Trotec Speedy 100 Laser Cutter

Trotec Speedy 100

Tool Type: Laser cutter
Location: Microfluidics Lab
Description: Laser cutter and engraver
Manufacturer: Trotec

About

The Trotec Laser Cutter uses a 30-60W CO2 laser to cut and engrave various materials. It utilizes CorelDraw as a 2D sketch manager, which is then imported into Trotec's specific cutting software. CorelDraw can be used to create the 2D sketch, however importing a DXF file or PDF into CorelDraw from Solidworks or other CAD packages is preferred due the CAD packages integrated features and functions.

Safety Concerns

This laser engraving system contains a class 4 carbon dioxide (CO2) laser that emits intensive and invisible laser radiation. Without safety precautions the direct radiation or even diffuse reflected radiation is dangerous!

- Always wear safety glasses when using the machine.
- Always work with the machine cover closed.
- NEVER leave the laser machine alone when running a job. If you do need to leave, make sure there is someone else nearby who is aware that it is on and cutting.
- The machine door must be left open while you are away.
- Do not store any flammable materials in the inside of the device or in the immediate vicinity of the device.
- Remove leftovers of previously produced materials before running a job.
- A fire extinguisher/fire blanket must always be handy as the laser beam can ignite flammable materials.
- Metals, particularly un-coated aluminum, copper in particular, silver and gold, cannot be

processed with the laser and lead to high reflections of the laser beam. If needed, metals can be coated with a paint/tape which chemically bonds to the surface when engraved.
- Before processing materials the user must verify whether harmful materials can be generated and whether the filter equipment of the exhaust system is suitable for the harmful materials.
- PVC (polyvinyl chloride) must under no circumstances be processed with the laser.
- Looking directly into the laser can cause retinal damage.
- Confirm that the fume collection system is running whenever the laser is cutting or engraving.
- Whenever heat is a concern, please use the nitrogen air assist. This includes cutting features with high surface density, or cutting materials that like to melt, such as delrin.

Training Documentation

Laser Cutter Training SOP

Detailed Specifications

- Working area (W x D): 24 x 12 in
- Max. height of workpiece : 5.2 in
- Loading area (W x D): 27 in x 17 in
- Overall dimensions (W x D x H): 40 x 31 x 40 in
- Max. processing speed: 1.8 m/s
- Max. acceleration: 1,969 ips²
- Technology motion system: Brushless DC servo motors
- Laser power CO2: 30 - 60W
- Laser class:2
- Weight: 150 kg
- Power consumption: 1 ~ AC 110-230V 50/60Hz, 1.3 kW (60 watts)

Reference Documentation

Marking Tape/Paint

Atmos Compact Operation Manual

Service Manual

Plastic Processing Guide

Job Control Software Manual

Bonding Acrylic with Methylene Chloride

Laser cutting data