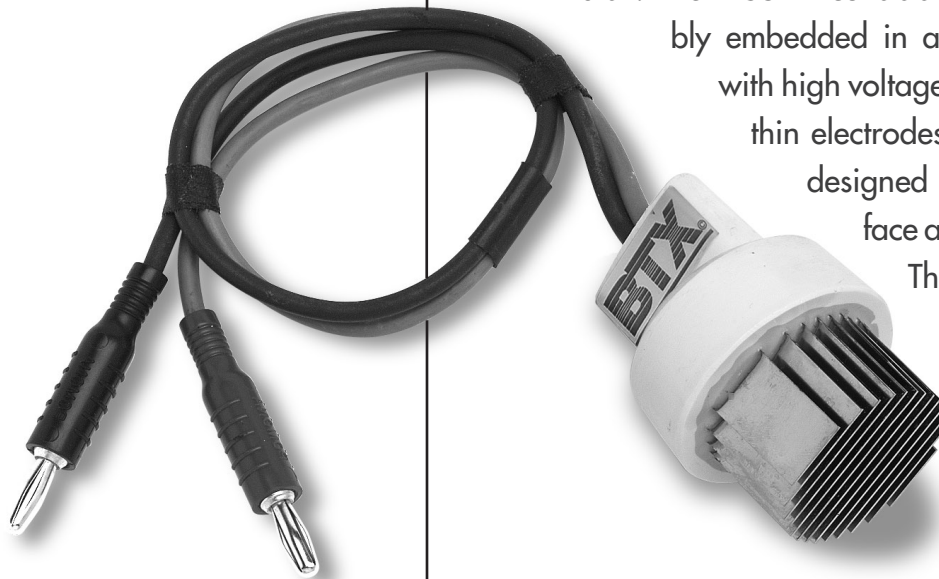


Petri-Pulser™

INSTRUCTIONS MODEL PP35-2P



IMPORTANT: Read all Instructions, Warnings and Precautions prior to use. FOR RESEARCH PURPOSES ONLY

The Petri Pulser™ PP35-2P is a reusable electroporation applicator designed to fit into each single well of a 6-well plate or an individual 35 mm diameter petri dish. The PP35-2P consists of an electrode assembly embedded in a polyurethane holder with high voltage electrode cables. The thin electrodes are gold plated and designed to maximize the surface area of electroporation. The high voltage cables are connected with a BTX Pulse Generator, and the electrode head inserted into the dish or well containing the sample. An electroporation pulse may then be delivered. The entire applicator may be cleaned with mild detergent, and the electrodes may be sterilized with ethanol and dried with acetone.

ELECTRICAL & TECHNICAL SPECIFICATIONS

Standard Capabilities

Voltage Range:	0 - 300V DC (Do not use AC current)
Pulse Length Range:	1 μ sec - 35 msec
Pulse Number Range:	1-99 (depending on voltage)
Operating Temperature:	5° - 40° C
Intended Use:	Indoor Use
Relative Humidity:	20-80%
Maximum Altitude:	2000m (6562 ft)
Pollution Degree:	II
Insulation Degree:	CAT I

Physical Characteristics

Weight:	6 oz
Number of Electrodes:	13
Volume Range:	0.5 - 3.0 ml
Gap Size:	2 mm
Electrode Thickness:	0.5 mm
Electrode Material:	Gold Plated

Generator Compatibility

ECM 830, 630, 600, 399, 395, T 820

Monitoring

Enhancer 400 Recommended

BTX®
The Electroporation Experts

DEFINITION OF SYMBOLS



Warning – Refer to instructions for use in order to find the nature of any potential hazard and any actions which have to be taken.



Caution – Risk of electric shock. Dangerous voltage that could result in injury or loss of life.



SAFETY GUIDELINES

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.



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, pulse length, or increase sample volume to avoid repeating this condition.

Connect and disconnect properly. Do not connect or disconnect cables of Petri Pulser while generator is powered on.

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 the manual before using the device.

Avoid exposure to contact. Do not insert electrodes into anything other than 6 well plates or 35 mm petri dishes. 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.

SAMPLE PREPARATION

BTX protocols outline detailed information on sample preparation. Please request protocols by contacting BTX technical service (tech@genetronics.com). In sample preparation, the medium used represents a certain electrical resistance to the power supply. The cuvette resistance is determined by the cuvette geometry and the specific conductivity of the medium. These variables could cause a voltage drop when using highly conductive media such as PBS.

INSTRUCTIONS FOR USE



WARNING HIGH VOLTAGE. Make sure the BTX Pulse Generator is switched off before continuing.

Operation with 6-Well Plates

1. Plug the HV cables from the PP35-2P into output jacks of a BTX pulse generator or the Enhancer™ 400.
2. Prepare sample of interest (cells-adherent or suspension and molecule-DNA, protein, etc.) in 6-well plates.
3. Place the electrode head in one well of the 6-well place. Allow it to gently rest on the surface of the dish.

4. Deliver electroporation pulse(s) from a BTX pulse generator, following the generator manual instructions.
5. Remove the electrode, clean as appropriate and complete delivery of pulses to all wells.

Cleaning the electrode between samples

1. Fill the wells of a 6-well plate with 3 ml of serum-free medium (you may want to prepare a few "cleaning plates" like this depending on the number of samples you have).
2. In between samples, dip the electrode sequentially into the two wells of serum-free media. Dab the electrode with Kimwipe gently to dry. Then dip the electrode into the well with the actual sample and deliver the pulse..
3. When you are changing sample type again, repeat the cleaning by dipping the electrodes into two new wells in the cleaning plate. This will ensure that no cross-contamination is introduced. Do this each time you change the sample type.

MAINTENANCE

Do not attempt maintenance while the PP35-2P is plugged into a pulse generator.

Clean the polyurethane electrode base with a soft cloth or Kimwipe. If necessary, moisten the cloth or Kimwipe with a dilute detergent solution.

Clean the electrode plates by washing with a mild detergent using a soft bristled brush. Alternatively, the electrode head can be placed into an ultrasonic water bath and cleaned with mild detergent under sonication. **Do not immerse the electronic components fo the electrode head.**

TROUBLESHOOTING

Please contact BTX Technical Service at any of the numbers listed on the following page in the event of any failure.

WARRANTY

The BTX Instrument Division of Genetronics, Inc. warrants that the Petri-Pulser, PP35-2P, is free of defects at time of delivery to the user. If a defect is found, product may be returned for exchange only within a period of 90 days from time of delivery from BTX or an authorized BTX Distributor. If any defects covered by this warranty appear within the above period, Genetronics shall have the option of repairing or replacing the product at its expense. Such repair or replacement shall be the customer's exclusive remedy for breach of warranty or for negligence. This warranty does not extend to any product which has been (a) subjected to misuse, neglect, accident or abuse, (b) repaired or altered by anyone other than Genetronics without Genetronics' express and prior approval, (c) used in violation of instructions furnished by the BTX Instrument Division of Genetronics, Inc. Manufacturer shall not be liable for any special or consequential damages or for loss, damage or expense (whether or not caused by or resulting from Manufacturer's negligence) directly or indirectly arising from use of the product sold here under either separately or in combination with any other product or from any other cause.

The above warranty shall be in lieu of and excludes all other expressed or implied warranties of merchantability, or fitness for any purpose, or otherwise. Without limiting the generality of the foregoing, Manufacturer shall not be liable for any claims of any kind whatsoever, as to the product delivered or for non-delivery of equipment, and whether or not based on negligence.

Manufacturer will correct any malfunction not caused by operator abuse at no charge for parts

and labor. All service under the warranty will be made at the Genetronics, Inc. San Diego, California, USA facilities or at another location approved by Genetronics, Inc. Owner will ship product prepaid to San Diego, California. Manufacturer will return the product, after servicing, freight prepaid to owner's address.

Warranty is VOID if the product is changed in any way from its original factory design or if repairs are attempted without written authorization by Manufacturer.

Warranty is VOID if parts or connections not manufactured by Manufacturer are used with a BTX product.

Note: Under no conditions should any product be returned without prior approval and a returned goods authorization (RGA) number from manufacturer.

TECHNICAL & CUSTOMER SERVICE

BTX® is the ultimate resource for technical information on the use of high voltage electric fields for performing high efficiency cell fusion, embryo manipulation, gene transfer, bacterial transformation and general electroporation of molecules and drugs into cells. We constantly track and monitor all scientific publications in this area. Our Technical Service group extracts and enters pertinent information, such as results and parameters from these papers into a Database Management System. The resultant database can be accessed and searched on any combination of the field identifiers.

For technical assistance or information, contact the BTX Instrument Division of Genetronics, Inc. Technical Service group:

Phone: 1-800-597-0580 1-858-597-6006

Fax: 1-858-597-9594

E-mail: tech@genetronics.com

If outside the United States and Canada: call 858-597-6006 or contact your nearest BTX Distributor.

BTX®

A Division of Genetronics, Inc.

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San Diego, CA 92121-1334 U.S.A.

For any inquiry or request for repair service, contact the BTX Instrument Division of Genetronics, Inc. Customer Service group in writing or by the following:

ORDERING INFORMATION

Product Model	Description	Part Number
PP35-2P	Petri Pulser PP35-2P	10-002024-01

Accessory Model	Description	Part Number
4001	Enhancer 400 w/ Computer & Printer Interface	01-001483-01

Meets requirements of Directive 89/336/EEC for Electromagnetic Compatibility (EC) and Low-Voltage Directive 72/23/EEC for Product Safety.