

ROOM:

MACHINE OPERATION: VERTICAL MILLING MACHINE



HAZARDS:

- Long hair, loose clothing etc., can become entangled in moving parts
- Work pieces, chuck keys, broken cutting tools, swarf, etc., can be violently ejected
- Lathes can present a hazard of electric shock
- Closing movements between parts under power can be a trapping hazard
- Sharp edges on tools, work pieces and swarf can cause cuts
- Contact with cutting fluids, oil and grease can irritate
- Swarf can jam or be ejected if allowed to build up
- Inadvertent starting of the machine
- Lack of space around the machine can lead to operator being pushed by passers by
- Slippery floors surfaces or loose items around the machine can cause slips and trips resulting in contact with moving parts
- Manual handling of heavy equipment (e.g. chucks, faceplates work pieces) can present a hazard.

CONTROL MEASURES – SPECIFIC:

- The machine is with a power isolator either on or adjacent to the machine and be controlled by a starter incorporating overload protection and no-volt release. When an automatic power feed to the table is used, the wheel must disengage and not rotate with the feed screw (this machine does not have an automatic feed). The control of the coolant pump must be independent of the power control to the cutter.
- Guards enclose the cutter, arbor and table of the milling machine and a means of preventing access to the machine whilst it is moving. When the guard, which is hinged, is opened to gain access to the work etc., the isolation switch is turned to the OFF position. A bolt between the two halves of the guard should be designed to delay the opening of the guard until the machine is at a standstill.
- For vertical milling machines, where the risk of injury is much lower, it is acceptable to have a clear plastic screen. This should totally enclose the cutter.
- The pulley drive and gear is totally guarded. A tool-operated locking device must be provided to all access covers.
- The dangers associated with these machines must not be underestimated. The machine must be checked by the teacher to ensure that the cutter and work are correctly mounted, the guard is in position and the correct speeds and feeds selected. The work must be securely held on the table by means of a heavily constructed machine vice, angle plates, etc. The work piece must be traversed well clear of the cutter before loading or unloading the machine. Swarf must only be removed using a brush with a straight handle when the machine is electrically isolated.
- A space of at least 500mm should exist between the machine table at the extreme ends of its travel and any fixed object.
- Manual handling tasks associated with moving heavy work, vices and indexing heads etc., can be beyond the physical abilities of some persons. An assessment should be made and appropriate procedures developed.

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- Metal working fluids should be mixed and changed in accordance with supplier's instructions. Contact with skin should be kept to a minimum. Barrier cream is recommended for staff and hands should be thoroughly washed after use.

CONTROL MEASURES – GENERAL:

- The machine is provided with a power isolator adjacent to the machine and is controlled by a starter incorporating overload protection and no-volt release. The machine has a securely fitted emergency foot stop.
- The pulley drive and gear is totally guarded. A tool-operated locking device must be provided to all access covers. The drill, chuck and spindle must be guarded by a self-adjusting guard which must be positively locked when in the operating position.
- Eye protection conforming to BS2092-1 must be used at all times. Loose clothing must be secured; long hair tied back and substantial footwear worn to minimise risk of injury if the material or chuck falls.
- Sufficient space should exist around the machine to prevent accidental contact with passers by.

Risk Assessment checked by:

Date: