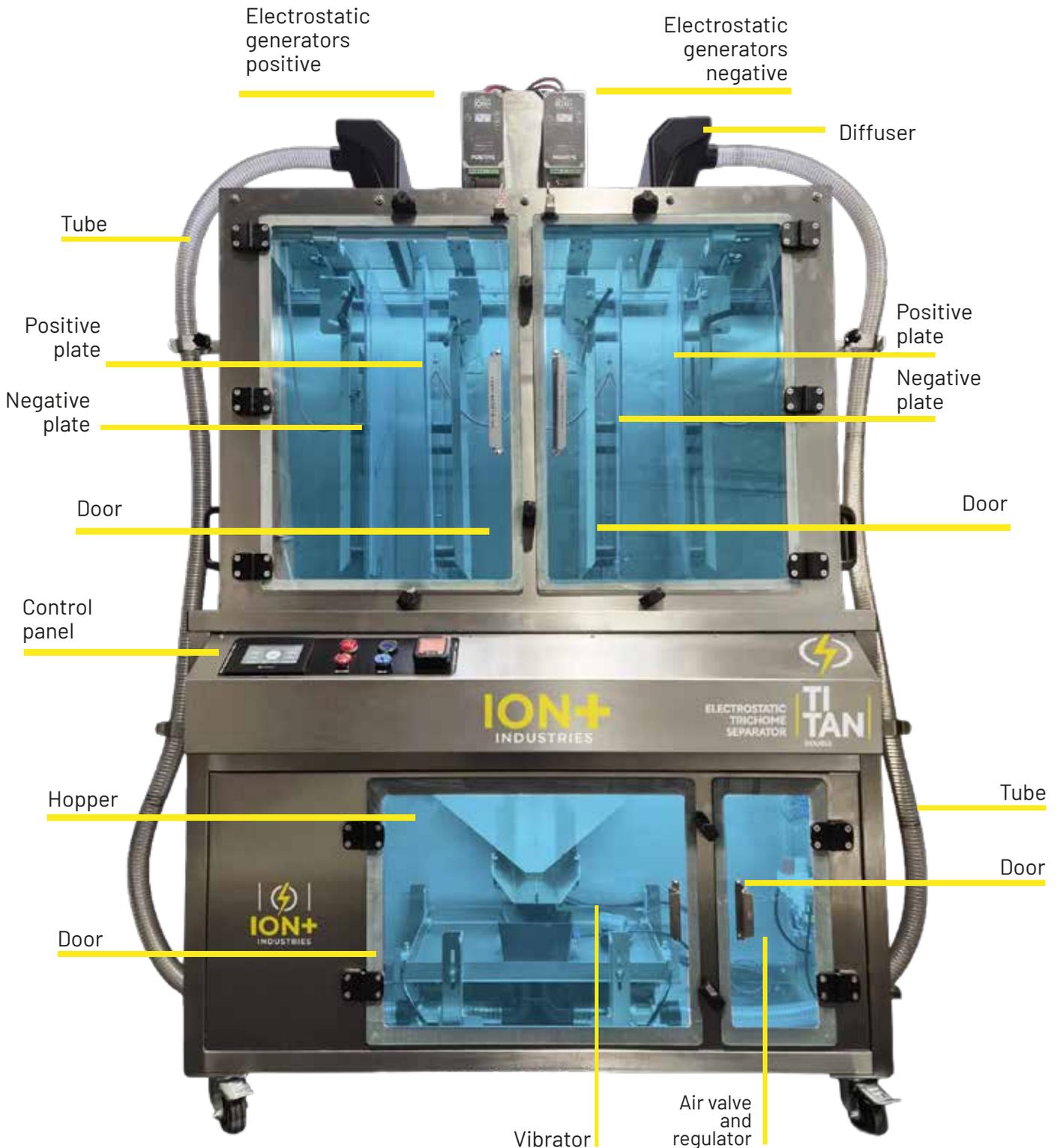


ELECTROSTATIC TRICHOME SEPARATOR



TITAN V2

OPERATION AND INSTRUCTION MANUAL



ELECTROSTATIC TRICHOME SEPARATOR

TITAN V2

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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 a clean and efficient separation.

Main components:

- Structural chassis made of stainless steel.
- Positive plate made of anodized aluminum (enhances trichome attraction).
- Negative plate made of stainless steel (enhances attraction of plant residues).
- Anti-static polycarbonate door, ensuring visibility and safety.
- Upper feeding hopper with adjustable vibrator (3 speeds).
- Integrated diffuser and compressed air system.
- Adjustable electrodes with position brake.
- Positive and negative electrostatic generators (adjustable up to 20 kV).
- Control panel with independent controls.
- Decompressor 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 inlet of the machine.
- Recommended working pressure: 3 bar.
- Requires a compressor of at least 150 L and 200 m³/h for continuous operation.
- Ensure that the pneumatic circuit is free of moisture and oil.
- Check that the doors are properly closed before starting operation.
- Recommended environmental conditions:
Temperature Range: Designed to operate efficiently between -6°C and + 12°/15°C, maintaining consistent separation performance.

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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

- Electrical supply: 110–220 V single-phase / max. 2.5 A
- Ground connection: mandatory.
- Air inlet: quick-connect fitting (pressure 3 bar).
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- Flow regulator: integrated into the internal circuit.
- Noise level: 70 dB (peaks of 75 dB when activating the decompressor).

5. Operating Instructions

1. Connect the machine to the electrical power supply and the compressed air line.
2. 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.
3. Open the door and load the biomass into the main hopper.
4. Adjust the distance between the electrodes according to the desired type of 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: fast.
 - Speed 3: full discharge.

Process Description:

Once activated, the biomass falls from the 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 the plant residues adhere to the negative plate.

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Material that does not adhere falls back into the main hopper, automatically repeating the cycle.

The process is continuous, allowing for efficient and uninterrupted separation.

6. Control Panel and Adjustments

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 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.
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Integrated protections:

- 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 residues 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

Problem / Possible Cause / Solution

No separation is generated

Electrostatic generators are off, low voltage, or grounding issues

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

Material accumulates in the hopper

Excess load, material too влажно, or low air pressure

Reduce the amount of biomass, ensure the material is dry, or increase airflow

Insufficient vibration

Low speed setting or vibrator failure

Check the configuration or the component

Excessive noise

Vibrator or decompactor improperly adjusted

Check fastenings and adjustments

Sparking or discharge

Electrical arcing

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

Material sticking to the electrodes

Dirt or residue buildup

Clean the electrodes with isopropyl alcohol

10. Technical Specifications

Parameter / Value

Electrical supply: 110–220 V single-phase

Maximum consumption: 2.5 A

Operating pressure: 3 bar

Compressor required: minimum 150 L / 200 m³/h

Dimensions:

200 cm (H) × 148 cm (L) × 54 cm (D)

Weight: 135 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

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11. Warranty and Technical Service

Electrostatic generators: 5-year warranty.

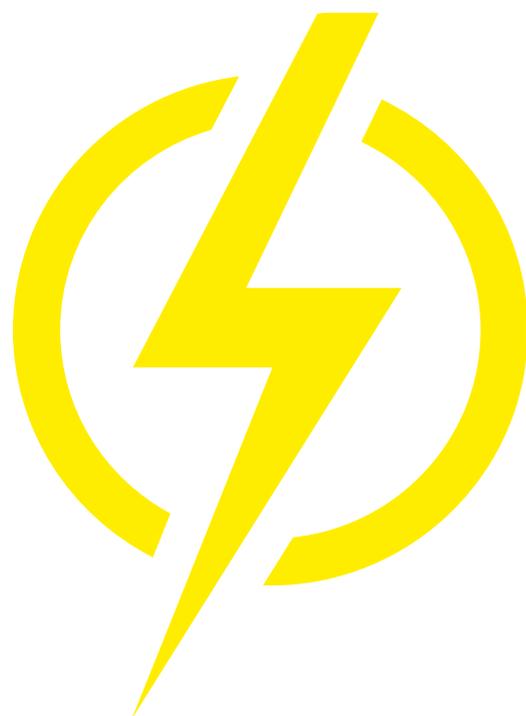
Vibrator: 10-year warranty.

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

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

Technical Service Contact

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