

# BG-verBLOT Mini Vertical Transfer System User Manual



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### Important safe operation information!

#### Please read carefully before using!

This manual contains important operational and safe use information! In order to use this instrument better, please read and understand the contents of this manual carefully before using! And before the formal use, pre-operate the instrument several times to be proficient in application.

To avoid the risk of electric shock when the instrument is not in using, disconnect the instrument from the power source. The power supply should also be in a power down state. Before using, please check the outer tank for cracks to avoid leakage of buffer from the crack during electrophoresis, causing leakage. In addition, please check the wire and plug for loose connection, broken rubber, wire corrosion, wire disconnection, etc., to avoid harm to the human body during use. The instrument is intended for using only for the purposes described in this manual. Do not continue to use this product if the wire or instrument is damaged. Disconnect the power when operating this product. When electrophoresis, please pay attention to whether the tank and the test bench have buffer leakage. If there is any leakage, please stop the electrophoresis immediately and contact our company or local office. Make sure to add enough buffer!

Note: The company is not responsible for any consequences caused by not following the instructions

# Chapter 1 Product Introduction

## 1.1 Overview

The BG-verBLOT mini transfer system is a small transfer electrophoresis system, which is mainly used to transfer the electrophoretic separated proteins and nucleic acids from the gel to the membrane for further analysis. The combination of ice box cooling and buffer cooling design allows the heat generated by the electrophoresis to be well absorbed, which ensuring a good transfer effect.

The BG-verBLOT mini vertical transfer electrophoresis apparatus mainly includes a tank, a lid with the wires, an electrode assembly with the platinum wire electrode cards, the transfer gel holder cassettes, the gel support foam pads, an ice box, and so on.

The BG-Power600/600i/300 provides the current required for the BG-verBLOT mini vertical transfer electrophoresis system.

## 1.2 Structure

After the instrument is purchased, check the accessories on the packing list before starting to use and check if the instrument is damaged due to transportation. If the accessories are insufficient or the instrument is damaged, please contact the company or local office immediately. When unpacking, use a knife to gently cut the tape and take out the instrument.

The packing list is as follows:

Description	Quantity	Description	Quantity
Transfer electrode assembly	1	Transfer clip	2
TransBlot foam pad	4	TransBlot ice box	1
Tank and lid	1	User manual	1
Warranty Card	1	Certificate	1



Figure 1. Tank

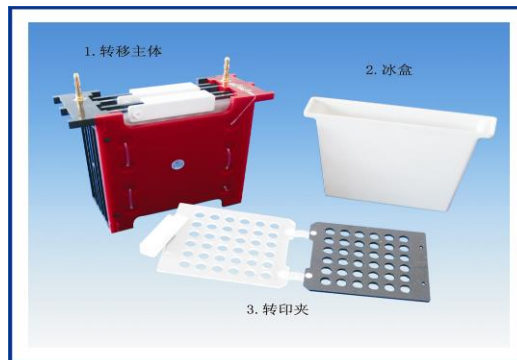


Figure 2. Transfer electrode assembly, ice box, transfer clip

### 1.3 Technical Parameters

Size	159 x 144 x 184 mm
Transfer size (W × L)	95 x 110 mm
The number of transfer gel at the one time	1 ~ 2 pieces
Buffer	800 ml
Weight (net weight)	0.93 Kg

The power required for the instrument to work is DC power. The BG-Power600/600i/300 provide the power required for the BG-verBLOT mini vertical transfer system. If you want you use other power supply, please confirm with our engineers.

The maximum power parameters of the instrument are as follows:

Max. voltage	300V
Max. power	60W
Max. buffer temperature	50 ° C

## Chapter 2 Operating Procedures

(Note: Do not connect the electrophoresis meter to the power supply before operation)

1. Cut two filter papers and one nitrocellulose membrane, the size is the same as the gel size, not less than the gel. The nitrocellulose membrane, filter paper and gel were placed in transfer buffer for 15 minutes. (If it is a PVDF membrane, the PVDF membrane must be immersed in 100% methanol for 10 seconds, deionized water for 5 minutes, and then put into the transfer buffer.)
2. Install "Transfer Sandwich" structure into the transfer gel holder cassettes in order: from the positive pole to the negative pole, it should be transparent hole board of the transfer clip, foam pad, filter paper, membrane, gel, filter paper, foam pad and black hole board of the transfer clip. Once installed, clip them to form a "transfer sandwich" structure. (Note: The operation should always be carried out in the buffer, and there should be no bubble inside the "transfer sandwich" structure.)
3. Place the electrode assembly and the ice box into the tank (You should prepare the ice in the ice box ahead by freezing the box with the water in it in the refrigerator) and fill about 4/5 tank with the buffer. Put the transfer sandwich into the electrode assembly in the tank according to the right poles. Be sure the transparent hole board of the transfer clip should face to the red electrode card (positive pole) and the black board face to the black one (negative pole). Closing the lid and connect wire to power supply. Set up the electrophoresis parameters such as voltage, time, etc. and start electrophoresis.

4. Different voltages were selected for different gel sizes and sample molecular weights. Please find the best voltage and time before using. In general, the voltage is twice the area of the gel.

5. After the electrophoresis is finished, stop the power supply, disassemble the "transfer sandwich" structure, and take out the membrane. Clean the instrument and let it dry.

## Chapter 3 Maintenance

1. After using the instrument, rinse the transfer clips, transfer electrode assembly, tank, and foam pads with deionized water carefully and dry as soon as possible.

2. The instrument should be used in a well-ventilated room without corrosive gas at temperatures from 0° C to 50° C, the relative humidity of no more than 93%.

3. After the electrode tip gets wet, dry it with absorbent paper as soon as possible to prevent rust. After using for a while, the electrode tip could be rusted or poor contacted, you can unscrew the electrode tip and replace it with a new one.

4.5. When not in using, keep the instrument in a dry and well-ventilated room without corrosive gas at temperatures from 4°C to 60°C.

5. Please keep the electrophoresis apparatus away from acid and alkali solution to prevent corrosion and damage to the apparatus.

## Chapter 4 Trouble shooting

Problems	Cause	Method
Protein transfer is not good	Transfer time is too short  The current is too low   The buffer pH is wrong  The gel concentration is too high   The membrane aperture is too large, and the sample penetrates the membrane	Extend the transfer time or increase the voltage. 1. Check the buffer concentration and choose the right concentration 2. Power failure or poor wire contact.  The buffer should be fresh prepared  1. Reduce the separation gel concentration in case that it will not affecting the separation result 2. Higher SDS concentration can also help protein transfer. 3. Reduce the methanol concentration in the buffer.  Choose a small pore size membrane. Reduce voltage or reduce time.

	<p>The sample loading on the gel is too little</p> <p>The membrane is not wet enough</p>	<p>Increase the sample loading when the sample is separated during electrophoresis.</p> <p>The membrane was wetted with transfer buffer for 15 min before using, and the PVDF membrane should be treated with methanol before using.</p>
<p>The protein is not transferred</p>	<p>Wrong transfer direction results from wrong assembly for transfer sandwich (the direction of the membrane and gel) or electrodes.</p>	<p>Pay attention to the positive and negative direction during assembly.</p>

## Chapter 5 Transport and Storage

1. Do not carry heavy objects on it during transportation or storage. When handling, please take it lightly.
2. The packaged product should be stored in a well-ventilated room without corrosive gas at temperatures from -20 ° C to 55 ° C, the relative humidity of no more than 93%.

## Chapter 6 Warranty

- 1) The product come with one-year machine warranty free of charge from the date of sold and all-life services.
- 2) This warranty free of charge shall not apply to any product that has been subjected to any following situation. We provide fee-based services for these cases.
  - a. Certificates, warranty cards and invoices cannot be presented.
  - b. Altered invoice.
  - c. Damage caused by accidental factors or disaster; Improper operation and operate not according to the instruction manual.
  - d. Damage caused by self-repair
  - e. Out of the expiration date, while it can still be used after repair.
  - f. Electrophoresis platinum wire is a consumable without free warranty service, please keep properly.

## The Appendix

Table 1 Ordering information of related instruments and accessories

Description	Product code
BG-power300 electrophoresis power supply	100-010-001

BG-power600i electrophoresis power supply	100-020-001
BG-power600 electrophoresis power supply	100-030-001
BG-verMINI mini vertical electrophoresis System	101-510-001
Mini transfer core	101-540-002
TransBLOT foam pad 4mm (94x94mm)	2090006
TransBLOT ice box	2090001
verMINI lid (power cord included)	101-510-027
verMINI lower tank	101-501-002

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