



# i-MyRun II Electrophoresis System

Cat. no. CBJ-IMR2-001

## Instruction Manual



COSMO BIO Co., LTD.

# Important user information

Please read this entire manual to fully understand and safely use i-MyRun II. We will not be liable for any types of damages nor losses for usage against contents written in this manual.



## **WARNING SIGN**

Indicates a potentially hazardous situation, which if not avoided, will result in death or serious injury.



## **ATTENTION SIGN**

Indicates a potentially hazardous situation, which if not avoided, may result in minor injury or equipment damage.



## **PROHIBITION SIGN**

Indicates a situation not recommended for your safety reasons.



## **WARNING SIGN (Electricity)**

Indicates a situation there is a fear of electric shock.



## **OBSERVE INSTRUCTIONS**

Indicates instructions to follow.

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## WARNING !



Do not modify or disassemble this product, as a fire, electrical shock, injury or breakdown could result.



Do not use i-MyRun II Gel electrophoresis tank or its Power supply against third company products, i-MyRun.N, i-MyRun.NC nor i-MyRun.P, as a fire, electrical shock, or breakdown could result.



Insert the power plug of the Power cable properly into the outlet, operating voltage range of between 100 V to 240 V. Usage out of this voltage range may cause a fire or electrical shock.



Do not damage, bend Power cable by force nor leave it under any heavy object, as electrical shock, shortout, or a fire could result.



Do not use this product if outer damage caused by strong shocks such as from being dropped, as a fire or electrical shock could result.



Do not operate this product nor unplug Power cable from the outlet with wet hands, as electrical shock could result.



Do not touch buffer, gel nor conductive material with your hand during gel electrophoresis, as injury or electrical shock could result.



Stop gel electrophoresis immediately and unplug the power plug of the Power cable from the outlet, if Power supply emits smoke, has a strange odor, or makes unfamiliar noises, as a fire could result.



## ATTENTION !



Do not pour liquid onto Power supply nor electrode connectors, as electrical shock, shortout, or a fire could result.



If moving Gel electrophoresis tank while containing buffer in it, separate the Power supply first before moving, unless hold the Power supply and the tank firmly with both hands, as electrode connectors will be stressed, equipment damage or dropping of product could result.



Unplug the power plug of the Power cable from the outlet when product is not in use.



## OPERATING PRECAUTIONS !



When cleaning the Power supply and Gel electrophoresis tank, wipe them using a soft cloth, dampened with mild detergent. Usage of organic solvent may cause deformation or create cracks.



Crossover function activates when in cases as buffer concentration becomes too high, or overcurrent event occurs due to buffer temperature rose over proper level (over 40 degrees Celsius [°C]/104 degrees Fahrenheit [°F]).

\* Crossover function: Automated function to suppress sample aggregation. Sudden current change will be detected and E1 error (overcurrent error) will show in the display.



Do not leave buffer in Gel electrophoresis tank for prolonged period, as degradation of electrode could result.



Gel electrophoresis tank and Gel casting tray both have UV (Ultraviolet) light transparency, though prolonged exposure to UV light may cause discoloration or decrease of UV light transparency level. Always wear a visor or approved goggles to help vision and to protect your eyes and skin from UV light.



Always wear suitable protective gloves and avoid skin contact with nucleic acid stain, as it may be hazardous to human body.



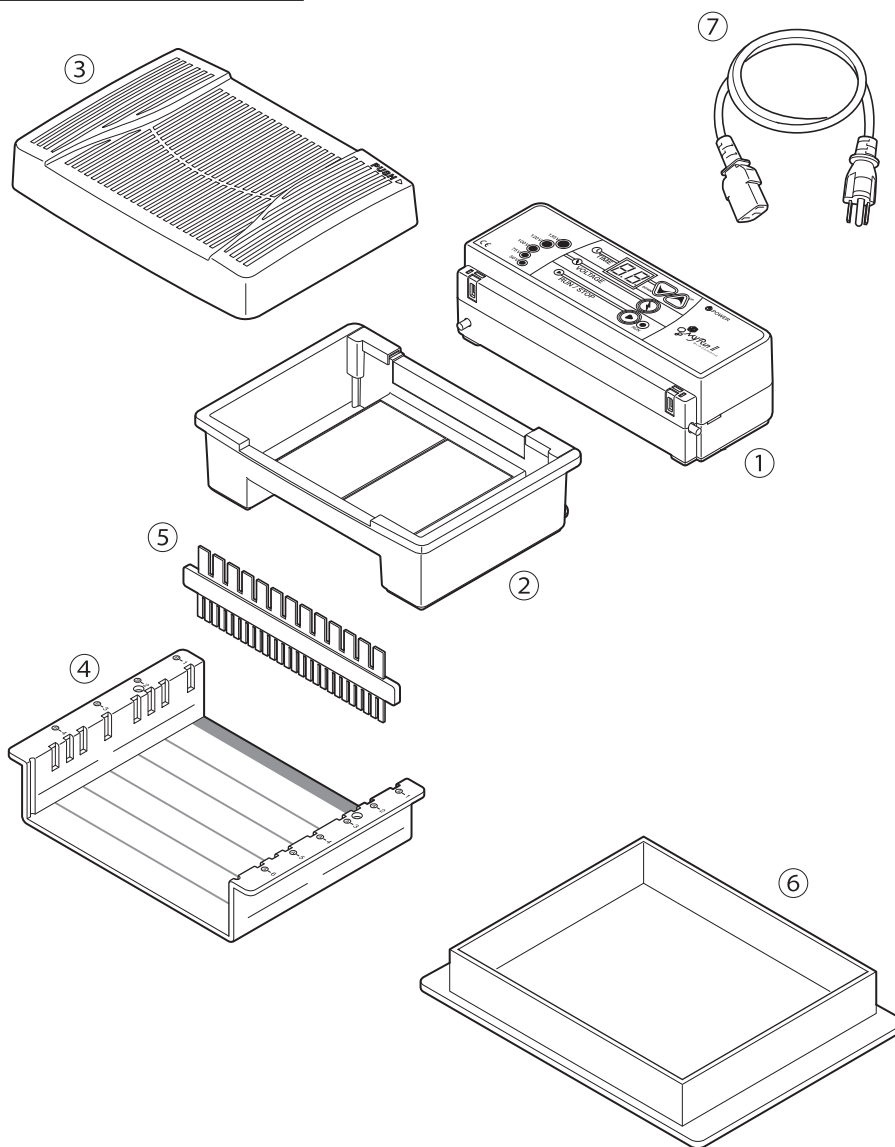
Gel electrophoresis tank is washable, though dry well after the wash, as electrical shock, a fire or equipment damage could result when using it wet.



Never autoclave this product, as deformation and equipment damage could result.

# 1. Kit Components and Features

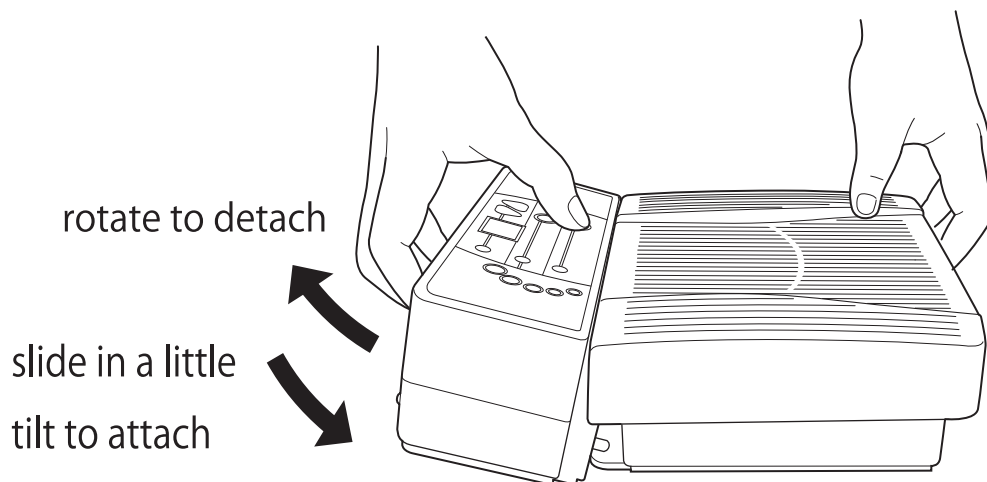
## 1.1. Standard components



- |   |                                |       |        |
|---|--------------------------------|-------|--------|
| ① | Power supply                   | _____ | 1 each |
| ② | Gel electrophoresis tank       | _____ | 1 each |
| ③ | Gel electrophoresis tank cover | _____ | 1 each |
| ④ | Gel casting tray               | _____ | 1 each |
| ⑤ | Combs                          | _____ | 6 each |
| ⑥ | Gel casting stand              | _____ | 1 each |
| ⑦ | Power cable                    | _____ | 1 each |

## 1. 2. How to attach/detach Power supply and Gel electrophoresis tank

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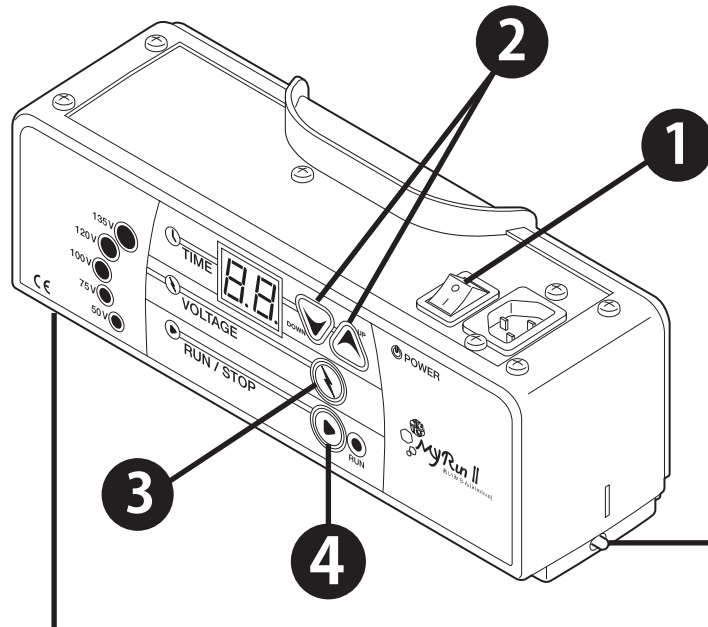
### 【 How to attach Power supply and Gel electrophoresis tank 】

When attaching Power supply, slide in a little and tilte as shown in the figure.

### 【 How to detach Power supply from Gel electrophoresis tank 】

Power supply will detach from the Gel electrophoresis tank by rotating towards it.

### 1.3. Buttons and Safety switches



#### Safety switch

This Safety switch functions only when Gel electrophoresis tank is attached.

#### Safety switch

This Safety switch functions only when Gel electrophoresis tank cover is firmly closed.

\* If both Safety switches are not functioning, "E2" error will show up in the display.

#### 1 Main power

#### 2 Timer setting button

Timer settings from 0 - 99 minutes. Gel electrophoresis will end when timer reaches 0 (zero). When timer is set to 0 (zero), "--" will be displayed for continuous run mode.

#### 3 Voltage setting button

Switches voltage in order of 50→75→100→120→135 V as button is pressed. e.g. When setting to 50 V, only 50 V will light up. When setting to 120 V, all 50, 75, 100 and 120 V will light up.

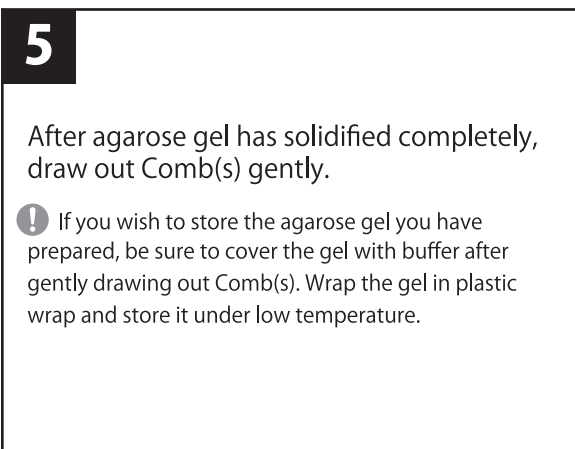
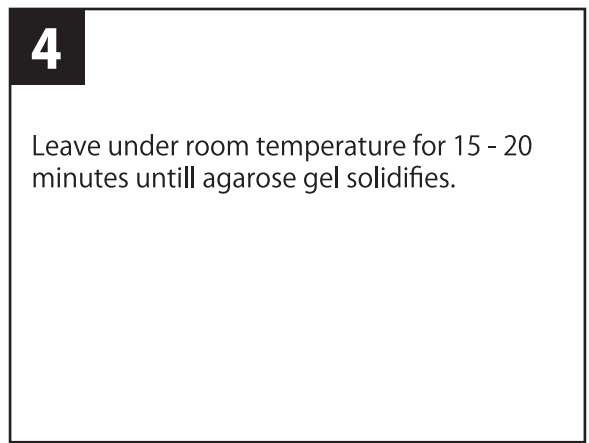
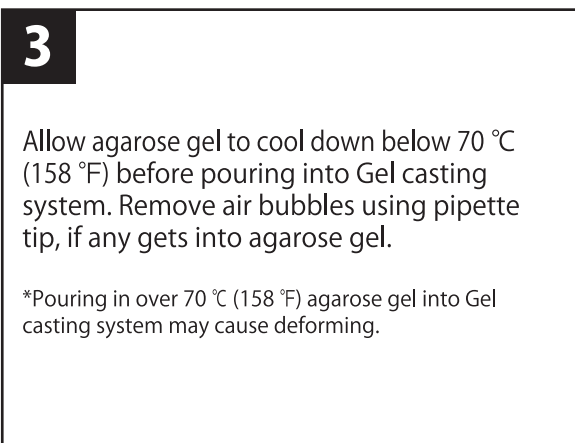
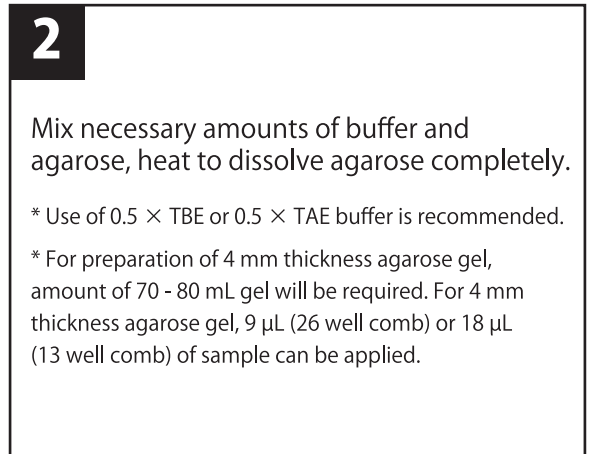
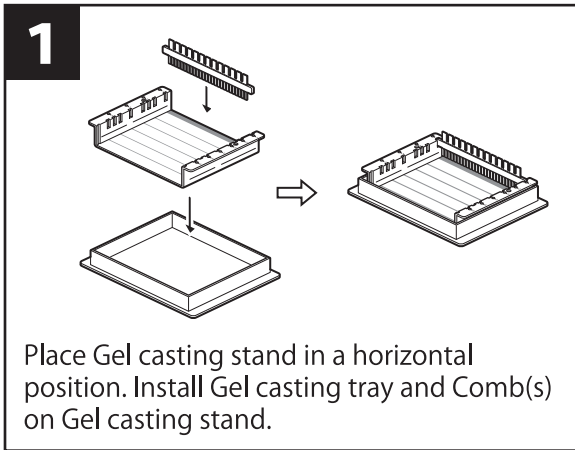
#### 4 Run button

When pressed, electrophoresis will start as programmed. During the run, lamp will light up.



## 2. How to use

### 2.1. Agarose gel preparation

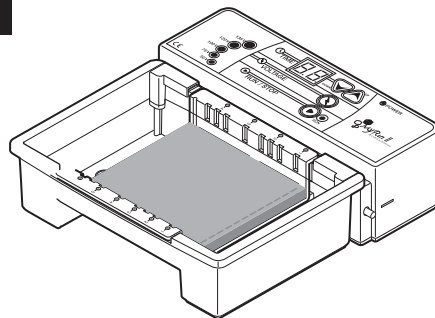


## 2.2. Gel electrophoresis

**1**

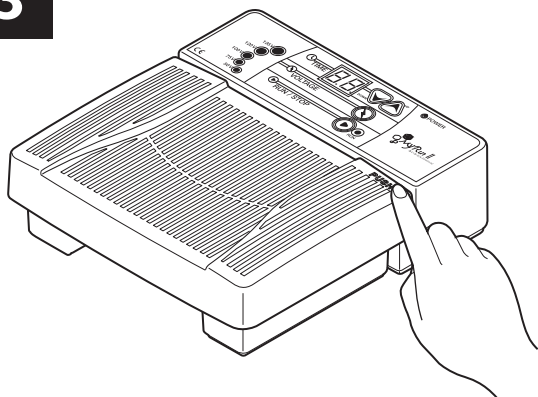
Pour in buffer that has same concentration that was used to prepare agarose gel into the Gel electrophoresis tank. For 4 mm gel, c.a. 350 mL of buffer is required to perform gel electrophoresis.

**2**



Remove Gel casting tray with agarose gel from Gel casting stand and set it in the center of Gel electrophoresis tank. Place Gel casting tray in such way that the negatively charged nucleic acid migrates in the direction of the "+" marked on the tank. Be careful not to let air bubbles enter the space between Gel electrophoresis tray and the tank.

**3**



Put on Gel electrophoresis tank cover and press "PUSH" mark, which is located at the top right corner of the cover.

**4**

After setting timer and voltage, press "RUN" button to start gel electrophoresis. Please double-check that "RUN" button lights up and air bubbles forming from platinum wires at both ends of the tank.

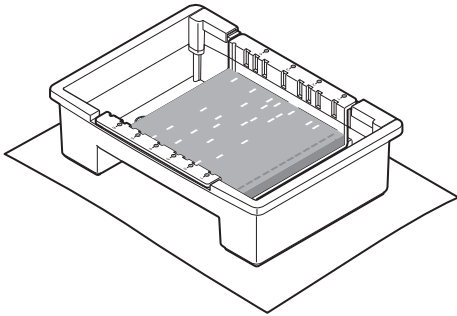
⚠ Performing gel electrophoresis for prolonged time under condition of 100 V or more will raise the buffer temperature, as sample distortion could result.

**5**

When gel electrophoresis completes, turn off Power supply and unplug the power plug of the Power cable from the outlet.

## 2.3. Checking sample bands

1



Due to UV (Ultraviolet) light transparency of Gel electrophoresis tank and Gel casting tray, the result can be observed using transilluminator without taking out the gel from the tank, if staining dye has been added into the agarose gel when preparing.

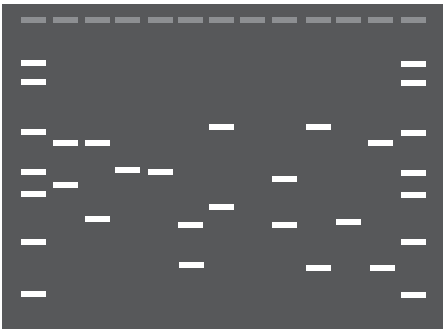
! Always wear a visor or approved goggles to help vision and to protect your eyes and skin from UV light.

2

If staining dye has not been added to the agarose gel when preparing, take out the gel from Gel casting tray and stain it for necessary time length.

! When using ethidium bromide for DNA staining, always wear gloves to avoid skin contact.

3



When staining is completed, observe the result using transilluminator.

### 3. Specification

Input voltage and power	AC 100 - 240 V, 90 VA, 50 - 60 Hz
Temperature of operation	From 0 – 35 °C / 32 - 95 °F (avoid condensation to form at lower temperatures)
Output constant voltage	DC 50 V, 75 V, 100 V, 120 V, 135 V, 54 VA
Timer Settings	Timer settings from 0 - 99 min (When timer is set to 0 [zero], "--" will be displayed for continuous run mode)
Dimensions (width, height, length)	215mm (W) × 65mm (H) × 240 mm (L)
Materials	Gel electrophoresis tank : UV light transparent resin Gel casting tray : UV light transparent resin Gel electrophoresis tank cover : UV light un-transparent resin

### 4. Error messages

If an error occurs, the error message will be displayed during execution depending on its error level.

E0	Not enough current in the buffer. Replace with new buffer.
E1	Overcurrent state. Replace with new buffer.
E2	Safety switches for Gel electrophoresis tank and cover are not properly functioning. Double-check connections of Power supply, tank and cover to see if both switches are turned on.

## 5. Troubleshooting

### Gel electrophoresis stops in the middle of its run

- \* Gel electrophoresis unit may be in over-current state (E1 error will be displayed in such case). Replace with new buffer.
- \* Safety switch may have been turned off during the gel electrophoresis (E2 error will be displayed in such case).

### Gel electrophoresis speed is slow

- \* Electrical conductivity may have been increased due to high ionic strength. Replace with new buffer.

### Band strains / tilts+

- \* Make sure that agarose gel does not contain any air bubbles nor undissolved gel blocks.
- \* Make sure that agarose gel is not too thin. For preparation of 4 mm thickness agarose gel, amount of 70-80 mL gel will be required. For 4 mm thickness agarose gel, 9  $\mu$ L (26 well comb) or 18  $\mu$ L (13 well comb) of sample can be applied to each well.
- \* Make sure that buffer temperature has not risen significantly, before and after the gel electrophoresis. Also, avoid performing the gel electrophoresis in high temperature rooms.
- \* Make sure that gel electrophoresis unit is set horizontally.
- \* Repeat usage of buffer may cause differences in electrical conductivity and / or pH concentration. Replace with new buffer.

## Band not visible

- \* Double-check the usage of staining dye. Proper UV light wavelength needs to be used for each dyes.
- \* Try extending the staining time frame.
- \* Try extending the exposure time frame.
- \* Try viewing the result in dark room.
- \* Double-check that the sample amount applied was sufficient.
- \* If observing the result through gel electrophoresis tank or tray, try observing only the gel.
- \* If the gel after gel electrophoresis has been left out for prolonged period, nucleic acid bands may diffuse and observation may become difficult.
- \* If lighting UV for prolonged time to the gel after gel electrophoresis, staining dye may fade out.
- \* Sample may have run through the gel. Try shortening the gel electrophoresis time.
- \* Sample may have leaked from the bottom of the gel due to gel breakage.

## Warranty

Thank you for purchasing the Electrophoresis System i-MyRun II.

i-MyRun II is warranted to be free from defects in materials or workmanship for a period of one (1) year from your purchased date, under usage written in this manual.

Cosmo Bio Co., Ltd. will replace defective products or parts without any charges for defects which have occurred during the warranty period, except for defects from conditions outlined below.

Please note that defects described below are specially excluded from the Cosmo Bio warranty policy.

1. Improper operation of the instrument.
2. Repair or modification by any person or company who is not authorised by Cosmo Bio Co., Ltd.
3. Use of fittings or other spare parts supplied by any person or company other than Cosmo Bio Co., Ltd. or Cosmo Bio official distributors.
4. Damage caused by any (in)-direct accident, neglect or misuse.
5. Damage caused by natural disasters.
6. Damage caused by any improper solvents or samples.

### Proof of Purchase

Please keep your below Warranty Registration sheet and receipt / invoice as a proof of purchase. This will be required to demonstrate your warranty coverage. Additionally, this will serve as a proof that your purchase was made at an authorized or official Cosmo Bio distributor. Our Limited Warranty only applies to products that were purchased from Cosmo Bio or Cosmo Bio official distributors.

Please fill out the Warranty Registration, or a copy of it to validate your warranty.

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## Warranty Registration

Description : i-MyRun II		Cat. No. : CBJ-IMR2-001	
Date Purchased:		Manufacturer' s part	
LOT No.			



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