

Health and Safety Department

Policy for the Management of the Provision and Use of Work Equipment Regulations (PUWER)

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	Added link for PUWER LEARN Module for examples of technical files for Research Rigs		
	Policy reviewed & amended to reflect Equality, Diversity & Inclusivity .		

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1. Policy Statement

PUWER place duties on the University, employees, students and tenants, who own, operate or have justified control over the Provision and Use of Work Equipment. This policy provides guidance on the purchase, use, maintenance and inspection of work equipment to ensure compliance to the Provision and Use of Work Equipment Regulations (PUWER) 1998, whether we own the equipment or not. Work equipment has the potential for serious personal injury and significant damage to property if the work equipment is not managed safely. This policy seeks to establish consistent standards and approaches across all of Loughborough University's campuses, providing guidelines on the responsibilities of relevant personnel involved. Summary guidance boxes can be found at the end of each section to help with implementation of the policy.

1.1 Introduction to PUWER

This Policy applies to you if your area of work uses work equipment.

If your area of work uses **work equipment** or is involved in providing work equipment to others to use (e.g. for loan or hire) you **must manage the risks** from that equipment.

PUWER requires that equipment provided for use at work:

- Is **Suitable** for the intended use.
- Is Safe for use, **maintained** in a safe condition and **inspected** to ensure it is correctly installed and does not subsequently deteriorate.
- Any **adaptation** of the equipment is carefully **managed** to ensure safety.
- Is **used only** by the 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.
- Has **mitigation from specified hazards** or extremes of temperature.
- Is used in accordance with the **specific requirements for mobile work equipment and power presses**.

PUWER applies to the provision and use of all work equipment but it cannot be considered in isolation from other health and safety legislation. The main other ones are but not limited to:

- Lifting equipment must also meet the requirements of Lifting Operations and **Lifting Equipment** Regulations (LOLER).
- Pressure equipment must meet the **Pressure Systems** Safety Regulations
- Protective equipment must meet the **Personal Protective Equipment** Regulations.
- Exhaust Ventilations systems must meet the **Local Exhaust Ventilation** Systems (LEV)

NOTE: Please also refer to the specific Loughborough University Policies for the above Regulations, these are on the University website

What is work Equipment?

Work equipment is any machinery, appliance, apparatus, tool or installation for use at work. This includes equipment which employees provide for their own use at work. The scope of work equipment is therefore extremely wide.

Use of Work Equipment

All activities involving that work equipment **and its use**, including:

- Starting and stopping
- Repairing, Modifying
- Programming and Training
- Maintaining, Cleaning and Servicing
- Transporting

Where does PUWER apply?

PUWER applies in all sectors where the Health and Safety at Work Act applies. This policy applies to **all** areas of the Loughborough University campuses from Academic Departments to Halls of Residence.

How is PUWER enforced?

PUWER is enforced by health and safety inspections. If PUWER Regulations are not followed for work equipment, then the equipment is liable to be given an improvement or prohibition notice and likely taken out of service. Enforcement can be taken broader than a notice. It can cover everything from a notice of contravention to prosecution. These actions can be taken if the equipment is found to be badly maintained, damaged or has not undergone adequate inspections or Risk Assessments.

What do I have to do?

This policy will take you through the things you need to **consider, assess** and **action**.

More guidance can be found on the LEARN page: [Module: Work Equipment: Provision and Use - Guidance and Training \(lboro.ac.uk\)](https://www.lboro.ac.uk/learn/module/work-equipment-provision-and-use-guidance-and-training)

2. Scope

This policy sets out what managers, academics, staff and students have to do to ensure the safety of people when using Equipment at Work. The scope of Work Equipment is extremely wide. PUWER applies whether the equipment is new, existing, second-hand, loaned or hired. It applies to both portable and stationary equipment.

2.1 High/Low Risk Work Equipment

For the purposes of this policy work equipment can be considered as 'low risk' or 'high risk'.

Low Risk

- Portable battery powered tools
- Hand Tools
- Sack trucks/gas bottle trolleys
- Office equipment
- Smaller pieces of analytical Laboratory equipment (weighing scales/balances)
- Lifting equipment managed under Loughborough University LOLER Policy
- Access equipment managed under Loughborough University Working at Height Policy

High Risk

- Workshop type equipment (machines) such as lathes, pillar drills, milling machines, saws, machine tools etc.
- Series of machines connected together
- Work vehicles (Forklift trucks, vans)
- Power Presses and Machinery (see below)

Power Presses

A Power Press is a machine for mass production which usually has a rotating flywheel. These are considered **high-risk** machine and it is essential they are inspected and well maintained. Under PUWER every employer is **obliged to ensure Power Presses as well as their guards and protection devices are thoroughly examined** every 12 months where there are fixed guards only and every six months for all other cases. In addition, examination should also occur when it has been **installed for the first time** or if safety of equipment has been jeopardised.

Machinery

Working with machinery can be dangerous because moving machinery can cause injury in many ways:

- People can be hit or injured by moving parts or ejected material
- Parts of the body can become crushed or trapped.
- Sharp edges can cause cuts; rough surfaces cause abrasive injuries.
- Emissions from machinery can cause scalding or electrical burns/shock.

- Injuries can also occur due to machinery becoming unreliable and developing faults due to poor maintenance.
- Use of fuels to power equipment can result in a flammable or explosive atmospheres
- Use of equipment by untrained or careless operators can lead to accidents.

Please refer to **Appendix 1: Work Equipment in scope and exemption listing** for a more detailed list of Equipment in scope under PUWER.

2.2 Definitions (PUWER Specific)

Machinery

Machinery refers to an assembly of part, one or more of which are fitted with a drive system (moving) and are joined together for a specific application.

Dangerous Part

Part of machinery or work equipment that can cause injury by cutting, crushing etc.

Guard

Device to prevent or safely restrict access by a person or person's body.

Essential Health and Safety Requirements (EHSR's)

There are broad objectives for health and safety in the **Machinery Directive** stating how the Designer and Manufacturer should construct applicable products for safety and compliance. These Essential Health and Safety Requirements (EHSR's) cover all aspects of health and safety of equipment for example physical safety (safeguards) and information (warnings). The aim of PUWER is to keep people safe wherever equipment and machinery is used at work hence equipment needs to be suitable for the intended purpose, maintained and used by people trained to do so.

3. Responsibilities

3.1 Duty Holder: COO (senior person responsible)

The Chief Operating Officer (COO) is responsible to the Vice Chancellor on a delegated basis for the general oversight and development of health and safety policy and for ensuring co-ordination of such policies and practice across the University. The COO has responsibility for ensuring that the arrangements to manage health and safety in accordance with University policy are effective. The COO has line management responsibility for the Director of Health Safety and Wellbeing in order to oversee health and safety compliance and performance.

3.2 Duties of Deans of Schools

- Appoint Authorised Persons(s) for their areas/departments

and ensure the competency of the Authorised Person (AP)

by ensuring that the person has suitable ability, experience, training and resources to enable them to carry out their duties defined in the policy.

- Ensure all PUWER policy and guidance documents are available and accessible to all persons with responsibilities under this policy.
- Ensure all supervisors (including Academic, Research, Technical, Professional and Administrative) are given necessary information, instruction and training with regards to PUWER.
- Ensure that PUWER is complied with and the risk from work equipment is satisfactorily controlled.
- Cooperate with arrangements for examination and testing by a 'Competent Body' (e.g. insurance inspector) followed by resultant remedial work.
- Responsible for the adoption of the University Policies within their area of control.
- Responsible for appointing School/Departmental Safety Officer(s)
- Set local health and safety policy based on institutional requirements by informing staff of their responsibilities, the arrangements for the introduction and maintenance of measures designed to identify, assess, control and monitor risks.
- Ensure staff provide appropriate supervision of researchers and students based on their risk assessments.
- Ensure that any matter brought to their attention by safety representatives is given prompt and appropriate attention.
- Take personal action to suspend or stop any activity that is dangerous or not carried out within local health and safety policies and arrangements.

3.3 Duties of Directors and Heads of Professional Services

- Appoint Authorised Persons(s) for their areas/departments and ensure the competency of the Authorised Person (AP) by ensuring that the person has suitable ability, experience, training and resources to enable them to carry out the duties defined in the policy.
- Ensure all PUWER policy and guidance documents are available and accessible to all persons with responsibilities under this policy.
- Ensure all supervisors (including Professionals, Research, Technical and Administrative) are given necessary information, instruction and training with regards to PUWER.
- Ensure that PUWER is complied with and the risk from work equipment is satisfactorily controlled.
- Cooperate with arrangements for examination and testing by a 'Competent Body' (e.g. insurance inspector) followed by resultant remedial work.
- Responsible for the adoption of the University Policies within their area of control.
- Responsible for appointing Health and Safety Leads/Departmental Safety Officer(s)
- Set local health and safety policy based on institutional requirements by informing staff of their responsibilities, the arrangements for the introduction and maintenance of measures designed to identify, assess, control and monitor risks.
- Ensure that any matter brought to their attention by safety representatives is given prompt and appropriate attention.
- Take personal action to suspend or stop any activity that is dangerous or not carried out within local health and safety policies and arrangements.

3.4 Duties of Operations Managers

- Ensuring health and safety audits are performed and results forwarded to the Health and Safety Services.
- Ensuring the Health and Safety Committee meets at least three times a year.
- Ensuring that all accidents and near misses are reported to the Health and Safety Services.
- Ensuring that all action is taken to remove causes of accidents or near miss events.
- Reviewing Procedures for producing Risk Assessments and ensure Risk Assessments are suitable, sufficient and up to date.
- Bring to the attention of the Dean or Head of Professional Service any breach of statutory requirement or other health and safety concern that cannot be resolved.

3.5 Duties of School/Departmental School Safety Officers

- Undertake health and safety training to appropriate level of competence.
- Be fully familiar with University Health and Safety Policies and assist the Head of Department to develop, implement and review local policies and procedures.
- Undertake regular safe use of work equipment audits.
- Ensure all occupational ill-health, accidents and incidents are investigated and subsequent actions carried out.
- Disseminate health and safety information and ensure necessary provision of health and safety training.
- Monitor that the PPE provided is adequate.
- Monitor that all plant, equipment and processes within their area are maintained in a safe condition.
- Monitor safe working practices based on risk assessments.
- Ensure work equipment is satisfactorily maintained.
- Ensure work equipment is positioned and installed to minimise risks.

3.6 Duties of Supervisory Staff (Senior Academic staff, Technical Managers, Team Leaders, Administrative Managers)

- Ensure they are familiar with University and local health and safety policies that apply to their area(s).
- Ensure staff are sufficiently trained to enable them to carry out suitable and sufficient risk assessments where required.
- Ensure that staff operate in accordance with University and local Health and Safety Policies relevant to their work.
- Ensure that all staff are trained in the principles, operations and emergency procedures necessary for health and safety.
- Ensure staff know the University procedure for accident/near miss reporting.
- Ensure Training and competence of staff.
- Ensure safe working practices within a safe working environment are used by all staff.
- Ensure all work equipment is fit for purpose and maintained in good working order.
- Ensure suitable PPE is supplied and provision made for its safe storage and cleaning.

- Ensure all work equipment has been designed and constructed in accordance with the relevant legislation, carry the CE mark and are in possession of the Declaration of Conformity and operating instructions.
- Ensure equipment is appropriately guarded in order to prevent contact with dangerous parts and protection provided against specified hazards.
- Ensure equipment is provided with the relevant warnings and markings.
- Ensure there is a maintenance schedule for work equipment which requires it and the equipment is examined, inspected and tested at the frequency the risk assessment requires
- Ensure records are kept for maintenance, examination, inspection and testing.

3.7 Duties of All Employees

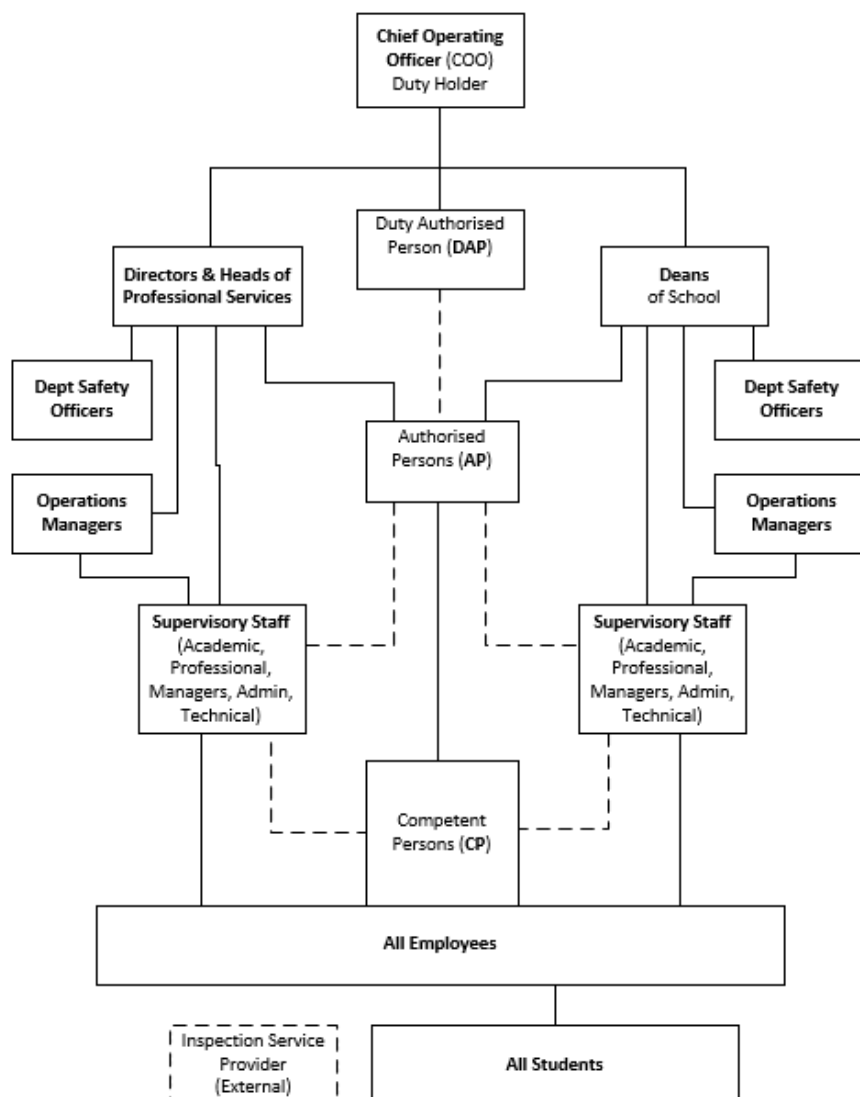
- Make themselves familiar with University and local health and safety policies relevant to their work.
- There is a general legal duty to take reasonable care of yourself and others who could be affected by your actions and co-operate with your employer to comply to health and safety regulations.
- Undertake as required all health and safety training deemed necessary by their manager/supervisor.
- Report any occupational ill health issues, accidents, incidents and dangerous occurrences to your manager/supervisor.
- Use the equipment and safety devices supplied in accordance with the training provided.
- Make full use of appropriate Personal Protective Equipment (PPE) and safety equipment and devices provided. If you have any doubt that any of this equipment is appropriate do not undertake the work and report this to your line manager/supervisor/task manager, normally a new Risk Assessment would be undertaken to confirm PPE and safety equipment and devices provided are appropriate before proceeding.
- Maintain tools and equipment in good condition reporting any defects to their manager/supervisor.
- Conform to all instructions either oral or written given to ensure their personal safety and that of others.
- Shall not, intentionally or recklessly, interfere with or misuse anything provided by the University in the interests of health, safety and welfare.
- Shall not, without consent from the manager/supervisor, introduce any equipment for use on University Premises, alter any fixed installations, alter or remove health and safety notices or equipment or otherwise take any action which may create hazards for others.
- Undertake any pre-use inspections of work equipment as required.

3.8 Duties of All Students

- At all times whilst they are on University premises or taking part in University activities follow the University and local health and safety policies and health and safety instructions given to them.
- There is a general legal duty to take reasonable care of yourself and others who could be affected by your actions and co-operate with your employer to comply to health and safety regulations.

- Undertake as required all health and safety training deemed necessary by their line manager/supervisor.
- Report any occupational ill health issues, accidents, incidents and dangerous occurrences to your line manager/supervisor.
- Use the equipment and safety devices supplied in accordance with the training provided.
- Shall not, without consent from a member of staff, introduce any equipment for use on University Premises, alter any fixed installations, alter or remove health and safety notices or equipment or otherwise take any action which may create hazards for others.
- Make full use of appropriate Personal Protective Equipment and safety equipment and devices provided.
- Maintain tools and equipment in good condition reporting any defects to their line manager/supervisor.
- Conform to all instructions either oral or written given to ensure their personal safety and that of others.
- Shall not, intentionally or recklessly, interfere with or misuse anything provided by the University in the interests of health, safety and welfare.

PUWER
Responsibility Diagram



3.9 Duty Authorised Person (DAP)

A person, employed by the University, with the required knowledge, training and experience, appointed by the Chief Operating Officer (COO) in writing, to take managerial responsibility for the implementation of policy and procedures for a specific area of health and safety legislation including:

- Ensuring competency of all Authorised Persons (appointed under section 3.2) by ensuring that the person has suitable ability, experience, training and resources to enable to carry out the role.
- Responsible for the policy and implementation via schools and departments.
- To communicate by whatever means possible information to employees with regards to relevant information on the risks and control measures being undertaken.
- To ensure day to day compliance in regard to PUWER.
- To review as necessary the university PUWER Policy.
- To assist and offer advice in regard to PUWER across all areas of the University.
- To review that the PUWER Registers are up to date.
- Promote and ensure inspections are carried out in accordance with the risk assessment and other related requirements.

3.10 Authorised Person (AP)

A Person, either employed by the University School / Department or another organisation possessing proficient knowledge and having received appropriate training appointed by the Dean or Directors (FM/Professional Services) to take operational responsibility for the implementation of the policy and procedures for a specified area of Health and Safety legislation (in this case PUWER) including the duties:

- Day to day responsibility for controlling identified risk from work equipment in their areas.
- Advise the Dean/Director of any changes, modifications or areas of concern for any work equipment.
- Ensure all control measures are in place and effective.
- Carry out audits to ensure risk assessments are in place and comply to regulations.
- Promote and ensure Competent Persons are identified in their work areas.

NOTE: It is understood that certain staff may hold a number of concurrent roles and this authorised person role. This is not considered to be a conflict of interest or compromise the integrity of the system. Any member of staff who feels conflicted should speak to their Dean or Head of Department.

3.11 Competent Person (CP)

A competent person is someone who has sufficient training, experience or knowledge to competently and safely use and manage work equipment or laboratories and facilities that contain work equipment that they are competent in using.

3.12 Inspection Service Provider

The Competent Body appointed by Loughborough University for conduction of 'thorough Examinations/Insurance Inspection'. Loughborough University current Inspection Service Provider is British Engineering Services insurance engineer(s)/surveyor(s).

4. Work Equipment in Use

The Definition of 'use' is wide and includes all activities involving work equipment. In this section it is important to consider what the regulations state and what is required in order to be compliant to ensure safe use of work equipment.

4.1 Key Requirements

The Provision and Use of Work Equipment Regulations (PUWER) 1998 Applies to all work equipment. The regulations and this University Policy require that:

- Sufficiently Authorised Person(s) are appointed to be responsible for items of equipment owned or used by the School/Professional Services.
- Work equipment is suitable for the purpose it is used or provided for and is properly maintained and inspected at suitable intervals. Any inspection carried out should be done by a 'Competent Person' and a record kept of the inspection.
- Ensure work equipment is used in accordance with the manufacturer's guidelines. If equipment is adapted, it must be suitable for the purpose intended.
- Where the use of work equipment is likely to involve specific risks, the use, maintenance etc. of that equipment is restricted to authorised people given the task of using and/or maintaining it. Equipment should be accompanied by suitable safety measures e.g. protective devices, markings, warnings.
- Users, supervisors and managers have received adequate training for the purposes of health and safety. Those involved with managing staff who work with machinery should acquaint themselves with their responsibilities.
- Supervisors should ensure that risk that is created through the use of the work equipment is either eliminated where possible or controlled by hardware measures (guards, protective devices, emergency stops or PPE) or software measures such as following safe systems of work and ensuring adequate training.
- Standard Operating Procedures or written instructions should be provided for each piece of work equipment.
- Produce a safe system of work for using and maintaining the work equipment.
- Choose the right machine/work equipment for the job. Consider if equipment used is appropriate for particular loads.
- Managers/Supervisors must keep suitable records of work equipment to include and manage Assets in procurement and disposal as well as those in use or storage within their areas of responsibilities.
- Records that are kept must be accessible to those users that need access to them to safely use the work equipment. Records can be kept in hard copy, e-copies, workspaces, filing systems, centrally or in local areas. Records kept will normally include:

- Asset Lists
- Maintenance Records
- Inspection Records
- Standard Operating Procedures
- Authorisation to use
- Risk Assessments

4.2 Risk Assessments for Work Equipment

To ensure work equipment risks are managed a Risk Assessment for work equipment **must** be undertaken to identify the hazards, decide who might be harmed & how, help evaluate the risks of the proposed work and equipment and decide on a selection of measures to eliminate or adequately control the risks proportionate to the magnitude of risk. A Risk Assessment should consider all the operations which have to be done with the work equipment. This includes installation, normal use, break down, servicing, maintenance, cleaning, foreseeable misuse and disposal. A risk assessment will identify significant risks, evaluate the likelihood of occurrence, frequency of exposure, degree of possible harm and persons at risk.

A **Risk Assessment** should be undertaken and recorded on the Loughborough University template Risk Assessment form, be suitably and appropriately approved and must contain a Working Method Statement. Risk Assessments should be regularly reviewed & updated if changes occur or in the event of an incident. Any changes must be communicated to those who use the equipment.

Guidance Points for Identifying Hazards & Risk Assessments

- Risk Assessments must be written for specific equipment & about the specific activities being undertaken. Consider the risks associated when the equipment is installed for the first time, then review regularly to ensure is up to date.
- Ensure that suitably knowledgeable persons undertake the risk assessment for the work
- Consider the working environment (lighting, weather conditions).
- Is the equipment strong enough for the job? Is it stable?
- Are there dangerous parts of the machine? Are there guards to prevent injury?. If guards cannot be fitted what arrangements are in place to keep parts of the body away from dangerous parts?
- Are there covers to stop materials being ejected ?
- Does the equipment need to be housed inside something?
- Are relief valves required?
- Are risks of people being crushed or trapped being controlled?
- Consider control procedures (securing mobile equipment, removing hazardous substances).
- Identify the diversity of groups potentially more at risk (young, those with health conditions or impairments, less experienced, expectant persons, contractors, temporary

workers)

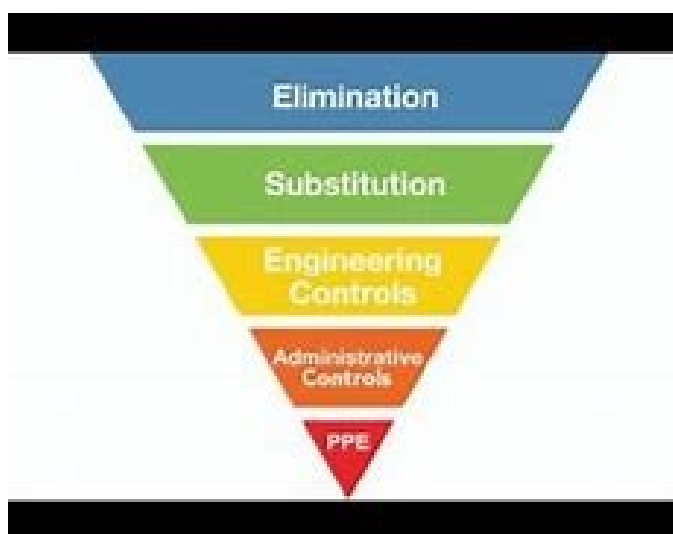
- Consider the ergonomics – Consider the diversity of human size and shape for operating positions, working heights especially for repetitive work. It should not require undue force or stretching.
- Consider the location where equipment is being used (you don't want to use electrical equipment in a location susceptible to wet or flammable atmospheres). Is there enough space around the equipment? Does there need to be a yellow hatched box area around the equipment to increase awareness?
- Is there much foot fall, is there a risk to pedestrians or people working nearby? Can people pass by safely ?
- Is there enough ventilation? (if working with airborne pollution)
- Are there any risks to health? (manual handling, trip hazards ,fumes, level & type of noise, hand/arm vibration?) Are there adequate controls in place or safer alternatives considered? (Refer to Loughborough University Control of Hand Arm Vibration Policy , Controlling Noise at work Policy & Manual handling for more information).
- Consider maintenance and servicing by external contractors - access/permit to works?
- Consider liability with regards to lending work equipment to external contractors without checking if it's safe to use or correctly maintained and inspected. e.g. ladders

4.2.1 Control of Risk for Work Equipment

Users of work equipment must always consider controlling risks:

- Can the hazardous activity be justified?
- Can it be avoided or be done by a safer method?
- Can the hazardous component be isolated or contained?
- Can the hazardous activities be controlled with guards/ventilation?
- Can the hazardous activities be controlled with time/extent?
- Can PPE be used to further reduce the hazard?
- No list is exhaustive, just because a hazard is not listed it does not mean it does not exist.

4.2.2 Hierarchy of Control



Eliminate risk where possible by not using the equipment or replacing with safer alternatives
Substitution of equipment or process with less risks

Engineering Controls measures (guards) or procedural measures (specific cleaning procedures) to control risks or isolate the hazard.

Administrative Controls using safe systems of work, training & supervision.

PPE – To reduce any residual risk . This should be used as a last resort or in conjunction with other controls.

4.3 Procurement/ Suitability of New/Leased/Rented Equipment

Selecting a piece of equipment for use at work needs careful consideration with regards to safety. All machinery must be designed & manufactured to comply to the Essential Health and Safety Requirements (EHSRs) of the machinery directive. Equipment should have a Declaration of Conformity & marking of conformity to act as evidence that they comply. This section looks at what to consider as part of the procurement and installation process whether the equipment is new, hired or second hand.

4.3.1 Procurement

Before obtaining new equipment (either bought, hired, loaned, second hand etc), the following issues need to be considered:

- Selection of Equipment - Does it comply with regulations, UKCA/CE marking?
- Does it have a Declaration of Conformity?
- Identification of utilities required – does it need a water or electrical supply?
- Location – Consider vibration factors ,noise levels, extraction, ventilation required etc.
- Consider accessibility for diversity of human size & shapes for future inspections or maintenance
- Consideration of safe use.
- Consider a pre-installation visit from supplier to identify ‘added extra’s’ in advance.
- How will any waste products be safely dealt with and disposed of?
- Ask yourself, **What, Where, Who** and **How** will the equipment be used?
- Consult with others that might be impacted (e.g. Facilities Managers, Operations Managers).

Please refer to **Appendix 4: Procurement of Equipment checklist considerations**

NOTE: The **responsibility** for ensuring purchased equipment meets required standards should be with the person requesting/ordering the equipment and Declaration of Conformity Documentation should be requested with the equipment to ensure the University only purchases work equipment of acceptable standards. Operating Manuals should also be asked for as this will give guidance on how to use it, safety features & maintenance guidelines.

4.3.2 UKCA Marking

As a result of Brexit the UK government requires those who manufacture or supply equipment in Great Britain to transition to use the UKCA (UK Conformity Assessed) mark of conformity ,

instead of CE, on any new products. Responsibility to protect the health and safety of people affected by work activities remain.



The UKCA marking came into effect on 1st January 2021. However, to give businesses time to adjust people are still be able to use the CE marking until 31st December 2022 in most cases but are encouraged to be ready to use the UKCA marking as soon as possible before this date. From the 1st January 2023 all new equipment supplied in Great Britain must be marked with the UKCA marking & be accompanied with documentation that is marked with it. The Technical requirements manufacturers must meet and the conformity assessment processes and standards that can be used to demonstrate conformity are largely the same as there were for the CE marking. Manufacturers may only affix the UKCA marking when all of the requirements of all UK product supply legislation applicable to the product have been met.

Products in conformity with relevant European product supply legislation and correctly bearing the CE marking will (until 31st December 2022) be treated as satisfying the requirements of the relevant UK legislation and need not bear UK marking. However, The CE marking will only be valid in Great Britain for areas where GB and EU rules remain the same. If the EU changes its rules manufacturers will not be able to use the CE marking to sell in Great Britain even before 31 December 2022. The UKCA marking will not be recognised on the EU market. Products need a CE mark for sale in the EU. Goods supplied from Northern Ireland must be either CE or both CE and UKCA marked from 1st January 2022. You can find more information about the UKNI marking here: <https://www.gov.uk/guidance/using-the-ukni-marking>

UKCA marking is the responsibility of the person/company who places the product on the GB market for the first time, or in some cases (e.g. machinery) where it may not have been placed on the market, the person who puts it into service for the first time. If a product can operate as a machine it must always be fully protected with all safeguards provided, be UKCA marked and accompanied by a Declaration of Conformity.

UKCA marking only covers certain specific categories of equipment while PUWER is applied to all work equipment. Therefore, there are certain categories of equipment (e.g. hand-powered machines) which do not require UKCA marking but are in the scope of PUWER.

UKCA Marking does **not** guarantee safety, so assessments of suitability and risk are also required. It is crucial that checks for obvious defects or damage are made and inspections are undertaken by the individuals using the work equipment. A PUWER assessment will highlight areas of non-compliance in the UKCA marking process as not all suppliers are as diligent as others which is why close inspection of the machine and guarding is essential. Pay particular attention to equipment from outside of the EU.

For more information please see links below:

[UKCA marking and training | BSI \(bsigroup.com\)](#)

[Using the UKCA marking - GOV.UK \(www.gov.uk\)](#)

4.3.3 Declaration of Conformity (DoC) and Declaration of Incorporation

UK Declaration of Conformity

The UK Declaration of Conformity is a legal document which must accompany all UKCA marked products. Manufacturers are recommended to have a separate UK Declaration of Conformity to their EU Declaration of Conformity. All new products supplied to end users will have a Declaration of Conformity proving the product meets the relevant legislation. It is a sign that a product has been designed and constructed for compliance with relevant essential requirements and has been through appropriate conformity assessment processes. A DoC is not a quality certificate or a guarantee of safety. Purchasers should retain the DoC as they provide documentary evidence that the product complied with safety requirements applying to that product, so they have met their duty under Regulation 10 of the PUWER Regulations. The conformity assessment will involve producing a technical file, containing design drawings and specifications, standards used during the design of the equipment, description of the methods used to eliminate the hazards and a copy of the instructions for the equipment. The Manufacturer would keep this file for 10 years after the last unit was made.

The Declaration of Conformity may avoid the need for an initial thorough examination before first use in those cases where the safety of that equipment does not depend on the conditions of its installation or assembly e.g. lifting equipment. You may need to provide copies of the DoC if you wish to use the lifting equipment at another location.

A Declaration of Conformity must:

- State the name and address of the manufacturer and where appropriate the name and address of their authorised representative
- Contain a description of the machinery, its make, type and serial number
- Indicate all Laws with which the machinery complies
- State details of any notified body that has been involved
- Specify which standards have been used in the manufacture
- State the place and date of declaration
- Be signed by the person with authority to do so

A Declaration of Incorporation (partly completed machines)

Manufacturers of **partly completed machines** intended to be incorporated into another machine or cannot function unless built into a production line must sign a '**Declaration of**

Incorporation'. This states that the machinery is **incomplete** and must be **made to fully conform** with the requirements of the **Machinery Directive** before it is brought into service. However, it must be supplied with instructions for its safe incorporation in an assembly with other machinery. The person undertaking the completed machinery to form the final machine then becomes the Manufacturer of the complete product.

4.3.4 Suitability of Equipment

The main aspects to consider when choosing Work Equipment are:

- Initial Integrity
- The place where it will be used
- Who will it be used by
- Purpose for which it will be used
- How it will be maintained and inspected
- Suitable design and construction
- Specification for spare parts
- In accordance with manufacturer's specification and instructions
- Environmental conditions

4.3.5 Installation of equipment

The correct installation of work equipment is a vital part of ensuring its safe use.

Ensure that:

- It covers a wide variety of aspects including power, ventilation, drainage as well as controls.
- There is access for maintenance and servicing which reflects diversity of human size & shape.
- It considers the environment – are there any tripping hazards once installed? Has it taken into account the temperature and humidity?
- It considers fire protection, protection against floods and back-up systems.
- It will involve commissioning and testing to ensure it meets the specification and can be operated safely.
- There is suitable working space around the work equipment for safe and easy access, the storage of materials, machined parts and the collection of waste materials/by products.
- PUWER requires that where the safety of work equipment depends on the installation conditions that it is inspected after installation and assembly or if it moved to a new position. Examination reports must be kept by the person responsible for the equipment.
- There are no obvious faults or damage at the point of installation.
- A Risk Assessment is completed on first installation and then periodically afterwards.
- Equipment is on the appropriate Asset Register.
- There is a Standard Operating Procedure
- Training plans in place

Consider:

- Do any parts look worn or dangerous?

- Is there adequate room around the equipment so people can pass by safely with consideration to diversity of human size, shape & health impairments? Should there be an area marked with yellow hatched tape to increase awareness?
- Are the guards in the right place?
- Are there covers to stop materials from being ejected?
- Are known risks adequately controlled?
- Can the machine operate with guards removed?
- Are the controls easily understood?
- Can dust and fumes escape from the machine?
- Is it noisy or have excessive vibration? Is there data available regarding emissions?
- Are any exposed parts excessively hot or cold?
- Are there any exposed live electrical parts?
- Are manufacturer's instructions clear? Do they include information on use, installation and maintenance?
- Are warnings signs visible?
- Do you need to limit access to the equipment to those trained to use it?
- Are interlocks/light curtains/cells/enclosures required?

4.3.6 Second hand Equipment

Anyone supplying second-hand equipment for use at work must ensure that it is safe and without risks to health. This includes when the equipment is being set, used, cleaned or maintained

When buying second-hand equipment consider:

- Has the seller provided adequate information and documentation about using the equipment?
- The equipment may not be in perfect condition but must have all health and safety features present and fully functional. Older equipment may not have UKCA/CE marking but should be supplied in safe condition.
- A copy of the operating and maintenance manual (in English) and last inspection/service records should also be supplied.
- Does it have a DoC, UKCA/CE marking or technical compliance file? (if applicable)
- Has it been assessed for suitability and risk before use?
- Asking for a trial run to see the safety features and how they work
- Create a Standard Operating Procedure (SOP)
- Complete a Risk Assessment for Equipment in situ.

4.3.7 Refurbished and modified Machinery

Where changes are made to the design, function or safety of the machinery (or assembly of machines) you must assess the extent of the changes made (e.g. significant new hazards or control measures.) Refurbished and modified machinery must be safe and meet the full requirements of PUWER.

4.3.8 Hired Equipment / Loaned

If equipment is being hired, the hirer, has a duty to ensure it is safe at point of hire. Those hiring out work equipment (or loaning us it for use) have responsibilities under PUWER to ensure thorough examination and other inspections have taken place & there are records.

It may be appropriate for the user to organise the periodic thorough examinations especially if it is long term loan. This would need to be drawn up in the hire agreement. However, unless part of the hire agreement, those hiring out work equipment cannot be held responsible for the day to day and other pre-use safety checks which should be undertaken by the user or the responsible person.

If you hire/loan out equipment:

- Ensure it has been inspected and checked.
- Make a reasonable effort to find out what the equipment will be used for in hired location.
- Ensure it has instructions for use, and copies of manuals provided.
- Provide training as required.
- Consider drawing up agreement with the hirer for the maintenance of equipment and competence of the people who will be using it.

If you are using hired/loaned equipment:

- Ensure it has been inspected and checked by the hirer.
- Ensure it has instructions for use.
- Ensure training has been provided.
- Ensure you are happy with the terms of the hire agreement and understand what maintenance they will be doing and what is expected of you as the user.
- Ensure documentation is received and stored.
- Create Standard Operating Procedures and Risk Assessments for your use of this hired/loaned work equipment.

Summary: What Do I Need to Do?

Risk Assessments for Work Equipment in your area

Address Considerations of PUWER before buying, hiring or using loaned equipment in your area

5. Standard Operating Procedures/Training and Competence

A piece of equipment can only be considered safe if the person using it has been given written instructions and training to use it. It is good practice to train people to the instructions to ensure standardisation of instruction.

5.1 Instructions/Standard Operating Procedures

Each piece of equipment should have clear written instructions. These can be in the form of:

- Standard Operating Procedures (SOPs)
- Working method statement (can be part of Risk Assessment form)
- Other clear written operating instructions (worksheet, manuals, training manuals, poster)

The instructions should include:

- Information about the way in which the equipment should be used.
- Safety related devices (guards, hazards etc).
- Setting up procedures, normal operation, shut-down procedures, cleaning.
- Personal Protective Equipment required.
- The conditions under which it can be used.
- Troubleshooting.
- Maintenance procedures.
- Specific health and safety information.
- Documentation/Records to be kept.

These instruction documents should be up to date and made available to those who use the equipment. This includes temporary workers, maintenance and supervisory staff.

NOTE: Give consideration and support to those whose first language is not English and those with intellectual disability to ensure the information has been understood. You may need make special arrangements in these cases for example visual DVD's or translation into a different language. Give consideration to the format for those who may be visually impaired or dyslexic.

5.2 Training

People who use the equipment must have received sufficient information, instruction and training in order to carry out the work safely. Ensure the training includes how to safely use equipment, methods for using it, any foreseeable circumstances under which its use could be hazardous, troubleshooting and what to do in an emergency. Or they need to demonstrate they have the past training, knowledge and experience to safely use the equipment. Employees must take on board & put into practice any training & instruction given.

A training programme will need to be developed for the equipment in your area. Supervisors and managers should keep suitable training records or authorisations to use to demonstrate training and competency of individuals. Employees and students should be encouraged to keep training records up to date when new training is undertaken. Please refer to **Appendix 7** for an example template of an Authorisation to Use/ Training Record.

Teach users about the dangers and why we have the safety procedures we do. (e.g. the reason why we have to tie long hair back or avoid wearing loose clothing when using rotating machinery).

Ensure training includes the dangers arising, precautions to be observed, requirements of the

law and methods for using guards, protection devices and PPE.
The Greater the danger the higher level of training required.

5.2.1 Work Equipment Training & supervision for students

Training and proper supervision of students is important because of their relative immaturity and lack of familiarity with the working environment. Induction training is of particular importance. There are no general age restrictions in PUWER relating to the use of work equipment, although there are some restrictions in the ACOPs covering lifting, power presses, woodworking machinery, and fork lift trucks. Risk assessments should consider carefully the training needs of students, taking into account their inexperience, lack of awareness of potential risks and their immaturity, to determine whether they should undertake certain work activities.

Guidance Points for Training

- Consider level of experience, degree of supervision and complexity of equipment.
- Consider diversity of staff & students especially young people as they will have an unfamiliarity with the working environment and limited experience to draw on. Ensure adequate supervision is given.
- Consider the delivery of the training so that it reflects diversity of staff & is inclusive to all. Ensure any practical training is inclusive to those with health conditions or impairments.
- Consider flexibility of the training to ensure equality & inclusivity to all to reflect dynamic working patterns/ part time workers/those with caring responsibilities .
- Training can be in the form of external courses, in-house training programmes, work shadowing, demonstrations, online courses or a combination of these. Training should include general safety, equipment specific and on the job training under supervision.
- Ensure there are written information and instructions. Manufacturers manuals may need supplementary instruction sheets to inform users of how this applies in individual workplaces.
- Consider refresher training when necessary especially if there are changes to the system of work, new equipment or technology is introduced or if skills are not used regularly.
- Ensure any changes to the use of the equipment is effectively communicated to all (e.g team briefings).
- Establish a management process within your local area to address the various users of work equipment taking into account the risk level & experience. You might want to consider a colour coded system for various pieces of equipment indicating training or supervisory requirements for the user. Alternatively, you may wish to have named users who you group into various levels (basic users, competent user, trainer) & record this information on each piece of equipment. A training matrix could be developed to record this. The SOP or Risk Assessment could also be a way of recording the level of training or supervision a user requires to use a piece of equipment.

5.3 Competence for use of work equipment

Competence must be demonstrated and assessed and never assumed. You may need to consider a period of supervision while competency is demonstrated and recorded. Please refer

to **Appendix 7** for an example template of an Authorisation to Use/ Training Record. The length of this supervision will be determined by the type of equipment and risk involved.

Ensure individuals are trained for the full range of work equipment they will be expected to use and consider all eventualities and risks including working out of hours. Ensure extra support is given to those who require it. Consider the capabilities of each individual & ensure they have the physical strength to use the equipment you are asking them to use. A formal qualification maybe required for using some equipment. Occasionally a medical fitness or mental aptitude test may be required to use certain equipment. A list of authorised persons to use certain equipment should be available near the respective equipment.

Summary: What Do I Need to Do?

Ensure you have SOPS/Operating Instructions for Work Equipment in your area. Ensure you provide adequate training for the equipment in your area.

Structured Training plan and Records of Training are Kept.

Authorised to Use persons list attached to equipment.

6. Protection against Specific Hazards/Personal Protective Equipment (PPE)

To ensure work equipment risks are managed, protection against specific hazards must be addressed and minimised where possible, in addition appropriate PPE must be made available for use with work equipment. Machines are made safe by employing a number of parallel strategies.

6.1 Hazards

There should be measures to minimise the effects of the hazard as well as reduce the likelihood of the hazard occurring:

- Article or substance falling or be ejected from work equipment.
- Rupture or disintegration of parts of work equipment.
- Potential for entanglement or entrapment
- Work equipment overheating or catching fire.
- Premature discharge of gas, liquid, vapour.
- Premature explosion of work equipment or substance stored in it.

6.2 High or low Temperature

Many items of equipment have exposed surfaces or can contain very hot or very cold substances which represent sources of risk. (e.g. Liquid Nitrogen tanks, gas cooker, soldering

iron). The risk should be assessed for each piece of equipment and control measures put in place to mitigate (e.g. the use of Personal Protective Equipment, limited exposure time, provision of guards.) Other important factors to consider are adequate training, warning signs and working under supervision or working in pairs.

6.3 Controls (including stop controls)

A control system is defined as “a system or device which responds to input signals and generates an output signal which causes the equipment under control to operate” (PUWER Regulations 1998).

Work equipment must be provided with controls for starting, stopping, controlling the change in the speed or pressure conditions. Control systems operating and interlock conditions must be met before equipment may start, this prevents machines from starting up unintentionally. A stoppage may have happened due to the activation of a protection device. There must be procedures in place to guide workers to re-start equipment in this instance.

A stop control should bring the equipment to a stop position in a safe manner and should only require a short accessible manual action to activate it. This may not mean an immediate stop that might cause additional risks (for example time for a dangerous part to be stored in a locked position). A stop control should switch off all sources of energy from the equipment after it has stopped if this is necessary to prevent or minimise risk. Controls must be maintained & checked to be operational at all times while the equipment is in use. Controls must be sufficient & appropriate to minimise risk.

Controls should be designed and fitted to:

- Ensure it is easy to identify what each control does and which equipment it effects.
- Start and stop buttons are accessible.
- Controls and their markings are clearly visible & indicate their function.
- It should only be possible to start or re-start equipment by using the appropriate controls (e.g. it should not be possible to restart equipment by simply re-setting a protection device)
- Start controls should not be combined with ‘emergency stop’ controls.
- Any Change in the operating conditions of the equipment should only be possible by the use of a control.
- Use timed interlocks or trapped key systems to allow rundown and prevent operators entering the danger area before the machine has fully stopped.
- “Hold to run” controls should be designed so that the stop function has priority over the start control following the release of the control.
- Controls should be designed to ensure they cannot be started accidentally so should be encased in locking facility.
- Position two hand controls at a safe distance from the danger area.

6.3.1 Lock-off and Isolation Procedures

These procedures should be used to make equipment safe:

- During Maintenance.

- When unsafe conditions develop.
- When a temporary situation makes it unsafe to use the equipment.

Isolation entails breaking the energy supply in a way that ensures inadvertent reconnection is not possible. This could be removing the plug from the mains or it could be an isolation switch which is locked in the closed position to avoid reconnection. When equipment contains stored energy, this should be dissipated in addition to effective isolation of the machine before any maintenance or repair work begins.

An interlock is a means of linking a safeguard to the control circuitry of a piece of equipment so that the equipment may not operate when the safeguard is not in place.

Lock Out Tag Out (LOCO) is a safety procedure that ensures that dangerous machinery and energy sources are properly shut off and not started up unexpectedly while maintenance or service works is being completed. It prevents accidents from moving parts. It is not enough to just switch off a machine if you need to access it. All energy sources must be controlled, isolated and locked. A lock is secured to the power source to prevent it being switched on. A high visibility warning tag is fixed to the energy isolating locking device to warn employees not to turn on the machine. It is best to use both methods together. There should be a Lock out procedure in place, training provided & inspections/audits of the devices.

6.3.2 Emergency Stop Controls

An **emergency stop** control should be provided where the other safeguards in place are not adequate to prevent risk when an irregular event occurs. Emergency stops are provided to enable a rapid response to a dangerous situation. However, they are not a substitute for safeguarding. They should be easy to use and easy to reach. This is often achieved by using the 'mushroom' type controls which are larger & more obvious.

6.4 Guarding and Protective Devices and Protection Appliances

Machinery should be constructed to prevent contact of any part of the body or clothing with a dangerous part of the machine (moving, sharp, hot).

Measures must be taken to prevent access to dangerous parts of machinery. They must be suitable for the purpose, be maintained, not easily by-passed and training provided.

Assess the guards and devices you have. Are they easily defeated, difficult to use or inhibit work leading to the temptation to not use them?

Consider if the material the guards are made from are suitable for the job & properly designed. Guards must conform to regulations. Guards should be properly maintained and designed to allow equipment to still be cleaned and maintained as this could lead to further hazards. Guards should not restrict visibility.

Your control strategy should follow the following hierarchy:

- **Fixed Guards to enclose dangerous parts-** Should remain in place at all times (except by authorised person for maintenance).
- **Guards** (closed tools, interlocking, adjustable, automatic, self-closing – choice will depend on need for/frequency of access).

- **Protective devices** (Captive keys, sensing devices, infrared device, pressure mats, tripping devices).
- **Protection appliances** (jigs, holders or push sticks to help keep fingers a safe distance away).
- **Braking Devices** – Consider fitting these to reduce the rundown time of cutting tools.

6.5 Lighting

You must ensure there is suitable and sufficient lighting which takes into account the operations to be carried out where people use equipment at work (including emergency operations). Extra lighting might be required to give a sufficient view of a dangerous process or reduce visual fatigue. Consider using strobing or rotating equipment. Where there is no natural light available supplementary lighting is necessary. Additional lighting may be provided in a temporary format such as portable lights. Consider where tall equipment may block light to equipment nearby. Give consideration to those who may be visually impaired & may require additional lighting requirements (types of bulbs, consistent controllable lighting levels, preventing glare, good distribution of light) to carry out work safely.

6.6 Markings

Equipment must have clear markings for reasons of health and safety (e.g. Start/Stop controls, hazard warning symbols, maximum speed for rotating parts, frequency of inspection etc). Markings can be letters, numbers, symbols but they must be clear and unmistakable. They need to be fixed to the machinery as appropriate to indicate the presence of hazards. Where international symbols are used ensure they conform to published standards. Consider what other markings may be specific to the working area. Ensure markings are visible & inclusive to all who need to see them by considering the diversity of the workforce (e.g being placed too high/low, being too small for visually impaired, format is suitable for those with dyslexia/colour blind).

6.7 Warnings

Equipment must have clear warnings for reasons of health and safety. They must be easily understood and unambiguous. A warning is usually in the form of a notice which can be positive instructions or prohibitions. The warning can be visual or audible and must be associated with the equipment it is intended for. (e.g. “Hard Hats must be worn”). Warnings can be permanent or temporary. Consider factors which may affect people’s perception of warnings such as the choice of colour or constant flashing signal can have a different impact in different situations. Be inclusive of those with hearing impairments who may require a visual signal too.

The design of the warnings must consider ‘*sensorial* saturation’ which can result from too many visual and or acoustic signals which can lead to defeating the object of the warning device. Consider what warnings may be specific to the working area. Ensure warning signs are visible & inclusive to all who need to see them by considering the diversity of the workforce (e.g being placed too high/low, being too small for visually impaired, format is suitable for those with dyslexia/colour blind).

6.8 Signage

Safety signage must be provided in circumstances where there is a significant risk to health and safety which has not been removed by other means or where the use of the sign can further reduce the risk. Safety signs must be adequately maintained. Signage should include words & images to aid understanding. Unfamiliar signs must be explained. Examples of signs include those which prohibit behaviour (Red) , warning signs (yellow) mandatory signs (blue) & emergency signs (green). Ensure signage is inclusive to all by considering the diversity of the workforce. Those working with equipment should look at relevant signage before starting work with equipment.

6.9 Lightning Strikes

Ensure that where there is a risk to workers from lightning strikes to work equipment when it is being used, adequate safety precautions must be followed. Refer to the PUWER regulations for more details.

6.10 Stability

Work equipment must be stabilised or clamped for purposes of health and safety. This should be done each time the equipment is repositioned. Most machines should be bolted or fastened to ensure they do not move or rock during use.

6.11 Personal Protective Equipment (PPE)

Personal Protective Equipment means all equipment intended to be worn or held by a person at work which protects them against risks to health and safety. This can be in the form of gloves, safety goggles/visors, safety shoes, overalls/lab coats or safety harnesses. PPE is to be used as a last resort if that hazard has not been controlled by other means. PPE can be used in combination with other control measures such as engineering or procedural controls. PPE must be suitable for the purpose & person. Individuals should be provided with training on the use & cleaning of PPE and supervisors should be actively enforcing the requirement for appropriate PPE to be worn.

When choosing PPE consideration should be given to:

- Latest regulations and University Policies.
- The Task and risk for which protection is needed.
- Physical effort of the tasks and duration of the task.
- Requirements for visibility and communication.
- The Environment the task takes place in.
- The person – consider the diversity of people using the PPE & be supportive of specific requests due to health, allergies , facial hair, ergonomic effects (including fit) & disabilities.
- Equipment must be compatible if more than one item of PPE used.

- PPE should be maintained in good working order, checked

- for damage, cleaned and replaced when required.
- PPE should be stored to prevent damage, contamination and loss.
- Ensure individuals have had sufficient training on how to use the PPE appropriately including exposure limits.
- Footwear – Consider the hazards (e.g. steel shoes for working with heavy equipment)
- Consider specialized eye protection (ultraviolet light/laser wavelength)
- Hand Protection – consider the hazard – biological, hot/cold/cut resistant

Please refer to the University Personal Protective Equipment Policy and Guidance for more information.

Summary: What Do I Need to Do?

Carefully consider the hazards with each piece of equipment in your area and ensure all controls, warnings and markings are in place or risks minimised.

Evaluate the requirement and condition of PPE for each piece of equipment in your area. Make sure the PPE for the Work is appropriate.

Ensure the use of PPE is enforced by those supervising each area.

7 Portable Appliance Testing (PAT) / Asset Register

7.1 Portable Appliance Testing

While PAT is not a legislative requirement, the University as good practice recommends all work equipment is PAT tested as appropriate. (Refer to the Loughborough University guidance document *Inspection and Testing of Portable Appliances*).

7.2 Asset Register

Each School/Service/Department needs to create and maintain a suitable PUWER Asset Register for work equipment or add PUWER Work Equipment and References to existing Asset Register(s).

The Asset Register is to list all PUWER related Work Equipment and act as the prime record for PUWER equipment for each School/Service/Department. Please refer to **Appendix 5** for an example template for an Asset Register.

Summary: What Do I Need to Do?

Inspect equipment in your area to ensure it has been PAT tested and is up to date.

Familiarise yourself with your Asset Register location and content, use it.

Check equipment in your area is listed on the appropriate Asset Register for your department and keep it up to date.

8 Maintenance of Equipment

Maintenance of work equipment is fundamental to keeping it safe. Equipment must be maintained in a safe condition so that its performance does not deteriorate to the extent to put people at risk. Equipment must be checked frequently to ensure that the safety related features are functioning correctly. The frequency of the maintenance will depend on intensity of use, operating environment and risk to health and safety. Some maintenance will be obvious and require doing as part of everyday use, but other maintenance will be less obvious, less frequent but none the less important to prevent overheating or seizing of parts. Maintenance must be performed by those who have had instruction & training & are competent to do so. The Manufacturers instructions will describe the maintenance required.

You need to be able to demonstrate that you have arrangements in place to make sure work equipment is maintained in a safe condition.

A nominated person needs to take responsibility for equipment to ensure it is safely managed.

8.1 Pre-use Checks

Pre-use checks are recommended to be carried out as appropriate on the equipment before being used by a competent operator before use. The aim of such checks is to pick up faults due to day-to-day wear and tear and malfunction of safety-related equipment (e.g damaged cables). If any defects are found the user or operator should report the defect or, if competent to do so, take action to rectify it. It is good practice to have a 'checklist' near the equipment for the operator to complete to evidence that pre-use checks have been completed. The Level of skills to do the checks depend on the type of equipment but training must be provided.

Guidance Points for Pre-Use Checks of Equipment

Before Use consider:

- Do any parts look worn or dangerous?
- Are the guards in the right place?
- Is the appropriate PPE available?
- What happens if the machine starts up unexpectedly?
- What happens if tools break during use?

8.2 Maintenance

Maintenance of equipment is vital to the safety of the equipment and can prolong the life of the equipment reducing costs for repairs and replacement.

The extent, frequency or complexity of the maintenance will depend on the equipment. You should consider:

- The Intensity of use - frequency and maximum working limits.
- The Operating environment – Indoors or outdoors.
- Number of different tasks and functions the equipment performs.
- Risk to health and safety in the event of malfunction.
- The manufacturer's recommendations (e.g. periodic lubrication, replacement of parts such as a rotor on a centrifuge.)
- Each piece of equipment should have a clear written maintenance plan/ schedule/fault reporting system and a record log.

- There should also be regular checks made to ensure maintenance is being performed.
- Review of maintenance procedures may be required if circumstances change for example increase in use.

Please refer to **Appendix 6** for an example template for maintenance records.

NOTE: If equipment is hired it is important to establish who is responsible for carrying out the safety related maintenance. This is particularly important for long term loan. The terms of agreement should be recorded in writing.

Guidance Points for Maintenance of Equipment

Before any maintenance commences consider safety systems of work first.

- Consider if the work requires a 'Permit to Work' to ensure everything has been assessed. Please see more details in Permit to work policy. [Permit to Work Policy.pdf \(lboro.ac.uk\)](#)
- Ensure work equipment is safely isolated and power disconnected before maintenance commences where possible. Most equipment should be designed so this is possible for safety. If equipment has to be running ensure measures are taken to reduce the risk. Consider if there needs to be physical disconnection from the power source e.g requesting the switching off the supply to high voltage cables

- Lock off machines if there is a chance the power could accidentally be switched back on using Lock Out Tag Out (LOCO) safety procedures.
- Avoid entering tanks, vessels or confined spaces where possible.
- Does the work need doing by specialist contractors? Ensure the maintenance is performed by competent persons. Provide training where required.
- Plan the maintenance – use the manufacturer’s instructions. Plan maintenance during ‘down time’ where possible to minimise risk to other workers and the person performing the maintenance.
- Are the correct PPE and correct tools available?
- Consider diversity of human shape & size in relation to accessibility to do the maintenance.
- Remove loose clothing/loose jewellery and tie back long hair that could get trapped.
- Consider barriers/signage to prevent access.
- Don’t get distracted.
- Allow hot equipment to cool down before maintenance commences.
- Ensure safe access if work is carried out at height
- For lines/pipes under pressure or containing hazardous material isolate by closing and locking off valves. Release residual or stored energy (e.g electrical ,mechanical, gas, hydraulic) .
- Secure any parts which could fall & ensure equipment is stable
- Take care with equipment which has contained flammable materials ensuring you decontaminate.
- Decontaminate work equipment if exposed to hazardous material (Biological, chemical, radioactive before maintenance takes place). Consider a decontamination certificate as evidence of the precautions taken.
- Have a procedure in place for workers to report issues.
- Do not ignore maintenance, use faulty equipment or fail to report any safety concerns

8.2.1 Hand tool Maintenance

Hand tools should only be used for the task they were designed for, be checked by the user before use and replaced or repaired if damaged.

Hand tools are unlikely to require formalised maintenance, but it is important they are inspected regularly, and that equipment is lubricated, or parts replaced (e.g. sander piece) as required. Pre-use checks are sufficient instead of formal inspection procedures as long as users are trained to know what to look for as part of the pre-check. More information can be found on the HSE website.

8.2.2 Repairs

Repairs to equipment should only be carried out by those trained and competent to do so.

8.2.3 Equipment Storage

Workplaces should have safe storage for work equipment when not in use. These should be suitably controlled. Storage areas should be safe to access & equipment placed on appropriate racking/shelving/benches for their size/shape. Storage areas should be inside a building. Only equipment not effected by weather should be left outside.

Summary: What Do I Need to Do?

Ensure there are written maintenance procedures for PUWER work equipment.

Ensure there is a procedure for reporting and actioning problems found during maintenance.

Design maintenance schedules for PUWER work equipment in your area and ensure users are trained to perform these duties safely.

Keep Records of Maintenance and checklists. Ensure Asset Register is updated.

9 Record Keeping

Keeping good Records is vital for any business. This can be for regulatory reasons or simply to keep a record of any maintenance or inspection that can be reviewed or audited later down the line. Keeping good records of maintenance of equipment not only gives a detailed history of the life of the equipment but proves to inspectors that you maintain the equipment appropriately from a regulatory and safety point of view.

9.1 Maintenance/Service logs

It is good practice to keep detailed up to date logs of equipment maintenance. Create a technical compliance file for key equipment to keep all information about the equipment together. Detailed maintenance logs can minimise the number of expensive repairs, increase operator safety, provide information about previous maintenance performed, patterns of faults and future planning of maintenance. They also evidence that employee's safety has been considered. Logs can take the form of a logbook or a sheet on the wall/equipment/in a folder.

Please refer to **Appendix 6** for an example of a template maintenance record.

High Risk equipment should have a formalised system for maintenance and operator checks. (This could be a record card in a plastic wallet by the equipment). Details which should be recorded are:

- Equipment name/ID number
- Date of maintenance
- Name of person carrying out the maintenance
- Details of the maintenance e.g. service, parts replaced

9.2 Inspection Reports

Every time a piece of work equipment undergoes a PUWER inspection the details should be logged for future reference. This is not only crucial for demonstrating compliance but helping your track how frequently you carry out inspections. Having a timeline gives you an overview of your equipment's condition so you can spot common issues and patterns that might influence future inspections.

Inspection Reports can be from external organisations or from in-house inspections. Records do not have to be in a particular format. They can be stored as a hard copy, but you must have a digital back up as you may fail an inspection if you cannot provide these records if they are lost or destroyed.

Records should be kept within each Department/School/Professional service on the workspace and be easily accessible to users and for audit purposes. It might be an idea to create a form that can be printed and completed for each inspection. Thorough inspection records are stored on the British Engineering Services Register (Portal) which is operated and maintained by the Competent Person (British Engineering Services)

The information that should be contained in the record is:

- Type and model of equipment
- Location
- Identification mark or number
- Date of inspection
- Who carried out the inspection
- Any Faults, action taken and who reported to
- Date when repairs were carried out
- Date of next inspection
- Training Records

Physical Evidence of Inspection

This can be a record or a label/tag/colour coding. This shows easily that an inspection has been carried out (e.g. for Lifting Equipment), when it was, the date of the next inspection and should link back to the records.

Summary: What Do I Need to Do?

Ensure you have records of maintenance and inspections of equipment in your area.

Consider creating a technical compliance file for key equipment.

Update the appropriate Asset Register.

Ensure Equipment is available for inspection & servicing when required.

10 Specialist Research Equipment /Scientific and Laboratory Equipment

In a University environment it is inevitable that there will be specialist research equipment/rigs that will be designed and constructed 'in-house'. However, these are still in the scope of PUWER and therefore must conform to the necessary regulations.

The University must be able to demonstrate that equipment, machinery, rigs or apparatus constructed, assembled or modified by the University is safe. To achieve this, it is advised that the broad principles and requirements of the **Supply of Machinery (Safety)**

Regulations be adopted which require the production of a "technical file" which documents the design, manufacture and requirements for safe operation of work equipment.

10.1 Supply of Machinery Regulations and Essential Health and Safety Requirements (EHSR's)

Most new machinery is covered by the **Machinery Directive** 2006/42/EC. These directives are implemented by the supply of Machinery (Safety) Regulations 2008. These regulations apply to all new machinery placed on the UK market or put into service in the UK. The EHSR's demand that the machine manufacturers identify the hazards which their product contains and then the risk which these hazards present to users. Any risk must be reduced to as low a level as is reasonably practicable.

The Regulations require that:

- Machinery meets all Essential Health and Safety Requirements
- A "technical file" is produced
- Machinery is issued with a Declaration of Conformity or Declaration of Incorporation (if it being placed on the market)
- UKCA/CE marking is affixed to the machinery (if it is being placed on the market)

The Manufacturer must:

- Carry out a risk assessment to identify the risks (EHSR's should be used to ensure all possible hazards have been addressed).
- Eliminate significant risks
- Provide safeguards
- Provide information about residual risks not able to be designed out.

EHSR's cover:

- Physical Safety, including health effects of a product in all its various aspects (selection of materials used, means of control, safeguards, containment of fragmenting work pieces, emissions from the product)
- Protection against other hazards (errors due to incorrect replacement of parts,

- temperature extremes, fire and explosion, noise)
- Maintenance (safe means of adjusting, lubricating, cleaning)
- Principles of safety by design taking into account foreseeable use and misuse
- Information for end users (markings, warnings, instructions)

How can Essential Health and Safety Requirements be met?

- Firstly, risk Avoidance by Design
- Secondly, protection against risks that cannot be eliminated
- Thirdly, warning of any residual risks that remain.

Product Design

The Job of the product/equipment designer is to consider all relevant essential requirements and seek the best methods of meeting those objectives.

PUWER gives some guidance to the Machinery Directive but is a separate entity and is really a continual assessment requirement. The Machinery Directive is consulted at the concept design stage but once the machine has been produced it is then up to the user to perform a PUWER Assessment even if the machinery has been designed and built in house.

Notwithstanding any obligation to UKCA/CE mark the equipment, employers in the UK have an obligation under PUWER and the Health and Safety at work Act to ensure that the equipment which is supplied for use by employees complies with any applicable Essential Requirements. Regulation

10.1 of PUWER 1998 states that every employer shall ensure that an item of work equipment has been designed and constructed in compliance with any essential requirements, this is to say requirements relating to its design or construction.

An employer meets their obligation under PUWER by specifying UKCA/CE marked equipment and using it according to the manufacturer's instructions but if the equipment is not UKCA/CE marked or the equipment is being used for some other purpose than the manufacturer intended then the employer must take responsibility for compliance with the EHSR's themselves.

10.2 In-House Specialist Research Equipment/Rigs

- Work Equipment specially designed and constructed 'in-house' for use 'in house' should be designed and constructed in accordance with relevant legislation and comply to Essential Health and Safety Requirements and the requirements of the Supply of Machinery (Safety) Regulations 2008. In the absence of UKCA/CE Marking (which is not required due to the fact it is not being 'placed on the market') PUWER sets out these minimum safety requirements which must be adhered to by the employer and these are retrospective so that the equipment must meet certain minimum safety requirements no matter how old it is. Therefore, people making equipment must apply the same standards as they would if they were UKCA/CE marking it. (equipment/system must be safe). Whether or not the UKCA/CE mark is put on the equipment makes very little difference to the design measures which ought to be applied to ensure its safe.
- The design stage of the research equipment/rig should consider all risks and evaluate and implement ways to mitigate them. At this stage the designer should liaise with their School/Department Safety Officer/lead to help with this process to ensure compliance to the machinery directive with regards to the parts purchased. How you show compliance goes back

to the risk assessment. Any residual risks must be communicated to those who will be using the equipment. Inherently safe design measures are the first and most important step in the risk reduction process.

- The Health and Safety at work act places a duty on any person who designs, manufactures, imports or supplies any article for use at work to ensure so far as reasonably practicable that the article is designed and constructed that it will be safe and without risks to health.
- The production of a 'Technical Compliance File or Technical File' for the equipment is encouraged. Technical files for research rigs in the University setting can take a variety of forms as this equipment is not usually being placed on the market. However, they should include a description of the equipment, functions, safety related devices (stop controls) , test reports, circuit diagrams, identification of the ESHRs associated with the machinery, description of the critical operating parameters (temperatures, speeds), records of risk assessments against specific standards, quality control, training documents, software information , flow charts and commissioning procedures.
- Ensure suitable instructions and training for use are provided and Standard Operating Procedures written for the system.
- The maintenance of the equipment will depend on the equipment purpose and frequency of use and the complexities of the research equipment. Any Modifications to the research equipment which effects the integrity of the system requires notification to the competent person for approval.
- Some Specialist equipment assemblies will contain sub systems that are UKCA/CE marked and such sub systems must be considered as PUWER equipment separately.

What do you need to consider when starting the design stage for a Research Rig?

- Consider the size & location of the rig.
- Consider the materials & equipment you want to use as some are not compatible.
- Do you need access to electricity, water supply, compressed air, temperature management, use of lasers?
- Will there be toxic fumes produced? Do you need extraction? How will you do that? Do you need help from FM or external contractor?
- Do you need to use gases? Consider safety, storage, PPE, training.
- What parts do you need?
- Do you have the approved COSHH in place for chemicals/materials/gases you want to use?
- What are the risks & how can you design them out?
- What safety systems & engineering controls might you need in place (interlocks, Lock Out Tag Out ,stop controls)?
- Is there an inspection schedule in place ? Are there recorded pre-checks ?
- Does the rig need to be housed/contained inside a cabinet/cell ?
- Is it set up so that it will not work if a safety element has been compromised?
- What access Restrictions might be required to the area around the Research Rig?
- What PPE is required?
- Are there clear warnings signs ?
- Ensure there is a Risk Assessment & operating procedure as part of the technical file for the research rig . What is the process for updating Risk Assessments with modifications?

- Ensure there is a management of change system in place so substantial changes to processes are identified and risk assessed . Ensure approved users are added to Risk Assessment.
- Has recorded training been provided for all those who will use it including the use of any safety control measures.

Please see **Appendix 9: Checklist to ensure the safety of ‘in-house’ constructed Equipment** to help assess compliance for in house constructed equipment.

Please see **Examples of Technical Files on Work Equipment Provision & use Guidance & Training LEARN page**. [Module: Work Equipment: Provision and Use - Guidance and Training \(lboro.ac.uk\)](https://www.lboro.ac.uk/learn/work-equipment-provision-and-use-guidance-and-training)

10.3 Safe Working in the proximity of Robots and complex Machinery

The guarding requirements of robots and other complex equipment need to be properly assessed. Particular attention needs to be paid to any changes of use or change of circumstance over time and the guarding assessment should be reviewed on a regular basis.

Operators of robots and complex or higher risk machinery must be properly trained (and that training documented). Operators should also be periodically reminded of the safe operating practices to be used around robots and other complex equipment.

In terms of robot safety in particular, schools are advised to identify and assess where teaching mode is used and ensure that appropriate precautions are in place and the risk is minimised in that mode.

It is good practice to schedule safety focused walk arounds looking at the work practices in high-risk areas, specifically checking that routine operations and checks are being conducted as defined.

Prestart safety checks should be a part of normal operation for high-risk equipment and the completion of these checks should be recorded.

10.4 Scientific and Laboratory Equipment

Special considerations need to be made when considering the safe use of equipment in a laboratory due to the nature of the work, the environment and materials used. To ensure safety of those working or maintaining this equipment you must ensure strict cleaning, and decontamination procedures of equipment to minimise exposure to biological or chemical agents. In addition, certain laboratory work equipment presents specific hazards and risks that need to be risk assessed and managed.

Guidance Points for Scientific and Laboratory Equipment

Things to consider:

- Spark free Fridges/Freezers for storage of flammable chemicals.
- Equipment containing compressed gases, pressure vessel, low or high temperatures. Think about the hazards, regulators, labelling, pre- checks, PPE, handling and storage.
- Centrifuges – Failure/deterioration due to lack of maintenance of rotors or improper balancing can cause a number of hazards.
- Ultra-sonicators or other rotating equipment – Exposure to high volumes of audible sounds can cause health issues.
- Use of lasers, electromagnetic radiation – Consider PPE and signage.
- Electrically powered equipment – hot plates, vacuum pumps.
- High voltage and high- powered equipment
- Ensure equipment is installed correctly and maintained appropriately.
- Placement of equipment to reduce trip hazards, allow maintenance and space for guarding.
- Minimise the use of disposable sharp puncturing devices where possible, use safe techniques and ensure safe disposal.
- Use Microwaves specially designed for laboratory use – Built in safety features.
- Humidity – Condensation can enter electrical equipment placed in a cold room
- Refer to the University Chemical and Biological Safety Policies and refer to HSE Management and Operation of Microbiological Laboratories guidance.

Summary: What Do I Need to Do?

Ensure all research equipment constructed 'in-house' conforms to legislation.

All Research Equipment/Rigs needs a risk assessment, Technical File, Operating Instructions and training provided.

Carefully consider special requirements and specific hazards for laboratory equipment in specialised areas.

11 Mobile Work Equipment

For the purposes of PUWER mobile work equipment is any work equipment that travels between places where it works or that works as it travels. Examples include fork-lift trucks & tractors. Equipment might be moved on wheels, tracks, rollers and could be self-propelled, towed or remote controlled. Steps must be taken to ensure stability. You must ensure risks to the operator and other workers is controlled.

Workers should be protected from:

- Falling out of the equipment or unexpected movement. Consider seating requirements, restraining devices, speed limits, use of guard rails, good braking systems. Passengers must not be carried unless equipment designed to do so.
- Risk of falling objects (Need for Falling Object Protective Structures (FOPS) like protective cages.)
- Being hit from moving parts or ejected material. Guards should be fitted to prevent contact with wheels or tracks.
- Sharp edges or crushing
- Risk of overturning. (Need for Roll over Protective Structures (ROPS))
Insufficient Visibility to ensure they can manoeuvre safely. If vision is impaired CCTV or mirrors could be used.
- Unstable mobile equipment. Where ballasting or counterbalancing is used the stabilising method should be reviewed each time it is repositioned.
- Exposure to fumes by ensuring work equipment using internal combustion engine is not used in confined spaces. Controls must be put in place to capture exhaust fumes.

Every employer must ensure that mobile work equipment is suitable for carrying persons and incorporates features for reducing risks to safety this includes considering the risks of the mobile equipment rolling over. Consideration should be given to the diversity of the people using the equipment & take into account differences in human shape/size & disabilities.

NOTE: The use of restraining devices and protective structures must be closely evaluated as part of the risk assessment to ensure there is not an increase to risk injury due to these devices.

11.1 Motor Vehicles

Motor vehicles being used for work activities which are not privately-owned fall under PUWER. When these vehicles are used in public roads the road traffic legislation takes precedence. Drivers should have a valid driving licence and the vehicles should be maintained to normal standards for the public highway and have a valid MOT certificate.

Summary: What Do I Need to Do?

Consider what equipment in your area may fall under this Mobile category.

Have all risks been considered?

12 Exemptions

The Scope of PUWER is very wide and the risks of work equipment varies. However, within the confines of this University PUWER Policy some equipment will likely be exempt from PUWER regulations. Exemptions usually occur when there are more specific requirements.

These are:

- **Domestic** white goods appliances (Fridges, Freezers, heaters, microwaves). However, specialist freezers/microwaves for laboratory or catering use are in scope.
- Shelving /Racking/Cabinets with no moving parts.
- Extension Leads
- PC's and Paper Printers
- Private Cars

Please see Appendix 1 Work Equipment in Scope and Exemption Listings

12.1 Medical Devices

Where a medical device is also a machine it is excluded from the scope of the Machinery Directive although it still must meet the relevant Essential Health and Safety requirements. Enforcement for this equipment falls to Medicines and Healthcare Products Regulatory Agency (MHRA).

According to the Medical Device Directive (MDD) a medical device is described as any instrument, apparatus, appliance, software, material or other article used alone or combined for humans to:

- Diagnose, prevent, monitor, treat or alleviate disease
- Diagnose, monitor, treat, alleviate or compensate for injury or handicap
- Investigate, replace or modify the anatomy or physiological process
- Control conception

Summary: What Do I Need to Do?

Evaluate what work equipment in your work area is in scope/exempt. Seek advice from the AP or CP or DAP if required.

Ensure any medical devices meet Essential Health and Safety Requirements and are compliant to the MHRA regulations.

13 Inspection/ Audit Procedures

A PUWER inspection is a formal requirement of the regulations but should also serve and benefit your work area by regularly reviewing the safety of your equipment and working practices. The Purpose of an Inspection is to identify whether the equipment can be operated, adjusted and maintained safely and that any deterioration (damage or wear) can be detected or remedied. Inspections may also look at training records for equipment.

Not all work equipment needs formal inspection to ensure safety but a visual check before use is required. However, inspection is necessary for equipment with significant risks to health and safety.

The result of the inspection should be recorded. These records should be held securely and be made available on request of enforcing authority.

Work equipment should not be used unless you know the inspection has taken place.

Guidance Points for Inspections

Inspections can be:

- 'In-House' Pre-Planned - Schedule and content of inspection decided by those responsible for the safety of the equipment. Regular 'walk around' recorded inspections are encouraged.
- 'In-house' Un-Planned – This can be a member of the University Health and Safety Team or Departmental Safety Officer performing a spot check of a department to check for compliance.
- External Pre-planned– These are 'thorough Examinations' that are carried out by external insurance inspector (organised through Facilities Management) due to regulations to look at a certain aspect/type of equipment (e.g. lifting equipment/pressure vessel inspection). The frequency of these will depend on the equipment so you need to contact your DAP for advice.
- External Un-planned – This is a visit from an external organisation who announce their visit with limited notice to check on compliance of the organisation they are visiting. (e.g. Health and Safety Executive).

When are inspections required?

Equipment should be checked to ensure that safety related features are functioning correctly. Inspections will normally be required where the safe operation of the equipment is dependent on its condition in use and deterioration could lead to significant risks.. Examples of such conditions include:

- Rapid wear from use in an arduous environment.
- Failure through repeated operation.
- Before use – informal Pre-Checks.
- Malfunction.
- To check safety control systems
- Tampering with safety devices.
- Installation or Incorrect Installation /re-installation. (Where the safety of the work equipment depends on the installation conditions. It should be inspected after installation, before first use and after reassembly at a new location).
- Following exceptional circumstances, following modification, change of use, long period without use or serious damage to the equipment.
- Some work equipment will need inspection due to regulation e.g. Pressure Vessels.

Extent of Inspection schedule:

- Depends on the potential risks.
- Depends on the Risk Assessment which will take into account how the equipment is used, who is using it and the environment it is operating.
- Depends on the equipment manufacturer's information – This will contain instructions for

routine maintenance and inspection and frequency to reduce deterioration.

- Depends on your own experience and previous history the equipment.

What Should an Inspection Include?

- Inspections will include visual checks & sometimes functional checks and testing.
- It should always include safety related parts necessary for the operation of the equipment (controls).
A functional or other test may be required to test safety related parts (interlocks) .Not always required for all types of equipment.
- Records of Inspection made and kept.

Frequency of inspection

This is based on the type of equipment, frequency of use and environment in which it is used.

Who Should do the inspection?

Any person carrying out elements of the inspection schedule, e.g. the operator, user or supervisor, must have an appropriate level of competence to do so. They should have the necessary knowledge and experience. They should know what to look at, what to look for and what to do if there is a problem.

Internal Inspection Schedule (In-House)

Experienced in-house employees such as a departmental manager/supervisor may be able to do this if they have the correct experience and knowledge. They decide what the inspection should include, how it should be done and how often it should be done.

Summary: What Do I Need to Do?

- Come up with your own schedule for the inspections dependent on your equipment.
- Under PUWER you only need inspect what is necessary for safety.
- Design the inspection content to address the areas you think need checking or testing. (A checklist can help). The person who designs the inspection does not have to be the person who carries it out but there must be clear instructions of what to look for and what to do if they find an issue. Training and instruction must be given.
- Keep records of each inspection and ensure any issues found during the inspection are reported or escalated to the appropriate person to ensure actions are taken.
- Add Details to Asset Register

External Examination and Inspection

Sometimes the level of expertise to perform an inspection requires help from an outside organisation either due specialist equipment being required, a critical component needing

replacing, level of skill required or due to a statutory examination (e.g. Pressure vessel). Ensure these inspections have been arranged in advance, have been completed correctly and records kept.

Legally, some inspections need to be done annually and therefore planning is crucial to ensure the inspection is completed within the specified timeframe. Ensure Equipment is made available for the inspection.

13.1 Audit

Schools/Departments/Services should consider in areas of PUWER high risk to undertake audits as best practice. The audit should be designed to check compliance with this policy and accuracy of records and registers. Findings should be discussed at Health and Safety Review Meetings. Ensure there is equality & diversity of staff who undertake audits if qualified to do so to aid personal development.

Summary: What Do I Need to Do?

Design an 'in-house' inspection programme and schedule. Keep records of all inspections. Ensure all examinations and inspections have been conducted on equipment as required. Update Asset Register as appropriate.

14 Safe Disposal of Work Equipment & Sustainability

At the end of a machines (work equipment) life the instructions need to be consulted and a risk assessment conducted prior to decommissioning and disposal. The removal of any guards as part of the dis-mantling of equipment process can present a hazard which is why a risk assessment is required.

Disposal of work equipment no longer required needs consideration for the following aspects:

- Decontamination
- Prevention of unauthorised re-use
- Removal of labels
- WEEE (Waste Electrical & Electronic Equipment) Regulations
- Re-use
- Recycling
- Refrigerators/gases
- Radioactive sources
- Removal of records

For more information with regards to decontamination of equipment please refer to the University 'Biological Safety Policy' and 'Chemical Safety Policy'.

WEEE

It is illegal to dispose of WEEE in general waste and therefore this process must be used for the disposal of all redundant electrical equipment including mobile phones & computers. For more information on WEEE procedures please refer to the Sustainability section of the Facilities Management page on the University website. [WEEE | Sustainability | Loughborough University \(lboro.ac.uk\)](#)

WARPit

WARPit is an online portal and reuse network which makes it easy for Schools and Departments to share surplus resources on our two campuses. Often items are thrown away in one part of the organisation when another part is in need, so if you have an item you no longer require and it is still fit for use please advertise it on WARPit. This supports the University's procurement procedures as well as the Environmental Policy and specifically the Waste Management Strategy. Anything electrical may only be promoted internally and must be in good and safe working order. [WARPit | Sustainability | Loughborough University \(lboro.ac.uk\)](#)

Kit Catalogue

A catalogue of all the equipment and facilities available for use at Loughborough University, and containing hundreds of supporting manuals, case studies and other resources [Loughborough University's Equipment Database \(lboro.ac.uk\)](#). All Equipment should be compliant with PUWER.

For more information refer to Environmental Policy and Sustainability Charter. When considering disposal, you are encouraged to adopt the waste management hierarchy of Prevention, Re-use, Recycling and Recovery in order to reduce waste and landfill.

The re-use of equipment is actively encouraged from a sustainability perspective but we also need to ensure we meet our obligations under PUWER to ensure what might be shared or donated to other areas within the University meets certain standards. For more information please see the PUWER LEARN page or contact the PUWER DAP : [Module: Work Equipment: Provision and Use - Guidance and Training \(lboro.ac.uk\)](#)

15 Summary

What do I need to do to apply this PUWER policy in my area of work?

Now you have read through what is expected of you under the PUWER Regulations you need to consider:

What Work Equipment have I got in my area?

What procedures do we already have in place? (i.e. SOPs, Risk Assessments, PPE, Maintenance regimes, Training, Asset Lists, Records)

What forms do we have already we could use? What do we NOT have in place?

What steps do I need to take to get them in place?

Use **Appendix 2: Provision of Work Equipment Compliance Checklist** to help consider the work equipment in your area and formulate your action plan.

16 References and Further Information

16.1 Key Legislative References

- The Provision and Use of Work Equipment Regulations 1998: SI. 1998/2306 (HMSO)
- Safe Use of Work Equipment Approved Code of Practice and Guidance: L22 (HSE)
- The Management of Health and Safety at Work Regulations 1992: SI.1992/2051 (HMSO)
- The Supply of Machinery (Safety) Regulations 2008
- Machinery Directive 2006/42/EC
- The Personal Protective Equipment (EC Directive) Regulations 1992
- Pressure Equipment Regulations and Simple Pressure Vessels (Safety) Regulations
- The Lifting Operations and Lifting Equipment Regulations (LOLER) 1998
- The Working at Height Regulations 2005
- The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013 require that all injuries, occupational diseases and dangerous occurrences are reported to the Health and Safety Executive (HSE) by the most appropriate means.
- Control of Substances Hazardous to Health Regulations (COSHH) 2002 (substances emitted from work equipment)
- The Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) (fire or explosion risks including those generated by work equipment)

16.2 References and Information

- <http://www.hse.gov.uk/toolbox/index.htm>
- <http://www.hse.gov.uk/managing/index.htm>
- Safety and Safe Use of Work Equipment, Science and Technology Facilities Council, Safety code No.4
- The Hierarchy of controls , Safety & Health Magazine. [Fall protection and the Hierarchy of Controls | 2020-07-26 | Safety+Health \(safetyandhealthmagazine.com\)](https://www.safetyandhealthmagazine.com)
- Providing and Using work equipment safely, A Brief Guide. HSE.

- Safety of Machinery: General principles of design, risk assessment and risk reduction (ISO12100:2010)
- Safe Use of Woodworking Machinery: Approved Code of Practice and guidance L114.
- High Speed Training [PUWER Training | Online Course & Certification \(highspeedtraining.co.uk\)](https://www.highspeedtraining.co.uk)
- <http://www.hse.gov.uk/work-equipment-machinery>
- [Placing products for use at work on the GB market: a product safety guide \(hse.gov.uk\)](https://www.hse.gov.uk/placing-products-for-use-at-work/)

16.3 Relevant Loughborough University Policies and Guidance Documents associated with PUWER

- Hand Arm Safety Vibration
- Health and Safety Policy v6.
- Controlling Noise at work Policy
- Driving and Transport Policy
- Laser Safety Policy & Code of Practice
- Use of Local Exhaust Ventilation (LUV) Systems
- Management of Risks Associated with Plant, Equipment and Building Installations
- Manual handling Policy
- Personal Protective Equipment Policy and Guidance
- Risk Assessment Policy
- Completing Risk Assessments Health and Safety Guidance
- Policy for Safety of Pressure Systems Reference
- Policy for the Management of the Lifting Operations and Lifting Equipment Regulations (LOLER)
- Inspection and testing of Portable Appliances
- Laser Safety Code of Practice guidance
- Working at Height – safe use of ladders and stepladders
- Chemical Safety Policy
- Biological Safety Policy
- Fitness to operate a Lift-Truck procedure
- Fitness to operate a crane procedure
- Fitness to wear respiratory equipment procedures
- Safety Inspections guidance
- Annex S - Facilities Management Health and Safety Policy
- Dangerous Substances & Explosive Atmospheres (DSEAR)
- [Permit to Work Policy.pdf \(lboro.ac.uk\)](https://www.lboro.ac.uk/policy/permit-to-work/)

NOTE: These can all be found under the Loughborough University Website, under Health and Safety Policies and Guidance Notes.

Appendices related to PUWER:

The following are **example** templates that you can **adapt/modify** to align with your local requirements as appropriate:

Appendix 1 Work Equipment in Scope and Exemption Listings

Under this policy the listings below consider which types of work equipment are in scope and which are exempt.

Please note this is **not** an exhaustive list.

Work Equipment	In Scope	Exempt
'Toolbox Tools' such as hammers, knives, handsaws, meat cleavers	Yes <i>But consider as a "toolbox" rather than single tools</i>	
Single Machines such as drilling machines, circular saws, photocopiers, dumper trucks	Yes	
Machine Tools	Yes	
Hand Tools (Powered or requiring manual effort to use (e.g hammers, knives, handsaws, portable drills, hot air guns, screwdrivers, crowbars, spanners, sanders, saws, grinders, axes, hacksaws	Yes	
Lifting Equipment (hoists, lift trucks, elevating work platforms, lifting slings)	Yes <u>and</u> LOLER Policy	
Ladders	Yes	
Pressure water cleaners	Yes <u>and</u> Pressure Vessels Policy	
Lifting Mechanisms	Yes <u>and</u> LOLER	
Mechanisms connected together (e.g scaffolding)	Yes	
Boiler Systems	Yes <u>and</u> Pressure Vessels	
Welding Equipment	Yes	
Abrasive Wheels	Yes	
Laboratory apparatus (incl "Bunsen" burners etc)	Yes	

Laboratory Fridges/Freezers	Yes	
Catering Fridges/Freezers	Yes	
Work Equipment	In Scope	Exempt
Pressurised Coffee Machines	Yes	
Powered Catering Equipment	Yes	
Domestic Fridge, Microwaves, kettles, Coffee M/Cs	-	Yes
Extension Flexs	-	Yes
Fan Heaters	-	Yes
PC's, Printers, monitors and raised/lower desks	-	Yes
Structural items (walls, stairs, fences)	-	Yes
Private Cars	-	Yes
Substances (Cement, water, acids)	But do consider COSHH Policy	Yes
Livestock	-	Yes

Appendix 2 provision of Work Equipment Compliance Checklist

Use the checklist below to assess your area/department compliance level for work equipment.

Now undertake the **actions** to achieve compliance.

If in doubt contact your local Authorised Person, Competent Person or Loughborough University Duty Authorised Person (DAP)

Work Equipment Compliance Checklist	Yes (Details)	No (Details)	Action
Who are your area/department? - Authorised Person(s) - Competent Person(s)			
Do you have a list of all Work Equipment?			
Is there an approved Risk Assessment for the Equipment?			
Has the Equipment been placed on the Asset Register?			
Are their clear written instructions or SOPs for each piece of equipment?			
Is there an authorised list of users?			
Is there a documented Training/competence assessment procedure for equipment?			
Is there a procedure to ensure the equipment is checked before each use? (signs of wear etc)			
Has the equipment been maintained? Are there record logs for the maintenance of the equipment?			
Has the equipment been PAT tested?			
Is their adequate PPE for "safe use" of equipment and is it stored and cleaned correctly?			
Has the equipment been examined, inspected or tested as appropriate?			
Is there a documented internal/external inspection schedule?			
Is there a procedure for reporting equipment failure/ safety related issue?			

Appendix 3: Equipment Safety Checklist

The following addresses the features of PUWER, indicates hazards and corresponding risks. Adequate responses to these checks will lead to the development of a safe system of work with work equipment and help in undertaking Risk Assessments.

Work Equipment Safety Checklist	Yes (Details)	No (Details)	Action
Could the equipment overheat, explode or eject hazardous substances?			
Is the material used suitable for the equipment? (Strength/Stability)			
Access prevention to dangerous parts of the equipment? Are their sufficient guards/controls in place? Do interlocks function correctly?			
Adequate safe procedures for stopping equipment in emergency?			
Are their warnings signs visible on the equipment? Do audible warning devices function correctly?			
Is the equipment placed in the correct position to ensure stability, ease of access of user and in good lighting?			
Is the equipment effected by an environmental factor?			
Does the equipment meet appropriate legislative requirements?			
Is isolation provided for all sources of energy?			
Is machine stable under its own weight/ bolted to the floor?			
Are controls easily identifiable and unambiguous?			
Are there appropriate measures in place to stop people being trapped in the equipment?			
Are controls in place to stop machine from starting accidentally?			
Are pipes and vessels marked with their internal substances?			

Appendix 4: Equipment Procurement Checklist of considerations

Use the checklist below to help **evaluate safety considerations for new / second-hand / hired / loaned / leased** equipment.

Work Equipment	YES (Details)	NO (Details)	Action
Does the equipment comply with current legislation?			
Is the equipment UKCA Marked with suitable Declarations of Conformity/Declarations of Incorporation?			
Is there a pre-installation checklist provided?			
Is there an installation/operating manual?			
Is the room large enough to house the equipment? Do you have sufficient bench/floor space to house it? Consider footprint and what space you may require around it. Is there enough room for someone to work at the equipment and reach all the controls? Have you considered diversity of workforce (human size/shape)			
Can the equipment easily be manoeuvred into place? Consider door widths, access.			
What is the weight of the equipment? Does the floor/benching need reinforcing?			
Is their sufficient light for people to work safely?			
Security – is this adequate for Health and Safety Reasons?			
Special requirements for flooring or benching? E.g chemical resistant			
How many data points are required?			
Noise Consideration? Is PPE adequate?			
Power requirements – What is the current rating, is a breaker protection required, AC or DC? Phasing, battery backup required?			
Will the equipment require cooling water? Is this included in the purchase?			

Work Equipment	Yes (Details)	No (Details)	Action
Will the equipment require compressed air or other gases (Nitrogen, Co2, Oxygen, Argon)? Are Oxygen depletion monitors required?			
Does the equipment require any monitoring systems? E.g. temperature			
Will the equipment require the use of any hazardous substances? E.g. lasers, chemicals, radiation			
Does the equipment require an extraction system?			
Does it have any effects or interaction with other system e.g. fire alarms?			
Does the equipment come with warranty or any service contracts, technical support?			
Does the supplier offer training?			
What are the running costs and cost of repairs and spares?			
Will it produce hazardous waste? How will this be disposed of safely?			
Will the room require air conditioning/air handling if equipment producing heat)			

Appendix 5: Example Asset Register for a Lab/Work Area

Asset Register									
School/Department									
Asset No.	MMEW3456	MMEW2459							
Asset Description e.g Laptop	Power Drill	Scales							
Description Category e.g Computer	Machinery	Instrument							
Asset Description Type e.g lab equipment	Machinery	Lab Equipment							
Date of Manufacture	1998	1994							
Date Acquired	24/06/1999	02/01/1996							
Installation/Commissioning Date.	Aug-99	N/A							
Compliance or value Asset?	Compliance	Compliance							
Serial Number	S782623W	S112457E							
Location e.g Room/lab	T207	STEM 1.12							
Legislative compliance area e.g PUWER, LOLER	PUWER	PUWER							
Standard Operating Procedure (SOP) Reference	CBE 054	STED03							
Risk Assessment Reference	SAF 008	SAF 124							
Maintenance Procedures frequency	Monthly	Annually							
Date of Last Inspection	14/02/2019	03/11/2018							
By Who	A.N	A.F							
Date of Last Service	N/A	N/A							
By Who									
Person Responsible for Asset	A.N	A.F							
Supplier	unknown	Fisher							
Disposal? Date? Reason?	No	No							

Appendix 6: Example Maintenance/Inspection Records Form

School/Department:			
Equipment:	Asset No.	Serial No.	Location:
Maintenance/Inspection Details	Date	Operator	Comments

Appendix 7: Example "Authorisation to use / Training Agreement"
Form

<u>Training Agreement (Authorisation to Use Form)</u>			
Name of Equipment:			
Location:			
<i>ALL STAFF TRAINED/AUTHOURISED TO USE THIS EQUIPMENT MUST COMPLETE</i>			
Location of Equipment			
Type and Model:			
Name of Evaluator / Instructor:			
Date assessment Completed:			
<p><i>I agree that I have received training and instruction from a competent person(s) on the use of this equipment, including:</i></p> <ul style="list-style-type: none"> · <i>How to operate the equipment safely</i> · <i>Appropriate and inappropriate use of equipment</i> · <i>Function of all controls, guarding, warning indicators and other safety related devices</i> · <i>Limitations of performance</i> · <i>Understanding the hazards and PPE that needs to be worn</i> · <i>How to perform a visual inspection of the equipment and report any concerns</i> · <i>Emergency Procedures.</i> <p><i>I also agree that I have read and understood the Instruction Manual and relevant SOP for use and maintenance of this equipment.</i></p>			
Competence level achieved			
Trainer		Competent	
			Basic
Name of person being assessed:			
Signature:		Date:	
<p><i>It is agreed that the above named has been assessed and is considered competent to use this equipment at the level indicated.</i></p>			
Name of evaluator:			
Signature:		Date:	

Appendix 8: Example of a "Hire/loan of Equipment Record" Form

It is important adequate checks are made and information and training are given before work equipment is loaned out and subsequently when it is returned.

Type / Name of Equipment	
Accessories	
Department /Location	
Asset No. /Serial Number	
Loan Period	

Lender:

I confirm this work equipment has been checked/inspected and is in good working order and that I have provided adequate training, information and documentation for its safe use.

I agree I am responsible for the following maintenance as the lender:

Signed: _____ Print Name: _____ Date: ____

Contact Details: _____

Receiver:

I confirm receipt of the above work equipment and have checked it is in good working order. I have been trained in its use and have received all relevant documentation for its safe use. I understand I am responsible for ensuring the correct use of this work equipment and any accessories while in my care.

I understand I am responsible for the following maintenance as the receiver:

Signed: _____ Print Name: _____ Date: ____

Contact Details: _____

Date Work Equipment Returned: _____ **By Whom: (Please Print)** _____

Received and checked by: _____

A copy of this agreement should be kept by both parties.

**Appendix 9: Checklist to ensure the Safety of 'in-house'
Constructed Equipment**

The University must demonstrate that any machinery/rigs/apparatus constructed by the University is safe to use.

To do this is must meet the requirements of the Essential Health and Safety Requirements of the Machinery Directive.

The checklist below will assist you to establish if equipment made 'in-house' meets those requirements.

Please refer to Supply of Machinery (Safety) Regulations (2008) as amended by the Supply of Machinery (Safety) Regulations 2011 for more information.

Equipment Name:		
Location of use:		
Person Responsible:		
Safety Requirement	Yes/No/N/A	Comment/Action
Valid Approved Risk Assessment		
Listed on the Asset Register		
UKCA Marking and Declaration of Conformity Documentation (if applicable)		
Adequate Technical file		
Safe Materials used		
Correct design for handling		
Adequate assembly and stability		
Adequate Lighting		
Ergonomics considered		
Adequate Operating Positions/seating		
Adequate control systems and devices		
Protection from mechanical hazards		
Protection against failure of power supply		
Protection against sharp edges or surfaces		
Protection against moving parts		
Protection against falling/ejected objects		
Adequate guarding and protective devices		
Adequate warnings and markings		
Protection against electrical hazards, fire, radiation, explosion, extreme temperatures, noise and vibration.		
Protection against being trapped or slipping, falling		
Protection against emissions of hazardous materials.		
Safe access for maintenance and cleaning		
Adequate maintenance and cleaning procedures.		
Adequate training programme		
Adequate Standard Operating Procedure/Instructions for Use		
Adequate Personal Protective Equipment		