

Machinery guarding and intervention



Machinery can present hazards - most have the potential to cause serious injuries, particularly if unreliable, faulty, or when used improperly through inexperience or lack of training.

People can be struck by moving parts within machinery, or by material ejected from it, get caught between parts moving past one another or other fixed object, resulting in crush injuries, cuts, and parts of the body can be drawn in or trapped.

Even when a machine is powered down, sharp edges can cause cuts and rough surface parts can cause friction or abrasion.

The Provision and Use of Work Equipment Regulations (PUWER) establish the duties of employers and workers to maintain health and safety when for example, handling, moving, installing, using, servicing, inspecting, maintaining and / or cleaning work equipment, including machinery.

Key actions to prevent injuries due to machinery

- Make a thorough assessment of the risks to health and safety presented by work equipment, taking into account the type of work, substances and electrical or mechanical hazards people may be exposed to.
 - Consider if the equipment is appropriate for the work, bearing in mind various environmental factors, like lighting, weather conditions, ergonomics and ventilation.
 - Put control measures in place for specific risks, e.g. manual handling, dust, fumes and noise. Select work equipment based on what is safest and poses the least risk to health.
 - Check that it is UKCA and / or CE marked (rules have changed) and has a relevant declaration or certificate of conformity.
 - Make sure all who use, maintain or inspect machinery have access to instructions provided in English (or whichever language they require).
- Have equipment installed by someone who has the right knowledge and experience for the item and the type of environment it's being placed in.
- Arrange maintenance and inspection, including that required by law, and have procedures in place to ensure pre-use safety checks are completed and recorded.

- Make sure suitable safe systems of work are available, including arrangements for isolation and lock off of machinery and equipment during maintenance, cleaning, inspection, etc.
- Provide information and instruction to all who use, maintain or inspect machinery.
- Erect guards and warning signs where there's a potential for exposure to high or very low temperatures.
- Include in your health and safety induction and refresher training:
 1. The main dangers associated with operating, maintaining, servicing, inspecting and cleaning the machinery;
 2. How the main safeguards and protection devices work;
 3. Who should be notified of defective safeguards;
 4. How to start, operate and stop the machine safely;
 5. Arrangements for isolation and lock off;
 6. What to wear (i.e. protective equipment) and what not to wear (e.g. loose clothing) at some machines; and
 7. How to load and unload components.
- Prevent access to dangerous parts by installing safety measures according to this hierarchy (or, in some cases, in combination):
- Install guards to enclose dangerous parts, selecting the best material to suit the purpose. Plastic may be easy to see through but it may be easily damaged. If using wire mesh or similar material, make sure holes aren't big enough to let access to moving parts or debris and ejecting parts escape.
- If fixed guards aren't practicable, use other methods, such as interlocking the guard so the machine can't start before the guard is closed and can't be opened while the machine is moving.
 - In some cases, trip systems (e.g. photoelectric devices, pressure-sensitive mats or automatic guards) may be used if other guards are not practicable. All such devices should be 'fail safe' - i.e. in the event of their failure, they continue to prevent access to dangerous parts.
- Where guards can't give full protection, use jigs, holders, push sticks, etc., if it is practicable to do so.
- Control any remaining risk by providing users with the necessary information, instruction, training, supervision and personal protective equipment.