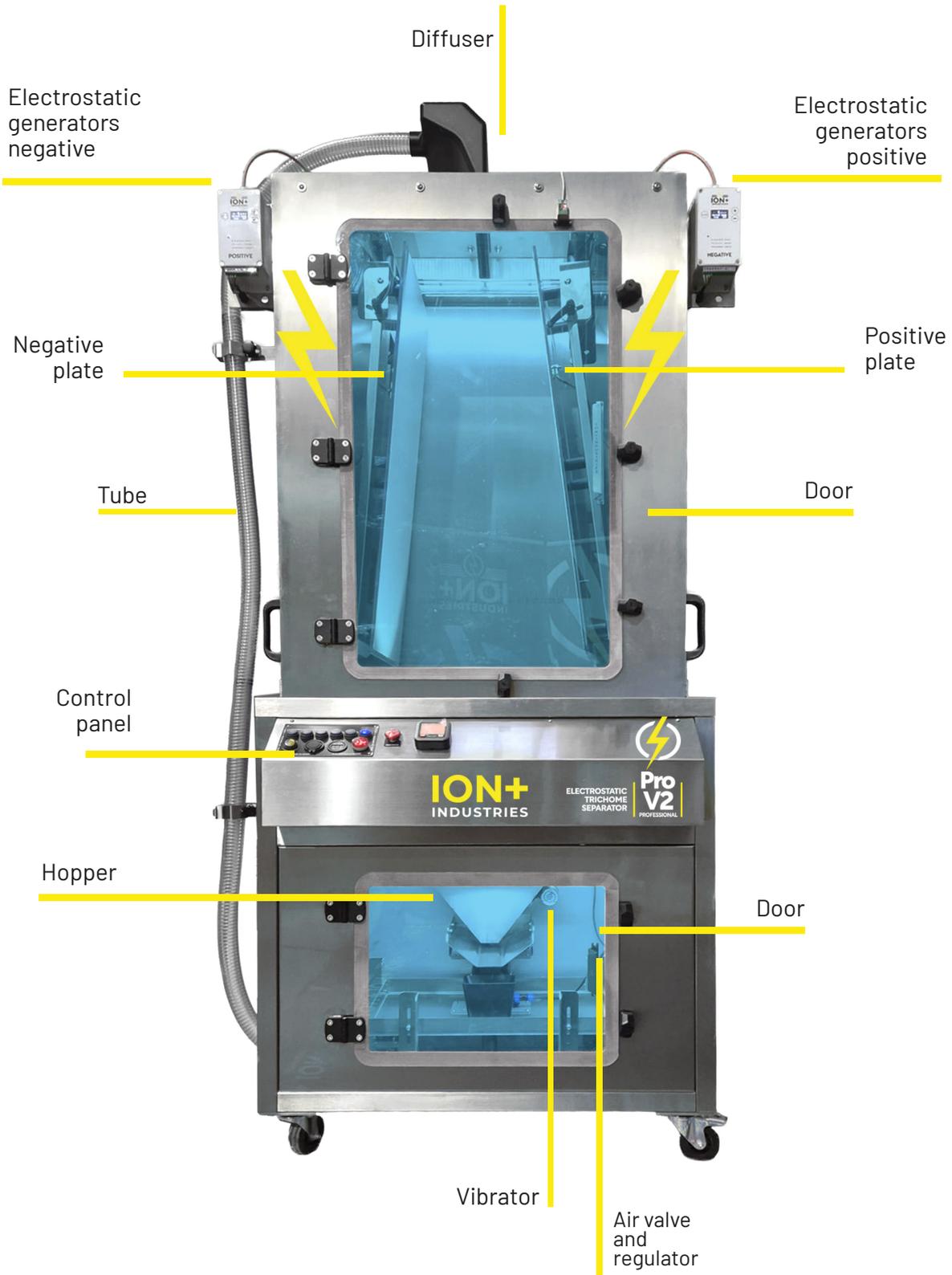


ELECTROSTATIC TRICHOME SEPARATOR



PROFESSIONAL V2

OPERATION AND INSTRUCTION MANUAL



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1. Introduction

Thank you for trusting ION+INDUSTRIES.

This manual contains all the necessary information for the correct installation, operation, maintenance, and safety of the electrostatic separation machine for trichomes and plant material.

Please carefully follow the instructions to ensure optimal and safe operation of the equipment.

2. Equipment Description

The ION+INDUSTRIES machine is designed to separate trichomes from plant material using the principle of electrostatic attraction.

The system uses two electrically charged plates (one positive and one negative) that generate a high-voltage electrostatic field. During the process, trichomes are attracted to the positive plate while plant matter adheres to the negative plate, achieving clean and efficient separation.

Main Components:

Structural frame made of stainless steel.

Positive plate made of anodized aluminum (enhances trichome attraction).

Negative plate made of stainless steel (enhances attraction of plant residues).

Antistatic polycarbonate door, ensuring visibility and safety.

Upper feed hopper with adjustable vibrator (3 speeds).

Integrated diffuser and compressed air system.

Adjustable electrodes with position-lock brake.

Positive and negative electrostatic generators (adjustable up to 20 kV).

Control panel with independent controls.

Decompactor and auxiliary USB output for device charging.

3. Installation

Place the machine on a level and stable surface.

Connect the power cable to a 220 V single-phase grounded outlet.

Connect the compressed air line to the rear air inlet of the machine.

Recommended working pressure: 3 bar.

Requires a minimum 150 L compressor and 200 m³/h for continuous operation.

Ensure that the pneumatic circuit is free of moisture and oil.

Check that all doors are properly closed before starting operation.

Recommended environmental conditions:

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Temperature Range: Designed to operate efficiently between -6°C and $+12^{\circ}/15^{\circ}\text{C}$, maintaining consistent separation performance.

Relative Humidity: Recommended range is 35%–45%. This optimizes trichome detachment and prevents clumping, ensuring high efficiency even in cold-room.

4. Electrical and Pneumatic Connections

Power supply: 110–220 V single-phase / max. 2.5 A

Ground connection: mandatory

Air inlet: quick-connect fitting (3 bar pressure)

Flow regulator: integrated into the internal circuit

Noise level: 70 dB (peaks up to 75 dB when activating the decompressor)

5. Operating Instructions

1. Connect the machine to the electrical supply and the compressed air source.
2. Turn on the machine lighting, open the air valve, and adjust airflow using the integrated regulator.
Recommended airflow setting: between 6 and 8 on the speed dial.
3. Open the door and load the biomass into the main hopper.
4. Adjust the distance between electrodes according to the desired separation.
5. Secure the electrodes using the locking brake and close the door.
6. Activate the positive and negative electrostatic generators.
7. Activate the hopper at speed 1 (low speed).
Speed 2: high speed
Speed 3: full discharge

Process Description:

Once activated, the biomass falls from the main hopper onto the vibrator and passes into a secondary hopper made of antistatic PLA.

From there, the material is conveyed through a food-grade silicone tube, where it becomes electrostatically charged before entering the upper diffuser.

Inside the diffuser, the biomass is evenly distributed, falling in a curtain-like form between the two electrostatically charged plates.

Trichome heads are attracted to the positive plate, while plant residues adhere to the negative plate.

Material that does not adhere falls back into the main hopper, automatically repeating the cycle. The process is continuous, allowing efficient and uninterrupted separation.

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6. Control Panel and Adjustments

The control panel includes:

- Main ON/OFF switch
- Internal lighting control
- Vibrator speed selector (1, 2, 3)
- Independent activation of positive and negative electrostatic generators
- Decompactor button
- Air pressure and flow regulator
- USB port for device charging



7. Safety

Important Precautions:

- Do not operate with the door open.
- Do not insert hands or tools into the separation area.
- Do not use in humid environments or near flammable liquids.
- Disconnect the equipment before any cleaning or maintenance.
- Ensure proper grounding before operation.
- Avoid contact with electrodes during operation.
- Keep metallic objects and conductive materials away from the machine.

Integrated Safety Features:

- Protective fuses
- Ground connection
- Antistatic polycarbonate doors
- Electrode locking system with brake

8. Cleaning and Maintenance

Clean the equipment every 8 working hours to ensure proper electrostatic adhesion. Use a dry cloth, compressed air, or isopropyl alcohol to remove dust and biomass residues. Do not use water, abrasive products, or solvents other than isopropyl alcohol. Ensure the plates are free of residue before each use. Periodically check the tightness of screws and electrical connections. Always disconnect the equipment from the power supply before cleaning.

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9. Troubleshooting

Problem	Possible Cause	Solution
No separation occurs	Generators switched off, low voltage, or grounding issues	Check generators, set voltage to 5.5 kV, and verify grounding
Material accumulates in the hopper	Excessive load, material too влаждо, or low air pressure	Reduce biomass quantity, ensure material is dry, or increase airflow
Insufficient vibration	Low speed setting or vibrator malfunction	Check settings or inspect the component
Excessive noise	Vibrator or decompactor improperly adjusted	Check fastenings and adjustments
Sparking or electrical discharge	Electrical arcing	Reduce power to 5.5 kV; if it persists, contact authorized service
Material sticking to electrodes	Dirt or residue buildup	Clean electrodes with isopropyl alcohol

10. Technical Specifications

Parameter - Value
Power supply - 110-220 V single-phase
Maximum consumption - 2.5 A
Working pressure - 3 bar
Compressor required - 150 L / 200 m ³ /h minimum
Dimensions - 230 cm (H) × 98 cm (L) × 54 cm (D)
Weight - 110 kg
Noise level - 70 dB (max. 75 dB with decompactor)
Chassis material - Stainless steel
Positive plate - Anodized aluminum
Negative plate - Stainless steel
Doors - Antistatic polycarbonate
Operating mode - Continuous
Air regulator - Integrated

Note:

An air compressor is required for operation, with a minimum capacity of 150 L and an air delivery of 450 L/min.

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11. Warranty

Electrostatic generators: 5-year warranty

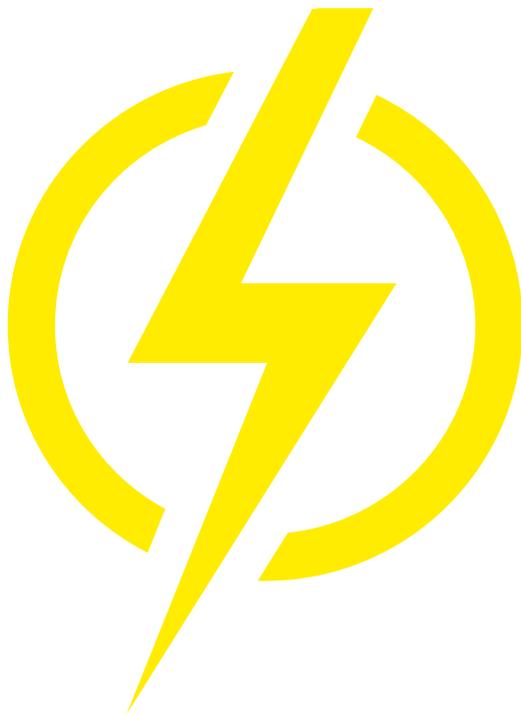
Vibrator: 10-year warranty

The warranty does not cover damage caused by improper use, impacts, moisture, or unauthorized modifications.

The use of original ION+INDUSTRIES spare parts is always recommended.

12. Technical Service:

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