

polystruuder GR^{PRO}

Plastic Shredder Owner's Manual and Safety Guideline

WARNING

Read this manual before using this product.

FAILURE TO FOLLOW THE WARNINGS AND INSTRUCTIONS MAY RESULT IN ELECTRIC SHOCK, FIRE, AND/OR SERIOUS INJURY.

SAVE THIS MANUAL!





1.Safety Guidelines

TABLE OF CONTENTS

- 1.Safety Guidelines
- 2.Introduction
- 3.Getting Started
- 4.Operating the Shredder

- 5.Touchscreen User Interface
- 6.Calibration and Troubleshooting
- 7.Warranty and Support
- 8.Appendix

WARNING SYMBOLS AND DEFINITIONS

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
 DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor to moderate injury.
NOTICE	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

WARNING

Read all safety warnings and instructions.

FAILURE TO FOLLOW THE WARNINGS AND INSTRUCTIONS MAY RESULT IN ELECTRIC SHOCK, FIRE, AND/OR SERIOUS INJURY OR DEATH.

Save all warnings and instructions for future reference.

1.1 General Safety Information

Prioritize safety at all times when using the Polystruuder GR PRO. Ensure a secure and hazard-free environment by adhering to the following guidelines:

1. **KEEP WORK AREA CLEAN:** A cluttered workspace can lead to accidents. Ensure your work area is well-organized, free of obstacles, and clear of any materials that could interfere with the safe operation of the shredder. Regularly clean up plastic shreds and debris around the machine to maintain a safe environment.
2. **DO NOT USE IN WET, DAMP AREAS, OR OUTDOORS:** The Polystruuder GR PRO is designed for indoor use in dry conditions. Exposure to moisture can damage the machine and pose electrical hazards. Never operate the shredder outdoors or in areas where it could come into contact with liquids.
3. **KEEP CHILDREN AWAY:** Children should be kept at a safe distance from the machine during operation. The Polystruuder GR PRO's moving parts can be hazardous. Always store it out of reach and ensure that children are supervised when near the equipment.
4. **DO NOT FORCE THE MACHINE:** Overloading the shredder beyond its capacity can lead to malfunctions, damage, or safety hazards. Pay attention to the recommended shredding limits provided in the user manual and do not exceed them. If the machine encounters resistance, stop operation and investigate the cause.

1. Safety Guidelines

5. **USE A PROPER EXTENSION CORD:** If an extension cord is required for power, use one with the appropriate gauge and rating to handle the shredder's power requirements. Using an undersized or damaged extension cord can result in voltage drop and overheating, which is a safety risk.
6. **WEAR SAFETY APPAREL AND REMOVE JEWELRY:** When operating the Polystruuder GR PRO, always wear appropriate safety gear, including safety glasses, gloves and proper respirator. Remove any loose clothing, necklaces, rings, or other jewelry that could become entangled in moving parts or pose a safety risk. Always use a hair tie or bonnet when operating the machine with long hair.
7. **DO NOT LOOK DIRECTLY INTO THE SHREDDING CHAMBER:** To prevent the risk of injury, avoid looking directly into the shredding chamber during operation. Plastic shreds can be forcefully ejected from the machine and may pose a danger to the eyes. Always wear safety glasses or goggles.
8. **MAINTAIN THE MACHINE:** Regular maintenance is essential for the safe and efficient operation of the shredder. Follow the maintenance instructions outlined in this manual to keep the machine in good working condition.
9. **UNPLUG THE MACHINE BEFORE CLEANING OR REMOVING JAMS:** Always disconnect the power source by unplugging the shredder from the electrical outlet before cleaning or attempting to clear any jammed material from the shredding chamber. This step is crucial to prevent accidental activation while performing maintenance tasks and cleaning.
10. **USE ONLY ORIGINAL ACCESSORIES:** To ensure the safety and performance of the Polystruuder GR PRO, use only genuine accessories and replacement parts provided or recommended by the manufacturer. Non-original parts may not meet safety standards and can compromise the integrity of the machine.
11. **DO NOT MODIFY THE MACHINERY:** Avoid making any modifications or alterations to the shredder. Unauthorized modifications can affect its safety features and may void the warranty.
12. **CHECK FOR DAMAGED PARTS:** Before each use, thoroughly inspect the shredder for any damaged or worn components, such as power cords, plugs, switches, or housing. If any issues are detected, refrain from using the machine until the necessary repairs or replacements are made.
13. **NEVER LEAVE THE MACHINE UNATTENDED DURING OPERATION:** Always stay near the Polystruuder GR PRO while it's in use to monitor its performance and ensure safety. If any issues arise, immediately power off the machine and address the problem.

1.2 Grounded Tools: Tools with Three-Prong Plugs

WARNING

TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION READ AND FOLLOW THESE INSTRUCTIONS:

1. Grounded tools, also known as three-prong tools, have a third prong on their plug, which is connected to the grounding conductor in the power cord. This grounding conductor is an essential safety feature that helps protect against electrical shock.
2. The grounding conductor is designed to redirect electrical faults, such as short circuits or electrical leaks, away from the operator, reducing the risk of electrical shock.
3. When operating the Polystruuder GR PRO, it's crucial to ensure that you are using an appropriate electrical outlet that matches the tool's plug. Follow these guidelines:
4. Use grounded outlets: The Polystruuder GR PRO comes equipped with a three-prong plug. Therefore, only use grounded (three-hole) outlets. Using ungrounded outlets may compromise safety.

1. Safety Guidelines

5. Do not remove the grounding prong: Under no circumstances should you remove or modify the grounding prong on the tool's plug. This prong is a vital safety feature and should always be intact.
6. Inspect the power cord and plug regularly to ensure they are in good condition. Damaged cords or plugs can pose safety risks. Here's what to look for:
 7. Cord integrity: Check the power cord for any cuts, fraying, or exposed wires. If you find any damage, do not use the tool until it is repaired or replaced.
 8. Plug condition: Examine the plug for any signs of damage or wear. The prongs should be straight and not bent or broken. If the plug is damaged, replace it immediately.

1.3 Detailed Safety Guidelines During Operation

WARNING

ALWAYS SUPERVISE THE OPERATION OF THE POLYSTRUDER GR PRO. DO NOT LEAVE THE MACHINE UNATTENDED DURING USE. BEING PRESENT ALLOWS YOU TO MONITOR THE OPERATION, INTERVENE IN CASE OF ISSUES, AND ENSURE THE SHREDDING PROCESS PROCEEDS SMOOTHLY.

Prioritize safety at all times when using the Polystruder GR PRO. Ensure a secure and hazard-free environment by adhering to the following guidelines:

1.3.1 Emergency Shutdown

In the event of an emergency or if you notice any abnormalities during operation, immediately perform an emergency shutdown. Here's how to do it:

1. Press the emergency stop button (available only in optional customized orders) or press the power button and disconnect the power by unplugging the machine from the electrical outlet.
2. Ensure all personnel are at a safe distance from the machine during the emergency shutdown.

1.3.2 Safe Material Feeding

When loading plastic materials into the shredder, adhere to the following safety guidelines:

1. Feed materials gradually: Do not overload the shredding chamber. Feed materials gradually to prevent jams and ensure even shredding.
2. Keep hands clear: Never insert your hands or any objects other than the designated feeding mechanisms into the shredding chamber. Use the provided tools or mechanisms for material insertion.

1.3.3 Overheating Precautions

The Polystruder GR PRO is equipped with an overheating protection feature. This system measures the temperature within the machine and will automatically shut down if it reaches the temperature limit. To prevent overheating:

1. Avoid prolonged use: Allow the machine to cool down if it has been in continuous operation for an extended period.
2. Observe recommended duty cycles: Adhere to the recommended duty cycles as specified in the user manual.
3. Ventilation: Position the machine in a well-ventilated area, ensuring that the surrounding space is clear of obstructions and that the ventilation grills on each side of the machine remain unobstructed.

1. Safety Guidelines

1.3.4 Jam Detection

The Polystruuder GR PRO is equipped with a jam detection sensor that detects and responds to persistent jams during operation. In the event of a jam, the machine will automatically stop the shredding operation to prevent damage and facilitate jam clearance.

Customize jam detection via the touch screen: The jam detection feature can be customized using the touch screen user interface. You can adjust the sensitivity of the sensor to suit the specific materials you are shredding.

1.3.5 Material Compatibility

Use only materials that are compatible with the Polystruuder GR PRO. Using unsuitable materials may cause damage to the machine or pose safety risks. Refer to the user manual for a list of compatible materials.

1.3.6 Secure the Table

The Polystruuder GR PRO may vibrate and shake during operation, especially when shredding certain materials. To prevent accidents and ensure stable operation place the machine on a table or workbench that is both secure and heavy. This prevents the table from moving or tipping during operation.



SAVE THESE SAFETY INSTRUCTIONS FOR FUTURE USE

IMPORTANT SAFETY INFORMATION

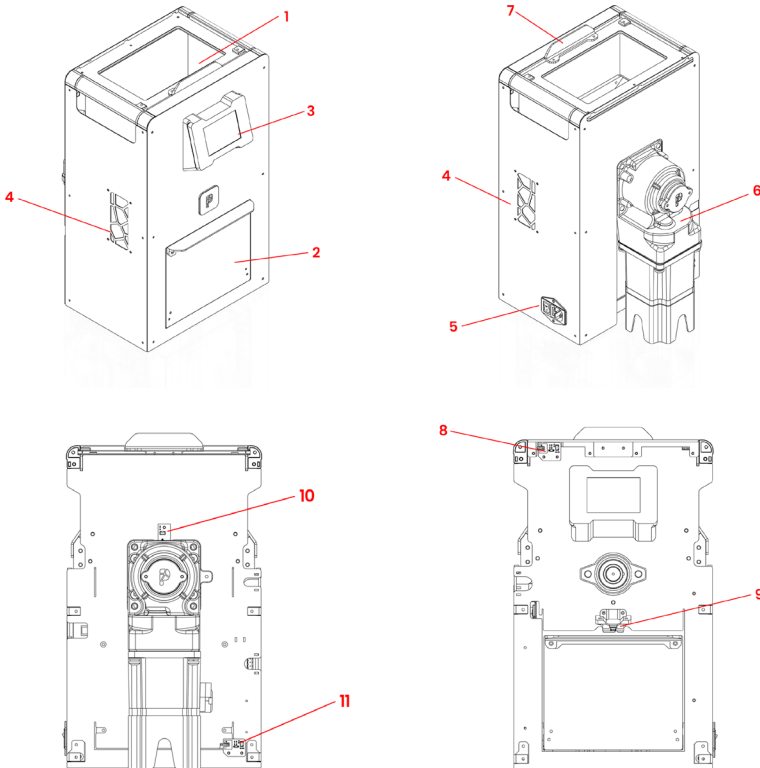


Read all safety warnings and instructions on section one at the beginning of this manual including the all text under subheadings therein before setup or use this product.

The Polystruder GR PRO is a cutting-edge plastic shredder engineered to transform plastic waste into valuable resources for 3D printing filament production. Whether you are an environmentally conscious enthusiast or a professional filament manufacturer, the Polystruder GR PRO offers a seamless and efficient solution to process various plastic materials.

2.1 About the Polystruder GR PRO

The Polystruder GR PRO is designed with precision and durability in mind, offering a range of advanced features that make it an exceptional choice for plastic shredding. Below, you will find descriptions of the key components of the machine.



2.Introduction

Detailed explanation of components:

1. **Shredding Chamber:** The heart of the Polystruder GR PRO, where plastic materials are shredded into smaller, usable pieces. The sliding door is secured with 2 strong magnets to prevent accidental opening.
2. **Collector Bin:** A removable container located beneath the shredding chamber to collect the shredded plastic material. The collector bin can be easily emptied for further processing.
3. **Touchscreen:** An intuitive and user-friendly touchscreen interface that allows you to customize shredding settings, monitor the machine's status, and make adjustments with ease.
4. **Ventilation Grills:** Ensure efficient airflow, preventing overheating of electronic components and enhancing the Polystruder GR PRO's performance and longevity.
5. **Power Input with Switch and Fuse:** The power input and switch control the machine's electrical supply. The switch allows you to turn the machine on and off as needed. A replaceable 10A fuse is also present to prevent short circuit.
6. **Motor:** The powerful motor provides the necessary force to drive the shredding blades and ensure smooth and efficient operation.
7. **Shredding Chamber Sliding Door Handle:** Door handle for sliding door mechanism. Slide the handle towards back to open the door.
8. **Sliding Door Sensor:** Monitors the status of the sliding door. The machine will not operate if the sliding is not properly closed.
9. **Collector Bin Level Sensor:** Measures the level of shredded material in the collector bin. This sensor helps prevent overfilling.
10. **Collector Bin Sensor:** Monitors the presence of the collector bin. The machine will not operate if the bin is not properly in place.
11. **Temperature Sensor:** Monitors the internal temperature of the machine and activates the overheating protection feature if needed.



WARNING

THE SHREDDER CHAMBER DOOR IS EQUIPPED WITH POWERFUL NEODYMIUM MAGNETS TO KEEP IT SECURELY CLOSED. IF YOU HAVE A PACEMAKER, DO NOT USE OR APPROACH THE MACHINE FOR YOUR SAFETY.

2.2 Purpose and Benefits

The Polystruder GR PRO serves a distinct purpose and provides a range of benefits for users, which include:

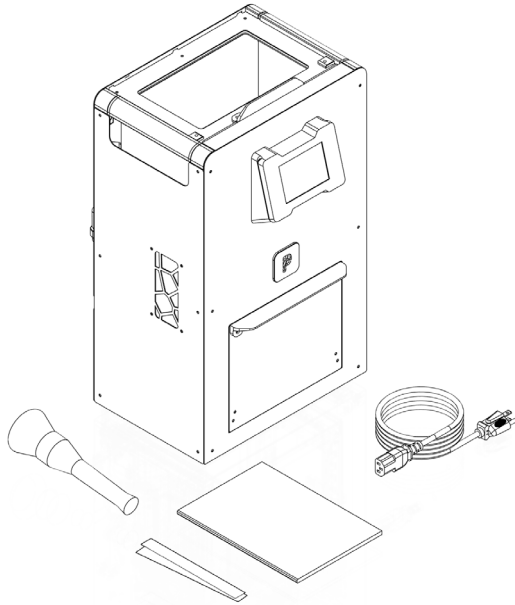
1. **Efficient Recycling with ShredAI:** The Polystruder GR PRO is designed to seamlessly recycle various types of plastic materials, transforming waste into valuable resources for 3D printing filament production. The intelligent ShredAI technology ensures optimal shredding performance with zero user interaction, while continuously monitoring the machine's status in real-time.
2. **Environmentally Responsible:** The machine facilitates responsible plastic disposal, reducing the environmental impact of plastic waste by enabling recycling.
3. **User-Friendly Operation:** The Polystruder GR PRO is designed for ease of use, with advanced features, safety mechanisms, and an intuitive touchscreen interface.

3. Getting Started

This section is designed to help you prepare for the initial setup and safe operation of the Polystruder GR PRO.

3.1 Package Contents

Before you begin, it's essential to verify the contents of the package to ensure that you have received all the necessary components and accessories. The package should include the following items:



1. Polystruder GR PRO (pre-assembled)
2. Power cord
3. 2x spare anti-skid pads for collector bin
4. Owner's Manual and Safety Guideline
5. Cleaning brush

If any components are missing or appear damaged, please contact us for the assistance.

3.2 Power Requirements

The Polystruder GR PRO is designed to operate within a specific power range. To ensure safe and efficient operation, follow these power requirements:

1. **Voltage:** The machine is compatible with both 110V and 220V power sources. Ensure that the power source matches the machine's voltage requirements. To switch between 110V and 220V please remove the right side panel and change the voltage switch located on the back side of the power supply marked with yellow label.
2. **Grounded Outlet:** Use a grounded (three-prong) outlet with the appropriate voltage rating. A grounded outlet is essential to provide electrical safety.
3. **Power Cord:** Make sure the provided power cord is in good condition and properly inserted into the power input of the machine.

3. Getting Started

3.3 Safety Precautions

Safety is a top priority when using the Polystruder GR PRO. Before you start operating the machine, please review and adhere to the following safety precautions:

1. **Refer to the Safety Guidelines:** Familiarize yourself with the safety guidelines outlined in Section 1 of this manual, including general safety information, using grounded tools, and detailed safety guidelines during operation.
2. **Keep the Work Area Clean:** Maintain a clean and organized workspace to prevent accidents and ensure safe operation.
3. **Operate Indoors:** Use the machine in a dry, indoor location. Avoid wet, damp areas, and outdoor operation to prevent electrical hazards.
4. **Keep Children Away:** Ensure that children and pets are at a safe distance from the machine during operation. The Polystruder GR PRO's moving parts can be hazardous.
5. **Wear Safety Apparel:** Always wear appropriate safety gear, including safety glasses and gloves. Remove jewelry or loose clothing that could pose a safety risk.
6. **Use the machine in a well ventilated area:** Shredding plastic might expose you to the micro particles that might cause respiratory illnesses. Always wear a respirator and operate the machine in a well ventilated area.
7. **Never Leave the Machine Unattended:** Stay near the machine while it's in use to monitor its performance and ensure safety. Never leave the machine unattended during operation.
8. **Customize Safety Settings:** Take advantage of the safety features available through the touchscreen interface, including adjusting the jam detection sensitivity and other safety settings.

4. Operating the Shredder

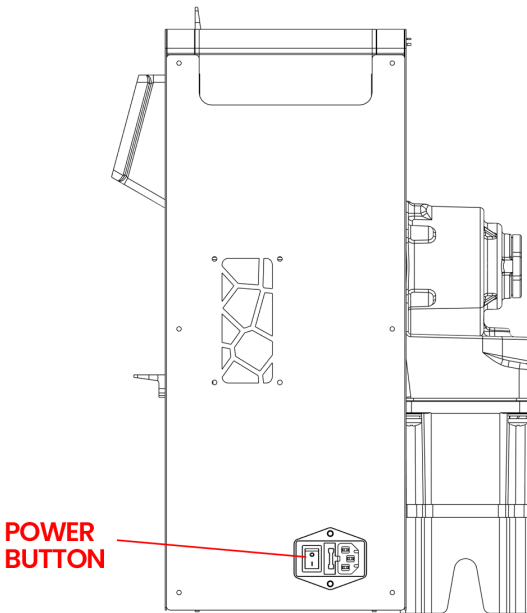
This section provides instructions for the proper operation, maintenance, and safety procedures when using the Polystruder GR PRO.

WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION: TURN THE POWER SWITCH OF THE MACHINE OFF AND UNPLUG THE TOOL FROM ITS ELECTRICAL OUTLET BEFORE PERFORMING ANY PROCEDURES IN THIS SECTION.

TO PREVENT SERIOUS INJURY FROM MACHINE FAILURE: DO NOT USE DAMAGED MACHINE. INSPECT THE MACHINE FOR ANY STRUCTURAL DAMAGE THAT MIGHT AFFECT THE OPERATION. CHECK THE SENSORS, HOPPER DOOR AND COLLECTOR BIN FOR ANY DAMAGE. ALWAYS SUPERVISE THE OPERATION OF THE POLYSTRUDER GR PRO. DO NOT LEAVE THE MACHINE UNATTENDED DURING USE.

4.1 Powering On and Off



4.1.1 Powering On

To power on the Polystruder GR PRO:

1. Ensure the machine is securely placed on a stable and level surface.
2. Plug the power cord into a grounded outlet that matches the machine's voltage requirements (110V or 220V).
3. Press the power switch to the "ON" position.
4. The touchscreen interface will initialize, and the machine will be ready for operation.

4. Operating the Shredder

4.1.2 Powering Off

To power off the Polystruuder GR PRO:

1. Ensure that the shredding chamber is empty and the collector bin is properly in place.
2. Press the power switch to the "OFF" position.
3. The machine will power down, and the touchscreen interface will turn off.

CAUTION

ALWAYS POWER OFF AND UNPLUG THE MACHINE WHEN NOT IN USE, JAM IS OCCURED OR DURING CLEANING AND MAINTENANCE.

4.2 Preparing and Feeding Plastic Material

4.2.1 Material Selection

Before starting the shredding process, ensure that you are using plastic materials compatible with the Polystruuder GR PRO. Below is a list of compatible plastic types that have been tested for use with the Polystruuder GR PRO.

PLA	PETG	ABS
ASA	NYLON	PC
HIPS	TPU	PVA
PET	Carbon fiber filled (10% max)	Glass filled (10% max)

Please note that shredding materials such as carbon fiber, glass, or other abrasive-filled substances can significantly reduce the lifespan of the machine's blades.

4.2.2 Material Preperation and Limitations

Always ensure that the plastic material is free of any metal objects, such as nuts, rivets, sockets, screws, and other foreign materials like labels, paper, glue, or similar. We strongly advise shredding only the same type of plastic at the same time. Mixing different types of plastic can lead to suboptimal results. Do not shred solid materials thicker than 10mm. If shredding a solid material thicker than 5mm thickness, break it apart to smaller pieces not larger than **50mm width by 10mm depth** with standard electrical or battery powered PVC pipe cutter. **Never fill the shredding chamber more than 50 percent! Failure to follow this instructions considered as user error and could lead a machine damage, not covered with warranty!**

WARNING

TO PREVENT SERIOUS INJURY RESULTING FROM OVERFILLING, NEVER EXCEED 50 PERCENT CAPACITY IN THE SHREDDING CHAMBER. OVERFILLING MAY LEAD TO THE SHREDDING CHAMBER DOOR OPENING DUE TO THE EJECTION OF PLASTIC PIECES AT HIGH SHREDDING SPEEDS. NEVER LOOK DIRECTLY INTO THE SHREDDING CHAMBER. ALWAYS WEAR SAFETY GEAR WHEN OPERATING THE MACHINE.

1. Ensure that the collector bin is in place.
2. Place the object to be shredded inside the shredding chamber. If the object height is larger than 80mm, we recommend shredding only one piece at a time.
3. Ensure that the material is not thicker than 10mm. If the material is solid or thicker than 5mm, break apart to smaller pieces before putting it into shredding chamber.
4. Close the hopper door.

4. Operating the Shredder

4.3 Shredding Process

The Polystruuder GR PRO is designed for user-friendly operation. Once the machine is powered on, you can configure the shredding settings using the touchscreen interface. Follow these steps for the shredding process:

1. Go to home screen, make sure collector bin is empty and hopper door is closed.
2. Press and hold "HOLD TO START" button for 3 seconds to initiate the shredding process.
3. The machine will commence shredding the plastic material according to your specified settings. Always supervise the operation to ensure that it proceeds smoothly and safely.

NOTICE

Please note that the blades, blade insets, and blade insets holders may have slight play and can move during the shredding process, generating a metallic sound. Additionally, the machine frame may flex and tilt slightly depending on the shredding direction. This is considered normal and expected behavior.

4.4 Tips for Optimal Shredding Performance

The Polystruuder GR PRO is designed to process material as small as 2mm pieces. To ensure the best shredding results we recommend following these steps:

1. Ensure that the material being fed into the shredder is free of contaminants and any metal objects, which might damage the blades.
2. It is important to clean the machine when transitioning between different material types to prevent any cross-contamination. For instance, mixing PLA and PETG may lead to jams during filament extrusion process. Additionally, we strongly advise against blending filaments of different colors and brands, given the potential variations in chemical composition.
3. Maintain caution not to overfill the shredding chamber, as optimal performance is achieved by filling it up to a maximum of 50%, reducing the risk of blade jams.
4. Initiate the shredding process using ShredAI as the primary mode, as it operates successfully 90% of the time. In cases of heightened jam occurrences, consider switching to manual mode and adjusting the speed and temperature settings accordingly.
5. For achieving an ideal and consistent plastic particle size within the 2mm to 5mm range, consider reshredding the same material at least three times. Notably, reshredding becomes 5 to 10 times faster after the initial process. To ensure efficiency during reshredding, limit the input to a maximum of 2 cups of plastic (approximately 450g) to avoid unnecessary jams.
6. While sifting between reshredding sessions is an option, it is not mandatory. The Polystruuder GR PRO is equipped with 3mm thin blades and narrow channels designed to minimize the likelihood of large pieces falling into the collector bin.
7. When dealing with large objects, it is recommended to shred one plastic object at a time. Introducing multiple large objects into the machine simultaneously may result in avoidable jams.
8. Do not disable persistent jam feature when shredding large or thick objects. Persistent jam feature is

4. Operating the Shredder

4.4 Maintenance and Cleaning

WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION: TURN THE POWER SWITCH OF THE MACHINE OFF AND UNPLUG THE TOOL FROM ITS ELECTRICAL OUTLET BEFORE PERFORMING ANY PROCEDURES IN THIS SECTION.

TO PREVENT SERIOUS INJURY FROM MACHINE FAILURE: DO NOT USE DAMAGED MACHINE. INSPECT THE MACHINE FOR ANY STRUCTURAL DAMAGE THAT MIGHT AFFECT THE OPERATION. CHECK THE SENSORS, HOPPER DOOR AND COLLECTOR BIN FOR ANY DAMAGE. ALWAYS SUPERVISE THE OPERATION OF THE POLYSTRUDER GR PRO. DO NOT LEAVE THE MACHINE UNATTENDED DURING USE.

The Polystruder GR PRO is designed for user-friendly operation. Once the machine is powered on, you can configure the shredding settings using the touchscreen interface. Follow these steps for the shredding process:

1. **Regular Inspection:** Periodically inspect the machine for any signs of damage or wear, including power cords, plugs, switches, and blades. If any issues are detected, refrain from using the machine until repairs are made.
2. **Clearing Jams:** In case of a jam, follow the jam-clearing instructions provided in the user manual. Ensure that the power is unplugged before attempting to clear any jammed material. Only use pliers and wear cut-resistant gloves to clear the jammed material. **NEVER ATTEMPT TO CLEAR A JAM WITH BARE HANDS!** Doing so may result in serious injury.
3. **Collector Bin:** Regularly empty the collector bin as needed to prevent overfilling and ensure smooth operation.
4. **Cleaning:** Clean the shredding chamber, blades, and the surrounding areas of any accumulated plastic debris. Make sure the machine is powered off and unplugged during the cleaning process. When switching between different types of plastic, we recommend using compressed air and a soft bristle brush to clean the shredding chamber and the area under the blades, from the collector bin to ensure no leftover plastic is present from the previous session.

CAUTION

DO NOT USE FLAMMABLE, HARSH CHEMICALS, WATER OR ANY LIQUID TO CLEAN THE MACHINE. ONLY USE SOFT BRISTLE BRUSH, PLIERS AND COMPRESSED AIR.

5. Touchscreen and User Interface

The touchscreen user interface of the Polystruuder GR PRO offers a convenient and user-friendly way to control and customize your shredding process. This section provides an overview of the interface and instructions for navigation.

5.1 Overview

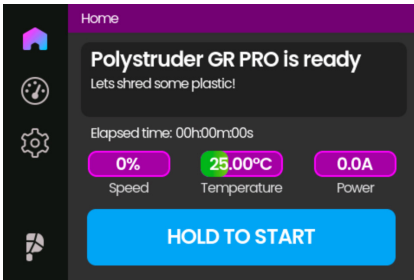
The touchscreen interface is the control center for your Polystruuder GR PRO. With it, you can:

1. Start and stop the shredding.
2. Set and customize machine parameters.
3. Monitor the machine status.

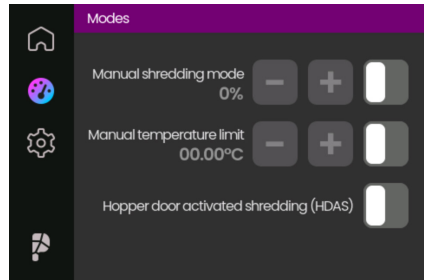
5.2 Navigating the User Interface

The touchscreen interface consists of several screens, each with specific functions. You can navigate between these screens to access the desired features.

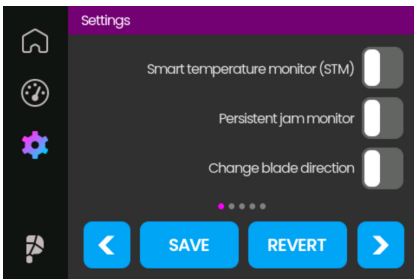
On the left side of the screen you can find 4 buttons to navigate between 4 different screens.



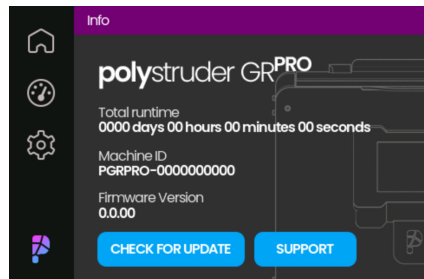
Home screen



Modes screen



Settings screen



Info screen

NOTICE

DEPENDING ON THE FIRMWARE VERSION, THE USER INTERFACE MAY DIFFER SLIGHTLY FROM THE ONE SHOWN ABOVE. PLEASE REFER TO THE LATEST FIRMWARE UPDATE RELEASE NOTES TO SEE WHAT HAS CHANGED.

5. Touchscreen and User Interface

5.2.1 Home Screen

The Home Screen is the main screen you see upon starting the machine. From here, you can access the following key functions:

1. **Hold to Start/Stop Button:** This button allows you to initiate and halt the shredding process. Holding down for 3 seconds starts the shredding process, and pressing it again stops the machine.
2. **Status Messages:** This area displays important messages related to the shredding process, including notifications or alerts.
3. **Machine Status Indicators:** These indicators provide real-time information about the machine's operation:
 - **Speed:** Displays the realtime operating speed of the machine.
 - **Temperature:** Displays the internal temperature of the shredder to ensure safe operation temperature to prevent material melting.
 - **Power:** Displays the power draw of the machine, helping you monitor how hard motor is working.

5.2.2 Modes Screen

The Modes Screen allows you to select different operating modes:

1. **Manual Shredding Mode:** In this mode, you have full control over shredding settings, allowing for customized parameters based on your specific requirements.
2. **Manual Temperature Limit:** You can set a maximum temperature limit to ensure the shredding process remains within a safe temperature range. Only works when Smart Temperature Monitor (STM) is activated.
3. **Hopper Door Activated Shredding (HDAS):** This mode enables automatic shredding when the hopper door is closed, providing a convenient and hands-free option.

WARNING

HDAS IS AN EXPERIMENTAL FEATURE AND NEEDS TO BE USED CAREFULLY. IT CAN CAUSE FATAL INJURY OR DAMAGE TO THE MACHINE. POLYSTRUDER IS NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY CAUSED BY THE USAGE OF HDAS. ACTIVATE IT AT YOUR OWN DISCRETION.

5. Touchscreen and User Interface

5.2.3 Settings Screen

To navigate between the settings screens, use the left and right arrow buttons to explore different settings options. Here's how to manage the settings:

1. **SAVE:** After making adjustments to settings, press "SAVE" to save the settings to memory. This ensures the machine remembers the settings after restarting.
2. **REVERT:** Use "REVERT" to reset the settings to their factory default values.

The Settings Screen allows you to configure various machine settings, including:

1. **Smart Temperature Monitor (STM):** Temperature monitoring feature to maintain safe operating conditions. When temperature exceeds 60C the machine automatically pauses the shredding session and waits until the motor cools down and resumes shredding without no user interaction. It can be used with Manual Temperature Limit Mode to set the temperature limit manually.
2. **Persistent Jam Monitor:** Enables the persistent jam detection feature.
3. **Change Blade Direction:** Enables the direction change of the shredding blades. Regardless of this settings enabled or disabled, machine will always change blade direction when motor power exceeds 12A.
4. **Change Blade Direction Interval:** Sets the interval at which the blade direction changes.
5. **Material Detection Interval:** Configures how often the machine detects if the material is present inside the shredding chamber.
6. **Persistent Jam Detection Interval:** Adjusts the interval at which the machine checks for persistent jams.
7. **Display Brightness:** Allows you to customize the brightness of the touchscreen display.
8. **Beep on Machine Status Change:** Enables or disables the audible beep when the machine's status changes.
9. **Beep on Touch:** Configures whether a beep sound is produced when touching the screen.
10. **Bin Sensor Calibration:** Calibrates the collector bin sensor to ensure accurate level detection.
11. **Power Sensor Calibration:** Calibrates the power sensor for accurate power measurement.
12. **Temperature Sensor Calibration:** Calibrates the temperature sensor for precise temperature measurement.
13. **Connect Wi-Fi Automatically:** Determines whether the machine connects to Wi-Fi automatically.
14. **Check for Firmware Update During Startup:** Enables or disables the automatic firmware update check during startup.
15. **Wi-Fi Settings:** Allows you to configure and manage Wi-Fi settings.

5.2.4 Info Screen

The Info Screen provides essential information about the machine, including:

1. **Total Runtime:** Displays the total operational time of the Polystruder GR PRO.
2. **Machine ID:** Shows a unique identifier for the machine.
3. **Firmware Version:** Indicates the current firmware version installed.
4. **Check for Update:** Allows you to manually check for firmware updates.
5. **Support:** Provides contact information and access to customer support for any questions or issues you may have.

6. Calibration and Troubleshooting

6. Calibration and Troubleshooting

WARNING

TO PREVENT SERIOUS INJURY FROM MACHINE FAILURE: DO NOT USE DAMAGED MACHINE. INSPECT THE MACHINE FOR ANY STRUCTURAL DAMAGE THAT MIGHT AFFECT THE OPERATION. CHECK THE SENSORS, HOPPER DOOR AND COLLECTOR BIN FOR ANY DAMAGE. ALWAYS SUPERVISE THE OPERATION OF THE POLYSTRUDER GR PRO. DO NOT LEAVE THE MACHINE UNATTENDED DURING USE.

Calibration and troubleshooting are essential for maintaining the proper operation of your Polystruder GR PRO. This section provides instructions for sensor calibration, common error messages and solutions, and general troubleshooting steps.

6.1 Sensor Calibration

Calibrating the sensors ensures accurate measurements and reliable operation. The following subsections describe how to calibrate different sensors:

6.1.1 Door Sensor Calibration

Door sensor calibration might be necessary from time to time when hopper door is closed but on touchscreen it is displayed as “Close the hopper door to start.” To calibrate the door sensor, follow these steps:

1. Access the touchscreen user interface.
2. Navigate to the “Settings Screen” and go to tab 4.
3. Select “Door Sensor Calibration”.
4. Follow the on-screen instructions to calibrate the bin sensor.

6.1.2 Bin Sensor Calibration

Calibrating the bin sensor ensures precise detection of the collector bin’s level and prevents overfilling. Only do this step when bin sensor not detecting the material level properly. To calibrate the bin sensor, perform the following steps:

1. Access the touchscreen user interface.
2. Navigate to the “Settings Screen” and go to tab 4.
3. Select “Bin Sensor Calibration”.
4. Follow the on-screen instructions to calibrate the bin sensor.

6.1.3 Power Sensor Calibration

Calibrating the power sensor ensures accurate power measurement and safety during operation. To calibrate the power sensor, follow these steps:

1. Access the touchscreen user interface.
2. Navigate to the “Settings Screen” and go to tab 4.
3. Select “Power Sensor Calibration”.
4. Follow the on-screen instructions to calibrate the power sensor.

6. Calibration and Troubleshooting

6.1.4 Temperature Sensor Calibration

Calibrating the temperature sensor is crucial for precise temperature monitoring. We recommend temperature calibration each time when the machine is moved to another environment where temperature difference is more than 5 degrees. To calibrate the temperature sensor, follow these steps

1. Access the touchscreen user interface.
2. Navigate to the "Settings Screen." and go to tab 4.
3. Select "Temperature Sensor Calibration".
4. Follow the on-screen instructions to calibrate the temperature sensor.



You need a precise thermometer to complete the temperature calibration.

6.1.5 Reverting Calibration Data

To reset the sensor calibration data to the factory default settings, press the 'REVERT' button on the settings screen. This action will erase all saved settings and return the machine to its original factory defaults.

6.2 Common Error Messages and Troubleshooting

In the event of an error message, consult the user manual or follow the on-screen instructions to resolve the issue. Here are some common error messages and their potential solutions:

1. **Jam detected:** When jam is detected machine stops automatically and wait for the user to clean the any jammed material. Please wear cut-resistant protective gloves and protective eyewear at all times. Do not attempt to clean the jam with bare hands. Use pliers or similar tool to remove the jam!
2. **Temperature limit reached!:** When maximum shredding temperature limit is reached machine will stop automatically and waits until temperature drops to safe level. If Smart Temperature Monitor (STM) is active it will resume shredding automatically without any user interaction. You can also adjust the temperature limit manually from modes menu.
3. **Collector bin is full:** Empty the collector bin to prevent overfilling. Replace the bin to resume shredding.
4. **Collector bin is not present:** Replace the bin to resume shredding.
5. **Door is open:** Securely close the shredding chamber hopper door to resume operation safely.
6. **Sensor error!:** A sensor error has been detected, likely caused by a loose or damaged sensor or wiring. Please refer to the on-screen instructions to identify which sensor is reporting the error.
7. **Thermal runaway!:** Temperature sensor might be damaged or loose. Please check the temperature sensor and wiring, necessary.

NOTICE

DEPENDING ON THE FIRMWARE VERSION, THE ERROR MESSAGES PROVIDED MAY DIFFER SLIGHTLY FROM THE ONE SHOWN ABOVE. PLEASE REFER TO THE LATEST FIRMWARE UPDATE RELEASE NOTES TO SEE WHAT HAS CHANGED.

6. Calibration and Troubleshooting

6.3 Additional Troubleshooting

In the event of issues or malfunctions not covered by specific error messages, consult the user manual for detailed troubleshooting steps. General troubleshooting may include:

1. Checking the power supply, 10A fuse and connections.
2. Ensuring all safety features are functioning properly.
3. Verifying the material being shredded is compatible with the machine.
4. Cleaning the shredding chamber and blades.
5. Ensure the blades are sharp and intact. Make sure no foreign object (metal, organic etc.) is present other than plastic.
6. Check the machine for any physical damage, including sensors.

In case of sensor failure, the machine will provide information which sensor is malfunctioning to prevent unintended startup. Please thoroughly inspect the sensors and their wiring for any signs of damage, and replace them if necessary.

You can also contact us at support@polystruder.com

7. Warranty and Support

This section provides information about the warranty coverage for your Polystruuder GR PRO and how to contact customer support.

7.1 Warranty Information

The Polystruuder GR PRO is covered by a limited warranty designed to offer you peace of mind and ensure the reliability of your machine. Below are key points regarding the warranty:

1. **Warranty Period:** The warranty coverage extends for a specified period, typically one year from the date of delivery. Check your warranty certificate or our website for the exact duration.
2. **Scope of Warranty:** The warranty covers manufacturing defects and malfunctions. It does not cover damages resulting from misuse, unauthorized modifications, or wear and tear.
3. **Warranty Claims:** In the event of a warranty claim, contact the manufacturer for guidance on the claims process. You may be required to provide proof of purchase and product registration.

Polystruuder reserves the right to change and modify warranty information. For the most up-to-date warranty details, please visit our website at <https://polystruuder.com>.

7.2 Contact Information

If you require technical assistance, have inquiries about the product, or need help with troubleshooting, please contact our customer support team. They are available to provide guidance and solutions to any issues you may encounter.

- Email: support@polystruuder.com
- Website: <https://polystruuder.com>
- Mailing Address: 351 S Fuller Ave. Apt 4L, Los Angeles, CA, 90036, United States of America

8.1 Technical Specifications

Mechanical

- 304 Stainless Steel Blades
- 304 Stainless Steel Octagonal Blade Shaft
- 304 Stainless Steel Blade Spacers
- 304 Stainless Steel Blade Inserts
- Lightweight Aluminum Structural Frame

Motor

- 300W 24V BLDC Motor
- 90:1 Gearbox
- Speed: 1 RPM - 10 RPM
- 40Nm Maximum Torque

Shredding Capacity

- Minimum: 0.5kg/hr
- Maximum: 5.0kg/hr
- Optimal: 1.5kg/hr
- 3 Liters Hopper Volume
- 4.5 Liters Collector Bin Volume

Electronics

- Dual Core 32 bit MCU
- 3.2in Touchscreen
- Wi-Fi Connectivity
- OTA Firmware Updates
- 4 Safety Sensors
- 1 Power Sensor
- 1 Hall Effect Sensor
- Safety Relay

Power Input

- 6.8A/115VAC - 3.4A/230VAC

Dimensions

- Length: 337mm - 13.2in
- Width: 288mm - 11.3in
- Height: 469mm - 18.4in

Weight

- 24kg / 52lbs



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