

STATICGENECON™

N99-B10-1324



Manual of Operations

IMPORTANT!
Read the following before using this equipment:
Carefully follow all instructions and observe all precautions given in this manual



Version2.1JL120216

CONTENTS

1. One Static GENECON™
2. One set of output cables
3. One instruction manual

SPECIFICATIONS

Static GENECON™ Housing: Made of Polycarbonate resin

Static GENECON™ Generator: The negative pole is made of polyvinyl chloride (PVC) resin. The positive pole is made of felt.

Gear Construction: Polyacetal resin

Output Cables: High voltage cables

Output: About 30 kV at the terminals.
More than 10 kV at the output ends.

Dimensions: 223mm x 75mm x 255mm (L x W x H)

Weight: 1 pound

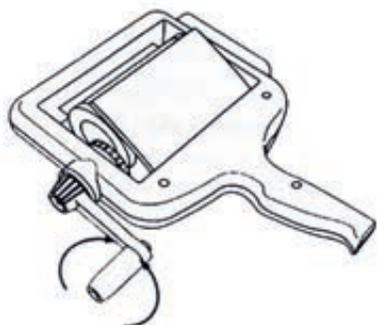


Fig. 1 Overview of Static GENECON™



Fig. 2 Humidifying the Unit when the Air is Dry

STORAGE

Place the unit in a plastic bag to protect it from dust.

PRECAUTIONS

The gears of the Static GENECON™ can break if unreasonable force is applied to the unit such as turning the handle fervently at high speed. Avoid spilling water, juice, coffee, or other drinks on to the felt, which is an important component of the static electricity-generating system.

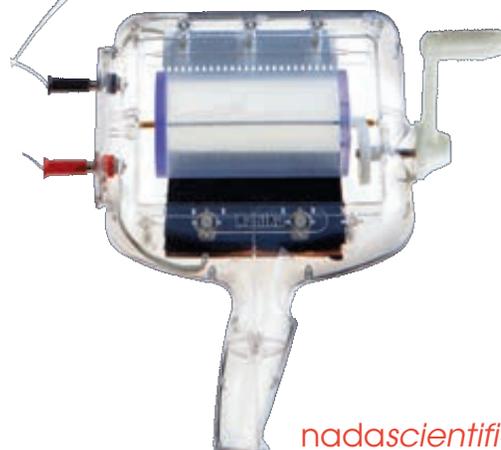
Static GENECON™ improves on its generating capability as the PVC-made drum fits comfortably into the felt surface through friction. Immediately after you purchase the unit, both voltage and output generated may not be satisfactory. Age the unit by turning the handle slowly about 100 times once every day for a few days. Aging is complete when you see fine scars on the surface of the PVC drum and the felt is partly unraveled and entangled.



PREPARATION & OPERATION

1. High voltage static electricity can be drawn from the output terminals as you turn the handle. (as shown in Figure 1) The polarity of the output voltage remains the same whether you turn the handle clockwise or counterclockwise.
2. Turn the handle of the Static GENECON™ at a rate of one or two turns per second. If you turn the handle at a high speed, the gears may break and friction between the PVC drum and the felt is reduced, which decreases the output voltage. Turn the handle slowly until you feel the frictional resistance from the unit to produce high voltage static electricity.
3. Generally, high voltage static electricity is difficult to produce in a humid atmosphere. The Static GENECON™ is best used in an environment of 40% to 60% humidity. This is because the friction between the felt and the PVC drum increases and the electric charges are smoothly transferred from the felt surface to the internal metal electrode when the felt is slightly moist. Therefore, in dry seasons such as winter (about 20% humidity), the drum and the felt will slip on each other, making it difficult to generate high voltage. Electric currents drawn from the electrodes are also reduced. Under conditions of high humidity, turn the drum several times while blowing humid exhaled air on the area between the drum and the felt (Figure 2). You are ready to start the experiment when a sizzling sound is audible near the collecting electrode on the upper part of the Static GENECON™ main unit.

* Humidifying with exhaled air is effective when the air is dry.
Never use a humidifier or similar units.



ELECTRIC PENDULUM

N99-B10-1324-01

The pendulum ball, when in contact with the electrode terminal on one side, collects the same polarity charge 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. This "round trip" process is repeated as long as current is generated across both electrodes.

**HAMILTON FLYWHEEL**

N99-B10-1324-02

The Hamilton Flywheel is used to demonstrate the positive and negative polarities by connecting both the flywheel and PVC plate to the Static GENECON™ cable.

**ALUMINUM COLLECTING SPHERE**

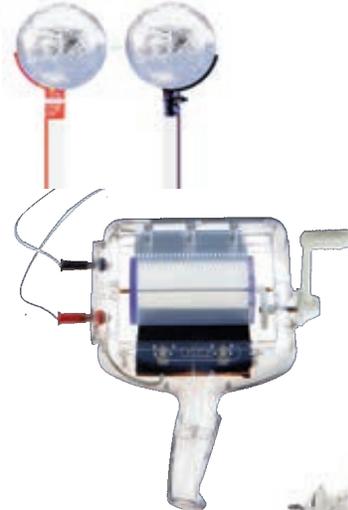
N99-B10-1324-03

By sticking strips of moisture-resistant paper on top of the sphere, you will experiment and observe the paper strips levitating when turning the handle. The user can estimate the direction of the electric lines of force by noting the direction of the floating strips.

**SIMPLIFIED COLLECTING SPHERE ASSEMBLY KIT**

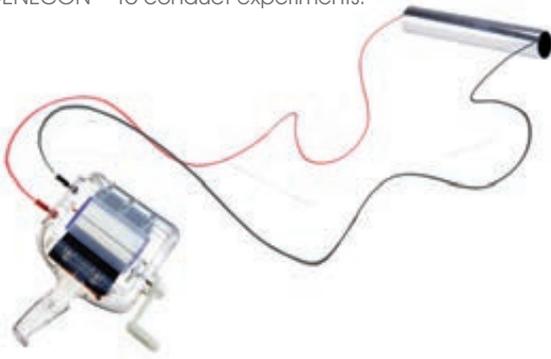
N99-B10-1324-04

This kit consists of 7 components that are assembled to create a collecting sphere. Components include: collecting sphere, base, leads with lugs, screws and nuts for electrodes, rubber pads, aluminum tape and foil.

**SIMPLIFIED CAPACITOR ASSEMBLY KIT**

N99-B10-1324-05

This kit includes the following components: 1 PVC pipe, 1 plastic bag, 2 sheets of aluminum foil, 2 pieces of electrode leads (red and black). Assemble this kit and use with the Static GENECON™ to conduct experiments.

**STATIC MOTOR ASSEMBLY KIT**

N99-B10-1324-06

Connect the output cables to the electrode terminals on the static motor. By slowly turning the handle, the cup turns as the electrode tape on the cup and the electrode poles contact each other and then break away.

**MOORE'S MOTOR ASSEMBLY KIT**

N99-B10-1324-07

This kit will permit the user to experiment using a conductive ball inside a tray laced with aluminum tape. As power is supplied to the electrodes, the ball goes around the tray until the user stops generating power.

**3 COLOR FLUORESCENT LAMP**

N99-P70-0745

This tri-colored light is a great indication of the power generated by the Static GENECON™. Watch as it lights up!



ELECTROSTATIC FIELD APPARATUS

WITH **STATIC GENECON™**

N99-B10-1493

PURPOSE

This unique apparatus is designed for the observation of electric lines of force. The visible lines are generated by applying an external electric field to the plastic observation cell filled with a special solution. Individual or classroom size demonstrations can be conducted by using an overhead projector. Select any of the five electrode plates to enhance the experiment.

CONSTRUCTION

- Observation Tank: Made of transparent plastic
- Dimensions: 160mm x 105mm x 7mm (L x W x H)
- Holder: Holds the observation tank which is inserted laterally; made of transparent plastic
- Electrode Plate: Positioned on the observation tank. Caution: Do not press it down with force.
- Power Source: To apply high voltage to the electrode plate, connect the black lead wire to the Static GENECON™'s black inlet and then connect the wire to the black inlet on the holder. Next, connect the red lead wire to the Static GENECON™'s red inlet and then connect the wire to the red inlet on the holder.

HOW TO USE

1. Attach the observation tank to the holder (insert it laterally with the air chamber upward). Set the stopper. The observation tank should not be too clean; slightly smear with a drop of oil to increase the observation tank's responsiveness to static electricity.
2. Lay the holder on an overhead projector (if applicable). Tilt the holder so that the air bubble comes out of the air chamber to stir the liquid in the tank. Once stirring is complete, tilt the holder to return the air bubble back to the air chamber. **Caution:** Do not set the electrode plate on the holder while performing this procedure.
3. Place the electrode plate into position on the holder with the electrode on the inlet side of holder. **Caution:** Forcing the electrode plate into the observation tank can damage the unit.
4. Adjust the focus of the overhead projector (if applicable).
5. Connect the black ground lead wire from the Static GENECON™ to the black inlet of the holder and connect the red lead wire of the Static GENECON™ to the red inlet of the holder.
6. Turn the handle of the Static GENECON™ to generate an electric current, then observe the formation of the lines of force.
7. When replacing the electrodes or making a new electric line of force, be sure to remove the electrode plate and stir the liquid with the air bubble.
8. In the case of unsatisfactory results due to humidity or other factors, wipe both glasses of the tank with a drop of alcohol.



DESIRABLE CONDITIONS TO OBTAIN GOOD RESULTS

1. The observation tank is not charged with electricity.
2. The observation tank is well insulated.

