

FACT SHEET

METALWORKING GUILLOTINES (SQUARING OR POWER SHEAR)

Metalworking guillotines operate by a clamp securing the sheet of material. Similar to the action of scissors, the blade shears the material, starting at one side of the sheet.

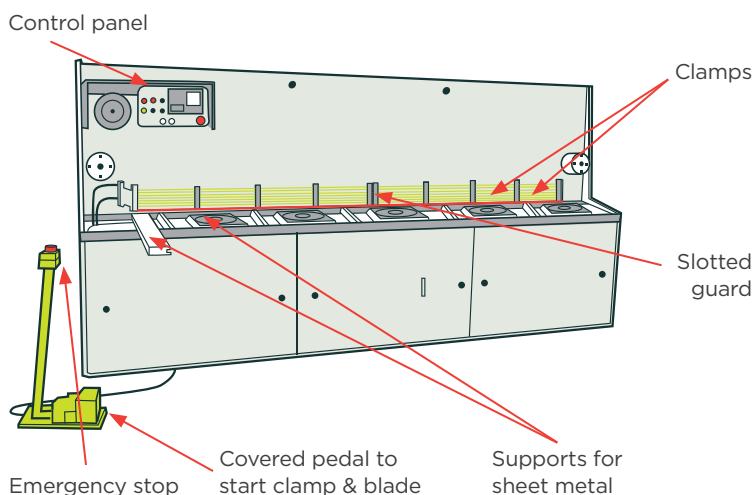
Usually, the cut off piece will fall on to a metal ramp beneath the blade, and slide down the ramp to where it can be recovered.

Guillotines can have mechanical, hydraulic, or pneumatic prime movers. Small guillotines

may be operator-powered by a pedal or handle. The small force provided by the operator is increased to provide much larger force at the blade.

In mechanical guillotines, energy to drive the tool is stored in a revolving flywheel. In hydraulic guillotines, energy for the tool comes from pressure in a hydraulic ram. In pneumatic guillotines, compressed air replaces hydraulic fluid.

FIGURE 1: HYDRAULIC GUILLOTINE



HAZARDS:

- > Sheet metal
- > Contact with clamp and blade
- > Falling items
- > Moving parts
- > Viewing slots
- > Noise
- > Leaking hydraulic oil
- > Slips, trips and falls
- > Faulty/altered machinery (maintenance & cleaning)

PPE:



TASK – LOAD & UNLOAD/COLLECT CUT-OFFS

Hazard	Risk	Controls
Sheet metal	<ul style="list-style-type: none"> > Deep cuts > Muscle strains 	<ul style="list-style-type: none"> > Wear protective gloves. > Use mechanical aids to lift materials, when necessary.
Contact with clamp and blade	<ul style="list-style-type: none"> > Deep cuts or amputation > Crushing injuries 	<ul style="list-style-type: none"> > Fix guards to isolate the point of closure at the clamp and blade. > Use interlocked guards to avoid entanglement. > Off-cuts must have a collection point that does not involve reaching into the back of the guillotine.
Falling items	<ul style="list-style-type: none"> > Bruising 	<ul style="list-style-type: none"> > Ensure clamp and blade are interlocked against faults (for full revolution type guillotines).

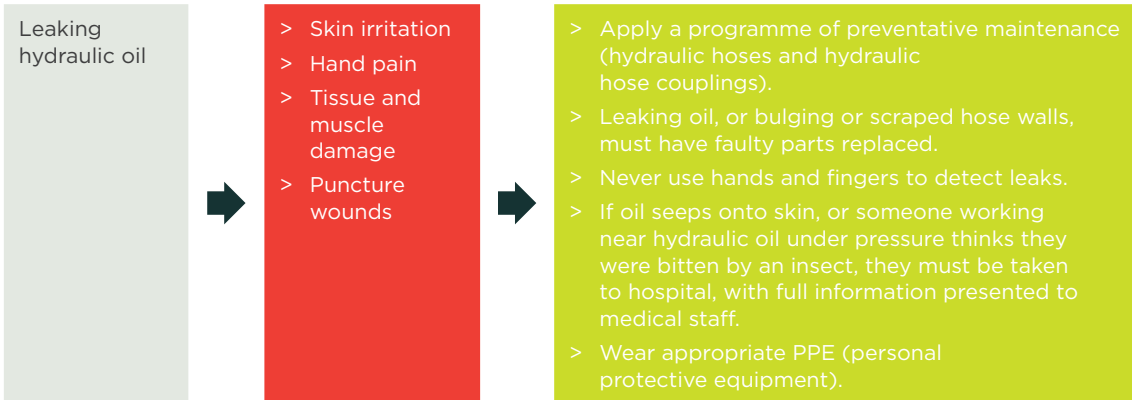
TASK – GUIDE & CONTROL THE CUT

Hazard	Risk	Controls
Moving parts	<ul style="list-style-type: none"> > Deep cuts or amputation 	<ul style="list-style-type: none"> > Fix guards to prevent reach to moving parts and hands from reaching beneath clamps or blades. > Cover pedals to minimise the chance of an unintentional start. > Never wear loose clothing or jewellery. > Fit presence sensing devices. If guillotines fail, they must stop safely, and not restart until the fault is repaired. > Ensure regular testing of the presence sensing system.
Viewing slots		
		<ul style="list-style-type: none"> > Ensure viewing slots are small enough to prevent reach.

OTHER (NON-MECHANICAL) HAZARDS

Hazard	Risk	Controls
Noise	<ul style="list-style-type: none"> > Hearing damage or loss 	<ul style="list-style-type: none"> > Reduce noise levels by isolating machines or enclosing within noise barriers. > Assess noise levels. > Arrange hearing screenings. > Always wear hearing protection.

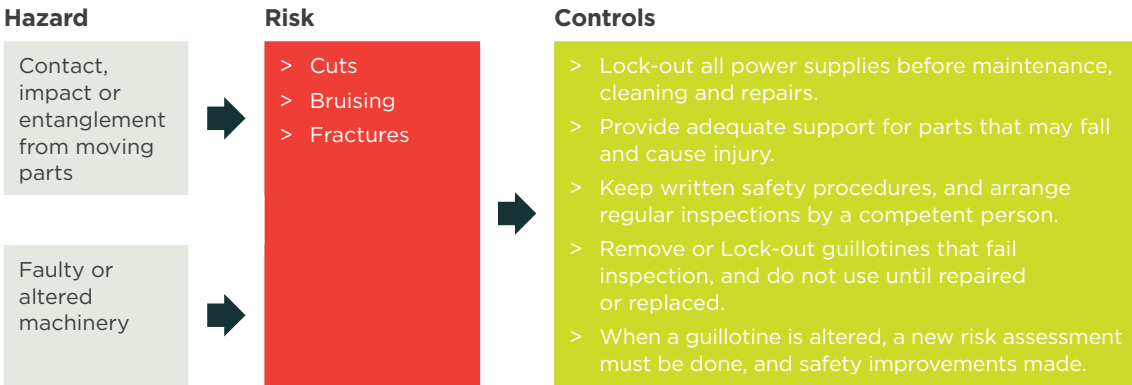
A safe noise level over an eight hour day is 85dB(A). A metalworking guillotine may exceed this noise intensity.



Hydraulic oil under pressure will get into skin, even through leather gloves.



TASK - MAINTENANCE, CLEANING & REPAIRS



References, current standards and further information can be found on the Manufacturing project page at: <http://manufacturing.worksafe.govt.nz>

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