

## FACT SHEET

# PUNCH AND SHEAR MACHINES

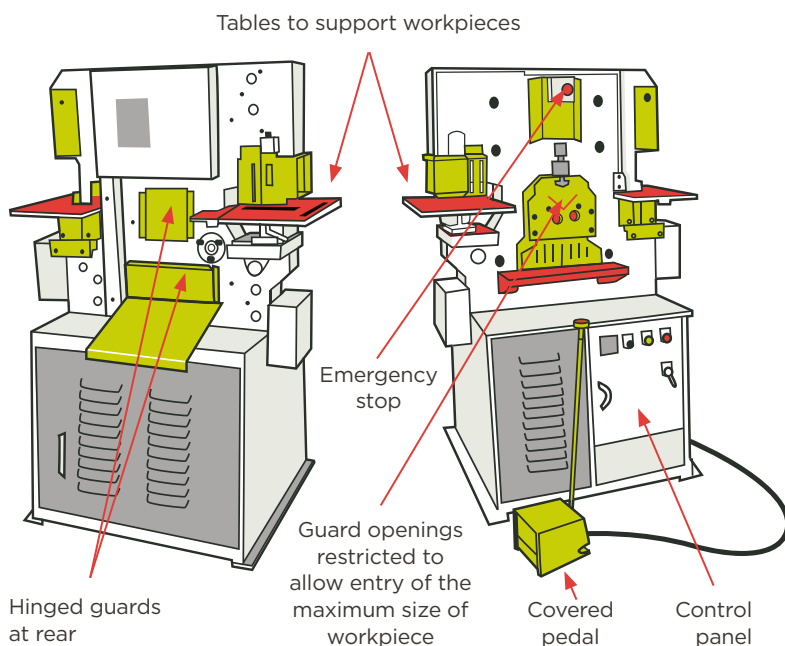
**These machines can perform a number of functions, including shearing, punching, notching or bending.**

On larger machines, operations may be disconnected from the prime mover while it isn't in use. However, usually the machine in use and a number of tools nearby will operate at the same time. If the punch and shear is large enough, two operators may work together, using two pedals without interference.

Modern punch and shear machines have hydraulic prime movers. In older machines, the energy driving the tool is stored in a revolving flywheel. A clutch connects the flywheel to the crankshaft, which in turn drives the tool. At the start of the stroke the operator engages the clutch to connect the flywheel energy to the crankshaft. A key clutch connects the flywheel and tool for one revolution of the flywheel.

In hydraulic machines, energy for the tool comes from pressure in a hydraulic ram. Hydraulic oil flows into the ram, controlling whether the tools moves, or how fast.

**FIGURE 1: PUNCH AND SHEAR MACHINE**



**HAZARDS:**

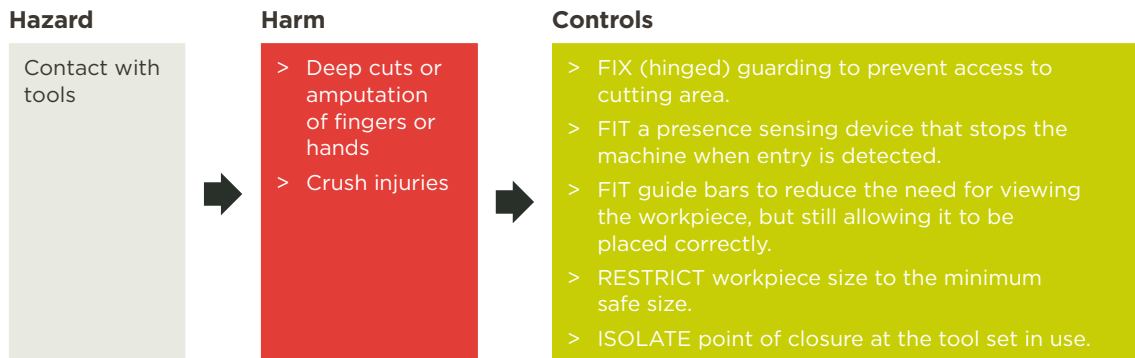
- > Contact with tools
- > Heavy lifting
- > Contact or impact from moving parts/ejected tools
- > Noise
- > Slips, trips and falls
- > Contact or impact from unexpected movement (during maintenance, cleaning & repairs)

**PPE:**



---

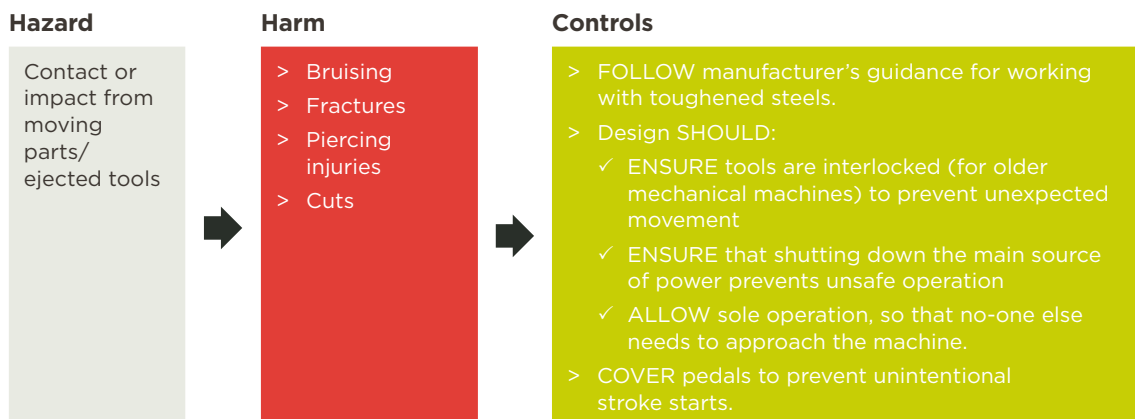
## TASK - LOAD/UNLOAD MATERIALS



Tools can cause serious harm to the operator, particularly if the operator is trying to hold small workpieces too close to tool parts.



## TASK - MACHINE OPERATION



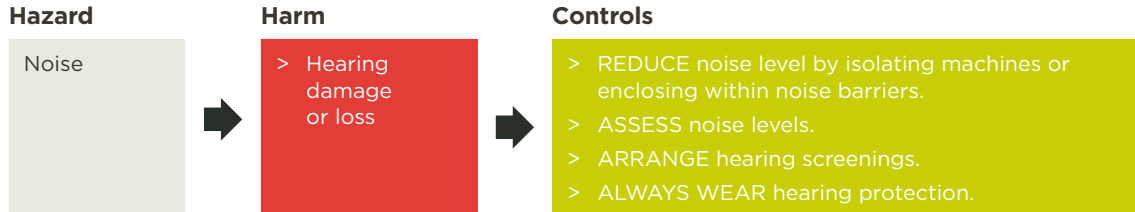
Broken tooling can eject from the machine, becoming a projectile.

Metal pieces may move or change shape as they are worked on.

---

---

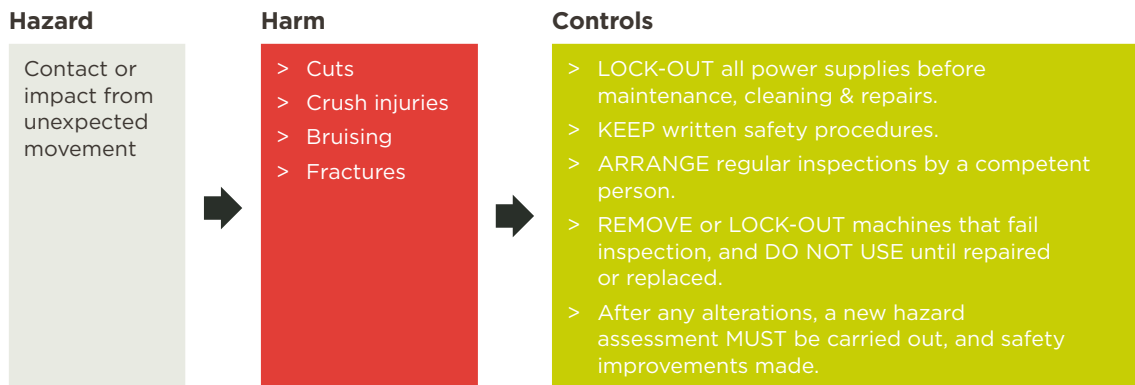
## OTHER (NON-MECHANICAL) HAZARDS



A safe noise level over an eight hour day is 85dB(A). A punch and shear machine may exceed this noise intensity.



## TASK - MAINTENANCE, CLEANING & REPAIRS



References, current standards and further information can be found on the Safe Use of Machinery project page at: [www.worksafe.govt.nz](http://www.worksafe.govt.nz)

---

PUBLISHED: APRIL 2014. CURRENT UNTIL REVIEW IN 2017