A Geno Technology, Inc. (USA) brand name

Horizontal Electrophoresis Units

Cat. No. BT110, BT111, BT112, BT113, BT114, BT115 & BT116

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SAFETY PRECAUTION

WHEN USED CORRECTLY, THESE UNITS POSE NO HEALTH RISK. HOWEVER, THESE UNITS CAN DELIVER DANGEROUS LEVELS OF ELECTRICITY AND ARE TO

BE OPERATED ONLY BY QUALIFIED PERSONNEL FOLLOWING THE GUIDELINES LAID OUT IN THIS INSTRUCTION MANUAL.

ANYONE INTENDING TO USE THIS EQUIPMENT SHOULD READ THE COMPLETE MANUAL THOROUGHLY.

THE UNIT MUST NEVER BE USED WITHOUT THE SAFETY LID CORRECTLY IN POSITION.

THE UNIT SHOULD NOT BE USED IF THERE IS ANY SIGN OF DAMAGE TO THE EXTERNAL TANK OR LID.

MAINTENANCE

Cleaning Horizontal Units

Units are best cleaned using warm water and a mild detergent. Water at temperatures above 60°C can cause damage to the unit and components.

The tank should be thoroughly rinsed with warm water or distilled water to prevent build up of salts but care should be taken not to damage the enclosed electrode and vigorous cleaning is not necessary or advised.

Air drying is preferably before use.

The units should only be cleaned with the following:

Warm water with a mild concentration of soap or other mild detergent. Compatible detergents include dishwashing liquid, Hexane and Aliphatic hydrocarbons.

The units should not be left in detergents for more than 30 minutes.

The unit should never come into contact with the following cleaning agents, these will cause irreversible and accumulative damage.
Acetone, Phenol, Chloroform, Carbon tetrachloride, Methanol, Ethanol, Isopropyl alcohol.

Rnase Decontamination

Clean the units with a mild detergent as described above. Wash with 3% hydrogen peroxide (H_2O_2) for 10 minutes. Rinsed with 0.1% DEPC (diethyl pyrocarbonate) treated distilled water.
Caution: DEPC is a suspected carcinogen. Always take the necessary precautions when using.

RNaseOUT™ (G-Biosciences) can also be used. Please consult the instructions for use with acrylic gel tanks.

SETTING UP THE HORIZONTAL GEL TANKS:-

Instructions for fitting Electrode Cables (If required)

1. Note the position of the lid on the unit. This shows the correct polarity and the correct orientation of the cables, black is negative and red positive.
2. Remove the lid from the unit, Note if the lid is not removed, fitting the cables may result in un-tightening of the gold plug and damage to the electrode.
3. Screw the cables into the tapped holes as fully as possible to thatthere is no gap between the lid and the leading edge of the cable fitting.
4. Refit the lid.

GEL PREPARATION

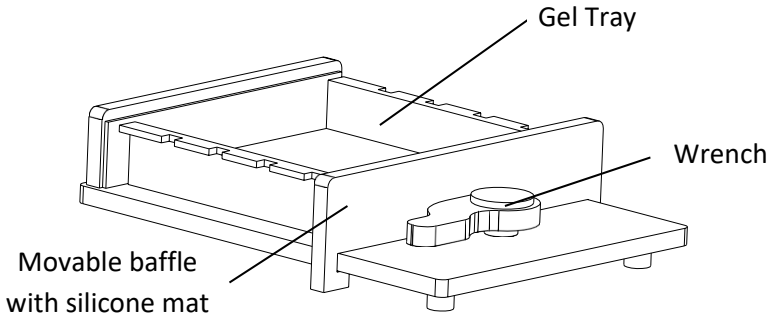
1. For a standard 0.7% agarose gel, add 0.7grams of agarose to 100ml of 1x TAE or TBE solution. The same 1x solution should be used in the tank buffer solution.
2. Add the agarose powder to a conical flask.
3. Add the appropriate amount of 1X TAE or TBE solution. To prevent evaporation during the dissolving steps below, the conical flask should be covered with parafilm.
4. Dissolve the agarose power by heating the agarose either on a magnetic hot plate with stirring bar or in a microwave oven. If using the microwave method, the microwave should be set an around a 400 watt or medium setting and the flask swirled every minute. The solution should be heated until all crystals are dissolved. This is best viewed against a light background. Crystals appear as translucent crystals. These will interfere with sample migration if not completely dissolved.
5. The gel must be cooled to between 50°C and 60°C before pouring.
6. If required, you can add your fluorescent stain at this stage

GEL POURING

Using the Gel box:-(For BT110, BT111, BT112 & BT113)

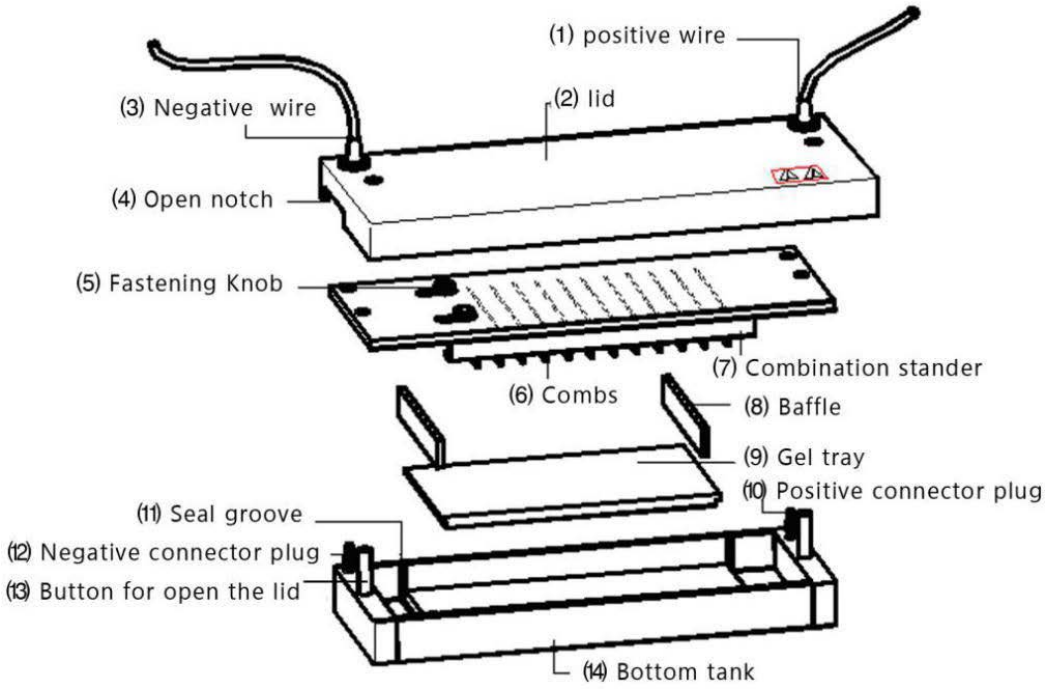
1. Put the gel box onto a level surface and put a fit gel tray into it. In order to prevent gel leaking, both ends of gel tray must be closely against the gel box.
2. Put the comb(s) onto the tray.
3. Pour agarose carefully so as not to generate bubbles.
4. Leave the gel by itself and wait it to set.
5. Pull the comb(s) out carefully and move the tray with gel to themain tank.

Using the Gel Casting:-(For BT114 & BT115)



1. Put Gel Casting onto a level surface.
2. Put a tray into the Gel Casting and make sure both ends of the tray are close against the silicone mat of the Gel Casting unit.
3. Insert the wrench into an appropriate hole according to the size ofthe tray.
4. Turn the wrench to fasten the gel tray.
5. Put the comb(s) onto the tray.
6. Pour the agarose carefully so as not to generate bubbles.
7. Leave the gel by itself and wait for it to set.
8. Pull the comb(s) out carefully and move the tray with gel to themain tank.

Using the dam-board (For BT116)



1. Loosen the Fasting Knob(5) on the Combination stander(7), set down the ingots. According to sample volume and length of electrophoresis channel to choose comb(s) from 1~12. Tighten by ingots and Fasting Knobs.
2. Put the Gel tray(9) in the bottom tank(14), and insert the baffle(8) in the Seal groove(11)
3. Pour the agarose carefully so as not to generate bubbles.
4. Put the Combination stander(7) on the gel through holes.
5. Leave the gel by itself and wait for it to set.
6. Carefully remove the Combination stander(7) and the baffle(8)

RUNNING THE GEL

1. Mix the sample to be loaded with appropriate sample buffer.
2. Pour buffer into the tank till the gel is covered by at least 2mm excess buffer. This will complete the experiment in a shorter time and better quality of sample resolution.
3. Load the samples into the wells with pipettes. Multi-channel pipettes can be used with MC compatible combs to load samples.
4. Carefully cover the tank with lid and connect it with a power supply.
5. Typically, gels are run under 90V-150V. Maximum voltages are indicated on the serial badge of each unit. Generally, higher voltages enable faster electrophoresis but poorer quality of sample resolution.
6. Run electrophoresis.

RUNNING BUFFERS

1x TAE

40mM tris (PH 7.6), 20mM acetic acid, 1mM EDTA. 50X (1L) dissolve in 750ml distilled water:

242g tris base (FW=121) 57.1ml glacial acetic acid 100ml 0.5M EDTA (PH 8.0)

Fill to 1 liter with distilled water.

1X TBE

89mM tris (PH 7.6), 89Mm boric acid, 2mM EDTA 10x (1L) dissolve in 750ml distilled water:

108g tris base (FW=121) 55g boric acid (FW=61.8) 40ml 0.5M EDTA (PH8.0)

Fill to 1 liter with distilled water.

WARRANTY

BT Lab Systems warrants apparatus of its manufacture against defects in materials and workmanship, under normal service, for ***one year from the shipping date to purchaser***. This warranty excludes damages resulting from shipping, misuse, carelessness, or neglect. BT Lab Systems' liability under the warranty is limited to the receipt of reasonable proof by the customer that the defect is embraced within the terms of the warranty. All claims made under this warranty must be presented to BT Lab Systems within one year following the date of delivery of the product to the customer.

TECHNICAL SUPPORT

BT Lab Systems offers technical support for all of its products. If you have any questions about the product's use or, operation, please contact BT Lab Systems at the following info.

E-Mail: info@BTLabSystems.com