

Manual of Operation

IMPORTANT!

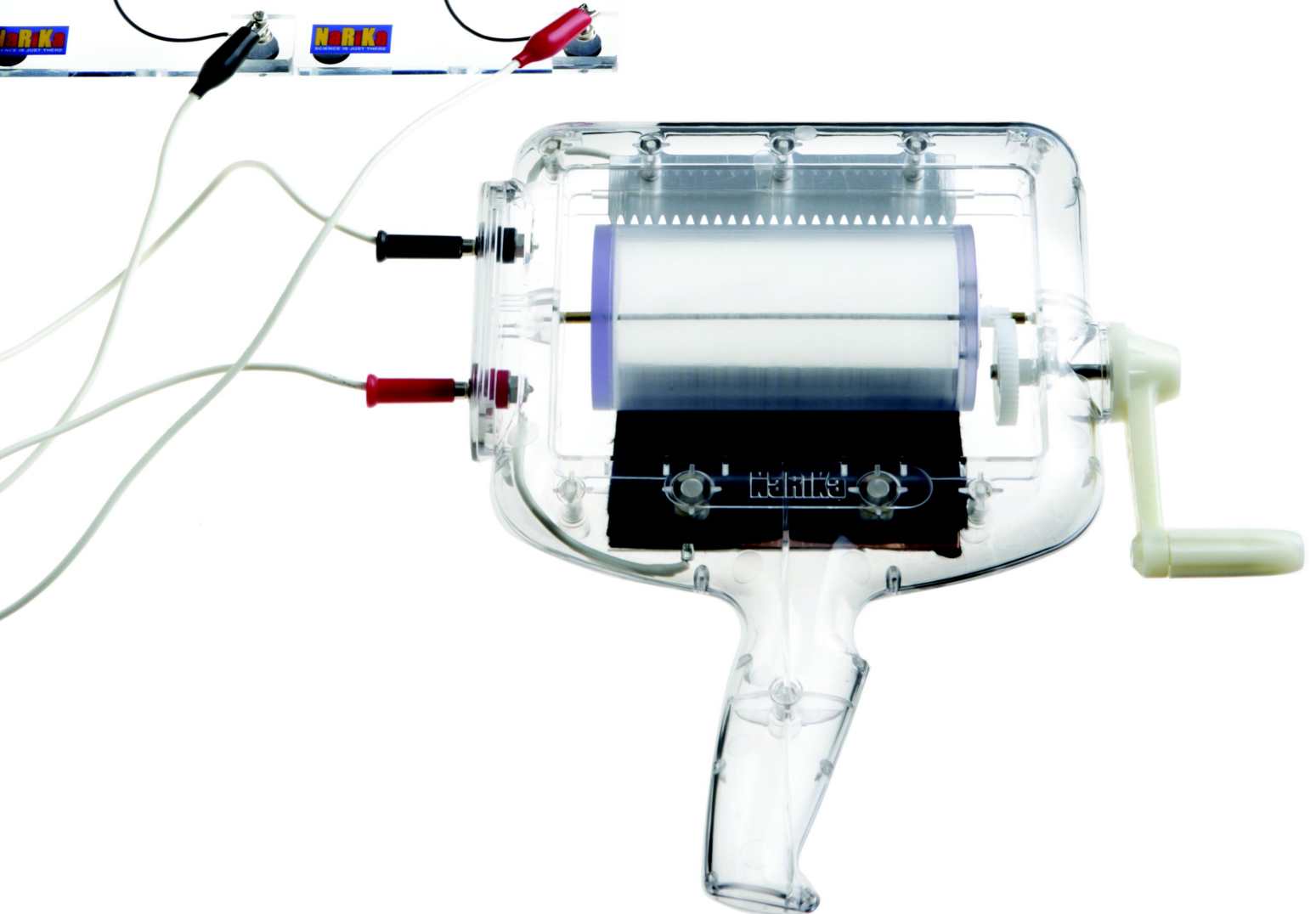
Read the following before using this equipment:

* Carefully follow all instructions and observe all precautions given in this manual.

1. Do not touch the output terminals or the clips at the tip of the output cables when turning the handle of Static GENECON. High voltage exceeding 10,000 volts is present, and a severe electric shock will result.
2. Never ask a person to grip the output terminals or the clips at the tip of the output cables and turn the handle of GENECON. A severe electric shock will lead to a fatal accident.
3. Do not turn the handle of Static GENECON at high speed forcedly. The gears will break. (The voltage does not rise if you turn the resin drum at high speed. On the contrary, friction between the drum and the felt surface is reduced to decrease the generating capacity.)
4. Be careful not to spill water over the felt surface. The felt surface will not return to its original condition even when it is dried, making static generation difficult.

Warning!

Caution!



Constituent Parts

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

Specifications

Static GENECON, housing: Made of polycarbonat resin

Static GENECON, generator: The negative pole is made of polyvinyl chloride (PVC) resin.

The positive pole is made of felt.

Gears: Polyacetal resin

Output cables: High-voltage cables (withstand voltage: 30kV)

Output: About 30,000 volts at the terminals in the housing; more than 10,000 volts at the ouput end of the dedicatd cables

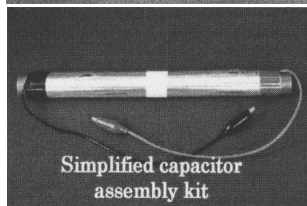
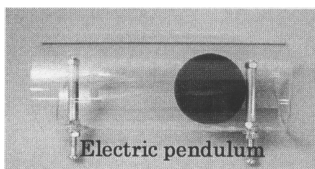
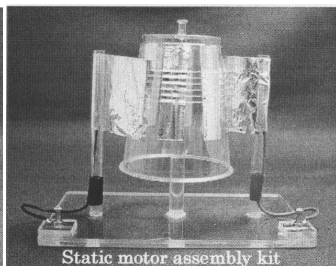
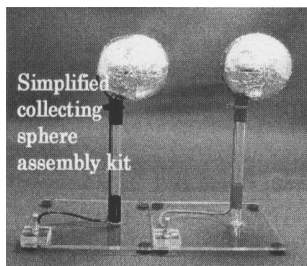
Size: 223x255mm, thickness 75mm, Weight: Approx. 400g

Features of Static GENECON

1. High-voltage static electricity can be drawn from the output terminals as you turn the handle shown in Fig. 1. The polarity of the output voltage remains the same whether you turn the handle to the right or left.
2. As mentioned on the preceding page, the best way is to turn the handle of GENECON at a rate of one or two turns per second. If you turn the handle at high speed, the gears break and friction between the PVC drum and the felt is reduced to decrease the voltage. Turn the handle slowly to feel the frictional resistance from the unit, and you will get static electricity of high voltage.
3. Generally, static electricity of high voltage is difficult to produce in a humid atmosphere. However, 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. In this case, turn the drum several times while blowing **humid exhaled air** to the area between the drum and the felt (Fig. 2). You are ready to start the experiment when a sizzling sound comes from near the collecting electrode on the upper part of the GENECON main unit.

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

Examples of Applicable Experimental Devices



Assemble the static motor known as the Franklin Motor and think over its principle. What is the highest speed?

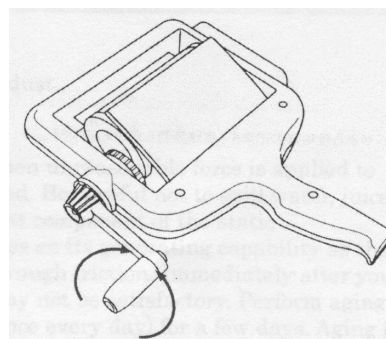
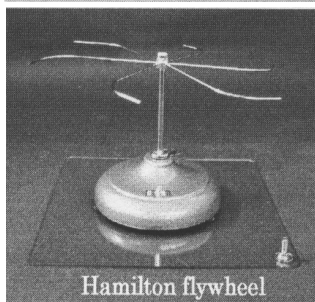


Fig. 1 Overview of Static GENECON



Fig. 2 Humidifying the Unit when the Air Is Dry

Storage and Precautions

Storage

Place the unit in a plastic bag, etc . . . and keep away from dust.

Precautions

As mentioned on the preceding page, the gears break when unreasonable force is applied to the unit such as turning the handle forcedly at high sped. Be careful not to spill water, juice, coffee, or other drinks over 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. Perform aging of the unit (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.