Comgrow Ender 5 Max

Creality Ender 5 Max 3D Printer Instruction Manual

Model: Ender 5 Max | Brand: Comgrow

1. Introduction

The Creality Ender 5 Max is a high-performance 3D printer designed for large-scale and high-speed additive manufacturing. Featuring a robust aluminum frame, precise linear rails, and dual Z-axis motors, it ensures stable and accurate printing. With a large build volume of 400x400x400mm and a maximum printing speed of 700mm/s, it is ideal for both large-scale projects and efficient batch production. The printer also includes advanced features such as 36-point automatic bed leveling, a 300°C high-temperature extruder, and smart connectivity options for enhanced user experience.

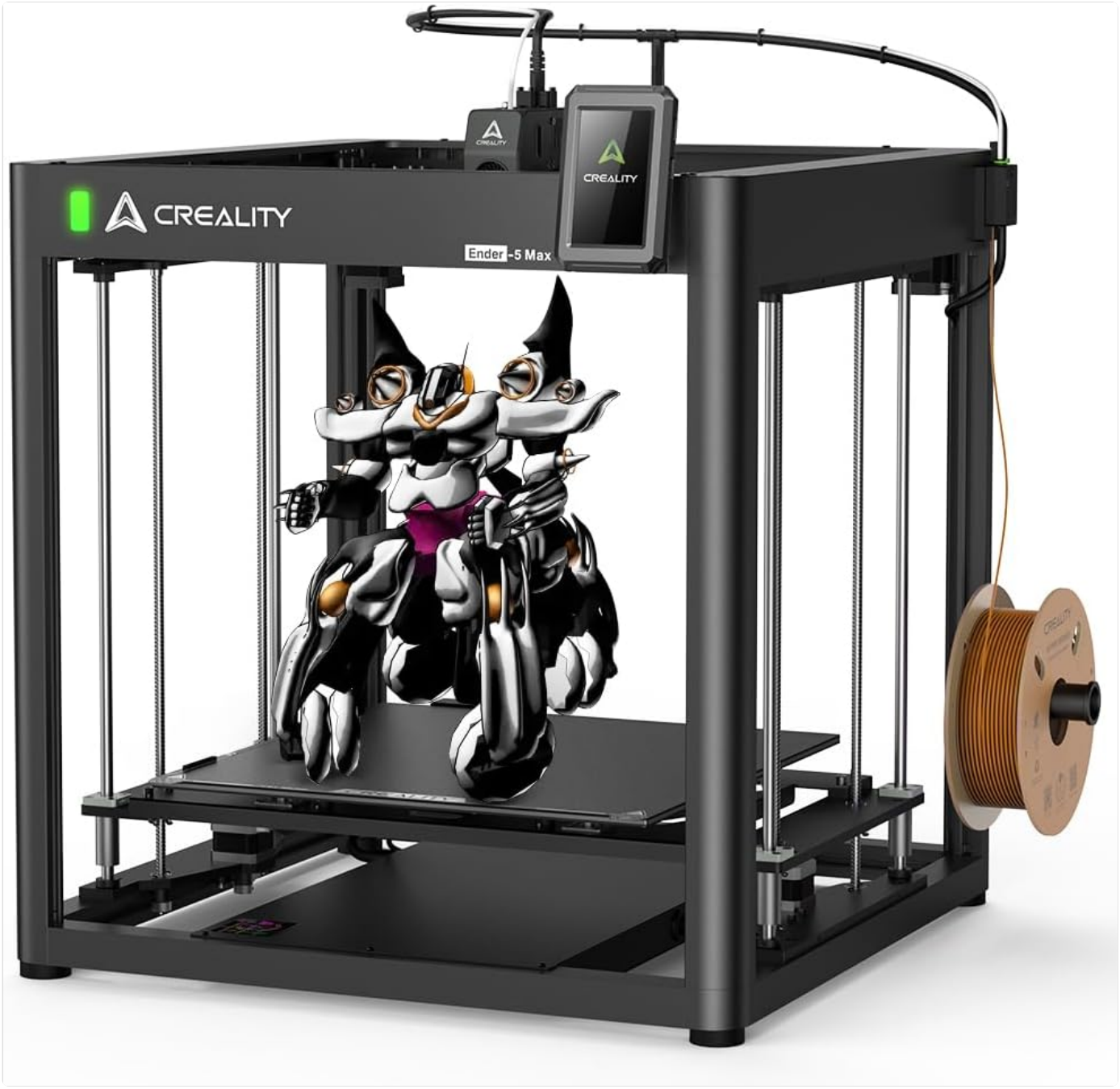

Figure 1: Creality Ender 5 Max 3D Printer

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Video 1: Overview of the Creality Ender 5 Max 3D Printer, highlighting its key features and capabilities.

2. What's in the Box

Before beginning assembly, please verify that all components listed below are present and undamaged.

- Ender 5 Max 3D Printer (Base Component, Top Component, Build Platform)
- Z-axis Components (x2)
- Filament Spool Holder
- Screen + Bracket
- Footpads (x4)
- Tool Kit (Allen wrenches, open wrench, cutting plier)
- Power Cable
- Sample Filament

- Profiles (x4)
- Swivel Cable Clip
- Cable Ties
- TPFE Tubes for TPU
- Nozzle Cleaner
- USB Drive
- Nozzle
- Quick Installation Guide
- After-sales Service Card
- Various Screws and Washers (M5x18, M4x12, M4x6, M5x22, M5x12 Button Head, M5x30, M5x12 Socket Head, M5x65, M3x6)

3. Setup and Assembly

Follow these steps to assemble your Creality Ender 5 Max 3D Printer. Refer to the accompanying video for visual guidance.

1. **Unboxing:** Open the box, remove the top foam, and carefully take out all foams, parts, and accessories.
2. **Assemble Base Frame:**
    - Prepare the four profiles and M5x18 screws.
    - Set up the network connection by attaching the first profile to the base component.
    - Flip the base sideways to reveal the bottom.
    - Fasten each profile from the bottom with two M5x18 screws.
    - Install the four footpads using M4x12 screws and washers.
    - Flip the assembled base to the upright position.
3. **Mount Top Component:**
    - Carefully mount the top component onto the four profiles. Ensure the Creality logo is above the base stickers 1 & 2, and no wires are pinched.
    - Secure the top with six M5x65 screws and washers.
4. **Install Z-axis Components:**
    - Remove the screws on top of the Z-axis components.
    - Place one Z-axis component inside a side frame. Keep the Z-axis component connector at the bottom and do not pull the Z-axis belt during assembly.
    - Fasten its bottom with two M5x22 screws.
    - Loosen the linear rod screws on the side.
    - Secure the top with two M5x12 (button head) screws.
    - Tighten the linear rod screws.
    - Repeat for the second Z-axis component on the opposite side.
5. **Install Hotbed:**
    - Wire up the two Z-axis motors beforehand.
    - Remove the hotbed power cover from the base.
    - Connect the bed leveling wire and lock it up.

- Plug in the hotbed power cord tightly and lock the cord in the U-groove.
- Reinstall the hotbed power cover. Buckle up the cover before tightening the screws.
- Align the hotbed to the screw holes in the Z-axis components. Handle the hotbed at an angle to avoid collision.
- Fasten it with eight M5x12 (socket head cap) screws.

6. **Install Screen & Spool Holder:**

   - Remove the profile seal close to the screen cable.
   - Pass the cable through two holes in the top frame.
   - Install the screen bracket with M4x6 screws. Ensure no wires are caught under the bracket.
   - Connect the screen cable and snap the screen into the bracket.
   - Put away the screen cable in the profile and seal it with the profile seal.
   - Prepare the spool holder parts.
   - Install the material rack with M5x30 screws.
   - Mount the filament tube.
   - Screw on the universal clip seat with the open wrench.
   - Follow the notice and snap the extruder cable into the clip seat.
   - Tie the Extruder cable to the clip seat.
   - Connect the extruder cable.
   - Secure it with M3x6 screws.
   - Insert the Teflon tube into the extruder.
   - Wire up the filament run-out sensor and Y-axis motor.
   - Connect the XY endstops.
   - Remove the profile seal nearby.
   - Bind the cables of endstops, extruder and run-out sensor.
   - Seal them in the profile.
   - Plug their bottom ends into the base.
   - Remove the profile seal close to the X-axis motor.
   - Wire up the X-axis motor and seal the wire.
   - Wire up the LED indicator and light bar.
   - Plug the wire's bottom end into the base.

7. **Power-on & Quick Setup:**

   - Connect the power cable and switch on the printer.
   - Select a language on the screen.
   - Read and agree to the privacy policy.
   - Set up the network connection (Wi-Fi).
   - Select your time zone.
   - Bind with Creality Cloud as instructed (optional).
   - Conduct self-check. Ensure the printing platform is stable and do not touch the printer during self-check.

8. **Print via USB Drive:**

   - Set a proper nozzle temperature.
   - Cut the filament at a sharp angle.
   - Pull out the Teflon tube from the extruder.

- Push the filament through the Teflon tube.
- Open the extruder latch and insert the filament.
- Lock the latch and put back the Teflon tube.
- Plug in the USB drive.
- Select a file and start printing.

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Video 2: Detailed guide on unboxing, assembling, and setting up the Creality Ender 5 Max 3D Printer.

4. Key Features

- **Large Printing Size:** A build volume of 400 mm x 400 mm x 400 mm allows for creating large items or printing numerous small parts simultaneously.

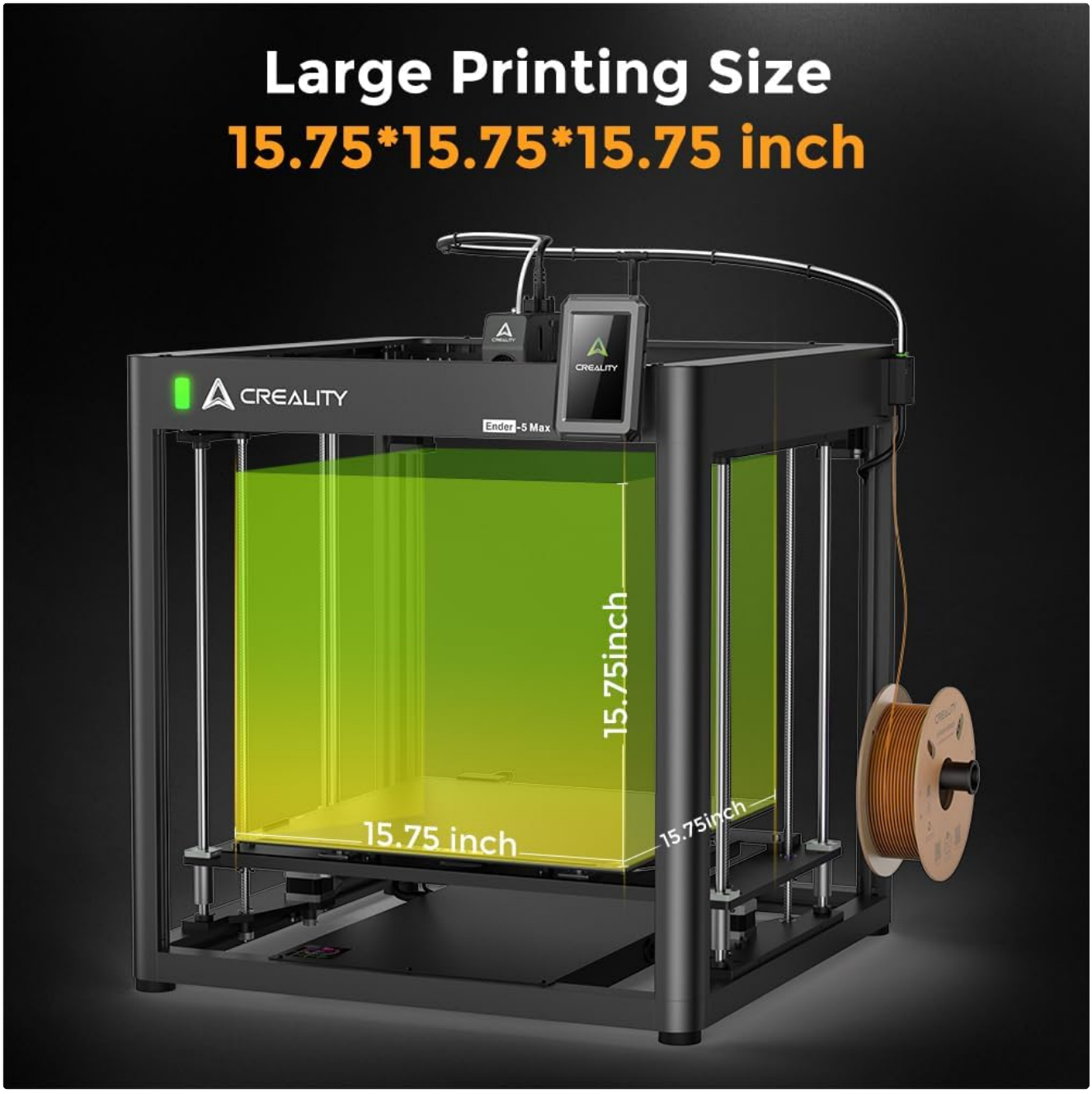

Figure 2: Illustration of the large build volume of the Ender 5 Max.

- **Up to 700 mm/s Maximum Printing Speed:** Equipped with 42-76 stepper motors driving X/Y axis movement, achieving up to 700 mm/s print speed and 20000 mm/s³ acceleration for efficient 3D printing.

Figure 3: Speed comparison highlighting the 700mm/s maximum printing speed.

- **Automatic Bed Leveling and Excellent First Layer:** Features 36-point leveling for quick calibration and hot bed tilt calibration to ensure a solid and even first layer.

Figure 4: Visual representation of the automatic bed leveling system.

- **High Temperature 300°C Extruder:** Hardened extruder gears can withstand 500 hours of continuous extrusion, ensuring reliability for 24/7 production.

Figure 5: Close-up view of the high-temperature extruder gears.

- **Improved Design:**
  - 3-color status indicator light: Visible from up to 10 meters, informing the exact machine status (Running, Standing by, Error).
  - Robust frame and precise linear rail: Super reinforced structure with enlarged die-casting aluminum alloy frame parts and a precise linear rail on the X-axis.
  - More strength from dual Z-axis motors: Two independently motorized Z-axes with two pairs of feed screws, each assisted by 2 linear rods for higher accuracy.

Figure 6: Depiction of the printer's solid structure, including the beefy frame, precise linear rail, and dual Z-axis motors.

Figure 7: The 3-color status indicator light showing different operational states.

- **Support Multiple Filaments:** Compatible with Hyper PLA, PLA, PETG, TPU95A, ABS, ASA, PLA-CF, PA, PLA-Silk.

Figure 8: Various filament types supported by the printer.

- **Managing a Print Farm over WLAN:** The brand-new Creality Print slicer includes over 40 filament presets and allows for managing multiple printers for production efficiency.

Figure 9: Illustration of managing multiple printers via WLAN.

5. Operating Instructions

Once assembled and powered on, the Creality Ender 5 Max is ready for operation. Ensure your printer is connected to the network for full functionality and access to Creality Cloud.

5.1 First Print

1. **Prepare Filament:** Load your chosen filament onto the spool holder and feed it through the filament run-out sensor and into the extruder.
2. **Preheat:** On the printer's touchscreen, set the desired nozzle and bed temperatures according to your filament type.
3. **Load G-code:** Insert a USB drive containing your sliced G-code file into the printer's USB port.
4. **Select and Print:** Navigate the touchscreen menu to select your file from the USB drive. Confirm settings and initiate the print.
5. **Monitor Print:** Utilize the built-in camera (if installed) and Creality Cloud app to monitor your print progress remotely. The AI Lidar system will check the first layer for accuracy.

5.2 Network Printing

For advanced control and multi-machine management, connect your printer to your WLAN network during the initial setup or via the network settings menu. Use the Creality Print software on your computer to send print jobs directly to the printer, monitor real-time status, and receive alerts.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your 3D printer.

- **Clean Build Plate:** After each print, allow the build plate to cool and gently remove any remaining filament or adhesive residue. Use isopropyl alcohol for thorough cleaning.
- **Nozzle Cleaning:** Periodically clean the nozzle using the provided nozzle cleaner to prevent clogs. For persistent clogs, a cold pull or hotend disassembly may be required.
- **Lubricate Moving Parts:** Apply a small amount of lithium grease or similar lubricant to the Z-axis lead screws and linear rails every few months, or as needed, to ensure smooth movement.
- **Check Belts:** Inspect the X and Y-axis belts for proper tension. They should be taut but not overly tight. Adjust if necessary.
- **Firmware Updates:** Regularly check the Creality official website for firmware updates to ensure your printer has the latest features and bug fixes.

7. Troubleshooting

Common issues and their solutions:

- **Print Not Sticking to Bed:**
  - Ensure the build plate is clean and free of grease.
  - Verify bed leveling. Re-run the auto-leveling process.
  - Adjust initial layer height and print speed in your slicer software.
  - Increase bed temperature slightly for better adhesion.
- **Filament Clogging:**
  - Check for debris in the nozzle; use the nozzle cleaner.
  - Ensure the filament is not tangled on the spool.
  - Verify correct printing temperature for your filament type.
  - Check the PTFE tube for kinks or blockages.
- **Layer Shifting:**
  - Inspect X and Y-axis belts for looseness; tighten if necessary.
  - Ensure the printer is on a stable surface to prevent vibrations.
  - Reduce print speed, especially for complex geometries.
- **Poor Print Quality (Stringing, Blobs):**
  - Adjust retraction settings in your slicer.
  - Ensure filament is dry; moist filament can cause issues.
  - Optimize print temperature.

8. Specifications

Feature	Detail
Product Name	Ender 5 Max
Product Dimensions	25"D x 15"W x 22"H (63.5cm D x 38.1cm W x 55.9cm H)
Item Weight	57.1 Pounds (25.9 kg)
Material	Aluminum
Max Printing Speed	700 mm/s
Printing Accuracy	100 ± 0.1 mm
Layer Height	0.05-0.3 mm
Extruder	Direct drive extruder
Filament Diameter	1.75 mm
Nozzle Diameter	0.4 mm (compatible 0.6 / 0.8 mm nozzle)
Nozzle Temperature	≤ 300℃
Heatbed Temperature	≤ 300℃
Build Plate	Epoxy flexible build plate
Leveling Mode	36-point Auto Leveling
Operating Temperature	5 ℃ - 40 ℃
Display Screen	4.3" color touch screen
Supported Filaments	Hyper PLA, PLA, PETG, TPU95A, ABS, ASA, PLA-CF, PA, PLA-Silk
Power Loss Recovery	Yes
Filament Runout Sensor	Yes
Input Shaping	Yes
Lighting kit	Yes
Sleep Mode	Yes
File Formats for Slicing	STL, OBJ, 3MF
Printing Size	15.75"x15.75"x15.75" (400x400x400 mm)
Package Size	28.43"x26.34"x39.5" (72.2cm x 67cm x 100.3cm)
Cross Weight	70.33 LB (31.9 kg)
Acceleration	20000 mm/s^2
Indicator Light	Red/Green/Yellow

Feature	Detail
Rated Voltage	100-240V~ AC 50/60 Hz
Rated Power	1250W
Slicing Software	Creality Print 5.1
File Transfer	USB drive/Wi-Fi
App for Cloud Printing	Creality Cloud
UI Languages	English, Spanish, German, French, Russian, Portuguese, Italian, Turkish, Japanese, Korean, Chinese

9. Warranty and Support

Comgrow offers comprehensive support and protection plans for your Creality Ender 5 Max 3D Printer.

9.1 Protection Plans

- **3-Year Protection Plan:** Available for $78.99 (one-time payment).
- **4-Year Protection Plan:** Available for $104.99 (one-time payment).
- **Complete Protect:** Covers all eligible past and future purchases for $16.99/month.

9.2 Returns and Customer Support

- **30-day Easy Returns:** Enjoy a 30-day return policy for refunds or replacements.
- **Customer Support:** For any inquiries or assistance, please contact Comgrow customer support.