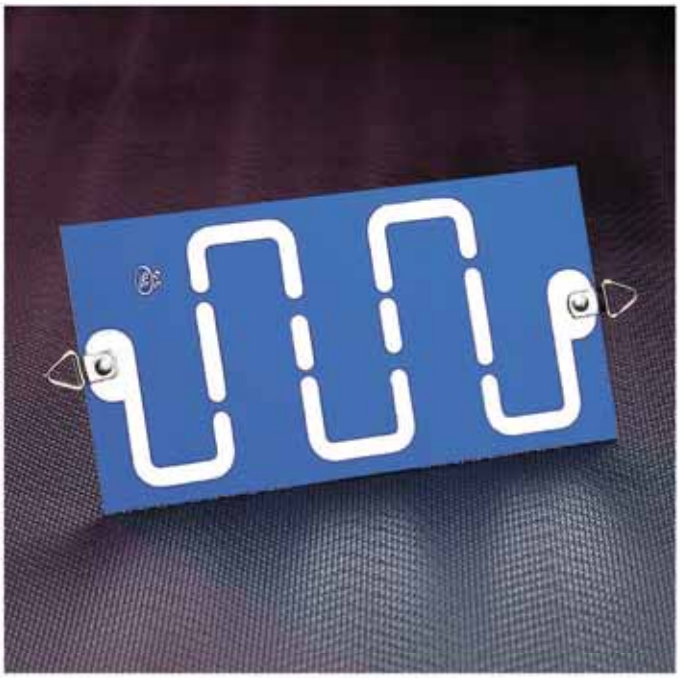
LIGHTENING PLATE

MODEL N-139

The lightning plate is used with an electrostatic generator (see WINSCO model N-100V) to show some of the characteristics of an electrostatic discharge. Connect one end of the plate to ground and the other to the dome of the electrostatic generator. The WINSCO model N-140 Insulating Stand is a convenient method of hanging the plate for good visibility. When the generator is started and builds up voltage, sparks will begin to jump the gaps on the lightning plate as they head for ground.

Note that the sparks follow the shortest route in going from one end of the plate to the other. Note also that the spark brightness is uniform, regardless of the width of the gap and that there is no variation in brightness from one end to the other. The Van de Graaff generator must, of course, reach some minimum potential sufficient to jump the sum of all the gaps. This amounts to about 1.1 inches and will require a minimum of 25,000 to 30,000 volts, but at this level will not be very visible. Only when the voltage reaches perhaps 100,000 volts will the stored energy be sufficient to make clearly visible sparks.



WARNING

THE DEMONSTRATIONS DESCRIBED IN THESE INSTRUCTIONS MAY INVOLVE HAZARDS FROM CARELESS HANDLING OR INCORRECT PROCEDURES. AS WITH ALL OUR EQUIPMENT, THIS INSTRUMENT SHOULD ONLY BE USED UNDER THE DIRECT SUPERVISION OF A QUALIFIED, CERTIFIED SCIENCE TEACHER.

DO NOT USE THE N-139 WITH ANY POWER SOURCE OTHER THAN THE MODEL N-105S OR THE N-100V VAN DE GRAAFF GENERATORS. UNDER NO CIRCUMSTANCES SHOULD IT BE CONNECTED TO ANY AC OR DC VOLTAGE EXCEPT AS DESCRIBED ABOVE.

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