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Creality Ender-3

Creality Ender 3 3D Printer User Manual

Model: Ender-3 | Brand: Creality

1. Introduction

This manual provides comprehensive instructions for the assembly, operation, and maintenance of your Creality Ender 3 3D Printer. Designed for precision and reliability, the Ender 3 is an ideal tool for prototyping, sample creation, and various 3D printing applications.

2. Safety Information

Always exercise caution when operating the 3D printer. Keep hands clear of moving parts and hot surfaces. Ensure proper ventilation during operation. For detailed safety guidelines, please refer to the official Safety Information PDF: Safety Information (PDF)

3. What's in the Box

Your Creality Ender 3 package includes the following components:

- 3D printer (partially assembled)
- Power supply
- Display screen
- Motor components
- Aluminum profiles
- Screw rod
- Z-axis passive block
- Extruder kit
- Filament holder
- Spatula
- Tools and accessories (pliers, Allen wrenches, nozzle cleaner, SD card, etc.)

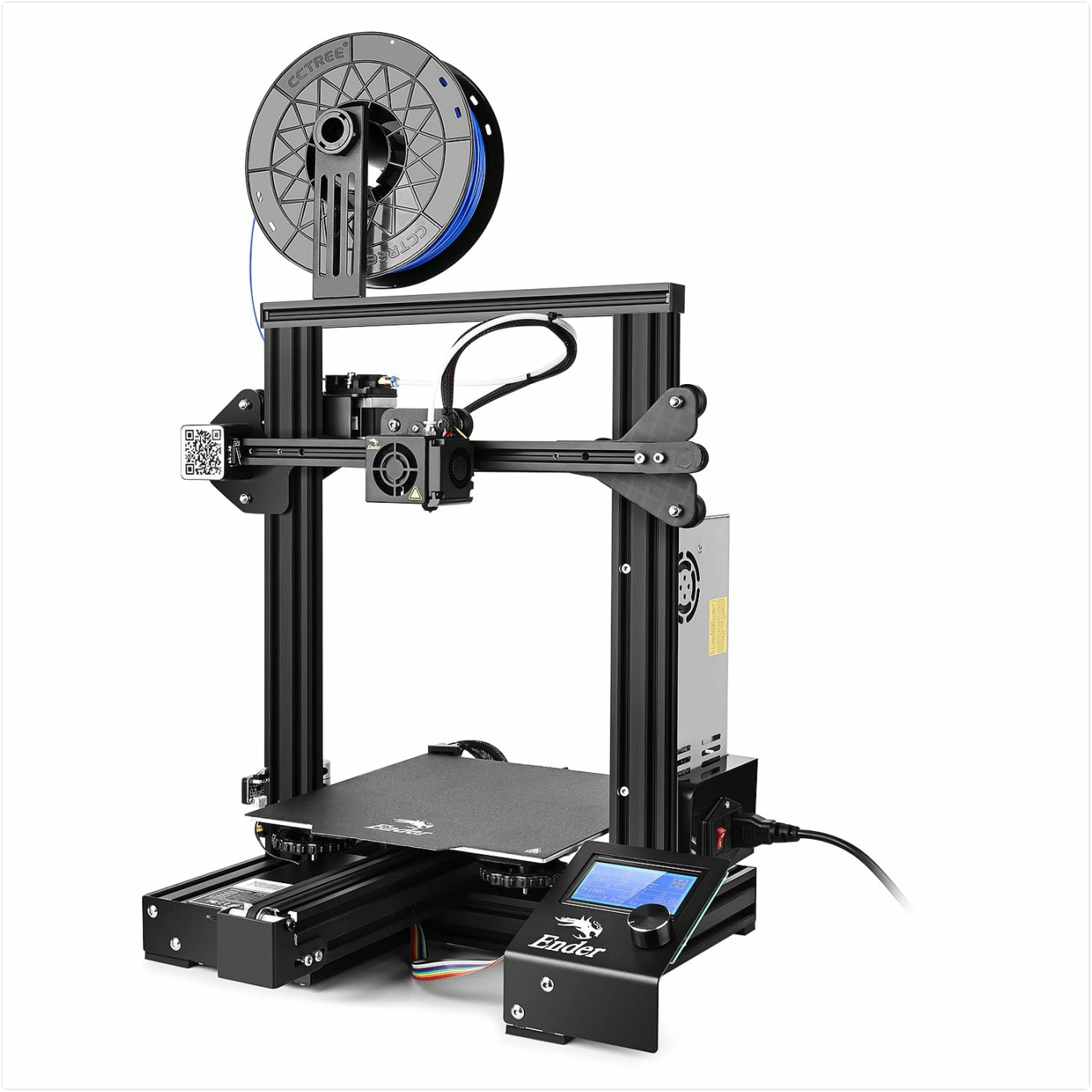

Figure 3.1: Included components and tools for the Ender 3 3D Printer.



Figure 3.2: Another view of the various parts included with the Ender 3.

4. Setup and Assembly

The Creality Ender 3 is designed for user-friendly assembly. Follow these steps to set up your printer. For a detailed visual guide, refer to the official Installation Manual PDF and video tutorials.
Installation Manual (PDF)

1. **Base Frame Assembly:** Secure the base frame components.
2. **Gantry Installation:** Attach the vertical gantry to the base. Ensure it is square and stable.
3. **Extruder and Hotend Assembly:** Mount the extruder and hotend assembly onto the X-axis gantry.
4. **Wiring:** Connect all motor, endstop, hotend, and heated bed wires according to the provided diagrams. Pay close attention to correct polarity and connections.
5. **Filament Holder:** Install the filament holder on top of the frame.
6. **Power Supply Connection:** Connect the power supply unit.
7. **Initial Power On & Testing:** Power on the printer and perform initial tests as per the manual.



Figure 4.1: Fully assembled Creality Ender 3 3D Printer. Scan the QR code for more information: http://qr16.cn/BsinVW



Figure 4.2: Front view of the assembled printer, showing the display and main structure. Scan the QR code for more information: http://l.ead.me/bat9cr



Figure 4.3: Side view of the assembled printer, highlighting the V-slot rails and stable design.



Figure 4.4: Rear view of the assembled printer, showing the power supply unit.



Figure 4.5: Close-up of the Ender 3's control screen, displaying temperature and print status.



Figure 4.6: Close-up of the upgraded extruder mechanism, designed to minimize clogging.



Figure 4.7: Detail of the Y-axis motor and belt drive system, ensuring precise movement.



Figure 4.8: View of the heated print bed, with a warning not to touch when hot.

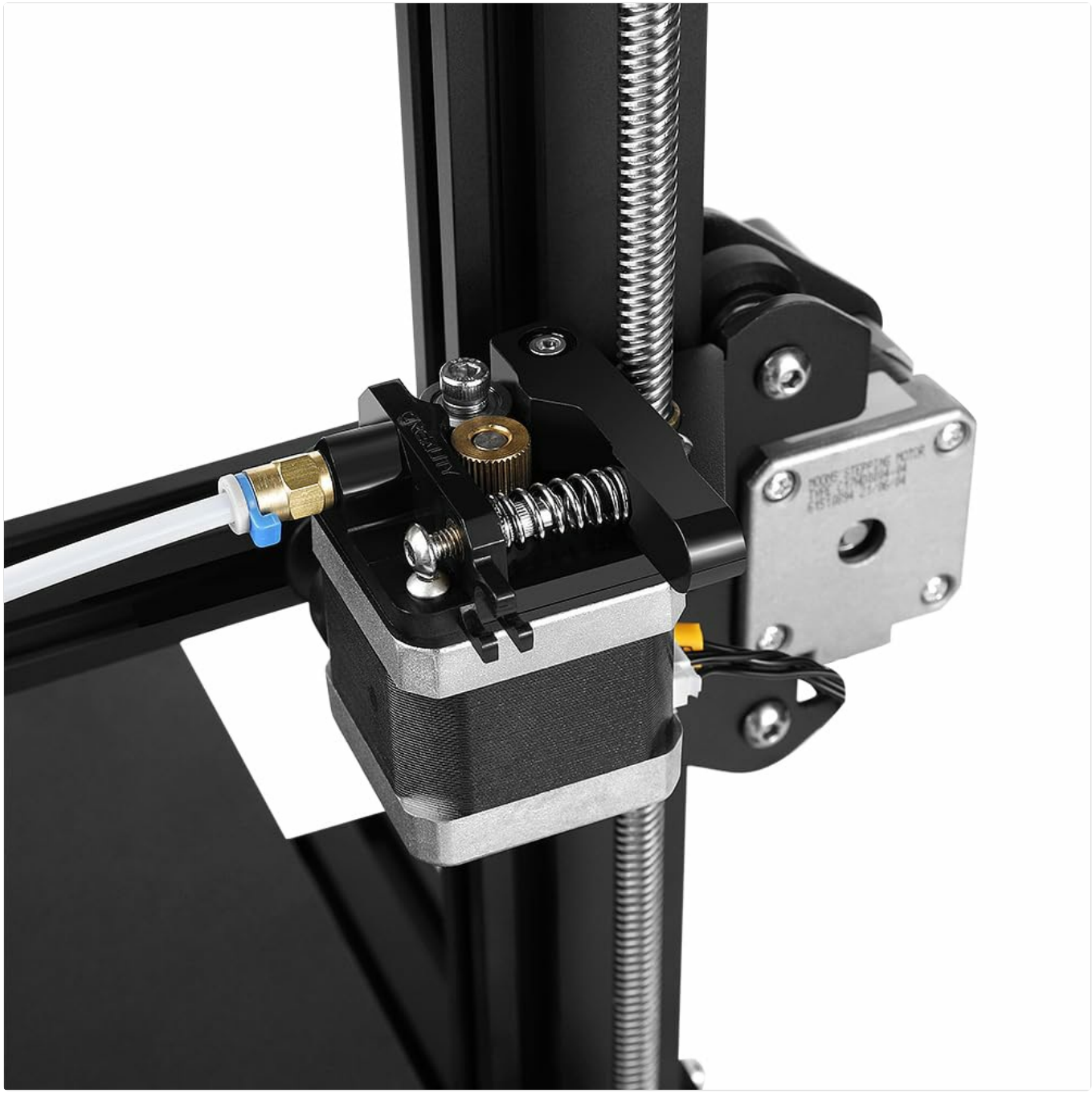

Figure 4.9: Detail of the main board enclosure, showing the power input and SD card slot.

5. Operating Instructions

5.1. Preparing for Print

- **Leveling the Print Bed:** Ensure the print bed is properly leveled to achieve optimal first layer adhesion. Adjust the leveling knobs at each corner until a piece of paper slides with slight resistance between the nozzle and the bed.
- **Loading Filament:** Heat the hotend to the appropriate temperature for your filament type. Insert the filament into the extruder and feed it through until it emerges from the nozzle.
- **Slicing Software:** Use a compatible slicing software (e.g., Cura, Repetier-Host, Simplify3D) to convert your 3D model (.STL, .OBJ, .AMF) into G-code for the printer.

5.2. Printing Process

- **Transferring Files:** Transfer the G-code file to the printer via the included SD card.
- **Starting a Print:** Select the desired G-code file from the printer's menu and initiate the print.

- **Monitoring:** Monitor the first few layers of your print to ensure proper adhesion and extrusion.

5.3. Key Features

- **Resume Printing Function:** The printer can resume printing from the last recorded position after a power interruption, preventing print failures and filament waste.
- **Rapid Heating Build Plate:** The heated bed reaches operating temperatures (up to 110°C) in approximately five minutes, ensuring strong adhesion and reducing warping.
- **Advanced Extruder Technology:** The upgraded extruder design minimizes clogging and ensures consistent filament flow.
- **Wide Material Compatibility:** Supports various filament types including PLA, ABS, PETG, TPU, and more.



Figure 5.1: Illustration of the resume printing function, which allows prints to continue after power loss.



Figure 5.2: The heated bed can reach 110°C in about 5 minutes, indicated by a thermometer.



Figure 5.3: The advanced extruder design helps prevent clogging for smoother prints.



Figure 5.4: The Ender 3 supports a wide range of filament materials, including PLA, TPU, and ABS.

5.4. Official Seller Videos

How to replace Ender-3 Limit switch replacement tutorial?

▶ **Watch video online**
How to replace Ender-3 Limit switch replacement tutorial?

This video provides a step-by-step tutorial on how to replace the limit switch on your Ender-3 3D printer.

How to DIY Creality Ender 3 with proximal extruder kit?

▶ **Watch video online**
How to DIY Creality Ender 3 with proximal extruder kit?

Learn how to install and configure a proximal extruder kit on your Creality Ender 3 with this DIY guide.

Official Creality Ender 3 3D Printer with Resume Printing, Stable Power Supply, Precise Printing

▶ **Watch video online**
Official Creality Ender 3 3D Printer with Resume Printing, Stable Power Supply, Precise Printing

An official overview highlighting the key features of the Creality Ender 3, including resume printing and stable power supply.

6. Maintenance

- **Clean the Print Bed:** Regularly clean the print bed with isopropyl alcohol to ensure good adhesion and prevent residue buildup.
- **Lubricate Moving Parts:** Apply a small amount of lubricant to the Z-axis lead screw and smooth rods periodically to ensure smooth movement.
- **Check Belts:** Ensure all belts (X, Y axes) are properly tensioned. They should be taut but not overly tight.
- **Nozzle Cleaning/Replacement:** If you experience clogs or poor extrusion, clean the nozzle with the provided needle or replace it if necessary.
- **Firmware Updates:** Check the Creality official website for any available firmware updates to improve printer performance and add new features.

7. Troubleshooting

Problem	Possible Cause	Solution
First layer not sticking	Bed not leveled, dirty bed, incorrect bed temperature, nozzle too far from bed.	Re-level the bed, clean the bed, adjust bed temperature, adjust Z-offset.
Filament not extruding	Clogged nozzle, tangled filament, incorrect hotend temperature, extruder gear slip.	Clean or replace nozzle, untangle filament, verify hotend temperature, check extruder tension.
Layer shifting	Loose belts, motor overheating, print speed too high.	Tighten belts, ensure proper cooling for motors, reduce print speed.
Poor print quality (stringing, blobs)	Incorrect retraction settings, excessive temperature, wet filament.	Adjust retraction settings in slicer, lower print temperature, dry filament.

8. Specifications

Feature	Detail

Feature	Detail
Machine Model	Ender-3
Molding Technology	FDM (Fused Deposition Modeling)
Printing Size	220 x 220 x 250 mm (8.66 x 8.66 x 9.84 inches)
Printing Speed	≤180mm/s (Normal: 30-60mm/s)
Printing Precision	±0.1mm
Nozzle Diameter	Standard 0.4mm (can be 0.3 or 0.2mm)
Hotbed Temperature	≤110°C
File Transfer	Online or SD Card Offline
File Format	STL, OBJ, AMF
Slicing Software	Cura, Repetier-Host, Simplify3D
Power Supply	Input: AC 115V/230V, Output: DC 24V 270W
Filament Compatibility	PLA, ABS, TPU, Wood, Copper, Gradient, etc.
Net Weight	6.62 kg (14.59 lbs)
Machine Size	440 x 440 x 465 mm
Gross Weight	8.1 kg (17.86 lbs)
Packaging Size	570 x 380 x 205 mm

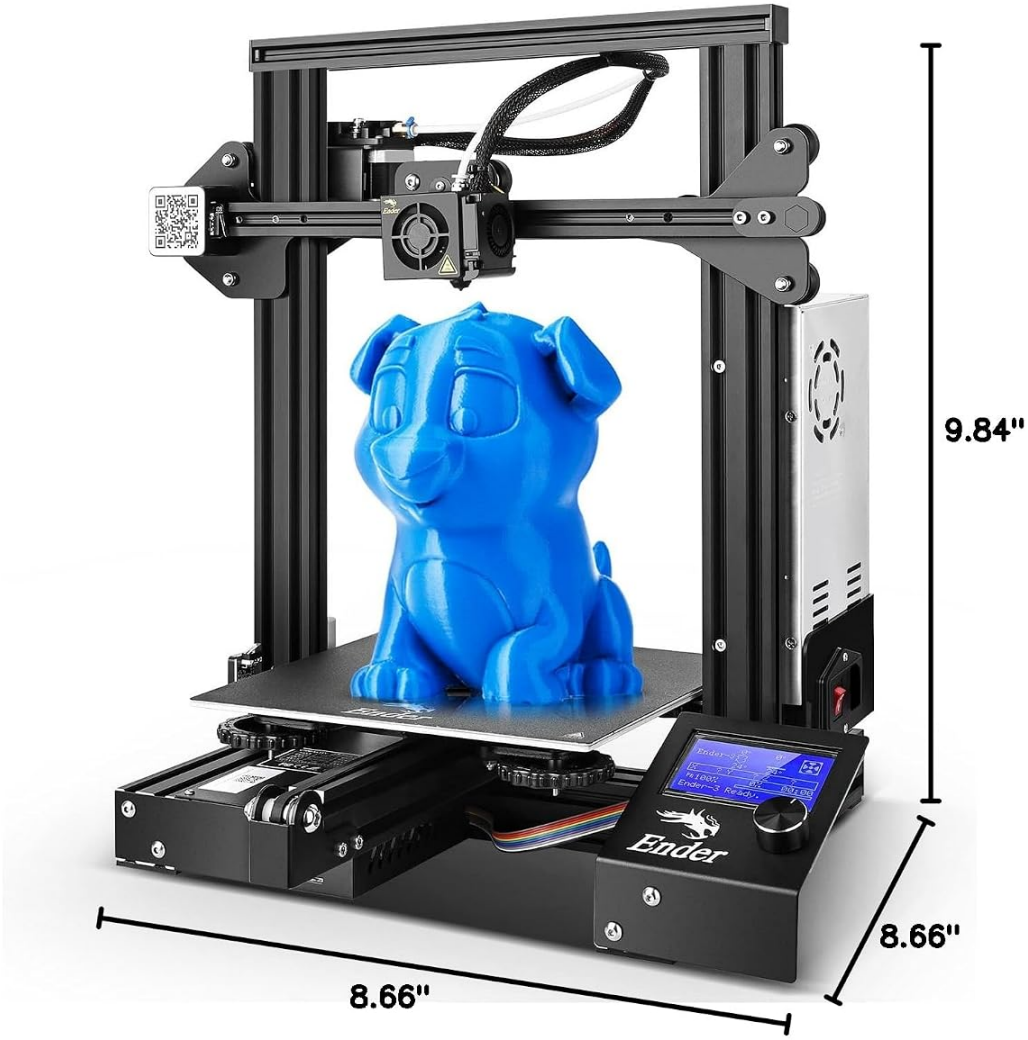

Figure 8.1: Key dimensions of the Ender 3 printer, showing its compact size.



Figure 8.2: Detailed technical specifications of the Creality Ender 3.

9. Warranty and Support

For warranty information and technical support, please refer to the official Creality website or contact their customer service. You can also find additional resources and community support through online forums and user groups dedicated to the Creality Ender 3.

Official Creality Store: Creality Store on Amazon

User Manual (PDF): User Manual (PDF)

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