

ELECTROSTATIC
TRICHOME
SEPARATOR



**MINI
RECIRCULATING**

**OPERATION AND
INSTRUCTION MANUAL**



ELECTROSTATIC TRICHOME SEPARATOR

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1. Introduction

Thank you for trusting ION+INDUSTRIES.

This manual contains all the information necessary for the correct installation, use, maintenance, and safety of the electrostatic trichome and plant material separation machine. 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 chassis made of stainless steel.
- Positive plate in anodized aluminum (enhances trichome attraction).
- Negative plate in 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.
- 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

1. Place the machine on a level and stable surface.
2. Connect the power cable to a 220 V single-phase grounded outlet.
3. Connect the compressed air line to the rear inlet of the machine.
Recommended working pressure: 3 bar
Requires a minimum 150 L compressor and 200 m³/h for continuous operation
4. Ensure that the pneumatic circuit is free of moisture and oil.
5. Check that the doors are properly closed before starting operation.
6. Recommended environmental conditions:
 - Maximum temperature: 16 °C
 - Maximum relative humidity: 40 %
 - Humedad relativa máxima: 40 %

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4. Electrical and Pneumatic Connections

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

Grounding: mandatory

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

Flow regulator: integrated into the internal circuit

Noise level: 70 dB (peaks of 75 dB when the decompactor is activated)

5. Operating Instructions

Connect the machine to the electrical power supply and the compressed air line.

Switch on the machine lighting, open the air valve, and adjust the airflow using the integrated regulator.

It is recommended to keep the flow regulator between 6 and 8 on the speed dial.

Open the door and load the biomass into the main hopper.

Adjust the distance between the electrodes according to the desired type of separation.

Lock the electrodes in position using the locking brake and close the door.

Activate the positive and negative electrostatic generators.

Activate the hopper at speed 1 (low speed).

Speed 2: fast

Speed 3: full discharge

Process Description:

Once activated, the biomass falls from the main hopper onto the vibrator, then 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 like a curtain between the two electrostatically charged plates.

The 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 for efficient, uninterrupted separation.

Si quieres, continúa con las siguientes secciones del manual y te lo dejo en formato técnico unificado listo para PDF o documentación industrial.

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6. Control Panel and Settings

The control panel includes:

- Main ON/OFF switch.
- Internal lighting control.
- Vibrator speed selector (1, 2, 3).
- Individual 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 the machine 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 performing any cleaning or maintenance.
- Ensure proper grounding before starting operation.
- Avoid contact with the electrodes during operation.
- Keep metallic objects and conductive materials away.

Integrated safety features:

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

8. Cleaning and Maintenance

- Clean the equipment every 8 hours of operation 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.
- Check that the plates are free of residue before each use.
- Periodically inspect the tightness of screws and electrical connections.
- Always disconnect the equipment from the power supply before cleaning.

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9. Troubleshooting

No separation occurs

Electrostatic generators disabled, low voltage, or grounding issues

Check generators, set to 5.5 kV, and verify the ground connection

Material accumulates in the hopper

Excess load, overly moist material, 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 mountings and fasteners

Sparking or electrical discharge

Electrical arcing

Reduce power to 5.5 kV; if the issue persists, contact authorized service

Material sticking to electrodes

Dirt or residue buildup

Clean electrodes with isopropyl alcohol

10. Technical Data

Parameter / Value

Power supply: 110-220 V single-phase

Maximum consumption: 2.5 A

Working pressure: 3 bar

Dimensions: 86 cm (H) × 50 cm (L) × 20 cm (D)

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

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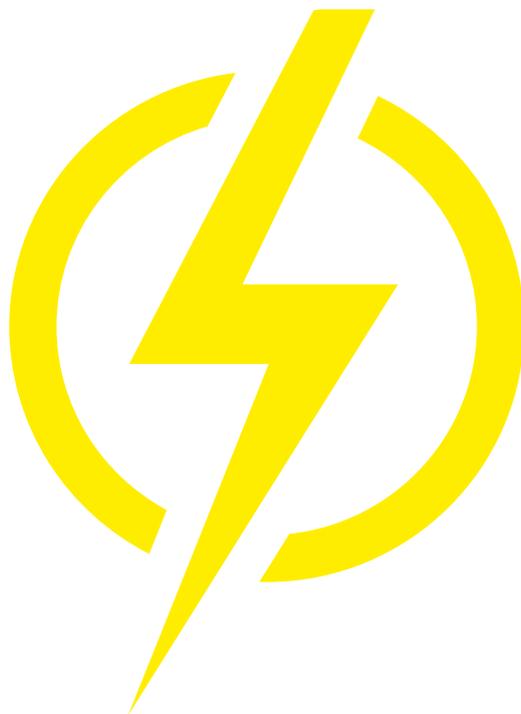
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11. Warranty

- Electrostatic generators: 5-year warranty
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- Vibrator: 10-year warranty
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- The warranty does not cover damage caused by improper use, impacts, humidity, or unauthorized handling.
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- It is recommended to always use original ION+INDUSTRIES spare parts.

12. Technical Service

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