

iColumn LV8

Operation Manual



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AccuBioMed Co. Ltd.

V1.1.3









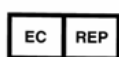




Safety Precautions

Before Use INSTRUCTION

This manual is designed to assist you with the operation of the iColumn LV8 Instrument in advance. Read it thoroughly before using the equipment or beginning any maintenance on it.

These WARNINGS and CAUTIONS are intended to protect you and other persons from injuries and damages. To ensure safe operation, please follow them carefully.

Safety Symbols and Markings:

	Expiration date [ⓘ]		Instruction for Use [ⓘ]
	Shipment number [ⓘ]		CAUTION! Refer to the accompanying documents. [ⓘ]
	Production date [ⓘ]		Recyclable Materials [ⓘ]
	Manufacturer Information [ⓘ]		Recyclable electrical and electronic materials. [ⓘ]
	European Authorized Representative [ⓘ]		CE Marking with number of the notified body. [ⓘ]
	Temperature limit [ⓘ]		




Safety Symbols and Markings	
	Danger. Hazardous voltage. Risk of electrical shock.
	Warning. Hands pinching.
	Warning. Hot surface. Burn hazard.



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1 Introduction

1.1 iColumn LV 8 Instrument Purification Procedure

The iColumn LV 8 Instrument is a fully automated nucleic acid purification system. Utilizing the silica membrane spin column method, it can purify nucleic acids with high yield and purity from wide range types of samples. In addition, through our Innovative Trinity Technology™, the purification procedure can be done within a small and straight-line cartridge without centrifuge and vacuum pump. Up to 8 samples can be isolated in a single run.

The automated steps performed by the iColumn LV 8 Instrument include:

- Sample lysis in the presence of a specially formulated Lysis Buffer on the heating block.
- Binding of nucleic acids to silica membrane on spin column
- Washing of the bound target molecules away from other cellular components
- Elution of the product into the elution tubes

1.2 Product Intended Use

iColumn Automated DNA/RNA Purification System is intended for molecular biology application. iColumn Automated DNA/RNA Purification System is an automated instrument for purification of nucleic acids (DNA, RNA, viral nucleic acid) from different kinds of sample by using AccuPure Kits, which develop specifically for iColumn Automated DNA/RNA Purification System. The system is intended for professional use only, but not for the diagnosis, prevention, or treatment of a disease.

1.3 Features

- Proven purification technology by using spin column method
- Easy-to-use and easy-to-maintain system operation
- Wide applications for DNA, RNA, and Viral DNA/RNA from wide ranges of samples
- Ready to go with the prefilled reagent cartridges
- Stream-line workflow to avoid cross contamination
- Documentation available

1.4 Specifications

Dimension	W440 x D720 x H640 mm
Weight	60 KG
Throughput	1-8 samples per run
Power Supply	100-240V, 50/60 Hz
Electric Control	Internal microprocessor
Light Source	LED white light
Heating Block	RT~120°C x1; RT~70 °C x1
Touch Screen	WVGA (16:9) 7" TFT LCD
Processing Time	72 minutes (depend upon sample types and method)
Sample Volume	5000µl
Elution Volume	50µl
Operating Condition	18~30°C



1.5 Product Components

Product	Cat. No.	
iColumn LV 8 Automated DNA/RNA Purification System	unit	ABM2008
iColumn LV 8 Instrument	1	
Syringe holder	1	
Heating Block	2	

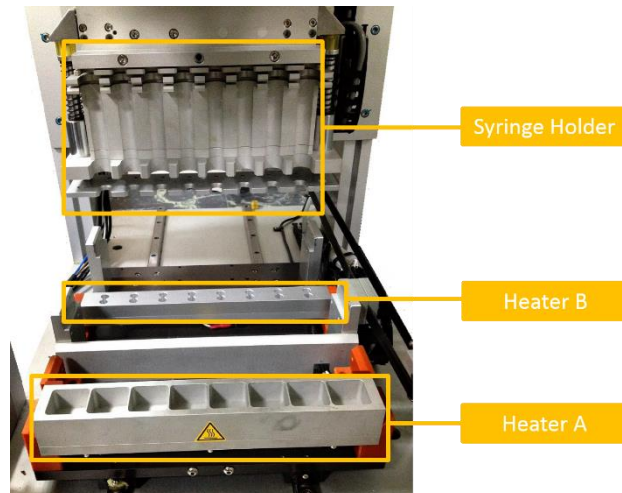


Figure 1.1: iColumn LV 8 Instrument.

Components shown include: Syringe holder and Heating Block for iColumn LV 8 Instrument

1.6 Accessories

Item	Name
1	8-in-1 Rack x1
2	Reagent Rack x1
3	Power Code x1
4	Barcode scanner(optional)

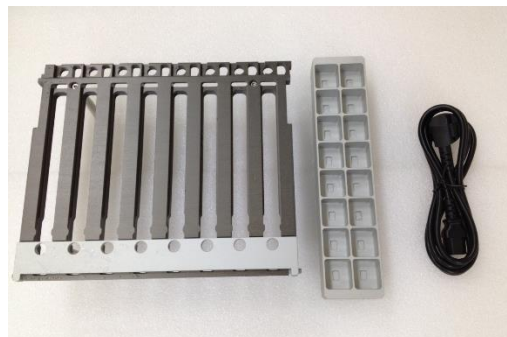


Figure 1.2: Accessories.



2 Installation

2.1 Unpacking the instrument



Figure 2.1: iColumn Wooden Carton (Dimension: 98W x 68D x 91H cm)

2.2 Dissemble the case



Figure 2.2: Remove screws

2.3 Remove the outer carton, four foam pieces, and take out the instrument



Figure 2.3: Instrument with foam protection buffer



2.4 Remove the foam from inside the instrument and remove the screws from plate locker.



Figure 2.4: Remove the foam ,tap and screws.

2.5 Adjust the level of the instrument .Using the bubble spirit level to adjust the horizontal level of the instrument



Figure 2.6: Using the bubble spirit level to adjust the horizontal level of the instrument.

2.6 Plug in the Power Code and turn on the rear power switch



Figure 2.7: Plug in the Power Code and turn on the rear power switch



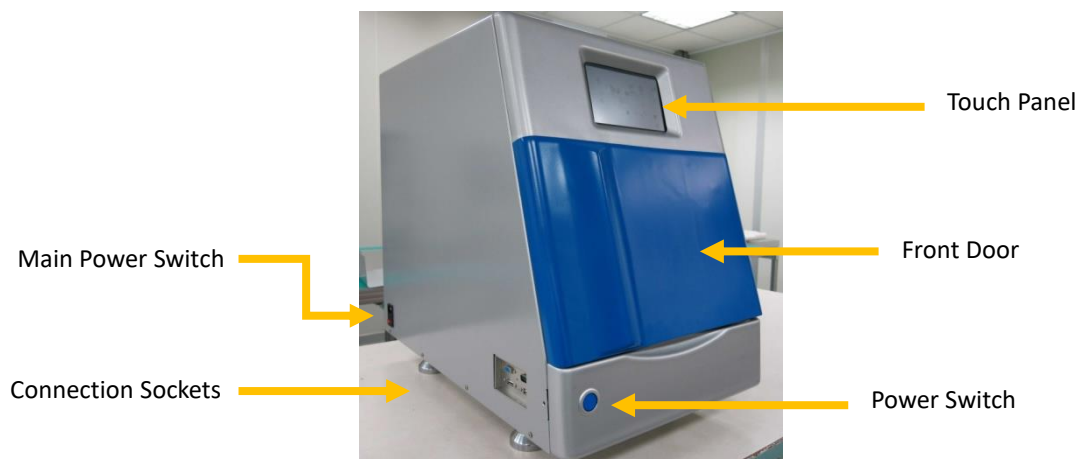
2.7 Turn on the front power switch (Blue) to start automated operation



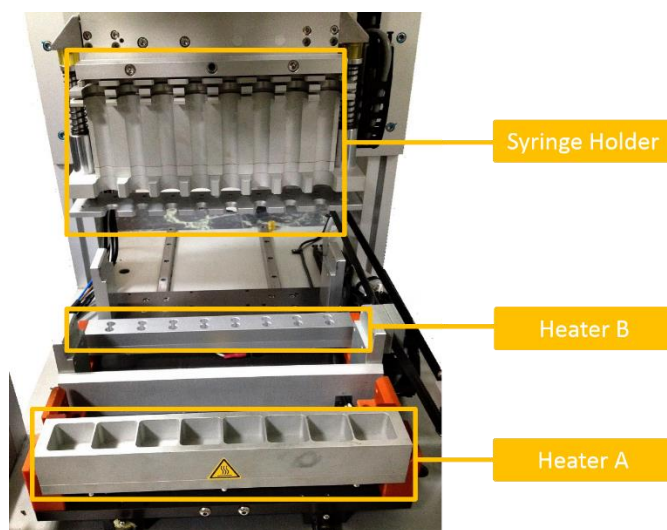
Figure 2.8: Turn on the front power switch

2.8 System Overview

- Exterior View



- Interior View

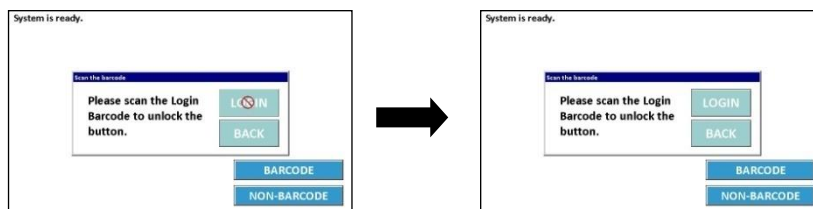


3 Operating the iColumn LV 8 instrument

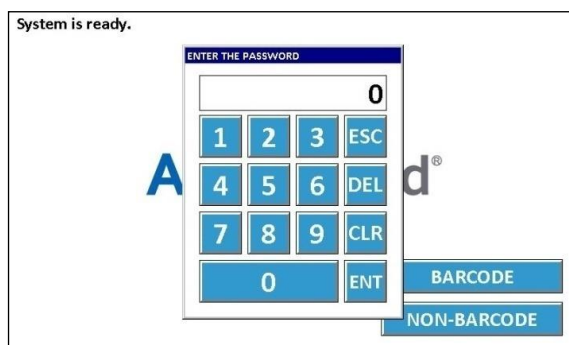
- 3.1 Turn on the iColumn LV 8 System. The instrument will power up, proceed through a self-check and home all moving parts.
- 3.2 At the **Start** screen, select “BARCODE” or “NON-BARCODE”.



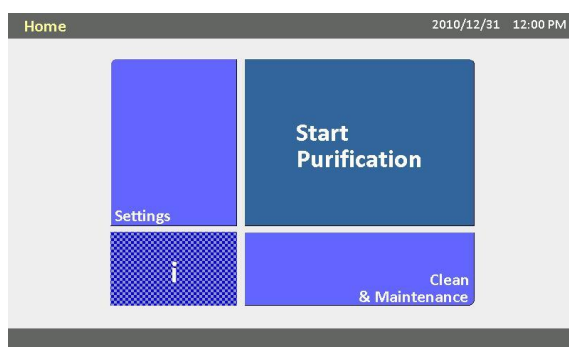
- At the **BARCODE** screen, scan the login barcode to unlock the button, then select “LOGIN”



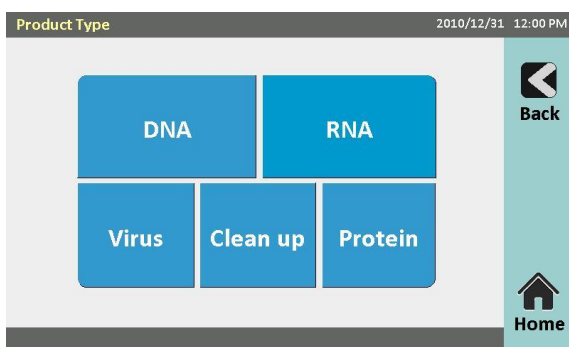
- At the **NON-BARCODE** screen, enter the password to login. (The default password is 0, part 4 will show how to set the login password)



- 3.3 At the **Home** screen, select “Start Purification”.



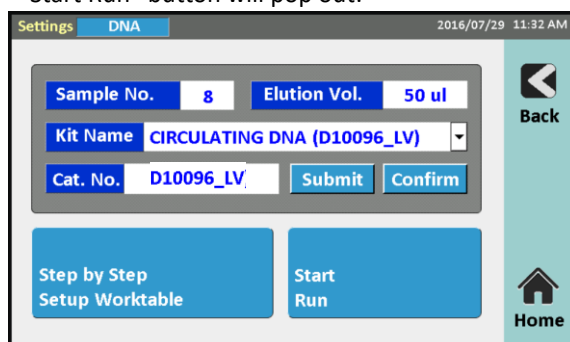
3.4 On the **Product Type** screen, verify that the end product type.



3.5 On the **Setting** screen

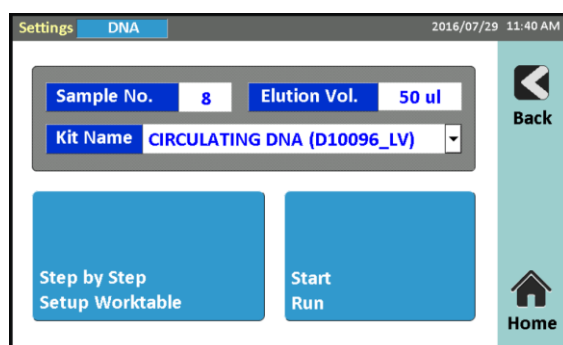
- **BARCODE**

- 3.5..1 Choose a Sample No. - 1 to 8 preps
- 3.5..2 Choose a Elution Volume - 50µl
- 3.5..3 Choose a Kit Name
- 3.5..4 Scan the barcode of the Cat. No.; Select “Submit”
- 3.5..5 If the Cat. No. is correct and the “Confirm” button will pop out, please select “Confirm”.
- 3.5..6 “Start Run” button will pop out.



- **NON-BARCODE**

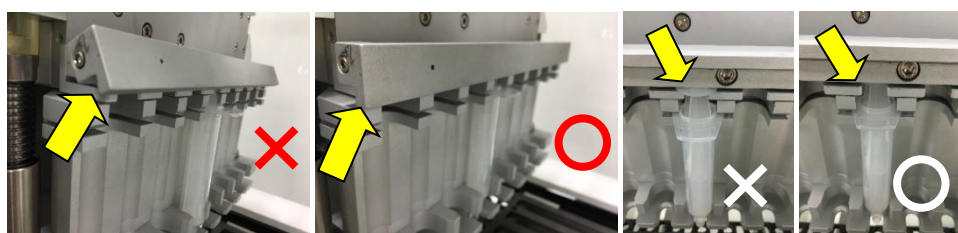
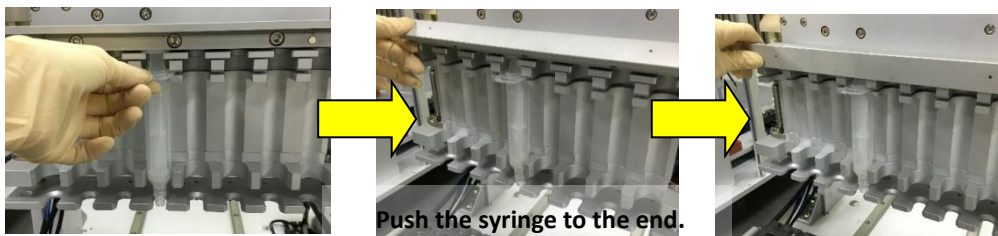
- 3.5..1 Choose a Sample No. - 1 to 8 preps
- 3.5..2 Choose a Elution Volume - 50 µl
- 3.5..3 Choose a Kit Name
- 3.5..4 “Start Run” button will pop out.



3.6 Open the front door and take the **8-in-1 Rack** and **Reagent Rack** out for preparation.

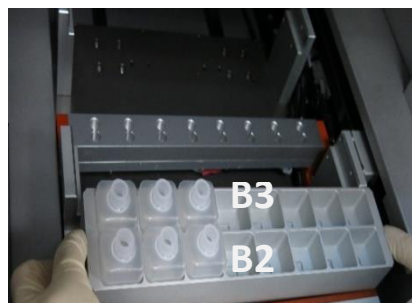
3.7 Put Syringe

- a. Open the lid and put syringe in.
- b. Push syringe into the end.
- c. Close the lid, ensure the lid has been closed completely

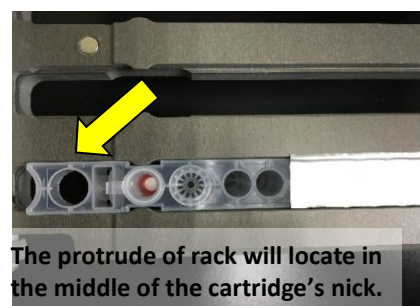


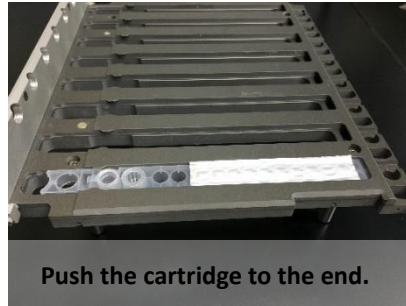
3.8 Put 20 ml Reagent Bottle on the B2 and B3 site of the Reagent Rack, and put the bottles to the end.

- B2: Add 5ml 100% Ethanol.
- B3: Add 10ml 100% Ethanol.

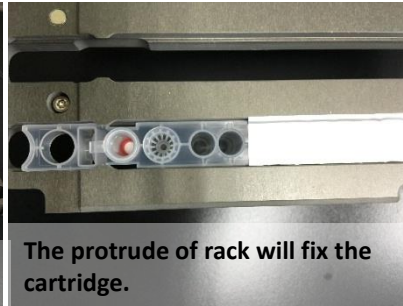


3.9 Load Cartridge(s) on the 8-in-1 Rack.



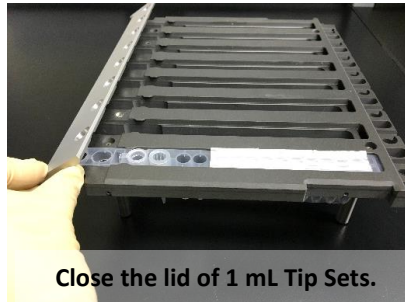


Push the cartridge to the end.

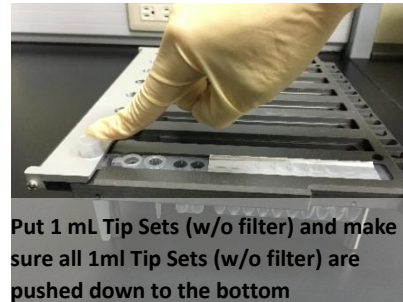


The protrude of rack will fix the cartridge.

3.10 Load 1 ml Tip Set (w/o filter) on the Cartridge(s)

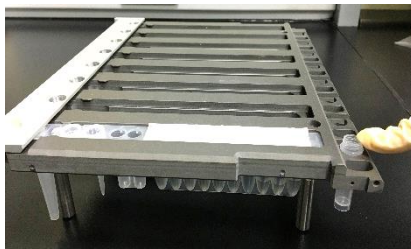


Close the lid of 1 mL Tip Sets.



Put 1 mL Tip Sets (w/o filter) and make sure all 1ml Tip Sets (w/o filter) are pushed down to the bottom

3.11 Load Screw Tube on the 8-in-1 Rack.



3.12 Place the 8-in-1 Rack into iColumn LV System worktable.

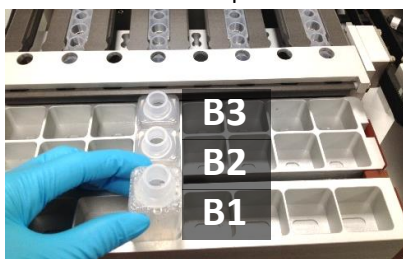


Front Door

3.13 Prepare samples with proper pre-treatment and transfer to 30 ml Sample Bottle.

- Please refer to Sample Pretreatment segment.

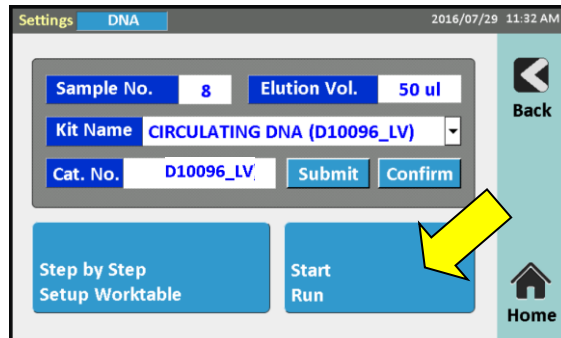
3.14 Load the 30 ml Sample Bottle into the B1 site of iColumn LV System.



3.15 Close the front door.

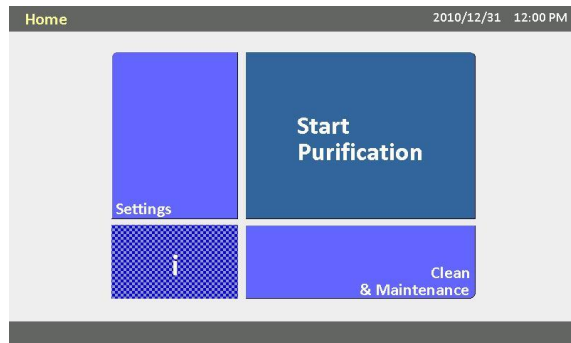
3.16 Tap “Start Run” to start the protocol.

(Please tap “Step by Step Setup Worktable” for guiding you how to setup the worktable step by step.)

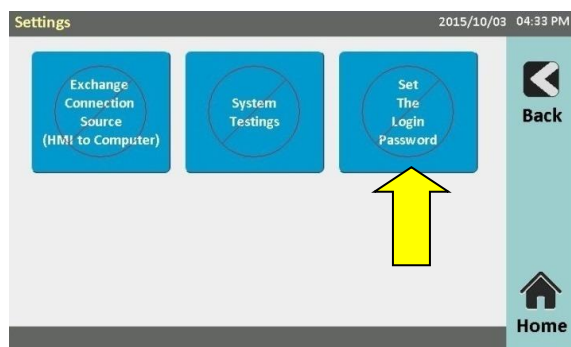



4 Set the Login password (on the non-barcode screen)

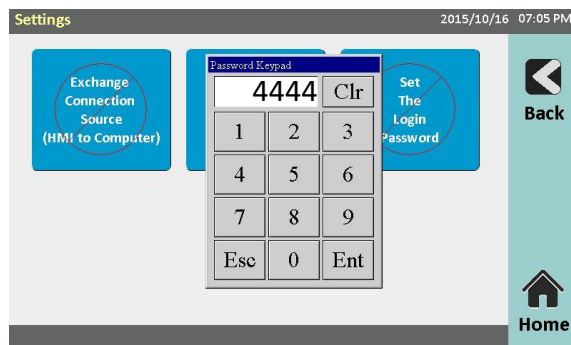
4.1 At the **Home** screen, select “Settings”



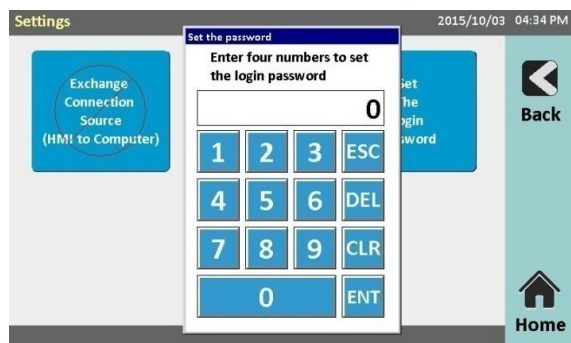
4.2 At the **Settings** screen, select “Set The Login Password”



4.3 Enter the password “4444” to enter the setting screen



4.4 At the **Set the password** screen, enter four numbers to set the login password.



4.5 The new login password will be effective after restart the system.



5 Cleaning and Maintenance

5.1 Daily

I. Cleaning Agents

- Alcohol: Use ethanol or 2-Propanol (Isopropanol)
- Bleach: 0.1% and 0.5% sodium hypochlorite solution (2% or 10% chlorine bleach)
- Water: Use distilled or deionized water.

CAUTION- Strong detergents may dissolve carrier and worktable surface coatings.

- *Use only recommended cleaning agents.*
- *Chlorine solution can pit equipment and metal. Use adequate amounts or repeated applications of 70% ethanol or water until chlorine residue is no longer visible.*

II. Decontamination Procedure using 1% Sodium Hypochlorite

A. Between different run

- i. Prepare a 1% volume/volume (v/v) sodium hypochlorite solution.
- ii. Apply 1% Sodium Hypochlorite solution to area and wait for at least 1 minute (no greater than 5 minutes, prolonged metal/bleach contact will pit the surface).
- iii. Apply deionized/distilled water and wipe off bleach.
- iv. Apply 70% ethanol.

B. End of day

8-1-rack and Reagent Rack washes with water and air dry.



5.2 Weekly

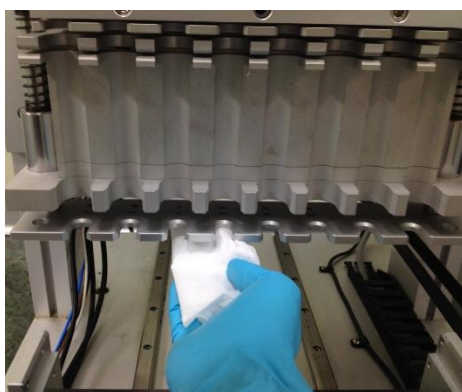
I. Cleaning Agents

- Alcohol: Use ethanol or 2-Propanol (Isopropanol)

II. Clean Piercing Needles. Wipe with 70% ethanol.



III. Clean the bottom of Syringe holder. Wipe with 70% ethanol.



IV. (Optional) UV Decontamination

- At HOME screen, select “Clean & Maintenance”
- At Clean & Maintenance screen, select “UV” and enter the password
Please contact your service agent to get the password.
- At confirm screen, select “Yes” to continue the step.
- Enter the time. (0~30min.)
- “Start” button will pop out after entering the time. Click “Start” to turn the UV lamp.



iColumn LV 8 Automated DNA/RNA Purification System Maintenance Log

Lab Name _____

Month _____

Year _____

DAILY	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.
Clean 8-in-1 Rack																															
Clean Reagent Rack																															
Clean Worktable																															
Signature																															

WEEKLY	Week1	Week2	Week3	Week4	Week5
Clean Piercing Needles					
Clean the bottom of Syringe holder (Optional) UV Decontamination					
Signature					

Occasionally service and maintenance record



7 Trouble Shooting

Problem	Possible Cause	Solution
No piercing	The motor or connector is not working properly	Restart system. If problem resists, contact Technical service.
Axis no Movement	Motor or connector is not working properly	Restart system. If problem resists, contact technical service

8 Warning Message

8.1 Error 441

Z axis motor crash and shutdown, please reboot the system to disarm the warning.

8.2 Error 442

S axis motor crash and shutdown, please reboot the system to disarm the warning.

8.3 Error 443

Y axis motor crash and shutdown, please reboot the system to disarm the warning.

8.4 Error 444

The next movement for the system will be out of limit and cause the error. Please turn off the system and reply this error to the OEM.



Contact



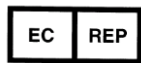
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