ELEGOO Neptune FDM 3D Printer

ELEGOO Neptune 4 3D Printer User Manual

Model: Neptune FDM 3D Printer
Brand: ELEGOO

1. Introduction

The ELEGOO Neptune 4 3D Printer is a high-speed FDM printer designed for efficient and precise 3D printing. Featuring Klipper firmware, advanced performance enhancements, and user-friendly functionalities, it offers a seamless printing experience for various applications.



Figure 1: Overview of the ELEGOO Neptune 4 3D Printer.

2. Setup

2.1 Assembly

The ELEGOO Neptune 4 is designed for easy assembly. Follow the included instructions to connect the main frame components. The printer features a sturdy aluminum frame for stability.

2.2 Filament Loading

Ensure proper filament loading for optimal printing. The printer is equipped with a dual-gear direct extruder for powerful and smoother filament feeding. It also includes a filament detection sensor to pause prints if filament runs out.



Figure 2: Close-up of the dual-gear direct extruder, providing powerful and smooth filament feeding.

2.3 Auto Leveling

The Neptune 4 features a 121 (11x11) point auto bed leveling system for quick and accurate calibration of the build platform. For perfect first-layer printing, auxiliary leveling can be performed using the hand-twist knobs under the PEI magnetic platform.

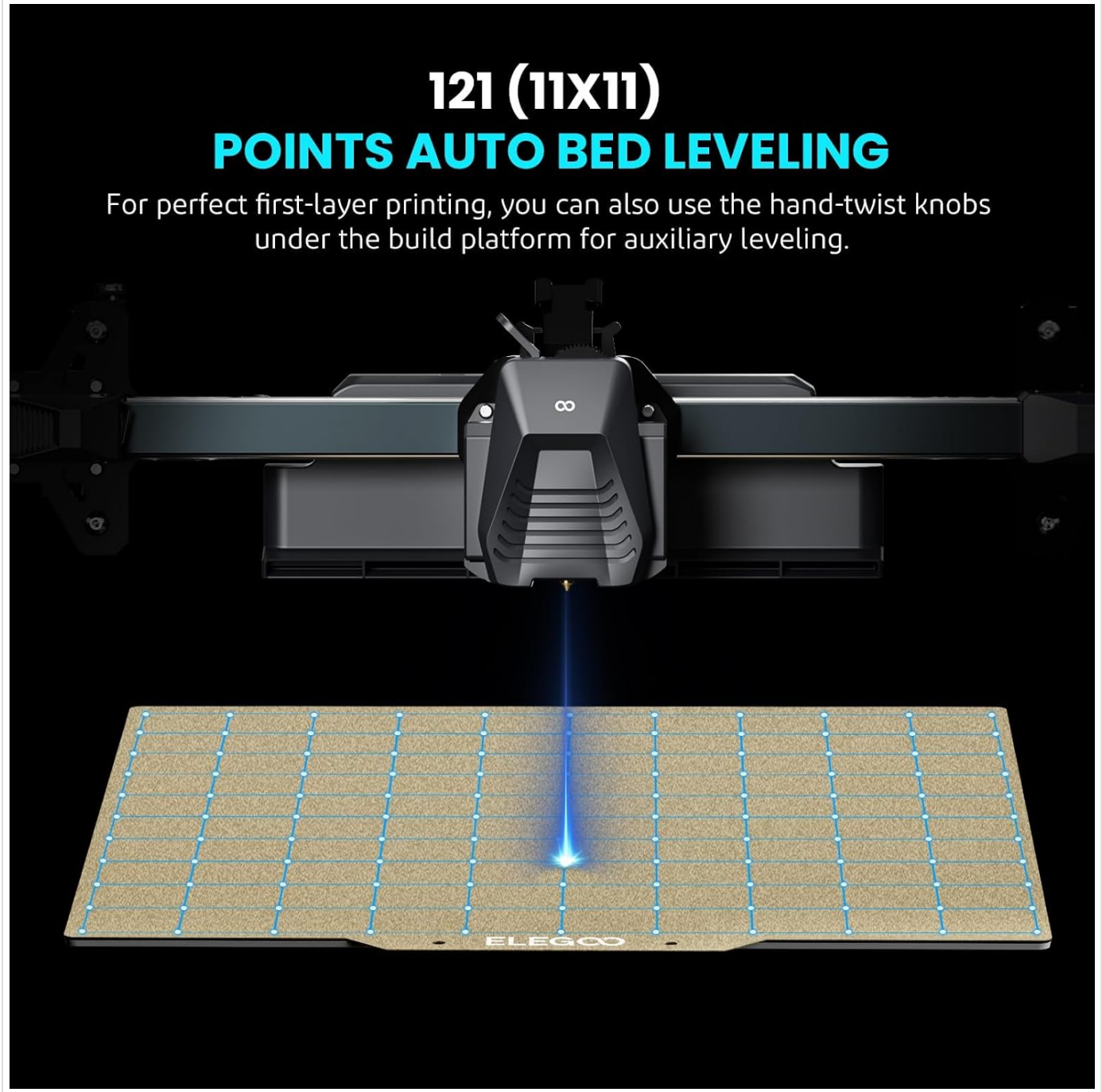


Figure 3: Visual representation of the 121 (11x11) points auto bed leveling process.

Video 1: Official ELEGOO tutorial on leveling the Neptune 4/4 Pro 3D printer.

3. Operating

3.1 Printing Speed and Performance

The Neptune 4 boasts a maximum printing speed of 500mm/s with 20000mm/s² acceleration, thanks to its Klipper firmware and ARM 64-bit 1.5GHz quad-core high-performance processor. Recommended printing speed is 250mm/s. Intelligent input shaping and pressure advance functions minimize vibration effects and enable precise flow control, significantly improving print quality.



Figure 4: Illustration of the pre-installed Klipper firmware enabling high-speed printing up to 500mm/s.

3.2 High-Temperature Nozzle

Equipped with a 300°C high-temp nozzle and an extended hot end, the Neptune 4 Pro ensures faster melting and extrusion. This allows it to handle various filament materials, including PLA, PETG, ABS, TPU, and nylon.

3.3 Efficient Cooling System

The printer features double-sided cooling fans with strong airflow for comprehensive heat dissipation. Ball bearing blower fans behind the print head rapidly cool down newly deposited models, ensuring efficient and instant cooling.

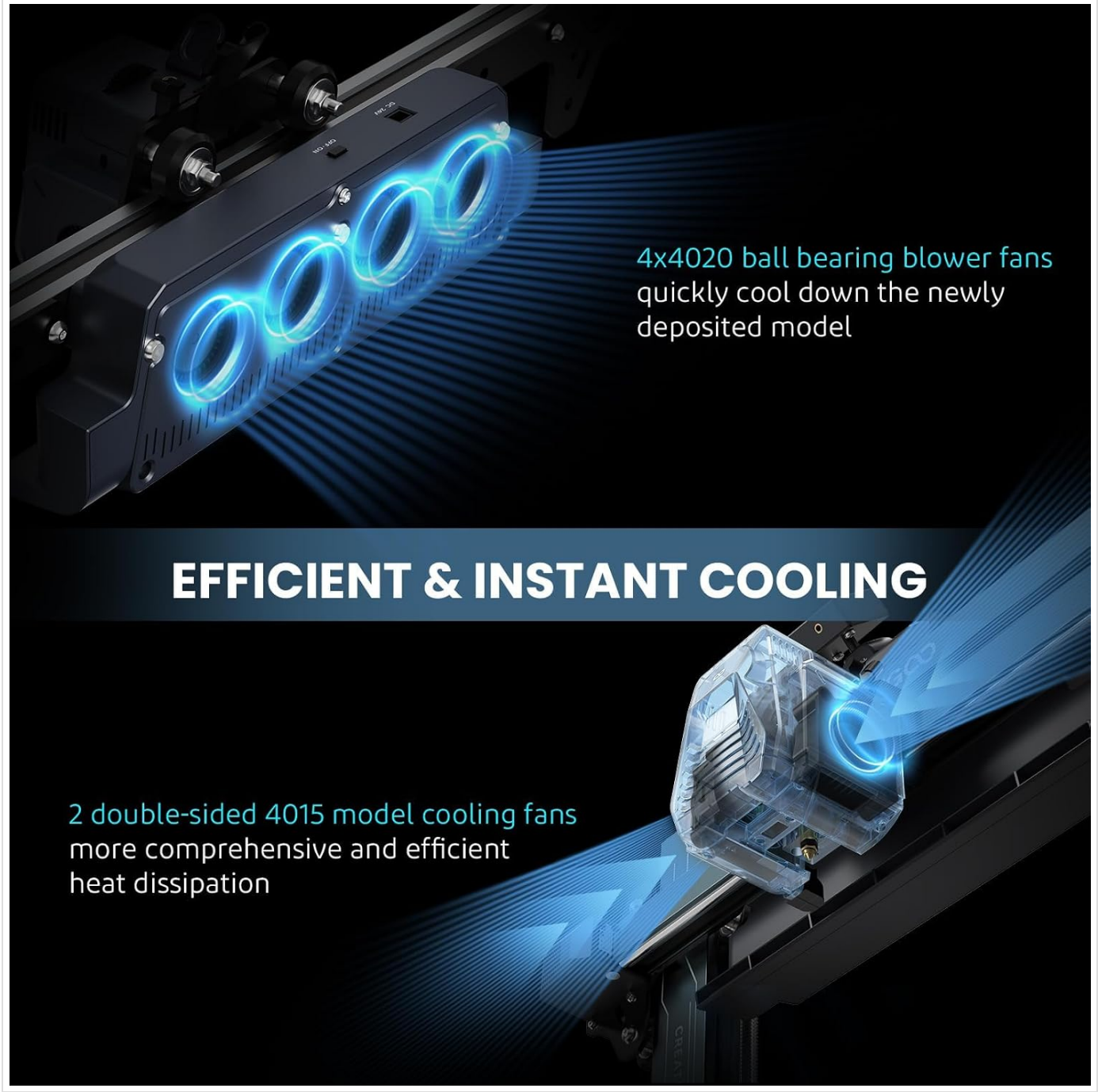


Figure 5: Diagram showing the double-sided cooling fans and ball bearing blower fans for efficient heat dissipation.

3.4 Print Volume and Touchscreen

The Neptune 4 offers a larger print volume of 225x225x265mm (8.85x8.85x10.43 inches). It comes with a removable capacitive touchscreen that includes a model preview function and pause printing function for user convenience.

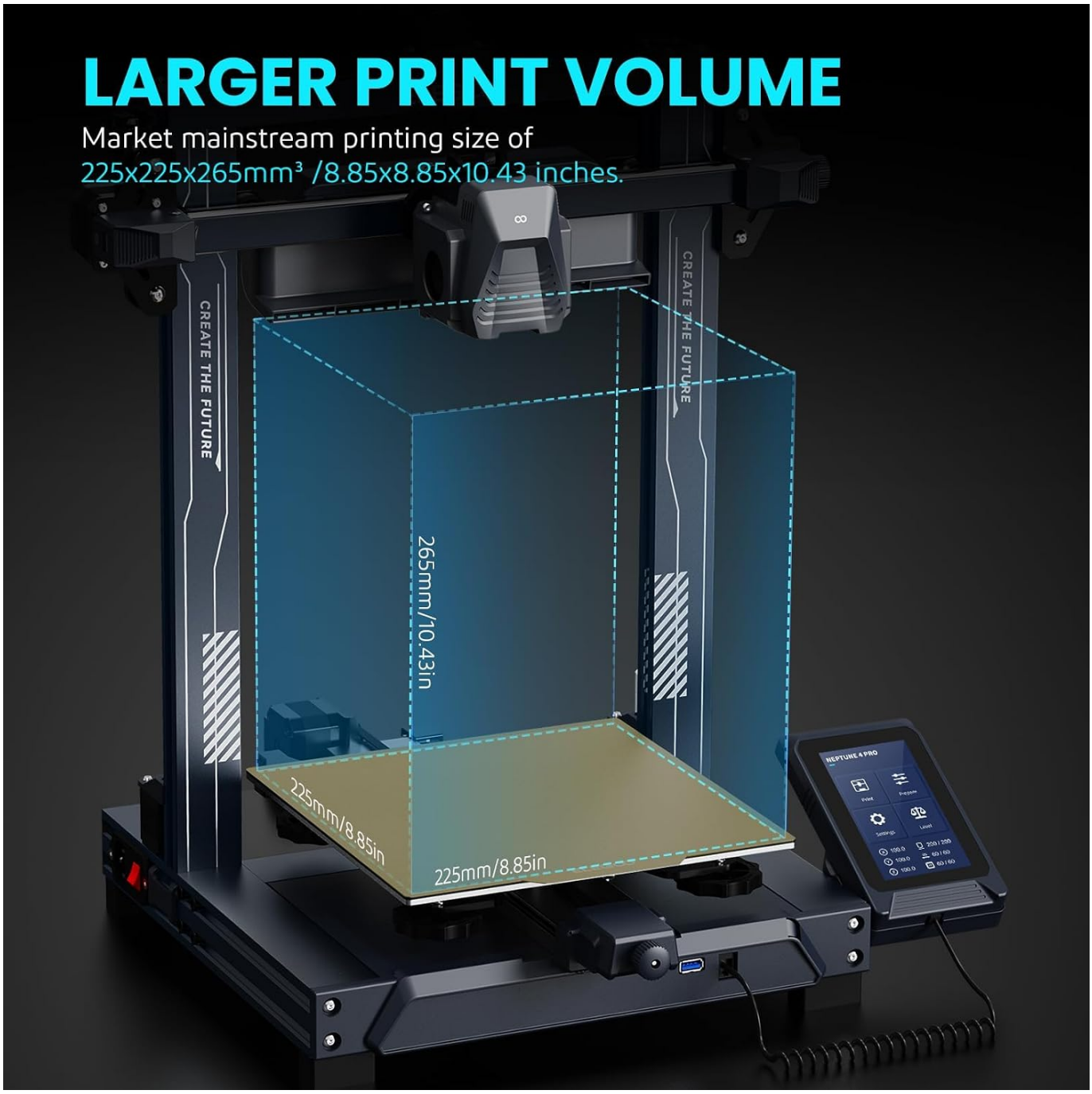


Figure 6: Illustration of the Neptune 4's larger print volume.



Figure 7: The removable capacitive touchscreen displaying print controls and model preview.

4. Maintenance

4.1 Extruder Replacement

For detailed instructions on replacing the extruder gearbox, please refer to the official video guide provided by ELEGOO.

Video 2: Official ELEGOO tutorial on how to replace the extruder gearbox for the Neptune 4 series.

4.2 General Maintenance Tips

Regular maintenance ensures the longevity and optimal performance of your 3D printer. This includes checking and adjusting the XY-axis belt tensioner and ensuring the PEI magnetic platform is clean and properly aligned.



Figure 8: The knob type XY-axis belt tensioner for easy adjustment and added stability.



Figure 9: The PEI magnetic platform and 250W hotbed, which can quickly heat up to 110°C.

5. Troubleshooting

For common printing issues such as poor first layer adhesion, filament clogging, or print quality problems, ensure proper bed leveling and filament loading as described in the setup section. Regularly check for any loose components or obstructions. If issues persist, consult the comprehensive user manual PDF for detailed troubleshooting guides.

6. Specifications

Feature	Specification
Model Number	Neptune FDM 3D Printer
Product Dimensions	17.51 x 18.7 x 20.27 inches
Item Weight	18.3 pounds
Printing Speed (Max)	500mm/s
Nozzle Temperature (Max)	300°C
Compatible Filaments	PLA, PETG, ABS, TPU, Nylon
Build Volume	225x225x265mm (8.85x8.85x10.43 inches)
Firmware	Klipper

7. Warranty and Support

For detailed warranty information and technical support, please refer to the official ELEGOO user manual available in PDF format. You can also visit the ELEGOO Store for additional resources and contact information.

What's in the box: Neptune 4 FDM 3D Printer.

Manufacturer: ELEGOO

User Manual (PDF): Download Here

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