Twotrees TTC3018

Twotrees TTC3018 CNC Router Machine Instruction Manual

Model: TTC3018

1. Introduction

This manual provides detailed instructions for the assembly, operation, maintenance, and troubleshooting of your Twotrees TTC3018 CNC Router Machine. The TTC3018 is a 3-axis engraving and milling machine designed for precision work on various materials including wood, plastics, acrylic, aluminum, and PCBs. It features GRBL control, a 775 spindle motor, and built-in WiFi for convenient operation.



Figure 1: Overview of the Twotrees TTC3018 CNC Router Machine.

2. Safety Information

Please read and understand all safety warnings and instructions before operating the machine. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always wear appropriate personal protective equipment (PPE), including safety glasses, during operation.
- Ensure the work area is well-ventilated and free from flammable materials.

- Keep hands and loose clothing away from moving parts and the spindle.
- Disconnect power before performing any maintenance, cleaning, or tool changes.
- Do not operate the machine if any parts are damaged or missing.
- Keep children and unauthorized personnel away from the machine during operation.
- Use the machine only for its intended purpose as described in this manual.

3. Setup and Assembly

The Twotrees TTC3018 CNC Router Machine comes partially pre-assembled. Follow these steps for complete assembly.

3.1 Unboxing and Component Identification

Carefully unpack all components and verify against the packing list. Ensure all parts are present and undamaged.

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Video 1: Unboxing and identification of all components for the TTC3018 CNC Router Machine.

3.2 Coupling Installation

Install the couplings onto the stepper motors as shown.



Figure 2: Attaching the red coupling to the stepper motor shaft using an Allen key.

3.3 Foot Mounting

Secure the foot mounts to the base plate. These provide stability for the machine.



Figure 3: Assembling the foot mounts with screws and T-nuts, then sliding them into the base frame channels.

3.4 Base Frame Assembly

Assemble the main base frame, ensuring all components are aligned and securely fastened.



Figure 4: Connecting the side guards to the base plate and securing them with screws to form the base frame.

3.5 Y-axis Motor Installation

Install the Y-axis motor and lead screw, ensuring smooth movement of the work area.



Figure 5: Installing the Y-axis motor and lead screw, connecting it to the moving platform.

3.6 X-axis Profile and Optical Axis Installation

Attach the X-axis profiles and optical axes to the side supports.



Figure 6: Securing the X-axis aluminum profiles and steel optical axes to the vertical side plates.

3.7 Z-axis Module Installation

Install the Z-axis module, which houses the spindle motor and controls vertical movement.

Figure 7: Mounting the Z-axis module onto the X-axis assembly, including the lead screw and motor.

3.8 Motherboard Components Installation

Assemble the motherboard components onto its protective casing.

Figure 8: Installing the main control board, fan, and power switch onto the acrylic housing.

3.9 Mainboard Wiring

Connect all motor and spindle wires to the mainboard according to the provided diagram.

Figure 9: Connecting the stepper motor wires and spindle motor wires to the main control board.

4. Operating Instructions

The TTC3018 CNC Router Machine is controlled via GRBL and supports various software applications.

4.1 Software Compatibility

The machine is compatible with popular software such as Artcam and Fusion360. It is officially supported on Windows XP through Windows 10 systems. Connection can be established via TF card or USB.



Figure 10: The TTC3018 CNC machine connected to a desktop PC and a laptop, illustrating its broad software and operating system compatibility.

4.2 Material Compatibility

The TTC3018 is capable of engraving and milling a wide range of materials. The 775 spindle motor (7000-9000 RPM) and ER11 collet (0.5-7mm bits) allow for versatility.

- **Wood:** Ideal for detailed carving and cutting.
- **Acrylic:** Suitable for precise engraving and cutting of acrylic sheets.

- **Plastics:** Effective for various plastic materials.
- **Aluminum:** Capable of light-duty milling on soft metals like aluminum.
- **PCB:** Can be used for PCB milling and prototyping.



Figure 11: Examples of materials that can be engraved or cut by the TTC3018, including wood, acrylics, PVCs, and plastics.

5. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your TTC3018 CNC machine.

- **Cleaning:** After each use, clean the work area, lead screws, and optical axes to remove dust and debris. Use a soft brush or compressed air.
- **Lubrication:** Periodically apply a small amount of lubricant to the lead screws and linear bearings to ensure smooth operation.
- **Inspection:** Regularly check all screws and connections for tightness. Ensure all cables are securely connected and free from damage.
- **Spindle Care:** Keep the spindle motor clean and free from obstructions. Replace worn or damaged bits promptly.

6. Troubleshooting

This section addresses common issues you might encounter with your TTC3018 CNC Router Machine.

Problem	Possible Cause	Solution
Machine does not power on.	Power cable not connected, power switch off, faulty power supply.	Check power cable connection, ensure switch is on, test power supply.
Motors are not moving.	Loose motor connections, software not sending commands, motor drivers faulty.	Verify all motor cable connections, check software settings, contact support if drivers are suspected.
Engraving is inaccurate or inconsistent.	Loose belts/couplings, worn bits, incorrect software settings, material not secured.	Tighten belts/couplings, replace bits, verify software parameters (steps/mm), secure material firmly.

Problem	Possible Cause	Solution
Spindle motor not rotating.	Spindle wiring loose, spindle motor faulty, software command issue.	Check spindle wiring, ensure correct commands are sent from software, contact support if motor is faulty.

7. Specifications

Key technical specifications for the Twotrees TTC3018 CNC Router Machine.



Figure 12: Physical dimensions of the TTC3018 CNC Router Machine: 420mm (width) x 355mm (depth) x 280mm (height).

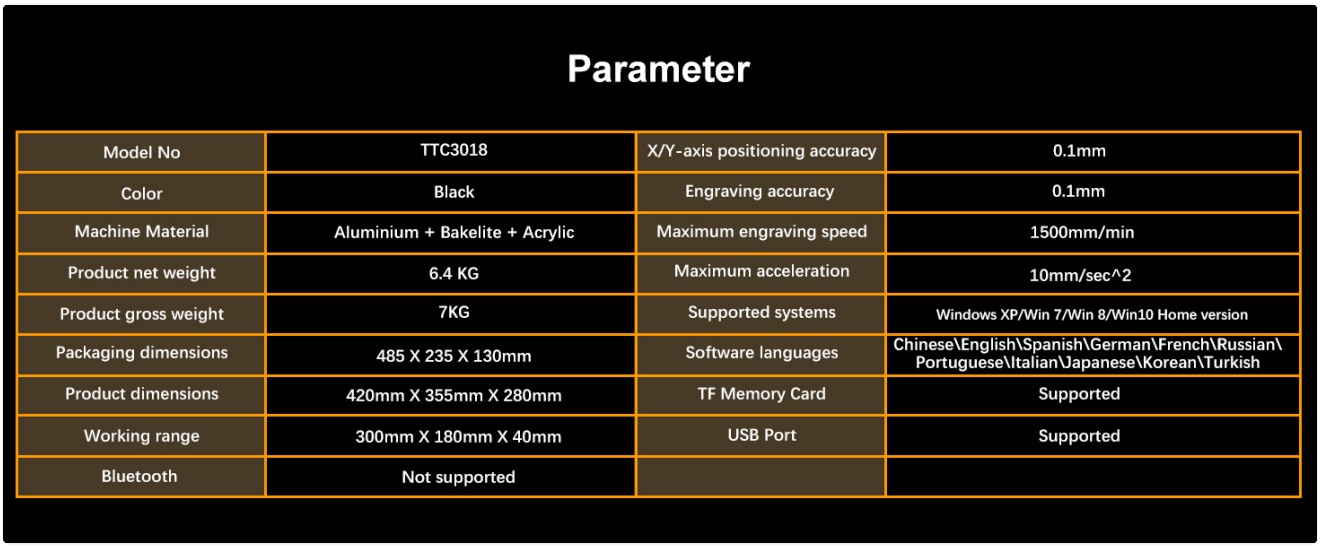


Figure 13: Detailed technical parameters of the TTC3018 CNC Router Machine.

Feature	Specification
Model No.	TTC3018
Color	Black
Machine Material	Aluminum + Bakelite + Acrylic
Product Net Weight	6.4 KG

Feature	Specification
Product Gross Weight	7 KG
Packaging Dimensions	485 x 235 x 130mm
Product Dimensions	420mm x 355mm x 280mm
Working Range	300mm x 180mm x 40mm
X/Y-axis Positioning Accuracy	0.1mm
Engraving Accuracy	0.1mm
Maximum Engraving Speed	1500mm/min
Maximum Acceleration	10mm/sec^2
Supported Systems	Windows XP/Win 7/Win 8/Win 10 Home version
Software Languages	Chinese, English, Spanish, German, French, Russian, Portuguese, Italian, Japanese, Korean, Turkish
TF Memory Card	Supported
USB Port	Supported
Bluetooth	Not supported

8. Warranty and Support

The Twotrees TTC3018 CNC Router Machine is designed and manufactured to high-quality standards. It holds multiple international safety certifications including CE-EMC, CE-LVD, CE-MD, CE-RED, ROHS, FCC-Sdoc, and FCC-ID, guaranteeing quality assurance.
For any technical assistance or inquiries, our dedicated customer service team provides 24-hour technical support. Please refer to the contact information provided with your product packaging or visit the official Twotrees website for support resources.