



# Guidance for designing, self-building, modifying or adapting work equipment

*Doc control no: PRSG28.5* WELLBEING, SAFETY AND HEALTH MANAGEMENT SYSTEM

This is a controlled document whilst viewed at [www.leeds.ac.uk/safety](http://www.leeds.ac.uk/safety) Once downloaded or printed it becomes an uncontrolled copy. Please check the website to ensure you are using the latest version

Author:	HSS	Approved by:	Gary Tideswell	Version number:	1	Issue Date:	30 November 2015
---------	-----	--------------	----------------	-----------------	---	-------------	------------------

**This document supports the implementation of the work equipment standard and provides additional guidance that can be used when designing, building, modifying or adapting work equipment.**

It is essential that all work equipment/machinery is suitable for its intended use, taking into account its: design; adaptation; operation; and conditions where it would be sited or used.

### **Risk Assessment**

Risk assessment is the key process in the planning, designing and building, adapting or modifying equipment / machinery. This will help you to consider the hazards involved during the whole life cycle of build, use and dismantling and disposal of work equipment. Additional hazards specific to the equipment design may include;

- Any hazardous substances contained within it,
- Extreme conditions such as start-up, shutdown, fault and emergency conditions
- Any foreseeable changes to the design conditions
- System failures
- External forces (physical or environmental) that might act on the equipment

**Considering the following additional information will help you when designing, building, and modifying or adapting work equipment;**

### **Suitably located**

When designing, building, adapting or modifying work equipment you will need to consider not only its final location but how you will transport the item, safe access that may be required for use, maintenance or inspection.

### **Constructed from suitable material**

When designing work equipment consideration is to be given to the requirements of each component to ensure that they are constructed from suitable materials to withstand the operation or activity they are intended for. E.g. exposure to pressure, temperature, environmental conditions and emergency situations.

### **Fitted with protective devices**

Where access to dangerous parts is possible, thought should be given to the need to provide protective devices such as interlocks and guarding to prevent injury or harm. Where these are required they should be designed, built and installed by a competent person.

### **Examination, inspection and testing**

All work equipment requires some form of examination, maintenance or inspection. This needs to be identified and completed before first use and records retained. Safe access for examination, maintenance or inspection should be possible.

Any critical parts of any machine or equipment that require formal examination (e.g. pressure vessels) by a competent person must be in line with the work equipment standard.

### **Designed, supervised or managed by competent people**

Staff or students who design, build, modify or adapt work equipment needs to have adequate knowledge and experience, be competent or supervised to perform these tasks and be aware of the requirements of the work equipment standard. A record of all training and authorisation of users is to be retained.

### **Supplied with adequate information, written instructions, safe systems of work and adequately trained.**

All work equipment designed, built, modified or adapted will require written instructions of how to use, maintain and inspect the equipment safely. These will be produced in house, communicated and users trained before the equipment is used. This will often include risk assessment, safe system of work, method statements or written instructions.

Title:	<i>Guidance Purchasing New &amp; Second Hand Work Equipment</i>	Number:	<i>PRSG28.5</i>	Issue date:	30 November 2015	Page Number	1
--------	---	---------	-----------------	-------------	------------------	-------------	---

### **Further Information on the EU Machinery directive**

In addition to the requirements within the standard and the information this guidance document the EU Machinery directive has a number of specific aspects that need to be achieved. It is recognised that the EU Machinery directive does not apply to machinery which is specially designed and constructed for research purposes and is for use in laboratories for only a limited period of time. However, the University of Leeds expects that the work equipment standard is applied when designing, building, and modifying or adapting work equipment/machinery for use within the University.

In addition any work equipment that is designed and built specifically for the purposes of sale (manufacture) have a number of stringent requirements which can be found in the Essential Health and Safety requirements (EHSR's) of the machinery directive.

Title:	<i>Guidance Purchasing New &amp; Second Hand Work Equipment</i>	Number:	<i>PRSG28.5</i>	Issue date:	30 November 2015	Page Number	2
--------	---	---------	-----------------	-------------	------------------	-------------	---