

Waste Recycling Machines

protect our world

ECO- 130KSN

Bio Digester





Introduction & Safety Instructions

1. Introduction
Thank you for choosing the Organic Waste Processing Machine (Model: ECO-130KSN). This manual is designed to help you use your product safely, efficiently, and for a long time. Please read this manual carefully before using the device and keep it for future reference.

Purpose of the Manual: This device uses kitchen waste, such as organic waste and food scraps, as raw material. Through rapid microbial fermentation technology under controlled aerobic conditions, it reduces the volume of waste by up to 90% within 12 to 24 hours, turning it into organic fertilizer. In this way, it makes the waste harmless at the source and recycles it.

SAFETY INSTRUCTIONS

Please read the following safety warnings carefully before using the device. Failure to follow these instructions may result in injury or damage to the equipment.

General Safety
- The device must be installed and commissioned only by authorized personnel.
- The unit must be placed in a dry, well-ventilated area, protected from direct sunlight.
- Use the machine solely for its intended purpose: composting organic waste.
- Do not insert hands, metal rods, or foreign objects into the machine.
- Do not open the lid while the machine is operating. Although an automatic stop system is in place, it may still cause serious injury.
- Always switch off and unplug the unit before performing any maintenance.

Electrical Safety
- Electrical connections must be performed by a qualified electrician.
- The device must not be operated without proper grounding.
- Do not plug in or unplug the device with wet hands.
- After a power outage, inspect the system before restarting the device.

Chemical and Biological Safety
- The liquid enzyme tank must be filled only with enzymes approved by Octoen.
- If the waste contains animal fats or liquids, increase the amount of sawdust to maintain balance.
- Do not open the lid before the process is complete; high temperatures and steam may be present inside.

Mechanical Safety
- Never interfere while the mixing motors are running.
- The emergency stop button (red) halts the system in critical situations; learn its location and use before operation.
- During periodic maintenance, all moving parts must be inspected.

Operational Safety
- The device is equipped with internal sensors. In case of a malfunction, it will automatically stop and trigger an audible alarm. Turn off the device and contact technical support.
- The filter system must be checked regularly, and activated carbon and silica gel refilled as necessary.
- At the end of each process, it is recommended to retain 25% of the compost inside for the next cycle.

Occupational Health and Safety
- Use gloves, safety goggles, and a mask if necessary during operation.
- Wear non-slip footwear during cleaning procedures.








Product Description

Model Name	ECO-130 KSN
Daily Input Processing Capacity	130 kg/day - 286.6 lb/day
Total Processing Duration	The total processing duration ranges from 12 to 24 hours, based on the moisture level, typ
Waste Reduction Rate	Reduces the volume of organic waste by up to 90%, depending on the input material.
Processing Technology & Method	Rapid microbial decomposition under controlled aerobic conditions
Control Method	PLC integrated with 7” HMI Touchscreen Panel
Remote Monitoring & Control	Equipped with remote control and monitoring features.Supports OCTOEN CarbonTrack® s
Power Consumption kwh/Day	20 kwh/Day
Total Power	5 kW, 3 Phaze, 50/60 Hz, 220V - 400V
Noise	≤50dB
Machine Weight	270 kg / 595.2 lb
Dimensions (W x D x H)	720.50 x 1350 x 840 mm - 28.4 × 53.1 × 33.1 in
Working Temperature	45-75°C
Contact Parts Metarial	AISI 304 & AISI 316
Enzyme Tank & Automatic Dosing System	The system includes an enzyme tank with automatic dosing, allowing precise and consistent enzyme application throughout the composting cycle, improving efficiency and reducing manual handling.
Weight Control	Includes 4 load sensors for real-time waste input monitoring and overload prevention.
Odor Control System	Equipped with a multi-stage odor control system including activated carbon filters and UVC
Certifications	• CE Certificate • ISO 9001 – Quality Management System • ISO 10002 – Customer Satisfaction & Complaint Management • ISO 14001 – Environmental Management System • ISO 45001 – Occupational Health and Safety Management • EN ISO 12100 – Safety of Machinery: General Design Principles • EN 60204-1 – Electrical Equipment Safety for Machinery • EN ISO 3834-2 – Welding Quality Requirements • Certificate of Conformity

Segregation Methods

- Please make sure to follow the nominal input limit of 130 kg per day. Excessive input may cause system malfunctions, reduce the effectiveness of decomposition, and lead to unpleasant odors.
- If the mixing chamber becomes muddy or sticky, it's a sign of overloading. In such cases, food waste input should be paused for 2 to 3 days, and the mixing chamber must be dried before the machine is used again.
- Before adding food waste with high water content, drain off as much liquid as possible.

Preparation for the Composting Process

1-Filling with Sawdust

- During the initial startup, add sawdust until it reaches the mixing shaft (approximately 20–25% full).
- Add at least 10 liters of clean water to the sawdust. This helps achieve the ideal moisture level for composting.

2-Pre-Heating Wait Time

- After adding sawdust and water, wait at least 1 hour before adding any waste. This allows the system to heat the sawdust to the required temperature (e.g., 55–75 °C).

3-Adding Enzymes

- The system automatically adds enzymes during operation.
- If the enzyme supply runs out, manually add approximately ½ cup (around 100 ml) of liquid enzyme through the enzyme fill cap for each composting cycle.

4-Compost Continuity

- At the end of each composting cycle, about 25% of the compost should be left inside the machine. This acts as a "starter" for the next batch and supports faster decomposition.

5-Adjustments Based on Waste Type

- If the input waste is oily or has high moisture content, increase the amount of sawdust. This helps maintain internal balance and prevents unpleasant odors.

Acceptable Items



Unacceptable Items



Note: Due to their different compositions, items like roots, eggshells, and other kitchen waste may take longer to decompose. Some residues may remain and can be removed manually during cleaning.



Bulky and solid waste should be chopped into smaller pieces before placing them inside the unit.



Food waste that is high in oil or salt should be rinsed with water before being added.



Waste with high water content should be drained before being added.



Do not add large amounts of vinegar, soy sauce, salt, sauces, or similar products.





Power Switch
Used to start or cut off the main electrical current of the device. Before operating the machine, this switch must be turned to the “I” (on) position.



Voltage Indicator Button
This button lights up when the device starts operating. It also displays the current voltage level. When the button is lit, it indicates that the device is active and receiving power.



Emergency Stop Button
In case of any danger, pressing this button will immediately shut down the device. To resume operation, turn the button clockwise to release it.

Operating Instructions











Odor Filter Covers and Refill Process

- The two handles located at the back of the device are used to access the activated carbon and silica gel filters .
- These filters should be refilled periodically depending on the operating time of the device and the surrounding environmental conditions.
- When the filter cover is opened:
  - The activated carbon tubes and silica gel bags inside are removed.
  - If needed, they are either replaced with new ones or refilled.
  - This process is typically recommended every 3–6 months. In environments with high humidity or strong odors, the interval may be shorter.

📌 After refilling, the covers must be closed tightly, and the seals should be checked to ensure they are secure.



Lid Safety Lock

- On the ECO-130KSN device, the orange safety lock must be secured after the top-loading lid is completely closed.
- This lock prevents the lid from being opened during operation—especially when high heat and steam are generated—and helps prevent steam leakage.
- Before starting the process, make sure the lid is fully closed and securely locked.



The red-handled valve located on the machine's lower outer panel

- This valve should be opened to drain water from inside the machine when internal cleaning is required.
- If no water flows out, there may be a blockage at the faucet connection or within the internal lines. In such cases, carefully clean the interior using a thin wire.
- This valve should only be used for draining liquids during cleaning and maintenance operations.



Enzyme Filling Cap

- The enzyme cap, located at the top of the machine, is used for adding liquid enzymes.
- Before the composting process begins, the required amount of liquid enzyme is poured directly into the chamber through this cap.
- The cap must be tightly closed, and no liquid should come into contact with the outer surface during filling.
- This area is strictly for enzyme input only; water or any other additives must not be added.



Compost Discharge Hatch

- Located on the front of the machine just below the Octoen logo, this hatch is used to discharge the processed compost.
- When the "Empty the Product" command is selected on the PLC screen, the mixing motor runs in reverse, pushing the compost out through this hatch.
- During the discharge process, make sure the hatch is fully open and the area in front of it is clear of any obstructions.

📌 Important: This section should only be used after the composting process is complete. After cleaning, the hatch must be securely locked again.



Energy and Weight Monitoring Equipment

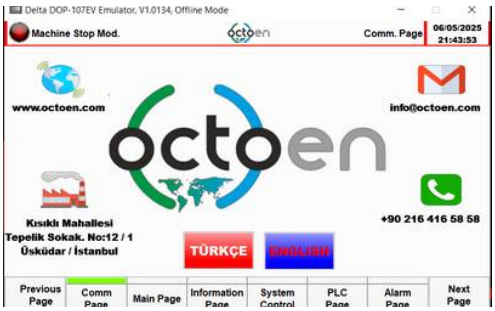
The ECO-130KSN unit is equipped with two integrated auxiliary systems that support process tracking:

🔌 Siemens PAC3120 Energy Analyzer
• Allows real-time and historical monitoring of voltage, current, power, frequency, and energy consumption.
• Ideal for users looking to conduct detailed energy efficiency analysis.
• Perfect for reporting the unit's energy performance and optimizing consumption.

⚖️ **Digital Weight Display**
• Connected to four independent load cell sensors installed on the unit.
• Accurately measures the amount of waste added to the chamber and the total weight of the produced compost.
• Enables users to track daily capacity and efficiency through input/output weight-based control.

📸 This panel is located on the front of the machine, providing real-time data directly to the user.

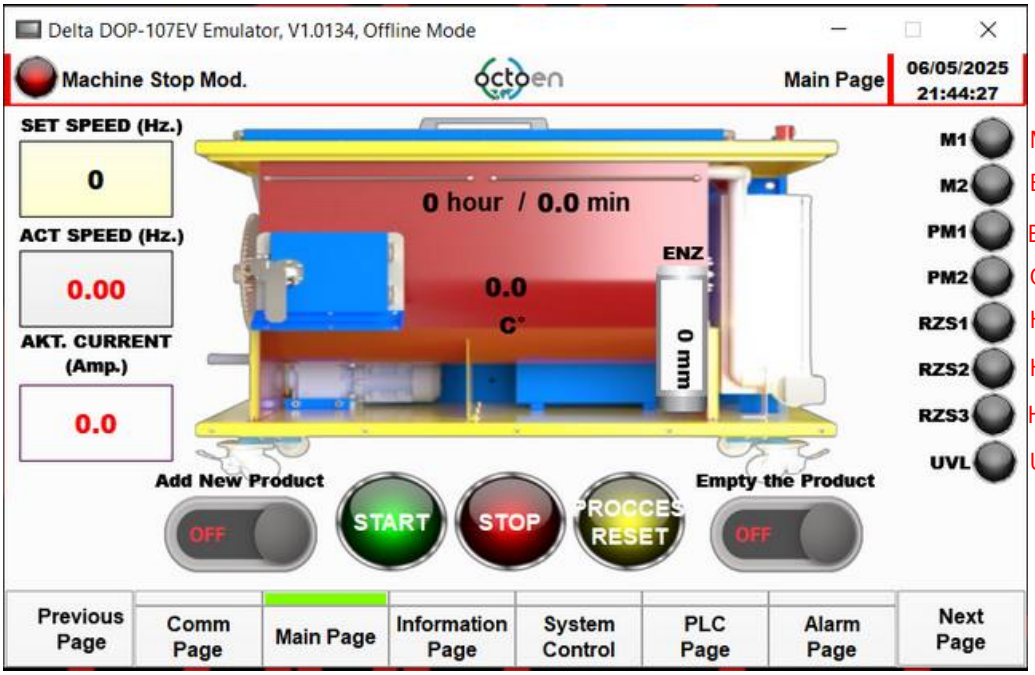
Operating Instructions



Welcome Screen

When the device is powered on, the screen displays the Octoen logo, contact information, and a language selection option (Turkish / English).
At the bottom of the screen, a navigation menu is available:

Comm Page, Main Page, System Control, PLC Page, Alarm Page
From here, you can directly navigate to the Main Page or the System Control screen.



Mixing Motor
Exhaust fan motor
Enzyme dosing pump
Condensed enzyme return pump
Heater 1
Heater 2
Heater 3
UV-C Filter system

MAIN CONTROL SCREEN

The main control screen is the central interface through which all basic functions of the device are accessed. It provides a user-friendly display where the user can monitor operational parameters, motor performance, enzyme levels, and processing times, and issue key commands.

Screen Elements and Descriptions:

Set Speed (Hz): This represents the target frequency (speed) for the mixing motor. It is pre-configured at the factory and usually does not require user adjustment. However, users may enter a new speed value manually if needed.

ACT Speed: Displays the actual current speed of the mixing motor. It helps users track how closely the actual speed matches the set speed.

ACT Current (Amp): Shows the actual current (amperage) drawn by the mixing motor. This may increase when the system is under load.

Hour / Min: Indicates the total active operating time of the system in hours and minutes. Useful for understanding the duration of the current process cycle.

ENZ: Displays the remaining enzyme level in the enzyme tank. When the level drops too low, the system will issue a warning, and manual refilling may be required.

Start: Starts the system. All motors and system components become active, and the composting process begins.

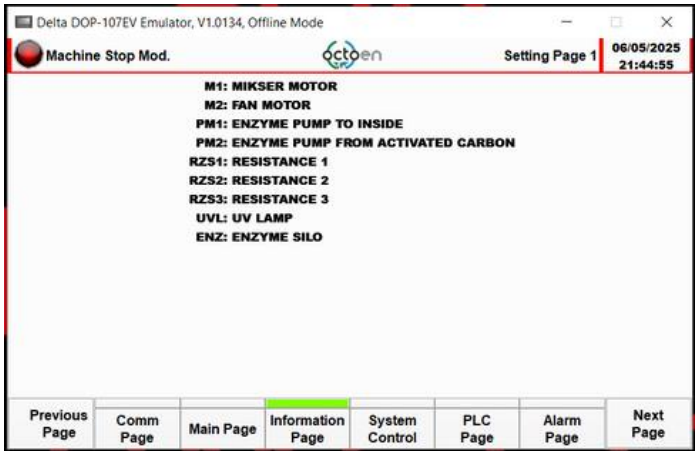
Stop: Stops the system immediately. All motors and process actions halt. Use this in emergency or shutdown situations.

Add New Product: Press this button when new waste is added during an active process. The system will dose additional enzyme accordingly and continue the process efficiently.

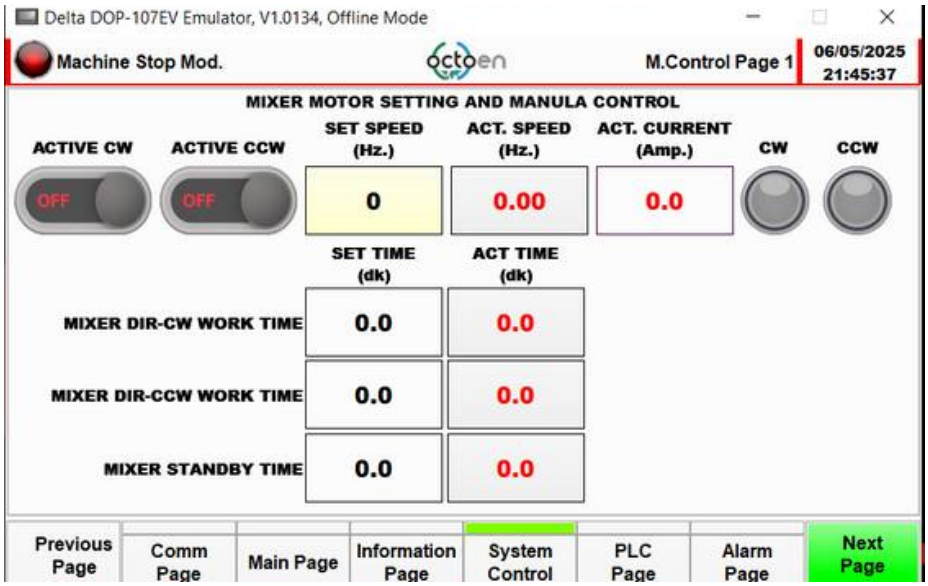
Empty the Product: Empties the finished compost from the machine. The motor runs in reverse to discharge the material through the compost outlet.

Process Reset: Resets the process data and prepares the machine for a new composting cycle.

M1, M2, M3... (Component Status Indicators on the Right): These represent the operational status of key machine components.
Active components are indicated in green, and inactive components in red, allowing users to monitor functionality in real-time.



This page provides real-time status monitoring of the machine's internal components. It displays whether each unit is operating or idle and helps the operator identify any malfunctions or inactive elements.



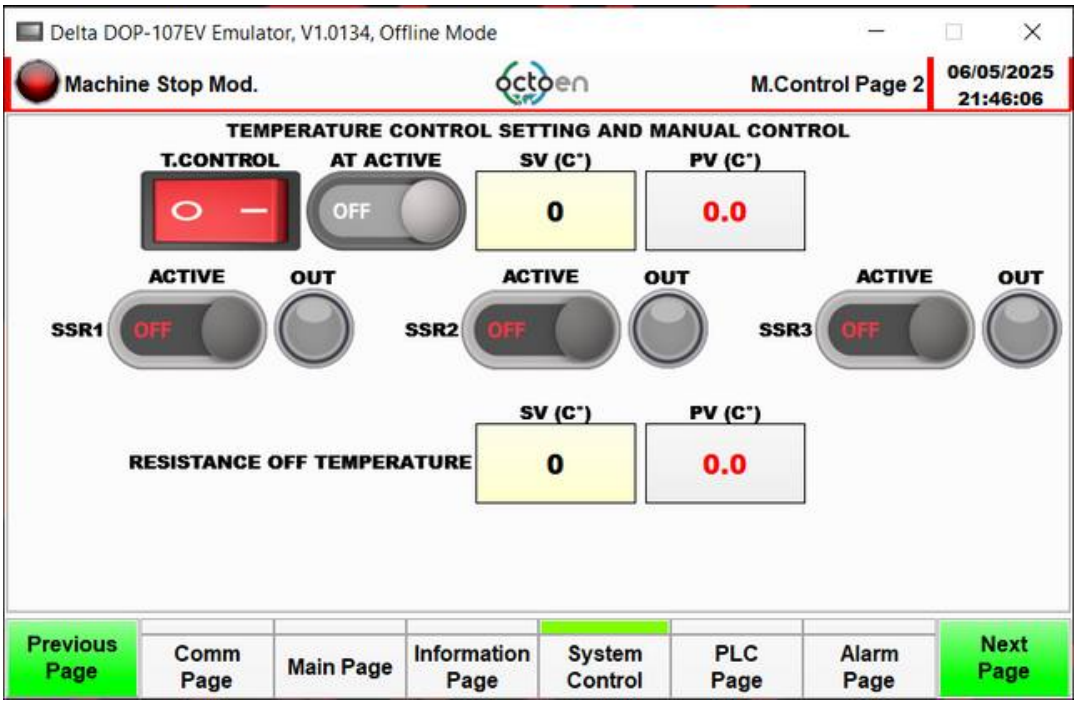
Mixer Motor Control Page

This page allows users to monitor and configure the operation of the internal mixing shaft.
Displayed Information and Controls:
·Active CW: Indicates clockwise rotation is active.
·Active CCW: Indicates counterclockwise rotation is active.
·Set Speed (Hz): The frequency (speed) value manually entered by the user.
·ACT Speed: Displays the actual real-time rotation speed of the motor.
·ACT Current (Amp): Displays the current being drawn by the motor during operation.
·Work Time: Total duration of active mixing rotation.
·Standby Time: Duration of motor pause or idle time between mixing cycles.
·Set Time Values: Determines how long the mixer will operate in each direction and how long it will rest between cycles.

⚠️ It is recommended to use all parameters with factory default values for optimal performance and system safety.

Mode	Duration (minutes)	Description
CW Rotation	20	Clockwise mixing operation
CCW Rotation	20	Counterclockwise mixing operation
Standby	20	Resting between rotations

Temperature Control and Manual Adjustment Screen
This screen is used to monitor and manually control the internal chamber temperature of the ECO-130KSN device. The heating process is managed safely and flexibly through three separate heating resistors.



T.CONTROL:
Activates the temperature sensors. Enabled/disabled with the red switch.
AT ACTIVE:
Automatic calibration feature. Used to correct deviations in sensor readings.
SV (°C):
Set Value – Displays the target temperature set by the user.
PV (°C):
Process Value – Shows the current actual temperature of the internal chamber.

Heater Controls:
SSR1 – SSR2 – SSR3
Controls three independent heating modules. Each one can be activated individually.

➕ This allows the composting process to continue even if one of the heaters fails.

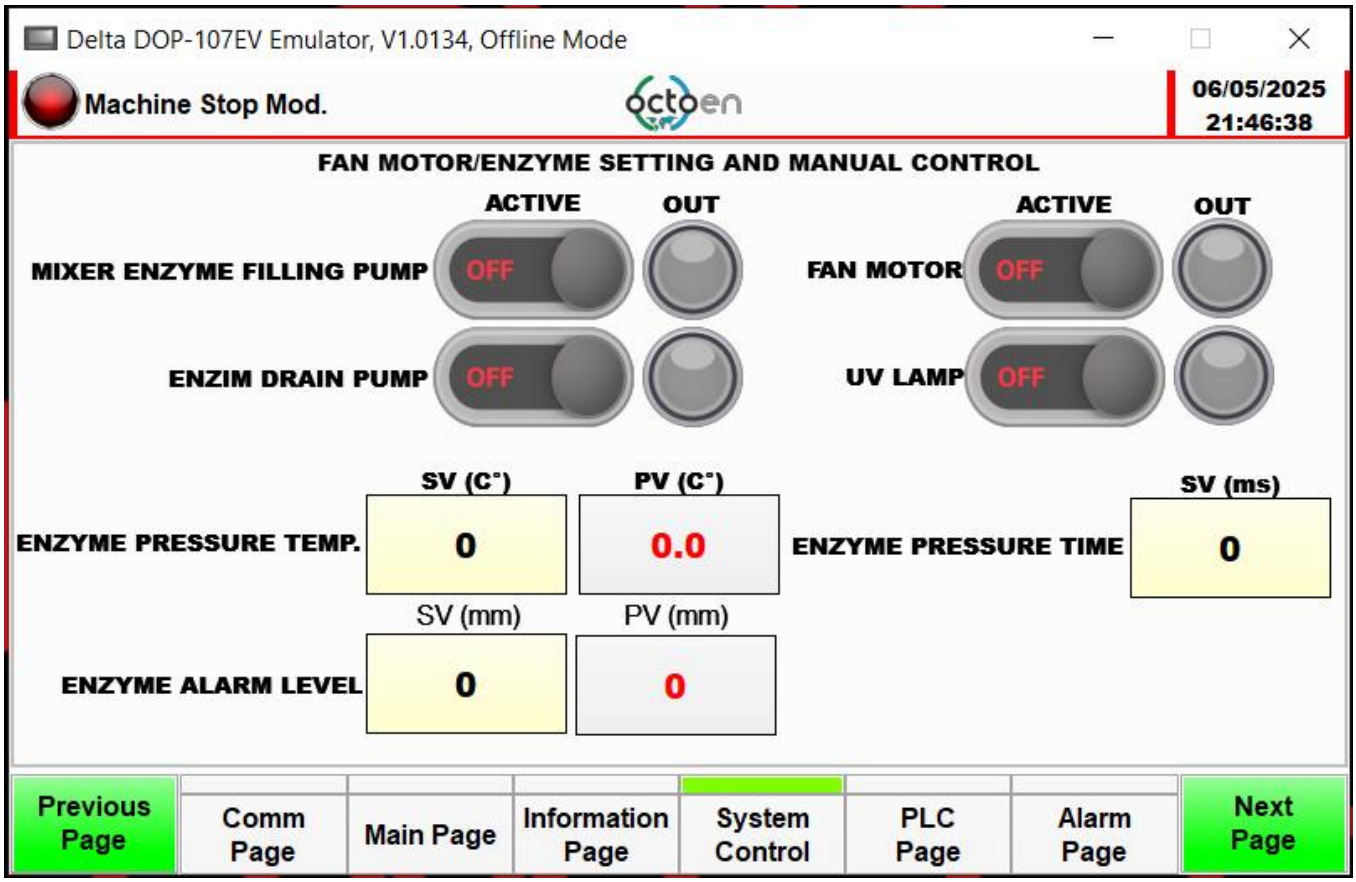
- ACTIVE: Indicates whether the heating module is on or off.
- OUT: Indicates whether the module is sending an output signal.

Resistance off temperature:

- **SV: The temperature at which the heaters will shut off (e.g., 80 °C).**
- **PV: The current real-time measured temperature.**

📌 **This screen is typically used by technical personnel. In automatic mode, these settings are fixed at factory defaults.**

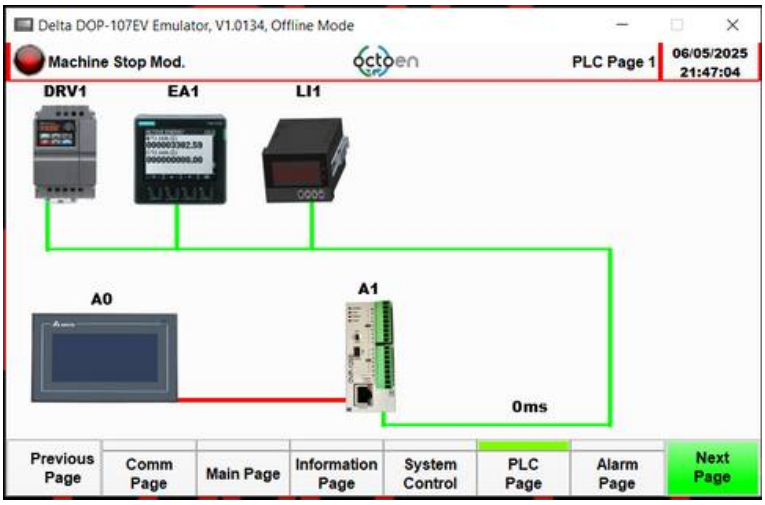
Enzyme Control and Manual Adjustment Page
This screen is used to manually control enzyme injection, steam recovery, fan, and UV-C filter systems on the ECO-130KSN device. It also allows monitoring of enzyme levels and temperature-based automatic injection settings.

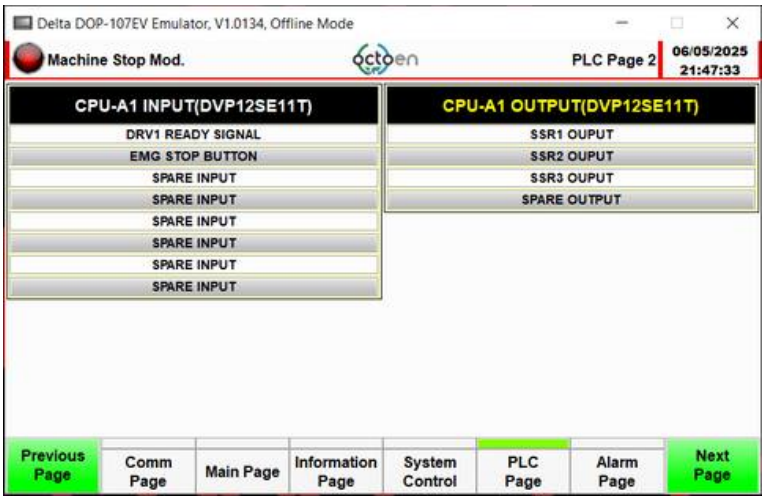


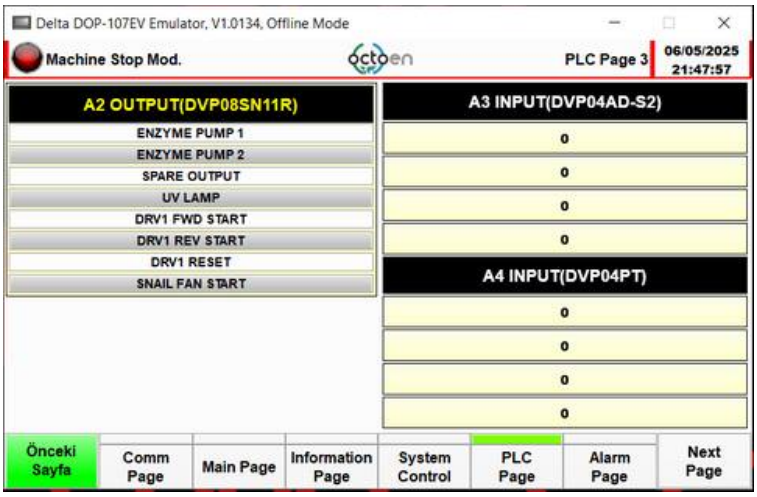
Mixer Enzyme Filling Pump: Controls the pump that sends liquid enzyme into the compost chamber.
Enzyme Drain Pump: Redirects condensate liquid back to the enzyme tank for recovery.
Fan Motor: Controls the filter fan in the system for odor management.
UV Lamp: Provides air sterilization via the UV-C lamp system. Can be enabled/disabled.

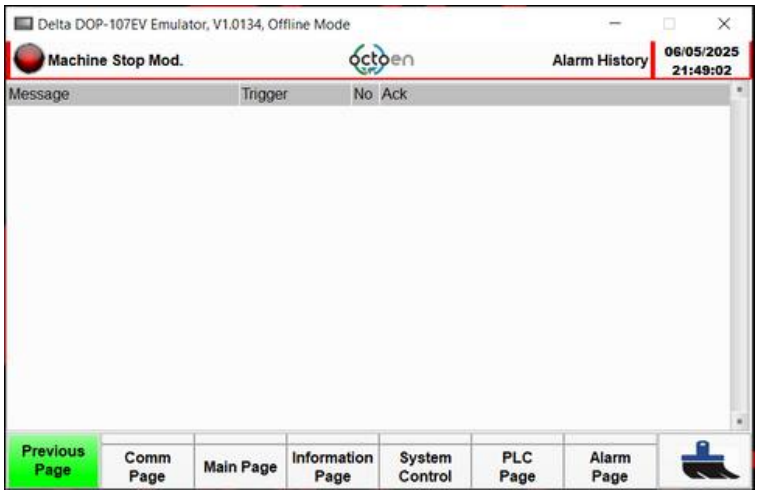
Enzyme Pressure Time (SV - ms): Sets how many milliseconds the enzyme pump will operate per cycle.
Enzyme Pressure Temp (SV / PV - °C): Adjusts enzyme injection timing based on the compost chamber temperature. SV: setpoint temperature, PV: current temperature.
Enzyme Alarm Level (SV / PV - mm): Monitors the minimum liquid level in the enzyme tank. SV: minimum limit, PV: current level. This value may change after condensate transfer.

This page is typically managed by technical service or installation engineers. Standard users should access this screen only when prompted by a system warning.









PLC Monitoring and Error Tracking Pages

These pages are designed for technical personnel. No direct actions are required from the user, but system connections and error logs can be monitored here.

- PLC Pages 1–3: Display PLC module connections, input–output pins, sensor pairings, and main actuator structures.
- Alarm Page & Alarm History: Show active fault messages and historical error records. When a fault occurs, the system issues an alert through this page. Previous alarms can also be reviewed here.

📌 **These pages are part of the technical appendix of the user manual and are intended for use only by authorized service personnel when intervention is necessary.**

Common Issues and Solutions

The Machine Is Not Running	The emergency stop button is jammed in the pressed position.	Rotate the emergency stop button to reset it and resume operation.
Does Not Operate After Starting (Shaft Not Rotating)	There is too much waste inside the system, or some waste is jammed.	Clear excess waste from the machine and inspect the tips of the mixing arms. In case of jamming, remove any material causing the blockage.
The machine is on, but the mixer arms aren't turning.	The system might still be in standby mode, or the chain could be broken.	Set all standby time values to zero through the system interface. If the problem continues, inspect the chain for damage or disconnection.
The machine is on, but the mixer arms aren't turning.	Motor overload may have activated the protection system.	Clear the excess material from inside the system, then perform a process reset.
Sludge has formed inside the machine at the end of the cycle.	The machine has been loaded with overly greasy and wet waste.	Add dry material into the system and restart the operation.
The machine produces an odor while operating.	The waste may begin to decompose earlier than expected.	Add dry matter to the system. Verify that the air intake and exhaust pipes are not obstructed, and ensure the lid lock is fully engaged.
The machine produces an odor while operating.	The activated carbon, silica gel, or UV-C lamps in the filter may have exceeded their service life.	Refill the cartridges inside the filter system. Clean the surfaces of the UV-C lamps, and clear any blockages if detected.

Defination of Warranty

1. Your product has passed strict quality control inspections.
2. In the event of a malfunction, if the issue cannot be resolved using the methods provided in the manual, please unplug the power supply, stop using the device, and contact the seller for after-sales service.
3. If a performance or functional failure occurs under normal use during the warranty period, the company is responsible for providing free repair service.

The seller will provide paid repair services in the following cases:

1. Performance issues or malfunctions occurring after the warranty period has expired.
2. Damage or malfunction caused by the user's intent or negligence.
3. Malfunctions resulting from repairs performed by unauthorized service providers not designated by the sales or service centers.
4. Failures caused by unstable power supply or poor-quality electrical outlets (regardless of the warranty period).
5. Product failures or defects resulting from natural disasters.

2 YIL GARANTİ	
Ürün İsmi	Mutfak atıklarını biyolojik olarak kompost gübreye dönüştürme makinası.
Model No.	ECO-130KSN
Seller Information	
User Information	
Warranty Period	1 year
Purchase Date	.....Year .....Month .....Day

The warranty becomes effective after installation.

Warranty Statement

The quality of this product is guaranteed in accordance with the terms outlined in this warranty.

Free after-sales service for this product is based on the purchase date, so please ensure the purchase date is entered accurately.

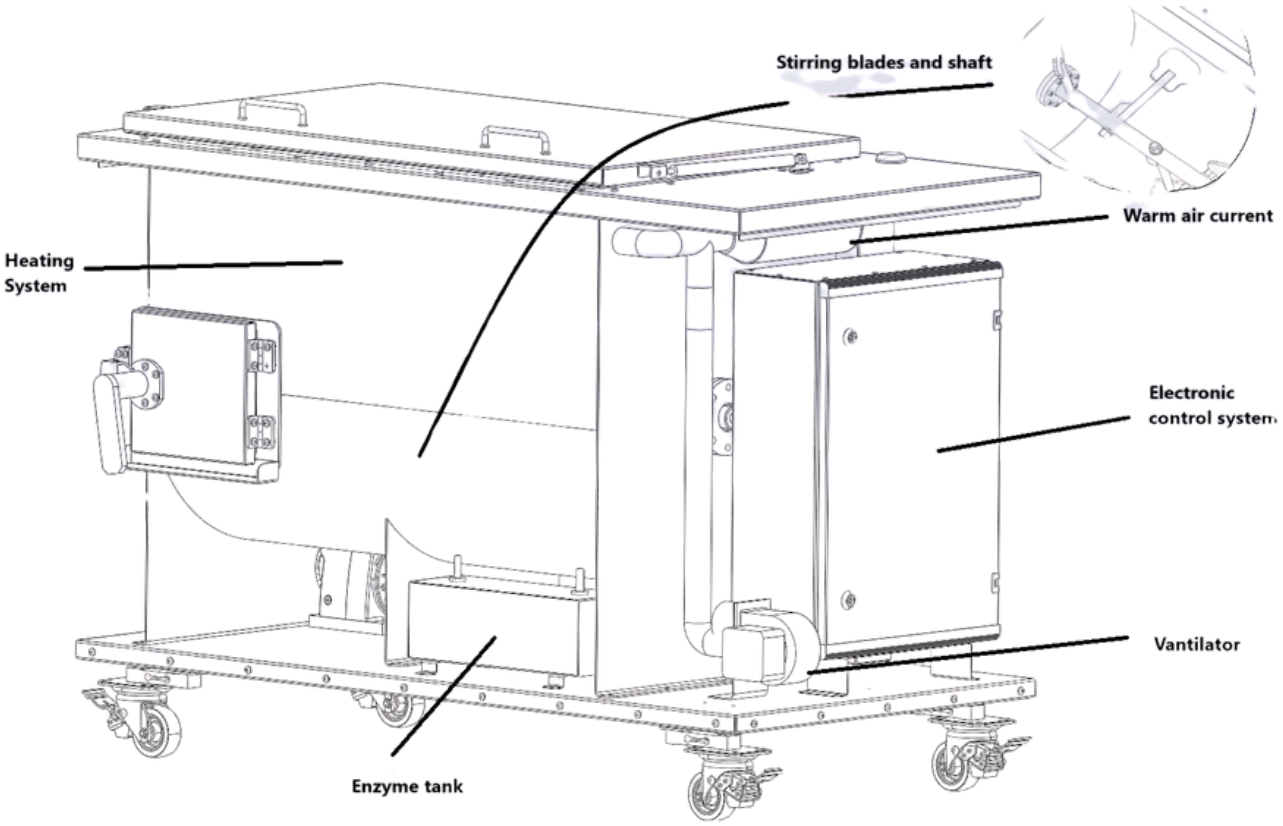
After-sales service is provided by OCTOEN A.S. and its authorized distributors.

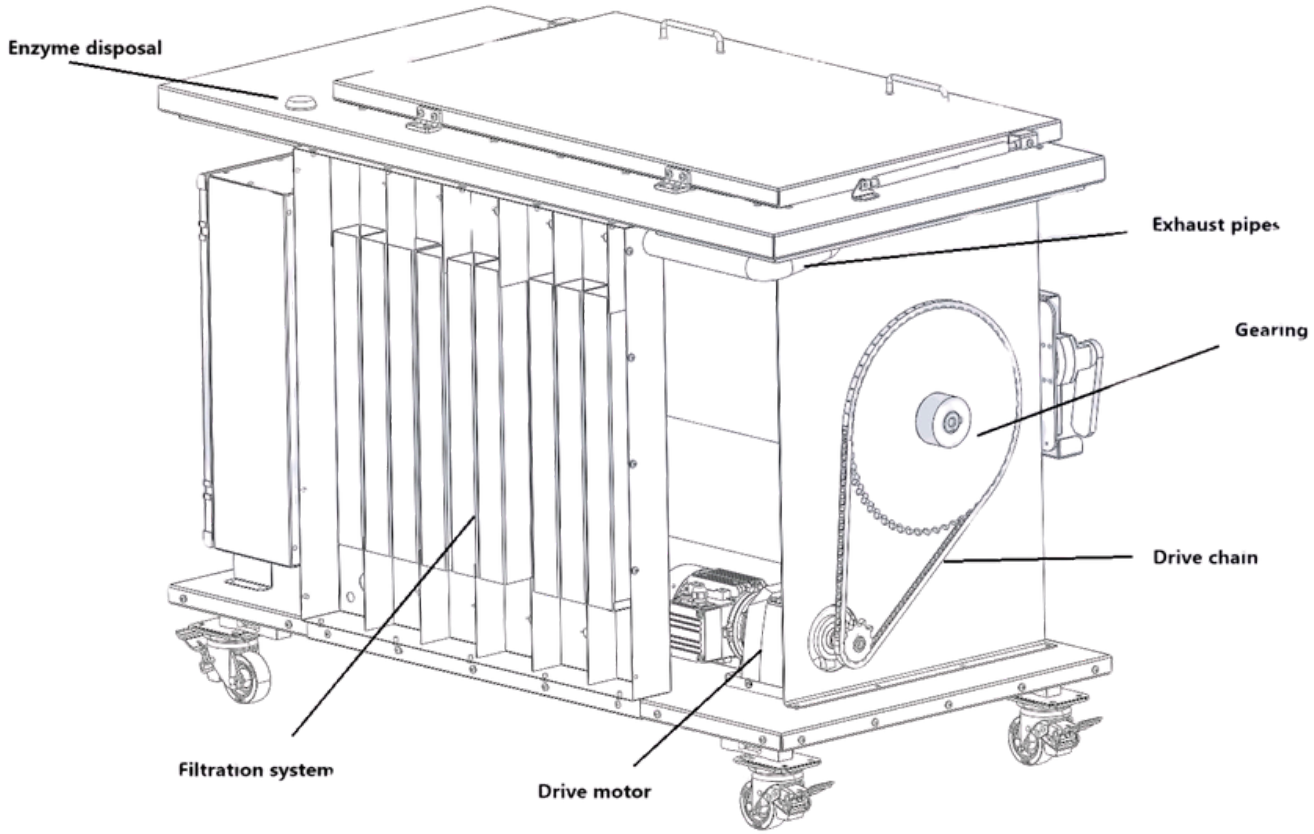
This warranty certificate is a valid document for after-sales support and product quality assurance—please store it carefully.

Our company assumes no responsibility for any repairs, replacements, or use of non-original parts carried out by anyone other than our authorized after-sales technicians.

OCTOEN ENDÜSTRİ A.Ş
Kısıklı Mah. Tepelik Sok. No: 12
Üsküdar / İSTANBUL / TÜRKİYE
+90 216 416 58 58

www.octoen.com
info@octoen.com
+90 532 136 55 83


Stirring blades and shaft
Warm air current
Heating System
Electronic control system
Vantilator
Enzyme tank


Enzyme disposal
Exhaust pipes
Gearing
Drive chain
Filtration system
Drive motor

OCTOEN ENDÜSTRİ A.Ş
Kısıklı Mah. Tepelik Sok. No: 12
Üsküdar / İSTANBUL / TÜRKİYE
+90 216 416 58 58

OCTOEN LLC.
2501 Chatham Rd. #4191
Springfield, IL, 62704
United States Of America
+1 331 201 18 98

www.octoen.com
info@octoen.com
+90 542 233 35 80