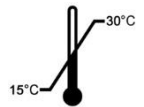


User's Guide

Agaro-Power™

Cat. No.: A-7020



Agaro-Power™

User's Guide

Version No.: 1.21 (2015-12)

Please read all the information in booklet before using the unit



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Trademarks

Agaro-Power™ is a trademark of Bioneer Corporation, Republic of Korea.

Warranty and Liability

All BIONEER products are tested under extensive Quality Control procedures. Bioneer guarantees the quality under the warranty period. Any problems should be reported immediately. Liability is conditional upon the customer providing full details of the problem to BIONEER. Once the problem occurred, customer must report within 30 days.

QC Test

Each lot of BIONEER's product is carefully tested in the quality control team

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1. Introduction

Agaro-Power™ is a complete horizontal gel electrophoresis system, developed specifically for multiple sample/high throughput analysis. It is composed of the Agaro Tank, Agaro Tank Lid with loading adapter, gel tray, gel caster, comb, dam, and compact power supply. The Agaro Tank Lid, with loading adapter and analytical combs, is designed such that a multi-channel pipette can be used to transfer multiple samples simultaneously from micro plates directly to the gel. 32 nucleic acid samples, plus two size marker samples, can be run in one row using the 34 well comb. If three combs are used, all 96 samples from a micro plate can run electrophoresis simultaneously on the gel. 96 samples can be loaded in five minutes. Using the dam barrier, users can make either 7.5 cm or 15 cm. Each side of the tray has a groove to prevent gel sliding. Voltage is controlled the switch, low (75V), high (150V), and OFF. The optimal running time for 96 samples at 150V is only 20 minutes.

The speed and high throughput of this electrophoresis system makes it ideal for large-scale screening and genome research. *Agaro-Power*™ is well suited for many applications including Northern and Southern blotting, Microsatellite analysis, PCR/RAPD/RFLP analysis, and DNA fingerprinting.



2. Safety Warnings

For all the safety purposes, please read the warnings and precautions carefully to prevent unpredictable dangers and damages.

In 'Safety Warning and Precautions' section, two words, "Warning" and "Caution" are divided separately. The meanings are in the following:



: This symbol is the warning and caution sign for each protocol to prevent the harm and danger.



Warning : Death or serious injury may occur if violated.



Caution : Slight injury and damage may occur if violated.

2.1 Installation Environment

[WARNING]

- 1) Check the power, this product is for 110V or 220V.
- 2) Use ground connected power. DO NOT plug on the loosen plug have electric leakage to cause electric shock.
- 3) If power cord is modified on user's own, or the cord is pressed under heavy weight obstacles, this may damage in the cord to cause electric leakage and fire.
- 4) If the power plug doesn't fit tightly, DO NOT use it since there may be damage in plug. Damage in plug may cause electric shock and fire.
- 5) While you plug in and plug out the power plug, MAKE SURE hands are dry.
- 6) Please DO NOT use many instrument sharing the Power plug at the same time. It may heat up to cause fire.
- 7) DO NOT install *Agaro-Power™* in inflammable place.
- 8) Avoid setting *Agaro-Power™* in direct rays of the sunlight and heaters.
- 9) DO NOT disassemble nor modify *Agaro-Power™*.
- 10) DO NOT install in wet place or where there is humidity.

[CAUTION]

- 1) Adjust the balance support of the system.
- 2) DO NOT install where there are strong magnet and electrical noise. There may cause on error on the system and may cause damage both users and the system.
- 3) Make sure there is no dust on the plug and the plug fits tightly in the power plug.
- 4) DO NOT touch the system with wet hands. This is to prevent the electric shock, Make sure the hands are completely dry when you are using the system.

2.2 Operation

[WARNING]

- 1) DO NOT use other purposes except for electrophoresis. This may be breaks the

system for other usage.

- 2) TURN OFF the system before take off the gel. If not turned off, this may cause electric shock.
- 3) DO NOT touch the lid of upper and bottom when the power turns on. Especially, do not touch with wet hands. There may be cause electronic shock.
- 4) DO NOT touch by the hand the cathode and anode of Agaro-tank during electrophoresis. This may be cause electronic shock. Especially, DO NOT touch with wet hands..

[CAUTION]

- 1) When system is running, make sure the system does not move.
- 2) DO NOT put in the finger in the buffer of Agaro-tank during electrophoresis,, This may cause electronic shock.

2.3 Chemicals

[WARNING]

- 1) Because EtBr is a cancer-causing material, which it adds in gel solution, it must uses after wearing poly glove or latex glove. Pay attention not to get it on any parts of body.
- 2) Due to remains EtBr in the buffer of Agaro-tank, pay attention not to get it on the skins.
- 3) Because EtBr remains in the used gels, it must treat separately.

3. System components and Specifications

3.1 System components

| Cat. No. A – 7020 | |
|----------------------------|-----|
| Machinery | 1ea |
| Manual | 1ea |
| Product surety certificate | 1ea |
| A/S from application | 1ea |

3.2 Specifications

| Specifications | |
|-----------------------------|--|
| Distance between electrodes | 228 mm |
| Gel tray size | 700 mL |
| Gel tray size | 163 (L) * 149 (W) mm |
| Comb (Number of teeth) | 25 well or 34 well / line x 1ea |
| | 21 well or 34 well / line x 1ea |
| | 15 well or 34 well / line x 1ea 13 well or 34 well / line x 1ea |
| Caster size (mm) | 170 (L) * 156 (W) mm |
| | Length (47, 70.5) mm |
| Input Voltage | 110Vac 50/60 Hz |
| | 220Vac 50/60 Hz |
| Output Voltage | High: 150V±10% / Low: 75V±10% (User selectable) |

4. Character

4.1 Gel Caster

- 1) The comb has 34 teeth/line, allowing analysis of a maximum of 96 samples at once.
- 2) The length of the gel can be adjusted, allowing you to adjust the time length of electrophoresis according to the sample to be analyzed. The width of the gel is 16 cm, and the length can be adjusted to either 7.5 cm or 15 cm using the dam.
- 3) The length of the gel can be adjusted, allowing you to adjust the time length of electrophoresis according to the sample to be analyzed. The width of the gel is 16 cm, and the length can be adjusted to either 7.5 cm or 15 cm using the dam.
- 4) Teeth on both inner sides of the caster prevent the formed gel from sliding.
- 5) The gel is made accurately and made it conveniently for users because position of the comb is fixed in gel caster.
- 6) A level marker on the Gel tray allows you to consistently make agarose gels of the same thickness. Loading makes it easier since the bands on the bottom of the caster mark each line where the comb was placed.

4.2 Running Tray

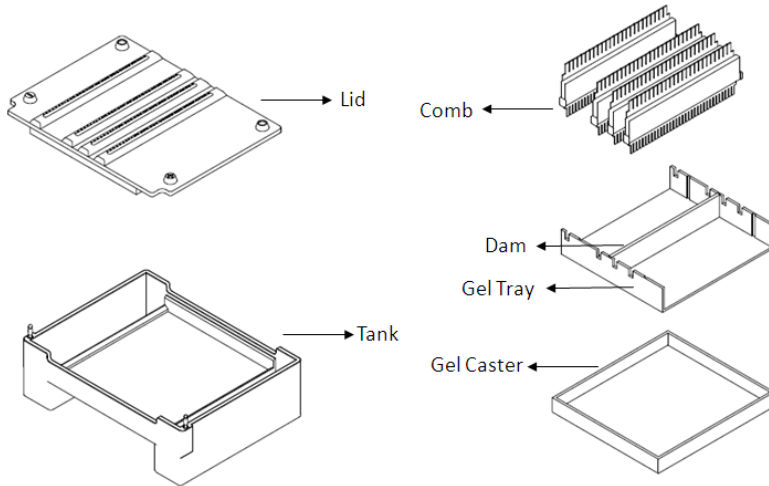
- 1) The running tray has a built-in loading adapter. (96-sample loading adapter) The loading error being reduced, also the sample-loading hour is economized. For example, 96 samples can be loaded in 5 minutes.
- 2) The transparent lid allows you to see the progress of the electrophoresis, and the numbered holes on the loading adapter minimize loading errors. A large buffer volume reduces heat that may occur from prolonged electrophoresis and possibly cause experimental deviations.

4.3 Power Supply

- 1) The compact Power Supply supplies either low (75 V) or high (150 V) voltage, and is controlled by an ON/OFF system.
- 2) The electrophoresis of 96 samples on the high voltage setting takes about 20 minutes.

5. Operation

5.1 Parts name



5.2 Preparing the Gel Caster

- 1) Place the Gel Tray on a flat, level surface.
- 2) Fit the Gel Caster into the Gel Tray.
- 3) After deciding the length of the gel, place each comb in the proper positions.
- 4) When making two 7.5 cm-length gels, fit the Dam in its position in the middle of the Gel Caster. (note the diagram)

5.3 Preparing the Running Tray

- 1) Place the Agaro Tank over a flat, level surface.
- 2) Carefully fill the Agaro Tank with 700 mL of Gel Running Buffer. If too much buffer is added, it may overflow when the gel is added and electrophoresis is started.
- 3) Place the Agargo Tank Lid so that the (-) sign faces up, and the (+) sign faces down.

5.4 Preparing the Gel

- 1) Dissolve the proper amount of agarose (according to the % gel you are making) in 100ml of 0.5X TBE or 1X TAE buffer and boil, then let cool to about 60–70°C. Add EtBr.
- 2) After carefully mixing the EtBr, slowly pour the agarose solution into the assembled gel caster. Pour slowly to avoid the formation of bubbles.
- 3) Let the gel solidify at room temperature.

5.5 Preparation for Electrophoresis

- 1) After the gel has solidified, remove each comb carefully. If the comb seems to be stuck, pour a little DW then remove.
- 2) Check that the gel in the caster does not slide, and that the gel is fully submerged in the buffer after being fitted in the Agaro Tank.
- 3) Place the Agaro Tank Lid over the Agaro Tank. Make sure that the (-) side faces up.
- 4) Load the prepared samples using a multi-channel pipette onto the loading adapter.
- 5) The samples will be accurately loaded onto each well. Also, check the number of the holes to reduce loading errors. Select the voltage and proceed with electrophoresis.

6. Order Information

| Cat.No. | Product |
|------------|---------------------------------------|
| A-7020 | Agaro-Power™ System |
| Cat.No. | Plastic Consumables |
| A-7020-1 | Agaro-Power™, Power Supply |
| A-7020-2 | Agaro-Power™, Agaro Tank/Lid |
| A-7020-3 | Agaro-Power™, Comb Set |
| A-7020-3-1 | Agaro-Power™, Comb(25 well / 34 well) |
| A-7020-3-2 | Agaro-Power™, Comb(13 well / 34 well) |
| A-7020-3-3 | Agaro-Power™, Comb(15 well / 34 well) |
| A-7020-3-4 | Agaro-Power™, Comb(21 well / 34 well) |
| A-7020-4 | Gel Caster/Tray |
| A-7020-5 | Agaro-Power™, Cable Jack |

LIMITED WARRANTY

Bioneer Corporation tests quality for each product from the Quality Control. During the limited warranty period, Bioneer will repair any products at free of charge that are caused by mishandled components or any errors by manufacturer.

| | | | |
|------------------|-------------------------------|-------|-----|
| Product | <i>Agaro-Power™</i> | | |
| Catalog No. | A-7020 | | |
| Serial No. | | | |
| Date of Purchase | Year | Month | Day |
| Warranty Period | From the date of the purchase | | |

1. Guide for Service Application

Once you find that there is a problem in the product, fill out the after service application attached to this manual and submit it by fax or by mail. If it is not that complicated case, or the repair maybe fixed by simple direction, then you can call directly to the office to request direct line service. All the reply of the service application will be replied within 7 days and with the solution Bioneer will reply within 14 days.

2. Guide for Free Service

The Warranty period is one (1) year from the date you have purchased the goods. If the product error occurred by Bioneer, the repair cost is at free of charge.

3. Guide for Paid Service

The following conditions are charged service.

- 1) In the case the system is broken by mishandled by the users.
 - When the system is broken by careless handled or purposely mishandled.
 - Any modification made by the users or the 3rd companies without Bioneer’s approvals.
 - Dropped after the installation.
- 2) Miscellaneous
 - Any damage caused by natural disaster

| AFTER SERVICE APPLICATION | | | |
|---------------------------|-----------------------|------------|------|
| Product | <i>Agaro-Power™</i> | | |
| Catalog No. | A-7020 | Serial No. | |
| Application Date | | | |
| Purchase Date | | | |
| Problem Descriptions | Date problem occur | | |
| | Problem location | | |
| | Symptom of the system | | |
| | Miscellaneous Remark | | |
| Customer Information | Address | | |
| | Job Title | | |
| | Name | | |
| | Contact | Tel: | Fax: |
| | E-mail | | |

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