

B10-1324-06

## Static Motor Assembly Kit

--- How to Assemble and Examples of Experiments ---

Thank you for purchasing the optional Static Motor Assembly Kit for the electrostatic generator. Read these instructions carefully and conduct experiments safely by following the described procedure.

### 1. Checking the Parts

Check that you have all the parts shown in Photo 1.

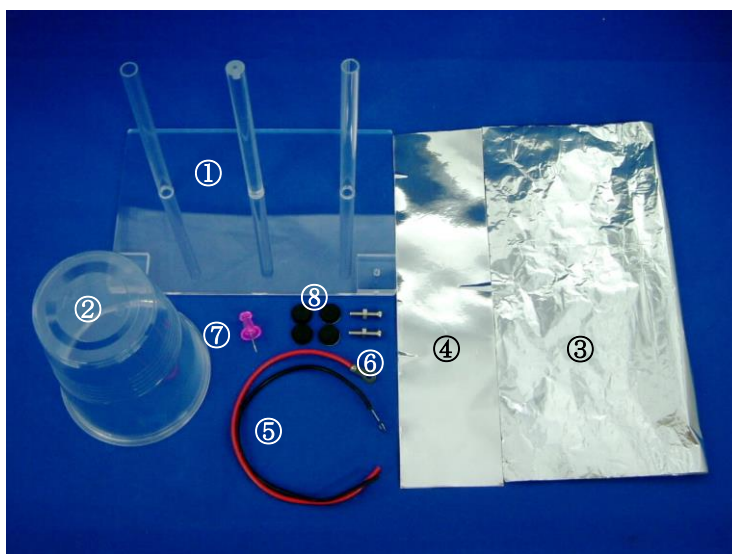


Photo 1. Parts in the Kit

- |                          |   |
|--------------------------|---|
| ① Motor base:            | Made of acrylic resin x 1 piece                                   |
| ② Plastic cup:           | For the motor rotor x 1 piece                                     |
| ③ Aluminum foil:         | For the electrodes, 200 x 200 mm, x 1 sheet                       |
| ④ Aluminum tape:         | For the electrodes and electrode stoppers, 50 x 200 mm, x 1 sheet |
| ⑤ Electrode leads:       | Vinyl wire with an oval lug x 2 pieces (red and black)            |
| ⑥ Screws and nuts:       | M3 x 2 sets   |
| ⑦ Thumbtack:             | Center pin for the rotor x 1 piece                                |
| ⑧ Rubber pads x 4 pieces |   |

**\* The following tools are required for assembling the kit:**

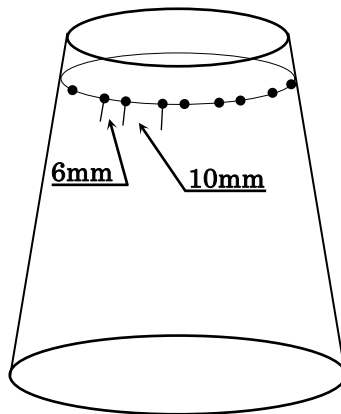
Rule, scissors, nippers (or cutter knife), vinyl tape, Phillips screwdriver, spanner (for tightening the nut; long-nose pliers can be substituted)

### 2. Assembly Procedure

#### [1] Preparing the Rotor

- ① Cut out eight strips, each measuring **60 mm long and 10 mm wide**, from the aluminum tape provided, for use as electrodes.

- ② Use an oil-base marker and mark the positions for attaching the aluminum tape (electrodes) on the surface of the plastic cup (rotor). Remember that eight strips of **10-mm-wide** aluminum tape will be attached at **6-mm intervals**.
- ③ Attach the aluminum tapes for the electrodes prepared in step ① to the cup according to the marking.



**Fig. 1 Marking for the Electrodes**



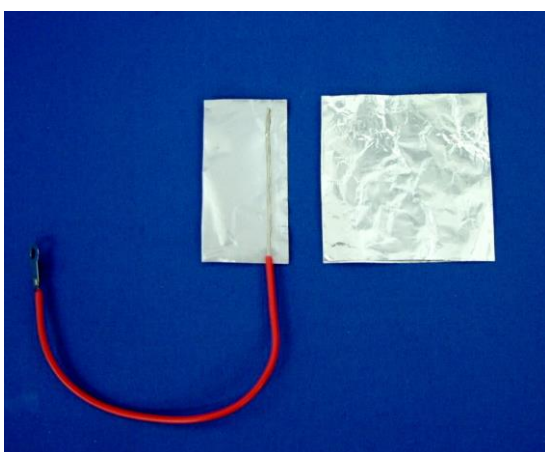
**Photo 2. Attaching the Electrodes**

**\* Carefully attach the tape not to produce wrinkles and slack.**

- ④ Last, stick the thumbtack into the cup at the center of the bottom. This completes assembly of the rotor. Place the rotor atop the center post on the plastic base and check for balanced rotation of the cup.

**[2] Preparing the Stator**

- ① Cut out two strips of electrode foil, each measuring 50 mm wide and 100 mm long, from the aluminum foil provided. Also cut out two strips of electrode-holding tape, each measuring 50 mm wide and 25 mm long from the aluminum tape provided.
- ② Use nippers and remove coatings from the red and black leads about 50 mm from the tip. Lightly twist the cores to prevent parting.
- ③ Referring to Photo 3, fold the electrode foil in half and attach the electrode-holding aluminum tape to the cores of the lead.



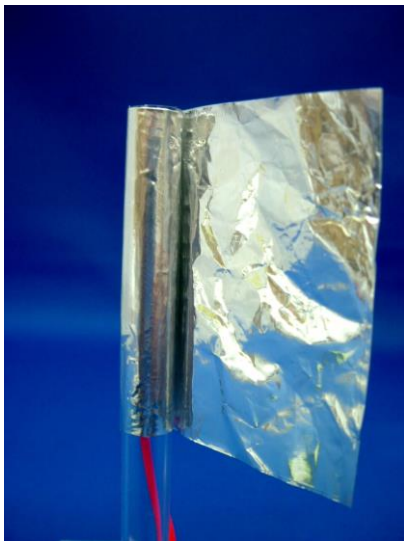
Attach the cores of the lead to the strip of aluminum tape.



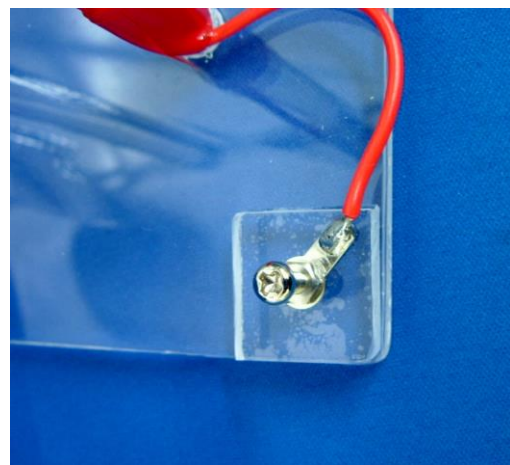
Attach the aluminum tape with the lead to the aluminum foil (electrode).

**Photo 3. Preparing the Electrode**

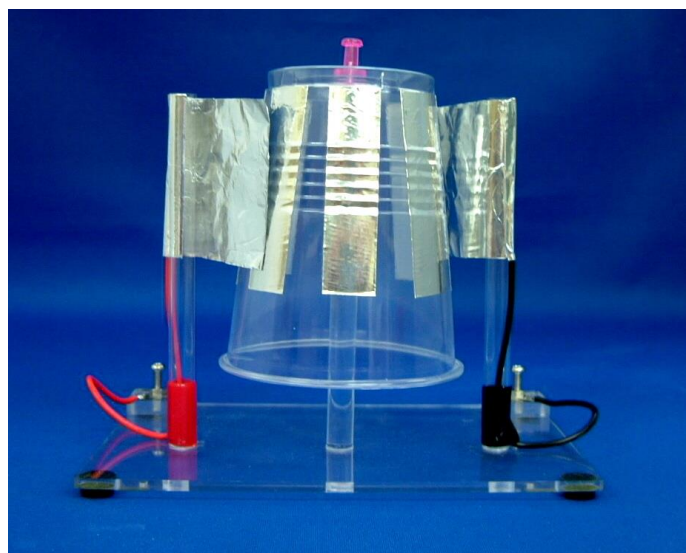
- ④ Referring to Photo 4, attach the electrodes to two acrylic stator posts fixed on the motor base, respectively.
- ⑤ Firmly hold the electrode lead against the stator post with vinyl tape.
- ⑥ Last, connect the lead lug to the motor base using the screw and the nut. Attach the rubber pads to the base at the bottom. This completes assembly of the stator. (Referring to Photo 6, stick the thumbtack atop the cup, and place the cup on the center post. This completes assembly of the static motor.)



**Photo 4. Attaching the Electrode to the Stator Post**



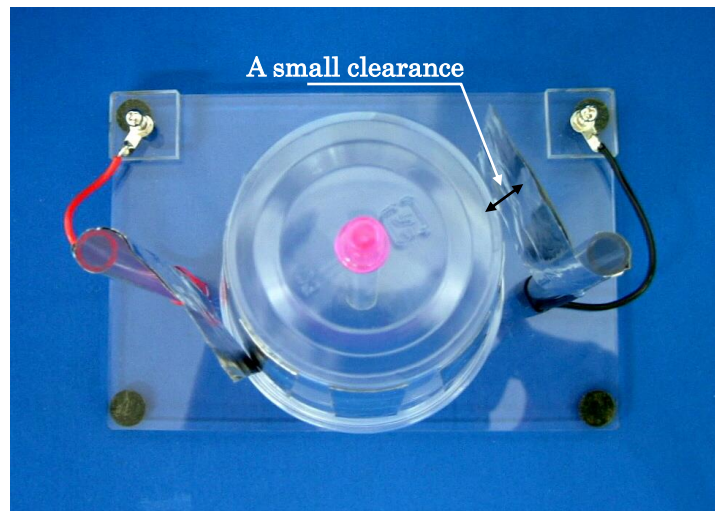
**Photo 5. Terminating the Electrode Cord**



**Photo 6. Sticking the Thumbtack atop the Cup Provided with Electrodes, and Placing the Cup at the Center of Motor Base**

### 3. Experiments

Connect the output cables of the electrostatic generator to the electrode terminals on the motor base of the static motor. Turn the generator handle slowly. You will see that the cup turns as the electrode tapes on the cup and the stator electrodes contact each other and break away alternately. For the motor to turn smoothly, you need to keep the electrode tapes on the cup and the stator electrode slightly separated from each other.



This sign indicates the risk of personal injury or damage to equipment.

The motor base is made of acrylic resin. Do not wipe with alcohol or other solvents nor allow them to spill over the motor base. The motor base may develop fine cracks.

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Ver.201306  
Printed in Japan