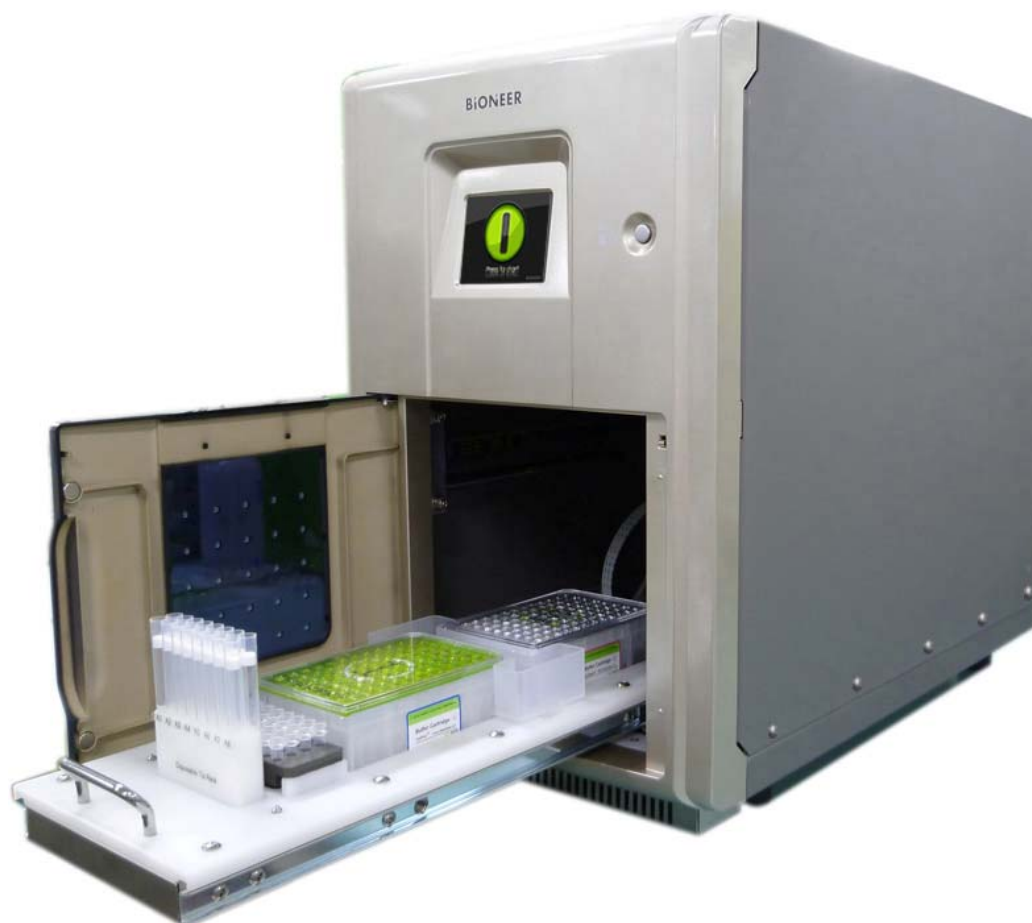


User Manual (Ver 1.0)

ExiProgen™

Fully Automated Protein Synthesis & RNA/DNA Prep System



BIONEER
Innovation • Value • Discovery



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PRODUCT

: *ExiProgen*[™],
Fully Automated Protein Synthesis & RNA/DNA Prep System

CATALOG NO.



A-5041

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I. Getting Started

Thank you for purchasing this Bioneer product.

We strive to provide the best results to our customers.

This manual contains practical guidelines and cautions to be taken regarding the instrument.

Please read this manual carefully and thoroughly before using the instrument.

Website

Please visit us online at <http://www.bioneer.com> to obtain more information about *ExiProgen™*.

General information

- *ExiProgen™* is a trademark of Bioneer Corporation.
- The information contained in this manual is under copyright protection. It is unlawful to reproduce part or all of the contents of this manual without the expressed written consent of Bioneer Corporation.
- Bioneer Corporation reserves the right to alter, modify and otherwise make changes to the instrument and manuals without prior notice.
- *ExiProgen™* can be use with PC software. Please contact us for details.
- User precaution is recommended when using the UV Lamp. Details can be found in Safety warning and Precautions.

Reversion

Cat. Number A-5041 Rev. 1.0

Sep/2011

II. Safety Warnings and Precautions

The warnings and precautions stated below are for the correct and safe operation of the instrument. Please heed all information for your safety. Bioneer Corporation does not assume responsibility for non-compliance with the safety warnings and precautions stated below.



Warning: Hazards or dangerous actions that may result in severe injury.



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



Warnings: Hazards or dangerous actions that may result in burn.



Warnings: Hazards or dangerous actions that may result in electronic shock.

1. User and experimental precautions



- 1) Make sure that the power supply (100-240V, ~50/60Hz) is correctly connected to the power adapter and, the power adapter is correctly connected to the instrument. Incorrect connection of the power adapter and the power supply can result in instrument damage or failure to turn on.
- 2) This instrument is intended for nucleic acid extraction and protein expression/purification. Please use the instrument for these purposes only.
- 3) The instrument may stop if the **LCD panel is touched** while the instrument is connected to a PC via LAN cable and operating. If operating the instrument via PC software, please allow for the instrument to finish its programmed movement before operating the LCD panel.
- 4) Do not turn the PC off or disconnect the LAN cable connected to the PC to the instrument. Data communication error can result in instrument malfunction and can affect the results of your experiment.
- 5) Please install the instrument on a flat and level surface.
- 6) Do not operate the instrument with wet hands as this may result in electric shock or instrument malfunction. Please touch the power adapter cord with dry hands.
- 7) If the instrument is stopped either from operator error including improper accessory insertion or manually halting the instrument during normal operation, you must re-initialize the instrument before pulling out the Base Plate. Pulling out the Base Plate without prior initialization can lead to instrument damage from movement interferences such as the Heating Block or other accessories stopped in motion. If Buffer Cartridges are inserted into the Base Plate, please reinitialize the instrument or pull out the Buffer Cartridges to make sure the Heating Block is not in the way of normal Base Plate movement.
- 8) Avoid placing objects in front and rear of the instrument, as fan blockage may reduce the efficiency of the Cooling Block performance.
- 9) Avoid any obstruction or foreign material in front of the lower-front side Cooling Fan mesh. Foreign objects can hinder normal Cooling Fan operation, and it may lead overheating of parts or cause fire.

2. Precautions regarding the operation environment



- 1) If the power plug is loose, do not use the instrument. Loose power plug connections may result in electric shock or fire.
- 2) Do not operate multiple instruments out of a single wall outlet. The load may cause overheating and may cause fire.
- 3) While plugging or unplugging the power adapter cord from a wall outlet, make sure your hands are completely dry. Wet or moist hands may cause electric shock.
- 4) Avoid placing objects in front and rear of the instrument.
- 5) Avoid installing the instrument in a dusty environment. Excessive dust may cause malfunction or damage to the instrument.
- 6) Avoid operating the instrument near heat sources. This can cause fire.
- 7) Avoid operating the instrument near sources of water or damp locations. This can cause electrical shock, fire or instrument malfunction.
- 8) Do not install near sources of flammable or corrosive gas. In a case of a gas leak, do not touch the power plug. Open the window and ventilate the area. Sparks from the power plug can cause fire and/or explosions.
- 9) Do not disassemble or modify the instrument in any way. This can result in fire, electrical shock or malfunction, and also voids the manufacturer's warranty.

3. Precautions and warnings regarding instrument installation

- 1) This instrument is a precision device. Do not install the instrument in a location exposed to direct sunlight.
- 2) Install the instrument on a flat and solid surface that does not move.
- 3) While installing the instrument, make sure at least 15 cm separate the instrument from the nearest wall.
- 4) Take cautions not to damage the cooling fan mesh (located on the front-bottom) while installing.

4. Precautions and warnings regarding instrument operation



- 1) Dust off the power cord and connect to the instrument firmly and securely. Incomplete electrical contacts may cause fire.
- 2) Operate the instrument within ambient temperature range of 15°C~30°C. Excessive exposure to heat will negatively affected the instrument and the experiment results.
- 3) Operate the instrument within the recommended humidity range (20~80%, no condensation). Humid conditions may cause corrosion or malfunction.
- 4) Do not place any object directly next to or behind the instrument. The instrument may malfunction.

- 5) This instrument contains precisely machined parts. Do not drop and handle with care. Improper handling of the instrument may compromise performance and cause safety hazards.
- 6) While the instrument is not in use for a long period of time, turn the instrument off and unplug from the wall outlet.
- 7) Take caution not to damage the cooling fan mesh located on the lower-front of the instrument. If the mesh is damaged and the Cooling Fan does not work, the Cooling Fan motor and cooling element may overheat and cause fire.
- 8) The instrument automatically turns off the UV lamp and stops operation when the instrument door is open. However, in case this safety measure fails, do NOT expose your eyes or skin to direct UV light.

5. Precautions and warnings regarding product usage and maintenance



- 1) This product should only be used for nucleic acid extraction, protein expression/purification and automatic aliquoting. Do not use the instrument for any other purpose other than explicitly stated in the User Manual.
- 2) Do not modify or delete instrument-related information installed within the instrument.
- 3) Do not use a sharp object to operate the LCD screen.
- 4) The instrument UV lamp will only operate if the door is completely shut. Make sure the door sensor is free of any material or obstruction.
- 5) Do not use powerful detergents or solvents to clean the outside of the instrument. This may cause discoloration of the instrument. If such chemicals are spilled on the instrument, immediately clean with a soft cloth.
- 6) Do not keep the instrument in highly humid environment. **Moisture Damage** is classified as water damage and is not covered by the manufacturer's warranty. Also, an instrument with moisture damage may not be repairable.
- 7) Disassembly and/or modification of the instrument voids the manufacturer's warranty and a service request may be refused.
- 8) Do not unplug the power adapter from the instrument while the instrument is in use. This may cause damage to the instrument.
- 9) If a burning smell is detected or the instrument seems to be excessively hot during operation, immediately stop using the instrument and call your service representative.
- 10) Do not drop or impact the instrument. This causes direct instrument damage and will void the manufacturer's warranty.
- 11) Always verify that the Heating Block is in initial position before pulling out the Base Plate. If the Base Plate is pulled out while the Heating Block is not in its initial position, the interference in movement can cause Heating Block and other internal component damage and lead to instrument malfunction. Since installed Buffer Cartridges obscure the view, re-initialize the instrument or take out the Buffer Cartridges and visually inspect the position of the Heating Block before pulling out the Base Plate.

- 12) Take caution not to damage the cooling fan mesh located on the lower-front side of the instrument. If the mesh is damaged and the Cooling Fan does not work, the Cooling Fan motor and cooling element may overheat the instrument and cause fire.
- 13) When there is liquid in the Waste Tray in the equipment, take extra caution to push-in or pull-out the base plate so the liquid does NOT overflow on the surface of the instrument inside. If happens, it may damage the instrument or cause the electrocution.

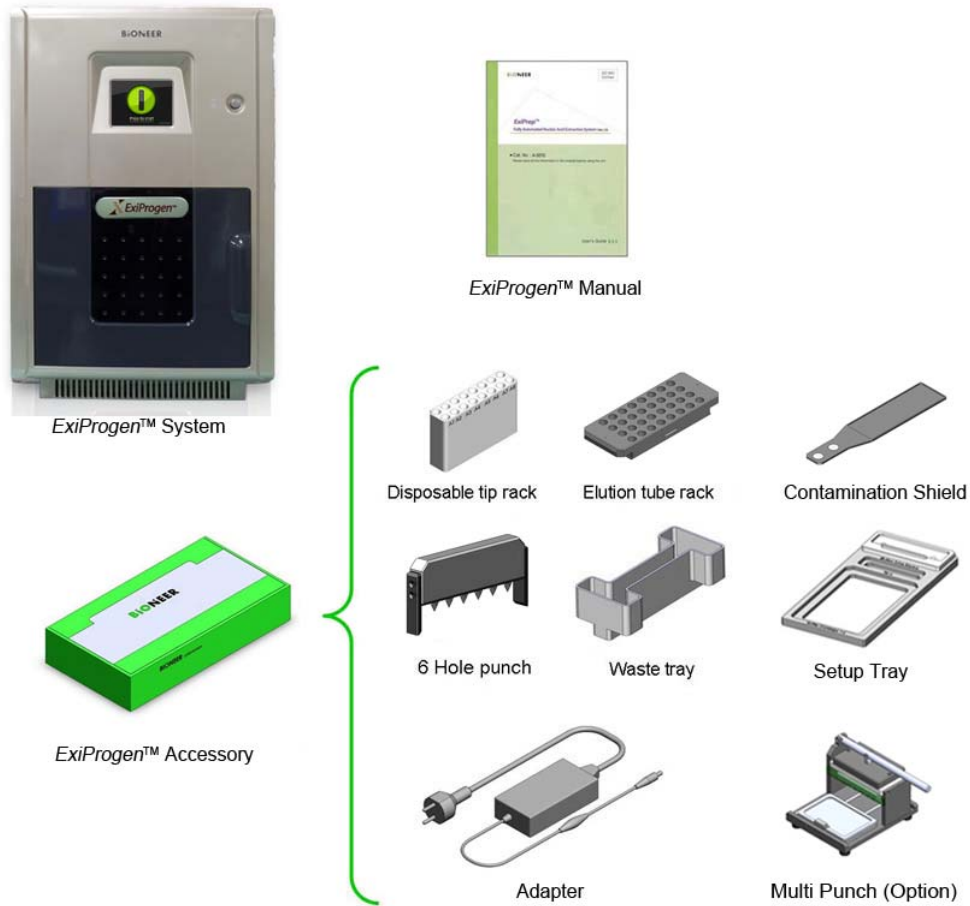
6. UV Lamp



- 1) UV lamp operation may create ozone molecules. For user safety, the instrument is pre-programmed to operate the UV lamp for 5 minutes only. Please do NOT use the UV lamp in excess.
- 2) Ultraviolet (UV) rays can seriously damage your eyes and skin when exposed directly (or even indirectly). When working with the UV lamp, make sure you are wearing proper protective equipment.

III. System Components and Specifications

1. System Components

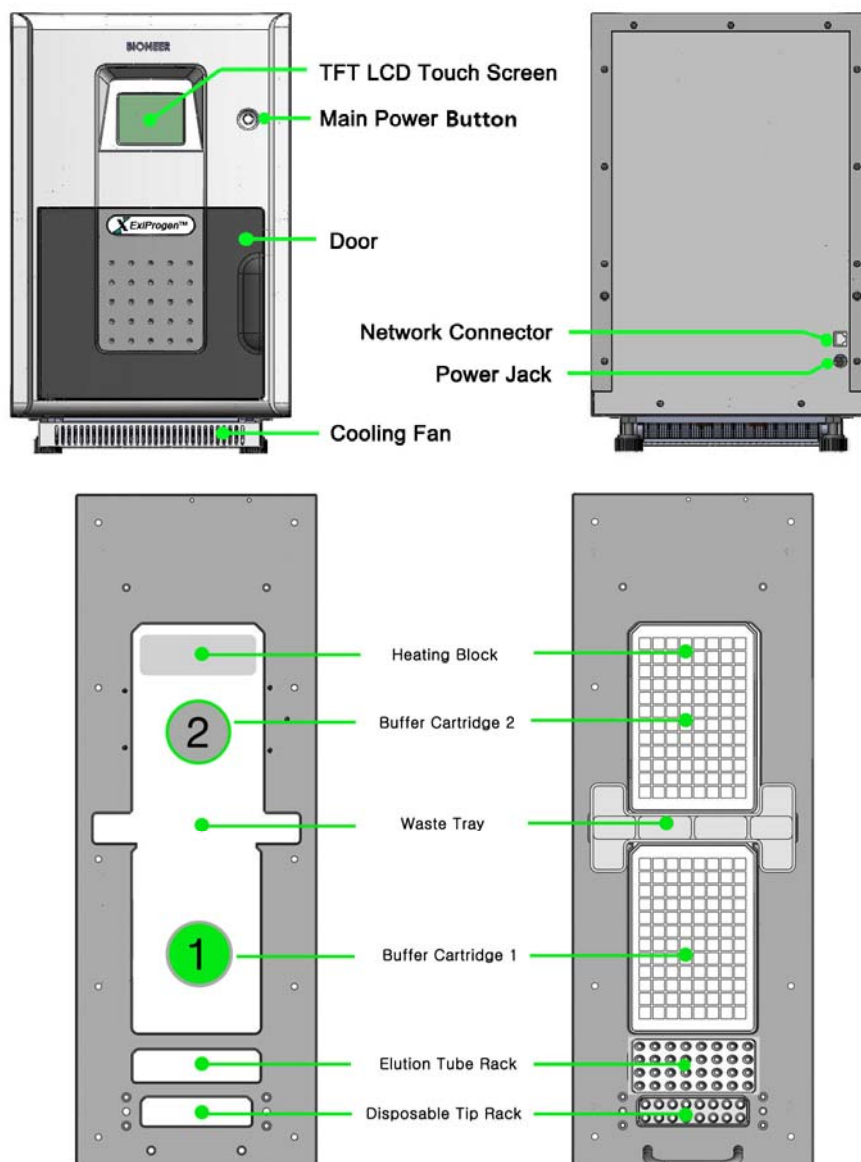


Part Name	Cat. No.	Qty.	Check
ExiProgen™	A-5041	1 ea	<input type="checkbox"/>
User's Manual		1 ea	<input type="checkbox"/>
Waste Tray		1 ea	<input type="checkbox"/>
Elution Tube Rack		1 ea	<input type="checkbox"/>
Disposable Tip Rack		1 ea	<input type="checkbox"/>
Contamination Shield		1 ea	<input type="checkbox"/>
6 Hole Puncher		1 ea	<input type="checkbox"/>
Adapter		1 set	<input type="checkbox"/>
Setup Tray		1 ea	<input type="checkbox"/>
(Option) Multi Puncher		-	

2. Specifications

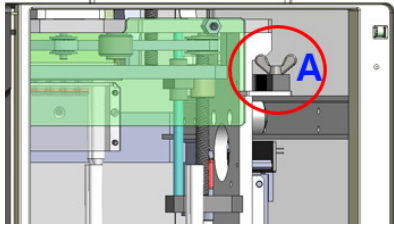
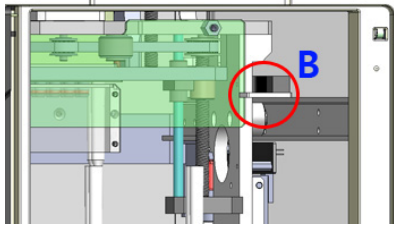
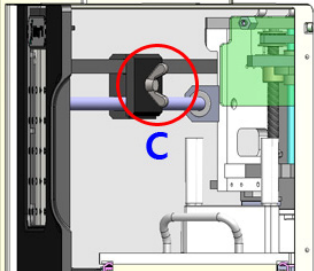
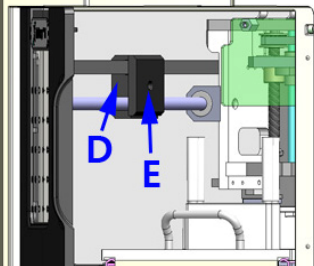
Dimensions (mm)	320 (W) x 500 (H) x 535 (D)
Weight	27 kg
Operating temperature	15 – 30°C
Operating humidity	20 - 80%, no condensation
Operating system	Standalone or PC
Electrical (Voltage / Frequency)	100- 240 VAC, 50/60 Hz
Network support	TCP/IP protocol
User interface	320 x 240 touch screen TFT LCD, 18 bit color

3. System Views

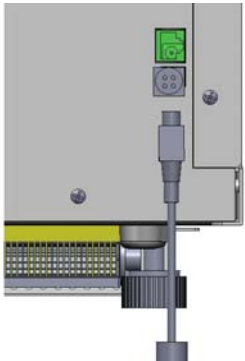


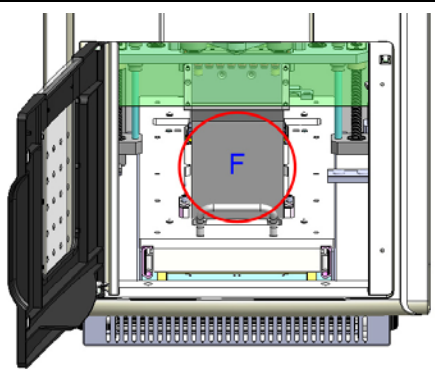


IV. Installing the ExiProgen™

- Clear and clean the area where the instrument will be installed.
- Open the instrument door and remove the holding accessories (described below).
- Make sure that all components are included. Refer to the list of components on [page 6](#).

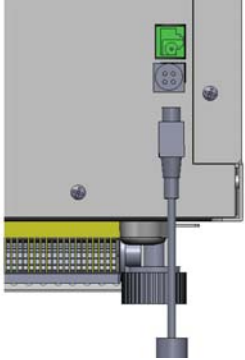

 A cutaway diagram of the instrument's interior. A red circle highlights a screw labeled 'A' on a horizontal rail.	<p>1. Open the door and remove the Screw (A) from the rail.</p>
 A cutaway diagram of the instrument's interior. A red circle highlights a holding plate labeled 'B' on a horizontal rail.	<p>2. Remove the holding plate (B) from the rail and the Syringe Block.</p>
 A cutaway diagram of the instrument's interior. A red circle highlights a screw labeled 'C' on a horizontal rail, which is part of a holding block.	<p>3. Remove the Screw (C) from the holding block which immobilizes the belt.</p>
 A cutaway diagram of the instrument's interior. Two blue arrows labeled 'D' and 'E' point to the holding block components.	<p>4. Separate the holding block (D, E) from the belt and remove it.</p>

IV. Installing the ExiProgen™ (continued)

	<p>5. Connect the power cable to the rear of the instrument.</p>
	<p>6. Turn on the instrument. A power button will display on the LCD touch screen to indicate normal power on.</p>
	<p>7. Press the power button on the LCD screen to initialize the instrument. A progress bar on the lower portion of the LCD touchscreen will indicate initialization progress.</p>
	<p>8. Open the door and remove the Sponge block (F) from the Base Plate after initialization.</p>


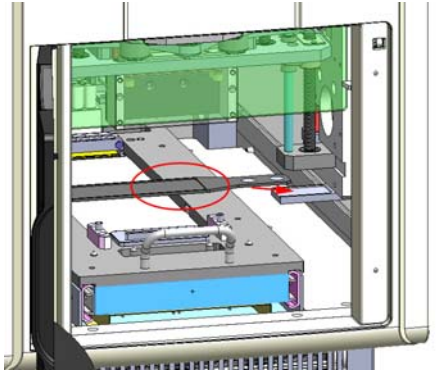

V. Protein Expression/Purification

1. Pre-installation

	<ol style="list-style-type: none">1. Connect the power cable to the rear of the instrument.
	<ol style="list-style-type: none">2. Press 'STORE OFF' on the LCD to turn the cooling block on. The Cooling Block maintains the Elution Tube Rack at a low temperature to keep the eluted protein expression/purification kit mix refrigerated

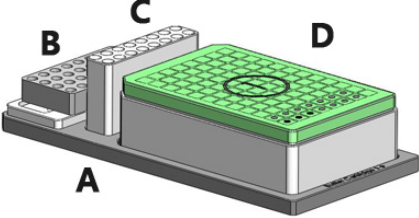
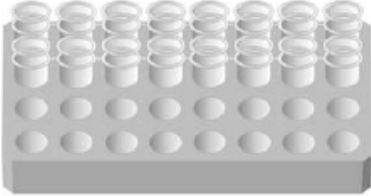

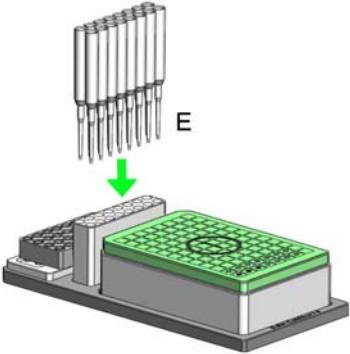
V. Protein Expression/Purification (Continued)

2. Contamination Shield Installation

	<p>1. From the 'Menu' screen, click 'MISC SET'.</p> <ul style="list-style-type: none">➤ This will bring the Syringe block to the front of the instrument for Contamination shield attachment. <p>⚠ CAUTION In order to use contamination shield, it must be installed correctly.</p>
	<p>2. Place the contamination shield on the lower-right side of the Syringe block.</p> <ul style="list-style-type: none">➤ Contamination shield has a magnet which can attach itself in the wrong orientation. Please make sure the Contamination shield is attached correctly.
	<p>3. From the 'Menu' screen, click 'MISC SET'.</p> <ul style="list-style-type: none">➤ The base plate moves back to the initialization position (inside the instrument).

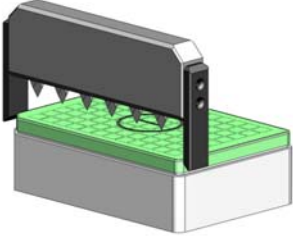

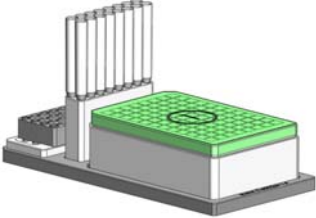
V. Protein Expression/Purification (Continued)

3. Sample Preparation

	<ol style="list-style-type: none"> 1. Place 'Setup tray (A)' on a flat surfaced desk. 2. On the Setup tray, place 'Buffer Cartridge ① (D)', 'Elution tube rack (B)', 'Disposable tip rack (C)'. <ul style="list-style-type: none"> ➤ The 'Setup Tray' and 'Tip Rack' are supplied with ExiProgen™. ➤ The 'Buffer Cartridge', 'Disposable Tip' and 'Elution Tube' are supplied in the Protein Expression/Purification Kit.
	<ol style="list-style-type: none"> 3. Check Protein Expression/Purification Kit for the samples and the proteins to be extracted. 4. Place the number of the Cell Extracts to be extracted on the Elution tube rack. <ul style="list-style-type: none"> ➤ You may cut the strips if necessary to match the number tubes to samples. ➤ Make sure front and rear orientation of the Elution tube rack is correct before inserting the tubes.
	<ol style="list-style-type: none"> 5. Place the number of the Elution Tubes to be extracted in the Elution tube rack.
	<ol style="list-style-type: none"> 6. Insert Disposable tips (E) for the experiment in the Disposable tip rack.


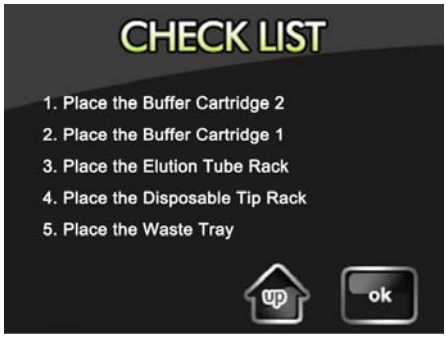
V. Protein Expression/Purification (Continued)

3. Sample Preparation (Continued)

	<ol style="list-style-type: none">7. Punch holes in the sealing film of Buffer Cartridge ① corresponding to the relative location and number of tubes and tips, using the Hole Puncher.8. Punch holes in sealing the film of Buffer Cartridge ② using the punch tool in the same pattern as Buffer Cartridge ①.9. Place the punched Cartridge back on the Setup Tray.
	<ol style="list-style-type: none">10. Insert the DNA sample including the sequence to be expressed into protein into the 'Sample Loading Well' of Buffer Cartridge ②.
	<ol style="list-style-type: none">11. Complete the preparation for protein expression/purification.


V. Protein Expression/Purification (Continued)

4. RUN

	<p>1. Press the 'START' button to access the PREP SETUP screen.</p>
	<p>2. Refer to the code list within this Manual or purchased Kit Manual to select the three-digit code (page 41) applicable to your desired protein and sample source type.</p> <p>3. Verify the 'Prep Type' and 'Sample SRC' of the three-digit code you have entered.</p> <p>4. Press the 'Enter' button to access the 'elution volume' selection menu.</p>
	<p>5. Select '250ul' from 'select elution volume' of the LCD touchscreen.</p> <p>6. After selecting the desired 'elution volume' press 'ok' to complete PREP SETUP.</p>
	<p>7. Open the instrument door and pull out the Base Plate.</p> <p>8. Place all racks and Buffer Cartridges in their respective locations on the Base Plate according to the CHECK LIST (page 16) on the LCD touchscreen.</p>

V. Protein Expression/Purification (Continued)

4. RUN (Continued)


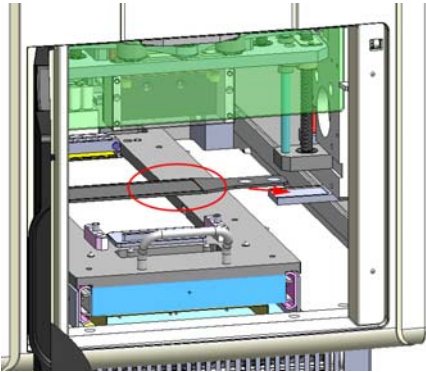

	<p>9. Verify the name of the target protein type and sample source type on the Running Mode screen, and press the 'RUN' button.</p> <ul style="list-style-type: none"> ➤ Progress of the expression/purification run can be checked through the progress bar on the lower portion of the LCD touchscreen.
	<p>10. You may press the 'STOP' button during the run to terminate the extraction.</p> <ul style="list-style-type: none"> ➤ If you press 'STOP' during an expression/purification run, a popup prompt asking you whether you are sure ('Are you sure?') will appear. Select 'Yes' to terminate the run, or 'No' to cancel the stop and proceed with the extraction run. ➤ You may select 'PAUSE' to temporarily stop the run and 'RUN' to resume.
	<p>11. After the expression/purification run is complete, pull out the Base Plate and remove the Elution tubes, Buffer Cartridges and all racks from the Base Plate. After removing all accessories, push the Base Plate back in completely and close the door.</p> <p>12. You are given three options at this point:</p> <ul style="list-style-type: none"> ➤ Still remains same work: Repeat the current protocol. ➤ Do other work: Perform an expression/purification run using a different protocol for another nucleic acid and sample source type. ➤ Finish: Finish and exit
	<p>13. If the automatic UV-sterilization option is enabled, a popup prompt will appear warning you not to open the door as UV sterilization is in progress. Details can be found in page 31.</p> <p>14. Press the 'START' button to initiate sterilization</p> <ul style="list-style-type: none"> ➤ Select 'SKIP' if you wish to pass sterilization. <p>15. The sterilization process takes 5 minutes. Progress can be checked through the progress bar.</p> <p>16. Remove the contamination shield.</p> <p>17. Press the 'Store On' button to turn the Cooling Block and cooling fan off.</p>

※ Setup process according to the CHECK LIST

	<p>8a. Insert Buffer Cartridge ② on the Base plate.</p> <ul style="list-style-type: none"> ➤ Make sure the Buffer Cartridge fits snugly and exactly into its place. Misplacement of the Buffer Cartridge may result in instrument break down and malfunction.
	<p>8b. Insert Buffer Cartridge ① on the Base plate.</p> <ul style="list-style-type: none"> ➤ Make sure the Buffer Cartridge fits snugly and exactly into its place. Misplacement of the Buffer Cartridge may result in instrument break down and malfunction.
	<p>8c. Place the Elution tube rack on the Base plate.</p> <ul style="list-style-type: none"> ➤ Make sure the direction and location of the Elution tube rack is correct.
	<p>8d. Place the Disposable tip rack on the Base plate.</p> <ul style="list-style-type: none"> ➤ Make sure the direction and location of the Disposable tip rack is correct.
	<p>8e. Place the Waste tray into the gap between Buffer Cartridges ① and ②.</p>
	<p>8f. Push the Base Plate in completely and close the door.</p> <ul style="list-style-type: none"> ➤ Press the 'ok' button to complete.

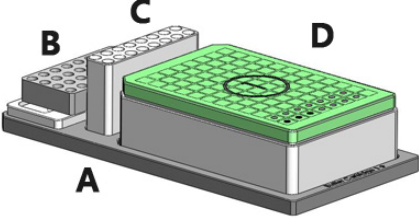
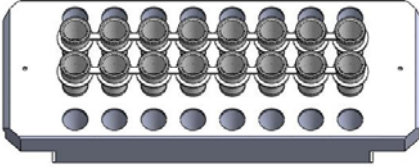
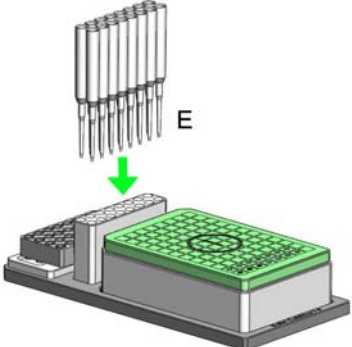
VI. DNA/ RNA Extraction

1. Contamination Shield Installation

	<ol style="list-style-type: none">1. From the 'Menu' screen, click 'MISC SET'.<ul style="list-style-type: none">➤ This will bring the Syringe block to the front of the instrument for Contamination shield attachment. <p>⚠ CAUTION In order to use contamination shield, it must be installed correctly.</p>
	<ol style="list-style-type: none">2. Place the contamination shield on the lower-right side of the Syringe block.<ul style="list-style-type: none">➤ Contamination shield has a magnet which can attach itself in the wrong orientation. Please make sure the Contamination shield is attached correctly.
	<ol style="list-style-type: none">3. From the 'Menu' screen, click 'MISC SET'.<ul style="list-style-type: none">➤ The base plate moves back to the initialization position (inside the instrument).

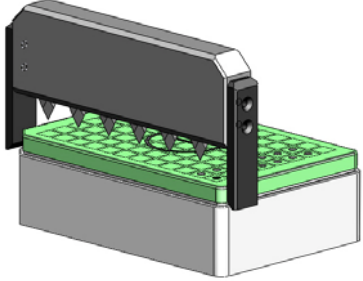
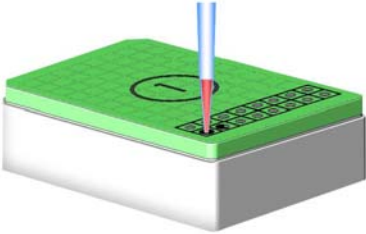
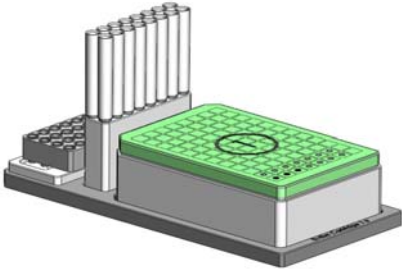
VI. DNA/ RNA Extraction (continued)

2. Sample Preparation

	<ol style="list-style-type: none"> 1. Place 'Setup tray (A)' on a flat surfaced desk. 2. On the Setup tray, put on the 'Buffer Cartridge ① (D)', 'Elution tube rack (B)', 'Disposable tip rack (C)'. <ul style="list-style-type: none"> ➤ The 'Setup Tray' and 'Tip Rack' are supplied with ExiProgen™. ➤ The 'Buffer Cartridge', 'Disposable Tip' and 'Elution Tube' are supplied in the DNA/ RNA Extraction Kit.
	<ol style="list-style-type: none"> 3. Check DNA/ RNA extraction Kit for the samples and the nucleic types to be extracted. 4. Place the number of elution tubes to be extracted on the Elution tube rack. <ul style="list-style-type: none"> ➤ You may cut the strips if necessary to match the number tubes to samples. ➤ Make sure front and rear orientation of the Elution tube rack is correct before inserting the tubes.
	<ol style="list-style-type: none"> 5. Place the Disposable tip (E) for the elution on to the Disposable tip rack.

VI. DNA/ RNA Extraction (continued)

2. Sample Preparation (Continued)

	<ol style="list-style-type: none">6. Punch holes in the sealing film of Buffer Cartridge ① corresponding to the relative location and number of tubes and tips, using the 6 Hole punch tool.7. Punch holes in sealing the film of Buffer Cartridge ② using the 6 Hole punch tool in the same pattern as Buffer Cartridge ①.8. Place back the punched Cartridge on the Setup Tray.
	<ol style="list-style-type: none">9. Insert the sample into 'Sample Loading Well' of Buffer Cartridge ①.
	<ol style="list-style-type: none">10. Complete the preparation for extraction.

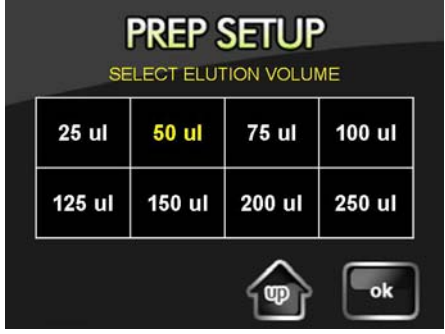
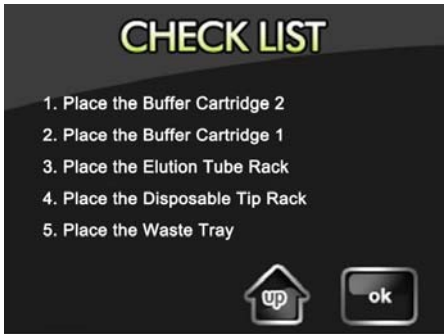
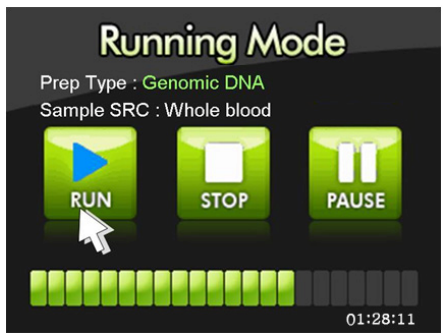
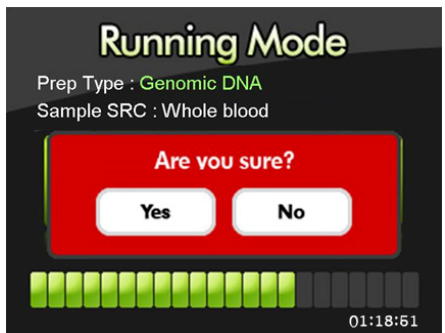
VI. DNA/ RNA Extraction (continued)

3. RUN

	<ol style="list-style-type: none"> 1. Connect the power cable to the rear of the instrument and separate the LAN cable of the instrument.
	<ol style="list-style-type: none"> 2. Press the 'Store Off' button to turn the Cooling Block and cooling fan on. The Cooling Block maintains the Elution Tube Rack at a low temperature to keep the eluted nucleic acid-diagnostic kit mix refrigerated.
	<ol style="list-style-type: none"> 3. Press the 'START' button to access the PREP SETUP screen.
	<ol style="list-style-type: none"> 4. Refer to the code list within this Manual or purchased Kit Manual to select the three-digit code (page 38) applicable to your desired nucleic acid and sample source type. 5. Verify the 'Prep Type' and 'Sample SRC' of the three-digit code you have entered. 6. Press the 'Enter' button to access the 'elution volume' selection menu.



VI. DNA/ RNA Extraction (continued)

3. RUN (Continued)

	<ol style="list-style-type: none"> 7. Select the 'elution volume' from the LCD touchscreen. 8. After selecting the desired 'elution volume' press 'ok' to complete PREP SETUP.
	<ol style="list-style-type: none"> 9. Open the instrument door and pull out the Base Plate. 10. Place all racks and Buffer Cartridges in their respective locations on the Base Plate according to the CHECK LIST (page 23) on the LCD touchscreen.
	<ol style="list-style-type: none"> 11. Verify the name of the target nucleic acid type and sample source type on the Running Mode screen, and press the 'RUN' button. <ul style="list-style-type: none"> ➤ Progress of the extraction run can be checked through the progress bar on the lower portion of the LCD touchscreen.
	<ol style="list-style-type: none"> 12. You may press the 'STOP' button during the run to terminate the extraction. <ul style="list-style-type: none"> ➤ If you press 'STOP' during an extraction run, a popup prompt asking you whether you are sure ('Are you sure?') will appear. Select 'Yes' to terminate the run, or 'No' to cancel the stop and proceed with the extraction run. ➤ You may select 'PAUSE' to temporarily stop the run and 'RUN' to resume.

VI. DNA/ RNA Extraction (continued)

3. RUN (Continued)

	<p>13. After the extraction run is complete, pull out the Base Plate and remove the Elution tubes, Buffer Cartridges and all racks from the Base Plate. After removing all accessories, push the Base Plate back in completely and close the door.</p> <p>14. You are given three options at this point:</p> <ul style="list-style-type: none"> ➤ Still remains same work: Repeat the current protocol. ➤ Do other work: Perform an extraction run using a different protocol for another nucleic acid and sample source type. ➤ Finish: Finish and exit.
	<p>15. If the automatic UV-sterilization option is enabled, a popup prompt will appear warning you not to open the door as UV sterilization is in progress. Details can be found in page 31.</p> <p>16. Press the 'START' button to initiate sterilization</p> <ul style="list-style-type: none"> ➤ Select 'SKIP' if you wish to pass sterilization. <p>17. The sterilization process takes 5 minutes. Progress can be checked through the progress bar.</p> <p>18. Remove the contamination shield. Detail can be found on page 17.</p> <p>19. Press the 'Store On' button to turn the Cooling Block and cooling fan off.</p>

※ Setup process according to the CHECK LIST

	<p>10a. Insert Buffer Cartridge ② on the Base plate.</p> <ul style="list-style-type: none"> ➤ Make sure the Buffer Cartridge fits snugly and exactly into its place. Misplacement of the Buffer Cartridge may result in instrument break down and malfunction.
	<p>10b. Insert Buffer Cartridge ① on the Base plate.</p> <ul style="list-style-type: none"> ➤ Make sure the Buffer Cartridge fits snugly and exactly into its place. Misplacement of the Buffer Cartridge may result in instrument break down and malfunction.
	<p>10c. Place the Elution tube rack on the Base plate.</p> <ul style="list-style-type: none"> ➤ Make sure the direction and location of the Elution tube rack is correct.
	<p>10d. Place the Disposable tip rack on the Base plate.</p> <ul style="list-style-type: none"> ➤ Make sure the direction and location of the Disposable tip rack is correct.
	<p>10e. Place the Waste tray into the gap between Buffer Cartridges ① and ②.</p>
	<p>10f. Push the Base Plate in completely and close the door.</p> <ul style="list-style-type: none"> ➤ Press the 'ok' button to complete.

VII. ExiProgen™ Setup

1. Main Menu

- Once the initialization has completed successfully, the LCD touchscreen will display the MENU as shown below.
- Please contact Bioneer Customer Service or your local sales representative if the initialization progress bar does not change for over 5 minutes during initialization or if the MENU screen does not appear after initialization.



Main Menu

Icon	Description
	<ul style="list-style-type: none"> ■ Network Connection <ul style="list-style-type: none"> ➢ This icon allows you to determine if the <i>ExiProgen™</i> is connected to the PC. If the icon is present, it means that the instrument is connected to the PC via network.
	<ul style="list-style-type: none"> ■ Cooling Fan Operation <ul style="list-style-type: none"> ➢ The Cooling Fan icon allows you to determine the status of the cooling fan. 'STORE OFF' means that the cooling fan is not operating, and 'STORE ON' means that the cooling fan is currently running. ➢ In order to keep the diagnostic kits or protein kits refrigerated, you must press this icon on the LCD touchscreen.
	<ul style="list-style-type: none"> ■ Contamination protection accessory installation <ul style="list-style-type: none"> ➢ This icon is to determine the status of the syringe block for setting the contamination shield.
	<ul style="list-style-type: none"> ■ Power <ul style="list-style-type: none"> ➢ This icon is to be pressed when power rebooting the instrument.

VII. ExiProgen™ Setup (continued)

1. Main Menu (continued)

1) PREP SETUP



MENU Screen



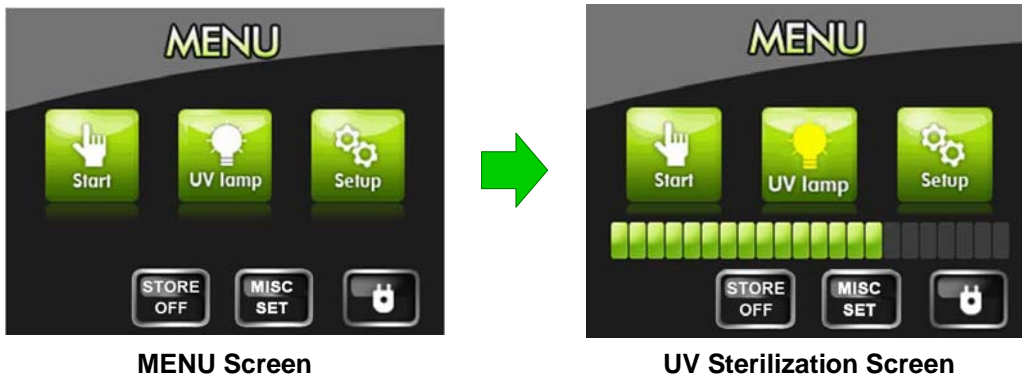
PREP SETUP Screen

- Selecting **'Start'** from the Main Menu for select protein expression/purification, DNA/RNA extraction will bring up the **'PREP SETUP'** screen where you can enter the three-digit code for the extraction and sample source type.
- Refer to the code list within this Manual to select the three-digit code ([page 38](#) ~ 41) applicable to your desired nucleic acid and sample source type.

VII. ExiProgen™ Setup (continued)

1. Main Menu (continued)

2) UV sterilization (UV lamp)



- Use the built-in UV-lamp to sterilize the internal cavity of the instrument.
- Press the **'UV lamp'** icon to initiate the UV sterilization process. The icon will turn yellow as UV sterilization proceeds.
- The sterilization runs for 5 minutes. The progress can be tracked through the progress bar displayed on the bottom portion of the LCD touchscreen. To cancel the sterilization process, press the **'UV lamp'** button again.

VII. ExiProgen™ Setup (continued)

1. Main Menu (continued)

3) System setup menu (SETUP)



Main Menu Screen





Setup Screen

Icon	Description
	<ul style="list-style-type: none"> ■ User registration menu <ul style="list-style-type: none"> ➢ You may create new accounts through this menu. Details on account creation can be found in page 28.
	<ul style="list-style-type: none"> ■ System configuration menu <ul style="list-style-type: none"> ➢ Allows you to restrict non-registered users from accessing features such as UV sterilization and system preferences. Details on system configuration can be found in page 32.
	<ul style="list-style-type: none"> ■ History <ul style="list-style-type: none"> ➢ Enabled by selecting the user login option. ➢ Allows you to audit up to 99 most recent runs by displaying information such as user ID, operation record and the instrument status (successful, cancelled) of a particular run. ➢ Details can be found in page 29.
	<ul style="list-style-type: none"> ■ Self Test <ul style="list-style-type: none"> ➢ This icon is for testing each motor initialization and heater block Temperature.
	<ul style="list-style-type: none"> ■ Tip Out <ul style="list-style-type: none"> ➢ This icon is for removing the Disposable Tips from the instrument Syringe Block. Pressing this icon will release the tips immediately.

VII. ExiProgen™ Setup (Continued)

2. Registering a New User

ExiProgen™ provides a user login option restricting the use of the instrument to registered users only. Enabling the user login option will limit non-user access to the instrument. Do not forget your user ID if you have enabled the user login option




	<p>1. Press the 'Setup' button to access the SETUP menu.</p>
	<p>2. Press the 'User' button to access the User Registration menu.</p>
	<p>3. Enter a 6-digit user ID using the keypad on the LCD touch screen and press 'Enter' to save the ID.</p> <ul style="list-style-type: none"> ➤ Delete: Delete last number entered. ➤ Clear: Delete all numbers entered. ➤ Enter: Save the numbers entered.
	<p>4. Verify the user ID and press 'ok' to complete the registration.</p> <ul style="list-style-type: none"> ➤ If the login option is enabled, non-registered use will have limited access to the instrument. ➤ Do not forget your user ID.

※ Up to 50 users can be registered. You can manage non-used user IDs using the administrator menu (page 33).

VII. ExiProgen™ Setup (continued)

3. Viewing Run History




If the login option is enabled, the user ID, process type and run status of each run is saved. Up to 99 most recent runs are saved in memory.

	<p>1. Press the 'Setup' button to access the SETUP menu.</p>																								
	<p>2. Press the 'History' button to view the instrument run history.</p>																								
 <table border="1" data-bbox="199 1211 560 1355"> <thead> <tr> <th>No.</th> <th>User ID</th> <th>Work</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1 1 1 1 1 1</td> <td>GD/ WB</td> <td>OK</td> </tr> <tr> <td>2</td> <td>2 2 2 2 2 2</td> <td>VD/ UR</td> <td>Abort</td> </tr> <tr> <td>3</td> <td>1 2 3 4 5 6</td> <td>TR/ PT</td> <td>OK</td> </tr> <tr> <td>4</td> <td>2 3 4 5 6 7</td> <td>FD/ GS</td> <td>Canceled</td> </tr> <tr> <td>5</td> <td>9 8 7 6 5 4</td> <td>PD/ EP</td> <td>OK</td> </tr> </tbody> </table>	No.	User ID	Work	Status	1	1 1 1 1 1 1	GD/ WB	OK	2	2 2 2 2 2 2	VD/ UR	Abort	3	1 2 3 4 5 6	TR/ PT	OK	4	2 3 4 5 6 7	FD/ GS	Canceled	5	9 8 7 6 5 4	PD/ EP	OK	<p>3. The run history contains the following parameters:</p> <ul style="list-style-type: none"> ➤ No.: Recent runs have a lower number. ➤ User ID: The 6-digit user ID. ➤ Work: An abbreviation of sample source and protocol type selected for that run. ➤ Status: Instrument report on whether protein expression/purification or nucleic acid extraction was successfully completed(OK), stopped during the run (Abort), or cancelled by the user (Canceled).
No.	User ID	Work	Status																						
1	1 1 1 1 1 1	GD/ WB	OK																						
2	2 2 2 2 2 2	VD/ UR	Abort																						
3	1 2 3 4 5 6	TR/ PT	OK																						
4	2 3 4 5 6 7	FD/ GS	Canceled																						
5	9 8 7 6 5 4	PD/ EP	OK																						

VII. ExiProgen™ Setup (continued)

4. Managing the Login Mode

The instrument provides a login mode for restricting non-registered use. Without a user ID, you would have limited access to protein expression/purification, DNA/RNA extraction and instrument functions. Do not forget your user ID.

	<p>1. Press the 'Setup' button to access the SETUP menu.</p>
	<p>2. Press the 'Config' button to access the System Setup menu.</p>
	<p>3. Press the 'User' button to enable login mode.</p> <ul style="list-style-type: none"> ➤ If the login mode is enabled, a popup prompt (User Mode ON) appears and the user icon will turn blue. ➤ Press the 'User' button again to disable user login mode. A popup prompt (User Mode OFF) appears and the user icon will turn white.

※ Entering an invalid user ID three consecutive times with user login mode enabled will shut down the system. Press the '**Power**' icon on the LCD touchscreen to restart.

VII. ExiProgen™ Setup (continued)

5. Managing the Automatic UV-Sterilization Mode








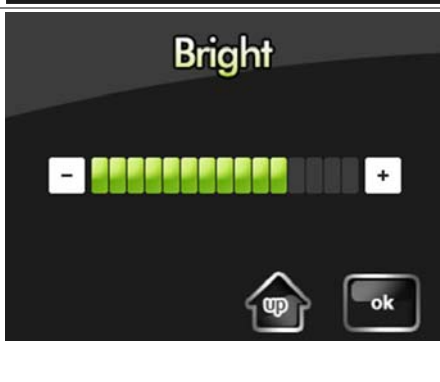
The instrument provides an automatic UV-Sterilization mode to sterilize the instrument after every protein expression/purification or DNA/RNA extraction run.

 <p>The screenshot shows the 'MENU' screen with three main buttons: 'Start' (hand icon), 'UV lamp' (lightbulb icon), and 'Setup' (gears icon). Below these are three smaller buttons: 'STORE OFF', 'MISC SET', and a power icon.</p>	<ol style="list-style-type: none"> 1. Press the 'Setup' button to access the SETUP menu.
 <p>The screenshot shows the 'SETUP' screen with three main buttons: 'User' (people icon), 'Config' (gears icon), and 'History' (clock icon). Below these are three smaller buttons: 'SELF TEST', 'TIP OUT', and a home icon.</p>	<ol style="list-style-type: none"> 2. Press the 'Config' button to access the System Setup menu.
 <p>The top screenshot shows the 'System Setup' screen with three main buttons: 'User' (people icon), 'UV lamp' (lightbulb icon), and 'Config' (gears icon). A mouse cursor is pointing at the 'UV lamp' button. Below these are three smaller buttons: 'SELF TEST', 'TIP OUT', and a home icon. The bottom screenshot shows the same 'System Setup' screen, but the 'UV lamp' button is now yellow, indicating that automatic UV-sterilization is enabled.</p>	<ol style="list-style-type: none"> 3. Press the 'UV lamp' button to enable automatic UV sterilization. <ul style="list-style-type: none"> ➤ If automatic UV-sterilization is enabled, a popup prompt (UV Mode ON) appears and the UV lamp icon will turn yellow. ➤ Press the 'UV lamp' button again to disable the mode. A popup prompt (UV Mode OFF) appears and the UV Lamp icon will turn white.

VII. ExiProgen™ Setup (continued)

6. Configuring the System

Only the single user with a registered administrator ID is able to configure the system. Do not forget the administrator ID.

	<p>1. Press the 'Config' Button from the System Setup menu to access the System Config menu.</p>			
	 Screen Calibrates the screen position	 Bright Adjusts the screen brightness	 Admin Manages user IDs as well as administrator ID	 Factory Accessible only by authorized engineers
	<p>➤ Screen: Calibrates the screen position</p> <ul style="list-style-type: none"> ➤ Calibrate the screen position relative to touching. ➤ Press and hold the circle at the upper left corner with a blunt tool for 2 seconds. ➤ Press and hold the circle at the bottom right corner with a blunt tool for 2 seconds. 			
	<p>➤ Bright: Screen brightness adjustment</p> <ul style="list-style-type: none"> ➤ Adjust the brightness of the LCD touchscreen using the '+' and '-' buttons. ➤ Press the 'ok' button to save the adjusted brightness level. The previous menu will be displayed when the new brightness setting is successfully applied. ➤ To return to the previous menu without saving the adjustments, press the 'up' button. 			

※ **Factory (A/S menu):** Only authorized service engineers may access this menu to service the instrument.



VII. ExiProgen™ Setup (continued)

7. Administrator Management

	<ol style="list-style-type: none"> 1. Press the 'Admin' button from the System Config menu to access the Admin Access menu. 																								
	<ol style="list-style-type: none"> 2. Enter the 6-digit administrator ID using the keypad on the LCD touchscreen. 3. Press the 'Enter' button. 																								
	<ol style="list-style-type: none"> 4. The Admin Menu screen includes an option to delete user IDs or change the administrator ID. <ul style="list-style-type: none"> ➤ Select 'User list delete (1)' to delete unused IDs. ➤ Select 'Administrator password change (2)' to change the factory default administrator ID. 																								
 <table border="1" data-bbox="199 1507 539 1630"> <thead> <tr> <th>ID</th> <th>Registered User</th> <th>Admin</th> <th>Factory</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>111111</td> <td>6</td> <td></td> </tr> <tr> <td>2</td> <td>222222</td> <td>7</td> <td></td> </tr> <tr> <td>3</td> <td>333333</td> <td>8</td> <td></td> </tr> <tr> <td>4</td> <td></td> <td>9</td> <td></td> </tr> <tr> <td>5</td> <td></td> <td>10</td> <td></td> </tr> </tbody> </table>	ID	Registered User	Admin	Factory	1	111111	6		2	222222	7		3	333333	8		4		9		5		10		<ul style="list-style-type: none"> ➤ User list delete menu (User List) <ul style="list-style-type: none"> ➤ Registered User: Displays the number of registered users. ➤ Select the user ID you wish to delete and press 'ok' to confirm deletion. ➤ Use the 'back' or 'next' buttons to navigate the pages.
ID	Registered User	Admin	Factory																						
1	111111	6																							
2	222222	7																							
3	333333	8																							
4		9																							
5		10																							

VII. ExiProgen™ Setup (continued)

7. Administrator (continued)

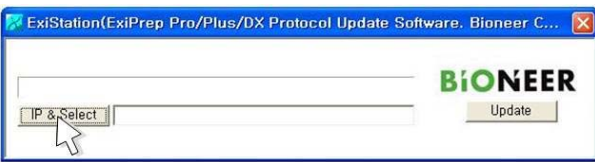
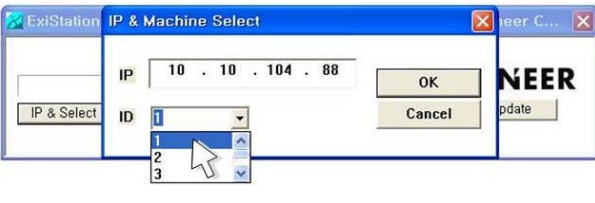
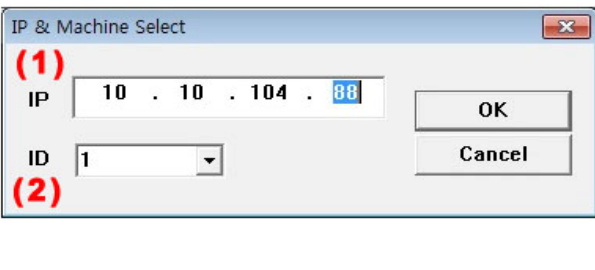
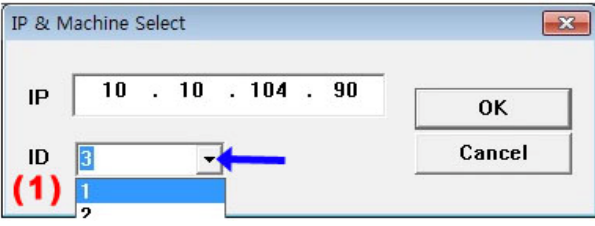

	<ul style="list-style-type: none"> ➤ Administrator ID change menu <ul style="list-style-type: none"> ➤ Enter a new 6-digit administrator ID using the keypad in the middle of LCD touchscreen and press 'Enter' button to save.
	<ul style="list-style-type: none"> ➤ Press the 'ok' button to save new administrator ID after verifying the new administrator ID. ➤ You may now use the new administrator ID to delete user IDs or setup and configure the system. ➤ Do not forget new administrator ID.

VIII. Updating the ExiProgen™


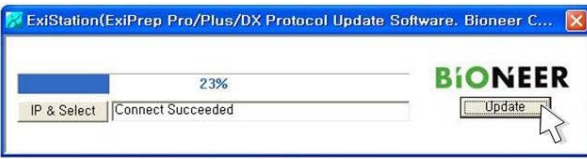
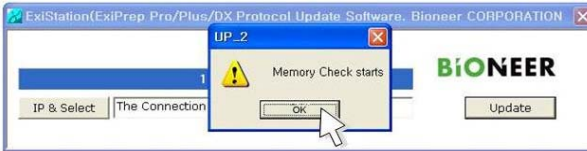
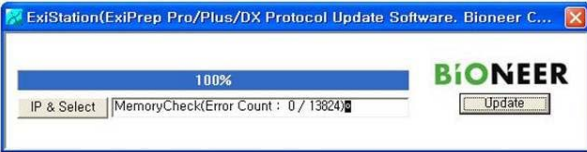


- Updating software may improve instrument functionality and install up-to-date protocols for protein/nucleic acid extraction.
- Please refer to the FAQ in our homepage or contact Bioneer Service Center if updating does not progress as described below or you have questions.

NOTE: This program NOT included with the instrument. If you want to the program, you have to request to us.

1. Connect ExiProgen™ to your computer using a **cross-type LAN cable**.
2. Start the installation of the downloaded program below.
 - The default IP address for ExiProgen™ is 10. 10. 104. 88.

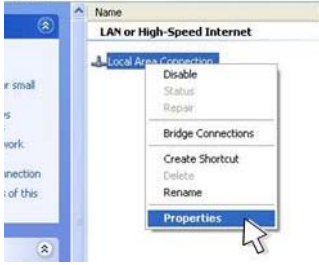



	<ol style="list-style-type: none"> 1. Execute the program. 2. Click the 'IP & Select' button on the lower left corner.
	<ol style="list-style-type: none"> 3. A new window 'IP & Machine Select' will appear with two boxes: IP and ID.
	<ol style="list-style-type: none"> 4. There are two ways of connecting to the instrument network. <ul style="list-style-type: none"> ➤ Directly enter the IP address into the IP box (1) and select the instrument ID (2). For example, if the IP address is '10.10.104.88', select ID '1' and click 'OK'.
	<ol style="list-style-type: none"> 5. Clicking on the small down arrow (blue arrow) will enable you to select several instrument IDs with corresponding IP addresses. Click 'OK' to finish connecting to the instrument.
	<ol style="list-style-type: none"> 6. If the connection succeeds, the 'Connect Succeeded' prompt will be displayed.

VIII. Updating the ExiProgen™ (Continued)

	<p>7. If the connection fails, the 'connect fail' prompt will be displayed. In this case, reboot the instrument and network hub, and verify that the network cable is connected correctly. Also verify the PC network settings including the IP address</p>
	<p>8. After the connection is completed, click the 'Update' button on the right side. Wait until the progress bar is full.</p> <ul style="list-style-type: none"> ➤ If the connection stops progressing, restart the update process from step 1.
	<p>9. Once the connection process is done, 'Memory Check starts' window will pop up.</p> <p>10. Click 'OK'.</p> <ul style="list-style-type: none"> ➤ If the connection stops progressing, restart the update process from step 1.
	<p>11. Once 'Memory Check' starts, the progress status bar will be displayed.</p>
	<p>12. When the Memory Check finishes the progress, 'Write and Read memory check results to matches' window will pop up.</p> <p>13. Press 'OK' button.</p>
	<p>14. If you get the 'Finish' message on the progress bar, all the update process.</p> <p>15. Disconnect the LAN cable from the computer and the instrument.</p> <p>16. Reboot the instrument and reconnect the LAN cable.</p>

※ The IP address may change depending on the installation site and PC.

※ If the PC fails to connect to the instrument, try the following steps.

	<ol style="list-style-type: none"> 1. Select 'Local Area Connection' from the control panel. 2. Right-click the connection and select 'Properties'.
	<ol style="list-style-type: none"> 3. Select 'Internet Protocol (TCP/IP)'.
	<ol style="list-style-type: none"> 4. Select 'Use the following IP address'.
	<ol style="list-style-type: none"> 5. Enter the IP address, subnet mask, Default gateway and DNS server address information below: IP address: 10. 10. 104. 38 Subnet mask: 255. 255. 192. 0 Default gateway: 10. 10. 100. 1 Preferred DNS server: 10. 10. 111. 3 (Alternate DNS server: 10. 10. 111. 4) 6. Click the 'OK' button commit the network changes.

IX. DNA/ RNA Extraction Program Number List

No.	Target	Sample source	No.	Target	Sample source
1 01	Genomic DNA	Whole blood	2 01	Total RNA	Whole blood
1 02	Genomic DNA	Animal tissue	2 02	Total RNA	Animal tissue
1 03	Genomic DNA	FFPE tissue	2 03	Total RNA	FFPE tissue
1 04	Genomic DNA	Plant tissue	2 04	Total RNA	Plant tissue
1 05	Genomic DNA	Plant seed	2 05	Total RNA	Plant seed
1 06	Genomic DNA	Rice	2 06	Total RNA	Rice
1 07	Genomic DNA	Cultured cell	2 07	Total RNA	Cultured cell
1 08	Genomic DNA	Gram (+) bacteria	2 08	Total RNA	Gram (+) bacteria
1 09	Genomic DNA	Gram (-) bacteria	2 09	Total RNA	Gram (-) bacteria
1 10	Genomic DNA	Yeast	2 10	Total RNA	Yeast
1 11	Genomic DNA	Fungi	2 11	Total RNA	Fungi
1 12	Genomic DNA	Plasma	2 12	Total RNA	Plasma
1 13	Genomic DNA	Serum	2 13	Total RNA	Serum
1 14	Genomic DNA	Buffy coat	2 14	Total RNA	Buffy coat
1 15	Genomic DNA	Sputum	2 15	Total RNA	Sputum
1 16	Genomic DNA	BAL	2 16	Total RNA	BAL
1 17	Genomic DNA	Saliva	2 17	Total RNA	Saliva
1 18	Genomic DNA	Swab	2 18	Total RNA	Swab
1 19	Genomic DNA	Urine	2 19	Total RNA	Urine
1 20	Genomic DNA	Stool	2 20	Total RNA	Stool
1 21	Genomic DNA	Cell free body fluid	2 21	Total RNA	Cell free body fluid
1 22	Genomic DNA	Pleural fluid	2 22	Total RNA	Pleural fluid
1 23	Genomic DNA	CSF	2 23	Total RNA	CSF
1 24	Genomic DNA	EPS	2 24	Total RNA	EPS
1 25	Genomic DNA	Respiratory sample	2 25	Total RNA	Respiratory sample
1 26	Genomic DNA	Amniotic fluid	2 26	Total RNA	Amniotic fluid
1 27	Genomic DNA	Forensic sample	2 27	Total RNA	Forensic sample
1 28	Genomic DNA	Bone marrow	2 28	Total RNA	Bone marrow
1 29	Genomic DNA	Bone	2 29	Total RNA	Bone
1 30	Genomic DNA	Dried blood spot	2 30	Total RNA	Dried blood spot
1 31	Genomic DNA	Soil	2 31	Total RNA	Soil
1 32	Genomic DNA	Hair	2 32	Total RNA	Hair
1 33	Genomic DNA	Cell supernatant	2 33	Total RNA	Cell supernatant

No.	Target	Sample source
3 01	mRNA	Whole blood
3 02	mRNA	Animal tissue
3 03	mRNA	FFPE tissue
3 04	mRNA	Plant tissue
3 05	mRNA	Plant seed
3 06	mRNA	Rice
3 07	mRNA	Cultured cell
3 08	mRNA	Gram (+) bacteria
3 09	mRNA	Gram (-) bacteria
3 10	mRNA	Yeast
3 11	mRNA	Fungi
3 12	mRNA	Plasma
3 13	mRNA	Serum
3 14	mRNA	Buffy coat
3 15	mRNA	Sputum
3 16	mRNA	BAL
3 17	mRNA	Saliva
3 18	mRNA	Swab
3 19	mRNA	Urine
3 20	mRNA	Stool
3 21	mRNA	Cell free body fluid
3 22	mRNA	Pleural fluid
3 23	mRNA	CSF
3 24	mRNA	EPS
3 25	mRNA	Respiratory sample
3 26	mRNA	Amniotic fluid
3 27	mRNA	Forensic sample
3 28	mRNA	Bone marrow
3 29	mRNA	Bone
3 30	mRNA	Dried blood spot
3 31	mRNA	Soil
3 32	mRNA	Hair
3 33	mRNA	Cell supernatant

No.	Target	Sample source
4 01	viral DNA	Whole blood
4 02	viral DNA	Animal tissue
4 03	viral DNA	FFPE tissue
4 04	viral DNA	Plant tissue
4 05	viral DNA	Plant seed
4 06	viral DNA	Rice
4 07	viral DNA	Cultured cell
4 08	viral DNA	Gram (+) bacteria
4 09	viral DNA	Gram (-) bacteria
4 10	viral DNA	Yeast
4 11	viral DNA	Fungi
4 12	viral DNA	Plasma
4 13	viral DNA	Serum
4 14	viral DNA	Buffy coat
4 15	viral DNA	Sputum
4 16	viral DNA	BAL
4 17	viral DNA	Saliva
4 18	viral DNA	Swab
4 19	viral DNA	Urine
4 20	viral DNA	Stool
4 21	viral DNA	Cell free body fluid
4 22	viral DNA	Pleural fluid
4 23	viral DNA	CSF
4 24	viral DNA	EPS
4 25	viral DNA	Respiratory sample
4 26	viral DNA	Amniotic fluid
4 27	viral DNA	Forensic sample
4 28	viral DNA	Bone marrow
4 29	viral DNA	Bone
4 30	viral DNA	Dried blood spot
4 31	viral DNA	Soil
4 32	viral DNA	Hair
4 33	viral DNA	Cell supernatant

No.	Target	Sample source
5 01	viral RNA	Whole blood
5 02	viral RNA	Animal tissue
5 03	viral RNA	FFPE tissue
5 04	viral RNA	Plant tissue
5 05	viral RNA	Plant seed
5 06	viral RNA	Rice
5 07	viral RNA	Cultured cell
5 08	viral RNA	Gram (+) bacteria
5 09	viral RNA	Gram (-) bacteria
5 10	viral RNA	Yeast
5 11	viral RNA	Fungi
5 12	viral RNA	Plasma
5 13	viral RNA	Serum
5 14	viral RNA	Buffy coat
5 15	viral RNA	Sputum
5 16	viral RNA	BAL
5 17	viral RNA	Saliva
5 18	viral RNA	Swab
5 19	viral RNA	Urine
5 20	viral RNA	Stool
5 21	viral RNA	Cell free body fluid
5 22	viral RNA	Pleural fluid
5 23	viral RNA	CSF
5 24	viral RNA	EPS
5 25	viral RNA	Respiratory sample
5 26	viral RNA	Amniotic fluid
5 27	viral RNA	Forensic sample
5 28	viral RNA	Bone marrow
5 29	viral RNA	Bone
5 30	viral RNA	Dried blood spot
5 31	viral RNA	Soil
5 32	viral RNA	Hair
5 33	viral RNA	Cell supernatant

No.	Target	Sample source
6 01	viral DNA/ RNA	Whole blood
6 02	viral DNA/ RNA	Animal tissue
6 03	viral DNA/ RNA	FFPE tissue
6 04	viral DNA/ RNA	Plant tissue
6 05	viral DNA/ RNA	Plant seed
6 06	viral DNA/ RNA	Rice
6 07	viral DNA/ RNA	Cultured cell
6 08	viral DNA/ RNA	Gram (+) bacteria
6 09	viral DNA/ RNA	Gram (-) bacteria
6 10	viral DNA/ RNA	Yeast
6 11	viral DNA/ RNA	Fungi
6 12	viral DNA/ RNA	Plasma
6 13	viral DNA/ RNA	Serum
6 14	viral DNA/ RNA	Buffy coat
6 15	viral DNA/ RNA	Sputum
6 16	viral DNA/ RNA	BAL
6 17	viral DNA/ RNA	Saliva
6 18	viral DNA/ RNA	Swab
6 19	viral DNA/ RNA	Urine
6 20	viral DNA/ RNA	Stool
6 21	viral DNA/ RNA	Cell free body fluid
6 22	viral DNA/ RNA	Pleural fluid
6 23	viral DNA/ RNA	CSF
6 24	viral DNA/ RNA	EPS
6 25	viral DNA/ RNA	Respiratory sample
6 26	viral DNA/ RNA	Amniotic fluid
6 27	viral DNA/ RNA	Forensic sample
6 28	viral DNA/ RNA	Bone marrow
6 29	viral DNA/ RNA	Bone
6 30	viral DNA/ RNA	Dried blood spot
6 31	viral DNA/ RNA	Soil
6 32	viral DNA/ RNA	Hair
6 33	viral DNA/ RNA	Cell supernatant

No.	Target	Sample source
7 01	Plasmid DNA	<i>endA</i> (+) strain
7 02	Plasmid DNA	<i>endA</i> (-) strain
No.	Target	Sample source
8 21	Fragment DNA	Gel slice
8 22	Fragment DNA	PCR product
8 23	Fragment DNA	Enzymatic reaction

No.	Target	Sample source
9 01	Protein	Purification
9 02	Protein	Synthesis

X. Troubleshooting

Error	Solution
The Power is not on.	<ol style="list-style-type: none"> 1. Make sure the power connector is connected. 2. Check if the system is connected to the adaptor. 3. Check if the system power is pushed. 4. If everything above has been followed but the power is not on, contact After Service.
The Power is on but the system cannot initiate.	<ol style="list-style-type: none"> 1. Press the power button to block the power. 2. Check if the power was turned off abnormally. 3. When the system power was shut off abnormally, check if there are any residues in tips and/or accessories in the system. 4. Remove any residues that may distract operating the system. 5. Manually move the syringe block of the interior desktop in the center. 6. Turn the power on and check whether the system is initiating. 7. Request for After Service.
LCD Screen is not on.	<ol style="list-style-type: none"> 1. It may be interior problem of the system, call for the After Service.
The system does not operate even RUN button is pressed.	<ol style="list-style-type: none"> 1. Check if the bracket lock is removed. 2. Check if the system is initiating normally when the power is on. 3. Check if there are any residues or obstacles in the system that may interrupt operating. 4. Check if all the accessories are inserted correctly. 5. Check if other buttons in the LCD are working. 6. Request for After Service.
The system is running but does not operate correctly.	<ol style="list-style-type: none"> 1. Check if the base plate is placed correctly. 2. Check if there is remaining residues or any obstacles that may interrupt operating the system. 3. Check if all the accessories are inserted correctly. 4. Request for After Service.
The front door does not close.	<ol style="list-style-type: none"> 1. Check if the base plate is placed correctly. 2. After holding the door to open and when releasing the door to be closed, check if the door is closed automatically by the spring. 3. Request for After Service.

Error	Solution
The base plate does not slide in completely.	<ol style="list-style-type: none"> 1. Check if there are any obstacles or residues that may interrupt moving the base plate. 2. Check if all the accessories are inserted correctly. 3. Request for After Service.
The system is not working even if the door is closed.	<ol style="list-style-type: none"> 1. Check if base plate is located in the correct. 2. Check if the pair of magnet attached to the door is correctly attached. 3. Check if the switch installed at the end of the base plate slide rail is damaged when base plate is pulled out. 4. Request for After Service.
The base plate does not slide out completely.	<ol style="list-style-type: none"> 1. Check inside of the system if there are any obstacles or residues that may interrupt moving the base plate. 2. Check the front of the system if there are any obstacles or residues that may interrupt moving the base plate. 3. Request for After Service.
The accessories are not being able insert.	<ol style="list-style-type: none"> 1. Check if all the accessories are located in the right position. 2. Check if there are any residues in each accessories and the rack. 3. Check if any accessories and the rack's lock pins are bent or damaged. 4. Request for After Service.
During the operation, the syringe block does not pin down the tips.	<ol style="list-style-type: none"> 1. Check if the door is completely closed. 2. Check if the tip and the tip rack is inserted correctly. 3. While inserting the tips, check if any residues or accessories are stuck. 4. Check if 'Stop' or 'Pause' button is pressed. 5. Check if the provided tips are inserted. 6. Check if the tip is bent or damaged. 7. Request for After Service.
Syringe Block is correctly equipped with the tips, but it doesn't move.	<ol style="list-style-type: none"> 1. Make sure the front door is closed. 2. When the block is being moved, check if any residues or accessories are stuck. 3. Check if the cartridge is inserted correctly. 4. Check if 'Stop' or 'Pause' button is pressed. 5. Request for After Service.

Error	Solution
It stops while operating.	<ol style="list-style-type: none"> 1. Check if the power supplied into the system. 2. Check if the Power switch has been pressed. 3. In the lower part of LCD screen, check if there is a delay in the blue progress bar. 4. Check if you have pressed 'Pause" by mistake. 5. Request for After Service.
The System is running but there is an error.	<ol style="list-style-type: none"> 1. Check if wrong protocol has been used. 2. Check if there is an error in the motor while operating during the movement of syringe block due to residues or accessories being stuck. 3. Check if it is operating after rerunning the same program. 4. Request for After Service.
The system is working but it does not do the elution.	<ol style="list-style-type: none"> 1. Check if Elution rack and tubes are inserted appropriately. 2. Check if the tips are inserted completely. 3. Check if the end of the tip is clogged. 4. Check if sample is inserted into the cartridge. 5. Check if there is any leakage in the syringe block. 6. Request for After Service.
There is a leakage in the syringe block.	<ol style="list-style-type: none"> 1. Stop using the well that were being used and request of after service.
The liquid is dripping in the bottom of the system.	<ol style="list-style-type: none"> 1. Check if the rack and the waste tray and other accessories are inserted in the right position. 2. Check if there is a leakage in the syringe block. 3. Request for After Service.
The heater is not working.	<ol style="list-style-type: none"> 1. Check if the rack and the waste tray and other accessories are inserted in the right position. 2. Check if any solution is dripped in the base plate during the usage. 3. Request for After Service.
There is a burning smell in the system.	<ol style="list-style-type: none"> 1. Disconnect the power and unplug the power connector immediately. 2. Request for After Service.
UV Lamp does not work.	<ol style="list-style-type: none"> 1. Check if the door is closed completely. 2. Request for After Service.

Error	Solution
The Sample Block does not maintain a cold temperature.	<ol style="list-style-type: none">1. Inspect the power supply.2. Verify the Sample Block status through the LCD screen or PC software.3. Request service from your dealer.
The cooling fan does not function.	<ol style="list-style-type: none">1. Inspect the power supply.2. Verify the Sample Block status through the LCD screen or PC software.3. Request service from your dealer.
Protocol dose not update.	<ol style="list-style-type: none">1. Check if the computer and the instrument are connected with LAN cable.2. Restart the computer and instrument.3. Update protocol4. Re-update protocol

XI. 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. If the product is still not functioning properly, contact Bioneer Customer Service at:

Bioneer Corporation (Headquarters)

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Phone: 82-42-930-8777/ Fax: 82-42-930-8688
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1000 Atlantic Avenue, Alameda, CA 94501, USA
Phone: 1-877-264-4300/ Fax: 1-510-865-0350
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