

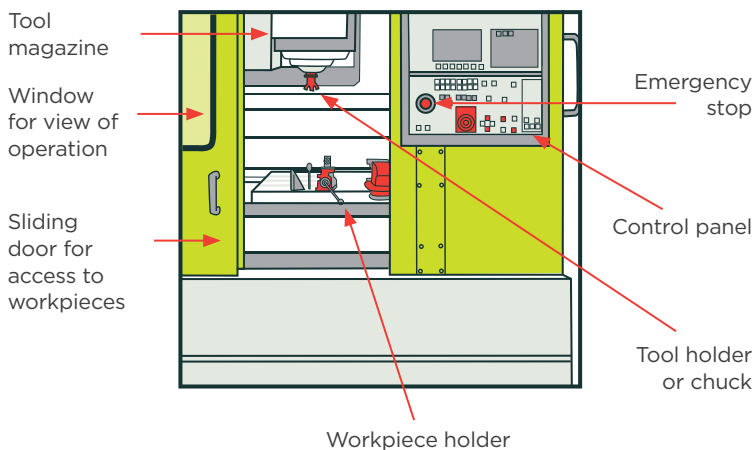
## FACT SHEET

# CNC (COMPUTER NUMERICAL CONTROL) MACHINING CENTRE

A CNC machining centre takes instructions from a computer file, using instructions to select and control tools that carve a block of metal, or billet, into a new product. Using this machine ensures that every product built to the same instructions will be identical.

The metal is securely clamped in a workpiece holder. Tools picked from a magazine (sometimes set up as a carousel) are securely fixed in a tool holder and used to carve a shape from the metal.

FIGURE 1: CNC MACHINE



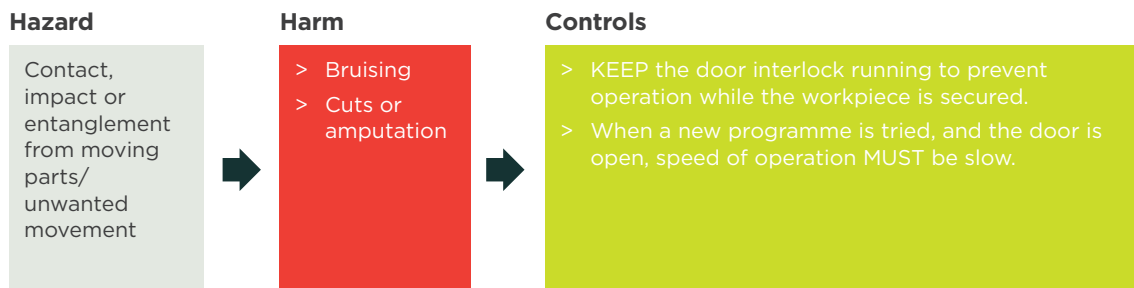
### HAZARDS:

- > Contact, impact or entanglement from moving parts/unwanted movement
- > Contact or impact from accidentally released tools
- > Contact with metal chips or swarf
- > Contact with liquid coolant
- > Slips, trips and falls
- > Trapping, impact or entanglement from unexpected movement (during maintenance, cleaning & repairs)

### PPE:



### TASK - LOAD/UNLOAD MATERIALS



## TASK - MACHINING CENTRE PROCESS (SECURING WORKPIECE, TOOL SELECTION, SHAPING WORKPIECE)



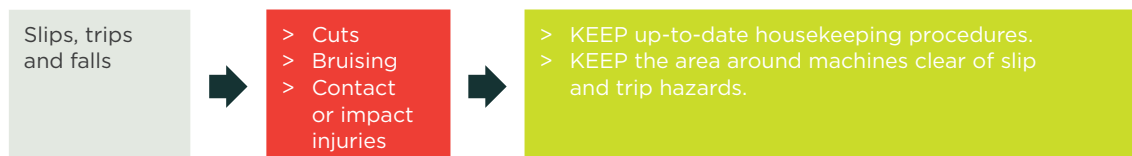
Tools may accidentally release from the holder when revolving at speed, and the tool may pierce the viewing window or the steel guard. Operator error and poorly maintained revolving parts may allow a part to eject. When steel bars are added to supplement the vision panel, the bars MUST be spaced to keep all ejected tools contained.



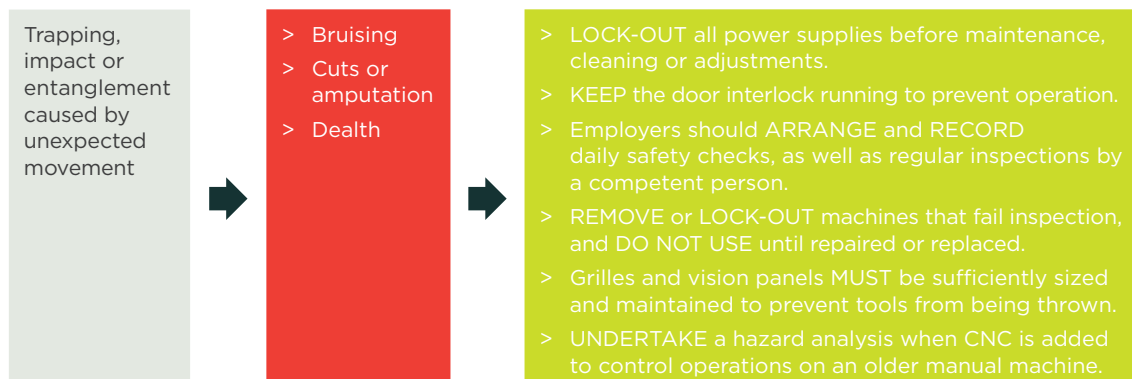
## OTHER (NON-MECHANICAL) HAZARDS



Fluids and lubricants used in the machining process degrade strength of polycarbonate viewing panels by about 10% per year.



## TASK - MAINTENANCE, CLEANING & ADJUSTMENTS



If an inspection shows limited ability to contain thrown parts, and an upgrade doesn't happen, speed or weight of turning parts MUST be restricted to a safe level. When adding CNC to an older machine, machine parts can move more rapidly, and greater volumes of aerosols from metalworking fluids can be released.