

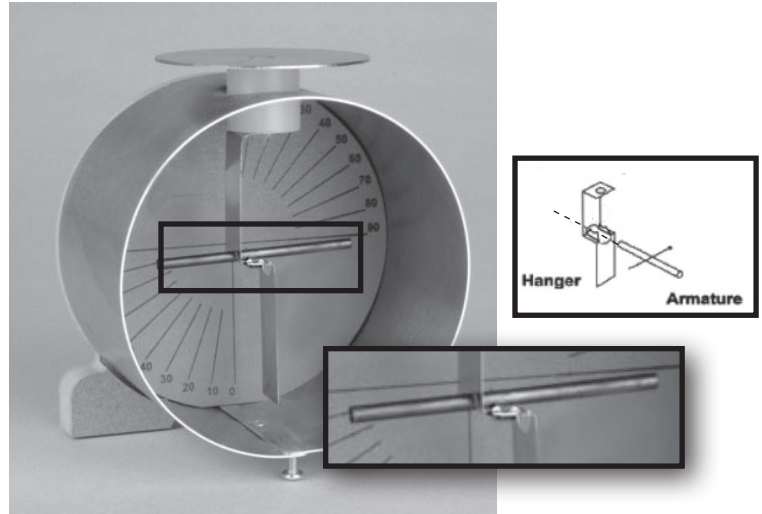
## 14435 Electroscope

### **Purpose:**

This device is used as a tool to investigate static electricity, charge polarity, and induced charges.

### **Contents:**

- One (1) Electroscope
- Three (1) Metalized armatures



### **Required Accessories:**

This electroscope is often used itself as an accessory in the performance of a number of experiments in contact, friction, or static electricity, so additional requirements may vary.

### **Assembly and Adjustment Procedures:**

Place the armature pin into the hanger.

The pin of the armature, when seated on the hanger, will be aimed at the center of the scale. The hanger arms should be vertical and parallel. **DO NOT insert or adjust the metalized armature without reading the specific procedures below.**

### **Preparing the metalized armature:**

- 1) Push a pin through the midpoint of the metalized armature and perpendicular to its length. The pin should go through the diameter of the straw. Accuracy is essential.
- 2) To check the accuracy of pin placement, use the rims of a pair of adjacent beakers to support the pin and armature. If the armature does not hang vertically, remove the pin and reinsert following the instructions in step 1.
- 3) While the armature is suspended vertically between the beakers, note which end is down. This is the heavy end which must be in the down position when inserted into the armature holder. While the armature is suspended, the armature should swing with a period of approximately 1 second. The longer the period of the swing, the more sensitive your electroscope will be. Occasionally the lower end of the armature is a little too heavy to permit a free swing. If so, reposition the pin or cut a SMALL amount from the lower end of the armature. Check the swing again.

4) Balance the metalized armature on the armature hanger prongs, heavy end down, with the pin in the center of the bearing of the hanger. Check the rotation of the armature to insure that it is free to swing and not caught on the hanger.

**This is a sensitive apparatus.** The metalized armature is very easily dislodged. Use extra care in moving and storing the apparatus so the armature will not fall out. Extra armatures are included to cover this contingency.

The apparatus is now ready for use in experiments. The electroscope can be charged by bringing other charged objects into contact with the charging plate at the top of the electroscope or through induction by simply bringing them very close to the plate while grounding the plate. An interesting first demonstration is to stick a portion of a piece of cellophane tape to the top plate, ground the plate, and then notice the separation of charges as the tape is carefully peeled away, while holding the wooden legs. Refer to a physics laboratory manual for other experiments involving static electricity and electroscopes.

**Time Allocation:**

To prepare this product for an initial experimental trial should take less than ten minutes. Actual experiments will vary with needs of students and the method of instruction, but typical activities are easily concluded within one class period.

**Feedback:**

If you have a question, a comment, or a suggestion that would improve this product, you may call our toll free number.