

Van de Graaff Generator with Accessory Set

User Manual

Educational Model

Intended use

Electrostatic generator for physics teaching demonstrations of static charge, charge distribution, corona discharge, sparks and ionization.

Intended users

Physics teachers, lecturers and science educators. Students only under direct teacher supervision.

Read this manual completely before first use and keep it with the product. This document provides general operating, care and safety guidance. Where the product is supplied with manufacturer labeling or instructions, those take precedence. For questions, a replacement copy, or a digital copy of this manual, email sales@scimedstore.com.

1. Safety

Safety warnings and cautions

- Produces high voltage. Do not touch the dome while the generator is running unless performing a supervised demonstration designed for it.
- Persons with pacemakers or other implanted electronic devices must stay away from the operating generator.
- Keep away from computers, phones and other sensitive electronics, and from flammable vapors.
- Always discharge the dome with a grounded discharge sphere or wand before touching it or doing maintenance.
- Students must operate the generator only under direct teacher supervision.
- For motorised models: connect only to a grounded outlet with the supply voltage marked on the unit, unplug before cleaning or belt changes, and keep liquids away from the base.
- Keep fingers, hair and loose clothing away from the moving belt and crank.

2. Package contents

- Van de Graaff generator
- Artificial hair brush
- Faraday pail
- Neon bulb
- Vibrating ion column in transparent container
- Spare rubber belt

Check contents on receipt. Report missing or damaged items to sales@scimedstore.com within 48 hours of delivery.

3. Specifications

Drive	Varies by variant: Manual Type (hand crank), Generator Motorised (electric motor), Generator Superior Model (electric motor, upgraded dome)
Charge transfer	Rubber belt with metallic combs
Dome	Polished metal
Insulating column	Perspex
Accessory socket	4 mm socket on top of dome

4. Unpacking and setup

- 1 Place the generator on a stable, dry, insulating table away from walls and metal objects.
- 2 Check that the belt is correctly fitted on its rollers and not cracked.
- 3 Fit the dome securely on top of the Perspex column.
- 4 Prepare a grounded discharge sphere or wand for discharging the dome.
- 5 For motorised models, check the supply voltage marked on the unit and plug into a grounded outlet with the switch off.
- 6 Make sure the room and the generator are dry; humidity reduces performance.

5. Operation

Charging the dome

- 1 Manual type: turn the crank steadily. Motorised types: switch on with the power switch and use the speed control if fitted.
- 2 Allow a short time for charge to build on the dome.
- 3 Bring a grounded discharge sphere near the dome to show a spark, keeping hands on the insulated handle.
- 4 Switch off or stop cranking and discharge the dome fully before touching it.

Accessory demonstrations

- 1 Hair brush: with the generator off and discharged, fit the artificial hair brush into the 4 mm socket on top of the dome. Run the generator and observe the strands spread apart.
- 2 Neon bulb: hold the neon bulb by its glass end near the charged dome and observe it glow.
- 3 Faraday pail: place the pail on the dome per your lesson plan to show that charge collects on the outer surface.
- 4 Ion column: place the ion column near the charged dome and observe the motion inside the container.
- 5 Stop the generator and discharge the dome after each demonstration.

Shutting down

- 1 Stop cranking or switch off the motor.
- 2 Discharge the dome with the grounded discharge sphere.
- 3 Unplug motorised models.
- 4 Remove accessories and store them.

6. Cleaning and disinfection

- Switch off, unplug (motorised models) and discharge the dome before cleaning.
- Wipe the dome and Perspex column with a dry, lint-free cloth to remove dust and fingerprints, which reduce performance.
- Keep the belt clean and dry. Do not use oils or solvents on the belt.
- Do not allow liquids into the base or motor housing.

7. Maintenance and storage

- Store covered in a dry place to keep dust and moisture off the dome, column and belt.
- Check the belt regularly and replace it with the spare belt when it is worn, stretched or cracked.
- Check the combs are clean and correctly positioned close to the belt.
- For motorised models, check the power cord for damage and refer electrical repairs to qualified service personnel.

8. Troubleshooting

Problem	Likely cause	What to do
Little or no charge on the dome	High humidity or dusty dome and column	Dry the room, wipe the dome and column clean, and try again.
Belt does not move	Belt slipped off rollers or broken	Switch off, unplug, discharge and refit or replace the belt.
Motor does not run	No power or loose cord	Check the outlet and cord; refer to qualified service if the fault continues.
Weak sparks	Combs dirty or out of position	Clean the combs and adjust them close to the belt.
Hair brush strands do not rise	Not enough charge or humid air	Run the generator longer in dry conditions.

9. Disposal

- Discharge the dome before disposal.
- Dispose of motorised models as electrical waste in accordance with local regulations. Do not discard in household waste.
- Dispose of manual models and worn belts as general or recyclable waste per local regulations.

10. Warranty and support

Products are covered by SciMed's standard warranty (12 months from purchase unless a different period is stated on your invoice). Warranty terms: scimedstore.com/pages/warranty.

Support, spare parts and additional copies of this manual: sales@scimedstore.com. Please include your order number and a photo of the product or issue.

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