# **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

Last update: 2023/10/10 18:50

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:2Weight: 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

From:

https://microfluidics.cnsi.ucsb.edu/wiki/ - Innovation Workshop Wiki

Permanent link:

https://microfluidics.cnsi.ucsb.edu/wiki/doku.php?id=trotec\_speedy&rev=1696963856

Last update: **2023/10/10 18:50** 

