

Twotrees TTS20MAX

Twotrees TTS-20 Max 20W Laser Engraving and Cutting Machine User Manual

INTRODUCTION

Product Overview

The Twotrees TTS-20 Max is a high-performance 20W laser engraving and cutting machine designed for precision and versatility. It offers a large working area and advanced control options for various creative and professional applications.

Key Features

- **High-Performance 20W Laser:** Delivers concentrated power for fast engraving and precise cutting of materials like wood, leather, acrylic, and stainless steel.
- **Industrial Precision Architecture:** Equipped with 42 stepper motors, a silent TMC2209 driver, and a precise GT2 synchronous belt drive system for stable, quiet operation and high accuracy (± 0.1 mm, repetition accuracy 0.01 mm).
- **Large 600x600mm Working Area:** Provides ample space for large-scale projects, wall art, or batch production of smaller items.
- **Smart Wireless Control:** Supports Wi-Fi, USB data transfer, and offline operation via TF card. Compatible with professional software like LightBurn.
- **Safety Certifications:** CE, FCC, ROHS certified, includes professional laser safety glasses.

SAFETY INFORMATION

General Safety Guidelines

- Always wear the provided professional laser safety glasses when operating the machine.
- Never look directly at the laser beam or its reflection.
- Ensure the work area is well-ventilated to dissipate fumes and smoke generated during engraving/cutting.
- Keep a fire extinguisher nearby.
- Do not leave the machine unattended during operation.

- Keep children and pets away from the machine during operation.
- Operate the machine on a stable, non-flammable surface.
- Ensure proper grounding of the machine.
- Do not engrave or cut unknown materials, as some may produce toxic fumes or catch fire easily.

PACKAGE CONTENTS

Before beginning assembly, please verify that all components listed below are present in your package. If any parts are missing or damaged, contact customer support immediately.

- Twotrees TTS-20 Max Laser Engraving Machine Frame Components
- 20W Laser Module
- Power Adapter and Cable
- USB Cable
- Professional Laser Safety Glasses
- TF Card (pre-prepared with necessary files)
- Assembly Tools (wrenches, screws, etc.)
- User Manual (this document)
- Sample Materials for testing

SETUP INSTRUCTIONS

1. Unpacking and Inspection

Carefully remove all components from the packaging. Inspect each part for any signs of damage during transit. Refer to the "Package Contents" section to ensure all items are present.

2. Frame Assembly

Assemble the aluminum frame according to the included diagrams. Ensure all screws are tightened securely to maintain the machine's precision and stability.

600x600MM Arbeitsbereich, um mehr Gravurbedürfnisse zu erfüllen

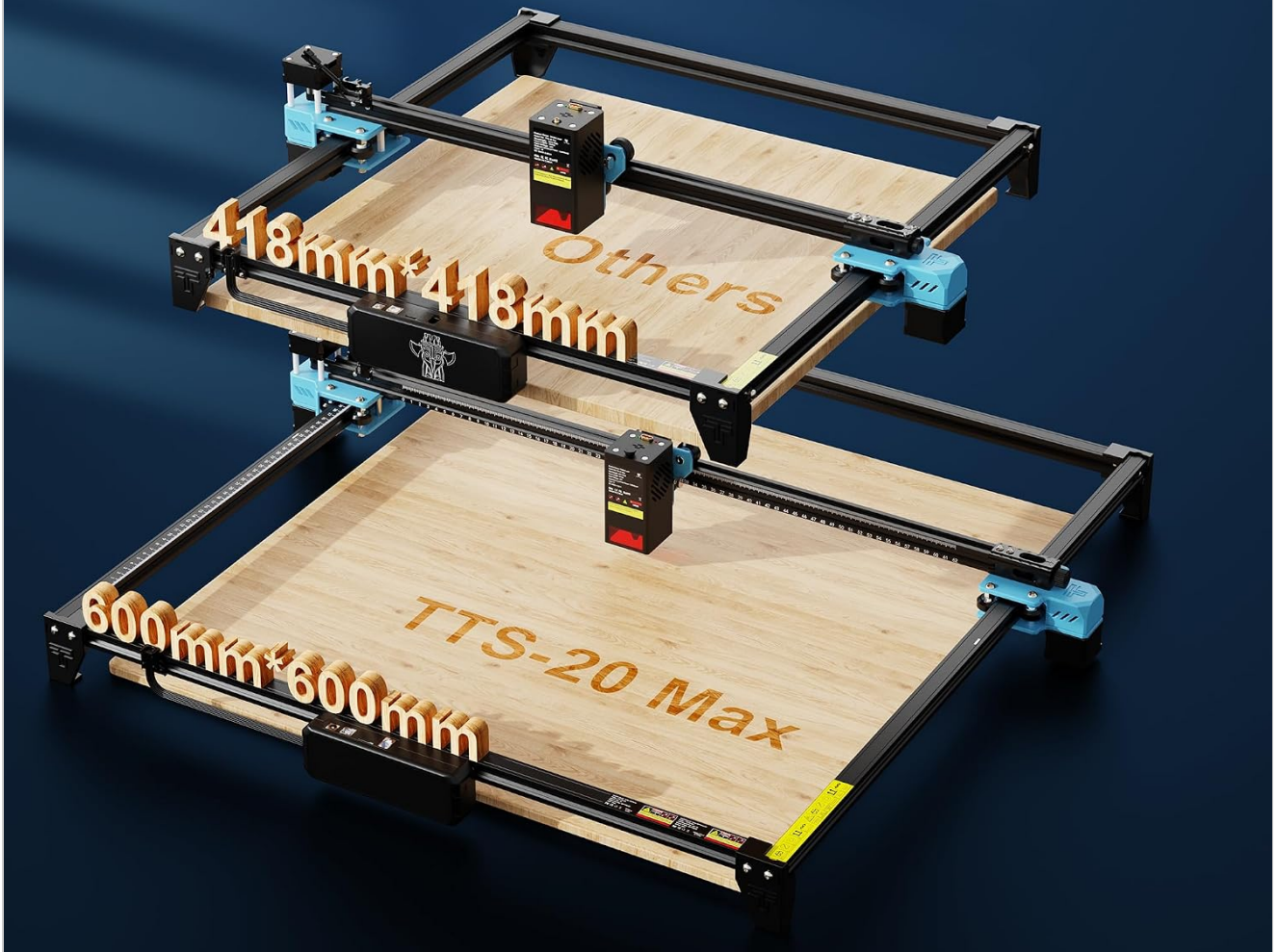


Image: Comparison of the TTS-20 Max's large 600x600mm working area with a smaller laser engraver, highlighting the ample space for projects.

3. Laser Module Installation

Mount the 20W laser module onto the gantry. Connect the laser module cable to the designated port on the control board. Ensure the module is seated firmly and correctly aligned.



Image: Detailed view of the 20W diode laser module in operation, demonstrating its capability to cut through materials like 35mm acrylic and 20mm veneer.

4. Cable Connections

Connect the power adapter to the machine and then to a suitable power outlet. Connect the USB cable to your computer if you plan to use a wired connection. For wireless operation, ensure your Wi-Fi network is configured.

5. Software Installation (LightBurn/GRBL)

Install the necessary laser control software on your computer. The TTS-20 Max is compatible with professional software such as LightBurn (purchased separately) and GRBL-compatible software. Follow the software's installation guide for detailed instructions.



Image: Screenshot showing the LightBurn and GRBL Laser software interfaces, illustrating the machine's compatibility with professional laser control software and wireless connectivity options.

OPERATING INSTRUCTIONS

1. Material Preparation

Place the material to be engraved or cut onto the working surface. Ensure it is flat and securely positioned to prevent movement during operation. Adjust the laser focus if necessary, following the laser module's specific instructions.

2. Design and Software Setup

Open your chosen laser control software (e.g., LightBurn). Import or create your design. Configure the laser parameters (power, speed, passes) based on the material type and desired effect. Refer to the software's documentation for detailed parameter settings.

Einfacher Laserfleck



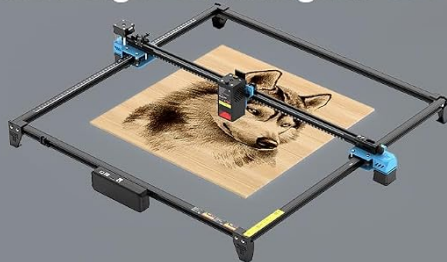
TTS-20 Max



Andere



Graviergeschwindigkeit 500 mm/s



TTS-20 Max(30 min)

VS



Andere(60 min)

Image: Illustration comparing the laser spot size of the TTS-20 Max (0.130mm) with other models (0.5mm, 0.3mm), and demonstrating an engraving speed of 500 mm/s.

3. Connecting to the Machine

Connect the software to the TTS-20 Max via USB, Wi-Fi, or by loading the G-code file from the TF card for offline operation. Ensure a stable connection before proceeding.

4. Framing and Positioning

Use the software's framing function to preview the laser path on your material. Adjust the material or design position as needed to ensure it fits within the desired area.

5. Starting the Operation

Once satisfied with the positioning and parameters, initiate the engraving or cutting process from the software. Monitor the machine closely during operation. Always wear your laser safety glasses.



600x600MM Arbeitsbereich,
um mehr Gravurbedürfnisse
zu erfüllen

Image: A user proudly displaying a large, intricately engraved wooden dragon artwork, showcasing the creative potential and large working area of the TTS-20 Max laser engraver.

6. Completion

After the operation is complete, wait for the laser to cool down and any smoke to clear before removing the material. Disconnect the machine from power when not in use.

MAINTENANCE

1. Cleaning the Laser Lens

Regularly clean the laser lens with a specialized lens cleaning solution and a lint-free cloth. A dirty lens can reduce laser power and engraving quality.

2. Cleaning the Machine

Keep the machine free from dust and debris. Use compressed air to clean the gantry, rails, and other moving parts. Ensure no material residue accumulates on the working surface.

3. Lubrication

Periodically lubricate the linear rails and lead screws with appropriate lubricant to ensure smooth movement and prevent wear.

4. Belt Tension

Check the tension of the synchronous belts. They should be taut but not overly tight. Adjust if necessary to maintain engraving accuracy.

TROUBLESHOOTING

1. Laser Not Firing

- Check if the power cable is securely connected and the machine is powered on.
- Verify the laser module cable is properly connected.
- Ensure the laser software is connected to the machine and the laser power setting is not zero.
- Check for any error messages in the software.

2. Poor Engraving/Cutting Quality

- **Focus:** Ensure the laser is properly focused on the material surface.
- **Parameters:** Adjust laser power, speed, and number of passes in the software. Different materials require different settings.
- **Cleanliness:** Clean the laser lens and ensure no debris is obstructing the laser path.
- **Material:** Ensure the material is flat and consistent in thickness.

3. Machine Not Moving

- Check all cable connections, especially for the stepper motors.
- Ensure the software is connected and sending commands.
- Verify there are no physical obstructions preventing movement.
- Check belt tension.

4. Connection Issues (Wi-Fi/USB)

- **USB:** Try a different USB port or cable. Reinstall USB drivers if necessary.
- **Wi-Fi:** Ensure the machine is within range of your Wi-Fi network and correctly configured. Restart both the machine and your router.

SPECIFICATIONS

Feature	Detail
Model	TTS-20 Max
Laser Power	20W Diode Laser
Working Area	600 x 600 mm

Engraving Accuracy	±0.1 mm
Repetition Accuracy	0.01 mm
Control System	42 Stepper Motors, TMC2209 Driver, GT2 Synchronous Belt Drive
Connectivity	Wi-Fi, USB, TF Card (Offline)
Compatible Software	LightBurn, GRBL-compatible software
Certifications	CE, FCC, ROHS
Package Dimensions	80 x 20 x 17 cm
Weight	5 kg

WARRANTY INFORMATION

Warranty information for the Twotrees TTS-20 Max is not explicitly provided in the product details. Please refer to the seller's or manufacturer's official website, or contact their customer support for specific warranty terms and conditions.

CUSTOMER SUPPORT

For technical assistance, troubleshooting, or inquiries regarding your Twotrees TTS-20 Max laser engraving machine, please contact Twotrees customer support through their official channels. Refer to the product packaging or the manufacturer's website for contact details.

Online resources such as forums and community groups for LightBurn and GRBL users may also provide helpful information and solutions.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question