

Turning

How most accidents happen

- A fatal accident arising from entanglement on rotating parts happens every year or so in the UK
- Entanglements on workpieces, chucks, carriers and unguarded stock bars cause most accidents
- Many accidents happen using hand-held emery cloth to smooth and polish components
- Direct contact with moving parts causes many injuries
- Eye injuries from machine cleaning, swarf removal and unenclosed machining when eye protection is not worn are frequent
- Chuck keys ejected from rotating chucks.

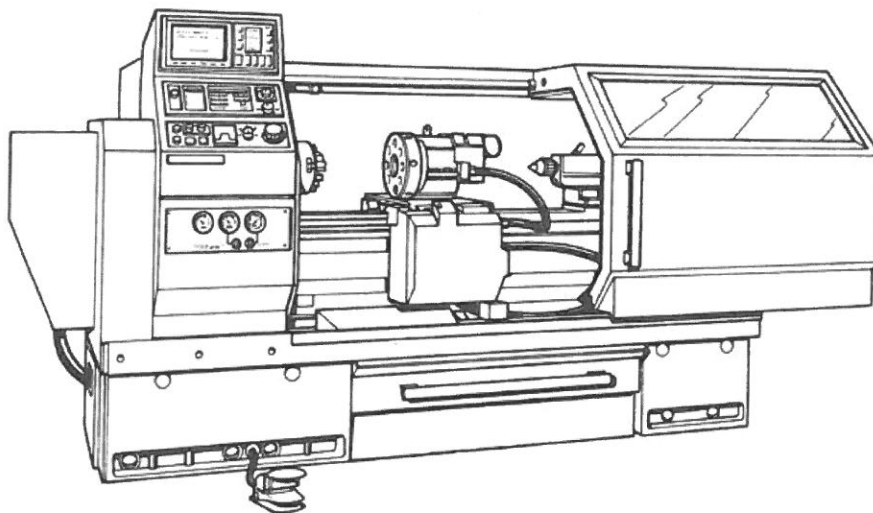
A large proportion of injuries result in amputation of fingers, broken bones and torn ligaments.

Most **ill health** arises from:

- unsafe handling (see pages 20–26), harmful metalworking fluids (see pages 52–54) and too much noise (see pages 51–56), but in particular
- noise levels from stock bars rotating in stock bar tubes which can be very high, particularly on multi-spindle machines
- risks from breathing in mists and aerosols may be higher at higher speed

machines, and throughout the workshop from groups of machines operating together.

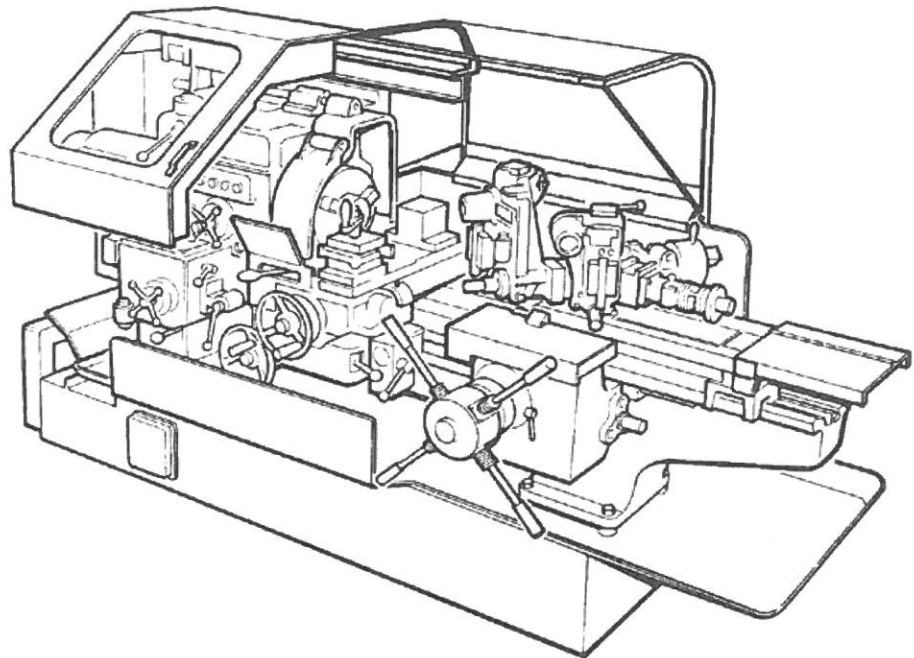
If required surface finish or dimensional accuracy cannot be achieved by turning techniques, consider using dedicated grinding, honing or polishing machines as appropriate instead of hand-held emery cloth.



Key safety measures

For a small CNC turning machine:

- Sliding interlocking guards to prevent access to dangerous movements when guards are open
- If access to machine movements is necessary when guards are open, safer, slower movements under hold to run control may be permitted when guards are open
- Exhaust extraction fitted or capable of being connected
- A strong properly maintained vision panel, capable of withstanding foreseeable ejections.



Key safety measures

For a manually operated turret lathe:

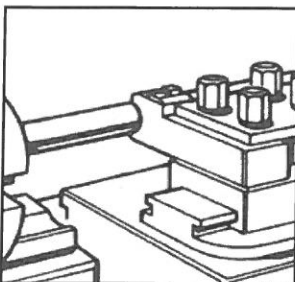
- Fixed guard at rear of machine
- Chuck guard
- Feed and lead screws guarded or well back from operator
- Splashguard for suds and swarf.

Training specifics

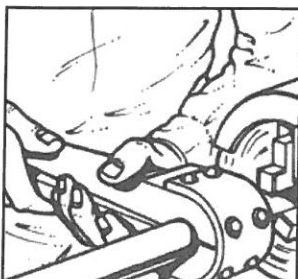
- Wear eye protection
- Don't wear jewellery, loose clothing or long hair if it's not tied back.

If using emery cloth cannot be avoided, in addition to general rules for safe operation (see page 41), users should be trained about the dangers of using emery cloth:

- Never use emery cloth at CNC lathes
- If required finish may only be obtained holding emery cloth against rotating components, then use:
 - a backing board
 - a tool post
 - a 'nutcracker'
 - hand-held abrasive-impregnated wire brushes



Tool post



'Nutcracker'

Key references: BS EN 12415: 2000; 12478: 2001; 12840: 2001; 13788: 2001
Accidents at metalworking lathes using energy cloth EIS2 HSE Books (free)