



Side Lawn Mower

Branches and grass mulching in root zones by horizontal knife flails

The Side Lawn Mower is a specialized rear-hinged attachment designed for high-performance mulching of branches and grass around tree trunks, root zones, and nearby trunk areas. It features a deck with three horizontal knife flails, which, guided by mechatronic actuation, follows a precise trajectory around tree trunks. This ensures efficient weed control, soil aeration, and optimal root zone conditioning while preventing damage to trees. This advanced design provides smooth and precise mulching, making it an ideal solution for maintaining plantation health and productivity.

100% Autonomous | 100% Electric



Features & Benefits

Fully Electric Operation – No Hydraulic Actuation

The Side Lawn Mower is an electrically driven attachment, ensuring consistent performance, precision, and efficiency without relying on hydraulic actuation. All instrument functions are based on electromechanical and mechatronic solutions powered by brushless motors, eliminating the need for hydraulic oil and actuators. This design significantly reduces leakage risks, minimizes maintenance requirements, and eliminates environmental concerns associated with hydraulic systems. The electric-driven mower deck allows for gentle and precise operation in root areas, preventing structural damage to both trees and equipment while ensuring smooth and efficient mulching around trunks and in plantation passages.

Encoder-Based Soft Contact Sensor & Suspension Frame

The Side Lawn Mower features an encoder-based soft contact sensor integrated into a specially designed suspension frame around the mower deck. Unlike traditional discrete sensors, this advanced system continuously calculates the real-time distance between the lawn mower deck and the tree trunk, ensuring precise and adaptive operation around trees. The suspension frame is supported by strings, making it significantly gentler on trees compared to electromechanical or hydraulic switches. This innovative design prevents overloading or accidental impacts on tree trunks, allowing for smooth, damage-free mulching of grass and branches in delicate root zones and plantation passages.

Specialized Deck for Mulching Branches and Grass in Root and Nearby Row Areas

The Side Lawn Mower features a specially designed deck equipped with three free-floating (flail) knife blades, ensuring efficient cutting and mulching from the machine's caterpillar tracks to the area around tree trunks. These flail knives are capable of mulching both hard branches after plantation pruning and grass, making the mower highly versatile for comprehensive plantation maintenance. Additionally, the deck's unique shape with an angled tip allows for precise operation around tree trunks, ensuring effective mulching while preventing damage to trees and root zones.





Semi-Open Deck for Enhanced Grass Cutting Efficiency

The Side Lawn Mower features a specially designed semi-open deck skirt, optimizing its performance for effective grass cutting. Unlike conventional mower decks that are fully enclosed, which often bend tall grass under the deck edge, preventing it from being cut efficiently, the Slopehelper Side Lawn Mower incorporates a deck tip that can be opened. This adjustable deck design ensures efficient cutting of tall grass, preventing it from being flattened and left uncut. This innovation enhances precision, efficiency, and overall cutting performance, making the Side Lawn Mower a versatile and highly effective solution for plantation maintenance.



Optional Horizontal Belt Trimmer for Trunk Cleaning

The Side Lawn Mower offers the option to install a horizontal belt trimmer, allowing for effective removal of vines, lanais, and heavy weeds growing along tree trunks—areas that knife flails cannot reach.

This feature provides:

- Versatile functionality – The mower can switch from grass and branch mulching to trunk cleaning by simply removing the flail knives and installing the belt trimmer on the outer spindle (which controls the open deck tip).
- Efficient trunk maintenance – The belt trimmer ensures thorough cleaning of tree trunks, improving plant health and plantation hygiene.
- Precision cleaning – Designed for gentle but effective operation, preventing damage to tree bark while removing unwanted growth.

This modular design enhances the Side Lawn Mower's adaptability, making it a multi-functional tool for comprehensive plantation management.



Emergency System for Damage Prevention in Case of Jamming

Field operations are unpredictable, and unexpected obstacles can pose serious risks to both equipment and plantation infrastructure. Situations such as loose wires entangling in the root area or the mower deck getting stuck on a post can lead to significant damage if not addressed immediately. In conventional systems, even a skilled operator may have little time to react, and in robotic operations, immediate manual intervention is impossible without specialized safety mechanisms. The Slopehelper Side Lawn Mower features an advanced emergency protection system that prevents such damage. The entire instrument is suspended on a specialized frame, which can detect jamming or obstruction of the mower deck. Upon detection, the system instantly stops the machine, preventing damage to both the equipment and the plantation. This intelligent safety mechanism ensures reliable, damage-free operation, even in demanding and unpredictable field conditions.

Technical Specifications

DIMENSIONS	VALUE
Height	1615 mm
Length	2440 mm
Width	1365 mm
Weight	332 kg
GENERAL SPECIFICATIONS	VALUE
Compatibility	SH.056 Slopehelper
Drive method	V-belt
Number of belts	2
Motor	Brushless motor - BLDC



Technical Specifications

WORKING DIMENSIONS	VALUE
Working width	800 mm
Depth of side lawn mower	350 mm
Width of the mowing area	830 mm
Sound power level	40 dB
Operation speed	up to 2 km/h

BLADE SPECIFICATIONS	VALUE
Speed of rotation	1000-2000 rpm, selectable
Type of blades	MTD long blade 942-0644
Number of blades	2

