

Electric Pendulum EG-02

Thank you for purchasing the optional Electric Pendulum for the electrostatic generator. Read these instructions carefully and conduct experiments safely by following the described procedure.

1. Structure and Specifications

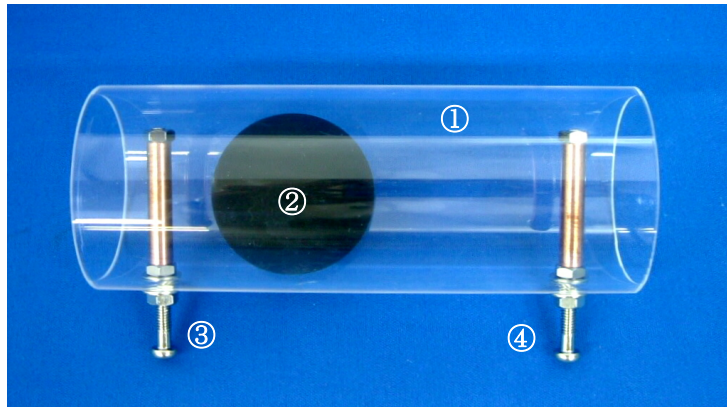


Photo 1. Electric Pendulum

Specifications (materials and other details)

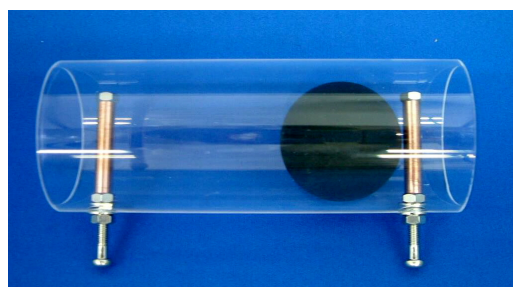
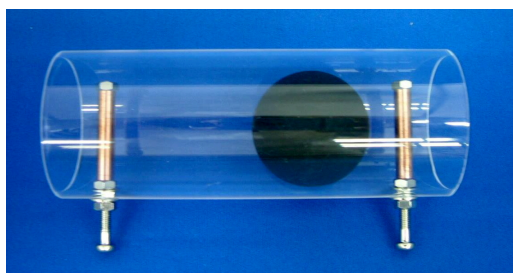
- ① Housing: Made of acrylic resin; with both ends chamfered.
- ② Pendulum ball: Made of resin; coated with carbon-based electrically conducting paints.
- ③ Electrode terminal: For connecting the output lead of the electrostatic generator.
- ④ Electrode terminal: For connecting the output lead of the electrostatic generator.

Operation

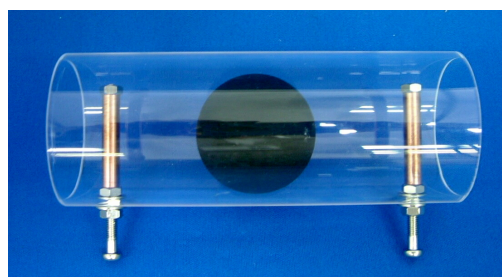
An electrostatic is impressed across the electrodes (3) and (4). The pendulum ball, in contact with the electrode terminal on one side, collects the same polarity charges as the electrode and moves away from the electrode by repulsion. The opposing electrode is charged to the different polarity and the ball moves to the other side by attraction. When the ball contacts the opposing electrode, it collects the same polarity charges and move to the opposite side by repulsion. This process is repeated so far as the electrostatic is impressed across both electrodes. The pendulum ball in the acrylic pipe continues “round trips” between the electrodes.

2. Precautions for Experiments

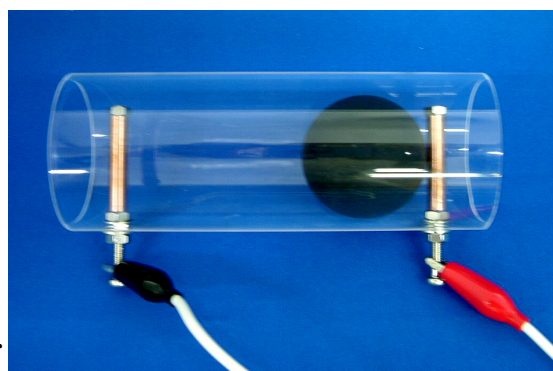
- ① Place the electric pendulum on a table that has a flat surface without inclination.
- ② Use a table of high electric insulation. If the surface is wet or covered with fine dust, static electricity impressed across the electrodes will leak to the table to interfere with the expected motion of the pendulum.
- ③ Impress the voltage when the ball is positioned as shown in Photo 2. If the ball is at about the center of the housing as shown in Fig. 3, the ball will not move right and left because of the weak electrostatic force between the charges induced on the ball and the electrode. The ball should preferably be placed within 1 cm from the electrode.



**Photo 2. Starting Position of the Ball
(Recommended)**



**Photo 3. Position of the Ball Where Pendulum
Motion Is Not Expected**



**Photo 4. Impressing the Output of
the Electrostatic Generator**

3. Experiments

Connect the output cables of the electrostatic generator to the electrode terminals of the electric pendulum as shown in Photo 4. Then turn the handle of the generator slowly.

CAUTION

The housing of the electric pendulum is made of acrylic resin. Do not wipe with alcohol or other solvents or allow them to spill over the housing. Prevent severe shocks such as fall to the housing. **(The housing will be cracked or split.)**

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