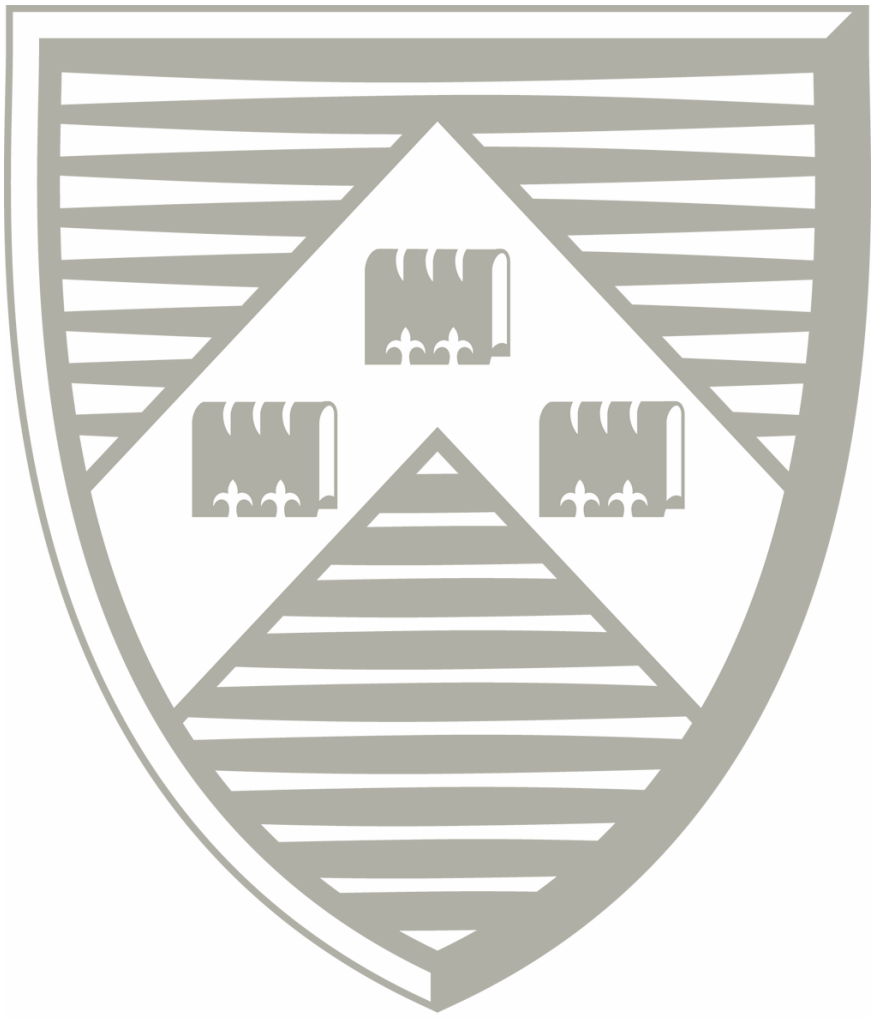
The Workplace Health and Safety Office



UNIVERSITY POLICY AND MANAGEMENT PROCEDURE

Work Equipment

Statement

*This Management Procedure was approved and authorised by the Health, Safety and Welfare Committee (now Workplace Health and Safety Committee) on **19 February 2008** on behalf of the University of York Council and forms part of the Health and Safety Policy of the University of York.*

This document is a Management Procedure for good health and safety management practice. This Management Procedure provides Deans of Faculty, Heads of Departments, Heads of College and all managers, staff and students with the necessary information to incorporate healthy and safe practices and relevant procedures into their activities. Divergence from this Management Procedure may result in Deans of Faculty, Heads of Departments, Heads of College and the University of York being exposed to possible legal proceedings.

The use of this Management Procedure and the incorporation of its requirements into working practices and activities will ensure that the University of York and its community achieves compliance with its legal duties with regards to health and safety.

The most recent version of this Management Procedure is available at
https://www.york.ac.uk/admin/hsas/safetynet/atoz.htm

Date of Review	*December 2023*	*By*	*The Director of Health and Safety*
Date of Last Review	*May 2021*	*By*	*The Director of Health, Safety and Security*
Date of Next Review	*December 2025*	*By*	

UNIVERSITY POLICY

1. INTRODUCTION

The **Provision and Use of Work Equipment Regulations 1998 (PUWER)** applies to all work equipment, including leased, hired or second-hand and to all activities involving work equipment including starting, stopping, regular use, transport, repair, modification, servicing and cleaning.

Work equipment means any machinery, appliance, apparatus, tool or installation (such as a series of machines connected together) for use at work including research and teaching. It embraces everything from hand tools to substantial manufacturing plant; for example autoclaves, microscopes, photocopiers, knives, hammers and motor vehicles.

The University of York's (University) obligations extend to any person who has control of non-domestic premises as a place of work for work equipment provided for or used in connection with work by:

- Staff and Students
- Others using the premises including contractors and suppliers
- Visitors and members of the public.

A wide variety of work equipment is used by staff and students in their work activities at the University. Every year, the use of equipment at work results in a number of accidents and dangerous occurrences, many of which are serious resulting in ill health, injury, damage and loss. The University will take all reasonable precautions to manage, control and prevent foreseeable injury, ill health, damage or loss to users of work equipment at the University.

No personal or domestic work equipment is permitted to be used in connection with work activities at the University.

ARRANGEMENTS

2. RISK ASSESSMENT AND CONTROL

A risk assessment in conjunction with manufacturer's data will provide guidance on the type, extent or combinations necessary to implement suitable and sufficient control measures. All such arrangements should be devised or selected to prevent foreseeable injury, ill health, damage or loss by giving advance warning of work equipment malfunction or failure.

Many foreseeable occurrences can create risk from using work equipment. Some examples are:

- Incorrect selection of work equipment for the task, e.g. using ladders to undertake lengthy or detailed work at high level instead of an appropriate access tower.
- Inadequate guarding arrangements on machines which could cause entanglement, crushing, trapping or cutting e.g. plastic guards protecting revolving blades on slicing machines being removed exposing the cutting edge.

- Inadequate control/isolation arrangements or incorrect controls in place so that work equipment cannot be switched off quickly and safely or it starts accidentally e.g. incorrect or missing labels or emergency stop/isolation controls broken.
- Inadequate and inappropriate information, instruction, training and supervision e.g. the introduction of new work equipment and users not provided with updated training or information.

When identifying risks associated with work equipment, consideration should be given to the following:

- The task involving work equipment, the interactions with the operator(s) and other associated equipment during normal use, set-up, maintenance, repair, breakdown and cleaning e.g. the preparation of sample slides for use with a microscope, use of it during a demonstration or laboratory practical by students or others, the cleaning and repair by technical staff.
- Who will use/operate work equipment, including experienced and competent users, new staff, new and more experienced students as well as those with known disabilities?
- What could go wrong if people act carelessly or foolishly or simply make a mistake during a task using work equipment?
- Whether guarding arrangements are appropriate, convenient and simple to operate or can such arrangements be easily removed or defeated.
- The types of power supply to work equipment, e.g. electrical, pneumatic or hydraulic as each presents a different risk.

Any work equipment provided for work must be installed, constructed or adapted to be suitable for its intended purpose. This includes taking into account reasonably foreseeable working conditions, inherent health and safety risks where the work equipment is to be used and any risks associated with the equipment itself. Work equipment must only be used for the task and under the conditions for which it is designed and suited.

Work equipment provided for use after 31 December 1992 has been designed and constructed in compliance with all essential requirements that are contained in relevant UK legislation which implements appropriate European Commission (EC) 'product' Directives.

2.1 Hand Tools

Many risks from hand tools can be controlled by ensuring such work equipment is properly used and maintained. For example:

- **Hammers** – Avoid split, broken or loose shafts and worn or chipped heads and ensure that the head is securely fixed and attached to the shaft.
- **Files –** Should have a proper handle and never be used as a lever.
- **Chisels** – Should be maintained with a sharp and correctly angled cutting edge. The head of a cold chisel should be ground down on a regular basis to prevent the mushroom spread developing.
- **Screwdrivers** – Should never be used as chisels and never use hammers on them.

- **Spanners** – Avoid splayed jaws. Dispose and replace any that show signs of slipping. Use only spanners of the correct jaw size and avoid using improvised extension pipes or rods.

2.2 Guarding Arrangements

Risks from the use of work equipment may require guards to prevent people from gaining access to or coming into contact with dangerous or moving parts which could cause injury. Consideration should be given to the following:

- Fixed guards that cannot be removed without special tools or keys.
- When a fixed guard is not practical due to access requirements as a normal part of a work activity an interlocked guard will be used.
- All guarding arrangements should be convenient and easy to use to prevent them being ignored or defeated by operators.
- Guarding arrangements must be suitable and sufficient.
- Guarding arrangements must be suitable to allow for cleaning and maintenance activities under a Safe System of Work (SSoW).

2.3 Mobile Work Equipment

Mobile work equipment is to be controlled as follows:

- No employee is to be carried by mobile work equipment unless it is suitable for carrying persons and incorporates features that reduce the risks to their safety.
- Suitable roll-over protection is to be provided where there is any risk of overturning, except for situations where this would increase the risks to safety. It should be noted that it is not reasonably practicable where the equipment was first provided for use before 05 December 1998.
- Fork lift trucks are to be adapted or equipped to reduce the risk of overturning so far as is reasonably practicable.
- Self-propelled equipment and remote-controlled equipment is to be fitted with appropriate safety features such as emergency stop facilities, fire-fighting appliances, manoeuvring aids, lighting, etc.
- Any risk of seizure of a drive shaft between work equipment and its accessories or any towed item is to be adequately controlled where it might involve a risk to safety.

In addition any remote-controlled mobile work equipment must be designed so that it will stop automatically once outside the control range and it must incorporate any necessary features to prevent any risk of crushing, where appropriate.

Mobile work equipment must not be used to carry employees or others unless it is suitable for that purpose and incorporates measures to reduce any risks to safety (including risks from wheels or tracks), as low as is reasonably practicable.

2.4 Dangerous Parts of Machinery

Control measures must be in place to prevent access to dangerous parts of machinery or any rotating stock-bars, or to stop the movement of any dangerous machinery or rotating stock-bars before any part of a person enters a danger zone. The hierarchy of such measures includes to the extent that it is practicable, the provision of:

- Fixed guards.
- Other guards or protection devices.
- Jigs, holders, push-sticks or similar protection appliances.
- Then information, instruction, training and supervision.

All guards, protection devices and protective appliances must:

- Be suitable for their intended purpose.
- Be of good construction.
- Be of sound material and adequate strength.
- Be maintained in an efficient state.
- Be in efficient working order and in good repair.
- Not increase any risks to health and safety.
- Not unduly restrict the view of the operating cycle where such a view is necessary.

In addition, guards, and protection devices must:

- Not be easily by-passed or disabled.
- Be situated at a sufficient distance from the danger zone and be constructed / adapted to allow replacement, repair or maintenance work, but only in the area where such work is necessary, and where possible without dismantling the guards or protective devices.

For the purpose of this University Policy and Management Procedure, "danger zone" means any zone in or around machinery in which a person is exposed to a risk to their health and safety arising from contact with a dangerous part.

2.5 Specific Hazards and Risks

Suitable control measures are to be introduced to prevent or adequately control risk to the health and safety of users, or if this is not reasonably practicable then to adequately control exposure to any of the "specified hazards" arising from the use of work equipment. Such measures must be by means other than Personal Protective Equipment (PPE) or information, instruction and training, so far as is reasonably practicable, and include measures to minimise the effects of the hazard as well as reducing the likelihood of the hazard occurring. Specified hazards may include:

- Articles or substances falling or ejected from work equipment.
- Equipment catching fire or overheating.
- Unintended or premature discharges or explosions.

Control measures shall minimise the effects of the hazard and reduce its likelihood and should not be dependent on PPE or the provision of information, instruction, training or supervision.

2.6 Danger Zones

Special measures apply to dangerous parts of machinery and may include:

- Preventing access to any dangerous part by fixed guards.
- Stopping movement of dangerous parts before any person enters a danger zone.
- Providing other suitable protection devices.
- Providing information, instruction, training and supervision for all users.

All guarding arrangements and protection devices shall be suitable, of good construction, properly maintained, not increase safety risks nor be easily by-passed, keep individuals away from danger zones, enhance safe working and allow proper maintenance, service or repair.

2.7 Control Devices

Work equipment must have effective controls for: starting; changing operation; regulating speed; stopping (normally); and emergency stop. This should be provided at every control point so action can be taken quickly. A fail-safe condition should be automatic and equipment should have a means of isolation from its power source to ensure machines cannot be inadvertently started while maintenance is being carried out.

Work equipment must also be provided with readily accessible stop controls, where appropriate, that will bring the equipment to a safe condition in a safe manner. In some cases this may mean bringing the equipment to a complete stop and/or switching off all energy sources. Stop controls must have priority over start and operating controls.

Work equipment is to be provided with readily accessible emergency stop controls, unless these controls are unnecessary by the nature of the hazard and the time required bringing the equipment to a complete stop because of activating a normal stop control. Emergency stop controls must have priority over any normal stop controls.

Emergency stop controls should be provided where other safeguards are inadequate to prevent the risk of some irregular event; they are not substitutes for safeguarding and should never be used to stop the equipment in normal work routines.

Where controls are fitted to work equipment then such controls must be clearly visible and identifiable including appropriate marking if necessary, and in such a position so as not to create additional risks to the health and safety of the operator. A hierarchy of other measures includes:

- Ensuring that the control operator can determine that no person is in any place of danger due to the activation of the controls, or where that is not reasonably practicable.
- Ensuring that safe systems of work are devised to prevent persons being in a danger zone created by the starting of a piece of work equipment, or where that is not reasonably practicable by ensuring an audible, visible or other suitable warning is given when work equipment is about to start.

Where persons are in a place of danger due to the starting or stopping of work equipment, arrangements must be in place to allow such persons to have sufficient time and means to avoid the danger.

2.8 Isolation from Sources of Energy

Work equipment must be provided with a clearly identifiable and readily accessible means of isolating it from its energy source, where appropriate. Reconnection of the equipment to the energy source must not expose persons using the equipment to any risks to their health and safety.

2.9 Lighting

Work equipment must be suitably and sufficiently lit. Natural light may not be adequate so artificial lighting needs to (must) be considered such as the amount, location, direction and intensity, whilst avoiding glare or dazzle.

2.10 Markings and Warnings

Arrangements must be implemented to ensure work equipment has appropriate and clearly visible health and safety markings, and that any appropriate health and safety warning or warning devices are incorporated. Such warnings must be unambiguous and easily perceived and understood.

2.11 Drive Shafts

In situations where there is a risk to safety from the seizure of a drive shaft between mobile work equipment and any accessories or objects being towed, there must be means for preventing such seizures, or, if this is not possible, measures must be taken to avoid any adverse effects on employees' safety. In addition, there must be a system for safeguarding the transmission shafts on mobile work equipment, where such shafts could become soiled or damaged through contact with the ground.

2.12 Testing and Inspections

Work equipment that poses a significant risk will need to be considered to determine a suitable inspection regime. These inspections are in addition to a daily check by an operator of work equipment and must be carried out by a Competent Person (CP). For the majority of equipment a visual check should be carried out weekly and a formal inspection monthly. Some equipment may require more frequent inspections (e.g. equipment used

in confined spaces, passenger lifts, scaffolding, pressure vessels, power presses and petrol driven disc cutters, etc).

In addition to the inspection regime outlined in the preceding paragraph, the below mentioned equipment is subject to periodic inspections or tests as follows:

- Test equipment.
- General access scaffold including towers and ladders.
- PPE, subject to inspection, is dependent on use but is to be carried out at least quarterly and findings recorded.

3. MAINTENANCE OF WORK EQUIPMENT

Appropriate arrangements must be implemented to ensure, so far as is reasonably practicable, that work equipment is constructed or adapted to allow maintenance work that involves a risk to health and safety to be carried out while the equipment is shut down or inactive. Where this is not possible, the maintenance operations should be carried out in such a way that the person doing the maintenance work is not exposed to health and safety risks and appropriate measures are to be implemented for their protection.

The provision of temporary guards, limiting the movement, power or speed of the equipment, etc and the provision of PPE, instruction and supervision, are ways of preventing or reducing risks in situations where the equipment cannot be stopped for maintenance.

The supplier or manufacturer may recommend a schedule of preventative maintenance checks and minor maintenance including daily weekly, monthly and annual checks on lubricants, pressure, brake functions, etc.

Work equipment will be maintained in an efficient state, in efficient working order, in good repair, and where a maintenance log is required, for example, under other legislation such logs will be kept up to date. Where necessary it is recommended that maintenance records are kept.

4. REPORTS AND DEFECT REPORTING

The CP making a thorough examination of lifting equipment shall immediately notify the University Engineer of any defects which are or could become dangerous.

The Estates Business Manager when notified of a defect shall ensure that the lifting equipment is not used and that appropriate arrangements are implemented:

- Before the defect is rectified.
- After a time specified by the CP.

Information to be contained in a report of a thorough examination should include:

- Name and address (location of equipment).
- Manufacturer and date.

- Safe working load.
- Appropriate interval.
- Any dangerous or potentially dangerous defects.
- Any inaccessible areas or areas not inspected.
- Other observations.
- Repairs required.
- Written Scheme Reference Number.
- Date of next examination and test.
- Details of the competent person.

4.1 Records

Examination schemes, examination reports and test certificates as applicable are to be maintained for a period of 2 years or longer where a specific need demands a longer term for retention and in accordance with University document control arrangements.

5. STORAGE ARRANGEMENTS

Work equipment is to be stored in a secure area and is to be subject to management controls including the removal of ignition keys, isolation and security arrangements. Under no circumstances are operatives/students to have access to work equipment without formal training.

6. INFORMATION, INSTRUCTION AND TRAINING

Persons, who use, supervise or manage the use of work equipment, including temporary and agency staff, are to receive training which includes methods of use, risks and related precautions. Specific training for Appointed Persons (AP) and CP for inspecting and testing the mounting and use of abrasive wheels, safe use of woodworking machines, etc. is to be addressed as required. Records of induction, refresher and familiarisation training are to be kept and maintained and should include the following:

- The requirements of the regulations.
- The requirements of the manufacturer/supplier.
- An understanding of the work, associated hazards, and necessary precautions.
- Findings from risk assessments including identified controls in connection with work activities.
- An understanding of safe systems of work and 'permits to work'.
- How emergencies arise, the need to follow prepared emergency arrangements, and the dangers of not doing so including specific training for those likely to be involved in emergency rescue.

Staff involved in managing, or who undertake maintenance and repairs on work equipment, will require suitable and sufficient information, instruction and training to enable them to work safely. Such information, instruction and training should include:

- Information provided by the supplier of new equipment based on instruction manuals and operating leaflets, etc.
- Manufacturer's information.
- Instruction on the safe use of hand tools and the controls identified by the risk assessment process and the development of a Safe System of Work.
- Written procedures and local rules.

7. THE PROVISION OF WORK EQUIPMENT

The University will provide employees and students with work equipment that is safe. PUWER applies to all existing work equipment as well as any new equipment purchased by the University, and items manufactured in-house.

7.1 Legal Requirements

The law governing the purchase and supply of new work equipment, particularly new machinery, is complicated and involved. There is however a guiding principle which should be observed at all times:

- Anyone buying new equipment is responsible for ensuring its safety **and** for checking that it complies with all the relevant laws.

In broad terms, 2 types of law relate to the purchase of new equipment:

- The 'supply' law (Supply of Machinery (Safety) Regulations 1992) applies to manufacturers and suppliers of **new** equipment and requires them to provide equipment which is safe. *Not: Sometimes machinery is supplied via another organisation, rather than direct from the manufacturer so this organisation is referred to as the supplier.*
- The 'user' law (Provision and Use of Work Equipment Regulations 1998) applies to buyers of equipment and requires them to provide and use equipment which is safe.

7.2 Application and Exclusions

These laws refer to 'work equipment' and 'machinery'.

The term 'work equipment' is used to mean any equipment which is used by an employee at work, e.g. knives, autoclaves, photocopiers, hammers and motor vehicles.

'Machinery' normally means a piece of work equipment which has moving parts and usually some kind of drive unit, e.g. circular saw, lift, and mechanical pallet truck and lawn mower.

'Supply' law does **not** apply to, amongst other things:

- Second hand machinery.
- Manually powered machinery.
- Medical machinery used in direct contact with patients.
- Steam boilers, tanks and pressure vessels.

- Nuclear equipment which will emit radioactivity if it fails.
- Radioactive sources forming part of a machine.
- Fire alarms and systems.
- Storage tanks and pipelines for petrol, diesel, inflammable liquids and dangerous substances.

Some of these types of work equipment have other special pieces of legislation which govern their use.

7.3 Manufacturers and Suppliers - 'Supply' Law

Most new work equipment should have a CE mark when purchased. CE marking is a statement by the manufacturer that the work equipment is safe and that they have met 'supply' law. The purchaser/user is still required to check that the equipment is safe. A CE mark is **not** a **guarantee** of safety.

With respect to electrical equipment for domestic use, reference is made to the most recent 'Product Standards: Electrical Equipment Requirements for Plugs and Sockets etc. - Guidance notes on the UK Plugs and Sockets etc. (Safety) Regulations 1994 (S.I. 1994/1768).' Electrical equipment intended for use within the workplace must satisfy the requirements of the Electrical Equipment (Safety) Regulations 1994. Both documents are available and maybe requested from the Workplace Health and Safety Office (WHSO).

Manufacturers must make sure that any new piece of work equipment they make is safe to use, by assessing the risk at the design and planning stage. This is undertaken to identify the types of hazard which will be created, and the likely risks which may arise from using the machine. The manufacturer must design out the hazards, or if that is not possible, to provide safeguards (guards, warning signs, etc.) to protect users.

Manufacturers have to keep records of all of the above, attach a CE mark to a machine to confirm that they have complied with the supply law, and provide a 'Declaration of Conformity' for the work equipment. This statement includes contact details for the manufacturer, the make, type and serial number of the equipment and a signature of authorised persons. It also contains information on which standards have been used in the design and manufacture of the equipment and what European Union (laws/directives) the equipment complies with.

Manufacturers are also required to supply the buyer with instructions on how to install, use and maintain the work equipment safely.

7.4 Duties of Buyers – 'User' Law

Before investing in the purchase of any new work equipment, it is important to consider the health and safety implications:

- Where and how will the work equipment be used?

- What will it be used for?
- Who will use it?
- What risks to health and safety might be created?
- Compare how health and safety risks are controlled by different manufacturers of the same types of pieces of equipment.

The answers to these questions may be relatively simple and straightforward if you are buying a standard piece of 'off-the-shelf' work equipment from a recognised manufacturer. Things may be more complex if working with a designer to create custom-built pieces of work equipment. Guidance is available from the Materials Managers Webpages may be useful if you are cooperating with a company to specially design a unique piece of work equipment.

http://www.york.ac.uk/admin/supplies/index.html

When placing an order, specify in writing that the work equipment should be safe. When accepting delivery, ensure that the CE mark and a copy of the 'Declaration of Conformity' has been provided and that a set of clear instructions on how the work equipment should be used has been provided. It is important to consider the following:

- Does it look like the catalogue/brochure photographs/demonstration model or the sample?
- Does it have the sorts of guards you were expecting?
- Do any parts look dangerous?
- Do you understand the controls?
- Could fumes/dust escape from the equipment?
- Is it excessively noisy or is there excessive vibration?
- Does any part get very hot or cold?
- Are there any live electrical parts exposed?
- Are the manufacturer's instructions clear and comprehensive?

If the work equipment delivered is not safe, DO NOT USE IT. Contact the manufacturer and discuss any concerns.

7.5 Manufacturing Work Equipment

Departments may require specialist items of work equipment to be manufactured in-house by members of staff. If this is the case, the same requirements for ensuring work equipment as for buying new work equipment apply. Those staff involved in specifying, designing and manufacturing work equipment made in-house are responsible for ensuring that it is safe.

7.6 Buying Work Equipment from Outside Europe

All suppliers have to make sure that work equipment supplied within the European Union is safe no matter where it is made. If purchasing work equipment from outside the EU, it

is possible that it will not comply with EU health and safety legislation. Purchasing Officers should seek the advice of the HSWD and/or Estates Services (Electrical Services Engineer) on the safety of any equipment purchased from outside Europe.

7.7 Second-Hand Work Equipment

The supply law does **not** apply to equipment bought second-hand. However, the 'user' law **does** still apply which means that any work equipment purchased second-hand must still comply with all aspects of PUWER.

If a Department wishes to donate an unwanted piece of work equipment which they no longer require to a third party they should provide a signed statement from an authorised person within the Department indicating that it was used safely by the Department and that if used in the same manner and for the same purpose by the third party it is safe. This will provide the University with some protection in the event of a subsequent incident involving the donated equipment.

7.8 Work Equipment on Loan or Being Used for Demonstrations

Departments may receive items of work equipment on loan for trial periods or for demonstration purposes prior to a purchase being made. Departments are required to obtain an indemnity against damage or injury from defective loan/demonstration work equipment from the supplier, prior to the equipment being received and used.

8. DISPOSAL OF WORK EQUIPMENT

Some types of work equipment can only be disposed of via specific routes e.g. refrigerators, lasers, etc. Before disposing of any work equipment which is no longer required, check whether there are special rules governing its disposal. This includes health and safety legislative requirements and environmental protection laws. Contact the WHSO for advice and guidance on safe disposal methods.

When work equipment reaches the end of its life it is necessary to ensure that it is disposed of properly. Consideration will have been given to this, and to the associated costs of decommissioning and disposal, as part of the initial calculation of the whole life cost of the work equipment. There are financial and statutory obligations to be considered with regard to the disposal of University assets. The Finance Department must be notified to ensure that the University Asset Register is updated.

If there is any doubt regarding potential liability with respect to disposal arrangements, trade-in or sale of work equipment, then work equipment should not be sold or given to a third party. Information including the completion of University Forms and asset disposal procedures advice can be obtained from the University's Supplies Manager.

Direct sales are not to be made to staff, students or individuals for the following reasons:

- When the University sells to individuals it accepts liability under the Consumer Protection Act 1987 and the Sale of Goods Act 1979 as amended by Sale and Supply of Goods Act 1994. Whilst the University can limit certain liabilities by using appropriate conditions of contract, it cannot eliminate them, and therefore there is a risk when selling to individuals.
- When sold to staff and students there is an expectation that they can return them for rectification when faults occur. This occurs even when it is made clear that no after sales service will be provided.
- Small values received often make this process administratively onerous.

8.1 Trade In

When work equipment is disposed of in this way, it represents in effect a commercial sale to the receiving organisation. It is important to ensure that:

- The University's conditions of sale are applied to the contract.
- A fair market price is obtained for the goods either as a cash value or in terms of a discount allowed on the replacement.
- There are no leases or other agreements in place that would prevent the disposal action being taken.

8.2 Internal Transfer

Where equipment is transferred between Departments it is important to notify the Finance Department so that the University Asset Inventory is updated. Records as regards maintenance and testing of the equipment, where appropriate, should also be made available to the receiving Department.

Prior to the disposal of old Personal Computer (PC) equipment, the University recommends the removal of all software from hard drives. Contact IT Services for more information on the disposal of old PCs.