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› OMTech 60W CO2 Laser Engraver with LightBurn, Model SH-G570 User Manual

OMTech SH-G570

OMTech 60W CO2 Laser Engraver with LightBurn

Model: SH-G570 | Brand: OMTech

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, maintenance, and troubleshooting of your OMTech 60W CO2 Laser Engraver, Model SH-G570. Please read this manual thoroughly before operating the machine to ensure proper usage and to prevent injury or damage.

2. PRODUCT OVERVIEW

The OMTech 60W CO2 Laser Engraver is a versatile machine designed for precision cutting and engraving across a wide range of materials. It features a 28"x20" working area, autofocus, air assist, and 4-way pass-through capabilities, making it suitable for various creative and industrial applications.



Figure 2.1: OMTech 60W CO2 Laser Engraver, Model SH-G570.

Key Features:

- **60W CO2 Laser Tube:** Provides sufficient power for engraving and cutting various materials.
- **28"x20" Working Area:** Accommodates a wide range of project sizes.
- **Autofocus Function:** Simplifies setup by automatically adjusting the laser focal distance.
- **Air Assist:** Helps to clear debris and reduce scorching during operation, resulting in cleaner cuts and engravings.
- **4-Way Pass-Through:** Allows for processing of oversized materials.
- **Software Compatibility:** Supports LightBurn, RDWorks, CorelDRAW, and AutoCAD.

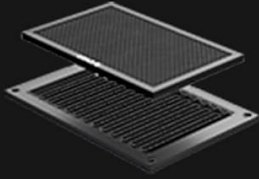


RDWorks, LightBurn, CorelDRAW,
& AutoCAD Compatibility

60W

Laser Power

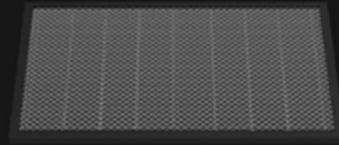
Honeycomb
& Blade Workbeds



0.4"
on a single pass

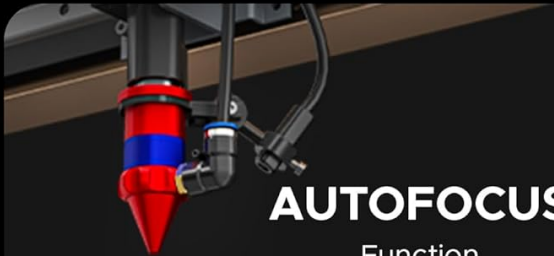


20" × 28"
Working Area



600MM/S

Max. Engraving Speed



AUTOFOCUS
Function



4-WAY
Pass-Through

Figure 2.2: Overview of the laser engraver's main features including laser power, working area, engraving speed, autofocus, and software compatibility.



Figure 2.3: The built-in autofocus and air assist system ensures precise focusing and efficient debris removal for optimal results.



WIDE COMPATIBILITY



RDWorks



LightBurn



CoreIDRAW



AutoCAD

Figure 2.4: The machine offers wide compatibility with popular software like RDWorks, LightBurn, CoreIDRAW, and AutoCAD.

4-WAY PASS-THROUGH

Work on Challenging Tasks and Projects & Handle
Pieces Larger Than the Workbed



Figure 2.5: The 4-way pass-through design allows for working with materials larger than the internal workbed.

60W Powerful Laser

Up to 0.8" Acrylic Cutting

| Up to 0.4" Wood Cutting

60W



Figure 2.6: The 60W laser is capable of cutting up to 0.8 inches of acrylic and 0.4 inches of wood.



SAFE OBSERVATION

Track Your Process While Staying Safe
Thanks to the Flame-Resistant Window

Figure 2.7: The laser head precisely engraves text onto a wooden surface, demonstrating its detailed capabilities.

3. SAFETY INFORMATION

Operating a laser engraver involves inherent risks. Adhere to all safety guidelines to prevent accidents and ensure safe operation.

- **Eye Protection:** Always wear appropriate laser safety glasses when the laser is in operation.
- **Ventilation:** Ensure adequate ventilation to remove fumes and smoke generated during engraving and cutting. An efficient exhaust system is crucial.
- **Fire Safety:** Keep a fire extinguisher nearby. Never leave the machine unattended during operation.
- **Material Compatibility:** Only engrave or cut materials approved for CO2 lasers. Avoid materials that produce toxic fumes or are highly flammable.
- **Electrical Safety:** Ensure the machine is properly grounded and connected to a suitable power supply.
- **Emergency Stop:** Familiarize yourself with the location and operation of the emergency stop button.



Figure 3.1: An efficient exhaust system is vital for directing hazardous debris and fumes away from the engraving surface and into a ventilation system.

4. SETUP

Follow these steps to set up your OMTech 60W CO2 Laser Engraver.

4.1 Unpacking and Placement

1. Carefully remove the machine from its packaging.
2. Place the engraver on a stable, level surface in a well-ventilated area.
3. Ensure sufficient space around the machine for operation and maintenance.

4.2 Connecting Components

1. Connect the exhaust fan and ducting to the machine and vent outdoors.
2. Connect the water pump/chiller to the laser tube's inlet and outlet ports. Ensure the water reservoir is filled with distilled water.
3. Connect the air pump to the air assist inlet.
4. Connect the power cable to a grounded outlet.

4.3 Software Installation

Your OMTech laser engraver is compatible with LightBurn and RDWorks. Refer to the software-specific installation guides provided with your machine or available on the OMTech website for detailed instructions.

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Video 4.1: This video provides a general overview of OMTech laser engravers, demonstrating their capabilities and ease of use, which can be helpful during initial setup and understanding the machine's potential.

5. OPERATING INSTRUCTIONS

This section outlines the basic steps for operating your laser engraver.

5.1 Powering On and Initial Checks

1. Turn on the water chiller/pump and air pump. Verify water flow and air pressure.
2. Turn on the main power switch on the machine.
3. The control panel will initialize.

5.2 Material Placement and Focusing

1. Place your material on the honeycomb or blade workbed.
2. Close the machine lid.
3. Use the autofocus function by pressing the designated button on the control panel. The laser head will automatically adjust to the correct focal distance.

5.3 Software Operation and Job Execution

1. Open your design software (e.g., LightBurn) on your computer.
2. Import or create your design.
3. Set appropriate power and speed settings for your material. Refer to the material compatibility chart below for general guidelines.
4. Send the job to the laser engraver.
5. On the machine's control panel, select the job and press 'Start'.
6. Monitor the engraving/cutting process through the flame-resistant window.


WIDE APPLICATION

MATERIAL	ENGRAVING	CUTTING	MATERIAL	ENGRAVING	CUTTING
Wood	✓	✓	Mylar	✓	✓
Acrylic	✓	✓	Cork	✓	✓
Leather	✓	✓	Glass	✓	✗
Plastic	✓	✓	Fiberglass	✓	✗
Cardboard	✓	✓	Ceramic	✓	✗
Pressboard	✓	✓	Brick	✓	✗
Fabric	✓	✓	Stone	✓	✗
MDF	✓	✓	Jade	✓	✗
Rubber	✓	✓	Marble	✓	✗
PVC	✓	✓	Shale	✓	✗
Bamboo	✓	✓	Cement	✓	✗
Kraft Paper	✓	✓	Corian	✓	✗
Corrugated Paper	✓	✓	Coated Metal	✓	✗
Felt	✓	✓	Electroplated Metal	✓	✗
Delrin	✓	✓	Painted Metal	✓	✗
Melamine	✓	✓	Anodized Metal	✓	✗

Figure 5.1: This table illustrates the wide range of materials compatible with the OMTech 60W CO2 laser for both engraving and cutting applications.

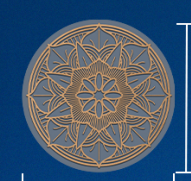
BEREIK PRODUCTIVITEITSVERHOGINGEN TOT 250-300% MET

600 mm/s




OMTech 44 Min. 29 sec.
Andere 73 Min. 41 sec.

Materiaal: multiplex
Vermogen: 80%
Snelheid: 10 mm/s



OMTech 104 min. 32 sec.
Andere 207 Min. 53 sec.

Materiaal: MDF
Vermogen: 90%
Snelheid: 10 mm/s



OMTech 43 Min. 28 sec.
Andere 72 Min. 34 sec.

Materiaal: steen
Vermogen: 30%
Snelheid: 400 mm/s

Figure 5.2: The machine's maximum engraving speed of 600 mm/s significantly enhances productivity.

6. MAINTENANCE

Regular maintenance is crucial for the longevity and optimal performance of your laser engraver.

6.1 Daily Maintenance

- Clean the workbed and interior of the machine to remove debris.
- Check the water level in the chiller and ensure proper circulation.
- Inspect the laser lens and mirrors for dust or residue.

6.2 Weekly Maintenance

- Clean the laser lens and mirrors using a specialized lens cleaning solution and wipes.
- Clean the exhaust fan and ducting.
- Lubricate the guide rails and bearings.

6.3 Laser Tube Care

The CO2 laser tube has a lifespan of up to 1,000 hours, which can be extended with efficient use at lower power settings. Ensure the water chiller maintains a stable temperature to prevent overheating.



Figure 6.1: The high-performance laser tube is designed for long-lasting operation, providing up to 1,000 hours of use.

7. TROUBLESHOOTING

This section addresses common issues you might encounter and their potential solutions.

7.1 No Laser Output

- **Check Power:** Ensure the machine is powered on and connected to a working outlet.
- **Water Chiller:** Verify the water chiller is on and circulating water. The laser will not fire if the water protection sensor is triggered.
- **Software Settings:** Confirm that the laser power and speed settings in your software are correctly configured and not set to zero.
- **Emergency Stop:** Ensure the emergency stop button is not engaged.

7.2 Poor Engraving/Cutting Quality

- **Focus:** Re-run the autofocus function or manually adjust the focal distance. An incorrect focus is a common cause of poor quality.

- **Lens/Mirrors:** Clean the laser lens and mirrors. Dirt or smudges can significantly degrade laser performance.
- **Power/Speed:** Adjust laser power and speed settings. Different materials require different settings.
- **Material Quality:** Ensure the material itself is suitable and consistent in thickness.

7.3 Machine Not Responding

- **Software Connection:** Check the USB or network connection between the computer and the machine.
- **Restart:** Try restarting both the machine and the computer.
- **Control Panel:** Ensure no error messages are displayed on the control panel.

8. SPECIFICATIONS

Detailed technical specifications for the OMTech 60W CO2 Laser Engraver, Model SH-G570.



Rated Power 60W	Max. Engraving Speed 600 mm/s
Machine Weight 249.1 lb.	Side/Side Pass Size 19.7"×0.8"
Front/Back Pass Size 31.5"×3.9"	Machine Dimensions 47.2"×34.3"×36.6"

Figure 8.1: Summary of rated power, max engraving speed, machine weight, pass sizes, and machine dimensions.

Specification	Value
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Specification	Value
Model Number	SH-G570
Laser Power	60W
Working Area	28" x 20" (700 x 500 mm)
Max. Engraving Speed	600 mm/s
Cutting Depth (Wood)	Up to 0.4"
Cutting Depth (Acrylic)	Up to 0.8"
Laser Class	Class 2 (0.874 mW output power)
Autofocus	Yes
Air Assist	Yes
Pass-Through	4-Way
Software Compatibility	LightBurn, RDWorks, CorelDRAW, AutoCAD
Machine Weight	249.1 lb.
Machine Dimensions	47.2" x 34.3" x 36.6"

9. WARRANTY AND SUPPORT

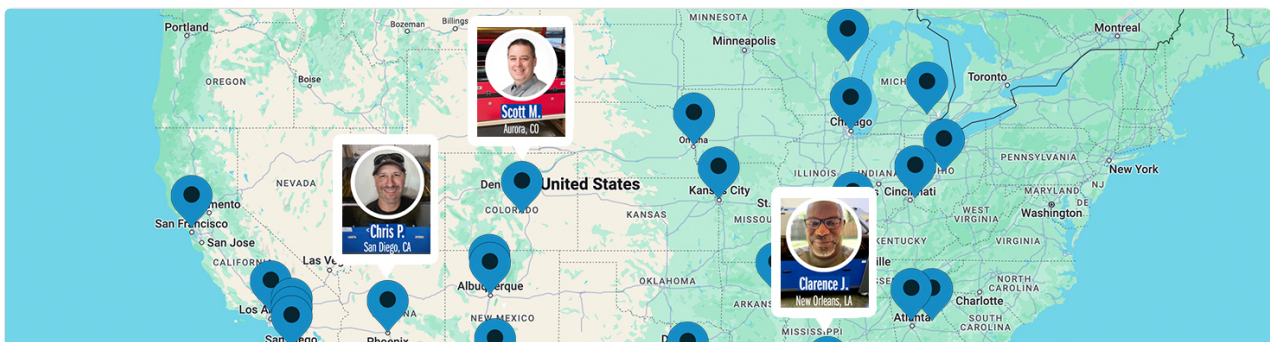
OMTech provides comprehensive support for its products.

9.1 Warranty Information

Your OMTech 60W CO2 Laser Engraver comes with a two-year support period. For specific warranty terms and conditions, please refer to the documentation included with your purchase or visit the official OMTech website.

9.2 Customer Support

For technical assistance, troubleshooting, or any inquiries regarding your laser engraver, please contact OMTech customer support. They offer U.S.-based technical support and 24/7 online customer service.



OMTECH DEMO ROOM PROGRAM

We currently have over 60 Demo Room Hosts across the United States and the number is continuously growing!

Figure 9.1: OMTech offers a demo room program with hosts across the United States for hands-on experience and support.

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Video 9.1: This video features 'Laser Guys from OMTech' discussing their experience with OMTech lasers, highlighting the quality, pricing, and how the machines have supported their business growth and product development.