

Personal Electroporation Pack

USER'S MANUAL

BTX[®]

HARVARD APPARATUS

The Electroporation Experts



INTRODUCTION

The Personal Electroporation Pack (PEP) is a self contained, portable cuvette module used with select BTX[®] Electroporation Systems. The module is compact, holds a single universal electroporation cuvette, and integrates a polycarbonate "swing" shield for user safety. This unique, low cost approach to single cuvette electroporation replaces the need for more expensive safety stands. The PEP accommodates most universal electroporation cuvettes, including BTX Disposable Cuvettes Plus[™].

IMPORTANT: Read all Instructions, Warnings and Precautions prior to use.

FOR RESEARCH PURPOSES ONLY

Order No.	Order	Description
45-0212	PEP-BLU	PEP Assembly

Personal Electroporation Pack

GENERAL INFORMATION

Warranty

BTX/Harvard Apparatus warrants this BTX Personal Electroporation Pack for a period of 90 days from date of purchase. At its option, BTX/Harvard Apparatus will repair or replace the item if it is found to be defective as to workmanship or material. This warranty does not extend to damage resulting from misuse, neglect, or abuse, normal wear and tear, or accident. This warranty extends only to the original customer purchase.

IN NO EVENT SHALL HARVARD APPARATUS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states do not allow exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, OR OF ANY OTHER NATURE.**

Some states do not allow this limitation on an implied warranty, so the above limitation may not apply to you. If a defect arises within the 90 day warranty period, promptly contact: **BTX/Harvard Apparatus, 84 October Hill Road, Holliston, Massachusetts 01746-1388** using our toll free number **1-800-272-2775 (Outside the U.S. call 1-508-893-8999)**. Goods will not be accepted for return unless an RMA (Return Materials Authorization) number has been issued by our customer service department. The customer is responsible for shipping charges. Please allow a reasonable period of time for completion of repairs or replacement and return. If the unit is replaced, the replacement unit is covered only for the remainder of the original warranty period dating from the purchase of the original device. This warranty gives you specific rights, and you may also have other rights which vary from state to state.

Note: BTX electrodes are not recommended for use with power supplies or cables from other manufacturers. Such use is completely at the customer's own risk as it may result in damage, create unsafe conditions and will immediately void the 90 day warranty.

IMPORTANT: Read all Instructions, Warnings and Precautions prior to use.

Technical & Customer Service

BTX® is the ultimate resource for technical information on the use of high voltage bacterial transformation and general electroporation of molecules and drugs into cells. We constantly track and monitor scientific publications in this area. Our Technical Service group extracts and enters pertinent information, such as results and parameters from these papers into a Protocol database. This database is available via the BTX website. Please visit www.btxonline.com. For technical assistance, additional information or an inquiry/request for repair service, contact BTX/Harvard Apparatus Technical Support/Customer Service Group at:

BTX®

A Division of Harvard Apparatus

84 October Hill Road

Holliston, MA 01746-1388 U.S.A.

Toll Free: 1-800-272-2775 (U.S. only)

Phone: 1-508-893-8999

Fax: 1-508-429-5732

E-mail: techsupport.btx@harvardapparatus.com

Internet: www.btxonline.com (click on customer service)

If outside the United States and Canada: call **1-508-893-8999** or contact your nearest BTX Distributor. A complete list of distributors is on our website.

GENERAL SAFETY INFORMATION

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazard, use this product only as specified. Only qualified BTX personnel should perform service procedures.

To Prevent Hazard or Injury:

ARCING CAN OCCUR AT HIGH VOLTAGES

An unfavorable combination of parameters such as high voltage settings and a small sample volume with a highly conductive medium might lead to flashover between the electrodes (ARC) and/or explosive evaporation of the medium. Reduce voltage or pulse length to avoid repeating this condition.

DO NOT OPERATE WITH SUSPECTED FAILURES

If you suspect there is damage to the product, have it inspected by qualified BTX service personnel.

DO NOT CONTACT ELECTRODES

To avoid fire or shock hazard, observe all ratings and markings on the product or in this manual before using the device.

AVOID EXPOSURE TO CONTACT

Do not insert fingers or try to remove electrode or sample during pulsing sequence.

WEAR PROPER EYE PROTECTION DURING ELECTROPORATION

DO NOT OPERATE IN AN EXPLOSIVE ENVIRONMENT

DO NOT OPERATE IN WET/DAMP CONDITIONS

Safety Terms and Symbols:



Terms that appear in this manual:

WARNING. Warning statements identify conditions or practices that could result in injury or loss of life.



CAUTION. Caution statements identify conditions or practices that could result in damage to these products or other property.

Symbols that may appear on the products:



Danger
High
Voltage



Attention
Refer to
Manual



Protective
(Earth)
Terminal



Functional
Ground
Terminal

Personal Electroporation Pack

OPERATION: GETTING STARTED



WARNING HIGH VOLTAGE

Make sure the BTX electroporator is switched off before continuing.

1. Plug the PEP banana plugs into the high voltage output of your BTX electroporator.
2. Turn the electroporator's power on and set the appropriate electroporation parameters.
3. Using aseptic technique, pipette the correct volume of cell suspension and reagents into the cuvette and replace the cap.
4. Place the cuvette into the cuvette slot of the PEP, orienting the cuvette notch facing outward.
5. Swing the PEP safety shield over the cuvette cap.
6. After the pulse is delivered, remove the cuvette from the PEP. Use a pipette to remove the cells. Treat the cells according to the protocol.
7. Discard the cuvette and pipette in a biohazard container. Refer to your country's waste management organization for proper disposal practices.
8. Unplug PEP from electroporator. Clean with ethanol and deionized water as needed.

APPENDIX A: SPECIFICATIONS

Personal Electroporation Pack (PEP) Electrical & Technical Specifications

Standard Capabilities*:

Voltage Range	0 to 3000 VDC
Charge Time	5 sec max (ECM® 399)
Pulse Length/Time Constants Range	5 msec to 125 msec
Pulse Number Range	1
Operating Temperature	5° to 40°C
Intended Use	Indoor use only
Relative Humidity	20 to 80%
Maximum Altitude	2,000 m (6,562 ft)
Pollution Degree	II
Insulation Category	CAT I

Physical Characteristics:

Overall Dimensions	8.3 x 5.6 x 8.3 cm (3.25 x 2.19 x 3.25 in)
Weight	0.01 kg (0.22 lbs)

Compatibility:

Generators	ECM® 399, 630, 830 and 2001
Other	Built-in safety interlock disconnects the internal electrodes when cuvette is removed.

*Note: Depending on buffer composition and volume

APPENDIX B: REPLACEMENT PARTS

Order No.	Model	Description
45-0212	PEP-Blu	PEP Assembly
45-0124	610	Disposable Cuvettes, 1 mm gap, pkg. of 50
45-0125	620	Disposable Cuvettes, 2 mm gap, pkg. of 50
45-0126	640	Disposable Cuvettes, 4 mm gap, pkg. of 50

APPENDIX C: TROUBLESHOOTING

Please contact BTX Technical Service at any of the numbers listed below in the event of any failure.

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PEP
45-0212



Cuvettes



WEEE/RoHS Compliance Statement

EU Directives WEEE and RoHS

To Our Valued Customers:

We are committed to being a good corporate citizen. As part of that commitment, we strive to maintain an environmentally conscious manufacturing operation.

The European Union (EU) has enacted two Directives, the first on product recycling (Waste Electrical and Electronic Equipment, WEEE) and the second limiting the use of certain substances (Restriction on the use of Hazardous Substances, RoHS). Over time, these Directives will be implemented in the national laws of each EU Member State.

Once the final national regulations have been put into place, recycling will be offered for our products which are within the scope of the WEEE Directive. Products falling under the scope of the WEEE Directive available for sale after August 13, 2005 will be identified with a "wheelie bin" symbol.

Two Categories of products covered by the WEEE Directive are currently exempt from the RoHS Directive – Category 8, medical devices (with the exception of implanted or infected products) and Category 9, monitoring and control instruments. Most of our products fall into either Category 8 or 9 and are currently exempt from the RoHS Directive. We will continue to monitor the application of the RoHS Directive to its products and will comply with any changes as they apply.



- **Do Not Dispose Product with Municipal Waste**
- **Special Collection/Disposal Required**

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