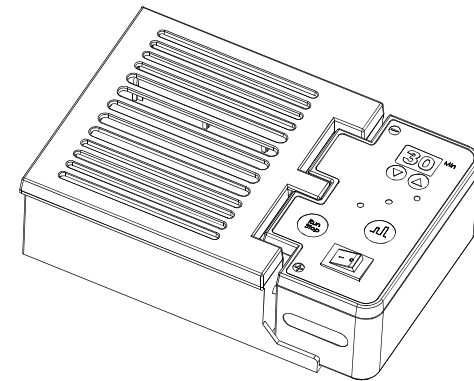


GEN-Mini-ES1/GEN-Mini-ES2

Mini Electrophoresis System

Operating Manual

Version 2.0



Foreword








Thank you for purchasing Mini Electrophoresis System.

This manual includes product introduction and operating guides etc., before using this product, be sure you fully understand its features as described in this user manual and use it properly. Also please keep the manual for future check.








Opening check

Please check the packing list when first open the packaging, if there's any missed or incorrect parts, please contact with distributor or manufacturer accordingly.

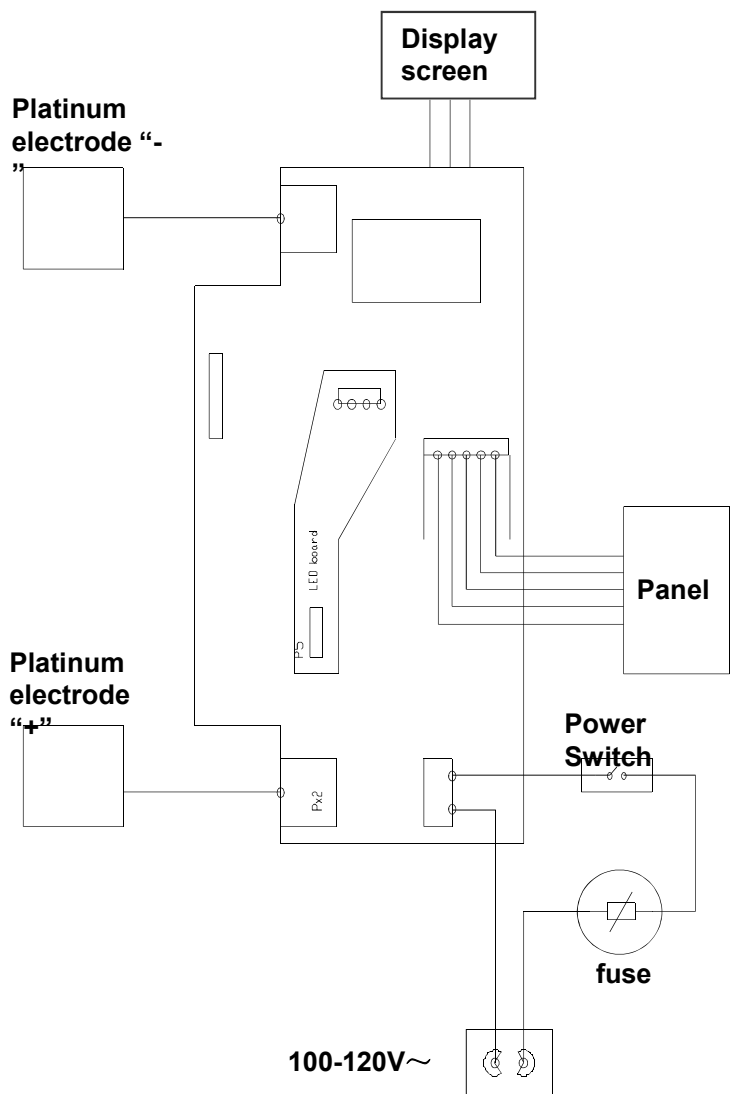
Packing List (for GEN-Mini-ES1)

No.	Contents	Specs	QTY
1	Main Device	GEN-Mini-ES1	1 pc
2	Power cord		1 pc
3	Gel maker Stand (A)		1 pc
4	Gel maker Stand (B)		1 pc
5	Gel Tray (A)		2 pcs
6	Gel Tray (B)		4 pcs
7	Combs (A)		2 pcs
8	Combs (B)		2 pcs
9	User Manual		1 pc

Packing List (for GEN-Mini-ES2)

No.	Contents	Specs	QTY
1	Main Device	GEN-Mini-ES2	1 pc
2	AC transformer		1 pc
3	Gel maker Stand (A)		1 pc
4	Gel maker Stand (B)		1 pc
5	Gel Tray (A)		2 pcs
6	Gel Tray (B)		4 pcs
7	Combs (A)		2 pcs
8	Combs (B)		2 pcs
9	User Manual		1 pc

Appendix 1 Wiring diagram for GEN-Mini-ES1/GEN-Mini-ES2



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1. Brief Introduction

This instrument has advantages in nucleic acid analyze, it's a major method in molecular biology research and basically used for nucleic acid detection and separation.

Before use, please read carefully this operating manual.

1.1 Standard set contents

Main device	1 pc
Power cord	1 pc
Gel maker stand (A)	1 pc
Gel maker stand (B)	1 pc
Gel Tray (A)	2 pcs
Gel Tray (B)	4 pcs
Combs (A)	2 pcs
Combs (B)	2 pcs
AC transformer *	1 pc
User Manual	1 pc

* Remarks: only model "GEN-Mini-ES2" come with the AC transformer.

5 Maintenance



When cleaning the surface of instrument, use regular wet cloth is okay, make sure not use any corrosive cleaner and disconnect the power before cleaning



When cleaning migration tank, please separate control box first, please simply use water or neutral cleaner. There's platinum electrode at the bottom of migration tank, it's delicate, be careful not to break it by cleaning.

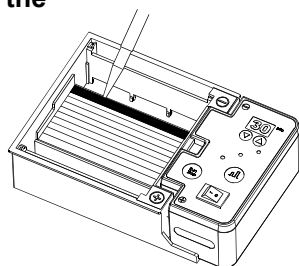


Cleaning gel maker stand, gel tray and combs with water or neutral cleaner.

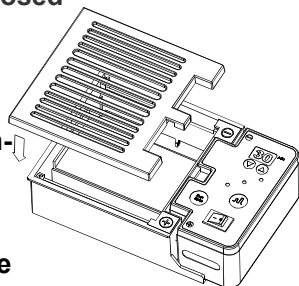
6 Troubleshooting

Problem	Causes	Measures
No display	Power disconnect Switch failure Controller failure	Check power supply, unplug and re-plug it Replace switch Contact distributor or manufacturer for repair
No Migration	Power switch not on No power supply	Turn on power switch Contact distributor or manufacturer for repair
Abnormal Electrophoresis Distance	Incorrect input voltage	Check mains voltage
Display "E1"	Cover open when operating	Put the cover on
Display "E3"	Run without cover	Put the cover on
Display "E5"	No solution in tank	Add solution
Display "E7"	Overloading	Device not applicable
Key function failure	Film switch failure	Contact distributor or manufacturer for repair

4.3.4 Use pipette to put the sample into the sample hole of gel



4.3.5 The display screen light after lid closed and switch turned on.

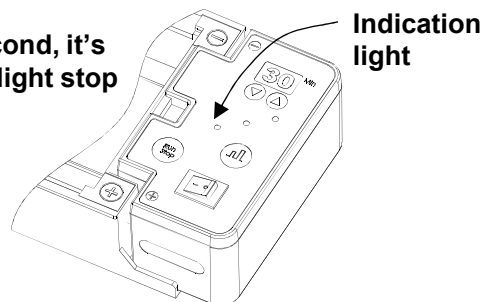


Press ▲▼ for time setting between 1min-99min, If need the instrument keep working, set "00" on time setting

Press  to select output voltage, the indication light on after chose.

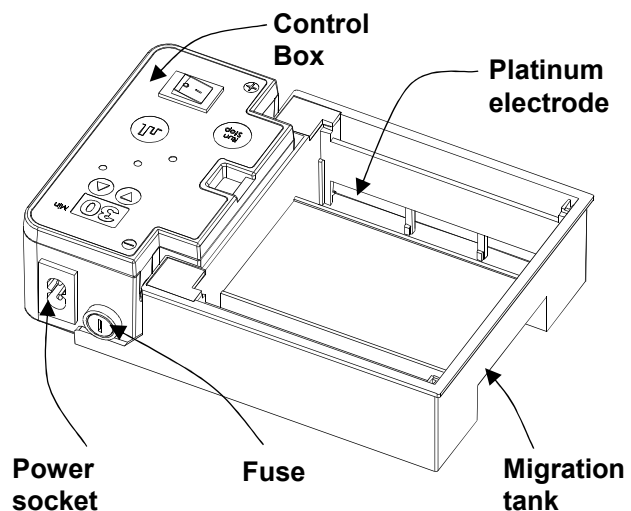
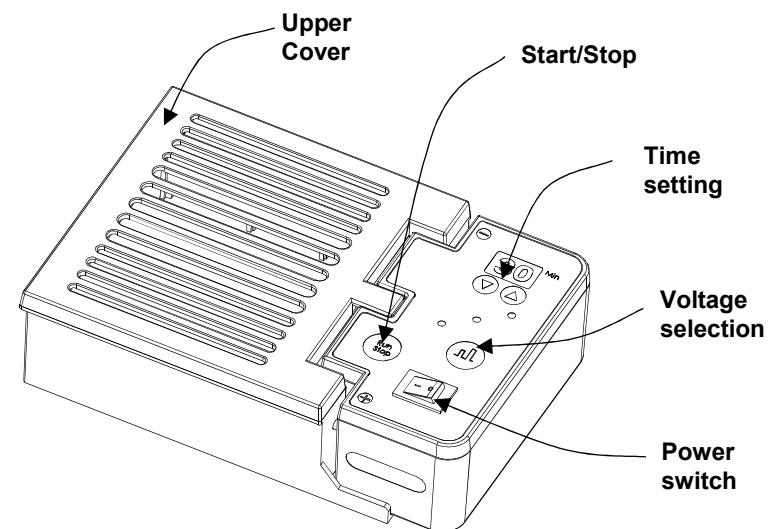
Short press Stop/Run once to start timing, simultaneously the indication light at output voltage start blinking regularly. After timing, the instrument will have beep alarm for 3 times, then display screen shows "Ed", press any key to return.

Long press Stop/Run for 1 second, it's stop operating and indication light stop blinking.



4.3.6 After operation, please turn off the power, then open the lid and take out the gel tray.

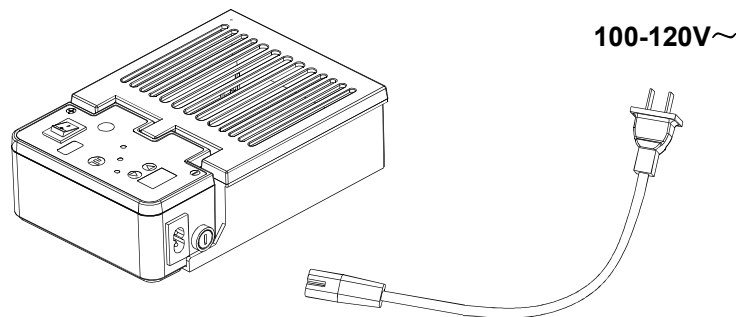
1.2 Components



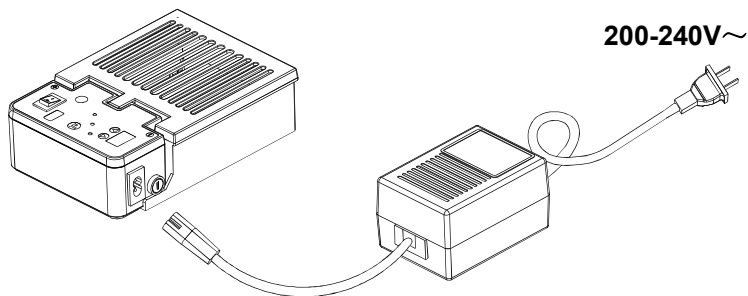
1.3 Installation

1.3.1 Put the electrophoresis system on a smooth surface.

1.3.2 Connect one end of power to the instrument and the other end to connect main power, the input voltage should be between AC100~120V (Photo as below)



1.3.3 When the input voltage is AC220V, please use adaptor to transform, please connect both instrument and adaptor as below

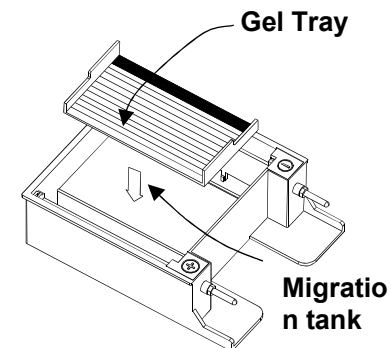


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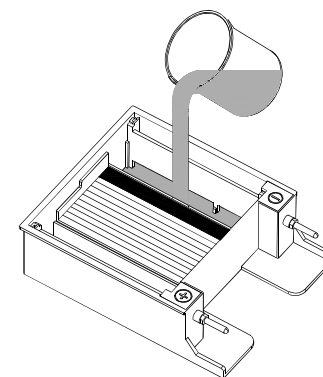
4.3 Electrophoresis

4.3.1 Place the prepared gel on the gel bed of the migration tank together with the tray.

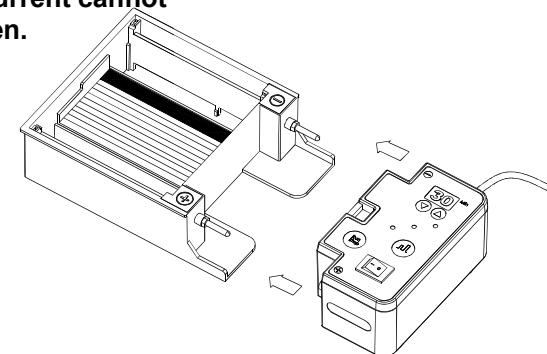
Remark: Migration may be affected if the migration tank is not placed on a level surface



4.3.2 Pour buffer solution to a level of about 3mm above the surface of the gel, 250-300ml of buffer is required.

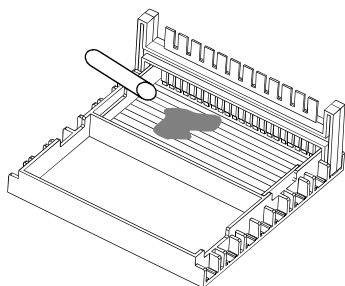


4.3.3 Connect the power supply to the migration tank and insert the electric plug into an outlet. The electric current cannot be turned on with the lid open.

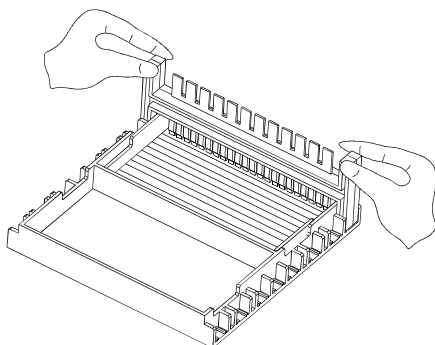


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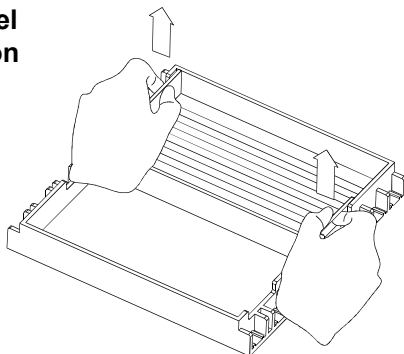
4.2.3 Pour the gel into gel maker stand with the tray and the height should around 4mm and each tray need about 25ml gel.



4.2.3 Hold the two sides of comb and pull out slowly after the gel solidified. The hole of gel should be ordered and without damage.



4.2.4 Take out the gel tray from gel maker stand and put into migration tank



2 Product Specifications

Model	GEN-Mini-ES1	GEN-Mini-ES2
Input power	AC100-120V 1A	Original input: AC100-120V 1A AC transformer: Input: AC220V, output: AC110V
Output voltage	DC35V , DC50V, DC100V	
Timing	0 ~ 99min	
Migration Tank Specs	120mm×110mm×45mm (inner dimension)	
Buffer Volume	250ml-300ml	
Comb Specs	3mm×1mm×22 5.6mm×1mm×12 3mm×1mm×18 5.6mm×1mm×10 (Teeth width x Teeth thickness x Teeth no.)	
Gel maker Stand	110mm×60mm and 54mm×60mm (Dimension for each section)	
Gel tray Specs	110mm×60mm and 54mm×60mm	
Fuse	250V 1.5A	
Overall dimension	190mm×130mm×55mm (W×D×H)	
Net weight	0.45 kg (without AC transformer)	

3 Warnings



To avoid electrical shock, do not use this product with wet hands.



When operating, do not put your finger or any other objects into the migration tank.

Do not detach the control box with migration tank while in energized state. Attempting to do so can cause damage.



Please read carefully this instruction manual before operation to avoid any personal injury. Only the trained one could be qualified in operating this product.



To protect your warranty and avoid potential electrical shock, do not attempt to open or repair the product, please contact distributor or manufacturer for repair.



Put the product in a place which has low humidity and low dust, also please keep it away from water, direct sunshine / strong light, corrosive gas, high magnetic field, heater, fire and other heat source, make sure good ventilation.



Power switch located on control box, press "I" turn on, press "O" turn off.



Turn off after operation, when this product is not in use, detach the power supply and cover it with soft cloth or plastic paper to avoid dust.

4. Operating guide

4.1 Key Functions

Stop/Run----Short press one to run and long press 1 second to stop



-----Select output voltage .

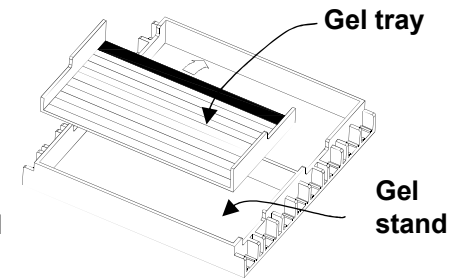


-----Time setting, when time set at "0", display "∞"

4.2 Gel Preparation

4.2.1 Place the gel maker stand on a level surface, put the gel tray into the gel stand and the maximum is to have two gel tray simultaneously

Note: If the gel tray is not placed level, the thickness of the gel will not be uniform and migration may be affected.



4.2.2 Fix the comb into the gel maker stand as per photo on the right

