SLOPEHELPER

Double-sided Sprayer

Turbo spraying on both sides of the passage

The **Double sided Sprayer** is a **specialized rear-hinged attachment** engineered for **efficient and precise turbo spraying** across all types of plantations. **Equipped with four ducted fan pivoting ventilators**, it ensures **optimal atomization** and **even distribution** of spraying components to the green fence, **maximizing coverage while minimizing waste**. This **advanced design** provides **smooth and precise spraying**, making it an **ideal solution** for maintaining **plantation health and productivity** by ensuring **effective pest control, fertilization, and disease prevention.**

100% Autonomous | **100% Electric**

Features & Benefits

No Operator Exposure to Chemicals – Fully Autonomous Spraying

Agricultural sprayers distribute chemical treatments that can pose serious **health risks** to operators, requiring **protective gear** and strict **safety measures**. In conventional spraying systems, tractor drivers are directly exposed to chemical drift, vapor, and airborne particles, increasing the risk of respiratory issues, skin irritation, and long-term health effects.

The **Slopehelper Sprayer** is a **fully autonomous system**, eliminating the need for an **operator inside the spraying zone**. By functioning **without human intervention**, it:

- **Removes health risks** associated with **pesticide and fungicide exposure**.
- **Eliminates the need for protective suits and respirators**, reducing **operational costs**.
- **Ensures a safer working environment**, making **spraying efficient, precise, and risk-free**.

This advanced **autonomous spraying technology** not only **protects worker health** but also ensures **optimal chemical application**, making **vineyard and orchard management safer** and **more sustainable**.

Efficient and Precise Spraying with Four Ducted Turbo Fans

The **Sprayer** utilizes **four high-efficiency ducted turbo fans**, each equipped with **electronically controlled nozzles** inside. This innovative spraying system ensures **precise atomization** of liquid components directly at the fan's exit, maximizing coverage and minimizing **chemical waste**.

The **electronic control system** dynamically adjusts spray volume based on:

- **Sprayer speed**, ensuring optimal chemical distribution at varying travel rates.
- **Green fence height**, adapting the application for **uniform coverage** across different plantation structures.

This **intelligent spraying technology** enhances **efficiency, accuracy,** and **environmental sustainability**, making it a highly effective solution for modern plantation management.

Turbo Spraying on Both Sides for Optimal Coverage

The **ducted fan technology** generates **high air pressure**, enabling the **Sprayer** to effectively distribute **atomized components** across both sides of the plantation row.

This powerful airflow allows for **inter-passage operations**, where spraying from only **one side of the row** is sufficient to achieve **full coverage**. This reduces the number of passes needed, optimizes **chemical usage**, and improves **efficiency**, making the system ideal for **large-scale plantation spraying** with minimal **environmental impact**.

info@pek-agrobot.com
+386 40 475 072
pek-agrobot.com

Adaptation for Different Plantation Heights

The **Sprayer** features a **height-adjustable block** of ducted fans, with **two fans per side** that can move **up and down** to accommodate varying plantation heights.

Key benefits include:
- **Adjustable fan positioning** – Ensures **precise chemical application**, preventing unnecessary drift.
- **Selective fan operation** – The **upper fans** can be switched off when working with **low-height plantations** or when treating only the **lower tree areas.**
- **Minimized chemical losses** – By positioning the fans at the **optimal height**, the system delivers the spray **directly onto the green fence**, reducing waste and preventing excess dispersion into the air.

This **flexible adaptation system** enhances **efficiency, precision**, and **sustainability**, ensuring effective plantation treatment with **minimal resource consumption**.

Pivoting Ducted Fans for Optimal Coverage

The **Sprayer** is equipped with four **pivoting ducted fans**, which can **tilt up and down** during operation. Unlike conventional **static sprayers**, this dynamic movement ensures:
- **Even chemical distribution** – The **pivoting motion** allows the spray to reach all sides of **leaves, branches, and fruit**, ensuring **uniform coverage**.
- **Improved penetration** – By mixing the **canopy layers**, the airflow effectively reaches **hidden surfaces** that conventional sprayers often miss.
- **Maximized efficiency** – The controlled movement **reduces chemical waste** and enhances the effectiveness of **pest control** and **fertilization**.

This innovative **pivoting system** ensures **full plantation coverage**, improving treatment quality while optimizing **chemical usage.**

Electronic Control of Chemical Flow and Pressure

The **Sprayer** is equipped with advanced **electronic sensors** for **pressure** and **flow measurement**, working in coordination with the **Base Platform's speed control** to ensure **precise chemical application**.

Key features and benefits:
- **Automated spray adjustment** – The system dynamically regulates **chemical flow and pressure** based on **platform speed**, ensuring **consistent coverage**.
- **Targeted application** – Sprays exactly on the **green fence**, minimizing **waste and drift**.
- **Precision control of electric high-pressure pumps** – Maintains **optimal pressure levels**, delivering a **uniform chemical distribution** across the plantation.

This intelligent **electronic control system** guarantees **efficient, precise, and resource-saving spraying**, enhancing **plant protection** while reducing **chemical consumption**.

Automatic Detection of Silted Sprinklers & Immediate Alerts

One of the main challenges in conventional sprayers is sprinkler silting, which occurs despite filtration systems due to various factors such as chemical crystallization inside sprinklers or distribution pipes. When using traditional tower sprayers, it is nearly impossible for the tractor driver to visually detect a non-functioning sprinkler, especially in misty conditions, low visibility, or nighttime operations. A blocked sprinkler means uneven chemical distribution, leading to insufficient spraying coverage and potential crop damage or disease risk.

The Slopehelper Sprayer solves this issue with an **advanced flow sensor system** that **automatically detects if a sprinkler stops working**. When a malfunction is registered, the system **immediately notifies the grower** via the **TeroAIR application**, allowing for **quick intervention**. Depending on the selected setting in the Slopehelper menu, the system can either:
- **Continue spraying while alerting the grower, so the issue can be resolved afterward.**
- **Automatically stop spraying to prevent uneven coverage and chemical waste.**

This intelligent monitoring system ensures consistent, high-precision spraying, eliminating undetected failures, reducing chemical waste, and improving plant protection efficiency.

Integrated Clean Water Tank, Tank Cleaning System, and Chemical Mixer

The **Sprayer Tank Module** is equipped with all **certification-required safety features**, ensuring safe and efficient operation.

Key features include:

- **Integrated Fresh Water Tank** – Provides instant access to **clean water** for **body washing** in case of accidental chemical contact, ensuring **operator safety**.
- **Automatic Tank Cleaning System** – Utilizes **rotating turbo sprinklers** inside the tank for **thorough internal washing**, preventing **chemical buildup** and contamination.
- **Continuous Chemical Mixing** – A built-in **mixer** ensures **constant agitation** of the solution during operation, preventing **chemical separation** and maintaining **consistent spray effectiveness**.

These advanced features enhance **safety, efficiency**, and **reliability**, making the **Slopehelper Sprayer** a fully **self-contained** and **regulation-compliant** spraying solution.

Zero Drift Solution – Precision Chemical Delivery

The Slopehelper Sprayer introduces a **breakthrough zero-drift technology**, ensuring direct chemical delivery to the canopy without chemical loss into the air. Unlike conventional tower sprayers, which disperse chemicals widely and inefficiently, often leading to mist drift and airborne waste, the Slopehelper system **precisely targets the canopy**, ensuring that **all applied chemicals remain where they are needed—on the plants**.

This direct application method offers several key advantages:

- **Minimizes chemical waste**, reducing unnecessary environmental exposure.
- **Prevents drift-related contamination**, ensuring that nearby crops, soil, and water sources remain unaffected.
- **Optimizes spraying efficiency**, leading to better plant protection and reduced chemical consumption.

By eliminating uncontrolled airborne spraying, the Slopehelper Sprayer provides **a more sustainable, cost-effective, and environmentally responsible solution** for vineyard and orchard treatments.

1000L Tank on Gravity Self-Stabilized Platform

The Slopehelper Base Platform is equipped with **a self-stabilizing gravity platform**, ensuring that the spraying tank remains in **a constant horizontal position**, regardless of the terrain profile.

This advanced stabilization system offers several key advantages:

1. **Smaller turning areas** – Unlike conventional sprayers that tow a trailer behind a tractor, the integrated tank design allows for better **superior maneuverability**, even with a large 1000L tank.
2. **Enhanced stability and speed** – The **self-leveling platform** maintains **balance and stability,** enabling the machine to operate at speeds up to 4 km/h on non-narrow terrain without compromising performance.
3. **Complete tank drainage** – At the end of the operation, the adjustable platform inclination allows for **efficient tank cleaning**, ensuring **zero residual chemicals** remain inside.
4. **Better soil pressure distribution** – With the tank's weight evenly stabilized, the **pressure on the ground** is **balanced between the base platform's caterpillars**, preventing downhill track formation, a common issue in conventional trailer-based sprayers carrying heavy tanks.

This intelligent stabilization system improves **efficiency, reduces chemical waste**, enhances maneuverability, and **protects soil integrity**, making the Slopehelper Sprayer the ultimate high-performance solution for modern vineyard and orchard spraying.

Ultra-Low Consumption with High-Precision Coverage

The Slopehelper Sprayer achieves exceptionally **low chemical consumption**, comparable to electrostatic sprayers, while maintaining **high-quality coverage**. This efficiency is a result of several advanced engineering features:

- **Pivoting ducted fans** that optimize air distribution.
- **Perfect turbulent airflow**, ensuring thorough mixing of chemicals with air for even droplet dispersion.
- **Direct delivery to the canopy**, minimizing waste and maximizing plant absorption.
- **Precise chemistry volume control**, ensuring the right amount of chemical is applied with zero excess.

Unlike electrostatic sprayers, which rely on charged particles for adherence and can be affected by moisture, the Slopehelper Sprayer operates with **conventional nozzles** positioned inside the ducted fans. This ensures **reliable** and **consistent spraying performance**, regardless of humidity levels, while still delivering ultra-low consumption and perfect canopy coverage.

By combining cutting-edge aerodynamics with precision spraying, the Slopehelper Sprayer provides a **cost-effective**, **efficient**, and **highly adaptable solution** for modern vineyard and orchard management.

Technical Specifications

DIMENSIONS (Main Instrument)	VALUE
Height	2500 mm
Length	1375 mm
Width	1745 mm
Weight	530 kg

DIMENSIONS (Platform Tank)	VALUE
Height	1465 mm
Length	1250 mm
Width	1115 mm
Volume	275 Gallons = 1000 L

WORKING DIMENSIONS	VALUE
Working height of foliages	400-4200 mm
Working width of rows	up to 3500 mm
Diameter of spraying spot	1500 mm
Speed of fan rotation	600-1300 rpm, selectable
Sound power level	50 dB
Material consumption	50-300 l/Ha, adjustable
Operation speed	2-4 km/h

Technical Specifications

GENERAL SPECIFICATIONS	VALUE
Compatibility	SH.056 Slopehelper
Drive method	Direct connection
Motor	Brush-less motor - BLDC

FAN SPECIFICATIONS	VALUE
Number of fans	4 ducts (2 up, 2 down)
Duct diameter	800 mm
Vertical movement	1460-1810 mm
Swing adjustment	10°, 30°, 45°
Duct orifice at exit	520 mm in diameter
Spraying spread angle	Approximately 30°
RPM on the fans	2300
Airflow	4 m^2/sec
Air speed on the exit	2,3 m/sec