

Technical data:

Sprak length: up to 150 mm

Diameter of the conductor ball: approx. 280 mm

Actuation: electrical motor or hand-driven

Voltage input: 230 V/ 50 ... 60 Hz

Dimensions: approx. 380 x 230 x 700 mm

Weight: approx. 4,5 kg

Supplied accessories:

Conductor ball on rod, L = approx. 300 mm, D = ca. 100 mm

Power supply: 10V DC / 3 A

Foil and pointed wheel

Note:

- The device may only be operated by qualified individuals or those instructed by such individuals. Supervision required!
- Make sure that the device does not fall while moving, packing or unpacking it. Should this nevertheless occur, disconnect the power cord from the mains immediately and have the device checked by authorized maintenance personnel and repaired if necessary.
- There are no parts within the device which must be maintained by the user.
- The device may only be repaired by authorized personnel..
- Do not place any vessels containing liquids on the case of the device.



DE525-3B

Van de Graaff generator II



Usage:

The Van de Graaff generator (belt generator) is an electrostatic device for producing electricity with a very high DC voltage and a small amperage.

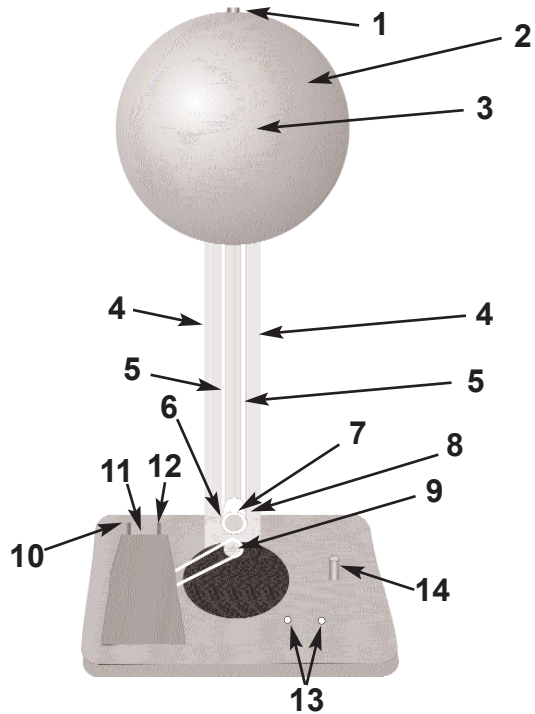
On the other hand, the Van de Graaff generator serves to demonstrate how electrically charged particles can be separated from each other.

Beyond this, it is an important source of electrical power and charges for the experiments in electrostatics.

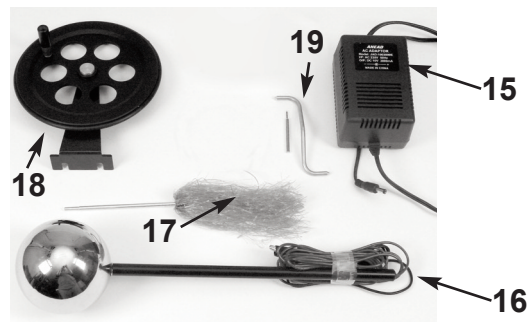


Fruhmann GmbH - A-7343 Neutal - 2012/09/24





- 1 - 4-mm-mass bush
- 2 - Hollow ball
- 3 - Pointed ridge S2
- 4 - Acrylic glass support
- 5 - Silicone belt
- 6 - Roller (pulley)
- 7 - Pointed ridge S1
- 8 - Pointed ridge S3
- 9 - Driving pulley, driving belt
- 10 - Switch for internal illumination
- 11 - Bush for power supply - 10 V DC / 3 A
- 12 - Power switch
- 13 - Screw nuts for the crank
- 14 - Bush for conductor ball on rod
- 15 - Power supply 10 V DC
- 16 - Conductor ball on rod
- 17 - Foil
- 18 - Driving wheel
- 19 - Pointed wheel



Usage:

The Van de Graaff - Generator is supplied by the fixed-voltage power supply. When the power switch (10) is turned on, the integrated LED power control light illuminates.

When working with the Van de Graaff generator, it is important that the hollow sphere (1), the silicone belt and the two vertical acrylic glass supports are free of dust and dirt! The degree to which the surface of the device is smudged and the humidity of the air in the operating room both affect how well the Van de Graaff generator operates. It is recommended that no one stand too close to the Van de Graaff generator since the human body also generates humidity, thus preventing the buildup of a large static charge. It should also be noted that exposure to strong sunlight causes the silicone belt (i.e. an insulator) to turn into a conductor. It is therefore recommended that the protective hood provides are used when storing the generator.

Operating mode:

The non-conducting silicone belt passes the pointed ridge S1 (6) at a rate of 50 to 60 revolutions per minute. Negatively charged particles, i.e. from the air or from the hollow sphere (carried downwards by the silicone belt), gather at point P opposite the pointed ridge S1. This negative charge results in a positive charge being influenced or sucked out of the air at the pointed ridge S1 which is grounded.

These charged particles are moving upwards by the silicone belt. A second pointed ridge inside the hollow sphere, S2, collects the positively charged particles which then disperse evenly along the outer surface of the hollow sphere. Superfluous negatively charged particles are moved from here downwards by the silicone belt. At point P they cause positively charged particles to be drawn from the ground at the pointed ridge S1 and these in turn are transported toward the hollow sphere. The remaining negative particles are given off to the ground at the pointed ridge S3 and the silicone belt is neutral once again!

The charges attached to the hollow metal ball can be removed due to the usage of a rod or ball (decharging).

This conductor should be connected with the 4-mm mass bush of the generator.

