

<b>Title</b>	<b>Set up and operate a laser cutting machine to make cutting formes for fibreboard packaging</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>20</b>

<b>Purpose</b>	<p>People credited with this unit standard are able to: check documentation and confirm that the components and equipment required for the job are available; demonstrate start-up and shut-down procedures for the laser cutting machine used in the workplace; select substrate to meet job requirements; demonstrate requirements for file transfer between the CAD system and the servo controllers or pc-based computers; set up the laser cutting machine and cut substrate; confirm job is completed and undertake post production tasks; and carry out routine and preventative maintenance on the machinery and equipment being used.</p>
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<b>Classification</b>	Fibreboard Packaging > Fibreboard Packaging Production
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<b>Available grade</b>	Achieved
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<b>Entry information</b>	
<b>Critical health and safety prerequisites</b>	Unit 340, <i>Demonstrate knowledge of safe working practices in the print industry</i> , or demonstrate equivalent knowledge and skills.

**Explanatory notes**

- 1 Candidates must follow any applicable and recognised codes of practice, and documented workplace health, safety, and environmental procedures for personal, product, workplace health, safety, and environmental matters, and the obligations required under current law including the Health and Safety in Employment Act 1992 and its subsequent amendments.
  
- 2 **Definitions**  
*Job documentation* refers to the documentation that is used in the workplace that contains the instructions and requirements for a particular production job. This may include but is not limited to workplace orders, production orders, workplace specifications, samples, lay cards.  
*Job requirements* refer to specific requirements for the job at hand. These requirements may or may not be covered in the job documentation and may include special instructions, quality requirements expected by the customer, and/or production standards as set down by the workplace.

*Workplace practices* refer to the documented procedures for the machine and/or workplace.

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## Outcomes and evidence requirements

### Outcome 1

Check documentation and confirm that the components and equipment required for the job are available.

#### Evidence requirements

- 1.1 Job documentation is checked to ensure that all specifications for the process being undertaken are complete and any discrepancies are reported in accordance with workplace practices.
- 1.2 Components required for the job are checked against job documentation and their availability is confirmed.
- 1.3 Availability of equipment, as determined by the job documentation, is confirmed.

### Outcome 2

Demonstrate start-up and shut-down procedures for the laser cutting machine used in the workplace.

#### Evidence requirements

- 2.1 Start-up procedures for the laser cutting machine are demonstrated in accordance with workplace practices.  
  
Range safety devices, safety guards, microswitches, sensor beams, emergency procedures.
- 2.2 Shut-down procedures for the laser cutting machine are demonstrated in accordance with workplace practices.  
  
Range emergency stop buttons, safety devices, safety guards, microswitches, sensor beams.

### Outcome 3

Select substrate to meet job requirements.

#### Evidence requirements

- 3.1 Substrate is selected from those available in the workplace.
- 3.2 Difficulties of cutting each of the materials used in the workplace to make cutting formes are explained.

### Outcome 4

Demonstrate the requirements for file transfer between the CAD system and the servo controllers or pc-based computers.

Range rotary or flatbed.

### **Evidence requirements**

- 4.1 Zero, zero (0,0) point is located using the controller.
- 4.2 Machine is interchanged between the various axes.
- 4.3 Terminology and information are explained in terms of computer numerical control (CNC), numerical control (NC) or G-code.
- 4.4 Fine tuning adjustments between the various pointages are made.
- 4.5 Safety mechanisms and limit switches are identified and their use explained.
- 4.6 Mechanical operational parts and movements controlled by the servo controller are described.

### **Outcome 5**

Set up the laser cutting machine and cut substrate in accordance with workplace practices.

Range may include but is not limited to – rotary or flatbed.

### **Evidence requirements**

- 5.1 Laser cutting machine is set up to meet job requirements.
- 5.2 Laser cutter beam is set and confirmed as suitable for meeting job requirements.
- 5.3 Laser beam is monitored ensuring that cutting quality of the substrates meets the required production standards and quality.

### **Outcome 6**

Confirm job is completed and undertake post production tasks in accordance with workplace practices.

### **Evidence requirements**

- 6.1 Quantity and other job requirements are checked against job documentation before removing job from machine and any discrepancies in quantity are rectified.
- 6.2 Correct shut-down sequence is followed.

- 6.3 Job documentation is completed and any amendments and variations are noted for future reference.
- 6.4 Other post production tasks are carried out as required by the job documentation.

### Outcome 7

Carry out routine and preventative maintenance on the machinery and equipment being used, in accordance with workplace practices.

### Evidence requirements

- 7.1 Equipment is inspected, adjusted and maintained to ensure efficient operation and any adjustments unable to be carried out are reported.
- 7.2 Machine and equipment componentry that require maintenance are identified and a preventative maintenance plan written.
- Range may include but is not limited to – laser high voltage (HV), blower, lenses, mirrors, beam alignment, gases, vacuum tests and leaks, slab canisters, general troubleshooting.
- 7.3 A preventative maintenance log is kept for the machinery and equipment used.

<b>Planned review date</b>	31 December 2017
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### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	18 December 2006	31 December 2014
Review	2	20 September 2012	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0005
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

### Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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**Comments on this unit standard**

Please contact [Competenz info@competenz.org.nz](mailto:info@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.