

INSTRUCTIONS & OPERATING  
MANUAL  
FOR

MIDI PREPARATIVE SUBMARINE GEL  
SYSTEM

**GENECO-H-MIDI Prep**

## **TROUBLE SHOOTING:**

### **Problem: Not Getting the Bands:**

Possible cause:

Problem with the buffer

Problem with the Electrode

Problem with the Power supply

Problem with the Connecting cord

Remedy:

Check the buffer

Check the Electrode

Check the Power Supply

Check the Connecting cord

### **Problem Buffer is leaking from Gel Casting Tray**

Possible Cause:

Problem with the Gasket

Comments

Check the Gasket

### **Problem From Band Separation it is Taking long time**

Possible Cause:

Applied Voltage May be less

Comments:

Increase the Voltage

Submarine Electrophoresis Systems in three different Models:

1. Small Model – An Economy System
2. Analytical Model – For Routine Works
3. PREPARATIVE MODEL – for Large Scale Preparation of nucleic acids.

While designing this system, much emphasis has been devoted to:

- Minimize buffer capacity so as to allow only the required current flow.
- Cast gels easily with sharp wells.
- Controls the heat generated during electrophoresis by providing perforation to the spacious lid.
- Assure the maximum safety to platinum electrodes while cleaning the apparatus.
- Perform the experiment with ease and excellence

**Specifications:**

	<b>MIDI Prep</b>
Dimensions(LWH)	370x180x100mm
Principal Materials	Acrylic
Max Gel Size	250x130mm
Gel Platforms	250x130mm (1 NO)
13 well 1.5mm	Two
3 well 3mm	One
Platinum Electrodes	Positive & Negative
Gel Casting Tray	One
Connecting Cords	Red & Black
Buffer Required	500ml
Power Required	250V,100mA
<b>CAT NO</b>	<b>GENECO-H-MIDIPrep</b>

**Description and Assembly of the Parts:**

The System Consists of:

- Basic unit with Lid
- Platinum Electrode Positive and Negative
- Gel running Tray 130mmx130mm – 1 No
- Combs 13 well 1.5mm 2 No and 3 well 3mm 1 No
- Connecting Cord Red and Black
- Gel Casting unit

**OTHER ACCESSORIES:**

1. Leveling Table &
2. Developing chamber

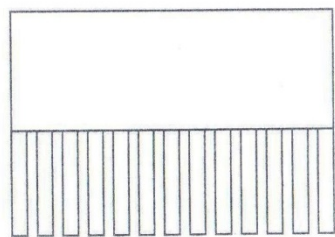
Are the additional Accessories of Submarine gel Electrophoresis. They are not included in the standard components of the apparatus. So they should be ordered separately.

**Leveling Table:**

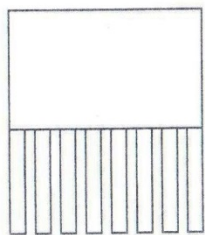
It is an essential accessory to cast uniform thickness of the gel in the gel platform, before placing the gel platform onto the leveling table, adjust the screws so that the spirit level bubble is centered.

**Comb:**

Combs are made of acrylic sheets and are used along with gel platforms to make rectangular wells in the gels. Combs are available in different thickness and size.



13 well comb



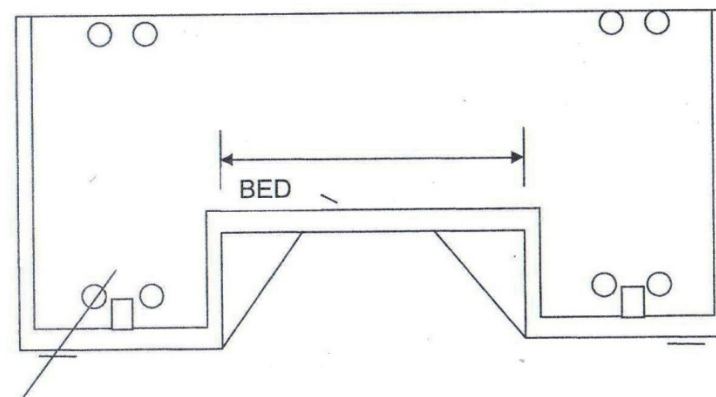
8 well comb

- Acrylic Combs are Heat liable and should not be autoclaved.
- Organic solvents like chloroform attack material, so they cannot be used to clean them, only distilled water with mild detergent is recommended for cleaning.
- Before pouring the gel solution, make sure that about 0.2 to 0.5mm gap is left between the floor surface of the gel platform and comb teeth. This is essential to get bottom closed wells in the gel. Otherwise samples leak through the gel. To get a uniform, loosen the screws so that the comb rests on the card freely, tighten the screws and remove the cord.
- Combs of requires size/thickness can be made on request.

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**Basic Unit:**

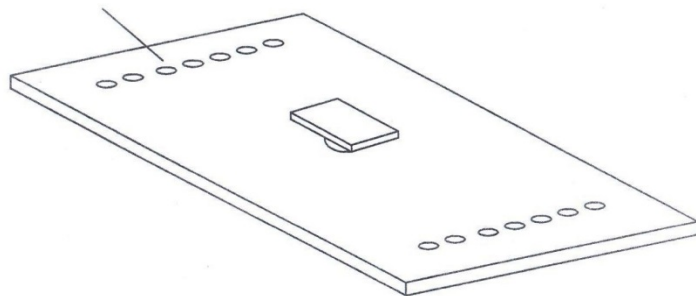
It is a rectangular chamber with the middle has been elevated to form a bed for placing gel platforms. The size of the bed varies with the model. It serves as buffer reservoir and also has provision for placing the platinum electrode assembly.

**Basic unit sizes**

Bed Size(LxW) : Mini Model 100x70mm  
: Midi Model 130x130mm  
: MidiPrep 250x130mm

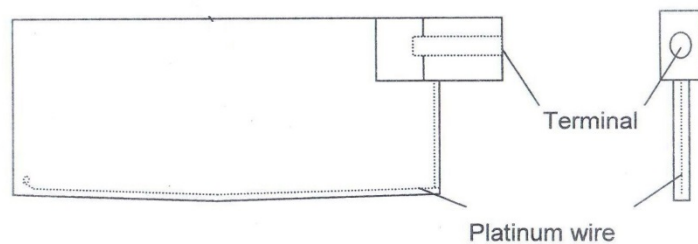
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**Lid:** It covers the basic unit. It also has perforations for the escape of Gas/water vapour generated during electrophoresis.



**Platinum Electrode assembly:**

Pure Platinum Wire (99.95% of 0.2mm thick) is used as electrode in the assembly. The Platinum Wire is recessed in a groove in 4.0mm thick acrylic sheet, its one end is tied and the other end is connected to the terminal. Each Apparatus has been provided with two such electrode assemblies. This electrode sits in the notch provided in the basic unit on either side.

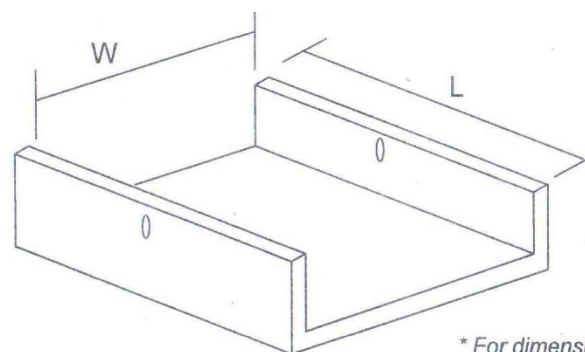


Platinum electrode assembly

- Air bubbles generated during the Electrophoresis should not stay on the wire. If they remain on the wire, they cause resistance to current flow, As a result movement of macromolecules slows down. To avoid this, One side of the groove is made as slope.
- Trace metal contamination in buffer causes deposition of metal on the platinum wire. So periodic leaning of electrode with distilled water immediately after every use is more essential.

**Gel Platforms:**

Gel Platforms are transparent acrylic trays with open at two sides. They are used in casting agarose gels. They are available in different Sizes for the use in different models.



*\* For dimensions L and W, refer Specifications table*

**Note:**

Acrylic sheets used in these platforms are not UV transparent. So gel should be removed from the platform and placed directly on the Trans illuminator for viewing bands.

**Note:**