NIPPON Genetics EUROPE GmbH

For Research Use Only

For safety, this manual must be read carefully and the device be handled properly.

FastGene® Protein Electrophoresis Chamber

Instruction Manual

Cautions

This electrophoresis device must be operated together with an external DC power supply designed specifically for electrophoresis applications under a high voltage. The output of this power supply must be isolated from external ground to insure that the DC voltage output floats with respect to ground.
If this device is used or modified in a manner not specified in this manual, then protection afforded by the device will be impaired. Alteration of this device will create a potential safety hazard.
Nippon Genetics Europe GmbH is not responsible for any injury or damage caused by use of this device for purposes other than those for which it is intended or by modifications of the device.

The electric operating parameters for this device are as follows:
Voltage Limit: 0 - 600 Vdc
Current Limit: 0 - 100 mA
Ambient Temperature Limit: 0 – 50°C

Protective gloves and safety glasses must be worn when operating in a laboratory environment. This device is intended for in vitro use only and must be used with its Lid whenever it is operated.
Precast Gel Cassettes that are separately available (see ordering information) are breakable if pressed improperly when attached or detached. Gel Cassettes should be set again into the device when difficult to be assembled properly.

Limited Warranty

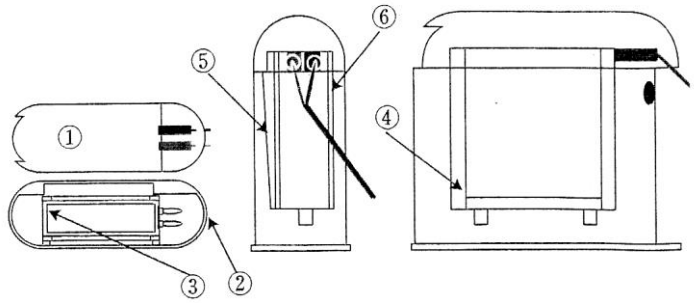
This device is warranted against manufacturing defects for a period of one year from the original purchase date. Nippon Genetics Europe will repair/exchange the defective parts under this warranty subject to the terms and conditions of Nippon Genetics Europe, provided that the device is operated according to the manual and labels.

Features

- Unique wedge system to firmly and easily fix the Gel Cassette(s)
- Buffer filled in the Chambers to cool all the surface of the Gel Cassettes(s)
- Smaller quantity of buffer required
- Easier sample loading visible through the transparent body

Components

- 1x Lid with power cables (1)
- 1x Anode Buffer Chamber (2)
- 1x Cathode Buffer Chamber Frame with electrodes (3) and Gasket (4)
- 2x blue Wedges (5)
- 2x Dummy Gel Cassettes (6)
- 1x Instruction Manual



〈Top View〉 〈Side View〉 〈Front View〉

Specifications

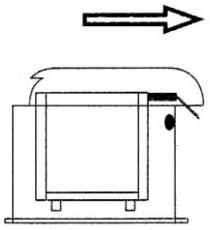
Lid Acrylic	Acrylic
Anode Buffer Chamber Frame	Acrylic
Cathode Buffer Chamber Frame	Acrylic
Gasket	Silicone
Wedge	Acrylic
Overall size (L x W x H)	8x18x18 cm
Weight (before buffer filled)	0.5 kg
Precast Gel: Compatibility	IDMax™ Gels 10x8 cm (see ordering information)
Electric Limits	600 Vdc and 100 mA
Buffer Camber Capacity	500 ml

This device is not compatible with acetone or ethanol. Use of organic solvents voids the warranties.

Additional equipment and materials required (not included):
Power Supply, Electrophoresis Buffer, Sample Loading Solution.

Unpacking

1. To remove the Lid, hold the device firmly and slide the Lid as indicated on the top.



2. Pull out the blue Wedges to release the Inner Chamber (Cathode Buffer Chamber Frame).

3. Take Out the Inner Chamber.

Assembly and Operation

Caution: Electrophoresis operates at a high voltage and Gel Cassetes are fragile by nature. Some protective measure like wearing gloves should be taken when handling FastGene® Protein Electrophoresis Chamber.

1. Ensure that the power supply is turned off and the Lid is not connected.

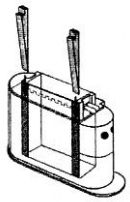
2. Ensure the Gaskets are set on the Inner Frame (Cathode-Buffer Chamber Frame). Otherwise place the Gaskets on the grooves of the Inner Frame and press the Gaskets so that they are fixed firmly into the grooves.

3. Pour the buffer (approximately 200 ml) in the Outer Anode Buffer Chamber up to around 4 cm from the bottom.

4. Take two IDMax™ Precast Gel Cassettes and remove the combs gently. Take the Inner Frame and position the Gel Cassettes so their bottom is covering all the "white" part of the gasket and the loading opening facing toward the inner frame.
   If using only one gel at a time, use one *Dummy Gel Cassette* instead of the second IDMax™ Precast Gel Cassette. Place the Dummy Cassette upside down, and the loading opening outside of the central reservoir, so it will not allow contact between the 2 buffer reservoirs.

5. Slide this sandwich into the Outer Chamber, matching respective colors of the plug (red and black) to those as indicated on the Outer Chamber. Once reaching the bottom of the chamber a slight resistance can be felt.

   Stabilize the Inner Chamber by inserting the Wedges straight down into the corner between the Gel Cartridges and the Outer Chamber.
   Note: Place the smooth side of each Wegde facing to the Inner Chamber and the side with the bar facing to the notches of the Outer Chamber.



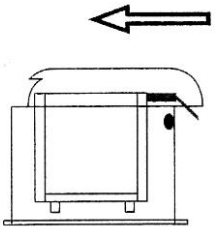
6. Fill the Inner Chamber with Running Buffer up to 2 mm below the top edge of the Gel Cassettes. After a few minutes, check for leakage (lowering of the level of the inside buffer). If leakage is observed, disassemble the inner Chamber and repeat the above steps.
   Note: Avoid a short circuit; do not overfill the Inner Chamber.

7. Fill the Outer Chamber with running buffer up 2.5 cm below the top edge of the Outer Chamber.
   Note: Pour the buffer gently to avoid rapping air bubbles along the bottom of the Inner Chamber, minor bubbles can be ignored.

8. Load a sample into the well. (Please refer to the Instruction Manual of Precast Gels for preparation of samples.)

9. Ensure the power cables of the Lid are not connected to the power supply

10. Place the Lid on the Outer Chambers that the plugs are connected with the jacks firmly.



11. Connect the power cables of the Lid to the power supply with the proper polarity. *Note: When attaching the Lid, the power supply must be switched off.*

12. Turn the power supply on to start electrophoresis.

    Recommended conditions (for your reference)
    SDS-PAGE: 40mA DC constant for 1 hour a Gel
    Native-Page: 20mA DC constant for 2 hours a Gel
    DNA-PAGE: 20mA DC constant for 2 hours a Gel

13. Turn the power supply off to stop electrophoresis when the tracking dye (Bromophenol Blue or Xylene Cyanol FF) reaches approximately 5 mm (around the center of Gasket) from the bottom edge of the Gel Plate.

14. Disconnect the power cables of the Lid for the power supply. Holding the device firmly, side the Lid as indicated on the top for open.

15. Discard the buffers and release the Gel Cassetes by pulling out the Wedges .

Staining or other procedures to follow the electrophoresis should be operated according to the individual instructions.

The device should be washed after each run with a gentle detergent and rinsed thoroughly with distilled or de-ionized water.

Ordering information

Protein Electrophoresis Chamber and Accessories	
FastGene® Protein Electrophoresis Chamber	FG-02
IDSol™ Running Buffer	
10x Running Buffer Tris-Glycine-SDS (500 ml)	ID1501
10x Running Buffer Tris-Glycine (500 ml)	ID1511
10x Running Buffer Tris-Tricine-SDS (500 ml)	ID1541
Quick Run Running Buffer w/o SDS (1000 ml)	ID1581
Quick Run Running Buffer with SDS (1000 ml)	ID1591
Running Buffer MOPS-SDS Components (10) 10 pouches for 1 l buffer each	PG-MOPS10
IDSol™ Loading Buffer	
5x Tris-Glycine-SDS Loading Buffer – Mercaptoethanol (1 ml)	ID1642
FastGene® PAGE Stain	
FastGene® Q-Stain Protein Dye (1000 ml)	FG-QS1
FastGene® Pre-stained Protein Marker	
PiNK Prestained Protein Marker	MWP02
BlueStar Prestained Protein Marker	MWP03
BlueStar Plus Prestained Protein Marker	MWP04
JustBlue Prestained Protein Marker	MWP05
BlueEasy Prestained Protein Marker	MWP06

FastGene® PAA Precast Gels (10 x 8 cm)		
Tris-Native	**10 well**	**Cat. No.**
12%	FastGene® PAGE Gel 8 x 10 cm -12% (1) FastGene® PAGE Gel 8 x 10 cm -12% (10)	PG-S012s PG-S012
4-12%	FastGene® PAGE Gel 8 x 10 cm -4-12% (1) FastGene® PAGE Gel 8 x 10 cm -4-12% (10)	PG-S412s PG-S412
4-20%	FastGene® PAGE Gel 8 x 10 cm -4-20% (1) FastGene® PAGE Gel 8 x 10 cm -4-20% (10)	PG-S420s PG-S420
8-16%	FastGene® PAGE Gel 8 x 10 cm -8-16% (1) FastGene® PAGE Gel 8 x 10 cm -8-16% (10)	PG-S816s PG-S816

Visit http://www.nippongenetics.eu for more detailed product information