

Cat. No. B10-1492

**Electrostatic Field Apparatus Set II**

**Instruction Manual**

**NaRiKa Corporation**

Thank you for purchasing this product.  
Be sure to read this instruction manual before using it.

## B10-1492 Electrostatic Field Apparatus Set II

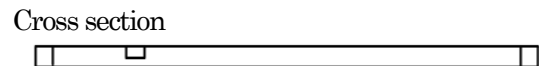
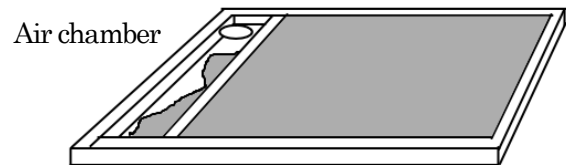
### Objective

This apparatus set is intended to observe electric force lines generated by applying an external electric field to the solution and the special powder filled in the plastic electrostatic cell. It also allows you to observe the electrostatic field using an OHP.

### Construction

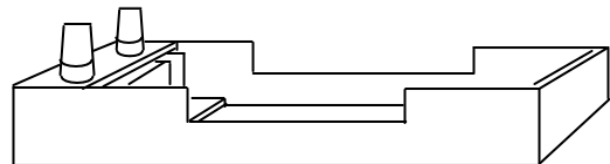
① Electrostatic cell

This is a plastic cell provided with an air chamber at one side of the upper part. It is filled with silicone oil and special powder.



② Holder

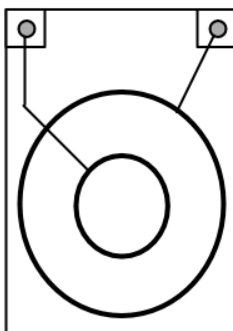
An electrode plate and the electrostatic cell are mounted to this holder during the experiment. In addition, the high-voltage generator box is connected to its terminals to conduct the experiment.



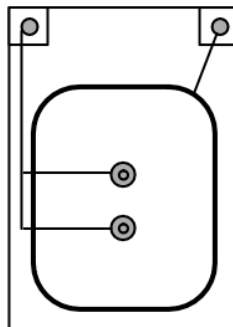
③ Electrode plates

The following five types of electrode plates are available:

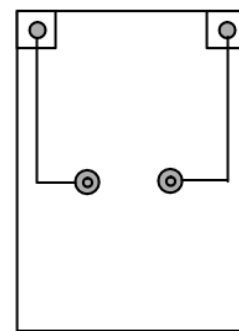
Electrostatic shielding



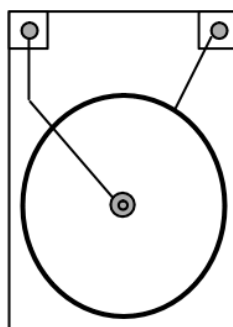
Between two points of the same electrode



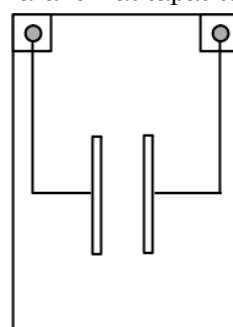
Between two points of different electrodes



Point charge



Parallel flat capacitor



#### ④ Backboard

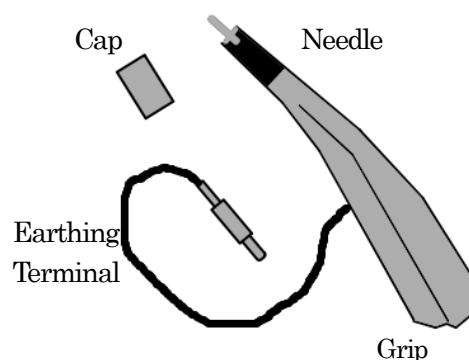
The backboard is a white acrylic board. Mounting this backboard from the lower side of the holder allows you to observe clearly the condition of the electrostatic cell. The board should be removed from the holder when observing the electrostatic field using an OHP.

#### ⑤ Static Pistol for charge and discharge

##### 【How To Use】

Connect the earthing terminal to the apparatus and put the needle on it. Grip the handle, then high-voltage transforms.

\*To See the electrostatic field, hold the grip several times.



##### [Cautions]

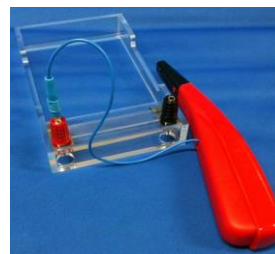
- Do not touch the needle, it may cause an electric shock.
- Do not use this high voltage generator pistol for any purpose other than experiments.

### Precautions for Experiments

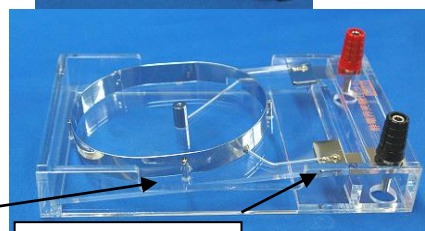
- The special powder in the electrostatic cell gradually settles after agitation, so conduct the experiment quickly.
- Because the electrostatic cell is made of plastic, static electricity sometimes remains; lightly wipe the cell surface with a damp cloth to eliminate it.
- When conducting an experiment using an OHP, the electrostatic cell may be deformed due to heat. Conduct the experiment at a temperature of 40°C or less.
- If the electrostatic cell expands due to changes in the atmospheric temperature, loosen the electrostatic cell's screw to release the air from the inside and allow it to flatten before use.
- If an experiment is conducted in high humidity such as in the rainy season, an electrostatic field may not occur. This is because static electricity escapes the surface of the electrostatic cell due to the high humidity. In this case, lower the humidity of the laboratory or lightly wipe the cell surface using ethyl alcohol to eliminate the humidity temporarily before conducting the experiment.
- The electrostatic cell and other parts are made of plastic, so they may be affected by organic solvents. If any part becomes contaminated, wipe off the contamination using soapy water.

### Operation Procedure

1. Attach the backboard to the holder and connect the high-voltage generator pistol to the terminals of the holder.



2. Select one of the electrode plates (five types) and mount it to the holder. When mounting, slide it into the holder as shown in the photo on the right to connect it electrically. In this case, place it so that the electrode metals face upward.

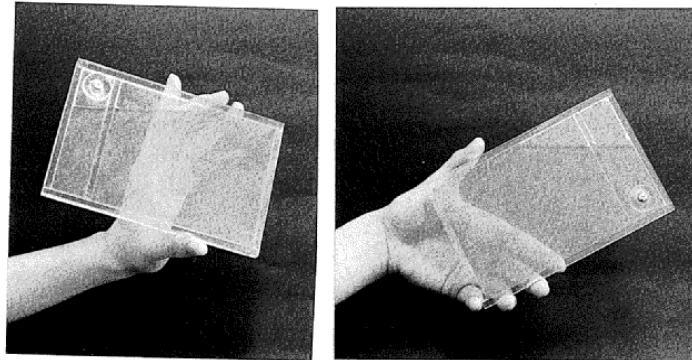


1. Put it from this side

2. Push here

3. If you use an OHP, remove the backboard from the holder.

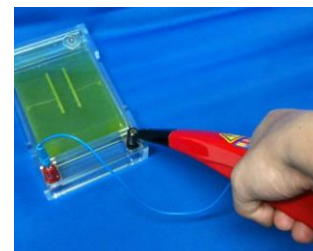
4. Agitate the inside of the electrostatic cell as follows: hold the cell in one hand and rotate it a half-turn right and left (or back and forth) repetitively as shown below. This allows the special powder to be uniformly distributed in the cell.



5. Hold the agitated cell in your hand obliquely to allow air bubbles to rise. Then mount it on the holder with the cell surface provided with the screw facing up. (The electrostatic cell is constructed such that air bubbles do not escape from the air chamber if it is placed flat.)



6. Put the Needle of the high voltage charge pistol to the terminal as the photo shows. Then, hold the grip and push the pistol several times. After pushing several times, you can observe the electro static field.



7. If you wish to conduct an experiment using a different electrode plate, replace the electrode with the esired one and follow the procedure again to conduct the experiment and observe the electrostatic field.

\*If static electricity accumulates on the electrostatic cell surface, the special powder interferes with it, resulting in a disturbed electrostatic field. In this case, wipe the cell surface with a damp cloth to eliminate the static electricity.