

Laser Cutter



Machine:	Laser Cutter
Make/Model:	Trotec Speedy 300 Flexx
Revised:	11 / 1 / 2023
Author:	Trevor Marks
Location:	Machine Shop
Department:	Mechanical Engineering

DO NOT use this machine unless you have been trained in its safe use and operation!

Personal Protective Equipment



Caution
Laser



Inhalation
Hazard



Caution
Hot Surface



Caution
Fire Hazard

Select Specifications

80 W CO_2 Laser (10.6 μm)

30 W Fiber Laser (1064 nm)

2.85" Flexx Lens

Working Area: 29" \times 17" (726 mm \times 432 mm)

Height: < 6.5" (165 mm)

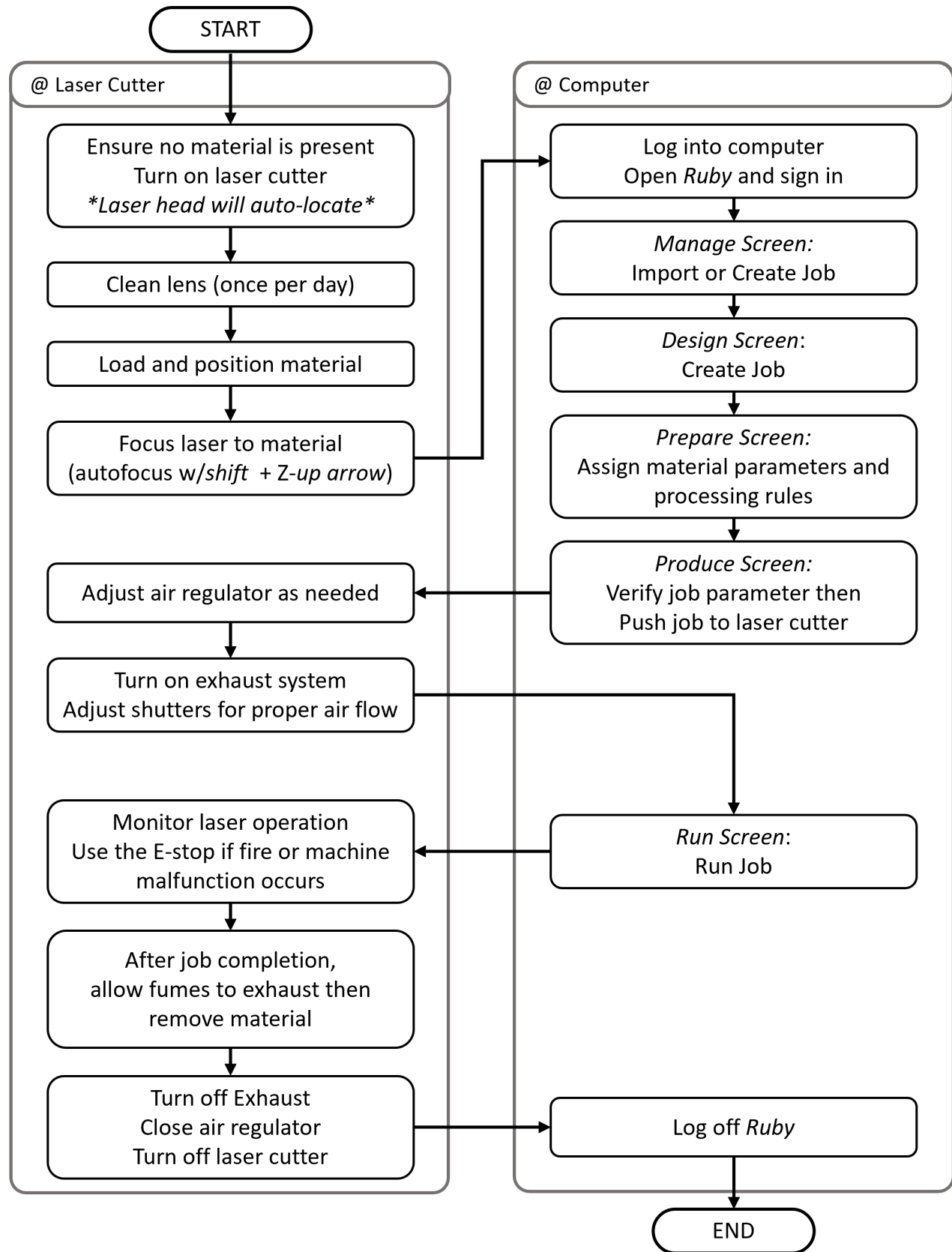
Max. load: 44 lb (22 kg)

Accuracy: \pm 0.0006" (0.015 mm)

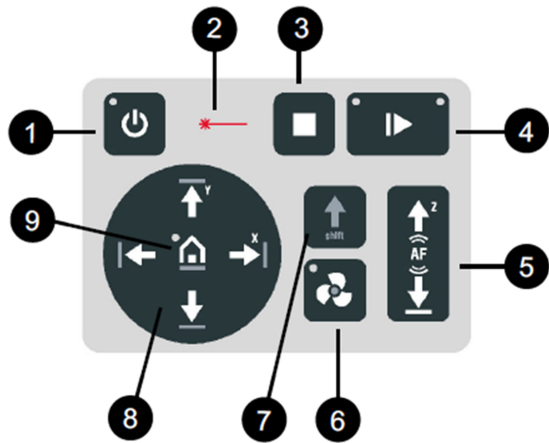
[\[Trotec Online Help Center\]](#)

[\[Trotec Ruby Guide\]](#)

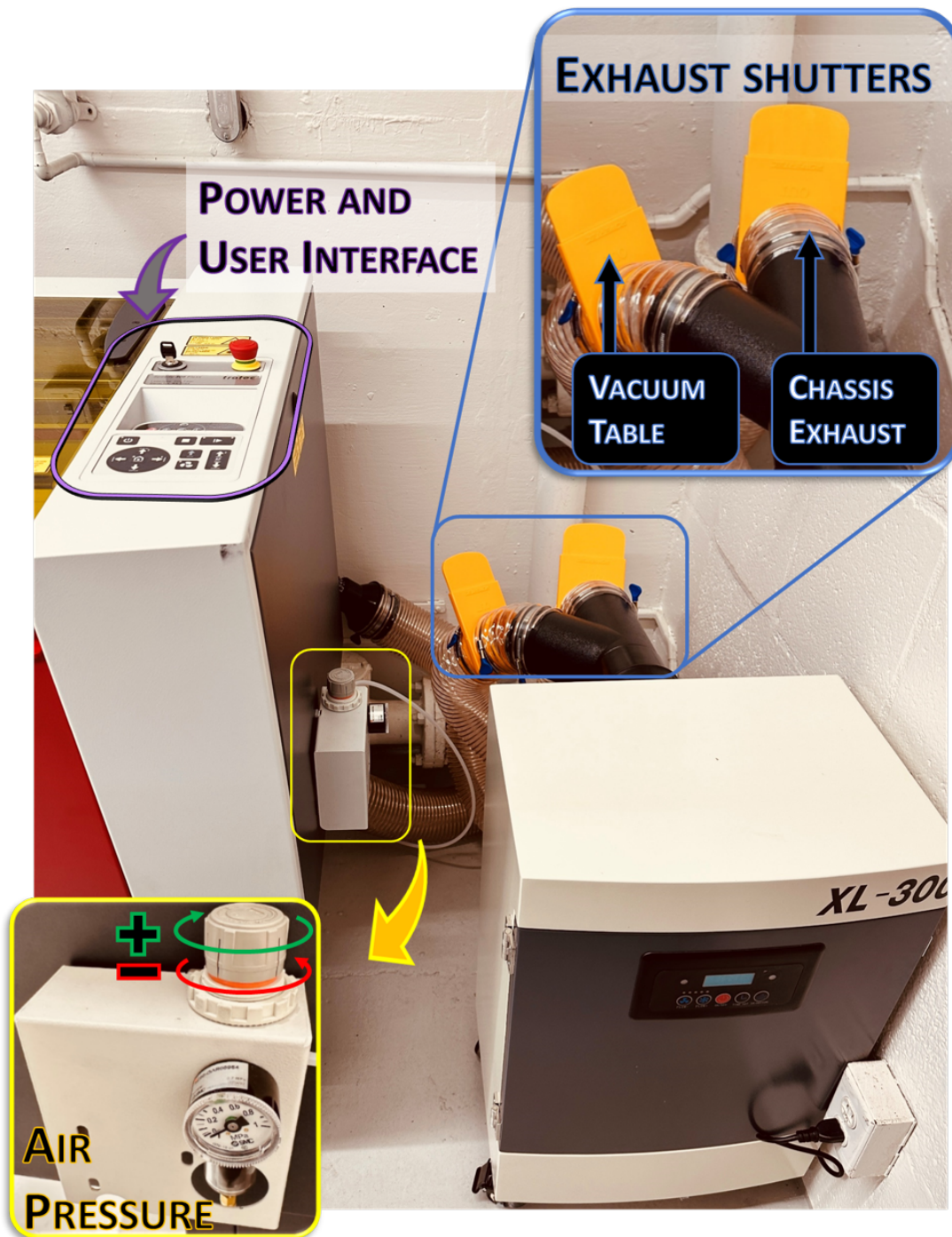
Procedure Checklist



Accessories



- ❶ Standby-button. LED On: Standby-Mode
- ❷ Status indicator laser beam. LED On: The machine is processing data.
- ❸ Stop-button
- ❹ Start/Pause/Repeat-button
- ❺ Working table control button Z
- ❻ Exhaust-button. LED On: Exhaust active
- ❼ Shift-button. Second operating level
- ❽ Laser head control button X/Y
- ❾ Home-button. LED On: Temporary change of home position.



Do's and Don'ts

Do:

- Read the laser cutter user manual: [\[GitHub Link\]](#)
- Only use materials on the `Approved Material` list
- Follow the *Procedure Checklist* (see next page)
- Turn on the exhaust and set the shutters correctly
- Set the air flow to an appropriate rate (depends on material and operation)

Don'ts:

- Do not use the laser cutter without approval!
- Do not use material on the **Prohibited Material list!**
- Do not leave the laser cutter while it is cutting!
- Do not run the laser without the exhaust on

Prohibited Materials

Only *approved* materials may be used in the laser cutter.

DO NOT USE ANY OF THE FOLLOWING MATERIAL:

- Any unknown material!
- Leather or artificial leather that contains chromium (VI)
- Carbon fibers (Carbon)
- ABS
- HDPE
- PolyCarbonate (PC)/Lexan
- PolyStyrene
- PolyPropylene
- PolyVinyl chloride (PVC)
- PolyVinyl butyral (PVB)
- PolyTetrafluorethylene (PTFE, Teflon)
- Beryllium oxide
- Materials containing halogens (fluorine, chlorine, bromine, iodine and astatine)
- Epoxy or phenolic resins
- Manganese, Chromium, Nickel, Cobalt, or Lead
- Any material with the naming addition “flame-retarding” since it might contain bromine

Approved Material List

Material	Cutting	Engrave/Marking	
	<i>CO₂</i>	<i>CO₂</i>	Fiber
Acrylic (PMMA)	•	•	•
Polyamide (PA)	•	•	•
Kapton (Polyimide)	•	•	•
Delrin (POM)	•	•	•
Depron Foam	•	•	•
PE Foam	•	•	•
Rubber (Chlorine free only)	•	•	•
Wood	•	•	
Paper	•	•	
Fabric	•	•	
Cardboard	•	•	
Cork	•	•	
Aluminum			•
Ceramics			•
Brass			•
Stainless Steel			•
Mirror			•
Painted Metal		•	
Stone		•	
Glass		•	