

Van de Graaff Generator

Junior
High
SchoolSenior
High
School

ESP59210

Van de Graaff generator is a static electric machine which produces very high DC voltage by collecting and storing electric charge on the hollowed spherical surface.

This apparatus can be operated in two ways. First is using a 220 volt AC electric motor which has speed adjuster. Second is directly run by hand. Changing the running method is easily done by displacing the rubber belt from the motor to hand pulley or vice versa.

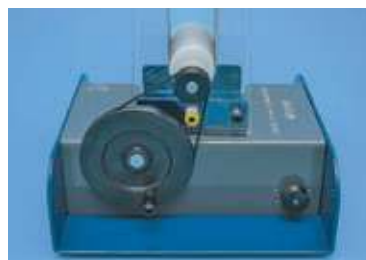
Advantages

- + Hollowed spherical is made of stainless steel in 220 mm diameter. The upper part can be uninstalled to show the generator work mechanism.
- + Hollow spherical capacitance ± 12 pF as the electric charge collector.
- + Static electric voltage can reach ± 330 kV. Electric spark can reach 50 – 100 mm distance, depends on the environment humidity.
- + On the lower brush there is 4 mm socket which can be used to connect to other high voltage source if necessary.



Specification

Charge collecting sphere diameter	: 220 mm
Spark gap length	: 50 – 100 mm (maximum)
Mains voltage to run motor	: 220V
Dimension	: 630 × 195 × 195 mm
Weight	: 5,3 kgs



Can be manually operated by hand by moving the driving belt position.



Use the additional comb to optimize the electric charge on the Van de Graaff sphere.



50 - 100 mm length of spark, depending on ambient conditions.



When the Electric Whirl is charged, the discharge repulsion at the point can make the wheel rotates freely on the axle.



Component List


All accessories are provided with plug 4 mm system, mounting on dome with 4 mm socket system.

Cat. code	Component	Description	Qty
A to J ESP59210	Van de Graaff Generator & Accessories	ESP59212 Van de Graaff w with all listed accessories below .	1 set
a ESP59212	Van de Graaff Generator	Static electricity producing machines.	1 pc
b ESP 592.01	Conductor Sphere on Rod	Mounted on a 410 mm long, \varnothing 10 mm rod with 4 mm safety terminal. The rod is mounted on a base.	1 set
c ESP 592.02	Perspex Pillar with Metalised Sphere	With suspended metalised sphere, Plexiglas material, \varnothing 10 \times 150 mm. This unit can be plugged into the top of the Van de Graaff sphere as a simple "pith ball" electroscope.	1 pc
d ESP 592.03	Faraday's Pail	Aluminum material, \varnothing 72 \times 100 mm, complete with 4 mm banana plug.	1 pc
e ESP 592.04	Metalised Spheres in Transparent Cylinder	Plexiglas material, \varnothing 56 \times 150 mm with cap and bottom made of aluminum. Fitted with banana plug and 3 pieces of metalised spheres.	1 pc
f ESP 592.05	Hair Model	Several nylon thread, \varnothing 0,5 \times 200 mm, bunched at one end on one end of a metal rod with a banana plug at the other end. When plugged into the hole of the charged Van de Graaff sphere, the "hairs" stand up in several direction.	1 pc
g ESP 592.06	Electric Whirl	Aluminum material, \varnothing 50 \times 0,5 mm, completed with brass axle, \varnothing 2 \times 60 mm, mounted on the plug.	1 pc
h ESP 592.07	Discharge Ball	Nickel plated brass; mounted on a brass rod \varnothing 4 \times 120 mm; nickel plated with insulated; complete with 500 mm length of lead with 4 mm banana plug.	1 pc
i ESP 592.08	Discharge Pointer	Brass rod nickel plated \varnothing 3 mm \times 150 mm, for deflecting or blow out a candle flame.	1 pc
j ESP 23.04	Neon Lamp	Mounted on plastic case with 4 mm plug 19 mm.	1 pc



Experiment Topics

- Standing Hairs
- Electric Spark
- Flying Ball
- Electric Wheel
- Jumping Ball
- Electric Charge Detecting
- Flame of Fire Direction is Bend
- Neon Lamp is Glowing

 Van de Graff Generator experiment guide in English (LPE 145E).



Standing Hairs

Jumping Ball

