

ILLUSIONS AUSTRALIA

SAFE WORK PROCEDURE

SWP 048 – LASER CUTTER - LASER ROOM OPERATIONS

1. PURPOSE AND SCOPE

Minimum requirements for operation of the enclosed laser cutter and control of the designated Laser Room at Illusions Australia.

Applies to approved cutting/engraving materials, loading/unloading, extraction, fire control and room access.

2. AUTHORISATION AND COMPETENCY

Only trained, competent and authorised operators may operate the laser cutter.

Operators must know the machine's interlocks, emergency stop, extraction system, approved material list and fire response.

The Laser Room warning light indicates laser operation; unauthorised entry is prohibited while the warning light is flashing.

3. REQUIRED PPE

The following PPE must be worn as appropriate:

- Eye protection where required for ancillary tasks; normal operation relies on the machine's engineered enclosure and interlocks.
- Safety footwear.
- Gloves where handling sharp-edged material or residues, away from moving machinery.
- Respiratory protection only where specifically required by the assessed cleaning/material task.

4. PRE-START CHECKS

Before commencing work, confirm that:

- Material is positively identified and approved for laser cutting/engraving.
- Machine enclosure, lid/doors and interlocks are functional.
- Extraction is operating and airflow is adequate.
- Bed is clean of excessive combustible residue.
- Optics/nozzle are in suitable condition as permitted for operator inspection.
- Fire extinguisher is accessible.
- Job file, focus, power and speed settings are suitable.
- Laser Room is clear of unauthorised persons and warning system is operational.

5. SAFE OPERATING PROCEDURE

1. Confirm the material against the approved-material list.
2. Remove protective films/coatings that are not approved for laser processing.
3. Load and position material without obstructing extraction.

4. Close the enclosure and start extraction.
5. Set/verify focus and job parameters.
6. Activate the warning system as applicable and commence the job.
7. Remain in attendance and monitor continuously for flame, smoke or abnormal cutting.
8. Stop immediately if sustained flame or excessive smoke occurs.
9. Wait for fumes to clear through extraction before opening the enclosure.
10. Remove finished material and clean residues using the approved method.

6. PROHIBITED PRACTICES

Workers must not:

- Cut PVC/vinyl or unidentified plastics/materials.
- Defeat or bypass enclosure interlocks.
- Operate with doors/lids open unless the machine is specifically designed and authorised for that mode.
- Leave the laser operating unattended.
- Continue operation with sustained flame, excessive smoke or failed extraction.
- Allow unauthorised entry while the Laser Room warning light is flashing.
- Store excessive combustible waste in or around the machine.

7. MATERIAL SELECTION AND FUMES

Laser processing can thermally decompose materials and generate hazardous gases or particulates.

- Use only positively identified approved materials.
- Maintain effective extraction.
- Stop for unusual odour, smoke or irritation.

8. FIRE

Laser cutting can ignite the workpiece or residue.

- Operator must remain in attendance.
- Keep bed and extraction path clean.
- Stop laser energy immediately if sustained flame occurs and use emergency/fire procedures as required.

9. LASER ROOM ACCESS

The room provides an additional administrative control around laser operation.

- Flashing warning light means no unauthorised entry.
- Keep doors/access arrangements consistent with site rules.
- Report warning-light or interlock defects immediately.

10. FAULTS, DAMAGE AND ABNORMAL CONDITIONS

Stop for interlock failure, extraction failure, sustained flame, abnormal smoke, electrical fault, damaged optics/guards or warning-system failure.

Isolate/tag defective equipment and prevent use.

11. SHUTDOWN AND HOUSEKEEPING

- Stop laser and allow extraction to clear fumes.
- Switch off/isolate as required.
- Remove scraps and combustible residue.
- Clean machine/room using approved methods.
- Report faults and material issues.

12. EMERGENCY AND INCIDENT RESPONSE

1. Stop the equipment or activity immediately.
2. Isolate the hazard or energy source where safe to do so.
3. Provide or obtain first aid as required.
4. Notify the Foreman, Leading Hand or other authorised Illusions Australia representative.
5. Call emergency services where required.
6. Do not recommence until the incident, defect or unsafe condition has been addressed.

13. STOP WORK REQUIREMENT

Work must stop where:

- Material identity is uncertain.
- Extraction is ineffective.
- Interlock/enclosure or warning system is defective.
- Fire controls are unavailable.
- The job cannot be continuously supervised.

No production requirement or deadline takes priority over safe work.

DOCUMENT CONTROL

Document	SWP 048 – Laser Cutter - Laser Room Operations
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Prepared By	Aidan McDonnell
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