Twotrees TTC 3018 Pro

Twotrees TTC 3018 Pro CNC Router Machine User Manual

Model: TTC 3018 Pro
Brand: Twotrees

1. Product Overview

The Twotrees TTC 3018 Pro CNC Router Machine is an upgraded 3-axis engraving and milling machine designed for precision carving. It features a working area of 300mm x 180mm x 40mm and offers 0.1mm positioning accuracy. This machine is suitable for engraving various materials including wood, acrylic, plastic, aluminum, and brass. It supports 0.5-7mm ER11 collet bits and operates with spindle speeds ranging from 7000 to 9000 RPM.
Constructed with a robust aluminum frame, the TTC 3018 Pro ensures stability and durability. It is controlled by an MKSDLC32 V2.0 motherboard, compatible with popular software like Artcam, Fusion360, and Easel, and supports .nc/.gcode files via USB or TF card. The machine is equipped with three 42 stepper motors for precise XYZ-axis movement and achieves a maximum speed of 1500mm/min.

Figure 1.1: The Twotrees TTC 3018 Pro CNC Router Machine, showcasing its compact design and a sample wood engraving.

2. Setup and Assembly

The TTC 3018 Pro is provided as an assembly kit. Careful assembly is crucial for optimal performance and safety. Refer to the included physical product manual for detailed step-by-step assembly instructions.

2.1 Unpacking and Component Identification

Upon receiving your package, carefully unpack all components and verify them against the packing list. Ensure all parts are present and undamaged before proceeding with assembly.

Figure 2.1: All components included in the Twotrees TTC 3018 Pro assembly kit. This image displays the various parts such as aluminum profiles, stepper motors, spindle, control board, and power supply.

2.2 Mechanical Assembly

Follow the instructions in the physical manual to assemble the aluminum frame, install the lead screws (GT2-6mm/T8-8mm), and mount the three 42 stepper motors (17HS3401S-15B/34) for the XYZ-axis. Ensure all connections are secure and movements are smooth.

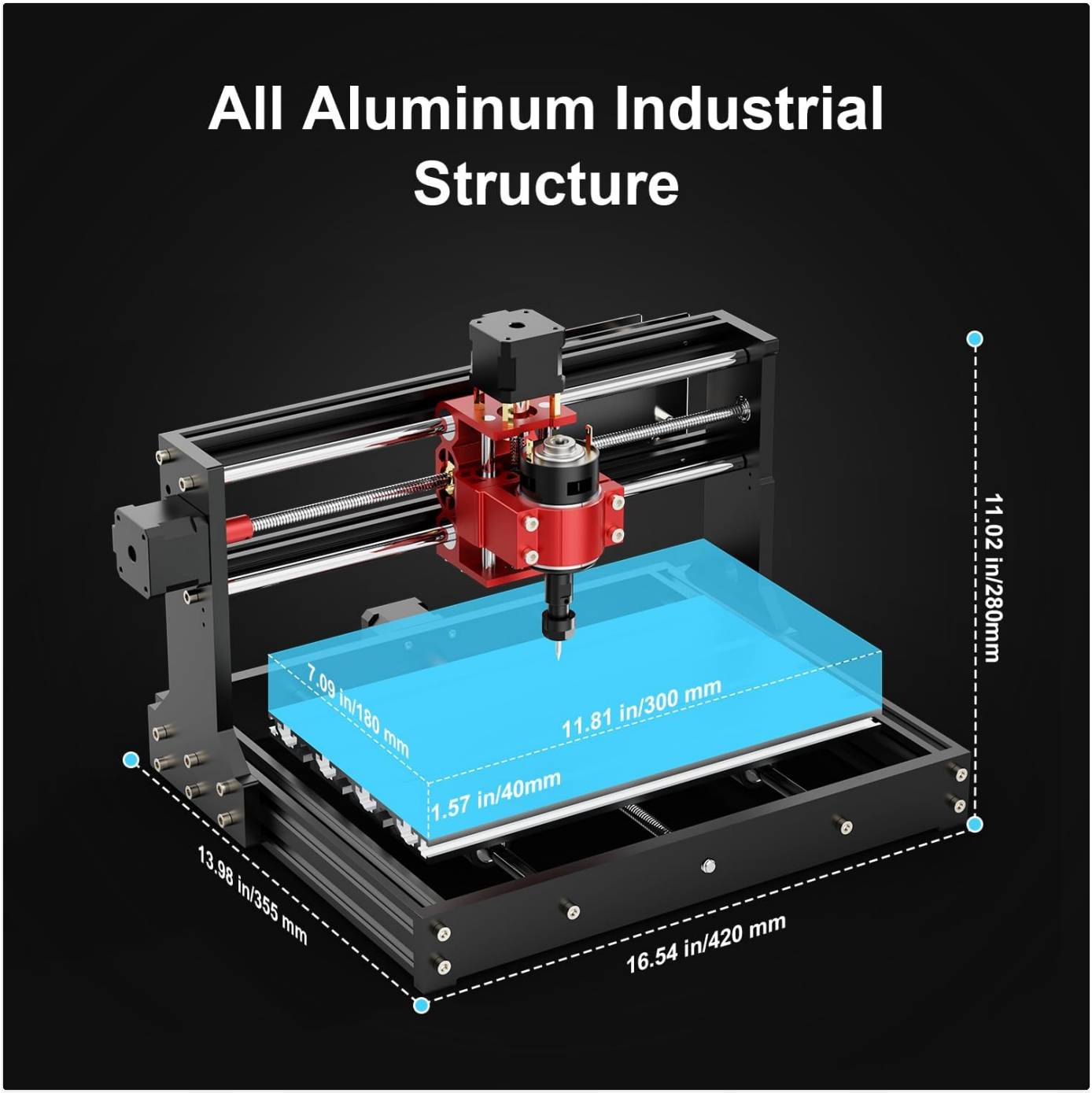


Figure 2.2: Diagram illustrating the dimensions of the Twotrees TTC 3018 Pro CNC Router Machine, highlighting its compact aluminum industrial structure.

2.3 Electrical Connections

Connect the stepper motors, spindle motor (775 brushed spindle motor), and other electrical components to the MKSDLC32 V2.0 motherboard. Ensure correct polarity and secure connections. Connect the 12-24V/5A power adapter to the machine and a 100-240V AC power source.

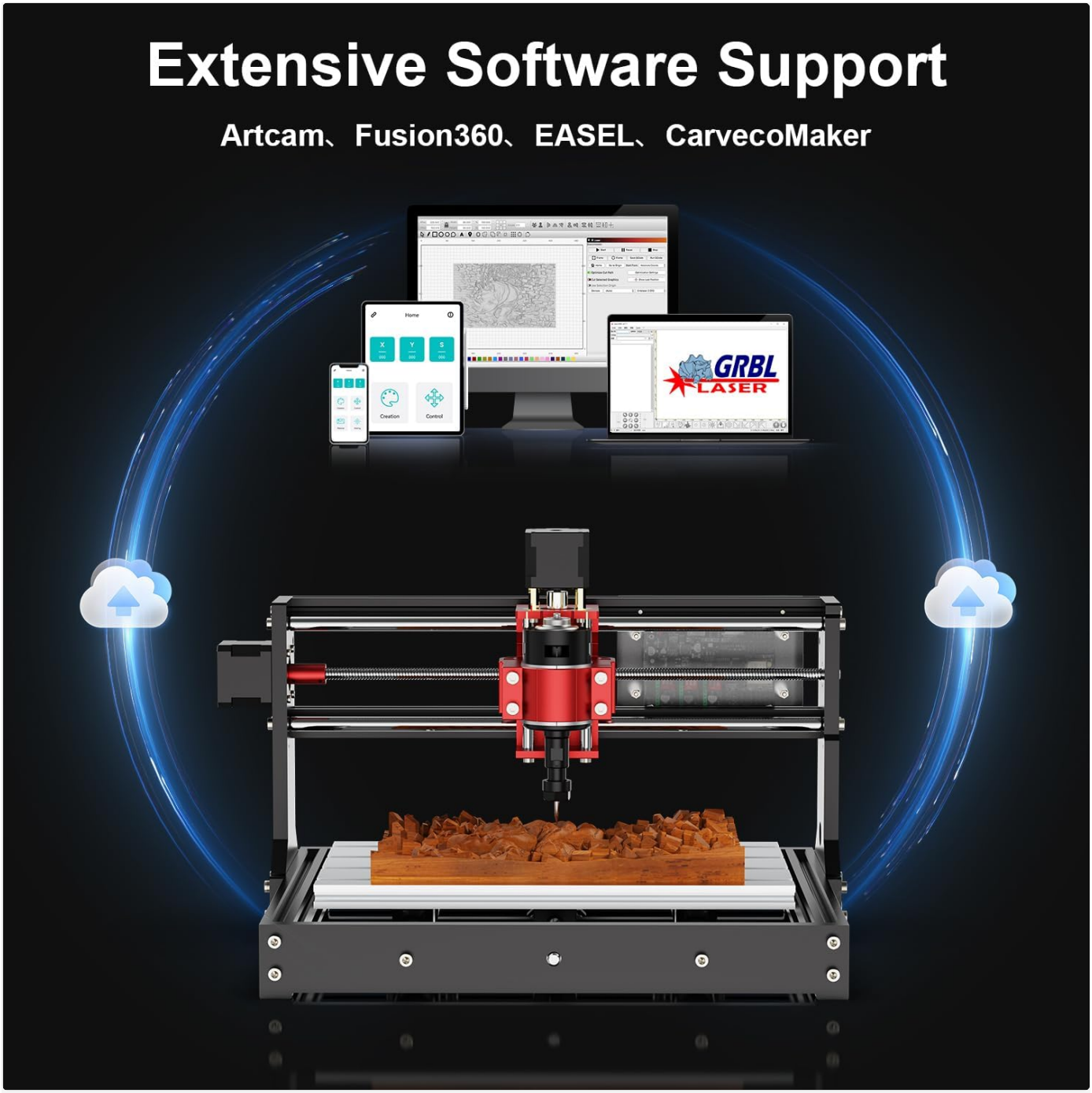


Figure 2.3: Detailed view of the compact controller box for the Twotrees TTC 3018 Pro, showing the various ports including DC24V power supply, USB, TF card slot, switch, 775 spindle, fan, and XYZ axis ports.

2.4 Software Installation and Configuration

The machine utilizes the GRBL control system. Install the necessary drivers and control software on your computer (Windows XP-10 compatible). The machine is compatible with Artcam, Fusion360, and Easel. Follow the software-specific instructions for installation and initial configuration, including setting up communication with the CNC machine via USB or TF card.

Figure 2.4: Illustration of the extensive software support for the Twotrees TTC 3018 Pro, including compatibility with Artcam, Fusion360, Easel, and CarveCoMaker, all based on GRBL control.

3. Operation Guide

3.1 Material Preparation

Ensure your material (wood, acrylic, plastic, aluminum, brass) is securely fastened to the working area (300mm x 180mm x 40mm). Proper clamping prevents movement during engraving, which can affect accuracy and safety.

3.2 Tooling and Spindle Setup

Select the appropriate ER11 collet bit (0.5-7mm) for your engraving task. Insert the bit into the spindle and tighten it securely. The 775 brushed spindle motor supports speeds of 7000-9000 RPM. Adjust spindle speed according to the material and desired engraving depth.

Figure 3.1: This image highlights the versatility of the Twotrees TTC 3018 Pro spindle, showing options for 7000RPM, 8000RPM, and 9000RPM spindles.

3.3 Loading G-code Files

Prepare your design file using compatible software (Artcam, Fusion360, Easel) and export it as a .nc or .gcode file. Load the file into your GRBL control software via USB or TF card. Verify the toolpath and origin settings before starting the engraving process.

3.4 Initiating Engraving

Once the material is secured and the G-code is loaded, initiate the engraving process through the control software. Monitor the machine's operation closely. The machine offers 0.1mm positioning accuracy and a maximum speed of 1500mm/min.

Figure 3.2: Close-up view of the Twotrees TTC 3018 Pro's mechanical components, emphasizing the T8 8mm lead screw and GT2 6mm lead screw, which contribute to its 0.1mm engraving accuracy.

4. Maintenance

Regular maintenance ensures the longevity and optimal performance of your TTC 3018 Pro CNC Router Machine.

4.1 Cleaning

- After each use, clean the working area and machine components to remove dust, chips, and debris. Use a brush or vacuum cleaner.
- Ensure the lead screws and guide rails are free from obstructions.
- Do not use harsh chemicals that may damage the acrylic or aluminum components.

4.2 Lubrication

- Periodically apply a small amount of lubricant to the lead screws and linear bearings to ensure smooth movement

and reduce wear.

- Consult the physical manual for recommended lubricant types and application frequency.

4.3 Inspection

- Regularly inspect all electrical connections for looseness or damage.
- Check the tightness of all screws and fasteners.
- Examine the ER11 collet bits for wear and replace them as needed to maintain engraving quality.

5. Troubleshooting

This section addresses common issues you might encounter with your TTC 3018 Pro CNC Router Machine.

Problem	Possible Cause	Solution
Machine does not power on.	Power adapter not connected; power outlet issue; faulty power adapter.	Ensure power adapter is securely connected to machine and a working outlet. Test outlet with another device. Replace power adapter if faulty.
Motors are not moving.	Loose motor connections; software not connected to machine; emergency stop engaged.	Check all motor cable connections to the control board. Verify software connection. Release emergency stop button if pressed.
Engraving accuracy is poor.	Loose material clamping; worn out engraving bit; loose lead screws or belts.	Ensure material is firmly clamped. Replace worn engraving bits. Check and tighten lead screws and ensure belts are properly tensioned.
Software connection issues.	Incorrect COM port selected; driver issues; USB cable fault.	Verify the correct COM port in device manager and software. Reinstall USB drivers. Try a different USB cable.
Spindle not rotating.	Spindle motor connection loose; spindle motor faulty; software command issue.	Check spindle motor connection to the control board. Ensure spindle is enabled in software. If issues persist, the spindle motor may need replacement.

For issues not covered here, please refer to the comprehensive troubleshooting section in your physical product manual or contact customer support.

6. Technical Specifications

Feature	Detail
Model Number	TTC 3018 Pro
Working Area	300mm x 180mm x 40mm
Positioning Accuracy	0.1mm
Frame Material	Aluminum (with acrylic/electrical board components)
Machine Dimensions	420mm x 355mm x 280mm
Item Weight	16.28 pounds (approx. 7.38 kg)

Feature	Detail
Control Board	MKSDLC32 V2.0 (A4988 drivers)
Compatible Software	Artcam, Fusion360, Easel
Supported File Formats	.nc, .gcode
Operating System Compatibility	Windows XP-10
Max Speed	1500mm/min
Lead Screws	GT2-6mm / T8-8mm
Stepper Motors	Three 42 stepper motors (17HS3401S-15B/34)
Spindle Motor	775 brushed spindle motor
Spindle RPM	7000-9000 RPM
Collet Bits Supported	0.5-7mm ER11
Power Adapter Input	100-240V AC
Power Adapter Output	12-24V / 5A
Wireless Connectivity	2.4GHz WiFi module
Certifications	CE/FCC/ROHS certified
Operating Temperature	0-40°C

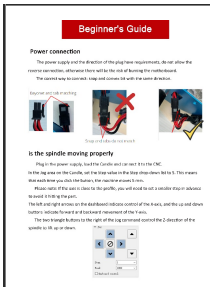
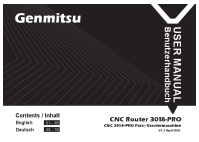
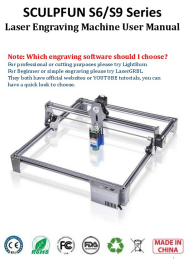
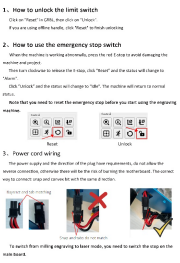
7. Warranty and Support

For specific warranty terms and conditions, please refer to the documentation included with your product or contact the seller directly. The Twotrees TTC 3018 Pro is manufactured by Twotrees and sold by **Twotrees-US Official Store**.

7.1 Customer Support

If you encounter any issues or have questions regarding the assembly, operation, or maintenance of your CNC router, please reach out to the manufacturer's or seller's customer support channels. Keep your purchase receipt and product model number handy for faster service.
Additional support resources, including FAQs and community forums, may be available on the official Twotrees website.

Related Documents - TTC 3018 Pro

	[Comgrow ROBO CNC 3018 Beginner's Guide: Setup and Operation] A comprehensive beginner's guide for the Comgrow ROBO CNC 3018, detailing power connection, spindle operation, axis control, troubleshooting, material setup, toolpath testing, and bit installation for CNC engraving and milling projects. Covers GRBL control and basic operation.
	[Genmitsu 3018-PRO CNC Router User Manual: Assembly, Setup, and Operation Guide] This user manual for the Genmitsu 3018-PRO CNC Router by SainSmart provides detailed instructions for assembly, software setup, operation, and using the offline controller. Essential guide for hobbyists and makers.
	[TWO TREES TTC-H40 CNC Router Product Manual and Assembly Guide] Comprehensive product manual for the TWO TREES TTC-H40 CNC Router, covering unboxing, parts list, assembly instructions, wiring, safety warnings, and operation guidance.
	[SCULPFUN S6/S9 Series Laser Engraving Machine User Manual] A comprehensive user manual for the SCULPFUN S6 and S9 series laser engraving machines, covering software installation (LaserGRBL and LightBurn), connection, preparation, engraving settings, material recommendations, troubleshooting, and maintenance.
	[Titoe CNC 3018Pro Router User Guide and Troubleshooting] Comprehensive user guide and troubleshooting FAQ for the Titoe CNC 3018Pro Router, covering software installation, machine operation, and common issues. Includes contact information for support.
	[Comgrow 3018 CNC Router & Laser Engraver: Operation and Mode Instructions] Comprehensive guide to operating the Comgrow 3018 CNC router and laser engraver, covering limit switch unlocking, emergency stop usage, power cord wiring, and main board mode configurations for tool and laser engraving.