

WORK EQUIPMENT



Health and Safety Guidance Note



NFU Mutual
RISK MANAGEMENT SERVICES

INTRODUCTION

Every year, many workers are injured due to accidents caused by work equipment. Many of these accidents result in serious injury and some are fatal.

Typical causes of such accidents include:

- Lack of protection from moving parts, e.g. not fitting adequate guards, etc.;
- Lack of maintenance of guards, safety devices, controls, etc.;
- Using the wrong equipment for the task, e.g. ladder instead of an access tower for complex or lengthy work at height;
- Lack of maintenance or lack of regular inspections and thorough examinations;
- Not being able to turn machines off quickly and safely in an emergency, or accidentally starting a machine;
- Not providing operators with the personal protective equipment needed to use certain machines safely, e.g. chain saws, angle grinders, etc.;
- Not being provided with the right information, instruction and training.

WHAT IS WORK EQUIPMENT?

Work equipment includes almost any equipment used by a worker at work, e.g. workshop equipment, lifting equipment, access equipment, manufacturing equipment, vehicles, personal protective equipment, office equipment and fixed installations such as lighting and ventilation, etc.

Please note that this guidance note is focused on the general work equipment safety essentials. Electrical equipment, equipment for work at height, office equipment, vehicles, fixed installations and personal protective equipment are covered in more detail in separate guidance notes. Similarly, topics closely related to work equipment, such as noise and vibration, are also covered in more detail in separate guidance notes.

WHAT ARE THE HAZARDS FROM WORK EQUIPMENT?

The main hazards associated with work equipment include:

- Moving parts;
- Sharp parts;
- Part failure;
- Falling objects;
- Ejected parts / debris;
- Extremes of temperature;
- Noise;
- Vibration;
- Electricity;
- Associated hazardous substances;
- Dust explosion from explosive dusts;
- Flammable substances;
- Fire;
- Ergonomic hazards.

WHAT ARE MY LEGAL RESPONSIBILITIES?

The Provision and Use of Work Equipment Regulations 1998 (PUWER) [Provision and Use of Work Equipment Regulations (Northern Ireland) 1999] is the main piece of legislation that applies to all machinery and equipment that is provided for use at work. If you allow employees to provide their own equipment for work, it too will be covered by PUWER and you will need to make sure it complies.

As an employer you have to ensure that work equipment is:

- Suitable for the intended use;
- Safe for use, maintained in a safe condition and inspected to ensure it is correctly installed and does not subsequently deteriorate;
- Used only by people who have received adequate information, instruction and training;
- Accompanied by suitable health and safety measures, such as protective devices and controls. These will normally include emergency stop devices, adequate means of isolation from sources of energy, clearly visible markings and warning devices;
- Used in accordance with specific requirements (for mobile work equipment and power presses).

Some work equipment is subject to other health and safety legislation in addition to PUWER. For example, lifting equipment must also meet the requirements of the Lifting Operations and Lifting Equipment Regulations (LOLER) 1998 [The Lifting Operations and Lifting Equipment Regulations (Northern Ireland) 1999], pressure equipment must meet the Pressure Systems Safety Regulations 2000 [The Pressure Systems Safety Regulations (Northern Ireland) 2004].

HOW DO I KNOW IF MY WORK EQUIPMENT IS SAFE FOR USE?

The first stage in ensuring the safety of work equipment is to identify the risks involved by carrying out a risk assessment. A risk assessment is about identifying and taking sensible and proportionate measures to control the risks in your workplace, not about creating huge amounts of paperwork. You are probably already taking steps to protect your employees, but your risk assessment will help you decide whether you should be doing more. Specific guidance on how to carry out a risk assessment is provided in the Risk Assessment Guidance Note.

When carrying out your work equipment risk assessment you need to take into account a range of relevant factors and encourage worker participation. When identifying the risks, think about:

- What work the equipment is used for – also consider setting-up, maintenance, repair, breakdowns and removal of blockages;
- Who will use the equipment – consider inexperienced workers, young people, employees with language difficulties, new starters, people who have changed jobs within the company or those with disabilities, e.g. those with impaired mobility;
- How anyone could get harmed – consider both the user and others who may be affected;
- Whether guards or safety devices are designed properly, are convenient to use, or are easily defeated (this could encourage employees to take risks);
- The type of power supply, e.g. electrical, hydraulic or pneumatic – each type has different risks and ways to control them.

Once the risks have been identified and assessed you need to take action to remove them, e.g. by not using the equipment or machine, or using a less hazardous one to do the task. Where this is not possible, you must introduce control measures to reduce the risks to an acceptable level.

HOW CAN I CONTROL THE RISKS FROM WORK EQUIPMENT?

The most common methods of controlling the risks associated with work equipment include:

Selecting the right equipment for the job –

Many accidents can be avoided by ensuring that you have the right equipment available for the job. Make sure that work is planned ahead of time and ensure that suitable equipment or machinery is available.

Buying safe equipment – When you buy new equipment, you must make sure it is safe and suitable for the work and the work environment it will be used in. All new machinery should be:

- Complete with all necessary guards and protective devices in place;
- CE marked and provided with an EC Declaration of Conformity;
- Provided with adequate operating and maintenance instructions. These should be in English and should state how to assemble, install, use, adjust and maintain the machinery, including dealing with blockages. The instructions should also give details on the protective measures to take, such as when personal protective equipment should be provided and used, warn of ways in which machinery must not be used and of any remaining residual risks that need to be controlled by safe systems of work.

Unfortunately a CE mark in itself does not guarantee that the machine or equipment is safe.

It is merely the manufacturer's claim that the product meets all relevant supply Directive requirements. If you think that machinery you have bought is not safe DO NOT ALLOW IT TO BE USED.

Provision of guarding – Guards and protective devices should be used to prevent access to those parts of machines and equipment that could cause injury.

When deciding on the best guards for your machine or equipment make sure you follow this hierarchy of control:

- Fixed guards are used wherever possible, properly fastened in place with screws or nuts and bolts which need tools to remove them – this is to prevent unauthorised persons from easily defeating and / or removing the guards;
- Interlocked guards should be used for those parts of the machine or equipment that require regular access and where a fixed guard is not possible. These types of guards will ensure that the machine or equipment cannot start before the guard is closed and will stop if the guard is opened while the machine is operating;
- In some cases, e.g. on guillotines, devices such as photoelectric systems or automatic guards may be used instead of fixed or interlocked guards;
- Where guards cannot give full protection, use jigs, holders, push sticks, etc. to move the work piece.

For all guards, make sure that they are convenient to use (including the ability to clean and maintain the machine or equipment safely) and not easy to defeat. Otherwise they may need modifying. Think about the best materials for guards. Plastic may be easy to see through, but can be easily scratched or damaged. If wire mesh or similar materials are used, make sure the holes are not large enough to allow access (even with a fingertip) to the danger area. As well as preventing such access, a guard may also be used to prevent harmful fluids, dust etc from escaping.

Safe operating controls – It is important that equipment can be operated from a safe place and that adequate and sufficient controls are provided to switch the machine or equipment off quickly in an emergency. Controls should also work in such a way that they cannot be operated by accident or at a time when the machine or equipment is not in a safe operating mode. Some examples of safe operating controls include:

- The provision of ‘hold-to-run’ and / or two-hand controls that can be operated at a safe distance from the danger area;
- Stop and start buttons that are readily accessible and well identified;
- Clearly marked control switches that show what they do – ideally the marking is the same on all equipment, so that operators are familiar with them and therefore less likely to get confused;
- Shrouding start buttons and pedals so that they cannot be operated inadvertently;
- Positioning emergency stop controls (e.g. buttons or pull wires) within easy reach.
- Ensuring that a machine can only be re-started following a stoppage by use of the start control. It should not be possible to re-start the machine simply by re-setting a device such as an interlock guard or trip bar.

MAINTAINING MACHINERY AND EQUIPMENT

You must carry out regular maintenance, safety checks and inspections of all work equipment to ensure that it remains safe for use. In addition, certain lifting equipment, pressure systems and power presses must be thoroughly examined by a competent person at regular intervals specified in law or according to a written scheme of examination drawn up by a competent person.

NFU Mutual can provide advice or assistance in organising these examinations through Vulcan Inspection Services. Please contact your NFU agent for further details.

Work equipment should be maintained and inspected by a competent person at regular intervals.

The intervals between inspections will depend on the type of equipment, how often it is used and the environmental conditions it operates in. Inspections should always be carried out before the equipment is used for the first time or after major repairs.

Make sure you check what the manufacturer’s instructions say about maintenance to ensure it is carried out where necessary and to the correct standard. Maintenance may take the form of routine daily and weekly checks, e.g. fluid levels, pressures, brake function, guards, etc. , but can also include more intrusive servicing e.g. on an annual basis. Some equipment, e.g. a crane, requires preventive maintenance (servicing) so that it does not become unsafe.

It is important to specifically keep those parts of the machine or equipment that are relied on for safety, such as guards and other safety devices, in good working order. As such they should be routinely checked, e.g. before use, but also after any repairs or modifications.

Keep a record of maintenance carried out and inspections made, as this can provide useful information for maintenance workers planning maintenance activities, as well as evidence that you have fulfilled your duty to maintain work equipment.

Don’t forget, when you enter a contract to hire equipment, particularly a long- term one, you will need to discuss what routine maintenance is needed and who will carry it out.

Safe working during maintenance – Many accidents occur during maintenance work, so it is important that safe working practices are implemented when undertaking such work, for example:

- Where possible, carry out maintenance with all energy sources to the equipment off (See Equipment Isolation) and allow moving equipment to stop and all components which operate at high temperatures time to cool;
- Ensure that any pressurised systems are depressurised and all stored energy is dissipated before the work starts – e.g. from hydraulics, pneumatics etc;
- Switch off the engine of mobile equipment using ‘Safe Stop’ – put the gearbox in neutral, apply the brake (and where necessary chock the wheels) and remove the key;

- Support parts of equipment which could fall – e.g. use a strut when working near or under hydraulically raised parts;
- To prevent fire and explosions, thoroughly clean vessels that have contained flammable solids, liquids, gases or dusts. Even small amounts of flammable material can give off enough vapour to create an explosive air mixture which could be ignited by a hand lamp or cutting / welding torch;
- Where maintenance work has to be carried out at height, ensure that a safe and secure means of access is provided which is suitable for the nature, duration and frequency of the task.

Equipment Isolation – Before any maintenance and inspection work starts, and also before attempting to unblock machinery or equipment, all energy sources should ideally be disconnected, or the fuses or keys removed, particularly where access to dangerous parts will be needed. This is known as ‘isolation’, which means establishing a break in the energy supply in a secure manner. Isolation should apply to all hazardous energy sources, including electrical power, pressurised fluid, gas, steam or other hazardous material.

The requirement for isolation will often form part of a safe system of work and should include additional measures to prevent danger from the mechanical, electrical and other hazards that the employee may be exposed to. You must provide clear instructions on what isolation procedures are required and in what circumstances.

In order to achieve effective isolation of energy sources you must ensure that the machine or equipment cannot be inadvertently switched on

again after it has been disconnected – e.g. by fully disconnecting pipework, using a padlock to lock the isolator or isolator valve in the off position and removing the key, etc.

Before starting the maintenance or inspection work it is essential that the effectiveness of the isolation is verified by a suitably competent person.

INFORMATION, INSTRUCTION, TRAINING AND SUPERVISION

Where employees are required to use and / or maintain work equipment, you need to provide them with information, instruction and training so that they understand the risks they may be exposed to, and their duties and responsibilities.

The information, instruction and training should at least include the following:

- Give them the information they need (e.g. manufacturer’s instructions and operating manuals) and check they understand them. This should include:
 - The conditions in which the work equipment can be used;
 - The way in which the work equipment can be used and what not to do;
 - Any foreseeable difficulties that could arise, and instructions on how to deal with them;
 - Instruct them on how to avoid risks;
- Provide appropriate training, particularly if control of the risk depends on how an employee uses the work equipment. The greater the danger, the better the training needs to be;
- For some high-risk work such as driving fork-lift trucks, using a chainsaw, using a circular saw and operating a crane etc. formal training is required by specialist instructors.

You must ensure that only competent workers are allowed to operate work equipment. Never assume an employee can use work equipment safely, especially if they have just started work, even if they have used similar equipment elsewhere.

It is important that workers are appropriately supervised. Effective supervision can help you monitor the effectiveness of the training that people have received, and whether employees have the necessary competence to do the job.

FURTHER GUIDANCE

- HSE Website “Work equipment and machinery” www.hse.gov.uk/work-equipment-machinery/
- INDG291 Providing and using work equipment safely – a brief guide www.hse.gov.uk/pubns/indg291.pdf
- INDG290 Lifting equipment at work – a brief guide www.hse.gov.uk/pubns/indg290.pdf
- INDG229 Using work equipment safely www.hse.gov.uk/pubns/indg229.pdf
- L22 Safe use of work equipment - Work equipment Regulations 1997 Approved Code of Practice and Guidance www.hse.gov.uk/pubns/priced/l22.pdf
- L113 Safe use of lifting equipment - Lifting Operations and Lifting Equipment Regulations 1998 Approved Code of Practice and Guidance www.hse.gov.uk/pubns/priced/l113.pdf
- L122 Safety of pressure systems - Pressure Systems Safety Regulations 2000. www.hse.gov.uk/pubns/priced/l122.pdf
- INDG422 Thorough examination of lifting equipment - A simple guide for employers www.hse.gov.uk/pubns/indg422.pdf
- INDG271 Buying new machinery www.hse.gov.uk/pubns/indg271.pdf

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