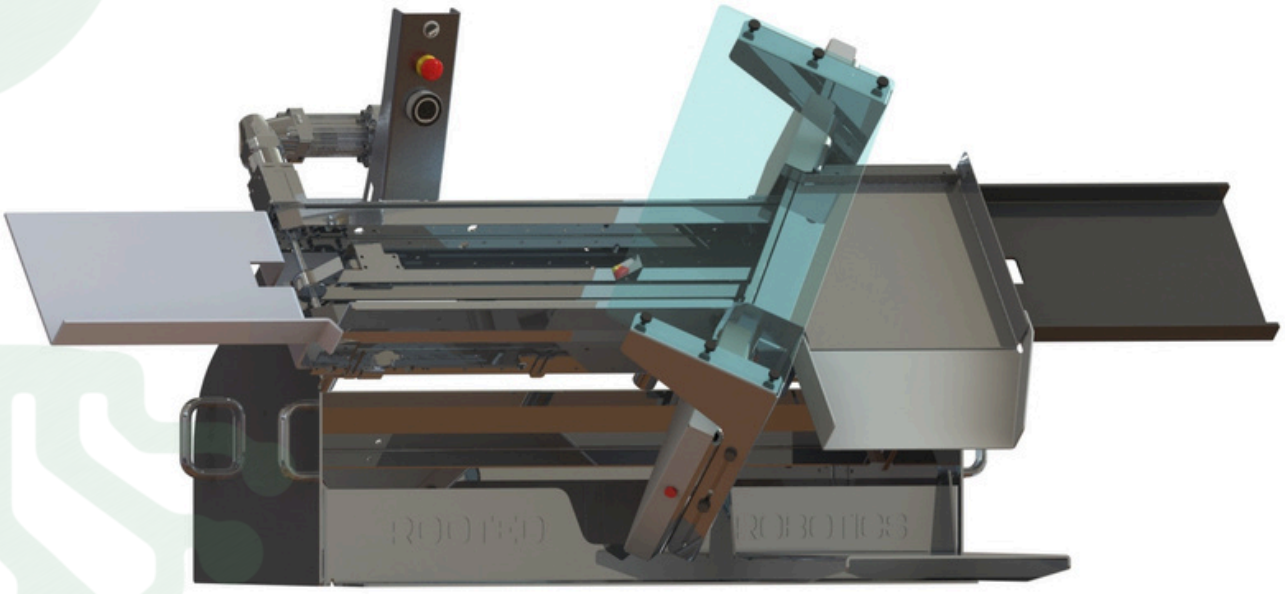
ROOTED ROBOTICS

Tabletop Harvester User Manual



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INTRODUCTION

Thank you for choosing the Rooted Robotics Tabletop Harvester. Designed to cut any crop in a 1020 tray, this machine streamlines the harvesting process, improving efficiency, consistency, and ease of use. Built with durability and adaptability in mind, the Tabletop Harvester is a useful tool for controlled environment agriculture operations of any scale. With an angled cutting design that utilizes gravity for product collection, the harvester eliminates the need for complex conveyor or blower systems. The result is a user-friendly machine that minimizes labor costs and enhances product quality while ensuring a fast return on investment.

This manual will guide you through setting up the harvester, adjusting cutting height and belt speed, and maintaining the machine for optimal performance. By automating the harvesting process, the Tabletop Harvester reduces manual labor, increases processing speed, and ensures a consistent, high-quality harvest across every tray.

PRODUCT OVERVIEW

The Rooted Robotics Tabletop Harvester arrives mostly assembled, requiring minimal setup to begin use. Simply unbox the machine, remove any packing materials, connect the electronics box, and reconnect the motor cables before plugging it in to start harvesting. With intuitive controls, operators can quickly adjust blade and belt speed to suit different crop types and tray configurations, making the harvester a flexible solution for diverse farming operations. The machine's simple design allows for easy cleaning and maintenance, with replaceable, off-the-shelf blades ensuring long-term affordability and reliability.

KEY BENEFITS

Using the Tabletop Harvester offers multiple benefits to your farm, providing a quick return on investment and significant labor savings:

- Fast ROI: The automation of harvesting tasks reduces labor costs and time spent on manual cutting, allowing farmers to see rapid returns on their investment.
- Consistent Harvest Quality: Adjustable settings ensure precise cuts and uniform product collection, improving overall quality and reducing waste.
- Ease of Use: The intuitive control dial allows operators to quickly adjust settings, reducing training time and ensuring seamless integration into farm workflows.
- Durability and Low Maintenance: Constructed with robust materials and off-the-shelf components, the harvester is designed for long-term use with minimal upkeep.

HOW THIS MANUAL HELPS

This manual is designed to guide you through the setup of your Tabletop Harvester. It provides essential steps to get your machine operational, including blade height adjustment, belt speed settings, and initial test runs. However, achieving the best results will require further fine-tuning based on your specific crops and workflow. By actively adjusting and testing different settings, you will optimize your harvester's performance for maximum efficiency and consistent, high-quality harvests. Regular maintenance and calibration will ensure long-term reliability and minimal downtime.

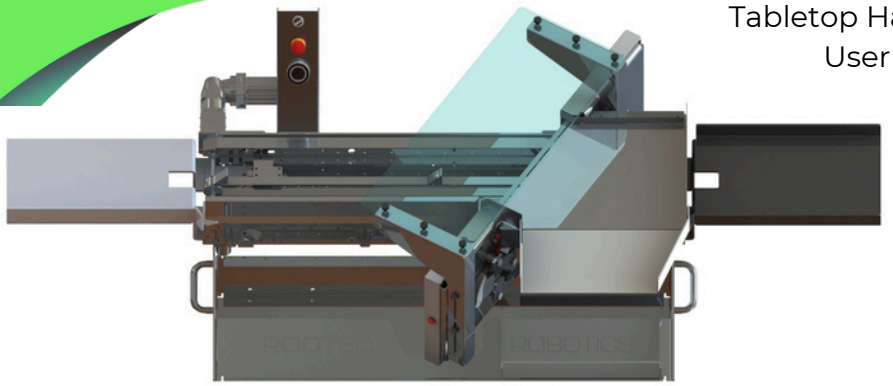
ABOUT US

Rooted Robotics is committed to providing innovative automation solutions for controlled environment agriculture. Our team of engineers, designers, and industry experts works to develop affordable and effective tools that empower growers to operate more efficiently and profitably. With our expertise in automation and farm operations, we are dedicated to equipping farms with intelligent, interfacing machines that enhance productivity and sustainability.

CUSTOMER SUPPORT

For additional assistance or troubleshooting about your Tabletop Harvester, our team is here to help. Please contact us at:

Email: customer-support@rootedrobotics.com
Phone: +1 (720) 999-9927
Website: www.rootedrobotics.com



SETUP AND CALIBRATION

The Rooted Robotics Tabletop Harvester arrives mostly assembled, requiring minimal setup to begin use. Follow these steps to properly set up and calibrate your machine:

1. Unbox the harvester and remove any packing materials.
2. Place the harvester on a stable surface.
3. If necessary, connect the electronics box and securely reconnect the motor cables. (see Connecting Electronics Box video)
4. Remove the blade cover and manually spin the bandsaw wheels to ensure the blade is still tracking correctly. (see Blade Removal, Replacement and Alignment video)
5. Adjust the blade height according to the crop type by loosening the adjustment knobs and using a tray as a guide. (see Adjusting Blade Height video)
6. Plug in the machine and power it on.
7. Start the belt and gradually increase speed by adjusting the control dial. (note: some amount of belt vibration without a tray present is normal)
8. Stop the belt.
9. Start the blade on the “clean” setting and allow it to run for 30 seconds to 1 minute to ensure it is still tracking correctly.
10. Increase the blade speed first to “low” and allow it to run for 30 seconds to 1 minute, then do the same on “high”.
    a. If the blade comes off at any point, hit the emergency stop and see our “Blade Removal, Replacement and Alignment” video.
11. Run a test tray through the harvester to evaluate the cut quality and belt speed.
12. Fine-tune the blade height and belt speed as necessary until achieving a clean and consistent cut.
13. Repeat the test three times to confirm accuracy before beginning full-scale operation.

Following these steps will ensure optimal performance, consistent results, and minimal downtime in your harvesting operation.

CLEANING PROCEDURES

Purpose

Keep all food contact surfaces visibly clean during use and thoroughly cleaned after use to protect product, quality and safety.

Approved agents and methods

- Use potable water, food grade detergents, peroxide or peracetic acid based sanitizers per label.
- Do not use chlorinated cleaners.
- Wipe or hose with a handheld nozzle. Do not use a pressure washer.

Routine cleaning during operation

1. With the blade off or running on 'clean' mode, wipe the blade edge guard area as needed using a damp, food safe wipe or towel.
2. Wipe the tray alignment rail as debris accumulates.
3. Wipe the product separator plate surface. Remove debris frequently to prevent buildup.
4. For belts, keep the belt moving and spray the belt with a hose on jet mode to flush debris off the top and bottom surfaces.

CAUTION: **Always be sure that the e-stop is engaged and the power is unpluged before attempting to perform inspection and maintenance.**

End of day cleaning

1. Disconnect power. Allow moving parts to stop.
2. Remove the blade cover. Detension and remove the blade from the wheels.
3. Use compressed air or a blower to remove loose plant matter from the bandsaw housing, guides, and cavities.
4. Hose interior accessible areas, avoiding direct spray into motor housings and sealed electrical enclosures.
5. Wash and sanitize the blade, extended alignment rail, and product separator plate.
6. Wipe all exterior surfaces.
7. Reinstall the blade and tension per the setup procedure. Confirm tracking by manually rotating wheels before reconnecting power.
8. Run on clean speed briefly to sling residual water, then stop and dry wipe touch points and the control dial.

Deep cleaning (as needed)

- Remove the product separator plate for access under the plate; clean mounting points and tray path.
- Remove blade cover; detension, remove and clean blade.
- Remove debris trapped behind guards and within the blade housing.
- Inspect and clean drain paths so water cannot pool.

Do and do not

Do keep food contact parts clean before, during, and after operation.
Do run the belt while spraying it to move debris off.
Do avoid direct spray at bearings, motors, and the electronics box.
Do not use chlorinated cleaners.
Do not use a pressure washer.

MAINTENANCE AND REPLACEMENT INTERVALS

Before each use

- Inspect blade tracking and tension; correct before use.
- Inspect the main conveyor and the smaller transfer belts for tears, edge fray, weak points, glazing, or splice damage.
- Wipe and inspect the extended alignment rail and product separator plate.
- Verify emergency stop and controls function.

End of each harvest day

- Remove blade cover, detension and remove blade. Clean inside the blade housing.
- Clean guides, wheels, and debris cavities with compressed air or blower, then hose and sanitize accessible areas.
- Remove and thoroughly clean the product separator plate.

Every 5,000 trays

- Replace and or sharpen the blade. Knife edge blades may be sharpened; replace if nicked, kinked, or if tray contact occurred.

Every 25,000 trays

- Inspect conveyor belt tracking and splice condition. Adjust tracking if needed. Replace belt if splice damage or persistent slipping is observed.
- Verify fasteners on guards, separator plate brackets, and wheel covers are snug.

Every 100,000 trays

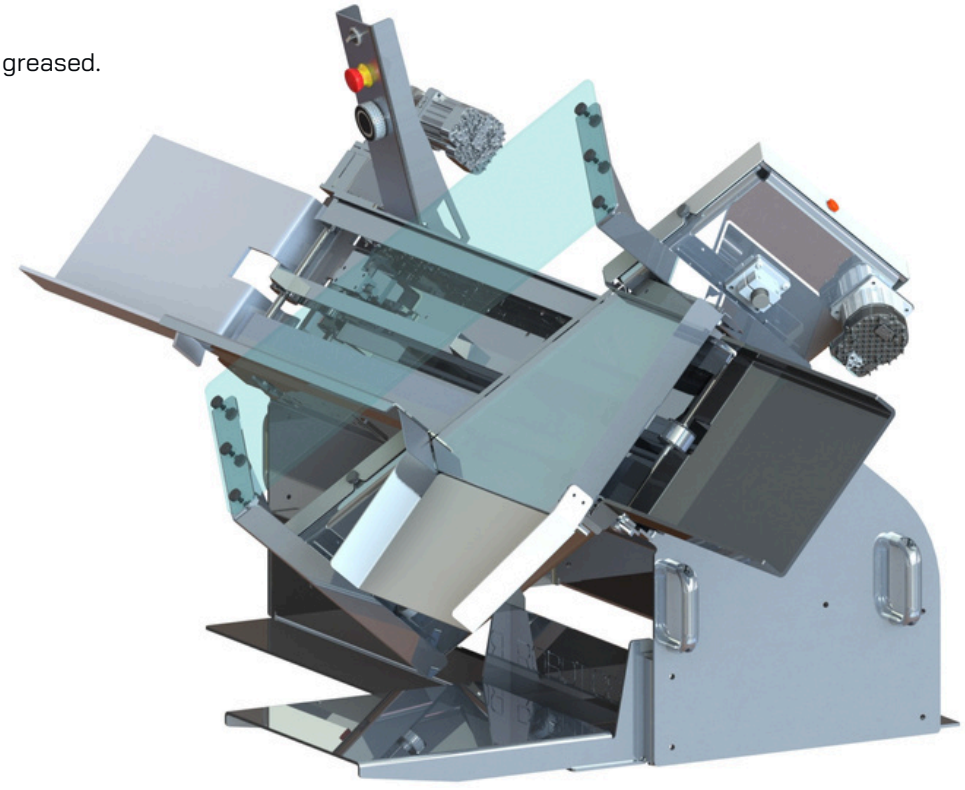
- Replace the bearings that house the shafts. All bearings are sealed and never require greasing.

As needed

- Replace product separator plate if bent or excessively scored.
- Replace belt if cleaning no longer restores grip or debris embeds in the surface.

Notes

- All bearings are sealed and are not to be greased.
- Do not use chlorinated cleaners.
- Do not use a pressure washer.



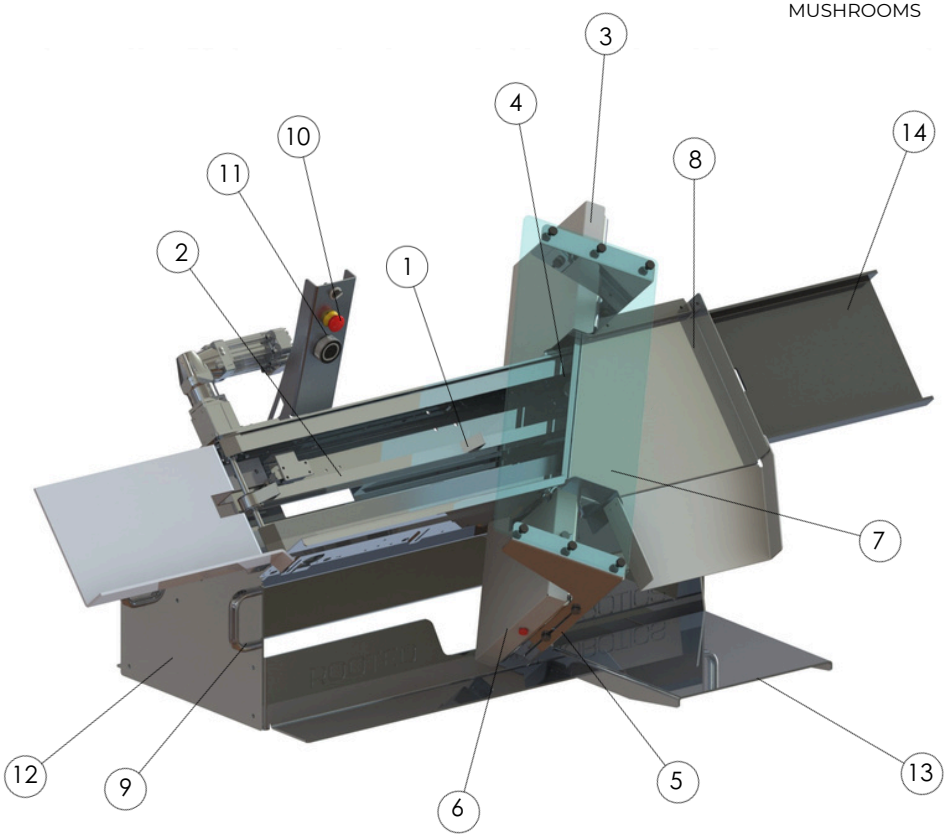
FEATURES

- **Precision Harvesting**: Consistently delivers precise cuts for maximum yield and quality.
- **Adjustable Blade Height:** Allows for multiple tray heights to accommodate different crop profiles.
- **Customizable Belt & Blade Speed**: Offers enhanced control over the process, including a very slow speed setting specifically for cleaning.
- **User-Friendly**: Features intuitive rotary controller and is engineered for easy in-place cleaning and sharpening, with simple removal and replacement for quick maintenance.
- **Durable & Energy-Efficient**: Built for heavy-duty use with versatile blades to handle a range of leafy greens while operating on low power for reduced operational costs.
- **Low Maintenance**: Wash-down rated and designed for hassle-free service and storage.

PHYSICAL SPECIFICATIONS	
OVERALL UNIT L x H x W (in)	51 x 36 x 36
OVERALL UNIT L x H x W (mm)	1295 x 915 x 915
DRIVE UNIT LENGTH (in) [mm]	45.1 [1146.2]
WEIGHT	90 LBS
MATERIAL	ALUMINUM
TRAY COMPATIBILITY	1020 GROW TRAYS UP TO 3" TALL

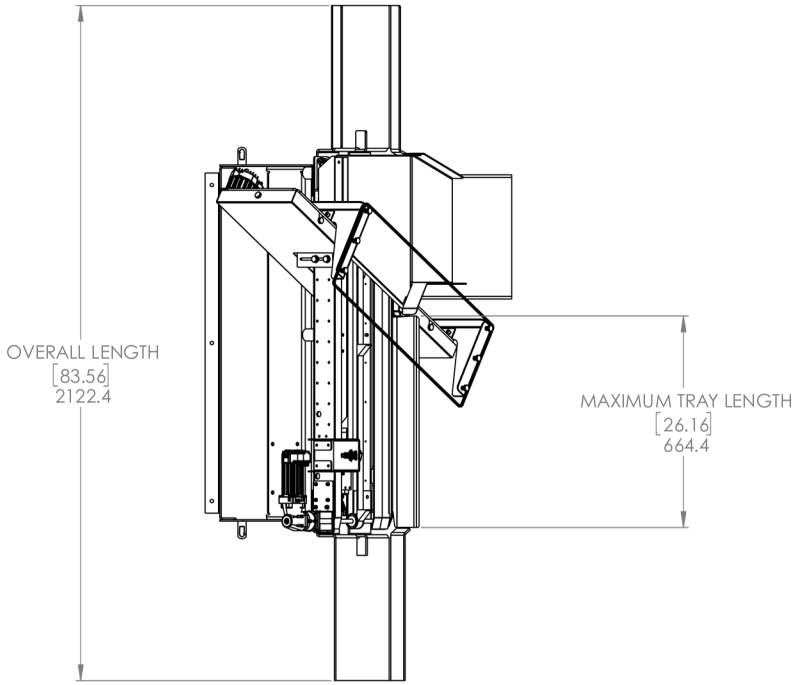
INPUT POWER REQUIREMENTS	
VOLTAGE	110V AC
PEAK AMPERAGE	10A
AVG. AMPERAGE	6A
AVG. POWER CONSUMPTION	750W

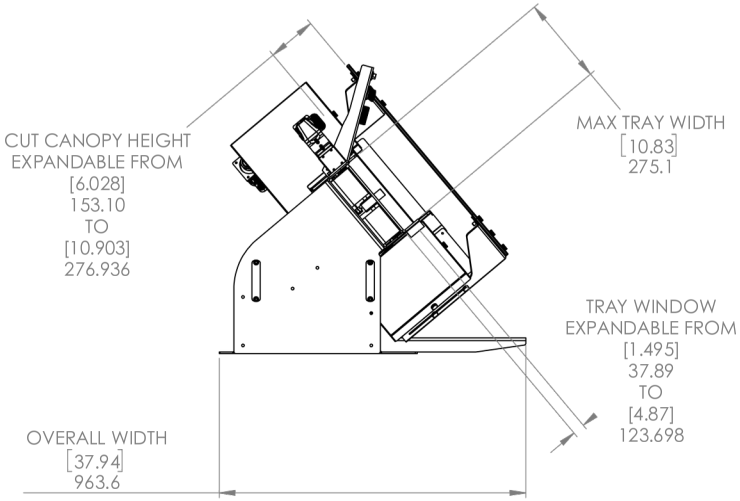
APPLICATIONS
MICROGREENS
BABY GREENS
MUSHROOMS

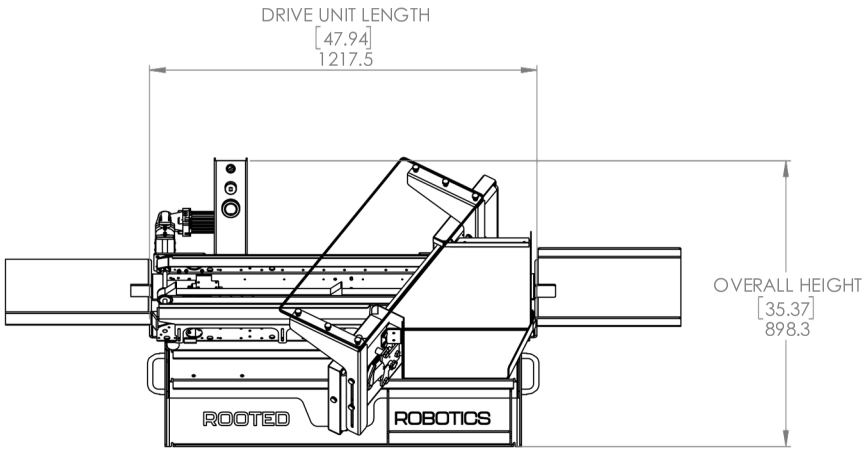


COMPONENTS	
1	CONVEYOR
2	BELT
3	BAND SAW UNIT
4	BLADE
5	BLADE TENSIONER
6	BAND SAW COVER
7	SAFETY GUARD
8	PRODUCT SEPARATOR PLATE
9	HANDLES
10	POWER/E-STOP
11	CONTROL DIAL
12	BASE
13	HARVEST BIN SHELF
14	TRAY REMOVAL GUIDE

REVISIONS			
REV.	DESCRIPTION (SHEET & ZONE)	DATE	APPROVED







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U0404C0001-01	TABLETOP HARVESTER

DRAWING SCALE: 1:10	UNITS: [INCH] mm