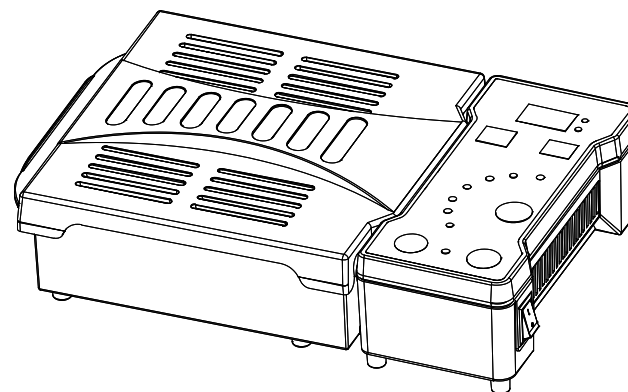




ACTGene, Inc.

ComboMini Electrophoresis Unit

Operation Manual

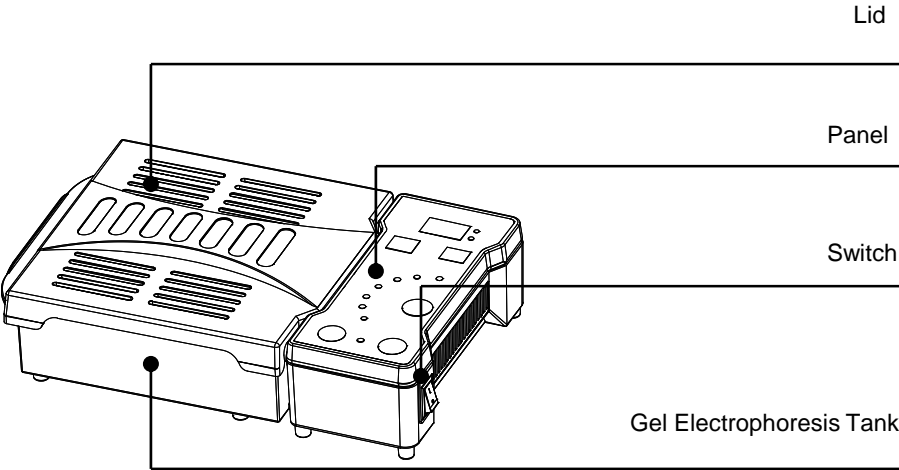


1. Introduction

ComboMini Gel Electrophoresis Unit is an integrated electrophoresis unit, that is compact in shape, delivers stable performance and easy operation. It assures the uniformity of the central electric field as the bubble produced by platinum electrode is blocked, PH value of the buffer carries consistent stability. It is widely as everyday electrophoresis tool for chemical, teaching, scientific research, food and medical applications. Horizontal gel electrophoresis unit is primarily used for separation and test of nucleic acid.

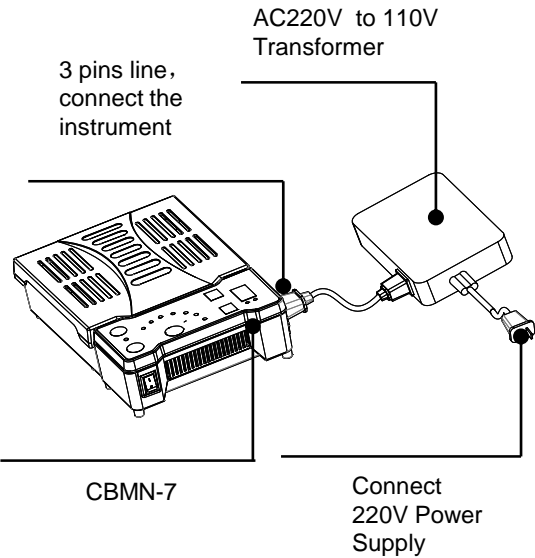
2. Operation Instruction

2.1 Structure



2.2 Instrument Installation (Very Important ! ! !)

- 1. When input voltage is AC 220V, please connect the transformer input wire to the electricity grid, connect the output wire to the instrument.
- 2. When input voltage is AC 110V, connect the instrument to the electricity grid directly.



2.3 Operation Panel and Display Screen

2.4 Key Function

- + -** The key to increase or decrease the setting value of time. Continuously pressing can increase or decrease quickly. Maximum setting time is 99 minutes and 59 seconds.

Start/Stop Start/Stop button. After desired speed and time are set, press to start operation. During operation, press it to stop operation.

Pause Short press the key into suspended state, instrument stops working, countdown also stops.

VOLTAGE SELECTOR Short press the key, it enters into switch status of 7 kinds of output voltages.

2.5 Operation Guide

1. Programm Set

- a) Turn on the power switch, with the sound of "di", the display screen will display the value settings for last time, the instrument goes into the initial state.
- b) Press + or – of time to set the unit value, also increase or decrease from tens digit to hundreds digit. If pressing the key for 2 seconds, it can quickly adjust the value.
- c) VOLTAGE SELECTOR Key, to switch the voltages, the voltage can switch to 18, 25, 35, 50, 70, 100, 135, the relevant light will be on when one voltage is chosen.
- d) When the screen shows "OFF", it means working time is infinite.
- e) "Lid" light is on, it means lid is closed correctly. If the light is off, it means the lid is not closed correctly and needs to be adjusted.

2. Instrument operation

- a) Make sure the lid is closed correctly before the instrument starts to work.
- b) When press the key "start", the light is on. When press the key "Pause", its light is flickering.

- ! Warning:**
- 1. Don't move the instrument when it is working.
 - 2. Don't open the lid when it is working.

3. Maintenance

Use dry cloth and non-corrosive (PH=7±1) to clean the instrument surface.

Make sure all the elements are completely dry before the instrument starts. Don't put the instrument into the liquid or get wet with liquid (The instrument must be power off when it is being cleaned).

4. Parameter

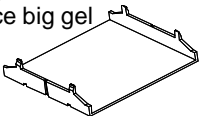
External Size: 261X170X70 (mm)	Power: ≤60W
Input Power: AC110/220V, 50/60Hz	Fuse: 1.0A
Output Voltage Range: 18-135V	Timing Range: 1S-99m:59S
Small Size Plate: 60X60mm	Large Size Plate: 120X120mm

5. Accessories

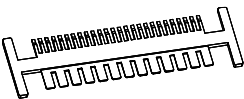
a) Small Size Plate: To produce small gel



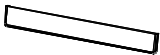
b) Large Size Plate: To produce big gel



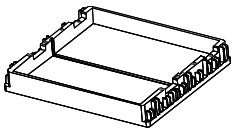
c) Comb: to make the marks when the gel is running



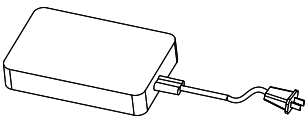
d) Division Plate: make the gel room to two parts



e) Gel Room: it can put one big size plate or two small-sized plates.



f) Transformer: change AC220 to be AC110



6. Failure Analysis and Trouble Shooting

Phenomenon	Possible Causes	Processing Procedure
No voltage output after pressing the START Key	1. The lid is not covered well.	Cover the lid correctly.
	2. No Power	Contact the seller.
No Display	1. Power line is not connected well.	Plug the power line.
	2. Power strip has no power.	Make sure power strip is working well .
	3. Power switch is off.	Open the power switch.
	4. Fuse is broken.	Replace a new one or Contact the seller.

Performance Test Report

Name		ComboMini Electrophoresis Unit		Type	ACT-CBMN-7
Test Date				Production No.	AV-CB18-0005
No.	Test Content	Method	Standard		Result
1	Voltage(V)	Multimeter	18/25/35/50/70/100/135		<input type="checkbox"/> Qualified
2	Basic Function	Visual Inspection	Valid		<input type="checkbox"/> Qualified
3	Appearance Demand	Visual Inspection	Valid		<input type="checkbox"/> Qualified
4	Appearance Sign	Visual Inspection	Valid		<input type="checkbox"/> Qualified
5	Continuous Experiment	Operation	30 minutes trouble - free		<input type="checkbox"/> Qualified

Packing List

No.	Name	Type	QTY	Remarks
1	Mini Gel Electrophoresis	CBMN-7	1	
2	Large Size Plate		1	
3	Medium Size Plate		1	
4	Small Size Plate		2	
5	Gel Room		1	
6	Division Plate		1	
7	Comb		7	
8	Transformer	220V to110V		
9	Power Line	220V/110V 1A	1	
10	Manual		1	