

Universal HV350 / HV350R / HV350SAFE Operating Instructions

Your **HV350** is intended for charging capacitors and operation of anti gravity devices, ion production and most any project requiring current control.

The front panel control adjusts the current by varying the duty cycle of the out put. The meter indicates the voltage. Even with the control set to minimal the open circuit voltage will still be at 25kv but occurs for less time during a period limiting the current. Because of this feature the unit must not be operated without a load and is why we include the resistor load consisting of twenty 2.2 meg/1watt resistor in series across the output. This load draws over 500 uamps at 25 kV and limits the open circuit voltage to this value. It may be removed if you no what your target load is. Note that the open circuit voltage will soar to over 50kv and may damage the unit. You may operate up to 35 kV max. There is a protection spark gap that is factory set for 25 kV. It may be changed at users risk in damaging the unit.

Failure is usually the IRF540 mosfet and is easily replaced. The unit is short circuit protected but must never be allowed to continually breakdown as a spark discharge.

The units require a 12 -14 volt DC supply capable of supplying 3 amps if operating at full load. The model #12/3AR or 12DC/7 are both regulated and on our web site. You may also use a rechargeable battery.



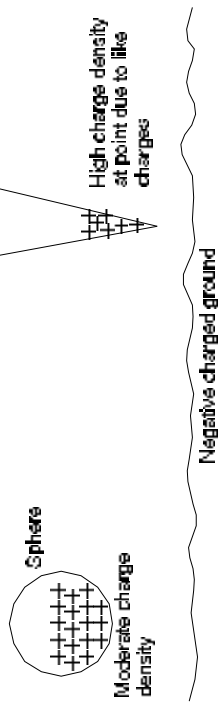
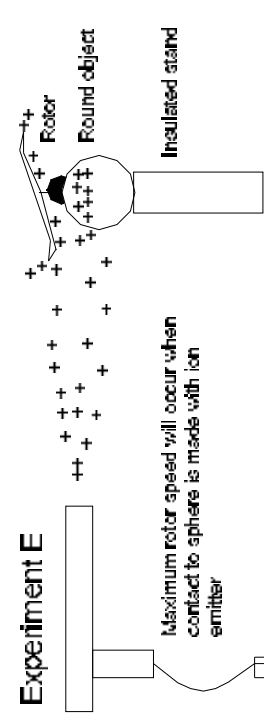
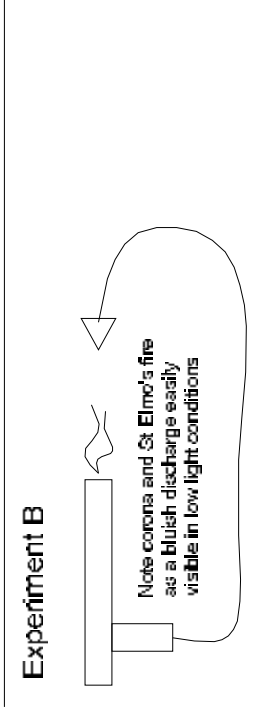
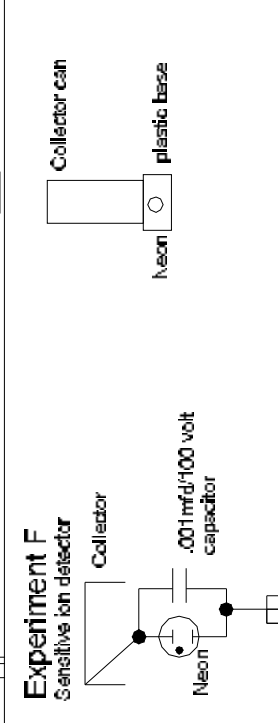
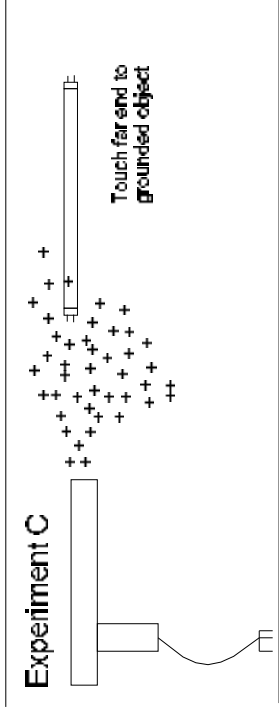
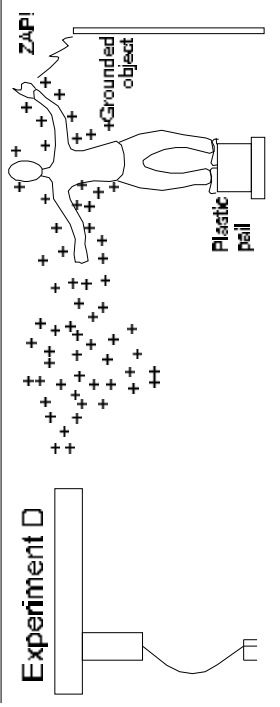
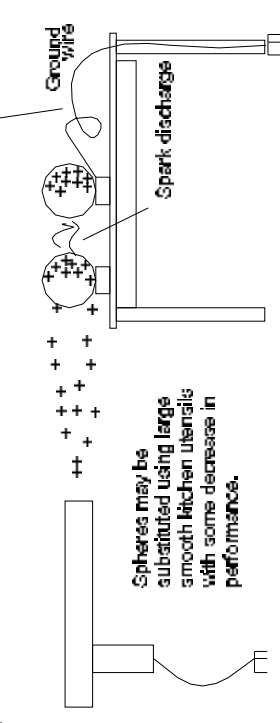
Your **HV350R** is similar to the above but has the added feature of maintaining a constant voltage throughout its operating range. No load or load resistor is needed and voltage can be adjusted from 5000 to 25000 is our basic model when operating at <1ma.. Lower voltage higher current models are available on customer requests

Your **HV350SAFE** is similar to the **HV350R** but has the added feature a high resistance output without any capacitance. This feature while limiting peak capacitive shocking currents does allow many experiments as shown.

Setup

1. Connect out put leads to intended load. Note that the lead exiting the rear of the unit must be used for the high voltage return or serious damage may result. Connect a high voltage lead to the out stack. It is suggested to cut the protruding lead and make the connection well into the plastic tube. This may be difficult but will reduce leakage corona from the connection junction.
2. Verify control is full ccw and turned off and there is a 3 amp fuse in holder.
3. Connect to a 12 volt source as described above. Plus connects to red lead and minus to black lead. The green lead is an earth grounding point and is not for the high voltage return. It is not the same as the green lead from the rear.
4. Turn on and adjust out put level as needed. Note the green LED on the HV350R indicates system is regulating. Do not allow spark to discharge to earth ground or continually break down as damage may occur

Fig -10 Experiments

<p>Experiment A</p>  <p>Sphere Moderate charge density</p> <p>High charge density at point due to like charges</p> <p>Negative charged ground</p>	<p>Experiment E</p>  <p>Rotor Round object Insulated stand</p> <p>Maximum rotor speed will occur when contact to sphere is made with ion emitter</p>
<p>Experiment B</p>  <p>Note corona and St Elmo's fire as a bluish discharge easily visible in low light conditions</p>	<p>Experiment F</p>  <p>Sensitive ion detector</p> <p>Collector</p> <p>Neon</p> <p>.001 mfd/100 volt capacitor</p> <p>Collector can</p> <p>Neon</p> <p>plastic base</p>
<p>Experiment C</p>  <p>Touch far end to grounded object</p>	<p>A small round metal bowl or similar object (ion collector) is attached to a glass jar or plastic cap. A neon lamp and capacitor are connected as shown. When the ion ray gun is pointed to the device the ion collector builds up a charge across the capacitor. Once the voltage reaches the ignition level of the neon lamp it flashes now discharging and repeating this action. The flashing rate is an indication of the ion field and can be used for relative measurements.</p>
<p>Experiment D</p>  <p>ZAP!</p> <p>+Grounded object</p> <p>Plastic pail</p>	<p>Experiment G</p>  <p>Ground wire</p> <p>Spark discharge</p> <p>Spheres may be substituted using large smooth kitchen utensils with some decrease in performance.</p> <p>Note the coil jumping and moving when a spark occurs. This is due to the generated magnetic field</p>