

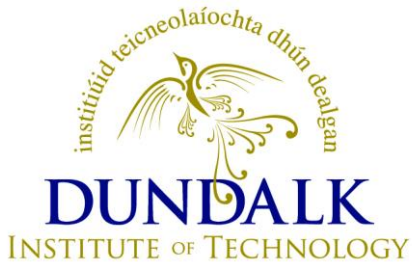
**School of Engineering**

**Dept of Mechanical & Electronic  
Engineering**

***Health and Safety File***

**Mechanical Workshops  
W105/ W106 /W108**

**File 1**



**School of Engineering**

**Dundalk Institute of Technology**

**Ancillary Safety Statement**

**April 2016**

This Ancillary Safety Statement is to be read in conjunction with the  
Parent Safety Statement of Dundalk Institute of Technology

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## Appendix I: Functional Area Safety Committee 2015/2016

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Appendix III: Safe Work Practice Sheets and Risk Assessment  
(Refer to specific laboratory and workshop specific safety files and Safe Work Practice Sheets)

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                           Near Miss Report Forms

                          List of First Aiders

## 1. Introduction

Under the provisions of The Safety, Health and Welfare at Work Act 2005, Dundalk Institute of Technology is required to ensure so far as is reasonably practicable the health, safety and welfare of all its employees and students engaged in work or study, and all visitors to the Institute premises.

In view of the recent extensive expansion that has taken place on the campus and in order to comply with the requirements of the 2005 Act, the Institute has decided to review and update its Safety Statement. Dundalk Institute of Technology's safety management programme consists of a Parent Safety Statement supplemented by seven ancillary Safety Statements, which apply to different functional areas of the Institute. These ancillary Safety Statements take account of the diverse range of activities, which apply across the Institute.

The Institute's overall Safety Statement is comprised of the following documents:

- Parent Safety Statement
- Ancillary Safety Statement – School of Business & Humanities
- Ancillary Safety Statement – School of Health & Science
- **Ancillary Safety Statement – School of Engineering**
- Ancillary Safety Statement – School of Informatics & Creative Arts
- Ancillary Safety Statement – Secretary/Financial Controller's Functional Area
- Ancillary Safety Statement – Registrar's Functional Area
- Ancillary Safety Statement – Regional Development Centre Functional Area
- Emergency Evacuations Procedures Manual

The purpose of the Ancillary Safety Statements is to provide details of the specific hazards and control measures which apply in these areas. Each Ancillary Safety Statement should be read in conjunction with the Parent Safety Statement.

## **2. General Statement of Policy within the School of Engineering**

The School of Engineering Functional Area is committed to ensuring that high standards of health and safety are achieved and maintained throughout all areas under our control. The key mechanism for achieving and maintaining safety is Risk Assessment, by which we identify hazards, which have the potential for harming health or causing accidents, evaluate the risks arising and select and implement appropriate precautions.

Throughout the School of Engineering Functional Area, Risk Assessments are carried out in all areas under our control periodically. Risk Assessments must take account of any changes with regard to the structure of the organization, Academic Staff, work practices; use of machinery, design techniques or equipment all may necessitate periodic changes to this document as well as any periodical amendments or updates to legislation.

It is essential that all staff and students contribute and cooperate to this process, thus ensuring that the School of Engineering Functional Area's stated objective of providing in so far as is reasonably practicable a safe place of work is achieved. Employees are encouraged to contribute to the improvement of health and safety by making suggestions to their departmental manager. The success of this policy depends on the co-operation of all staff and students, and it is therefore extremely important that staff:

Read and understand the safety information provided

Know their role and responsibilities.

Always abide by the arrangements the Institute has put in place to ensure their health, safety welfare, and that of their colleagues and others.

The process of Risk Assessment in the School of Engineering Functional Area enables us to take all relevant precautions to ensure that Dundalk Institute of Technology's legal standard as an employer is fulfilled particularly in relation to:

- Exercising all due care
- Putting in place necessary protective and preventative measures
- Identifying hazards and assessing risks likely to result in accidents or ill-health
- Not being required to take further measures where these would be grossly disproportionate having regard to the unusual, unforeseeable and exceptional nature of the circumstances.

Health and Safety is overseen in the School by the Functional Area Safety Committee which contains representatives from all of the areas within the School (See Appendix I for membership details)

Signed on behalf of School of Engineering, Dundalk Institute of Technology,

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**Mr. Eugene Roe**  
**Head of School of Engineering**

### 3.0 School of Engineering Functional Safety Area: Description

The School of Engineering is divided into Four Departments, one Research Centre.

1. Department of Electronic & Mechanical Engineering
2. Department of the Built Environment
3. Department of Engineering Trades
4. Centre for Renewable Energy at DkIT(CREDIT)

The School of Engineering is predominantly located in the following areas of the Institute:

Location	Description	Primary Activity
North Block	Dept. Electronic & Mechanical Engineering	<ul style="list-style-type: none"><li>○ Lecture rooms</li><li>○ Computer Labs</li><li>○ Office based activities</li><li>○ Work Placements</li><li>○ Laboratories</li><li>○ Workshops</li></ul>
North Block South Block	Dept. of the Built Environment	<ul style="list-style-type: none"><li>○ Lecture rooms</li><li>○ Computer Labs</li><li>○ Office based activities</li><li>○ Laboratories</li><li>○ Fieldwork</li></ul>
North Block South Block The Carroll's Building	Dept of Engineering Trades	<ul style="list-style-type: none"><li>○ Lecture Rooms</li><li>○ Computer Labs</li><li>○ Office based activities</li><li>○ Drawing Offices</li><li>○ Motor Engineering Workshop</li><li>○ Plumbing Workshops</li><li>○ Carpentry Workshops</li><li>○ Electrical Workshops</li><li>○ Motor Engineering Lab</li><li>○ Electrical Lab</li><li>○ Plumbing Lab</li></ul>

Risk Assessment is carried out at least once per year in each location in the School of Engineering functional area under the direction of the Head of School, Mr. Eugene Roe who is the responsible person.

The wide range of workplace activities and the associated risks to health, safety and welfare within the School of Engineering can be broadly categorized as follows:-

- Offices, (Administration and Lecturing Staff) – low to medium risk.
- Lecture Rooms, Drawing Offices, Computer Labs. – low to medium risk
- Workshops – low to high risk

Refer to Appendix II for School of Engineering safety management organizational layout.

Hard copies of this Functional Area Ancillary Safety Statement are available at the following locations:

1. Administration Office, School of Engineering
2. Workshop locations
3. Laboratories

## 4.0 School of Engineering – Overview of Risk Assessment Process.

This Ancillary Safety Statement covers all activities carried out by the School of Engineering, and should be read in conjunction with the Institute Parent Safety Statement.

Dundalk Institute of Technology will adapt the “General principles of prevention” as outlined in the 2005 Act Schedule 3

When a hazard is identified and the risk assessed, the necessary arrangements are put in place to protect safety and health.

Dundalk Institute of Technology will utilize the hierarchy of controls. A series of common sense steps for hazard control (often called hierarchy of control) **where elimination of the risk is not reasonably practical**.

These steps are:

1. Substitute the hazard (e.g. use a less harmful substance).
2. Isolate the hazard.
3. Use engineering controls (e.g. Physical controls).
4. Put in safe work practices (e.g. Instruction, training, supervision).
5. Use Personal Protective Equipment (PPE) such as gloves / overalls.

If a hazard cannot reasonably be eliminated it is the policy to work through this list to minimise exposure to risks. For example, the Institute will try to substitute the hazard first. If this is not possible, will go to the next step and so on. In some cases it may be appropriate to implement a combination of the steps e.g. Steps 3, 4 and 5.

The list above indicates an "order of priority" for remedial measures for any hazard situation which Dundalk Institute of Technology will adapt.

The process of Risk Analysis is by numerical format.

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

The above risk analysis is incorporated into the School's **Safe Work Practice Sheets**

The Analysis takes into account who is exposed

The initial Risk Rating before controls are implemented

The Reduction Risk Rating after controls is in place

**A risk is the probability or likelihood of a hazard actually causing a degree of injury or damage.**

**A hazard is anything that can potentially cause harm.**

After a hazard has been identified, it is evaluated in order to assess what its impact would be if steps to control it were not taken. In practical terms, one determines the likelihood of an accident happening and the consequences of it happening.

There are inevitable difficulties in assessing risks. Some risks such as exposure to e.g.- Chemicals / Manual Handling / Lone Workers / Trainees may require physical or organisational measurements to be taken. Risk depends on many (often related) circumstances:-

Is anyone exposed to the hazard? Is the hazard likely to cause injury?

Is the hazard well controlled? Is the level of supervision adequate?

How long people are exposed and what are the levels of exposure that should not be exceeded (e.g. Equipment, chemicals, poor lifting techniques)

**Risk Assessment** will be carried out at least once a year in all of the different sites in the School. The Risk Assessment process adopted by the School of Engineering identifies hazards posed by activities within the School and quantifies the risk posed by same.

In most cases these hazards can be controlled by adhering to procedures detailed in the School's **Safe Work Practice Sheets** (Appendix III) which are developed on an as-needed basis and identified through regular area-by-area risk assessment / Inspection. As part of the annual Risk Assessment process, all Safe Work Practice Procedure Sheets will be reviewed and updated to ensure that they take account of any changing circumstances that have arisen during the course of the year, any changes to work practices, introduction of equipment, changes in legislation will also require updating as is necessary.

**Safe Work Practice Sheets** are available in the School of Engineering Administrative office, Heads of Departments, Workshop Locations, Laboratories and on the Institute's website

The list of these SWPS is also included in [Appendix III](#) of this document. More generic college wide SWPS are also to be adhered to and are available at:

The primary objective of the Safe Work Practice procedures is to eliminate, reduce or control any risks posed as a result of the hazards that exist throughout the School. These Safe Work Practice Procedures are also made available to all staff and students operating in any lab, workshop or classroom environment that is the subject of a risk assessment and safe work practice procedures.

Adherence to the Safe Work Practice Procedures is the primary means of risk control in the School of Engineering. However, hazards may arise from time to time, which are not covered by

these procedures. Under Section 13 (h)(i - iii) of the 2005 Safety, Health & Welfare at Work Act, all staff are required to report any hazards that they notice or observe to their employer. Within the School of Engineering, any hazard noted or observed by any member of staff must be reported to their immediate superior.

Incidents and Dangerous Occurrences must be notified to the relevant supervisor using the forms included in [Appendix IV](#).

## 5.0 Functional Area Safety Records

Functional Area safety records include but are not limited to the following documents:

1. Ancillary Safety Statement, including Safe Work Practice Sheets
2. Health and Safety Training Records
3. Accident, Incident and Near Miss Dangerous Occurrence Reports
4. Functional Area Safety Committee Meeting Records
5. Inspection Certificates (where applicable)

(1-5 ) can be located as follows for:

### (a) The School of Engineering

Record Type	Building	Room No.	Contact
Ancillary Safety Statement, including Safe Work Practice Sheets	North Block	School of Engineering Office, NC121	Orlagh Devine <a href="mailto:orlagh.devine@dkit.ie">orlagh.devine@dkit.ie</a> , ext. 2894
	North Block	<u>Offices</u>	
		Mr. Eugene Roe (HOS) NC126	<a href="mailto:eugene.roe@dkit.ie">eugene.roe@dkit.ie</a> ext. 2893
		Mr. Simon O'Neill (HOD) NC124	<a href="mailto:simon.oneill@dkit.ie">simon.oneill@dkit.ie</a> ext. 2847
		Mr. Noel McKenna (HOD) NC127	<a href="mailto:noel.mckenna@dkit.ie">noel.mckenna@dkit.ie</a> ext. 2891
		Mr. Pat McCormick (HOD) NC128	<a href="mailto:pat.mccormick@dkit.ie">pat.mccormick@dkit.ie</a> ext. 2551
		Mr. Pdraig McGuigan (Section Head) NW207	<a href="mailto:padraig.mcguigan@dkit.ie">padraig.mcguigan@dkit.ie</a> ext. 2698
	South Block	Mr James Mulvany (Section Head) NW216	<a href="mailto:james.mulvany@dkit.ie">james.mulvany@dkit.ie</a> ext 2520
		Mr. John Doherty (Section Head) S120	<a href="mailto:john.doherty@dkit.ie">john.doherty@dkit.ie</a> ext. 2692
Training Records	North Block	School of Engineering Office, NC121	Orlagh Devine <a href="mailto:orlagh.devine@dkit.ie">orlagh.devine@dkit.ie</a> , ext. 2894
Incident & Accident Reports	North Block	School of Engineering Office, NC121	Orlagh Devine <a href="mailto:orlagh.devine@dkit.ie">orlagh.devine@dkit.ie</a> , ext. 2894
FASC Meeting Records	North Block	School of Engineering Office, NC121	Orlagh Devine <a href="mailto:orlagh.devine@dkit.ie">orlagh.devine@dkit.ie</a> , ext. 2894
Inspection Certificates	North Block	School of Engineering Office, NC121	Orlagh Devine <a href="mailto:orlagh.devine@dkit.ie">orlagh.devine@dkit.ie</a> , ext. 2894

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# APPENDICES

## Appendix I

### **Functional Area Safety Committee 2015/2016**

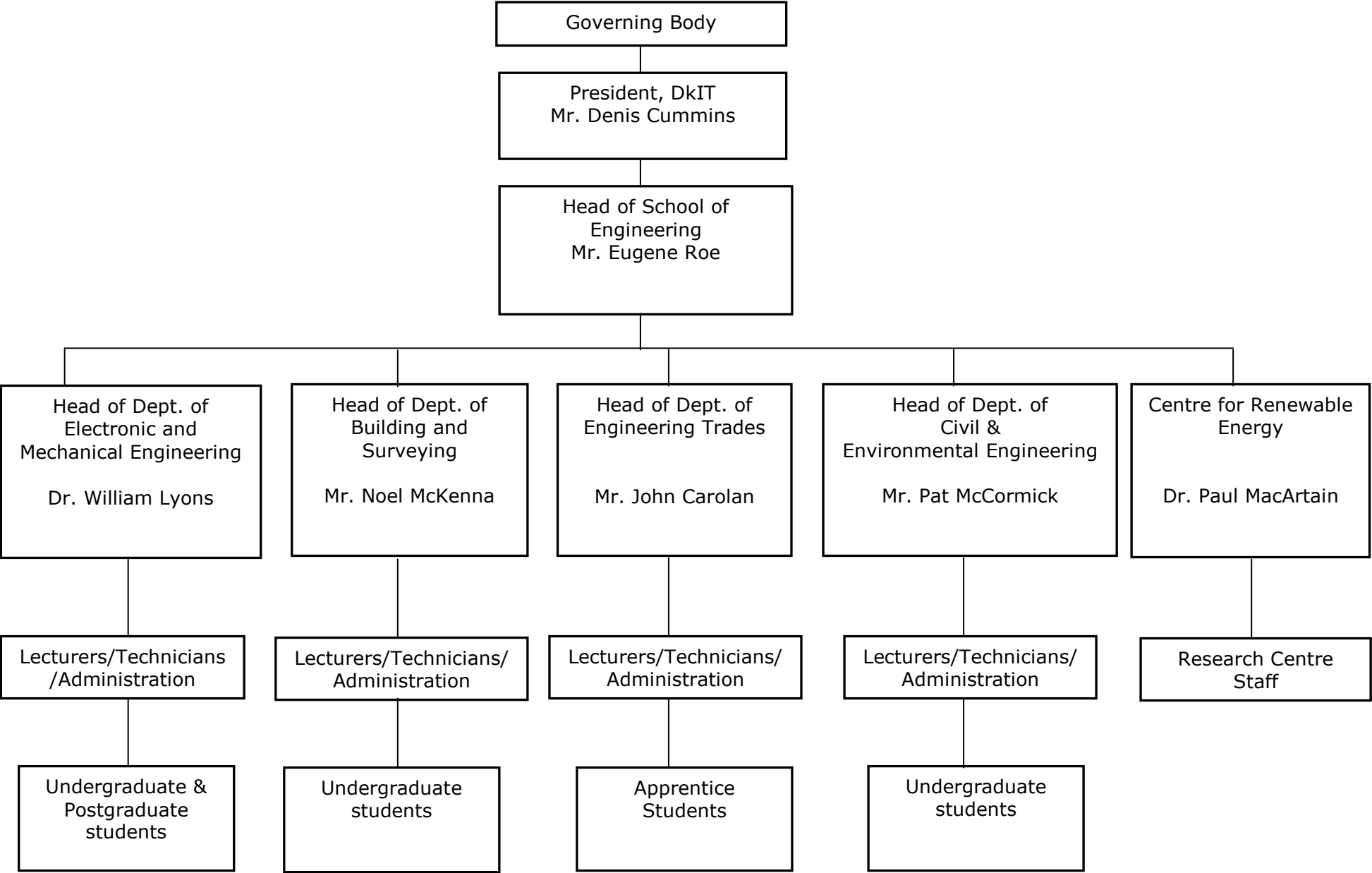
1. Eugene Roe, Head of School of Engineering (Chairperson)
2. Simon O'Neill, Head of Department of Engineering Trades
3. Pat McCormick, Head of Department of Mechanical and Electronic Engineering
4. Padraig McGuigan, Head of Section: Mechanical Engineering
5. James Mulvany, Head of Section: Electronic Engineering
6. Noel McKenna, Head of Department of the Built Environment
7. John Doherty, Head of Section Carpentry/ Joinery / Plumbing
8. Orlagh Devine, Senior Administration
9. Jim Connolly, Senior Technical Officer
10. Paul Egan, Lecturer
11. William Lyons, Lecturer
12. Brendan Walsh, Lecturer
13. Dermot Clarke, Lecturer
14. Paul Durcan, Lecturer

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## **Appendix II**

### **List of Responsible Persons within the School of Engineering**

<b>Head of School</b>	<b>Mr. Eugene Roe</b>
<b>Head of Dept of Mechanical &amp; Electronic Engineering</b>	<b>Mr. Pat McCormick</b>
<b>Head of Section: Mechanical Engineering</b>	<b>Mr. Padraig McGuigan</b>
<b>Head of Section: Electronic Engineering</b>	<b>Mr. James Mulvany</b>
<b>Head of Dept of the Built Environment</b>	<b>Mr. Noel McKenna</b>
<b>Head of Dept of Engineering Trades</b>	<b>Mr. Simon O'Neill</b>
<b>Head of Section: C&amp;J and Plumbing</b>	<b>Mr. John Doherty</b>
<b>Centre for Renewable Energy at Dundalk Institute of Technology (CREDIT)</b>	<b>Dr. Tom Dooley</b>



**School of Engineering  
Safety Management Organisation Chart**

# Appendix III

## Safe Work Practice Sheets

<b>SWPS ID</b>	<b>Mechanical Engineering Machinery Workshops W105 / W106 / W108</b>
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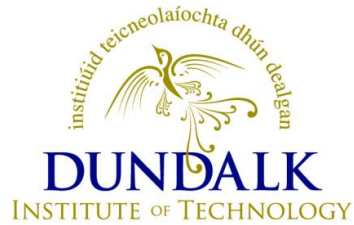
### General Routine Safe Work Practice Sheets Used in this Area:

GEN 001	<a href="#"><u>General Rules</u></a>
GEN 002	<a href="#"><u>Access and Egress</u></a>
GEN 003	<a href="#"><u>Fire Safety</u></a>
GEN 08	<a href="#"><u>Electrical Safety</u></a>
SWPS 05	<a href="#"><u>Chemical Agents Risk Assessments</u></a>
GEN 009	<a href="#"><u>Slips, Trips and Falls</u></a>
GEN 010	<a href="#"><u>Lone Person Working</u></a>
GEN 09	<a href="#"><u>Manual Handling</u></a>
GEN 019	<a href="#"><u>Storage Areas</u></a>
GEN 025	<a href="#"><u>General Workshop Safety</u></a>
GEN 026	<a href="#"><u>Use of Hand Tools</u></a>
SWPS 007	<a href="#"><u>Safe Use of Ladders / Stepladders</u></a>
GEN 027	<a href="#"><u>Cutters, Scalpels and Stanley Knives</u></a>
SWPS 013	<a href="#"><u>Noise</u></a>
SWPS 015	<a href="#"><u>General Health and Welfare Provisions</u></a>
SWPS 016	<a href="#"><u>Emergency Response</u></a>
SWPS 017	<a href="#"><u>Emergency Contact Numbers</u></a>

### Engineering Specific Safe Work Practice Sheets Used in this Area:

MEC 003	<a href="#"><u>Arc Welding (MMA, MIG, TIG)</u></a>
MEC 004	<a href="#"><u>Sheet Metal Bending and Folding Machine</u></a>
MOT 049	<a href="#"><u>Degreasing Bath</u></a>
MEC 007	<a href="#"><u>Bench and Pillar Drilling Machines</u></a>
MEC 009	<a href="#"><u>Flame-Fast Furnace</u></a>
MEC 010	<a href="#"><u>Gas Welding and Cutting</u></a>
MEC 011	<a href="#"><u>Grinding Machines (Pedestal)</u></a>
MEC 012	<a href="#"><u>Grinding (Surface Grinder)</u></a>
MEC 013	<a href="#"><u>Guillotine (Pedal Operated)</u></a>
MEC 014	<a href="#"><u>Steelworker Powered Guillotine</u></a>
MEC 015	<a href="#"><u>Hot Wire Strip Heater</u></a>
MEC 020	<a href="#"><u>Lathes (Harrison 300/400)</u></a>
MEC 022	<a href="#"><u>Milling Machines</u></a>
MEC 024	<a href="#"><u>Unimolder Plastics Molding Machine</u></a>
MEC 026	<a href="#"><u>Portable Electric Angle Grinder</u></a>
MEC 027	<a href="#"><u>Portable Electric Shears</u></a>
MEC 028	<a href="#"><u>Portable Spot Welder</u></a>
MEC 032	<a href="#"><u>Thermo Forming Centre - Portable</u></a>
MEC 033	<a href="#"><u>Vacuum Form Plastic Cutter</u></a>
MEC 036	<a href="#"><u>Air Compressor &amp; Hoses</u></a>
MEC 037	<a href="#"><u>Portable Hand Guillotine</u></a>
MEC 038	<a href="#"><u>Fixed Guillotine</u></a>
MEC 039	<a href="#"><u>Fly Press</u></a>

MEC 040	<a href="#"><u>Transportation &amp; Storage of Metal Stock</u></a>
MEC 041	<a href="#"><u>Carif 260, Semi-Automatic Band Saw</u></a>
MEC 042	<a href="#"><u>Portable Optimum Bit Grinder</u></a>
MEC 043	<a href="#"><u>Hurco TM 6</u></a>
MEC 044	<a href="#"><u>Hurco VM 10</u></a>
MEC 066	<a href="#"><u>Edwards Bench Mounted Bending Machine</u></a>
MEC 069	<a href="#"><u>Mitutoyu Optical Comparator</u></a>
MEC 070	<a href="#"><u>Scrolling Apparatus</u></a>
MEC 071	<a href="#"><u>Colchester Universal Workbenches</u></a>
MEC 079	<a href="#"><u>Hand Tools</u></a>
MEC 080	<a href="#"><u>Soldering</u></a>
MEC 081	<a href="#"><u>Corded and Cordless Hand Held Drills</u></a>
MEC 082	<a href="#"><u>Workshop Floor Cleaning</u></a>
PLU 019	<a href="#"><u>Gas Safety</u></a>



## **Appendix III**

### **General Routine Safe Work Practice Sheets**

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<b>Safe Work Practice Sheet</b> <b>General Rules</b>	Ref: SWPS 001
	Date: July 09
	Assessed by: E.Roe

#### Hazards

There is always an ever-present risk of accidents occurring due to lack of vigilance and awareness of staff and students

#### Person Exposed to Risk

☒ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

#### Work Description

Everyday working environment

#### Controls

- Smoking, eating and drinking is prohibited in all areas other than designated areas. Smoking is prohibited in all areas.
- Exercise care when opening or closing doors on entering or leaving rooms. Never run.
- Conduct yourself in a responsible manner and do not act in a way that could be dangerous to yourself or others. Refrain from indulging inappropriate behavior as it could have serious consequences.
- No student or member of staff should ever work alone in a Laboratory, Workshop, Service Duct or Plant Room, without prior notification to Line Manager.
- All bags and coats are to be left in designated areas. All work and teaching areas should be kept tidy when in use and left tidy when finished.
- All accidents however minor must be reported to immediate superior.
- No member of staff or student is to interfere with any workplace equipment.
- Report any malfunctioning or dangerous or defective equipment to immediate supervisor without delay. Never attempt to effect repairs, no matter how trivial.
- Become familiar with position and use of safety equipment for each area in which you work.
- Study carefully and obey the Safe Work Practice Sheets for any area in which you are required to work.
- Co-operate with Employer in fulfilling duties imposed under Section 13(1)(a- h) of the Safety, Health & Welfare Act 2005

#### Checks & Inspections

Constant vigilance and awareness

#### Information, Instruction & Training

Not applicable

***Personal protective equipment required (last resort)***

Not applicable

***Initial Risk Rating (without any control measures)***

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

#### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

#### Risk Assessment Review

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b> <b>Access and Egress</b>	Ref: SWPS 002
	Date: July 09
	Assessed by: E.Roe

### Hazards

Inadequate access and egress in the workplace can result in slips, trips and falls.  
Obstructed access roads and paths can also pose a risk of injury to pedestrians and to vehicle operators and can also delay emergency escape and emergency vehicle access.

### Person Exposed to Risk

✓ Students    ✓ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### Work Description

Everyday working environment on campus

### Controls

1. All doorways and access points in the workplace must be kept clear of obstructions.
2. All passageways and pedestrian routes must be kept clear from obstructions.
3. Materials must be stored in designated areas away from pedestrian and vehicular routes.
4. All stairways with more than 3 steps should be provided with handrails and maintained in good condition.
5. Adequate lighting must be provided throughout the Institute at all entry points, exit points and along corridors and passageways.
6. Workplaces must be kept clean and tidy at all times.
7. All spillages must be cleaned up immediately.
8. All cabling and hosing must be neatly tied off or ramped in order to prevent tripping.
9. Workplace floors must be kept in a level and even condition where possible in so far as is practicable. All holes and trip hazards should be removed, filled in or covered.
10. Trip hazards which cannot be removed must be clearly visible or signed as such.
11. Chairs, desks or drawers should never be used to access shelving or any other elevated area.
12. Stepladders or kick stools must always be used.
13. Vehicle drivers must exercise extreme caution when driving on Institute site.

All defects in flooring, lighting, stairwells, etc must be reported to the Estates Office via the Maintenance Request online system.

### Checks & Inspections

Constant vigilance and awareness.

### Information, Instruction & Training

Not applicable

### **Personal protective equipment required (last resort)**

Not applicable

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b> <b>Fire Safety</b>	Ref: SWPS 003
	Date: July 09
	Assessed by: E.Roe

### Hazards

The outbreak of fire can lead to:

- Serious bodily injury or fatality
- Damaged property or plant
- Disruption of premises causing loss of facilities **Person**

### Person Exposed to Risk

☒ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

### Work Description

There is always an ever-present risk of fire occurring in all workplaces. Common fire hazards include improperly stored combustible or flammable materials, the use of naked flames, faulty electrical equipment, the use of flammable fuels, the use of inappropriate equipment, the build up of flammable materials or wastes in the workplace and smoking in undesignated areas. The accidental release of chemical material may also lead to the outbreak of fire, especially if the material is pyrophoric, extremely flammable or is a strong oxidiser.

### Controls

The Institute is committed to providing a fire safety programme that guards against the outbreak of fire in all areas and also makes provisions for the safety of all persons in the event of a fire. The Institute would like to reiterate to all staff at this point that every employee has a responsibility to guard against the outbreak of fire in the workplace through the implementation of good fire safety practices and where applicable the adherence to the control measures outlined below.

Employees should also refer to specific fire risk assessments that apply to their specified places / type of work.

#### *Fire Detection, Equipment & Emergency Lighting*

Layout drawings, detailing the location of the fire detection and alarm systems, throughout the campus have been prepared by the Estates Office. Copies of these drawings are held by members of the Caretaking Staff, to assist in the identification of the location of any alarm signal.

Fire detection and alarm systems are installed and maintained in accordance with current standards. Emergency lighting systems are in operation in all parts of the Campus. These are installed to and regularly maintained in accordance with current standards.

Fire mains and Hydrants and Fire Hose Reels are inspected and maintained in accordance with current standards. The date of the most recent inspection is noted on each hose reel. Test reports on ring mains and hydrants are held in the Estates Office and Fire Registers. Portable fire extinguishers are inspected and maintained in accordance with current standards. The date of testing is noted on each extinguisher.

Copies of all testing and certificates are held in Estates Office in the Fire Register.

#### *Emergency Response*

1. Each building has in place an emergency plan detailing the response to be taken in the event of the sounding of a fire alarm or the discovery of a fire. Refer to [http://ww2.dkit.ie/about\\_dkit/health\\_safety/emergency\\_evacuations\\_procedures\\_manual](http://ww2.dkit.ie/about_dkit/health_safety/emergency_evacuations_procedures_manual) for further details.
2. Fire response procedures are displayed in prominent locations within the area covered by their provisions.
3. Emergency response procedures are tested at least annually by use of a fire drill.

#### *Procedural Controls*

1. It is prohibited to use a naked flame (outside of a laboratory area) or to engage in 'hot' work (outside of designated workshops) anywhere within the Institute without first obtaining a 'Hot Work Permit' from the Institute Estates Office. Hot work is defined as grinding, welding (all types), hot cutting, and any other work with the potential to generate a spark or an ignition source.
2. It is prohibited to disengage a fire detection device, remove a fire extinguisher from its designated location or to isolate a component of a fire safety system without the express permission of the Institute Estates Office.

#### *Training*

1. It is the responsibility of individuals within the Institute to ensure that they are familiar with the provisions of any relevant emergency procedures.
2. Fire safety training is available through the Staff Training & Development Officer for all interested parties.

#### *Means Of Escape*

1. All Institute premises will be provided with clearly signed suitable means of escape and emergency exits for use in the event of a fire.
2. All escape routes and emergency exits throughout a building / premises must be kept clear at all times.
3. It is the responsibility of all Institute employees to ensure that escape routes and emergency exits in their working area are kept free from obstruction.
4. No individual may obstruct or remove from service an escape route or emergency exit without prior arrangement with the Institute Estates Office.
5. In the event that employees have a concern regarding means of escape then they must contact their manager immediately. Urgent concerns can be conveyed directly to the Institute Estates Office.

#### *Hazardous Agents*

1. As part of a hazardous agent risk assessment fire safety provisions for handling the agent(s) in question must be detailed.
2. Flammable materials may only be handled and stored in accordance with the requirements of their Material Safety Data Sheets, with due regard being paid to their fire risks.
3. Flammable materials must be stored in a suitable storage area. The requirement for low voltage or flame proof wiring should be considered.
4. The large scale storage of flammable materials (>200l / kg) in a single location requires completion of a specific risk assessment prior to storage taking place.

1. Where new buildings are constructed by the Institute or existing buildings are substantially modified the requirements of Part B of the Building Regulations (1997) Technical Guidance Documents will be adhered to.
2. Smoking is prohibited in all indoor workplaces within the Institute.
3. Employees are encouraged to make themselves familiar with the location of alarm activation points and escape routes in their working areas.
4. Employees must not attempt to repair any electrical equipment unless they are competent to do so. All electrical repairs and installations within the University must only be completed by a competent person, following the rules laid down in the National Rules for the Electrical Installations, as prepared by the Electro-Technical Council of Ireland.
5. The amount of combustible materials stored within the workplace should be kept to a minimum.
6. In the event of an evacuation all persons must leave the workplace without exception and assembly at their designated assembly point.
7. Employees must adhere to any instructions given by Institute Fire Wardens or emergency services personnel in the event of an emergency.
8. Persons must not fight workplace fires unless they have been trained to do so and it is safe to do so.

***All employees are reminded of their statutory obligation to protect their own and their co-workers safety by guarding against the outbreak of fire in the workplace through the use of safe systems of work***

#### Checks & Inspections

#### Information, Instruction & Training

- Fire Drills
- Fire Warden Training
- Use of fire fighting equipment

#### **Personal protective equipment required (last resort)**

Not applicable

#### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

#### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

#### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b> <b>Electrical Safety</b>	Ref: SWPS 08
	Date: March 2009
	Assessed by: E. Bell

#### Hazards

- Electrocution
- Electric shock
- Burns
- Inadvertent starting of machines

#### Person Exposed to Risk

✓ Students    ✓ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

#### Work Description

A range of electrical appliances are used in the Institute. This Safe Work Practice Sheet covers Portable Appliance Testing and general electrical safety

#### Controls

- **General**
- Installation or repair work may only be carried out by qualified electricians.
- New installations will comply with the requirements of the General Application Regulations and the Electro-Technical Council of Ireland publication 'National Rules for Electrical Installations.
- Flexible cables will be adequately protected against external mechanical and heat damage.
- Flexible cables should not be run across floors or walkways. Where electrical cables have to be run across open floor areas ramps will be placed over them to prevent the tripping and damage to cables.
- Adequate fusing or excess protection, e.g. circuit breakers, must be provided for all fixed and portable equipment.
- RCDs should be tested at the beginning of each term.
- Areas around fuse boards will be kept clear of flammable materials and the fuse board cabinets will be kept closed at all times.
- Work on electrical appliances by contractors or work requiring isolation of electrical supplies requires an Electrical Work Permit. Buildings and Estates must be contacted.
- Staff must report defective equipment and take out of service Portable AC electrical appliances that may be subject to deterioration as a result of their use such as power supplies and oscilloscopes must be visually inspected and tested at regular intervals. The schedule of testing should be determined by following the Electrical Technical Councils guidelines available at [www.etci.ie/docs/ET215\(2008\).pdf](http://www.etci.ie/docs/ET215(2008).pdf). A record of testing and inspection must be kept by the relevant departments.
- Live working is prohibited except in circumstances where it is not possible to carry out the work in any other manner.

The following precautions must include as appropriate;

- the use of people who are properly trained and competent to work safely on live equipment
- the provision of adequate information to the person carrying out the work, about the live parts involved, the associated electrical installation and the likely risks, the use of suitable tools including insulated tools, equipment and protective clothing
- For example, insulating gloves, insulating boots and insulating rubber matting, the use of suitable insulated barriers or screens,
- the use of suitable instruments and test probes,
- accompaniment by a second person who is trained and able to act in an emergency, e.g. switch off power and give first aid treatment for electric shock,
- effective control of any area where there is danger from live parts.
- A safe system of work must be drawn up.

### Checks & Inspections

- Portable appliance testing must be carried out on certain portable AC electrical equipment
- RCDs tested once per term
- Electrical circuits tested every 3 years

### Information, Instruction & Training

- Trained First Aider/CPR (available when live working is carried out)

### **Personal protective equipment required (last resort)**

Safety boots

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

As and when process changes or yearly

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<b>Safe Work Practice Sheet</b> <b>Chemical Agents</b>	Ref: SWPS 05
	Date: 29/10/2008
	Assessed by: E. Bell Approved by: E. Roe

### Hazards

Exposure to certain chemical agents can cause a range of injuries from minor to serious long term damage. Exposure may be through ingestion, inhalation, skin absorption, absorption through the mucous membranes.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### Work Description

Staff and students may be exposed to a range of chemicals in the School including but not limited to;

- Petrol
- Cutting/cooling fluids
- Ferric chloride
- Solder
- Glues
- Cement/ Bitumen
- Hardwood dust
- Welding fume

Exposure frequency and duration is variable depending on the activity.

### Controls

- Material safety data sheets are obtained for all potentially hazardous chemicals or chemical agents and hard copies are kept with the School Safety Statement.
- A chemical agents risk assessment form (attached to this Safe Work Practice Sheet) is completed for each activity involving the use of chemicals as required by the Chemical Agents Regulations.
- Where a number of chemicals are associated with an activity they must be assessed together.
- The hazards associated with each chemical substance and the precautions that must be taken are brought to the attention of the users through the chemical agents risk assessment form.
- Where necessary local exhaust ventilation is installed and maintained.
- Appropriate personal protective equipment (PPE) is provided for staff. Students are alerted to the requirement for PPE.
- Hazardous chemicals are stored in accordance with the requirements set out in the Material Safety Data Sheet. Chemicals are not decanted into unmarked containers. Where chemicals are placed in other containers an appropriate hazard warning label is attached.
- Gas lines are marked with the gas name at intervals along their length.

### Checks & Inspections

- Local exhaust ventilation should be checked annually to ensure it is extracting efficiently.

### Information, Instruction & Training

The hazards associated with each chemical substance are brought to the attention of the users (Senior technical staff are responsible for informing other technical staff, lecturers are responsible for informing students)

### **Personal protective equipment required (last resort)**

Care must be taken in the selection of personal protective equipment, e.g. select the correct glove to ensure that the chemical does not readily break through  
Personal protective Equipment should be CE marked.

**Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

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**Form 2: DKIT School of Engineering Chemical Agents Risk Assessment.  
Rocol Multisol**

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**1. Location : Mechanical Workshop**

**2. Assessment carried out by: E. Bell, Integrated Risk Solutions**

**3. Date 29/10/08**

**4. Short description of the process involving the use of the chemical(s)** – indicate the frequency and duration of the process and who will be carrying it out - if necessary attach a written procedure for the process.

**Coolant used in lathe. Sump with coolant is cleaned out annually and new coolant added. Coolant is made up by adding 1 part Rocol Multisol to 20 parts water.**

**5. Hazardous Chemical Agents to be used      Amount      Physical Form**

<b>Rocol Multisol</b> – contains mineral oil, fatty acids, tall oil & reaction products of immuodiethanol and boric acid	<b>500 ml/3 times per year approx.</b>	<b>Liquid</b>

**6. Person Exposed to Risk**

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

**7. Indicate Hazard Classification (for all chemicals used)**

Explosive: ☐      Oxidising: ☐      Extremely Flammable: ☐  
Highly Flammable: ☐      Flammable: ☐      Very Toxic: ☐      Toxic: ☐  
Harmful: ☐      Irritant: ☒      Sensitiser: ☐  
Corrosive: ☐      Teratogen: ☐      Hazardous to the environment: ☒

**8. Potential routes of exposure**

Inhalation:      Skin Contact: ☒      Ingestion:

**9. Control Measures to ensure safe use of chemicals**

**9.1. PPE Required:** Lab Coat:      Safety Glasses:      Safety Goggles: Only if there is a risk of splashing when handling concentrated product.

Face Shield:      Gloves: (indicate type) Rubber gloves for concentrated product      Other: (give details)

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**9.2. Engineering Controls:** Fume Hood:      Local exhaust ventilation

Special storage arrangements : (give details) \_\_\_\_\_

**9.3. Emergency Response**

*(a)Fire (consult relevant MSDS for further information)*

Use foam, dry chemical or carbon dioxide, not water.

**(b)First Aid** (consult relevant MSDS for further information)

An MSDS must accompany all victims of exposure when seeking medical advice. Always consult an MSDS following an exposure to a hazardous agent.

- Flood eye with water for 15 minutes
- Wash skin with soap and water
- Wash mouth out with water. Do not induce vomiting. Seek medical attention.

**(c)Spill Response** (consult relevant MSDS for further information)

Use absorbent material. Wear gloves for clean up of concentrated product. No special precautions required.

**9.4. Further Risk Control Measures required**

*e.g. isolation of ignition sources; use of warning signage; the use of additional safety equipment; implementation of safe handling , transport and storage arrangements; availability of appropriate first aid equipment / antidotes, exclusion zones*

No additional requirements

**Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

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<b>Safe Work Practice Sheet</b> <b>Slips, Trips &amp; Falls</b>	Ref: SWPS 009
	Date: July 09
	Assessed by: E.Roe

## Hazards

Slips are caused by the presence of substances such as water, grease, oil, fats, soaps, granules, plastic sheets, packaging, leaves, ice etc deposited on the floor arising from the working conditions or in some cases the weather. Slip hazards can be found on both wet and dry surfaces.

Trips can be caused by such features as electric cables or compressed-air lines across walkways, curled-up or worn carpets, uneven floor surfaces and steps, or discarded work items.

Falls may be caused by slips or trips or when adjacent surfaces are at different levels leading to persons losing their balance because they had not anticipated the change in level. Slips or trips on stairs are particularly dangerous.

The hazards listed above are so ordinary and commonplace that people often accept them as part of normal living until they or someone close to them has an accident and is seriously hurt.

## Person Exposed to Risk

✓ Students   ✓ Employees   ✓ Public   ✓ Contractors   ✓ Visitors

## Work Description

Everyday activity on campus

## Controls

### Observe & Adhere to Health & Safety Authority Guidelines as below

- The starting point lies with everybody becoming aware of these hazards and taking appropriate action.
- Management must take responsibility for controlling these hazards and must assign appropriate responsibilities to staff. Clear policies should address what people need to do to identify and monitor slip, trip and fall hazards and the action to take once they identify a hazard.
- Slips, trips and falls must be considered in the workplace hazard assessment that is required by law. This assessment should take account of:
  - The type of hazard including how likely it is to occur
  - Characteristics of the workplace such as the nature and condition of floor surfaces, quality of lighting
  - Influence of the weather (e.g. rain, frost or leaves)
  - Maintenance and cleaning procedures
  - Workplace users
- Where workplaces are being modified or constructed there is an excellent opportunity to prevent slips and trips by selecting appropriate floor materials that are slip resistant and installed so as to minimise trip hazards.

### Nature of the hazard

In some work areas such as certain food processing activities slip hazards may not always be completely avoidable and the control measures will need to assume the hazard is always present.

- In other situations the floor surface may be non-slippery for most of the time but leaks from plant or bad weather may lead to the creation of a slip hazard. It only takes a small amount of liquid on a smooth floor to create a hazard. In these situations the immediate control measures will focus upon detection of liquids and the actions to be taken to remove the hazard or reduce it by the provision of warnings and cordoning off areas.
- Permanent trip hazards should be removed as far as possible by such measures as the rerouting of

pipes or cables, provision of more sockets to reduce long cable lengths, use of battery powered tools and the repair of uneven floor and stair surfaces.

- A good housekeeping regime will go a long way to reduce intermittent hazards from badly stored or discarded items. Materials should never be left or stored on stairs.
- Where changes in floor level cannot be avoided they should be clearly marked and the provision of handrails to control the movement of persons may be appropriate.
- Changes in level should not take people by surprise.

#### **Characteristics of your workplace**

- It is better to eliminate slip hazards by choosing a suitable surface rather than depending on cleaning regimes to keep a floor safe. Building designers should ensure that the intended appearance of a building does not compromise the choice of inherently safer floor options.
- Macro-rough surfaces (i.e. those that contain an aggregate) are recommended for areas that are expected to experience high levels of contamination. Floors that have hard particles throughout their thickness can maintain their slip resistance throughout their life but floors with a superficial layer of grit or slip resistant paint can become slippery as the layer is worn away.
- Profiled floors (ridges or blisters) are sometimes used in areas subject to slip hazards but these can become slippery over time as the profile becomes worn and contaminants can be left trapped within the profiles.
- Carpets or mats placed on smooth floors can pose both slip and trip hazards and, if used, should be securely fixed to the floor at their edges and at any joints.
- The slip resistance of steps is improved by the fitting of nosing's which protect the edge of the step from wear and help users to place their feet more accurately on it. Care has to be taken that the nosing itself does not constitute a hazard.
- The design of stairways in buildings will need to take account of Technical Guidance Documents B (Fire Safety), K (Stairways, etc) and M (Access for People with Disabilities) produced by the Department of Environment, Heritage and Local Government.
- Adequate lighting, including the avoidance of glare and shadows, is necessary to expose slip /trip hazards. Higher lighting levels are needed where older people are present.
- Poorly sited or excessive signage can distract people who are then less likely to notice slip or trip hazards.
- 

#### **The weather**

- Building entrances can become slippery due to the ingress of moisture, mud and debris in bad weather. Measures such as having a slightly higher internal air pressure in the vestibule or the provision of a suitably designed shelter or canopy above the entrance can reduce the ingress of rain. Another simple measure is the installation of doors that do not blow open in the wind.
- Where matting is provided it should be aligned with the way pedestrians use the entrance. It should be laid immediately inside the door entrance and extend across the full width of the door. The existence of wet footprints beyond the entrance or matting is usually a sign that existing controls are not sufficient.
- Where mats in mat-wells are prone to becoming waterlogged the provision of drainage holes should be considered.

#### **Maintenance and cleaning procedures**

- Floor cleaning procedures should be incorporated in the operation and maintenance procedures for a company. The procedure should specify the methods and materials to be used as the use of the wrong cleaning method can increase the area of hazard and level of risk. The cleaning agent used should be suitable for the floor surface and the type of contamination encountered. A build-up of polish or detergent residues should be avoided. The drying of floors after cleaning is most important for the control of slip hazards. Staff should be informed, trained and supervised with regard to:

- Cleaning and drying floors
- Importance of dealing with spillages/leaks

### "Cleaning as you go"

- Reporting hazards as they arise and any equipment defects contributing to slip hazards or problems with the cleaning equipment itself
- Prompt incident reporting
- Use of suitable footwear
- Cleaning should, where practical, be carried out when there are less people around.
- Cleaning activity should be organised so as to provide dry paths through areas being cleaned. It is better to restrict access to areas that are being cleaned by the use of barriers rather than depending on the use of cones or signs alone.
- Research has shown that forewarning people of a hazard can lead them to modifying their gait so as to anticipate the situation but attention must be paid to removing signs when the hazard has been dealt with; otherwise people will tend to ignore them if their experience tells them that the signs are always displayed irrespective of the conditions underfoot.
- Where existing unsuitable floor surfaces are identified, the hazard can be reduced by controlling contamination, using mats, treating the surface or in some cases replacing it altogether with a safer material.

### Workspace users

- Where there is control over access to the workspace, the risk of falls can be reduced by the introduction of a "sensible shoe" policy i.e. no high heels or loose fitting shoes. In addition: Shoe soles should have deep cleating and a well defined tread pattern.
- Safety footwear may not always be slip-resistant and purchasers should check that it is suitable for the conditions under which it is going to be used.
- Slip resistant shoes will not remain so if they become worn or contaminated underfoot.
- The risk of slipping while barefoot is often greater than when wearing shoes, so this factor needs to be taken into account in shower areas and in other tiled areas associated with swimming pools, etc
- Disposable plastic overshoes can have poor resistance on smooth floors
- In other workspaces where there is general public access there will greater dependence on the selection of floor material in combination with maintenance regimes to control slip, trip and fall hazards.

### Checks & Inspections

- Visual checks and Risk Assessments as required in each Functional Area

### Information, Instruction & Training

Not applicable

### **Personal protective equipment required (last resort)**

Not applicable

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk

Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

#### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

#### Risk Assessment Review

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b> <b>Lone Person Working</b>	Ref: SWPS 010 Date: March 09 Assessed by: E. Bell
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**Hazards**

- Persons working alone using hazardous chemicals or equipment may not be able to summons help in the event of an accident or spillage.
- Certain exit routes may not be available during out of hours working.
- Entrapment in areas or spaces due to negligence or accident

**Person Exposed to Risk**

☐ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

**Work Description**

**Definition of lone working**

Lone working/out of hours working is defined as follows:

Any Laboratory / Experimental work carried outside of 9 am - 5 pm Monday – Friday when there are no persons aware of your work within calling distance.

Any other work undertaken outside of 7 am-10 pm Monday – Friday and during the hours of 9am - 6pm on Saturday, Sunday & Bank Holidays.

All buildings must be vacated by 6pm on Saturdays, Sundays and Bank holidays to allow for full lock up. At Christmas & Easter the campus will close down for a specified number of days and access will only be granted under exceptional circumstances .

Lone working includes carrying out field work in hazardous terrain or in areas where there is a risk to personal safety.

Lone working may also include carrying out routine maintenance work in isolated areas such as roofs or plant-rooms.

**Controls**

**General**

- Lone working in laboratories is not permitted unless a risk assessment has been carried out in conjunction with an academic supervisor and the risk is deemed to be low. Typical work that may be allowed includes work on PCs, microscope work, viewing plates, taking items in and out of incubator.
- The supervisor may allow working on high risk activities if the person is competent (typically an experienced member of staff) and a buddy is in attendance.
- The supervisor may allow work on medium risk activities for competent researchers (with or without a buddy present).
- Where a person is working alone without other persons within shouting distance then a phone or mobile phone must be readily available. They must also notify a colleague of their intention, how long they intend to be working in the isolated area, and check back with the colleague at an agreed, pre-determined time, when the work in the isolated area is complete.
- Field work in hazardous terrain or where there is a risk of personal injury as a result of confrontation must not be carried out alone (see SWPS Fieldwork).
- Hazardous experiments must not be left unattended overnight.

**Out of hours access**

- If out of hours work is required permission must be sought from the Head of Department.

- All persons requiring 'Out of Hours' access must be aware of what to do in the event of an emergency, i.e. what emergency exit doors are available, how to raise the alarm, where to go etc.
- The Head of School must provide Security with the names and locations of persons working out of hours. The person must contact Security on leaving the building.
- Persons authorised to work out of hours must not admit any other person to the building out of hours. Persons claiming to be authorised but without a swipe access card or key should be referred to Security for access.
- Where the fire alarm is activated in the building after hours, those evacuating the building must assemble at the building fire assembly point. Otherwise emergency services will assume that they are still in the building.
- Researchers or Staff members who in exceptional circumstances, due to the nature of their research work, require access during 'Lock-Up' must seek authorisation for such access from Buildings and Estates.

### Checks & Inspections

Visual checks and Risk Assessments as required in each Functional Area

### Information, Instruction & Training

Not applicable

### Personal protective equipment required (last resort)

Not applicable

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

As and when process changes or yearly

### **Lone working/Out of Hours working**

	Name	Position	Date
Prepared by			
Reviewed by:			
Approved by			

Revision	Date	By	Description
1			
2			
3			

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<b>Safe Work Practice Sheet</b> <b>Manual Handling</b>	Ref: SWPS 09
	Date: 30/03/2011
	Approved by: E. Roe

### Hazards

Incorrect method of lifting  
 Attempting to lift something which is too heavy  
 Lifting sharp/awkward shapes  
 The main injuries associated with manual handling and lifting are:  
 Back strain, slipped disc, hernia,  
 Lacerations, crushing of hands or fingers.  
 Repetitive Strain Injury.  
 Bruised or broken toes or feet.  
 Various sprains, strains, etc.

### Person Exposed to Risk

☒ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

### Work Description

Staff and students may be required to lift or move heavy items from time to time including large pieces of wood, bags of aggregate, metal piping, moving rotating electrical boards, pushing/pulling trolleys and lifting engines and transmissions and various motor parts

### Controls

- Risk assessments must be carried out on manual handling tasks normally performed by staff. As a rule of thumb an assessment is required where weights are above the guideline weights set out by the Health and Safety Authority and reproduced overleaf in figure 1. The assessment should be in writing and set out on form 1 Manual handling assessment attached to this procedure.
- Manual handling will be avoided where possible. Mechanical or other means of moving or lifting will be used such as trolleys and winches.
- Staff will be provided with manual handling training where manual handling is a regular part of their job.
- Seek assistance where possible when lifting heavy items.

Consideration must be given to the arrangement of stored items so that heavier items are not stored near floor or above shoulder height.

### Risks

The injuries associated with objects involving, lifting, lowering, maneuvering and handling objects are:

- Back injury, including slipped disks. The effect of the injury may be cumulative over a period of years (as with chronic backache).
- Pulled muscles and strained ligaments.
- Note: once the back or any other part of the body “goes”, then it is easier to go again.

### Primary controls

- Trained in the correct manual handling techniques and requirements
- Whenever and wherever possible and practicable use the correct mechanical means to lift, lower or manoeuvre heavy or awkwardly shaped loads.
- Split large loads into several smaller loads if possible.

### Basic controls

## 1 Assessment

Carry out the following assessment process before you begin:

- Is it too heavy, too large, unwieldy or unstable?
- Will it require an unstable body posture position?
- Is the ground, floor or surface uneven or slippery?
- Are you able to maintain good posture while lifting?
- Will it require excessive lifting, lowering or carrying distances?
- Are you physically suited to carry out the task (e.g. physique, fitness, body strength)?
- Are you wearing suitable PPE (e.g. gloves, safety footwear)?

## 2 Safe to Manual Handle

When your assessment indicates that you can safely undertake the manual handling task, then proceed as detailed in section 3

Even when considered safe you should still use the correct mechanical means whenever and wherever possible and practicable.

## 3 If there is no alternative way then:

### Protect your back

- If you must lift, carry and move an object yourself or with others, then you must do so in accordance with the correct techniques that you have learned in training. These correct techniques are summarised as follows:
- Lifting: Stand close to the load, bend the knees, not the back. Get a firm grip of the load and rise up straight.
- Carrying: Keep the load close to the body, with back straight, and turn by pivoting your feet.
- Lowering: Lower the entire body bending the knees, with back straight.

### Special Controls

#### Loading, transporting & off-loading materials

- Use mechanical means to load heavy and awkward loads
- Wear gloves and boots to protect body from getting trapped between the load and any other surface.
- Secure and store safely on the transport vehicle

## Checks & Inspections

- Senior technician to monitor that correct manual handling technique is being used.
- Trolleys should be visually checked before use. Trolleys with damaged wheels should be taken out of service.

## Information, Instruction & Training

- Manual Handling Training provided to relevant staff. Manual Handling activities are monitored and refresher training and /or reinstruction is an integral part of the safety management programme.

## Personal protective equipment required (last resort)

## Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

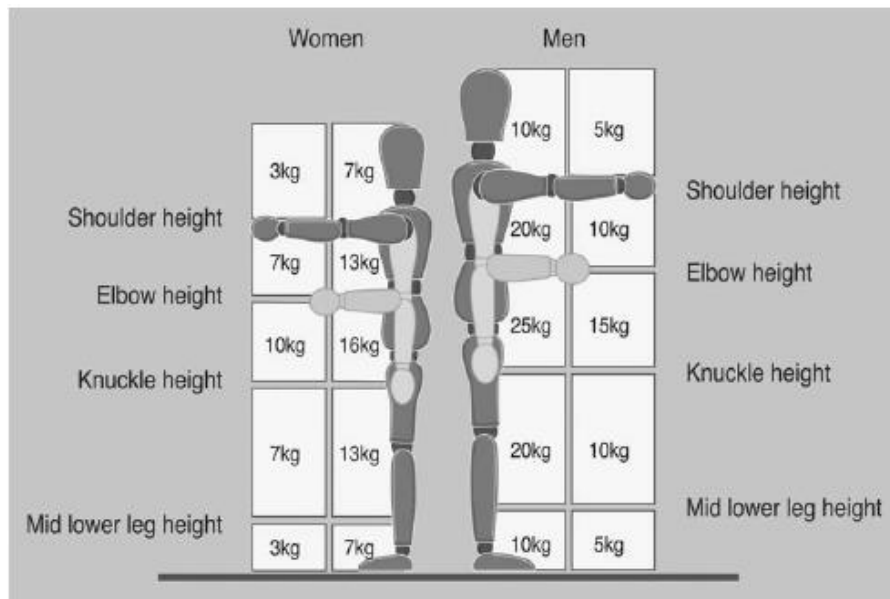


Figure 1. Guideline weights issued by the Health and Safety Authority.

## **Form 1 Manual handling risk assessment**

### **Section A – Preliminary**

**\* Circle as appropriate**

Job Description	Is an assessment needed? (i.e. Is there a potential risk for injury, and are the factors beyond the limits of the guidelines?)
Factors beyond the limits of the guideline weights? (See SWPS Manual handling)	Yes / No*

If 'yes' continue. If 'no' the assessment need go no further.

Operations covered by this assessment (detailed description):  Locations: Personnel involved: Date of assessment:	Diagrams or other information:
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**Section B** – See over for detailed analysis

**Section C** – Overall assessment of the risk of injury?      Low/Med/High\*

**Section D** – Remedial action to be taken:

Remedial steps that should be taken, in order of priority: 1. 2. 3. 4. 5. 6. 7. 8.	
Date by which action should be taken:	
Date for reassessment:	
Assessor's name:	Signature:

Section B – More detailed assessment, where necessary:					
Questions to consider:	If yes, tick appropriate level of risk			Problems occurring from the task (Make rough notes in this column in preparation for the possible remedial action to be taken).	Possible remedial action (Possible changes to be made to system/task, load, workplace/space, environment. Communication that is needed.
	Low	Med	High		
<b>The tasks</b> – do they involve: <ul style="list-style-type: none"> <li>• holding loads away from trunk?</li> <li>• twisting?</li> <li>• stooping?</li> <li>• reaching upwards?</li> <li>• large vertical movements?</li> <li>• long carrying distances?</li> <li>• strenuous pushing or pulling?</li> <li>• unpredictable movement of loads?</li> <li>• repetitive handling?</li> <li>• insufficient rest or recovery?</li> <li>• a work rate imposed by a process?</li> </ul>					
<b>The loads</b> – are they: <ul style="list-style-type: none"> <li>• heavy?</li> <li>• bulky / unwieldy?</li> <li>• difficult to grasp?</li> <li>• unstable / unpredictable?</li> <li>• intrinsically harmful (e.g. sharp / hot)?</li> </ul>					
<b>The working environment</b> – are there: <ul style="list-style-type: none"> <li>• constraints on posture?</li> <li>• poor floors?</li> <li>• variations in levels?</li> <li>• hot/cold humid conditions?</li> <li>• strong air movements?</li> <li>• poor lighting conditions?</li> </ul>					
<b>Individual capability</b> – does the job: <ul style="list-style-type: none"> <li>• require unusual capability?</li> <li>• hazard those with a health problem?</li> <li>• hazard those who are pregnant?</li> <li>• call for special information / training?</li> </ul>					
<b>Other factors:</b> Is movement or posture hindered by clothing or personal protective equipment?	YES / NO				

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<b>Safe Work Practice Sheet</b> <b>Storage Areas</b>	Ref: SWPS 019
	Date: July 09
	Assessed by: E.Roe

<b>Hazards</b> Slips, trips, falls Cut Back Injury Sprains Falling object Fire
<b>Person Exposed to Risk</b> ✓ Students    ✓ Employees <input type="checkbox"/> Public <input type="checkbox"/> Contractors <input type="checkbox"/> Visitors
<b>Work Description</b> Storage of hazardous and non-hazardous substances and materials
<b>Checks &amp; Inspections</b> <ul style="list-style-type: none"> <li>- Keep all pathways clear</li> <li>- Do not climb on shelves or storage racks</li> <li>- Do not climb on shelves to reach heights – use stepladders only</li> <li>- Keep aisleways clear</li> <li>- Do not keep any hazardous materials and substances in general storage areas – they must be kept in designated protected store located in Maintenance Building.</li> <li>- Store heavy items at low level.</li> <li>- Store medium weight items on middle shelves.</li> <li>- Store light items on high shelves.</li> <li>- Store items on shelves in such a way that they can not fall off.</li> <li>- Keep all hazardous materials and substances, papers, boxes, etc. away from electric heaters.</li> <li>- Store material lengths or racking parallel to the aisle.</li> <li>- Storage areas to be kept locked at all times.</li> <li>- Only authorized personnel are allowed access to Storage Areas.</li> <li>- Do not attempt to lift any loads unless you have received appropriate training in safe manual handling techniques.</li> <li>- Smoking, eating and drinking is prohibited in all storage areas.</li> </ul>

<b>Information, Instruction &amp; Training</b> Not applicable
<b>Personal protective equipment required (last resort)</b>
Not applicable
<b>Initial Risk Rating (without any control measures)</b> Probability : <input type="text" value="2"/> x Severity <input type="text" value="2"/> = Risk Factor <input type="text" value="4"/>

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

#### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

#### Risk Assessment Review

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b> <b>General Workshop Safety</b>	Ref: SWPS 025
	Date: Aug 09
	Assessed by: E.Roe

### Hazards

Improper storage of items can lead to items falling on staff,

- obstruction of exit routes,
- manual handling injuries,
- fire,
- failure of shelving.
- Operation of diesel or petrol engines in unventilated space may lead to asphyxiation
- Use of cutting equipment without extraction can lead to respiratory problems

### Person Exposed to Risk

☐ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

### Work Description

General activities in workshop

### Controls

- The Workshop is fitted with fire detection and alarm system and emergency lighting which is serviced regularly.
- Exit routes must be kept clear of obstruction at all times.
- Adequate shelving is provided to allow safe storage of equipment.
- Heavier items should be stored on middle shelves with lighter items above shoulder height & floor height.
- Where heavy items are stored the condition of shelving should be checked every 6 months by the Supervisor.
- Diesel and petrol is stored in appropriate marked containers in small quantities (<20 litres).
- Diesel or petrol engines must not be operated indoors unless ventilation is operational.
- Extraction ventilation must be serviced annually.
- Cutting equipment should be used in conjunction with extraction.

### Checks & Inspections

Extraction equipment must be serviced annually

### Information, Instruction & Training

Staff must be shown the correct use of extraction equipment

### ***Personal protective equipment required (last resort)***

Safety boots

### ***Initial Risk Rating (without any control measures)***

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b> <b>Use of hand tools</b>	Ref: SWPS 026
	Date: Aug 09
	Assessed by: E.Roe

### Hazards

Cuts  
Ejection of material  
Eye damage  
Stab injuries  
Head injuries

### Person Exposed to Risk

☐ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### Work Description

Using hand tools such as chisels, Stanley knives, hammers, drills etc.

### Controls

- Only staff with appropriate training or experience may use hand tools.
- The tools should be checked before use for signs of wear and tear. Damaged items should be taken out of service for repair or replacement.
- No power tools or electrical equipment of greater voltage than 110 volts shall be used in external locations.
- Where power tools have to be used off the main supply the source of supply must be fitted with residual current devices (ELCB) rated at 30 mAmps at 30 msec.
- All cable connections must be properly made; under no circumstances is insulation tape to be used for any repair or joint in extension.
- Power tools must be maintained in good condition with casing intact and label fitted showing voltage and other information. An annual formal documented inspection should be carried out by a competent person.
- Mains operated equipment must be electrically tested.
- Where there is a risk of particles hitting the eye, eye protection must be worn.
- Ear defenders will not normally be required as the duration of exposure is expected to be low and infrequent.
- Tools should not be left unattended in public areas when going for breaks.
- Staff should not repair tools unless they are trained to do so.
- Only use tools in the manner in which they were designed to be used.
- Return tools to the workshop at the end of each day.

### Checks & Inspections

- Check all tools before each use.
- Annual electrical test for mains operated equipment.

### Information, Instruction & Training

- Only trained staff may operate equipment. Training may be provided in house by another competent member of staff.

### ***Personal protective equipment required (last resort)***

Personal protective equipment varies with tool being used. Where there is a risk of flying

particles then eye protection should be worn.

**Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b> <b>Use of Ladders / Stepladders</b>	Ref: SWPS 007
	Date: 10/05/2011
	Assessed by: P. Killeen
	Approved by: E. Roe

### Hazards

- Physical injury due to fall of persons from ladder
- Objects dropped by ladder / stepladder user

### Person Exposed to Risk

✓ Students    ✓ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### NOTE:

The use of Ladders / stepladders is restricted to activities where the risk is deemed to be low (that it would be unlikely to cause injury), the work is of short duration (30mins max) or brief periods at a time, and where the risk assessment shows the use of other work equipment ( e.g. working platforms ) is not justified.

**Low Risk is considered when:** where the operator can maintain a handhold / grip on stile whilst placing a box on a shelf and where the user's both feet are fully supported on the same step / rung.

Ladders/ stepladders are not suitable for strenuous or heavy work or where the work involves carrying awkward objects, tools or equipment.

### Work Description

The use of Ladders / Stepladders by staff is infrequent. As part of their work technicians on occasions access shelving and storage areas to gain access to materials or parts.

### Controls

- Ladder work is restricted to work which can be carried out using one hand only and of short duration.
- The base of the ladder must be on firm and level ground.
- For extension ladders they must be at the correct angle of rest 75 degrees or a base to height ratio of 1:4 ( 1 out to every 4 units up ) and made secured ( tying at the top or bottom )
- Stepladders must be fully opened out.
- There must be no sideways loading.
- Maintain 3 points of contact ( both feet on the same rung, firm grip on the stile or handrail )
- Over reaching from ladders / stepladders will be avoided.
- Do not work on the top 3 rungs of a ladder, or top 2 steps for stepladders (regardless of length)
- Do not straddle ( or sit at the top ) of an A frame ladder.

### Checks & Inspections

- Ladders will be checked for the correct type of equipment for the job at hand.
- Ladders / Stepladders must be visually inspected before use.
- Inspection of ladders must be recorded on form GA3 for every 7 day of use or used for the first time.

### Information, Instruction & Training

- Operatives will be instructed to the safe use of ladders and the hazards which are to be avoided.
- Operatives to follow the controls
- Operatives to report any defects
- A further risk assessment will be necessary where the work activity is deemed to be medium or a high risk.

#### ***Personal protective equipment required (last resort)***

- PPE may be a requirement dependant on the Risk Assessment

#### ***Initial Risk Rating (without any control measures)***

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

#### ***Risk Reduction Rating (after controls introduced)***

Probability :  x Severity  = Risk Factor

#### ***Risk Assessment Review***

*Risk Assessment will be reviewed periodically*

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<b>Safe Work Practice Sheet</b> <b>Use of cutters, scalpel and stanley knives</b>	Ref: SWPS 027
	Date: March 09
	Assessed by: E. Bell

#### Hazards

- Cuts when taking blades in and out of handle
- Cuts while using equipment
- Cleaning staff receiving cuts if blades disposed of to general waste
- Eye injury if blade breaks while used with force for tasks other than cutting

#### Person Exposed to Risk

☒ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

#### Work Description

A range of cutting equipment is used in some areas by staff and students

#### Controls

- Where possible retractable blades or safety knives will be used.
- Blades must be disposed of to a designated sharps bin with a closable lid. Blades must never be disposed of to general waste.
- Users should use only sharp blades – blunt blades require more force and their use may result in injury
- Users should cut away from the body keeping the restraining hand well away from the blade.
- Unsheathed blades must never be carried in pockets or bags.
- Unsheathed blades must not be left in drawers or toolboxes.

#### Checks & Inspections

- Knives cutters used in classroom situations should be visually checked annually and damaged equipment removed from circulation.

#### Information, Instruction & Training

Students receive specific instruction on safe use of blades

#### **Personal protective equipment required (last resort)**

#### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk

Risk Factor = Probability x Severity

#### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

## **Risk Assessment Review**

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b> <b>Noise</b>	Ref: SWPS/ CJ 013
	Date 26/01/2011
	Assessed by: Paula Killeen Approved by: E. Roe

**Hazard:** Noise

Noise exposure can lead to hearing damage or poor concentration which can lead to incidents. Potential hearing damage due to a given sound depends on the sound level and duration of exposure. "Daily noise exposure level" is expressed as Lex 8h(db)(A) (time weighted average). Continuous noise levels can have the same energy content as varying sound levels. Peak sound pressure or instantaneous noise levels reached under the regulations will require particular measures as below

**Person Exposed to Risk**

✓ Students    ✓ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

**Work Description**

Noise associated with Workshop Machinery

**Controls**

As a rule of thumb you may be at risk if:

- you have to shout to be clearly heard by someone 1- 2 metres away
- your ears are still ringing after leaving the workplace
- the noise is intrusive – like a vacuum cleaner – for most of the day
- you work in a noisy environment, e.g. workshop

When noise exposure exceeds the exposure action value (80 dB(A)), information, training and hearing protection must be provided.

If the upper exposure action value (85 dB(A)) is exceeded,

- establish and implement technical and/ or organizational measures to reduce exposure to noise
- restrict access
- hearing protection
- hearing protection must be worn
- provide hearing checks
- Provide adequate information and training

***When using tools such as grinders, air operated pumps etc. Hearing protection must be worn.***

**Checks & Inspections**

- Instructions given when machine is shut down
- Technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction and Training

Supplies of ear defenders or other hearing protection will be made available for any Staff Member where it is not practicable to reduce the noise levels to a safe limit. These where issued must be worn at all times by both Staff and Student when operative is exposed to noise above the Above Upper Action level (85Db) or Exposure Limit(87Db).

### Personal protective equipment required (last resort)

hearing protection

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

Noise assessments and Health Surveillance will be part of the safety management programme

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<b>Safe Work Practice Sheet</b> <b>General Health and Welfare Provisions</b>	Ref: SWPS C/J 015
	Date: 2/02/2011
	Assessed by: P. Killeen
	Approved by: E. Roe

The workplace regulations ( general application ) regulations 2007 S.I. No. 299 in particular regulation 18 and 19 gives specific standards to be maintained in the place of work.

These regulations refer to adequate facilities for “taking meals / consumption of food” “cleanliness,” also that rest areas are “large enough”. These facilities must be kept in a state that is free from accumulations of any dirt, dust etc.. Regulation 18 states:

*(f) “the taking of meals by employees is prohibited at any location in the place of work where there is likely to be a risk to safety, health or welfare.”*

The workshop and store would not be deemed suitable as a place for taking meals ( which includes beverages ) for a number of reasons including the space limitations, the location of items stored at height, the lack of hygiene facilities and the fact that it is deemed a work area for a member of staff. The fact that it is a store within a workroom.

Regulation 19 states:

*An employer shall ensure that—*

*“(a) where, because of—*

*(i) the type of activity carried out, or*

*(ii) the presence of more than a certain number of employees, and*

*(iii) the safety, health and welfare of employees so requires,*

*employees are provided with an easily accessible rest room or appropriate rest area,”*

*providing relaxation during breaks,*

*(b) rest rooms are large enough and equipped with tables with easily cleaned surfaces and seats with backs, adequate for the number of employees,*

The workshop and store would not meet the criteria set out in section 19 above, because of the work activity carried out (where there is a presence of dirt and dust ) and ( it is deemed a work area ) and ( Insufficient space ). Therefore under both sections of the Safety, Health and Welfare at Work ( general application) regulations 2007 DkIT would be breaching the requirements.

**Washing, food preparation and eating areas are made available at various locations on the campus: The Well, The Coffee Dock, The Main Canteen, The Staff Room.**

#### **Information, Instruction**

To meet the requirements of Health and Safety Legislation and to ensure that good hygiene practices are employed at all times, it is prohibited to consume or bring into laboratories or workshops any drinks or beverages.

**Signed:**

\_\_\_\_\_  
Head of School of Engineering

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<b>EMERGENCY RESPONSE</b>	Ref: SWPS C/J 016
	Date: 26/01/2011
	Assessed by: P. Killeen Approved by: E. Roe

### Person Exposed to Risk

✓ Students    ✓ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### Work Description

Emergency protocol for everyday working environment.

### Emergency Contacts

- Dial 9 for an outside line, then 999 or 112 and you will be connected directly to the emergency services.
- Be prepared to give the following information:
- Information on the condition of the victim, if there is a casualty.
- Details of any hazards, i.e. fire/chemical/gas/radiation/structural collapse etc.
- Exact location of the accident (room number and building).
- Call the Estates Office (2671/2670) and give the above details.
- If deemed necessary, contact the Nurse (2777) and trained Department first aiders.
- Call Reception (500), ask them to alert the caretaker on duty and give them the above details.
- Report to the Head of Department, Head of School, and your Supervisor (where relevant).
- As soon as practically possible, report the accident on an accident/incident report form and submit to the Head of Department/ Head of School of Engineering.
- Emergency contact numbers are strategically located throughout the School of Engineering.

### Fire Fighting Equipment

The majority of fire-fighting equipment points are located in workshops, laboratories and on each floor in the School of Engineering building. There are a number of trained fire wardens in the School. Fire warden courses are run on a regular basis and are available through the Estates Office. The School abides by the Institute Policy and Procedures on fire safety.

### Information, Instruction & Training

All training in First Aid, Emergency Response, and Fire Safety/Wardens is available through consultation with your Head of Dept and HR Office. The School abides by the Institute Policy on first aid safety.

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<b>EMERGENCY CONTACT NUMBERS</b>	Ref: SWPS CJ 017
	Date: 26/01/2011
	Assessed by: P. Killeen Approved by: Eugene Roe

#### Person Exposed to Risk

☒ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

#### Work Description

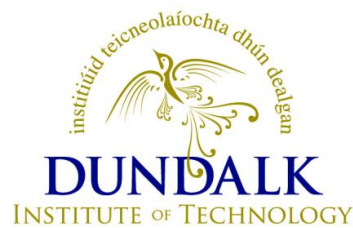
Important contact details which are available throughout all Departments in case of emergency

#### General

- Ambulance/Fire Brigade: 112 or 999
- Health Centre/Campus Nurse: 2777
- Doctor: Dr. Shane Gleeson: 2702/ 042 9320038
- Hospital: Louth Hospital: (042) 933 4701

**A List of First Aiders is prominently displayed in all workshops and Lab Locations**

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# **Appendix III**

## **Specific Safe Work Practice Sheets**

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<b>Safe Work Practice Sheet</b>  <b>Arc Welding (MMA, MIG, TIG)</b>	Ref: SWPS MEC 003
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Incorrectly connected, damaged or poorly maintained electrical wiring on welders can result in Electrocutation-Death. First second and or third degree burns

### Slips Trips & Falls

Untidy workspace, trailing electrical cables can cause tripping and result in breaking of limbs, cuts and bruises.

### Fumes

Inhalation of fumes from welding can cause respiratory disease and illness. Contact with skin can result in skin irritation.

### Manual Handling

Lifting of heavy metal loads or machinery for welding can cause acute or chronic musculoskeletal lower back disc injury.

### Fire

Sparks from welding can ignite fuel sources resulting in asphyxiation from smoke. First second and or third degree burns.

### Hot Surfaces

Contact with welded metal surfaces can result in first, second or third degree burns.

### Radiation

Exposure to ultra violet light from welding can result in acute severe burning to the eyes and skin, long term exposure may result in skin cancer and cataracts of the eyes.

### Sharps

Metal for welding may contain sharp edges or corners and result in major or minor lacerations to the hands and fingers.

### Person Exposed to Risk

☒ Students
 ☒ Employees
 ☐ Public
 ☐ Contractors
 ☐ Visitors

## Work Description

Welding of metal components or artefacts using Manual Metal Arc (MMA), Metal Inert Gas (MIG) or Tungsten Inert Gas (TIG) method.

## Controls

- The consumption of food and drink is not permitted in the work shop.
- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Loose or nylon clothing is not permitted when welding.
- Long hair should be neatly tied back or wear a well fitted cap.
- Hand jewellery must not be worn.
- Wear proper welding visor with approved filter glass.
- Do not look at welding arc with unprotected eyes.
- Protect the forearms and all exposed skin from exposure to arc rays, do not roll up sleeves.
- Protect the front of the body with suitable leather cape/apron.
- Wear suitable leather gloves to protect the wrists and hands.
- Wear suitable protective footwear.
- Follow the manual handling training when lifting heavy loads.
- Keep working area tidy and free from flammable materials and personal belongings.
- Ensure suitable fire extinguishing equipment is readily available and maintained in good condition.
- Ensure all electric cables, plugs and sockets are in good condition prior to use.
- Stand on a dry floor or duck-board and/or wear rubber-soled shoes/boots.
- Welding area must be properly ventilated. Use extract system at all times.
- Never drape or rap electrical cables around any body part.
- Screen off the area so that persons in the vicinity are protected from directly viewing the welding arc.
- Beware of the danger from hot metal when arc welding. N.B. cuffs on overalls, turn-ups on trousers, exposed long hair and low cut shoes are likely lodging places for sparks or globules of hot metal and slag.
- Allow sufficient cooling time before handling hot metal, use tongs or gloves where necessary
- Exercise caution and use gloves when handling metal sharps
- Use a descaling hammer or brush to remove welding slag.

## MIG or TIG Welding

- Do not touch the electrode while H.F. set is switched on
- Switch off the mains-power supply when not in use
- Switch off the contactor before changing the electrode or the nozzle.

## Checks & Inspections

- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE
- Ensure emergency shutdown devices are checked each term
- RCDs tested once per term
- Electrical circuits tested every 3 years
- Electric cables are inspected annually

## Information, Instruction & Training

- Students receive instruction before using equipment
- Students are supervised when using the equipment.
- PPE Training
- Manual handling training
- Chemical Handling training
- MSDS

#### Personal protective equipment required (last resort)

- Welding Gloves to be worn
- Suitable eye protection must be worn
- Apron/overalls to be worn
- **Glass Filters Shade 14GW, Arc-welding, TIG and MIG**
- **Equipment for eye and face protection BS1592:1949**

#### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY					
PROBABILITY		SEVERITY		RISK FACTOR	
Probable	3	Critical	3	1-3	Low Risk
Possible	2	Serious	2	4	Medium Risk
Unlikely	1	Minor	1	6-9	High Risk
Risk Factor = Probability x Severity					

#### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

#### Risk Assessment Review

*As and when process changes or yearly*

<b>Sheet Metal Bending and Folding Machines</b>	Ref: SWPS MEC 004
	20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Slips Trips & Falls

Untidy workspace or scrap metal on the ground can result in unsecure footing and slips & falling & breaking of limbs, cuts and bruises. Metal sheets stored against machine can cause trips & result in broken limbs cuts and bruises.

### Manual Handling

Carrying large heavy sheets of metal can overload the body and result in acute or chronic lower back disc injury or musculoskeletal injuries to the arms and neck.

### Mechanical

Crushing of hands and fingers if inserted into the machine when bending. Struck by moving parts of the machine resulting in concussion, bruising.

### Sharps

Sharp edges or corners on sheet metal can cause deep lacerations to the hands & other body parts.

### Flying Debris

Bending pieces of metal can result in metal breaking and flying thus resulting in loss of sight from metal flying fragments.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Bending sheet metal and other small cross-sectioned metal articles to particular shapes and angles

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- The consumption of food and drink is not permitted in the work shop.
- Loose clothing or items of jewellery must not be worn.
- Long hair must be neatly tied back.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Never sit or stand on the machine.
- Do not store metal sheets or materials on or leaning against the machine
- Measure and mark materials for bending on a work bench prior to bending
- Follow the manual handling training guidelines at all times
- Wear safety glasses.
- Wear leather work gloves when handling sheet metal stock.
- Ensure that hands and fingers are clear of the bending area at all times.
- Take heed of hazard warning notices.
- Observe bending machine surroundings when in use.

- Group gathering is not permitted when the machine is in operation.
- Wear safety glasses when operating the machine.

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures.
- Lecturers and technicians to monitor the wearing of PPE.

#### Information, Instruction & Training

- All students are given training before being allowed to use the bending machine.
- All students must be supervised by the lecturer when operating the bending machine.
- Manual handling training
- PPE training.

#### **Personal protective equipment required (last resort)**

- Safety glasses
- Leather work gloves
- Safety Boots

#### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

#### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

#### Risk Assessment Review

*As and when process changes or yearly*

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<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Degreasing Bath</b></p>	Ref: SWPS MOT 049
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Incorrectly connected, poorly maintained or damaged electrical cable or plugs of the degreasing machine can cause electrocution-death or first second and or third degree burns to the hands and body parts.

### Manual Handling

Topping up or emptying the degreaser of detergent requires lifting or carrying, lifting engine or gear parts in and out of the degreasing basin can result in acute or chronic lower back and or musculoskeletal injuries.

### Chemical

Immersing parts for degreasing with detergent, removing degreased parts for washing, brush cleaning parts, topping up or emptying the degreaser can result in splashing of detergent causing temporary or permanent loss of sight, burns to the hands and fingers or other body parts by contamination of clothing.

### Slips, Trips and Falls

Poor housekeeping, personal belongings, parts for cleaning lying on the ground, trailing power cable, spilled detergent lying on the ground can result in slipping and tripping causing fall impact head injuries and cuts and bruises.

### Fumes

Topping up the machine with detergent, removing cleaned parts, brushing parts down with detergent can result in the inhalation of detergent fumes causing acute or chronic respiratory illness.

### Fire

Detergent or engine components for degreasing can catch fire when in contact with an ignition source and result in first, second and or third degree burns.

### Falling Engine Parts

Lifting or removing engine or metal parts to or from the degreaser can slip and fall causing lower leg and feet crush injuries.

### Mechanical

Hands or fingers are inadvertently crushed when closing the lid of the degreaser.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

The machine is used for degreasing engine and gear box parts of grease, oil, wax, dirt etc.

## Controls

- All degreasing operations must be carried out in the degreasing bath in the Motor Shop.
- Students are not permitted to carry out this task.
- The Lecturer or technician must only carry out this task.

- Inspect the electrical cable and plug of the degreasing machine prior to use.
- Do not use the test unit if electrical cable or plugs are damaged in any way and remove from use for repair.
- Electrical repairs must be carried out by a competent person.
- Follow the manual handling training guide lines at all times when operating the degreaser.
- Always seek assistance when emptying the degreasing barrel or heavy engine parts.
- Safety glasses must be worn at all stages of the use and maintenance of the degreaser.
- Protective clothing i.e. overalls non-absorbent gloves must be worn (See PPE Required).
- Contaminated clothing must be removed immediately when in contact with degreaser.
- Ensure that the machine is plugged into the socket on the wall at the back of the machine.
- Spilled degreaser must be cleaned up immediately.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Parts for cleaning must never be stored on the ground around the machine, use the surrounding work benches.
- Ensure that there is adequate ventilation when operating the degreaser and that the area ventilation system is switched on.
- When possible close the lid of the machine for degreasing or draining parts from detergent.
- Never place hands or fingers between the lid and frame of the degreaser when closing the lid.
- Do not inhale fumes. Wear a mask.
- Do not use in the vicinity of welding operations.
- Do not use in the presence of naked flame or other source of ignition.
- Eating, drinking, smoking and using mobile phones are prohibited from all workshop and laboratory areas.
- Allow parts that are cleaned by detergent to drip dry in the detergent bath before removing.
- Rinse/wash component by immersing, washing or spraying with water.
- Wash both hands thoroughly when finished.
- Adhere to instruction in manufacturers Material Safety Data Sheets.
- All waste solvents must be disposed of according to Material Data Sheets.
- Appropriate fire extinguisher to be close at hand.
- Observe great care when using this process.

#### **Checks & Inspections**

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturer and technicians to monitor compliance with control measures.
- Operator to check extraction is operational before starting process.

#### **Information, Instruction & Training**

- MSDS
- Manual Handling training
- PPE Training
- Chemical Handling Training

#### ***Personal protective equipment required (last resort)***

- Safety glasses
- Industrial safety gloves (Black Gauntlet Gloves CE 0321, extended length 450mm)
- Protective apron/overalls
- Safety shoes/boots
- Safety Mask

**Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>  <b>Bench and Pillar Drilling Machines</b>	Ref: SWPS MEC 007
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Poorly connected, maintained or damaged electrical wiring can result in Electrocution-Death. First, second and or third degree burns.

### Mechanical

Wearing of loose clothing can cause entanglement with rotating drill resulting in cuts and bruises to the body. Crush or puncture injury by hand becoming trapped with descending drill. Blunt force injury from impact of unsecure machine or ejected objects from the machine. Eye/s injury from ejected drilled waste material or unsecured work materials.

### Hot Surfaces

Drilling metal objects generates heat and may result in first or second degree burns to the skin when in contact with.

### Slips, Trips and Falls

Untidy work area and trailing cables can cause falls that result in broken limbs, minor cuts and bruises.

### Ergonomics

Work tables that are too low or high can result in musculoskeletal injuries and cause lower back, neck, arm and hand injuries.

### Manual Handling

Lifting heavy objects for drilling can cause musculoskeletal injuries and result in lower back injuries.

### Sharps

Drilled material can create sharp surfaces and result in minor cuts to the hands.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Drilling holes in metallic and non-metallic materials, normally clamped in a vice.

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- The consumption of food and drink is not permitted in the work shop.
- Safety glasses must be worn at all times.
- Loose clothing such as open jackets, loose jumpers, ties etc. must not be worn when operating this machine.
- Wearing jewellery such as rings, necklaces etc. are not permitted.
- Long hair must be covered by cap or net or neatly tied back.
- Personal belongings must not be stored at or near the machine.
- Clutter must not be allowed to build up around the machine.
- Inspect the electrical cable and plug for any damage or defects prior to use. Do not use if damaged or

defected in any way and remove from use for repair by a competent person.

- Adjust the work table to the required working height.
- Inspect the cutting tool prior to use, do not use if damaged, all damaged cutting tools must be handed to the lecturer or technician. Students must not repair any damaged cutting tools, the Lecturer or the technician are only permitted to repair damaged cutting tools. New cutting tools must be obtained from the lecturer or technician.
- Ensure cutting tool is properly secured in machine chuck.
- Ensure work piece is properly secure in machine vice.
- Ensure vice is properly secured to machine table.
- When required, only use a copper or plastic mallet to tap down work piece or to tighten machine vice.
- Machine is never to be left unattended when running.
- Wear gloves or allow drill bit and drilled material to adequately cool down before handling
- Use a brush to clean down drilled material or machine, never use air to clean down.
- Take heed of hazard warning notices.

### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Ensure emergency shutdown devices are checked each term
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- All students are given training before being allowed to use drilling machines
- Manual Handling
- PPE Training

### Personal protective equipment required (last resort)

- Safety glasses
- Gloves
- Safety Boots

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY					
PROBABILITY		SEVERITY		RISK FACTOR	
Probable	3	Critical	3	1-3	Low Risk
Possible	2	Serious	2	4	Medium Risk
Unlikely	1	Minor	1	6-9	High Risk
Risk Factor = Probability x Severity					

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

As and when process changes or yearly

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<b>Safe Work Practice Sheet</b>  <b>Flame-Fast Furnace</b>	Ref: SWPS MEC 009
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Poorly connected or maintained electrical wiring can result electrocution-death First, second and or third degree burns.

### Chemicals

Inhalation of propane, molten metal vapours or carbon monoxide may cause Asphyxiation-death or unconsciousness due to the lack of oxygen.

### Slips Trips and Falls

Untidy work area and trailing cables can cause trips and falls that result in broken limbs, minor cuts and bruises.

### Fire

Sparks or hot surfaces may ignite fuel sources and result in asphyxiation from smoke.

### Temperature

Hot surfaces can cause first, second and or third degree burns to the hands and fingers.

### Manual Handling

Lifting heavy objects can cause lower back strain, neck and arm injuries.

### Explosions

Explosions may occur from flammable gas and result in ejected missiles causing serious to minor injuries to eyes, face and other body parts.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

The Flame-Fast furnace is used for melting aluminium for the purposes of producing metal castings.

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- The consumption of food and drink is not permitted in the work shop.
- Inspect the electrical cable for damage or defects prior to use, do not use if damaged or defected in any way and remove from use for repair.
- Loose or nylon clothing must not be worn.
- Long hair must be neatly tied back or a well fitted cap worn.
- Work space must be maintained free from clutter.

- Personal belongings are permitted beside or around the furnace.
- Jewellery must not be worn when operating the furnace.
- Fuel sources must not be stored at or near the furnace.
- Follow the manual handling training guidelines at all times
- Propane tank, pipework and fittings must be maintained in good condition.
- Ensure that correct type of fire extinguisher is located nearby.
- Use protective apron.
- Use safety glasses/goggles.
- Use appropriate tongs when handling hot surfaces.
- Use heat resistant gloves.
- Ensure that ventilation systems are switched on and operating properly.
- Take heed of hazard warning notices.

### Checks & Inspections

- All pipework, fittings, electrical cables are checked annually
- Flashback arrestors are replaced as soon as a replacement is indicated
- Ventilation system to be checked annually

### Information, Instruction & Training

- Student are only permitted to use this facility under close supervision of lecturer and/or technician
- PPE training
- Chemical Training
- Manual Handling Training
- MSDS

### **Personal protective equipment required (last resort)**

- Heat resistant apron
- Heat resistant gloves
- Safety glasses/goggles

### Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk
KEY							
PROBABILITY		SEVERITY		RISK FACTOR			
Probable	3	Critical	3	1-3 Low Risk			
Possible	2	Serious	2	4 Medium Risk			
Unlikely	1	Minor	1	6-9 High Risk			
Risk Factor = Probability x Severity							

### Risk Reduction Rating (after controls introduced)

Probability :	<input type="text" value="1"/>	x	Severity	<input type="text" value="3"/>	=	Risk Factor	<input type="text" value="3 Low Risk"/>
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### Risk Assessment Review

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>  <b>Gas Welding and Cutting</b>	Ref: SWPS MEC 010
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe
<b>Hazards</b>  <b>Electricity</b> Incorrect installation, damaged or poorly maintained electrical wiring can result in electrocution-death or major or minor burns.  <b>Chemicals</b> Inhalation of Acetylene may cause Asphyxiation-death or unconsciousness. Exposure to oxygen may cause eye and respiratory irritation.  <b>Fumes</b> Inhalation of smut when igniting acetylene can result in acute or respiratory discomfort and illness.  <b>Explosions</b> Explosions may occur from flammable gas resulting in ejected missiles causing serious to minor injuries to eyes, face and other body parts.  <b>Fire</b> Sparks or hot surfaces may ignite fuel sources and result in asphyxiation from smoke, first, second or third degree burns to the skin.  <b>Hot surfaces</b> Contact with hot surfaces can result in burns to the hands and fingers.  <b>Slips Trips and Falls</b> Untidy work area and trailing cables or hoses can cause falls that result in broken limbs, minor cuts and bruises.  <b>Manual Handling</b> Lifting or pulling heavy loads can result in acute or chronic lower back injury and or neck and arm injuries.  <b>Ergonomics</b> Welding pieces of metal that are too high or low can result in lower back and neck injuries.  <b>Bright Light</b> Burns to the back of the eyes can occur from looking into burning flame and cause permanent eye damage and discomfort  <b>Person Exposed to Risk</b>  <input checked="" type="checkbox"/> Students <input checked="" type="checkbox"/> Employees <input type="checkbox"/> Public <input type="checkbox"/> Contractors <input type="checkbox"/> Visitors	
<b>Work Description</b>  Using oxygen and acetylene for welding	
<b>Controls</b>  <ul style="list-style-type: none"> <li>Students are permitted to carry out this task, under correct instruction and the lecturer or technician's</li> </ul>	

supervision.

- The consumption of food and drink is not permitted at the workspace.
- Loose or nylon clothing must not be worn.
- Long hair must be neatly tied back or a well fitted cap worn.
- Personal belongings are not permitted beside or around the workspace.
- Jewellery must not be worn when operating gas welder.
- Wear proper welding visor with approved filter glass
- Protect the front of the body with suitable leather cape/apron.
- Wear suitable leather gloves to protect the wrists and hands.
- Wear suitable protective footwear.
- Beware of the danger from hot metal when gas welding and cutting. N.B. cuffs on overalls, turn-ups on trousers, exposed long hair and low cut shoes are likely lodging places for sparks or globules of hot metal and slag.
- Ensure the gas pressure is set correctly.
- Ensure gases and regulator valves are turned off when no longer required.
- Purge used lines into extract hood.
- Ensure extract fan is switched on when gas welding.
- Ensure damper on the extract hood is fully open. Close damper on all hoods not in use.
- Ensure the ignition of the acetylene is conducted directly under the extract hood in use.
- Ensure where possible no trailing gas torch hoses.
- Tidy all gas torch hoses up when no longer required.
- Wear gloves or use tongs when handling metal sharps or hot surfaces.
- Where possible hand file smooth sharp edges.
- Ensure work piece is at an adequate body height when welding.
- Never place gases at or near the mouth, nose or eyes.
- Keep working area tidy and free from flammable material.
- Welding and cutting must be performed in areas free from fire risk.
- Ensure suitable fire extinguishing equipment is readily available and maintained in good condition.
- Welding area must be properly ventilated
- Spark lighters are recommended.
- Follow the manual handling training guidelines at all times.

### Checks & Inspections

- All pipework, fittings are checked annually
- Flashback arrestors are replaced as soon as a replacement is indicated
- Ventilation system to be checked annually.

### Information, Instruction & Training

- PPE training
- Chemical Training
- Manual Handling Training
- Instruction is given on the safe use of the equipment
- Workshop and laboratory exercises are supervised by college staff
- The MSDS for each gas must be available in the work shop.

### **Personal protective equipment required (last resort)**

- Welding Gloves to be worn

- Approved filter safety glasses / visor must be worn
- Apron/overalls to be worn

### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

### **Risk Assessment Review**

*As and when process changes or yearly*

<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Grinding Machines (Pedestal)</b></p>	Ref: SWPS MEC 011
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Incorrectly installed, badly maintained or damaged electrical cables can result in electrocution-death and or first, second or third degree burns.

### Manual Handling

Lifting and holding heavy objects for grinding can cause acute or chronic lower back or musculoskeletal injuries.

### Mechanical

Moving parts can cause entanglement resulting in major or minor deep wounds to the face hands and arms. Contact with rotating wheel may result in hand/s becoming entrapped, cut and bruised.

### Slip Trips And Falls

Poor housekeeping, personal belongings, water on the floor and trailing cables can cause trips and slips causing falls that result in broken limbs, major and minor cuts and bruises.

### Vibration

Grinding pieces of metal for long periods of time can result in hand arm vibration – white finger causing damage to the nerves on the fingers and hands.

### Hot Surfaces

Grinding pieces of metal generates heat and can result in minor burns to the hands or fingers.

### Fire

The generation of sparks may result in a fire when in contact with flammable sources causing first, second and or third degree burns.

### Flying Debris

Damaged or defected grinding stone can shatter resulting in debris causing loss of sight and or bodily puncture wounds.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Hand held grinding and shaping of metallic components

## Controls

- Operators that have received formal abrasive wheel training may only operate this machine.
- Competent persons must only carry out mounting of an abrasive wheel.
- Group gatherings are not permitted at or around the machine when in use.
- Inspect the wheel for defects or damage prior to use, do not use if damaged in any way and remove from use.
- The consumption of food and drink is not permitted at the workspace.
- Loose or nylon clothing must not be worn.
- Long hair must be neatly tied back or a well fitted cap worn.
- Maintain good housekeeping and work area free from personal belongings at all times.

- Jewellery must not be worn when operating grinder machine.
- Group gathering around the machine is not permitted.
- Inspect the machine electrical cables and plug for damage or defects prior to use, do not use if damaged or defected in any way and remove from use for repair by a competent person.
- Eye protection must be used at all times.
- Wheel guard/visor to be in position when grinding is being carried out.
- Machine is never to be left unattended when running.
- Never touch the rotating stone with hands or fingers
- Wheel dressing must only be carried out by trained person.
- Water coolant is permitted when using this machine, Water on the floor must be dried immediately.
- Use a tongs or metal grips to hold pieces of metal.
- Avoid using the machine for extended periods of time, tend to other duties for periods of rest.
- Only trained technicians and apprentices in training are permitted to operate this machine.
- Flammable materials must never be stored at or near the machine.

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

#### Information, Instruction & Training

- Only trained technicians and apprentices in training are allowed to operate this machine.
- Only trained technicians are allowed to replace a grinding wheel.
- Abrasive wheel training in accordance with S.I. No. 30/1982 - Safety in Industry (Abrasive Wheels) Regulations, 1982.
- PPE Training
- Manual Handling

#### Personal protective equipment required (last resort)

- Safety glasses
- Safety Boots

#### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk

Risk Factor = Probability x Severity

#### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

#### Risk Assessment Review

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b>  <b>Grinder (Surface Grinder)</b>	Ref: SWPS MEC 012
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Incorrectly installed, damaged or badly maintained electrical cables can result in electrocution-death and or first, second or third degree burns.

### Manual Handling

Lifting and carrying heavy metal objects can cause acute or chronic lower back and or musculoskeletal injuries.

### Mechanical

Rotating parts of the machine can cause entanglement resulting in major or minor deep wounds to the face hands and arms. Contact with rotating wheel may result in hand/s becoming entrapped.

### Slip Trips And Falls

Untidy work, oil on ground can cause slips, trips that result falls, broken limbs, major, minor cuts and bruises.

### Flying Debris

Shattered grind stone may result in high speed flying debris resulting in loss of sight, major or minor puncture wounds

### Chemicals

Contact with machine cooling oil can result in minor skin and eye irritation.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Fine surface grinding of metallic components and artefacts

## Controls

- Operators that have received formal abrasive wheel training may only operate this machine.
- Students are not permitted to use this machine.
- The consumption of food and drink is not permitted at the workspace
- Loose or nylon clothing must not be worn.
- Long hair must be neatly tied back or a well fitted cap worn.
- Personal belongings are not permitted beside or around workspace.
- Maintain clear and clean workspace all times
- Jewellery must not be worn when operating grinder machine.
- Group gathering around the machine is not permitted.
- Machine must not be left unattended when running
- Do not run the speed of the machine above the manufacturer's recommendations.
- Do not reach above or around the moving wheel.
- Follow the manufacturer's instruction for mounting grinding wheel.
- Inspect the machine electrical cables and plug for damage or defects prior to use, do not use if damaged or defected in any way and remove from use for repair by a competent person.
- Safety glasses must be worn at all times
- Work piece must be clamped securely to magnetic table. Ensure magnetic chuck is turned on by trying to remove work from it. Ensure machine guards are in place prior to operating the machine and that the guard

covers at least half the grinding wheel.

- Keep face of the wheel evenly dressed.
- Take heed of hazard warning notices
- Only trained technicians may change and set up a grinding wheel.
- Clean the magnetic chuck with a cloth.
- Check that the magnetic chuck has been turned on by trying to remove work from the chuck.
- Check that the wheel clears the work before starting the grinder.
- Run a new grinding wheel for about one minute before engaging the wheel into the work.
- Stand to one side of the wheel before starting the grinder.
- Turn off coolant before stopping the wheel to avoid creating an out-of-balance condition.
- Keep the working surface clear of scraps, tools and materials.
- Keep the floor around the grinder clean and free of oil and grease.
- Wash hands thoroughly when in contact with coolant oil.
- Follow the manual handling training guidelines at all times.

### Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Ensure interlocks and emergency shutdown devices are checked each term
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- Only trained technicians are permitted to change and set up a grinding wheel.
- Abrasive wheel training in accordance with S.I. No. 30/1982 - Safety in Industry (Abrasive Wheels) Regulations, 1982.
- PPE Training
- Manual Handling
- MSDS

### Personal protective equipment required (last resort)

- Safety glasses
- Safety Boots

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

As and when process changes or yearly

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<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Guillotine (Pedal Operated)</b></p>	Ref: SWPS MEC 013
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Manual Handling

Lifting, carrying and pushing sheet metal for cutting can result in acute or chronic lower back injury and neck and arm injuries.

### Sharps

Thin pieces of metal sheets, corners of metal sheets and damaged pieces of metal can cause deep lacerations to the hands, arms, face and other body parts.

### Slips, Trips & Falls

Untidy work space, poorhouse keeping can cause individuals to trip or slip resulting in broken limbs, concussion, major and minor cuts and bruises.

### Mechanical

Moving parts of machinery can result in crushing or breaking fingers, severing of fingers from shearing action of cutting blades.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Cutting sheet and strip metal into particular shapes and lengths

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Food or drink must not be consumed in workshop.
- Loose clothing is not permitted.
- Long hair must be tied back neatly.
- Personal belongings are not permitted beside or around workspace.
- Maintain clear and clean workspace all times
- Jewellery must not be worn when operating machine.
- Group gathering around machine is not permitted.
- Wear safety glasses at all times.
- Do not touch cutting blade with bare hands
- Measure and mark metal sheets for cutting prior to using the machine.
- Follow the manual handling training guidelines at all times. When required, seek assistance in lifting and holding large cut offs of metal sheets.
- Wear leather work gloves when handling sheet metal stock.
- Always ensure secure footing when operating the machine.
- Ensure that hands and fingers are clear of the cutting area at all times.
- Hands and fingers must remain at the front stop of the machine when cutting.
- On completion of cutting, tidy the machine workspace and floor from all metal sheet cut offs.

- Take heed of hazard warning notices.

### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- All students are given training before being allowed to use the guillotine
- All students must be supervised when operating the guillotine
- Manual Handling Training

### **Personal protective equipment required (last resort)**

- Safety glasses
- Leather work gloves
- Safety boots

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Steelworker Powered Guillotine</b></p>	Ref: SWPS MEC 014
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Incorrectly wired or damaged cables can result in electrocution-death, first, second or third degree burns.

### Mechanical

Contact with machine cutting tool can result shearing of fingers, contact with machine puncher may cause crushing injuries to hands and fingers, contact with notching tool can result in entrapment and loss of fingers.

### Sharps

Cutting, notching and punching pieces of metal can result in sharp edges, corners and surfaces on machined and scrap pieces of metal and cause lacerations to the hands, face, eyes.

### Slips, trips and falls

Trailing power cable and untidy work area can impede secure footing and result in falls that cause concussion, major or minor cuts and bruises and musculoskeletal injuries.

### Chemicals

Filling up the machine oil reserves can cause skin and eye irritation from splashing.

### Hydraulics

Contact with hydraulic hot fluid may result in first, second or third degree burns, damage to the skin from injection or cuts and bruises from flying hydraulic lines.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Cutting medium sized cross-sectioned metal bar-stock to length, punching and notching sheet metal.

## Controls

- Students are not permitted to use the machine. Lecturers and technicians are only permitted to use this machine.
- Food or drink must not be consumed in workshop.
- Loose clothing is not permitted.
- Long hair must be tied back neatly.
- Personal belongings are not permitted beside or around workspace.
- Maintain clear and clean workspace all times
- Jewellery must not be worn when operating machine.
- Group gathering around machine is not permitted.
- Machine isolator must be locked (tag out / lock out) when machine is not in use.
- Emergency stop button must be pressed stop and power switch must be in off position when machine is not in use.
- Isolator power switch lock and key is under the control of the technician.

- Ensure electrical power cable of on/off foot pedal and machine are free from defects prior to use. Do not use if damaged. Competent persons must only carry out repairs to damaged power cables.
- Ensure all machine guards (Notching, Puncher, and Guillotine X 2) are in place prior to use.
- Ensure all machine panels are in place prior to use
- When required seek assistance when cutting large sections of material.
- Place foot pedal to the required (Notching, Punching or Guillotine) part of machine in use.
- Wear safety glasses.
- Wear gloves when topping up with hydraulic oil.
- Never touch leaking hydraulic fluid and ensure machine is turned off
- Wear leather work gloves when handling sheet metal stock.
- Ensure that hands and fingers are clear of the cutting area at all times.
- Take heed of hazard warning notices.

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School

#### Information, Instruction & Training

- Only trained technicians are allowed to operate this machine
- Manual Handling Training
- PPE Training
- Chemical Training
- MSDS

#### Personal protective equipment required (last resort)

- Safety glasses
- Leather work gloves
- Safety Boots

#### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

#### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

#### Risk Assessment Review

*As and when process changes or yearly*

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<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Hot Wire Strip Heater</b></p>	Ref: SWPS MEC 015
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Mechanical

Contact with the bending arm crushing of fingers resulting in bruising. Contact with the bending arm can cause entrapment resulting in broken fingers.

### Electricity

Incorrectly wired or damaged cables can result in electrocution-death, first, second and or third degree burns.

### Temperature

Machine hot wire, over heated material surfaces can cause first, second and or third degree burns.

### Manual Handling

Lifting, carrying of the machine can result in lower back acute and chronic injury.

### Slips trip and falls

Machine trailing cables, untidy work area can cause trips and result in falling injuries such as concussion, broken limbs, major and minor cuts and bruises.

### Fumes

Inhalation of fumes from overheated materials can result in acute or chronic respiratory illness.

### Fire

Combustible material in contact with heated wire, resulting first, second and or third degree burns, acute or chronic respiratory illness from inhalation of smoke.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

This machine clamps and holds Perspex and plastic sheeting. A heated wire element softens the material along a narrow straight line. The material can then be bent / folded along that line. On cooling, the material re-hardens thereby retaining its new folded shape.

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Food or drink must not be consumed in workshop.
- Loose or nylon clothing is not permitted.
- Long hair must be tied back neatly.
- Personal belongings are not permitted beside or around workspace.
- Maintain clear and clean workspace all times
- Jewellery must not be worn when operating the machine.
- Group gathering around machine is not permitted.
- Ensure materials are not stored on the machine.
- Ensure electric cable and plug are free from defects (do not use if damaged) prior to use. Only competent person/s can carry out repairs to damaged plug and cables. Follow manual handling guidelines when

transporting machine.

- Ensure the machine is used in a well-ventilated place.
- Flammable liquids or materials must not be stored on or near the machine.
- Do not place fingers underneath the machine bending arm.
- Never leave the machine unattended when in use.
- Only use materials suitable for heat bending (Perspex and acrylic sheets).
- Mark and measure working material using a china-graph pencil prior to using the machine.
- Prior to switching the machine on, insert the measured working material into the machine and adjust heating wire into the required position.
- Avoid over heating of work materials. Read and follow the manufacturer's heating guidelines on the face plate of the machine. When required temperature is achieved bend the material to the desired angle by using the lever arm on the machine.
- Do not place bare hands, or clothing on or near the heating wire or hot working materials.
- Place the bending arm over the heating wire when work is completed.
- Turn off and unplug the machine when no longer required.
- Wear heat resistant gloves
- Safety glasses must be worn

### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- All students are given training before being allowed to use the hot wire bending machine
- PPE training
- Manual Handling training
- MSDS

### Personal protective equipment required (last resort)

- Heat resistant gloves
- Safety glasses
- Safety Boots

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

As and when process changes or yearly

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<b>Safe Work Practice Sheet</b>  <b>Lathes (Harrison 300/400)</b>	Ref: SWPS MEC 020
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe
<b>Hazards</b>  <b>Electricity</b> Incorrectly wired or damaged cables can result in electrocution-death, first, second and or third degree burns.  <b>Manual Handling</b> Lifting and carrying chuck heads, pushing and pulling tail stock can result in acute lower back acute injuries.  <b>Mechanical</b> Loose clothing or long hair can become entangled with rotating shaft or chuck head and result in asphyxiation. Entrapment, fingers in contact with rotating parts, resulting in loss of fingers, broken bones, major and minor injuries.  <b>Hot Surfaces</b> Contact with machined surfaces or hot cutting tools can cause minor burns to the hands and fingers.  <b>Sharps</b> Contact with machine cutting tool and generated swarf machined material can result in major or minors lacerations to hands.  <b>Noise</b> Poorly maintained machinery, incorrect cutting of materials can cause noise resulting in acute temporary hearing loss, discomfort or chronic hearing problems.  <b>Slips trips and fall</b> Untidy work area, poorly placed floor mats can cause slipping & tripping that results in falling injuries, concussion, broken limbs, major and minor cuts and bruises.  <b>Chemicals</b> Contact with machine cooling or cutting oil may cause skin acne, slight irritation to the skin.  <b>Flying Debris / Missiles</b> Ejected cutting material or oil can come into contact with eyes and result in loss of sight or temporary eye discomfort. Ejected chuck key and work piece can cause impact injuries, loss of sight concussion cuts and bruises.  <b>Person Exposed to Risk</b> <input checked="" type="checkbox"/> Students <input checked="" type="checkbox"/> Employees <input type="checkbox"/> Public <input type="checkbox"/> Contractors <input type="checkbox"/> Visitors	
<b>Work Description</b>  Machining cylindrical part, components and artefacts mainly from metallic stock	
<b>Controls</b> <ul style="list-style-type: none"> <li>• Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision. .</li> <li>• Inspect the machine electrical cable and plugs for damage or defects prior to use, do not use if damaged or defected in any way and remove from use for repair.</li> <li>• Food or drink must not be consumed in workshop.</li> <li>• Personal belongings are not permitted beside or around workspace.</li> <li>• Maintain clear and clean workspace all times.</li> <li>• Group gathering around machine is not permitted (only under the lecturer's instruction).</li> </ul>	

- Non work materials must not be stored on the machine.
- Ensure machine parts and working materials are firmly stored on the head stock. Do not stand materials or parts top heavy.
- Ensure all machine guards are in place prior to operating the machine.
- Safety glasses must be worn at all times.
- Lecturers and technicians are only permitted to change chuck heads.
- Rotating Chuck head must come to a complete stop prior to loading or changing work pieces or chuck head.
- Chuck guard must be used where practical.
- Ensure work piece is properly secured in machine chuck.
- Remove chuck key immediately after tightening or releasing workpiece.
- Loose clothing such as open jackets, loose jumpers, ties etc must not be worn when operating this machine.
- Long hair must be covered by cap or hair net or tied back neatly.
- Jewellery such as rings, chains and necklaces must not be worn when operating this machine.
- Machine is never to be left unattended when running.
- Use proper manual handling practice when loading or unloading heavy or awkward work pieces or chucks.
- Ensure secure firm footing at all times, do not over reach when operating the machine.
- Take heed of hazard warning notices.
- Only use a brush to brush down machine, do not use air or bare hands.
- All swarf must be brushed down off the top of machine surfaces into the machine sump.
- Empty the sump when required.
- Exercise caution when handling cutting tools or machined materials (swarf etc.).

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Ensure interlocks and emergency shutdown devices are checked each term
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

#### Information, Instruction & Training

- Only trained operators are allowed to operate the lathe unsupervised.
- All students are given training before being allowed to use the lathe.
- All students must be supervised when operating the lathe.
- Manual Handling Training.
- PPE Training
- Chemical Handling Training
- MSDS

#### **Personal protective equipment required (last resort)**

- Safety glasses
- Cap / hair net
- Safety Boots

#### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Milling Machines</b></p>	Ref: SWPS MEC 022
	Date: 20/07/2014
	Revision no. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## **Hazards**

### **Electricity**

Incorrectly wired or damaged electrical cables may cause electrocution-death, first, second and third degree burns.

### **Chemicals**

Contact with cooling and cutting fluid can result in minor eye and skin irritation

### **Mechanical**

Contact with rotating cutting tool can result in entanglement and major or minor injuries, cuts and bruises

### **Sharps**

Contact with machine tools and machined material can result in major and minor lacerations to the hands and fingers.

### **Ejected materials**

Unsecured vice or work materials may be ejected and cause blunt force body injuries. Machined material or disintegrated broken cutting tools can generate flying parts and cause loss of sight, major and minor lacerations and puncture wounds to the body.

### **Pneumatics**

Incorrectly fitted or damaged air lines can result in whipping hose and cause loss of sight, major or minor lacerations and bruising to the body.

### **Slips, trips and falls**

Poor housekeeping, untidy work area, folded mats lead can cause falls from slipping, tripping that result in broken limbs, major and minor cuts and bruises.

### **Hot surfaces**

Used machine tools and machined material can cause minor burns when touched by hands and fingers.

### **Person Exposed to Risk**

☒ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

### **Work Description**

Cutting and shaping metal parts, components and artefacts

### **Controls**

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.

- Safety glasses must be worn at all times
- Loose clothing such as open jackets, loose jumpers, ties etc must not be worn when operating this machine
- Long hair must be covered by cap or hair net or tied back neatly.
- Food or drink must not be consumed in workshop.
- Personal belongings are not permitted beside or around workspace.
- Maintain clear and clean workspace all times and ensure mats are flat on the ground.
- Jewellery such as rings, chains and necklaces must not be worn.
- Group gathering around machine is not permitted (only under the lecturer's instruction).
- Inspect the machine power cable for damage or defects, do not use the machine if power cable is damaged or defected in any way. Competent person/s must only carry out electrical repairs.
- Cutting tools and clamping devices must only be replaced or adjusted when machine is not running.
- Do not place hands or body parts near rotating parts of machinery.
- Prior to use, ensure cutting tool is not damaged and is properly secured in machine chuck. Damaged cutting tools must be reported to the lecturer / technician for a replacement one.
- Lecturer and technicians must only repair and replace cutting heads and tools.
- Follow the manual handling training guidelines at all times. Seek assistance when lifting and carrying heavy machine parts and material to be machined.
- Where applicable ensure all machine guards are in place prior to and when operating the machine. Work piece/s must be properly secured in the machine vice.
- Ensure that the vice is properly secured to the machine table.
- Wash hands and body parts when in contact with cutting and coolant fluid.
- Allow hot cutting tool and materials to cool sufficiently (or wear heat resistant gloves) prior to handling.
- Exercise caution when handling sharp cutting tools and cut materials.
- Only use copper or plastic mallet to tap down work piece or to tighten machine vice.
- Machine is never to be left unattended when running.
- Machine must be brushed (using a brush only) down when work is complete and machine has come to a stop.
- Empty the swarf tray as required.
- Store all non-used machine tools (cutting tools etc.) in their storage location.
- Take heed of hazard warning notices.

### **Checks & Inspections**

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Ensure interlocks and emergency shutdown devices are checked each term
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### **Information, Instruction & Training**

- Only trained operators are allowed to operate the milling machine unsupervised
- All students are given training before being allowed to use the milling machine
- All students must be supervised when operating the milling machine
- Manual handling training.
- Chemical training
- PPE training
- MSDS

### **Personal protective equipment required (last resort)**

- Safety glasses

- Overalls/shop coat
- Safety Boots

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Unimolder Plastics Molding Machine</b></p>	Ref: SWPS MEC 024
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Damaged or incorrectly wired electrical cables can result in electrocution-death, first, second and or third degree burns.

### Mechanical

Sliding guard door, moving injection piston can result in crushing of hand and fingers.

### Hot Surfaces

Contact with hot moulds, heaters and hot materials can result in first, second or third degree burns to hands and fingers.

### Hydraulics

Contact with hydraulic fluid may cause minor irritation to the skin. Hydraulic injection fluid injuries, piercing the skin on the hands and fingers. Acute or chronic respiratory illness from inhalation of hydraulic fluid aerosol.

### Manual Handling

Lifting and pulling of machine guard can result in work related upper limb disorder, carrying of plastic materials and moulds can cause lower back acute or chronic injuries.

### Slips trips and falls

Poor housekeeping, leaking oil fluid, spilled plastic beads can cause slipping or tripping that results in falls and concussion, major or minor cuts to the head.

### Fumes

Acute or chronic respiratory illness from inhalation of fumes from overheated plastics

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Universal plastics moulding machine for injection, compression and blow moulding operations

## Controls

- Lecturers and Technicians are only permitted to operate the machine.
- Food or drink must not be consumed in workshop.
- Personal belongings are not permitted beside or around workspace.
- Maintain clear and clean workspace and floors all times.
- Group gathering around machine is not permitted.
- Materials must not be stored on top of the machine.
- Loose or nylon clothing must not be worn when operating the machine.
- Long hair must be tied back neatly.
- Ensure all electrical cables are in good working order prior to use. Do not use if electrical cables are

damaged.

- Ensure floor is free from hydraulic oil prior to use. Do not use machine if leaking hydraulic fluid.
- Avoid over filling of machine hopper when loading plastic pellets. Clean up any spilled plastic pellets immediately.
- Follow the manual handling training guidelines at all times, exercise caution when lifting and placing moulds into and out of the machine
- Wear safety glasses at all times
- Ensure safety guards and machine panels are in place and closed when machine is in operating mode
- Use heat resistant gloves where required
- Take heed of hazard warning notices
- Ensure that there is adequate ventilation when operating the machine.

### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Ensure safety interlocks on guards and emergency shutdown devices are checked each term

### Information, Instruction & Training

- Only trained technicians are allowed to operate this machine
- Manual Handling training
- PPE training
- Chemical Training.
- MSDS

### Personal protective equipment required (last resort)

- Heat resistant gloves
- Safety glasses
- Safety boots

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>  <b>Portable Electric Angle Grinder</b>	Ref: SWPS 026
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Poorly maintained, damaged or cut cable and plugs can result in electrocution-death, first, second and third degree burns.

### Manual Handling

Incorrect lifting, holding or carrying pieces of machinery can result in acute or chronic lower back injuries and work related upper limb disorder.

### Mechanical

Contact with rotating cutting blade can result major skin lacerations, severing of fingers. Entanglement of loose clothing, long hair may cause major cuts to body parts.

### Flying debris

Shattered cutting disc, grinded material may result in loss of sight, body puncture would, minor cuts and bruises.

### Ergonomics

Unfavourable working space, cramped position, can result in lower back injuries.

### Fire

Flammable fuel sources may ignite from sparks and result in major burns to the body, asphyxiation form smoke inhalation, and acute respiratory illness.

### Slips trips & falls

Trailing cables and untidy work area can result in slipping or tripping that results in falls and concussion, major or minor cuts to the head.

### Persons Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Rough grinding of metal items using hand-held power tool

## Controls

- Students are not permitted to use this machine.
- Operators that have received formal abrasive wheel training may only operate this machine.
- Competent persons must only carry out mounting of an abrasive wheel.
- Group gatherings are not permitted at or around the machine when in use.
- Food or drink must not be consumed at or near work area.
- The wearing of loose or nylon clothing is not permitted.
- Long hair must be neatly tied back.
- Group gatherings are not permitted when machine in operation.
- Work area must be maintained free from flammable materials, clutter and personal belongings.
- Never carry or move the machine by the power cable.
- The operator must carry out the required pre-operational (cable, plugs etc.) checks on the machine. Do not use the machine if damaged in any way.
- Eye protection to be worn at all times. When required wear a face guard.

- Adequate personal protective equipment (gloves, apron, boots) must be worn.
- Only trained competent persons to mount wheels in accordance with the Abrasive Wheels Regulations 1982.
- It is the duty of the employee to advise the Senior Technician of any repairs necessary to the machine where they become aware.
- Grinding should be performed in a controlled area (welding cubicle), certain circumstances may require grinding to be performed in an open area.
- Power cables must follow the rotating disc. No person, even the operator, is permitted to approach the dangerous moving parts of the machine while it is in operation.
- Do not touch a rotating grinding disc and allow coming to a stop.
- In exceptional circumstances, when a competent person is present to operate the machine, a maintenance person may observe the operation of the machine provided there is no risk of entanglement or coming in contact with moving parts of the machine.
- The operator should stop the machine if anyone has to move close to the grinding area for any reason, taking account of draw down time unless brakes are fitted. Adequate warning signs should be placed at the grinding area while in operation.
- When the machine is not in use, precautions must be taken to ensure that it is fully immobilised.
- Grinder must be returned to the stores after use & locked away under the lecturer, technician's control.

### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Grinding/cutting disc to be changed and checked by technician
- Technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- Only trained persons are allowed to operate this machine or to replace a grinding wheel
- Abrasive wheel training in accordance with S.I. No. 30/1982 - Safety in Industry (Abrasive Wheels) Regulations, 1982.
- PPE
- Manual Handling

### Personal protective equipment required (last resort)

- Safety glasses/goggles, face guard
- Boots
- Apron
- Gloves

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>  <b>Portable Electric Shears</b>	Ref: SWPS MEC 027
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electricity

Damaged or defected electrical cables or plugs can result in electrocution-death or first, second or third degree burns.

### Manual Handling

Incorrect lifting, carrying and holding of shears and metal sheets can result in lower back injuries, work related upper limb disorders.

### Mechanical

Contact with moving blade can result in minor cuts to hands and fingers.

### Slips trips & falls

Trailing cables and untidy work area can result in slipping or tripping that results in falls and concussion, major or minor cuts to the head.

### Sharps

Contact with machine blade, metal sheets can result in lacerations to the hands.

### Ergonomics

Unfavorable working space and height can result in lower back discomfort, work related upper limb disorder.

### Person Exposed to Risk

☒ Students   
 ☒ Employees   
 ☐ Public   
 ☐ Contractors   
 ☐ Visitors

## Work Description

A powered hand-held shears for cutting sheet metal

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Food or drink must not be consumed at or near work area.
- The wearing of loose or nylon clothing is not permitted.
- Long hair must be neatly tied back.
- Group gatherings are not permitted when the machine is in operation.
- Follow the manual handling training guidelines at all times.
- Maintain workspace free from clutter and personal belongings.
- Measure and mark sheet metal for cutting prior to obtaining the machine. Ensure sheet metal is on a work bench when marking for cutting.
- Students must request the machine from the lecturer or technician when required.

- Do not carry or move the machine by the power cable.
- Ensure the machine and power cable is free from defects prior to use. Do not use the machine if damaged in any way
- Plug in the machine at the sockets above the chosen workbench.
- Ensure adequate workspace is available and maintained when cutting materials
- Ensure the power cable follows the cutting blade when machine in is use
- Do not touch cutting blade or cut sheet metal edges with bare hands
- Machine must be returned to the lecturer or technician when no longer required.
- Tidy workspace from all sheet metal and cut offs when work is complete.
- Safety glasses must be worn.
- Safety gloves must be worn when handling sheet metal material.
- Take heed of hazard warning notices.

### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- All students are given training before being allowed to use the bending machine
- All students must be supervised when operating the bending machine
- Manual Handling Training
- PPE Training

### Personal protective equipment required (last resort)

- Safety glasses
- Safety gloves
- Safety boots

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY					
PROBABILITY		SEVERITY		RISK FACTOR	
Probable	3	Critical	3	1-3	Low Risk
Possible	2	Serious	2	4	Medium Risk
Unlikely	1	Minor	1	6-9	High Risk
Risk Factor = Probability x Severity					

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b>  <b>Portable Spot Welder</b>	Ref: SWPS MEC 028
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Electrical

Contact with damaged plugs or cables can result in electrocution-death or first, second or third degree burns.

### Manual Handling

Incorrect lifting, carrying and holding of welder can result acute or chronic lower back injuries, work related upper limb disorders.

### Mechanical

Contact with machine tong tips and linkages can crush hand parts and fingers.

### Slips trips & falls

Trailing cables and untidy work area can result in slipping or tripping causing falls and concussion, major or minor cuts to the head.

### Ergonomics

Unfavorable working space and bench height can result in acute or chronic lower back discomfort and or work related upper limb disorder.

### Fire

Flying sparks can ignite combustible materials resulting in burns, and respiratory illness from inhalation of smoke.

### Explosion

Flammable liquids exposed to heat or sparks can ignite and explode

### Hot surfaces

Contact with heated metal surfaces can result in first or second and third degree burns to the hands and fingers.

### Falling machinery / materials

Loose machine in vice or unsecure work material can result in falling item causing lower leg and feet impact injuries

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Spot welding is a process used to join thin metal sheets or plates. The sheets are placed in contact with one another and are joined by the heat obtained from resistance to electric current flow. Work-pieces are held together under pressure exerted by two electrodes. Welding current is concentrated into a small "spot". Forcing a large current through the spot will melt the metal and form the weld.

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Food or drink must not be consumed at or near work area.
- The wearing of loose or nylon clothing is not permitted.
- Long hair must be neatly tied back.
- Group gatherings are not permitted when the machine is in operation.
- Maintain workspace free from clutter and personal belongings.

- Students must request the machine from the lecturer or technician when required.
- Do not carry or move the machine by the power cable, use the machine handles.
- Ensure the machine and electrical cable are free from damage or defects prior to use. Do not use if damaged in any way.
- Lecturers / technicians must set up machine at the required work bench, use vice if required.
- Plug in the machine at the sockets above the chosen workbench.
- Ensure adequate workspace is available and maintained when welding.
- Ensure the power cable and hands do not come between machine tong tips.
- Use hand held tongs when welding small components.
- Do not touch hot welded surfaces with bare hands.
- Ensure there is adequate ventilation prior to operating the machine.
- Flammable and combustible materials must not be stored at or near welding working area.
- Return the welder back to storage when no longer required.
- Ensure to maintain a firm hold of the machine when in use.
- Ensure work pieces are securely clamped or held

### Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- All students are given training before being allowed to use the spot welder
- All students must be supervised when operating the spot welder
- Only the designated area in the workshop is to be used for spot welding
- Manual handling training
- PPE training

### Personal protective equipment required (last resort)

- Safety glasses/goggles must be worn at all times
- Heat resistant gloves
- Safety boots must be worn

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Thermo Forming Centre - Portable</b></p>	Ref: SWPS MEC 032
	Date: 20/07/2014
	Revision No. 001
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Hazards

### Electrical

Poorly maintained, connected or damaged cables or plugs can result in electrocution-death or first, second or third degree burns.

### Manual Handling

Pulling and pushing machine into position can result in acute or chronic lower back injury and or work related upper limb disorder. Incorrect lifting and closing of the machine heating hood can result in muscular skeletal injuries. Damaged wheels can impede the movement of the machine resulting acute lower back injuries.

### Pneumatics

Incorrectly fitted or damaged airlines can result in whipping airline, resulting in loss of sight, minor cuts and bruises

### Trips and falls

Poor housekeeping or incorrect placement of machine can result in trips and falls that result in broken limbs minor cuts and bruising.

### Mechanical

Placing of hands in injection molding piston can result in crushing injuries to fingers and hands. Fingers or hands may get crushed or trapped from closing manually operated heating hood, oven door. Loose clothing long hair may get trapped in oven heating hood

### Hot Surfaces

Inserting and removing metal components from the machine oven can result in first or second degree burns.

### Chemicals

Overheated plastic materials can generate fumes resulting in respiratory illness.

### Fire

Flammable sources in contact with hot surfaces may ignite and cause minor burns to the body.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### Work Description

The thermo forming centre is a machine used to soften plastic and polymer materials so that they can be pressed and moulded into shapes, using basic dies and moulds. Also used for preheating metals for plastic dip coating.

### Controls

- Students are permitted to operate the machine, under correct instruction & the lecturer or technician's supervision.
- Food or drink must not be consumed at or near work area.
- The wearing of loose or nylon clothing is not permitted when operating the machine.
- Jewellery must not be worn when operating the machine.
- Long hair must be neatly tied back.
- Group gatherings are not permitted when the machine is in operation.
- Follow the manual handling training guidelines at all times.
- Maintain workspace free from clutter and personal belongings.

- Follow manual handling training when moving the machine and seek assistance if required.
- Ensure wheels on machine are in good working order. Move the machine to the designated work area and lock both caster wheels. Do not transport by pulling on cables and hoses.
- Inspect the electrical cable, plugs and airlines for damage or defects prior to operating the machine.
- Avoid the trailing of electrical cables.
- Ensure the required machine guards are in place prior to operating the machine.
- Use the handle on the oven when required to operate.
- Use both hands to operate the handle of the heating hood.
- Do not touch injection molding piston when in operation,
- Follow the manufacturer's instructions on the machine face plate.
- Do not store flammable sources beside, on or near the machine.
- Ensure there is adequate ventilation when the machine is in use
- Use purpose-made tongs and handles for manipulating moulded components and materials
- Use heat resistant gloves when handling hot materials
- Use safety glasses at all times
- Take heed of hazard warning notices
- Do not use the machine if defective in any way.

### Checks & Inspections

- Regular maintenance inspections to be carried out and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- All students are given training before being allowed to use this machine
- Students are only permitted to operate the machine while supervised
- Manual handling training
- PPE training
- Chemical training
- MSDS

### Personal protective equipment required (last resort)

- Heat resistant gloves
- Safety glasses

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b>  <b>Vacuum Form Plastic Cutter</b>	Ref: SWPS MEC 033
	Date: 20/072014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Manual Handling

Moving the machine to and from storage location can result in lower back injuries.

### Electricity

Incorrectly wired, damaged or poorly maintained cables can result in electrocution-death or first second and third degree burns.

### Slips trips and falls

Trailing cable, poor housekeeping can cause slips and trips resulting in falls and broken hands and fingers, minor cuts and bruises. Folded floor mat may result in trips and fall impact head injuries causing concussion and minor bruising.

### Mechanical

Loose clothing, long hair in contact with rotating shaft can result in entanglement and cause minor cuts and bruising. Contact with rotating blade can result in deep lacerations to the fingers and hands.

### Flying material

Trimming plastic material creates flying waste material and can result in loss of sight or temporary eye discomfort.

### Hot surfaces

Trimming plastic materials on the cutting tool can result in generating heat and cause minor burns to the hands and fingers.

### Falling machine

Poorly mounted and unsecured machine can fall and cause impact injuries resulting in broken toes and major bruises.

### Person Exposed to Risk

☒ Students
 ☒ Employees
 ☐ Public
 ☐ Contractors
 ☐ Visitors

### Work Description

The vacuum form plastic cutter is a portable bench mounted cutting device use to trim moulding flash and excess material from vacuum formed components.

### Controls

- Lecturer or technicians must set up the machine.
- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Follow manual handling training guidelines when lifting and transporting the machine.

- Inspect the electrical cable and plug prior to use, do not use if damaged or defected in any way.
- Electrical repairs must be carried out by a competent person.
- Never pull or drag the machine by the electrical cable.
- Ensure no trailing cables, plug into socket above workbench.
- Maintain work area free from clutter and personal belongings.
- Floor mats must lay firm and flat on the ground.
- Loose clothing is not permitted when operating the machine.
- Long hair must be neatly tied back.
- Ensure machine guard is in place prior to using the machine.
- Never touch the rotating cutting tool.
- Chosen workbench must be free from materials so as to ensure secure mounting of machine.
- Ensure that the machine is paced in from the workbench edge.
- Group gatherings are not permitted around the machine unless under the lecturers supervision.
- Safety glasses/goggles must be worn at all times.
- Use heat resistant gloves when required.

#### Checks & Inspections

- Regular maintenance inspections to be carried out and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

#### Information, Instruction & Training

- All students are given training before being allowed to use the cutter
- All students must be supervised when operating the cutter

#### **Personal protective equipment required (last resort)**

- Safety glasses/goggles
- Heat resistant gloves
- Manual Handling training
- PPE Training

#### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

#### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

#### **Risk Assessment Review**

*As and when process changes or yearly*

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**Safe Work Practice Sheet**

Ref: SWPS MEC 036

**Air Compressor & Hoses**

Date: 20/07/2014

Assessed by: G. Caffrey  
Approved by: E. Roe**Hazards****Explosions**

Over pressuring of compressor, not being maintained can result in explosions and ejected flying metal missiles causing death, lacerations, deep puncture wounds, major and minor cuts and bruises.

**Electricity**

Loose, damaged or poorly maintained electrical cables, plugs can result in electrocution or first, second or third degree burns.

**Slips, Trips & Falls**

Leaking water, untidy workspace, poor housekeeping, can cause personnel to slip trip and fall breaking limbs, cuts and bruises and or concussion.

**Noise**

Poorly maintained compressors, missing guards can increase noise levels and cause acute or chronic permanent or temporary hearing loss and discomfort.

**Fire**

Overheating of compressors can result in fire when in contact with fuel sources and cause first second or third degree burns.

**Whipping air lines**

Damaged air lines, partly left open valves, poorly fitted connections can cause uncontrolled whipping lines striking individuals and causing loss of sight minor cuts and bruises.

**Person Exposed to Risk**

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

**Work Description**

Compressing air to open and close demonstration valves, operate machinery, and particular hand held tools.

**Controls**

- Students are not permitted to turn on Air Compressor or use airline hoses.
- Only trained lecturers and technicians must operate the compressor.
- Maintain good housekeeping and clutter free surrounding of the compressor at all times.
- Inspect electrical cable and plugs for damage or defects prior to use, do not use if damaged or defected in any way.
- Dry up any leaking water immediately.
- Ensure all machine guards and housing is in place at all times of use of the compressor.
- Ensure all airline valves are closed prior to turning on compressor.
- Switch on the compressor when required. Follow the manufacturer's instructions.
- Ensure all hose attachments and connectors are free from defects (do not use if damaged) prior to use. Leaking or

damaged airlines must only be repaired by a competent person.

- All non-machine hose airlines must be stored in storage lab. Lecturer and technicians are only permitted to use hose airlines. Return hose air lines to storage when no longer required.
- Only trained persons may use the compressor.
- All pipes, hoses, and fittings must have a rating of the maximum pressure of the compressor. Compressed air pipelines should be identified (psi) as to maximum working pressure.
- Air supply shutoff valves should be located (as near as possible) at the point-of-operation.
- Air hoses should be kept free of grease and oil to minimise the possibility of deterioration.
- Hoses must not be strung across floors or aisles where they are liable to cause personnel to trip and fall. When possible, air supply hoses should be suspended overhead, or otherwise located to afford efficient access and protection against damage.
- Compressed air must not be used to blow down clothing etc. and disciplinary action will be taken against anybody seen directing a live compressed air hose at any other person, as compressed air can enter the body via the skin causing serious illness/fatality.

#### Checks & Inspections

- Annual test and inspection of the compressor must be completed by the insurer. A record of the test should be kept by the School.
- Inspect hose and fittings prior to use.

#### Information, Instruction & Training

- PPE

#### **Personal protective equipment required (last resort)**

- Safety boots.
- Glasses

#### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

#### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

#### **Risk Assessment Review**

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 037
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Hazards

### Manual Handling

Lifting, carrying, pulling and pushing the machine to and from storage can result in acute or chronic lower back injury and neck and arm injuries.

### Sharps

Cutting blades, corners of sheet metal and damaged pieces of metal can cause deep lacerations to the hands, arms, face and other body parts.

### Slips, Trips & Falls

Untidy work space, poor housekeeping, personal belongings, supporting base legs of guillotine can cause individuals to trip or slip resulting in broken limbs, concussion, major and minor cuts and bruises.

### Mechanical

Operating hand lever of the machine can result in blunt blows to the head and body parts causing concussion minor wounds and bruising, fingers in between shearing action of cutting blades can result in severing of fingers.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

Portable machine for cutting thin pieces of sheet metal into various sizes and shapes.

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Food or drink must not be consumed in workshop.
- Loose clothing is not permitted.
- Long hair must be tied back neatly.
- Personal belongings are not permitted beside or around workspace.
- Maintain clear and clean workspace all times
- Jewellery must not be worn when operating machine.
- Group gathering around machine is not permitted.
- Wear safety glasses at all times.
- When required, place the machine (workshop or outside) into the required position and on firm level ground. Seek assistance when moving the machine and follow manual handling training guidance.
- Observe the placement of the supporting base of the machine when operating it.
- Measure and mark metal sheets for cutting prior to using the machine.
- Never touch machine cutting blades with bare hands.
- When required, seek assistance in lifting and supporting large cut offs of metal sheets.
- Wear leather work gloves when handling sheet metal stock.
- Place metal sheet into the guillotine where cut is to be achieved.

- Ensure that hands and fingers are clear of the cutting area at all times.
- Ensure that both hands are on the end of the guillotine lever when operating it.
- Ensure secure firm footing at all times.
- Return the lever into the upright position when cutting is complete.
- Ensure spatial surroundings are free from persons and obstructions when operating the machine lever.
- Tidy the machine workspace and floor from all metal sheet cut offs.
- Take heed of hazard warning notices.

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

#### Information, Instruction & Training

- All students are given training before being allowed to use the guillotine
- All students must be supervised when operating the guillotine

#### **Personal protective equipment required (last resort)**

- Safety glasses
- Leather work gloves

#### **Initial Risk Rating (without any control measures)**

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk
KEY							
PROBABILITY		SEVERITY		RISK FACTOR			
Probable	3	Critical	3	1-3 Low Risk			
Possible	2	Serious	2	4 Medium Risk			
Unlikely	1	Minor	1	6-9 High Risk			
Risk Factor = Probability x Severity							

#### **Risk Reduction Rating (after controls introduced)**

Probability : **1** x Severity **3** = Risk Factor **3 Low Risk**

#### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 038
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## **Fixed Guillotine**

### **Hazards**

#### **Manual Handling**

Lifting, carrying and holding heavy loads for cutting can result in acute or chronic lower back injury and neck and arm injuries.

#### **Sharps**

Cutting blades, corners of sheet metal and damaged pieces of metal can cause deep lacerations to the hands, arms, face and other body parts.

#### **Slips, Trips & Falls**

Untidy work space, poor housekeeping can cause individuals to trip or slip resulting in broken limbs, concussion, major and minor cuts and bruises.

#### **Mechanical**

Moving parts of machinery can result in blunt blows to the head and body parts causing concussion minor wounds and bruising, fingers in between shearing action of cutting blades can result in severing of fingers.

#### **Person Exposed to Risk**

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### **Work Description**

Portable machine for cutting thin pieces of sheet metal in various sizes and shapes.

### **Controls**

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Food or drink must not be consumed in workshop.
- Loose clothing is not permitted.
- Long hair must be tied back neatly.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Jewellery must not be worn when operating machine.
- Group gathering around machine is not permitted.
- Wear safety glasses at all times.
- Measure and mark metal sheets for cutting prior to using the machine.
- When required, seek assistance in lifting and supporting large cut offs of metal sheets.
- Wear leather work gloves when handling sheet metal stock.
- Ensure that hands and fingers are clear of the cutting area at all times. Do not touch cutting blade with bare hands.
- Ensure spatial surroundings are free from persons and obstructions when operating the machine lever.
- Both hands should be used to operate the machine lever.

- Return the lever into the upright position when cutting is complete, tidy the machine workspace and floor from all metal sheet cut offs.
- Take heed of hazard warning notices.

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

#### Information, Instruction & Training

- All students are given training before being allowed to use the guillotine
- All students must be supervised when operating the guillotine
- Manual handling training
- PPE training

#### **Personal protective equipment required (last resort)**

- Safety glasses
- Leather work gloves
- Safety Boots

#### **Initial Risk Rating (without any control measures)**

Probability :	2	x	Severity	3	=	Risk Factor	6 Medium Risk
KEY							
PROBABILITY		SEVERITY		RISK FACTOR			
Probable	3	Critical	3	1-3 Low Risk			
Possible	2	Serious	2	4 Medium Risk			
Unlikely	1	Minor	1	6-9 High Risk			
Risk Factor = Probability x Severity							

#### **Risk Reduction Rating (after controls introduced)**

Probability :	<b>1</b>	x	Severity	<b>2</b>	=	Risk Factor	<b>2 Low Risk</b>
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#### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 039
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## **Fly Press**

### **Hazards**

#### **Mechanical**

Contact with rotating fly wheel can result in blunt blows to the head, eyes and upper body parts resulting in concussion or minor bruising. Crushing of fingers can occur when pressing bearings. Loose clothing, long hair can become entangled with fly wheel and result in neck injuries and minor bruising to body parts.

#### **Chemicals**

Hands in contact with machine lubricating oil can result in contact dermatitis and minor skin irritations.

#### **Sips trips and falls**

Poor housekeeping, personal belongings, folded matting can generate slip and trip hazards resulting in falls and head injuries, broken arms, minor cuts and bruises.

#### **Falling machine**

Unsecured machine can fall and cause impact injury resulting in broken bones in the feet and lower legs, major and minor cuts and bruises.

#### **Manual Handling**

Incorrect pulling of the fly wheel can result in acute lower back or upper arm injuries.

#### **Person Exposed to Risk**

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### **Work Description**

The machine is used to press bearings and bushings

### **Controls**

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Food or drink is not permitted at or near the workstation.
- Do not touch lubricated parts of the machine with bare hands, wash hands or skin if in contact with oil.
- Use the machine as instructed and always keep head and body parts clear of the fly wheel.
- Ensure the fly wheel arm is properly configured prior to use.
- Do not place hands and fingers between moving parts, use both hands when turning the fly wheel.
- Maintain work area free from clutter and personal belongings at all times.
- Floor matting must be secure and flat on the ground at all times.
- Ensure that the machine is securely bolted to the work bench.
- Follow the manual handling safety guidelines when operating the fly wheel.
- Do not wear loose clothing.

- Long hair must be neatly tied back or cap worn when operating the machine.

#### Checks & Inspections

- Regular maintenance inspections to be carried out and records kept by the School
- Lecturers and technicians to monitor compliance with control measures

#### Information, Instruction & Training

- Operators must be trained in how to use the machine.
- Manual handling training.
- Chemical training.
- MSDS

#### **Personal protective equipment required (last resort)**

- Safety glasses/goggles
- Safety boots

#### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

#### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

#### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 040
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Transportation & Storage of Metal Stock

### Hazards

#### Manual handling

Lifting and carrying long pieces of metal can result in acute or chronic lower back injuries and work related upper limb disorder.

#### Slips trips and falls

Metal materials lying on the ground can cause slipping and tripping that results in falls to the ground or against stored materials resulting in possible concussion, major and minor cuts to the head, broken hand or arm, major and minor cuts and bruises to hands.

#### Metal Sharps

Lifting and carrying metal sheets and rods etc. can result in loss of sight from metal sharps, major and minor cuts or puncture wounds to the hands, arms and other body parts.

#### Falling materials

Heavy loads can slip and fall when carrying causing impact injuries to the feet and lower legs resulting in broken bones, major and, minor cuts and bruising.

#### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### Work Description

Flat metal sheeting, long metal rods etc. are taken in from a supplier and stored in the metal storage area for when required.

### Controls

- Technicians are only permitted to receive stock from suppliers and place in storage.
- Students are permitted to take stock from the stores as required, under correct instruction and the lecturer or technician's supervision.
- Seek assistance when transporting metal stock into the storage area.
- Heavy metal bars must be stored on bottom shelving & light material rods etc. on top shelving.
- Sheet metal must be stored on its side against the wall in the stores.
- Pre-cut long pieces of metal to the required length prior to moving to storage. Inspect cut material for metal sharps and file smooth if required.
- Ensure the walkway of the stores is maintained free from metals & maintain good housekeeping at all times. Personal belongings must not be stored in with metal materials.
- Ensure manual handling training guidelines are followed at all times.
- Safety glasses must be worn at all times.
- Use leather apron and gloves at all times.
- Safety boots must be worn at all times.

### Checks & Inspections

- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- Manual handling training
- PPE training

### **Personal protective equipment required (last resort)**

- Safety glasses
- Leather apron
- Safety boots

### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 041
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Carif 260, Semi-Automatic Band Saw

### Hazards

#### Electricity

Incorrectly wired, damaged power cables can result in electrocution-death or first second and third degree burns.

#### Manual Handling

Lifting and carrying heavy loads for cutting can result in acute or chronic lower back and or musculoskeletal injuries.

#### Ergonomics

Operating the cutting handle of the machine for extended periods of time can result in work related upper limb disorder.

#### Noise

Poorly maintained machinery can generate unnecessary noise when cutting various metal materials and cause acute hearing discomfort.

#### Chemicals

Filling the machine with cutting fluid can cause spilling and splashing and result in minor eye and skin irritation. Handling of lubricated cut metal or saw blade can result skin minor irritation to the hands and fingers.

#### Slips, trips and falls

Oil on floor may result in slips and cause impact head injuries from falling, minor and major cuts and bruises. Cutting Long pieces of cutting materials, poor housekeeping & incorrect storing of metal can cause trips resulting in impact head injuries from falls.

#### Sharps

Contact with machine cut metal can cause lacerations to the hands, fingers and other body parts. Contact with saw blade teeth can result in cuts to the hands and fingers.

#### Mechanical

Contact with rotating saw blade can result in severing of fingers & hands. Loose clothing, long hair can become entangled with machine causing death.

#### Flying debris

Cutting of various metals can generate flying materials and cause loss of sight or eye irritation. Unsecured work piece can fly and cause blunt force injuries resulting in concussion and bruising. Damaged or poorly fitted saw blade can result in ejected materials causing loss of sight and cuts.

#### Hydraulics

Damaged hydraulic hoses, ejecting hydraulic fluid can result in piercing of the skin, loss of sight and minor skin irritation.

#### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

#### Work Description

Long and short pieces of square, cylindrical, flat, metal tubing and rods of varying diameters are loaded into the

machine and cut to a required length using a rotating machine saw.

### **Controls**

- Trained operators (lecturers /technicians) must only use the machine.
- Students are not permitted to use the machine.
- Stand back from the machine when cutting is in progress.
- Group gatherings are not permitted with this machine, unless under the lecturers / technicians supervision.
- Materials must not be stored on top of or beside the machine.
- Prior to use, inspect the machine power cables and plug for any damage or defects. Do not use if damaged or defected in any way and remove from use for repair by a competent person.
- Ensure emergency stop button is in good working order.
- Follow manual handling training guidelines at all times, seek assistance where loads are too heavy or awkward to handle and lift.
- Ensure the machine is adequately filled with cutting oil and that it is turned on. Wear gloves and glasses when filling with cutting oil, pour carefully, and avoid spilling and splashing.
- Clean all cutting oil up that comes into contact with the floor as soon as possible.
- Collect all metal cut offs in an empty bucket.
- Remove and replace clothing contaminated with cutting oil. Wash any contaminated skin immediately.
- Wear gloves if handling metals or saw blade in contact with cutting fluid.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Ensure the machine rollers are free rolling.
- Hand file or grind any metal burrs & sharps if required.
- Ensure all machine and blade guards are in place prior to operating the machine.
- Stand clear and allow the machine to stop if the blade breaks when running.
- Never touch the rotating saw blade.
- Hands and body parts must remain clear from the rotating saw blade at all times.
- Loose clothing must not be worn and long hair must be neatly tied back or a cap worn.
- Wear safety glasses at all times when operating the machine.
- Ensure material for cutting is properly clamped and secure.
- Never cut more than one metal tubing or piping at a time.
- Ensure saw blade is correctly tensioned prior to use, replace any damaged saw blades.
- Wear gloves when handling cut materials, piping or removing and replacing saw blade.
- Ensure hydraulic machine hoses are in good order prior to use, do not use if damaged or leaking.
- Switch off the machine when it is no longer required and tidy up work area.
- Unused metal stock must be returned to storage.

### **Checks & Inspections**

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### **Information, Instruction & Training**

- Machine operation
- Manual handling training
- PPE training
- Chemical training
- MSDS

**Personal protective equipment required (last resort)**

- Safety Glasses
- Safety Boots
- Gloves

**Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 042
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

<p><b>Hazards</b></p> <p><b>Electricity</b> Incorrectly wired, damaged or poorly maintained electrical power cables can result in electrocution-death or first second and third degree burns.</p> <p><b>Manual Handling</b> Lifting and carrying the machine into the required location can result in acute or chronic lower back or musculoskeletal injuries.</p> <p><b>Ergonomics</b> Setting the machine up at a height that is too low or high can result in acute or chronic lower back or musculoskeletal injuries.</p> <p><b>Falling Machine</b> Unsecure machine on work bench edge can fall resulting in lower leg and feet impact injuries and bruising.</p> <p><b>Slips, trips and falls</b> Folded mats, trailing cables, poor housekeeping can result in slipping and tripping causing head impact injury and cuts and bruises. Wet floor when transporting machine resulting in splashing from trough causing slips and fall head impact injuries.</p> <p><b>Sharps</b> Contact with drill bits for sharpening can result in lacerations to the hands and fingers.</p> <p><b>Ejected metal / debris</b> Operating hand vise can result in hands in contact with metal debris &amp; inadvertently being rubbed into and causing eye damage.</p> <p><b>Hot Surfaces</b> Contact with machined drilled bits can result in minor burns to the hands and fingers.</p> <p><b>Mechanical</b> Loose clothing, long hair can become entangled with the machine causing minor cuts and bruising. Abrasions to hands and fingers from touching rotating stone.</p> <p><b>Person Exposed to Risk</b></p> <p><input checked="" type="checkbox"/> Students    <input checked="" type="checkbox"/> Employees    <input type="checkbox"/> Public    <input type="checkbox"/> Contractors    <input type="checkbox"/> Visitors</p>
<p><b>Work Description</b></p> <p>Damaged, blunt machine drill bits are inserted into the machine vise for manually operated reshaping on a rotating sharpening stone.</p>
<p><b>Controls</b></p> <ul style="list-style-type: none"> <li>• Students are not permitted to use this machine.</li> <li>• Operators that have received formal abrasive wheel training may only operate this machine.</li> <li>• Competent persons must only carry out mounting of an abrasive wheel.</li> <li>• Group gatherings are not permitted at or around the machine when in use.</li> <li>• Materials must not be stored on top of or beside the machine.</li> <li>• Inspect the machine power cable and plug for defects or damage prior to use. Do not use the machine</li> </ul>

where cables are damaged or defected in any way, remove from use for repair by a competent person.

- Ensure emergency stop button is in good working order.
- Follow manual handling training guidelines at all times, seek assistance if required.
- Ensure the machine is set up at the required height when in use.
- Ensure the machine is placed in from the work bench edge, level and flat.
- Ensure all floor matting is lying firm and flat along the ground.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Machine electrical cable should be plugged into sockets above workbenches or tables.
- Do not touch the drill bit or cutting tool head, handle by the shank.
- Use water in machine water trough to cool machined hot metals.
- Ensure all machine guards are in place prior to operating the machine.
- Never touch the rotating stone on the machine. Use machine clamping device at all times and ensure piece is securely clamped.
- Do not fill machine water trough prior to moving, do not over fill water trough when in position. Empty water trough when no longer required.
- Never touch hands to eyes during or after grinding, wash hands thoroughly after grinding is complete.
- Loose clothing must not be worn and long hair must be neatly tied back or a cap worn.
- Wear safety glasses at all times when operating the machine.
- Switch off the machine when it is no longer required for use and tidy up work area.

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

#### Information, Instruction & Training

- Abrasive wheel training in accordance with S.I. No. 30/1982 - Safety in Industry (Abrasive Wheels) Regulations, 1982.
- Manual handling training
- PPE training

#### Personal protective equipment required (last resort)

- Safety Glasses
- Safety Boots
- Gloves

#### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

#### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

#### Risk Assessment Review

As and when process changes or yearly

[Back to content page](#)

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 043
	Date: 28/01/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Hurco TM 6

### Hazards

#### Electricity

Incorrectly wired, loose or damaged power cables can result in electrocution-death or first second and third degree burns.

#### Manual Handling

Lifting and carrying drums of machine cutting fluid, swarf waste bin, reservoir oil tray, & removing and lifting machine panels and parts for maintenance can result in acute or chronic lower back injuries.

#### Slips, trips and falls

Folded mats, transformer power cables, poor housekeeping, personal belongings, machine control pedals can result in tripping causing head impact injuries and cuts and bruises. Spilled, leaking, splashed hydraulic or cutting fluid & waste material can result in slipping causing falls & head impact injuries.

#### Chemicals

Filling the machine with cutting fluid can result in spilling & splashing of fluid & cause minor eye and skin irritation and clothing contamination. Cutting oil in contact with hands and body parts can result in minor skin irritation.

#### Pneumatics

Incorrectly installed, damaged or inadvertent banging of airline can result in uncontrolled whipping airline causing loss of sight & minor eye injuries.

#### Sharps

Contact with cutting tool, chuck head, tail stock, machined material, swarf can result in cuts to the hands / fingers

#### Mechanical

Crush injuries and entrapment from tail stock and chuck head. Crushed fingers from closing machine door & part capture. Pinch points from replacing panels. Entanglement of loose clothing and long hair resulting in neck and head injuries. Entrapment with chuck head and or tail stock when loading or adjusting work piece.

#### Flying Missile & Debris

Machining material, brushing or blowing of swarf can generate flying debris and result in loss of sight. Unsecure work piece in chuck head can result in flying missile & cause major blunt force head injuries.

#### Falling objects

Machine cutting tools and miscellaneous materials stored on top of the machine can fall and cause impact injuries to the head and other body parts.

#### Fire

Machine not maintained can lead to overheating of machine oil, burnt cables etc. and result first second or third degree burns.

#### Hot Surfaces

Insufficient cutting oil on machined cutting tool/work pieces can result in minor burns to the hands and fingers.

#### Person Exposed to Risk

☒ Students   ☒ Employees   ☐ Public   ☐ Contractors   ☐ Visitors

#### Work Description

Using Computer Numerical Controlled (CNC) MTurning Centre to machine (cut) metal, polymers to a desired part or component shape

### Controls

- Only trained operators can use the machine, students must be supervised by the lecturer or technician when using the machine.
- All machine guards must be in place prior to operating the machine.
- Group gatherings are not permitted with the machine unless under the supervision of the lecturer.
- Ensure that all electrical power cables are free from defects or damage prior to using the machine, do not use if damaged in any way and remove from use for repair by a competent person.
- Loose clothing or jewellery must not be worn when operating the machine.
- Long hair must be neatly tied back or a cap worn.
- Never touch a machine rotating or moving part.
- Marked pedestrian walkway must be used at all times by passers-by.
- Follow the manual handling training guidelines when lifting, pulling, pushing or carrying heavy loads.
- Ensure that the machine surrounding floor space is free from oil leaks at all times.
- Cutting fluid or waste material on the floor must be cleaned as soon as noticed.
- Avoid the spilling and splashing of cutting fluid when topping up the machine.
- Remove and replace any clothing contaminated with cutting fluid or oil immediately.
- Wash skin contaminated by cutting fluid or oil immediately.
- Avoid trailing power cables with the machine control pedals and transformer.
- Ensure all floor mats are lying flat on the ground.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Safety glasses must be worn when operating or maintaining the machine.
- Safety gloves must be worn when handling cutting fluid, machined materials or parts in contact with cutting fluid.
- Ensure airlines are securely fitted, free from damage or leaks prior to using the machine. Do not use if damaged or defected in any way and remove from use for repair by a competent person.
- Always brush swarf away from yourself & machine parts & machined materials. Never use air to remove swarf.
- Never handle swarf with bare hands.
- Wear gloves when handling the cutting tool, tail stock, raw materials or machined materials.
- Do not place fingers or hands in-between moving chuck clamp or tail stock.
- Keep fingers and hands clear when closing machine doors and machines parts capture.
- Ensure material in chuck head is securely clamped prior to operating the machine.
- Never store machine parts or miscellaneous items on top of the machine.
- Turn off the machine when it is no longer required.
- Student part programmes from "of line" programme should only be imported into the Hurco master file.
- Checking of interlocks as per recommendations in Hurco safety manual
- CE locks, interlocks or hardware, limit switches or other guarding must never be interfered with.
- Front door can never be open during machining.
- The chuck foot pedal must be operated by the same operator loading and unloading the work piece.
- Machine door must be closed before tail stock foot pedal is operated. The machine operator must only advance the tail stock.
- Side door must only be opened for service proposes; door must be bolted closed during any machining

operations, or machine movements.

- Emergency Stop button must be unobstructed and tested each term.
- No person is permitted inside the enclosure without correct equipment lock out procedures in place.
- Always wash your hands when finished using the machine.

### Checks & Inspections

- Maintenance to be carried out according to manufactures recommendations (Ch. 4)
- Maintenance log to be maintained by the School
- Ensure safety interlocks are checked each term
- Technicians to monitor compliance with control measures
- Lectures and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- Machine operation
- Manual handling training
- PPE training
- Chemical training
- MSDS

### Personal protective equipment required (last resort)

- Safety Glasses
- Safety Boots
- Gloves

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Hurco VM 10</b></p>	Ref: SWPS MEC 044
	Date: 28/01/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Hazards

### Electricity

Incorrectly wired, loose or damaged power cables can result in electrocution-death or first second and third degree burns.

### Manual Handling

Lifting and carrying drums of machine cutting fluid, swarf waste bin, reservoir oil tray, machine panels and parts (vise dividing head etc.), for use or maintenance can result in acute or chronic lower back injuries.

### Slips, trips and falls

Folded mats, poor housekeeping, personal belongings, air and cooling fluid hose lines can result in tripping causing head impact injuries. Spilled, leaking, splashed hydraulic or cutting fluid & waste material can result in slipping causing falls & head impact injuries.

### Chemicals

Filling the machine with cutting fluid can result in spilling and splashing of cutting fluid & cause minor eye and skin irritation and contamination of clothing.

### Pneumatics

Incorrectly installed, damaged or inadvertent banging of airline can result in uncontrolled whipping airline causing loss of sight & minor eye injuries.

### Sharps

Contact with cutting tool, chuck head, machined material and swarf can result in lacerations to the hands and fingers.

### Mechanical

Crush injuries and entrapment with tail stock and chuck head. Crushed fingers from closing machine door & part capture. Pinch points from replacing panels. Entanglement of loose clothing, long hair with rotating cutting tool resulting in neck and head injuries. Pinch points when manually inserting cutting tool resulting in loss of finger.

### Flying missile / debris

Unsecure work piece or vise can result in flying missile & cause major blunt force head & body injuries. Machining material, brushing or blowing of swarf can generate flying debris & oil and result in permanent eye damage.

### Falling objects

Machine cutting tools and miscellaneous materials stored on top of the machine fall and cause impact injuries to the head and other body parts.

### Fire

Machine not maintained leading to overheating of machine oil, burnt cables etc. resulting burns to the body

### Hot Surfaces

Insufficient cutting oil on machined cutting tool and work pieces can result in minor burns to the hands and fingers.

## Person Exposed to Risk

☒ Students
 ☒ Employees
 ☐ Public
 ☐ Contractors
 ☐ Visitors

## Work Description

Using Computer Numerical Controlled (CNC) MTurning Centre to machine (cut) metal, polymers to a desired part or component shape.

## Controls

- Only trained operators can use the machine, students must be supervised by the lecturer or technician when using the machine.
- All machine guards must be in place prior to operating the machine.
- Group gatherings are not permitted with the machine unless under the supervision of the lecturer/technician.
- Marked pedestrian walkway must be used at all times by passers-by.
- Ensure that all electrical power cables are free from defects or damage prior to using the machine, do not use if damaged in any way and remove from use for repair by a competent person.
- Loose clothing or jewellery must not be worn when operating the machine.
- Long hair must be neatly tied back or a cap worn.
- Never touch a machine rotating or moving part.
- Follow the manual handling training guidelines when lifting, pulling, pushing or carrying heavy loads.
- Ensure that the machine surrounding floor space is free from oil leaks at all times.
- Ensure there is adequate cutting fluid prior to operating the machine.
- Cutting fluid or waste material on the floor must be cleaned as soon as noticed.
- Avoid the spilling and splashing of cutting fluid when topping up the machine.
- Remove and replace any clothing contaminated with cutting fluid or oil immediately.
- Wash skin contaminated by cutting fluid or oil immediately.
- Ensure all floor mats are lying flat on the ground.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Safety glasses must be worn when operating or maintaining the machine.
- Safety gloves must be worn when handling cutting fluid or machined materials or parts in contact with cutting fluid or hot surfaces.
- Ensure airlines are securely fitted, free from damage or leaks prior to using the machine. Do not use if damaged or defected in any way and remove from use for repair by a competent person..
- Always brush swarf away from yourself & machine parts & machined materials.
- Only trained operators can use air and coolant guns on the machine.
- Students must never use air or oil coolant guns.
- Never test air or coolant guns against body parts.
- Do not handle swarf with bare hands.
- Wear gloves when handling the cutting tool, tail stock, raw materials or machined materials.
- Keep fingers and hands clear when closing machine doors.
- Never store machine parts or miscellaneous items on top of the machine.
- Turn off the machine when it is no longer required.
- Student part programmes from "of line" programme should only be imported into the Hurco master file.
- Checking of interlocks as per recommendations in Hurco safety manual.
- CE locks, interlocks or hardware, limit switches or other guarding must never be interfered with.
- Work area must be cordoned off when side doors of machine are open for machining of large components

and under the lecturers supervision at all times of the operation.

- Front door can never be open during machining
- Side door must only be opened for service proposes; door must be bolted closed during any machining operations, or machine movements.
- Emergency Stop button must be unobstructed and tested each term.
- No person is permitted inside the enclosure without correct equipment lock out procedures in place.
- Always wash your hands when finished using the machine.

### Checks & Inspections

- Maintenance to be carried out according to manufactures recommendations (Ch. 4)
- Maintenance log to be maintained by the School
- Ensure safety interlocks are checked each term
- Technicians to monitor compliance with control measures
- Lectures and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- Machine operation
- Manual handling training
- PPE training
- Chemical training
- MSDS

### Personal protective equipment required (last resort)

- Safety Glasses
- Safety Boots
- Gloves

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 066
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Edwards Bench Mounted Bending Machine

### Hazards

#### Falling Machine

The machine is placed on the edge of the workbench and falls causing lower leg and feet impact and crushing injuries.

#### Manual Handling

Lifting and lowering of the bending lever of the machine for extended periods of time can result in work related upper limb disorder.

#### Mechanical

Crushing and entrapment of hands and fingers when in between manual descending clamping metal plate. Crushing of fingers when in between hinge limit and bending bolt or compressing springs.

#### Slips Trips and Falls

Poor housekeeping, personal belongings, metal artefacts lying on the ground can result in slips and trips causing fall impact head and body injuries.

#### Sharps

Handling flat pieces of metal for bending can contain sharp edges or corners that can result in deep lacerations to the hands and fingers.

#### Flying Debris

Bending pieces of metal can result in metal breaking and flying thus resulting in loss of sight from metal flying fragments.

#### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### Work Description

The Machine is used for bending and folding various flat metal sheets or bars.

### Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Ensure that the machine is fixed bolted to the work bench.
- If required, tend to other duties for periods of rest from repeatedly operating the bending lever of the machine.
- Follow the manual handling training guidelines at all times.
- Never place hands and fingers in between the manual descending clamping plate.
- Always keep fingers and hands on the outside of the machine when holding metal for bending.
- Do not place fingers tips in between the hinge limit and bending bolt.
- Never touch the springs of the machine when it is in use.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Always use the work bench at the machine to store metal parts for or after bending.

- Where possible file smooth any sharp metal edges or corners on material for bending.
- If required wear leather gloves for handling metal sharps.
- Be aware of other people in the vicinity of the machine and ensure the work area is clear before using equipment.
- Wear eye protection when operating the machine.

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

#### Information, Instruction & Training

- Manual handling training
- PPE training

#### **Personal protective equipment required (last resort)**

- Safety Boots
- Safety Gloves
- Safety Glasses

#### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY					
PROBABILITY		SEVERITY		RISK FACTOR	
Probable	3	Critical	3	1-3	Low Risk
Possible	2	Serious	2	4	Medium Risk
Unlikely	1	Minor	1	6-9	High Risk
Risk Factor = Probability x Severity					

#### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

#### **Risk Assessment Review**

*As and when process changes or yearly*

<p align="center"><b>Safe Work Practice Sheet</b></p> <p align="center"><b>Mitutoyu Optical Comparator</b></p>	Ref: SWPS MEC 069
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Hazards

### Falling Machine

The machine is placed at the workbench edge and falls resulting in lower leg and feet impact injuries.

### Electricity

Poorly maintained, damaged or defected electrical power cable or plug can result in electrocution-death or first, second and or third degree burns.

### Slips Trips and Falls

Poor housekeeping, personal belongings, trailing electrical cables lying on the ground can result in slips and trips causing fall impact head and body injuries.

### Manual Handling

Moving the machine to or from storage can result in acute or chronic lower back or musculoskeletal injuries.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

## Work Description

The Machine is used for bending and folding various flat metal sheets or bars.

## Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision.
- Ensure that the machine is placed in from the work top edge, flat and level.
- Inspect the machine electrical cable and plug for damage or defects prior to use, do not use if damaged or defected in any way. Competent person/s must carry out all electrical repairs.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Avoid the trailing of the electrical cable by plugging the machine in the socket mounted on the wall behind the machine.
- Follow the manual handling training guide lines if required to move the machine and seek assistance.
- Ensure that all electrical covers are in place and closed prior to operating the machine.

## Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

## Information, Instruction & Training

- Manual handling training

### **Personal protective equipment required (last resort)**

- Safety Boots

### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 070
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Scrolling Apparatus

### Hazards

#### Falling Apparatus

Mounting the apparatus on the edge of the workbench can fall and result in lower leg and feet impact and injuries.

#### Manual Handling

Repeated lifting and lowering of the bending lever of the machine can result in work related upper limb disorder.

#### Mechanical

Crushing of fingers with manual descending clamping roller. Crushing of fingers tips if in between ascending clamp and limit bolt. Shearing or crushing of finger tips if in between lever and bolt pivot points.

#### Slips Trips and Falls

Poor housekeeping, personal belongings, metal artefacts lying on the ground can result in slips and trips causing fall impact head and body injuries.

#### Sharps

Handling round or flat pieces of metal for scrolling can contain sharp edges or corners that can result in deep lacerations to the hands and fingers.

#### Flying Debris

Scrolling pieces of metal can result in metal breaking and flying thus resulting in loss of sight from metal flying fragments.

#### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☐ Contractors    ☐ Visitors

### Work Description

The Machine is used for scrolling flat and round pieces of metal.

### Controls

- Students are permitted to operate the machine, under correct instruction and the lecturer or technician's supervision. .
- Ensure that the apparatus is fixed bolted to the work bench prior to operating it.
- Tend to other duties for periods of rest from repeatedly operating the bending lever of the machine.
- Never place hands and fingers in between the manual descending clamping roller clamp & limit bolt.
- Never place finger tips in between lever and bolt pivot points.
- Never rest free hand on the machine when scrolling metal pieces.
- Where possible always use both hands to scroll metal pieces.
- Do not place fingers tips in between the hinge limit and bending bolt.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Always use the work bench at the machine to store metal parts for or after bending.
- Where possible file smooth any sharp metal edges or corners prior to scrolling.
- If required wear leather gloves for handling metal sharps.
- Ensure work area is free from bystanders when operating the machine.

- Wear eye protection when operating the machine.

#### Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

#### Information, Instruction & Training

- Manual handling training
- PPE training

#### **Personal protective equipment required (last resort)**

- Safety Boots
- Safety Gloves
- Safety Glasses

#### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY					
PROBABILITY		SEVERITY		RISK FACTOR	
Probable	3	Critical	3	1-3	Low Risk
Possible	2	Serious	2	4	Medium Risk
Unlikely	1	Minor	1	6-9	High Risk
Risk Factor = Probability x Severity					

#### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

#### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 071
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

<p><b>Hazards</b></p> <p><b>Manual Handling</b> Moving the workbench to and from location, adjusting the height of the bench can result in acute or chronic lower back and or musculoskeletal injury.</p> <p><b>Slips trips and Falls</b> Poor housekeeping, personal belongings, rubber mats and metal materials lying on the ground can result in slipping and tripping causing falls and head and body impact injuries cuts and bruises.</p> <p><b>Falling Bench</b> Moving the bench to and from required location can result in the bench toppling over and falling causing feet crushing injuries, lower leg impact injuries.</p> <p><b>Mechanical</b> Adjusting the height of the table can result in crushing of fingers if holding on to the shaft when the table is being lowered to the required height. Crushing of fingers when clamping in materials on the vice.</p> <p><b>Ergonomics</b> Carrying out work on the work bench that is too low or high can result in acute or chronic lower back and or musculoskeletal injuries.</p> <p><b>Person Exposed to Risk</b></p> <p><input checked="" type="checkbox"/> Students    <input checked="" type="checkbox"/> Employees    <input type="checkbox"/> Public    <input type="checkbox"/> Contractors    <input type="checkbox"/> Visitors</p>
<p><b>Work Description</b></p> <p>The workbenches are mobile and can be used as supplementary workbenches.</p>
<p><b>Controls</b></p> <ul style="list-style-type: none"> <li>• Students are permitted to use the benches, under the lecturer or technicians supervision.</li> <li>• Follow the manual handling training guidelines and seek assistance if required to move the table or use a trolley if required to transport the workbench several metres away.</li> <li>• Maintain good housekeeping and work area free from personal belongings at all times.</li> <li>• Never leave metal artefacts lying on the ground.</li> <li>• Ensure rubber mats are lying flat on the ground.</li> <li>• Where possible leave the bench in the same location.</li> <li>• Never hold on to the shaft of the workbench when adjusting the bench height.</li> <li>• Never place hands or fingers in between the closing jaws of the vice when clamping materials.</li> <li>• Always seek assistance when adjusting the table height.</li> <li>• Ensure that the table is adjusted to the required height prior to carrying out work on it.</li> <li>• Wear safety boots when working oat the bench.</li> </ul>
<p><b>Checks &amp; Inspections</b></p> <ul style="list-style-type: none"> <li>• Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.</li> </ul>

- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

### Information, Instruction & Training

- Manual handling training
- PPE training

### **Personal protective equipment required (last resort)**

- Safety Boots

### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 079
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

<p><b>Hazards</b></p> <p><b>Sharps</b> Holding tools by the cutting edge or blade, placing fingers between the cutting blades of snips, damaged tool handles with sharp metal parts can result in lacerations to the hands and fingers. Puncture wounds to body parts pointed sharps (scribes etc.)</p> <p><b>Flying Debris</b> Inappropriate use of the tool can result in the metal tool breaking and causing flying metal parts, hack saw blade breaks, striking metal objects with hammers etc. can result in loss of sight or puncture wounds to the body.</p> <p><b>Ergonomics</b> Holding and using hand tools for extended periods of time can result in work related upper limb disorder.</p> <p><b>Falling hand Tools</b> Tool rolls from the workbench, tools placed at the edge of the work bench edge, over loading of the body with hand tools when transporting resulting in lower leg and feet crush and or puncture injuries from falling tools.</p> <p><b>Slips Trips and Falls</b> Poor housekeeping, personal belongings, hand tools lying of the ground can result in slipping and tripping causing falls and head and body impact injuries.</p>
<p><b>Person Exposed to Risk</b></p> <p> <input checked="" type="checkbox"/> Students            <input checked="" type="checkbox"/> Employees            <input type="checkbox"/> Public            <input type="checkbox"/> Contractors            <input type="checkbox"/> Visitors       </p>
<p><b>Work Description</b></p> <p>The hand tools are manually operated and are used to cut, punch, file, extract, bend, measure etc. and can consist of metal and or wooden handles. The types of tools used can include hammers, files, dividers, callipers, scribes, spot punch, squares, hacksaws, stock dyes, tin men snips and clamps etc.</p>
<p><b>Controls</b></p> <ul style="list-style-type: none"> <li>• Students are permitted to use the hand tools under correct instruction and the lecture or technicians supervision.</li> <li>• Inspect the hand tool for damage or defects prior to use, do not use if damaged or defected in any way and remove from use for repair or replacement.</li> <li>• Always hold the tool by its handle.</li> <li>• Never place fingers in between closing parts of a hand tool.</li> <li>• Never press pointed sharps against any part of the body, always carry out work on a work bench or away from the body.</li> </ul>

- Always use the tool as intended by the manufacturer.
- Safety glasses must be worn at all times of hand tool use.
- Avoid the use of hand tools for extended periods of time, tend to other duties for periods of rest.
- Ensure tools are placed in from the work bench edge when not in use.
- Ensure tools cannot roll off the workbench when placed upon it.
- Never over load the body with hand tools when transporting.
- Safety boots must be worn at all times.
- Never throw or drop tools to the ground or workbench.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Hand tools must never be stored or left lying on the ground.

### Checks & Inspections

- Lecturer and technicians to monitor compliance with control measures.
- Lecturer and technician to monitor the wearing of PPE.

### Information, Instruction & Training

- PPE Training

### **Personal protective equipment required (last resort)**

- Safety Boots
- Safety glasses

### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY				
PROBABILITY		SEVERITY		RISK FACTOR
Probable	3	Critical	3	1-3 Low Risk
Possible	2	Serious	2	4 Medium Risk
Unlikely	1	Minor	1	6-9 High Risk
Risk Factor = Probability x Severity				

### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 080
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

<p><b>Hazards</b></p> <p><b>Electricity</b> Poorly fitted, loose or damaged electrical wiring or plug on the soldering Iron can result in electrocution-death or first, second and or third degree burns.</p> <p><b>Hot surfaces / Liquids</b> Contact with heated soldering iron or liquid metals can result in first second and or third degree burns to the hands and fingers.</p> <p><b>Fire</b> Flammable materials in contact with hot soldering iron can result in fire, minor and or major burns and or respiratory illness from smoke inhalation.</p> <p><b>Fumes</b> Soldering metal parts together can result in the inhalation of fumes and cause acute or chronic respiratory illness.</p> <p><b>Chemicals</b> Applying flux when soldering can result in acute or chronic irritation to the hands and finger, inadvertent ingestion of solder can result in acute or chronic illness.</p> <p><b>Slips Trips and Falls</b> Poor housekeeping, personal belongings, trailing cables can cause tripping and result in head and body fall impact injuries.</p>
<p><b>Person Exposed to Risk</b></p> <p><input checked="" type="checkbox"/> Students    <input checked="" type="checkbox"/> Employees    <input type="checkbox"/> Public    <input type="checkbox"/> Contractors    <input type="checkbox"/> Visitors</p>
<p><b>Work Description</b></p> <p>Soldering is carried out so as to join two join two pieces of metal together.</p>
<p><b>Controls</b></p> <ul style="list-style-type: none"> <li>• Students are not permitted to carry out soldering.</li> <li>• Soldering must be carried out by a lecturer or technician.</li> <li>• Inspect the electrical power cable &amp; plug of the soldering iron for damage or defects prior to use.</li> <li>• Do not use the soldering iron if the power cable or plug is damaged or defected in any way and remove from use for repair.</li> <li>• All electrical repairs must be carried out by a competent person.</li> <li>• Always hold the soldering iron by the handle.</li> </ul>

- Allow heated metals to adequately cool prior to handling.
- Wear heat resistant gloves if required to handle hot materials.
- Flammable materials must not be stored at or near the soldering iron when in use.
- Ensure soldering is performed in the welding shop and that the extract system is turned on.
- Use a brush when applying flux and wear safety gloves.
- Always wash your hands after soldering is complete.
- Food or drink must not be consumed in the work shop.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Avoid trailing cables and use the socket mounted on the wall.

### Checks & Inspections

- Regular maintenance carried out on in accordance with the manufacturers recommendations and records maintained by the school
- Lecturer and technicians to monitor compliance with control measures.
- Lecturer and technician to monitor the wearing of PPE.

### Information, Instruction & Training

- PPE Training
- Chemical Training
- MSDS for Flux and Solder.

### **Personal protective equipment required (last resort)**

- Safety Boots
- Safety glasses

### **Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY					
PROBABILITY		SEVERITY		RISK FACTOR	
Probable	3	Critical	3	1-3	Low Risk
Possible	2	Serious	2	4	Medium Risk
Unlikely	1	Minor	1	6-9	High Risk
Risk Factor = Probability x Severity					

### **Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

### **Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 081
	Date: 23/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## **Corded and Cordless Hand Held Drills**

### **Hazards**

#### **Electricity**

Poorly or incorrectly connected, fitted, damaged or defected electrical cables and plugs can result in electrocution-death or first, second and or third degree burns.

#### **Slips Trips and Falls**

Poor housekeeping, personal belongings or a trailing electrical cable, hand tool lying on the ground can result in slipping and tripping causing fall impact head and body injuries.

#### **Mechanical**

Entanglement of long hair or loose clothing with rotating tool or chuck head can result in minor cuts and bruises. Cuts to hands and fingers when in contact with rotating cutting tools.

#### **Ergonomics**

Operating the tool in crunched awkward positions and for extended periods of time can result in acute or chronic lower back and or upper body musculoskeletal injuries.

#### **Vibration / Torque**

Drilling various materials can result in vibration and cause hand and vibration injuries (white finger). Drilling various materials can result in sprains to the wrist and elbow when the drill comes to a sudden stop.

#### **Flying Debris**

Drilling various materials can generate flying debris (swarf) and result in loss of sight, drill bits can shatter when in use and fly resulting in loss of sight or minor cuts.

#### **Noise**

Drilling various materials can result in the generation of noise and cause temporary hearing discomfort.

#### **Sharps**

Drill bits can contain sharps and result in minor lacerations to the hands and fingers when handled.

#### **Falling Machine**

Unsecure hold of hand tool when operating it, hand tool placed on the edge of a work bench can result in a falling tool and cause lower leg and feet impact injuries.

#### **Person Exposed to Risk**

☒ Students    ☒ Employees    ☐ Public ☐ Contractors    ☐ Visitors

#### **Work Description**

The hand tools are used for drillings holes or screws into or cleaning down various materials.

## Controls

- Students are not permitted use of the equipment.
- Where possible always use a battery operated or 110v drill. If required to use a 240v drill ensure that it is plugged in to a socket with a Residual Control Device (RCD).
- 240v power tools are not permitted to be used for external work.
- Inspect the electrical cable, plugs and drill for damage or defects prior to use.
- Do not use if cable or drill is defected or damaged in any way and remove from use for repair by a competent person or safe disposal of.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Avoid the trailing of electrical cables where possible.
- Never leave a hand tool lying on the ground, use a nearby work bench to rest it on.
- Loose clothing must not be worn when operating the machine.
- Long hair must be neatly tied back or a well fitted cap worn.
- Never touch a rotating cutting tool.
- Never assist in stopping or slowing down a rotating tool or chuck head.
- Do not use the hand tool for extended periods of time and tend to other duties for periods of rest or split the work load with another work colleague if possible.
- Maintain a firm and secure hold of the hand tool when drilling materials.
- Always place the hand tool in from the edge of a work bench when not in use.
- Wear safety glasses when drilling materials.
- Never touch swarf with bare hands.
- Wear safety hearing protection when required.
- Always use the drill as intended by the manufacturer.
- Never hold or handle a drill bit by its cutting tool head, wear gloves if required.
- Never leave a drill unattended and return to storage when no longer required.
- Always hold the tool with both hands when drilling materials.

## Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

## Information, Instruction & Training

- PPE training.
- Safe use of operating the tool.

## ***Personal protective equipment required (last resort)***

- Safety Glasses
- Safety Boots
- Safety Gloves
- Hearing protection

**Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*

<b>Safe Work Practice Sheet</b>	Ref: SWPS MEC 082
	Date: 20/07/2014
	Assessed by: G. Caffrey
	Approved by: E. Roe

## Hazards

### Electricity

Contact with damaged, loose or poorly maintained electrical cables can result in electrocution-death or minor injuries, first, second and or third degree burns.

### Manual Handling

Pushing and pulling Hoover/buffer, cleaner, moving furniture, machinery etc. can result in acute or chronic lower back and or musculoskeletal injuries.

### Chemicals

Applying cleaning chemicals and emptying machinery can result in chemical burns to the eyes, hands, face and other body parts and contamination of clothing. Damage to the lungs by acute wheezing or chronic asthma from the inhalation of fumes.

### Slips Trips and Falls

Poor Housekeeping, wet floors, oil and dirt on the floors, trailing cables can cause slips trips and falls resulting in broken limbs, musculoskeletal injuries, broken fingers, cuts and bruises.

### Mechanical

Contact with rotating buffer can result in entanglement of long hair, loose clothing causing asphyxiation, cuts and bruises.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☒ Contractors    ☒ Visitors

## Work Description

Class aid is required to clean the floors of the mechanical work shop by means of electrical Hoover, buffer, Taski vacuum liquid sucker and liquid chemicals etc.

## Controls

- Floor Cleaning must be carried out when students, contractors, visitors or other staff are not present.
- Food and drink are not permitted in the work shop/ lab at any time.
- Safety signage must be used when cleaning in progress.
- Inspect the electrical cable and plug of the cleaning equipment for damage or defects prior to use. Do not use if damaged or defected in any way and remove from use for repair or replacement.
- Class Assistant must not carry out repairs on cables, plugs or damaged cleaning equipment.
- All electrical repairs must be carried out by a competent person.
- Never transport cleaning equipment by pulling on the electrical cables.
- Chemicals must be stored (under lock and key controlled by class assistant) away in a designated area.
- Chemicals must remain in original containers with original Identification label description.
- Ensure that there is adequate ventilation prior to commencing cleaning and turn on the extract system where

available.

- Liquid waste (Taski liquid vac Hoover, bucket etc.) must be disposed of to external drains.
- Care must be taken when moving or lifting class furniture (seek assistance if required). Follow manual handling training at all time and seek assistance when required.
- Use a pallet truck for moving work benches or other items of furniture and repeat the process when returning to their original position.
- When cleaning machinery is in use, trailing electrical cables must be draped over shoulder of class assistance.
- Remove and replace any clothing contaminated by chemicals.
- When using a mop bucket do not over fill with water.
- When chemicals are required for cleaning ensure to apply them sparingly.
- On completion of cleaning, all cleaning machinery must be returned to storage.
- Observe where cleaning machinery cables are at all times, avoid walking over cables where possible.
- Always use cleaning equipment and chemicals as intended by their manufacturer.
- Never touch the rotating parts of cleaning machinery with any body part.
- Never wear loose clothing when operating cleaning machinery.
- Long hair must be neatly tied back or a well fitted cap worn.

### Checks & Inspections

- Cables and Plugs on electrical machines must be checked before use.

### Information, Instruction & Training

- Manual handling training.
- Chemical Handling training.
- PPE training.
- MSDS

### **Personal protective equipment required (last resort)**

- Wear safety glasses, boots and gloves when cleaning in operation

### Initial Risk Rating (without any control measures)

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

### Risk Reduction Rating (after controls introduced)

Probability :  x Severity  = Risk Factor

### Risk Assessment Review

*As and when process changes or yearly*

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<b>Safe Work Practice Sheet</b>  <b>Gas Safety</b>	Ref: SWPS PLU 019
	Date: 18/07/2014
	Revision. No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

## Hazards

### Chemicals

Working with oxygen and ethylene gases can result in asphyxiation.

### Temperature

Quick releasing gas from cylinder can result in frostbite to exposed skin parts.

### Explosion

Gas exposed to an ignition source can result in an explosion and or fire and result in death or first second and third degree burns. Cylinders left lying on their side when full or empty can explode and cause death.

### Manual Handling

Moving cylinders to and from storage can result in acute or chronic lower back injury.

### Escaping Gas

Gas escaping from a cylinder under pressure can result in loss of sight.

### Falling Cylinders

Unsecure hold of cylinder when transporting to and from storage, not secure on trolley, cylinder left free standing, can result in a falling cylinder and crush injuries to the lower legs and feet.

### Person Exposed to Risk

☒ Students    ☒ Employees    ☐ Public    ☒ Contractors    ☐ Visitors

## Work Description

Use of oxygen and acetylene for welding.

## Controls

- Persons required to connect and disconnect cylinders must have gas safety training.
- Material Safety Data Sheets must be available for any gas in use in the School
- Cylinders must be properly marked so that all users are aware of the contents.
- Always ensure that the regulator in use is suitable for the pressure contained within the cylinder. Check the pressure rating of the regulator and the indicated pressure within the cylinder.
- Ensure that gas tubing is in good condition and is suitable for the gas e.g. never use natural rubber tubing with O<sub>2</sub>.
- Never lay cylinders on their side unless they are empty and are being stored prior to removal off site. Never lay acetylene cylinders on their side, even when empty.
- When using flammable gases remove potential sources of ignition from the area wherever possible.
- Cylinders must always be securely fastened. Cylinders must never be left freestanding for any length of time.
- Wear safety gloves, glasses and boots as required.

- The use of PTFE tape to seal joints is prohibited
- The use of oil or greases on cylinder threads is prohibited
- Never attempt to catch a falling cylinder
- The regulator should be closed / turned to zero before opening the cylinder valve at the spindle.
- Repairs to damaged regulators may only be undertaken by a competent service provider.
- Regulators must be serviced on a regular basis, as per the manufacturers instructions. As a general rule an annual inspection with a five year replacement or reconditioning is recommended.
- Regulators must be removed before transporting cylinders, even for short distances
- Correctly sized tools should be used when fitting regulators to ensure no damage to the fittings and a secure fit
- A purpose designed detector fluid should be used to check for leaks around a regulator during initial set up and at regular intervals thereafter
- Naked flames must not be used in areas where flammable gases are stored or used and signage to this effect must be erected close by.
- Areas in which compressed gases are in use must be adequately and continuously ventilated
- When a cylinder is not in use the cylinder valve should be closed
- Cylinders must be handled carefully at all times. All persons handling cylinders must be trained in manual handling techniques.
- Cylinders must be transported using a suitably sized cylinder trolley. Cylinders should be properly secured in the trolley and trolleys should be pushed and not pulled.
- Safety shoes and gloves must be worn when handling large compressed gas cylinders
- Cylinders must not be carried in passenger areas of vehicles. Cylinders should be carried in an open vehicle.
- Cylinders should be stored in well ventilated areas protected from the effects of weather and out of direct sunlight.
- Full cylinders should be stored separately to empty cylinders
- Empty cylinders should be returned to the supplier as soon as possible. Regular supplier delivery and collections should be made to ensure rapid turnover of used stock
- The minimum number of cylinders possible should be kept in storage
- Cylinders must be secured in an upright position

#### **Checks & Inspections**

- Piping is checked annually and records maintained by the school.
- Slam shut valves are checked annually and records maintained by the school.
- Lecturers and technicians to monitor the compliance with control measures and the wearing of PPE.

#### **Information, Instruction & Training**

- The MSDS for each gas must be available
- Manual Handling Training
- Chemical Handling Training
- PPE Training

#### ***Personal protective equipment required (last resort)***

- Safety gloves
- Glasses
- Boots

**Initial Risk Rating (without any control measures)**

Probability :  x Severity  = Risk Factor

KEY		
PROBABILITY	SEVERITY	RISK FACTOR
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

**Risk Reduction Rating (after controls introduced)**

Probability :  x Severity  = Risk Factor

**Risk Assessment Review**

*As and when process changes or yearly*



## **Appendix IV**

### **Accident / Incident, Near Miss and Dangerous Occurrence Reporting Procedures**

## **ACCIDENT, INCIDENT, NEAR MISS AND DANGEROUS OCCURRENCE REPORTING PROCEDURES**

Dundalk Institute of Technology is committed to reducing accidents and ill-health to staff and students of the Institute. Procedures are in place in the Institute to ensure that all Accidents, Near Misses and Dangerous Occurrences are recorded. These procedures not only ensure compliance with the law, but are also used as a basis for analysing trends throughout the Institute, in an effort to reduce accidents and ill-health to staff and students. All reports are reviewed at each meeting of the Institute Safety Monitoring Committee.

The purpose of an investigation is to establish all the facts relating to the incident, to draw conclusions from the facts and to make recommendations to prevent reoccurrence. Each incident will be looked at from the point of view of place, plant, procedures and people, to see where the safety system has failed and to tighten controls. It is important to note the definitions of all incidents (Accidents, Near Misses & Dangerous Occurrences) in order to take the correct action.

### **DEFINITIONS**

An **Accident** is defined as an unplanned event resulting in personal injury or property damage. This could include, but is not limited to:

- |                   |                   |                      |
|-------------------|-------------------|----------------------|
| ▪ Sprain          | ▪ Sickness due to | ▪ Sickness due to a  |
| ▪ Laceration      | exposure to a     | chemical spill or    |
| ▪ Broken bone     | dangerous         | environmental        |
| ▪ Concussion      | substance, fumes  | pollution            |
| ▪ Unconsciousness | or gases, fire or | ▪ Damage to building |
| ▪ Ill-health      | explosion         | ▪ Damage to property |

A **Near Miss** is defined as an incident in which there was no injury or property damage but where the potential for serious consequences existed.

A **Dangerous Occurrence** is one of a number of specific, reportable adverse events, which are defined within the Twelfth Schedule of the General Application Regulations 2007. Dangerous Occurrences are reportable to the Health & Safety Authority (HSA) using Form IR3 or via the HSA online notification process. Any Dangerous Occurrences which are notifiable to the HSA will be forwarded by the Health & Safety Co-ordinator.

These are incidents with a high potential to cause death or serious injury, but which happen relatively infrequently. Dangerous occurrences usually include incidents involving:

- |                     |               |               |
|---------------------|---------------|---------------|
| ▪ Lifting equipment | ▪ Explosions, | ▪ Collapse of |
|---------------------|---------------|---------------|

- Pressure systems
- Overhead electric lines
- Electrical incidents causing explosion or fire
- biological agents
- Radiation generators and radiography
- Breathing apparatus
- Diving operations
- scaffolding
- Train collisions
- Wells
- Pipelines or pipeline works

**All Accidents are 'Incidents'. However, the definition of an Incident is wider in that it includes Dangerous Occurrences and Near Misses.**

## **REPORTING PROCEDURES**

All incidents must be reported immediately using the DkIT relevant incident report forms. These are located in the Parent Safety Statement and also on the DkIT website at <https://www.dkit.ie/safety/incidents-accidents-reporting-procedures>. All sections of the form must be completed with as much accurate information as possible.

The immediate supervisor must investigate the cause of the incident, and complete the Institute Accident/Incident Report Form or Near Miss Form. A copy of this form must then be made available to the Head of Department/School/Function for review and final sign off. Copies of the completed form should be forwarded to the Health & Safety Co-ordinator, Secretary/Financial Controller and the Estate's Office. Copies of these forms are contained within this document.

Accidents involving visitors and contractors must be investigated by the staff member to whom the injury was reported, in conjunction with the staff member they are visiting or working with.

Accidents, which involve serious or fatal injuries to an employee, student or any third party must be notified to the Health and Safety Co-ordinator and the HSA without delay.

Any accidents at work that involve an employee being unable to carry out his/her duties for three or more consecutive days, or that involve a third party being injured and requiring treatment from a medical practitioner, are reportable to the HSA and must be notified using Form IR1 or via the HSA online process, as soon as practicable. Dangerous Occurrences are reportable to the HSA using Form IR3 or via the HSA online notification process. Any incidents, which are notifiable to the HSA, will be forwarded to the HSA by the Health & Safety Co-ordinator.

## **Internal Reporting Procedure**

It is the responsibility of each Head of Department/School/Function to ensure that the appropriate investigation procedures take place in the event of an Accident, Near Miss or Dangerous occurrence arising in their area. Heads of Department/School/Function must also

ensure that the appropriate forms are completed and forwarded to **each** of the relevant parties (i.e. Estates Office, Secretary/Financial Controller, Health & Safety Co-ordinator).

It is the responsibility of the Health & Safety Co-ordinator to ensure that all reported incidents are tabled and discussed at each ISMC meeting.

### **External Reporting Procedure**

Arising from the internal reporting procedure, any incidents, which are notifiable to the HSA, will be forwarded to that body by the Health & Safety Co-ordinator.

## ACCIDENT / INCIDENT REPORT FORM

Note:

This form should be completed whenever an accident or incident occurs which results in injury or damage to personnel or property.

If personnel or property WERE NOT injured or damaged during the Accident/ Incident, do not use this form. Use the NEAR MISS REPORT FORM.

Accident / Incident Report Form		
i	Name of person involved in Accident/Incident:	
ii	Address:	
	Phone:	
iii	Who was involved in the Accident/Incident: <input type="checkbox"/> Student <input type="checkbox"/> Employee <input type="checkbox"/> Public <input type="checkbox"/> Contractor <input type="checkbox"/> Visitor	
iv	Occupation:	
v	If an employee of the Institute please state Department:	
vi	If no, please elaborate:	
vii	Particulars of Accident/Incident & circumstances under which the Accident/Incident occurred: <i>Use additional pages and/or photos if necessary.</i>	
viii	Place:	
ix	Time:	Date:
x	Witness Phone No & Address:	
	Witness Phone No & Address:	
xi	When and to whom was the Accident/Incident initially reported?	

<b>xii</b>	<b>Details of injury/damage:</b> Indicate type of injury (put an 'x' in one box only) <table border="0" style="width: 100%;"> <tr> <td><input type="checkbox"/> Bruising, contusion</td><td><input type="checkbox"/> Suffocation, asphyxiation</td></tr> <tr> <td><input type="checkbox"/> Concussion</td><td><input type="checkbox"/> Gassing</td></tr> <tr> <td><input type="checkbox"/> Internal injuries</td><td><input type="checkbox"/> Drowning</td></tr> <tr> <td><input type="checkbox"/> Open wound</td><td><input type="checkbox"/> Poisoning</td></tr> <tr> <td><input type="checkbox"/> Abrasion, graze</td><td><input type="checkbox"/> Infection</td></tr> <tr> <td><input type="checkbox"/> Amputation</td><td><input type="checkbox"/> Burns, scalds and frostbite</td></tr> <tr> <td><input type="checkbox"/> Open fracture (i.e. bone exposed)</td><td><input type="checkbox"/> Effects of radiation</td></tr> <tr> <td><input type="checkbox"/> Closed fracture</td><td><input type="checkbox"/> Electrical injury</td></tr> <tr> <td><input type="checkbox"/> Dislocation</td><td><input type="checkbox"/> Property damage, Specify_____</td></tr> <tr> <td><input type="checkbox"/> Sprain, torn ligaments</td><td><input type="checkbox"/> Other, Specify_____</td></tr> </table>				<input type="checkbox"/> Bruising, contusion	<input type="checkbox"/> Suffocation, asphyxiation	<input type="checkbox"/> Concussion	<input type="checkbox"/> Gassing	<input type="checkbox"/> Internal injuries	<input type="checkbox"/> Drowning	<input type="checkbox"/> Open wound	<input type="checkbox"/> Poisoning	<input type="checkbox"/> Abrasion, graze	<input type="checkbox"/> Infection	<input type="checkbox"/> Amputation	<input type="checkbox"/> Burns, scalds and frostbite	<input type="checkbox"/> Open fracture (i.e. bone exposed)	<input type="checkbox"/> Effects of radiation	<input type="checkbox"/> Closed fracture	<input type="checkbox"/> Electrical injury	<input type="checkbox"/> Dislocation	<input type="checkbox"/> Property damage, Specify_____	<input type="checkbox"/> Sprain, torn ligaments	<input type="checkbox"/> Other, Specify_____
<input type="checkbox"/> Bruising, contusion	<input type="checkbox"/> Suffocation, asphyxiation																							
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<input type="checkbox"/> Open fracture (i.e. bone exposed)	<input type="checkbox"/> Effects of radiation																							
<input type="checkbox"/> Closed fracture	<input type="checkbox"/> Electrical injury																							
<input type="checkbox"/> Dislocation	<input type="checkbox"/> Property damage, Specify_____																							
<input type="checkbox"/> Sprain, torn ligaments	<input type="checkbox"/> Other, Specify_____																							
<b>xiii</b>	<b>Indicate part of body most seriously injured (put an 'x' in one box only):</b> <table border="0" style="width: 100%;"> <tr> <td><input type="checkbox"/> Head, except eyes</td><td><input type="checkbox"/> Fingers, one or more</td></tr> <tr> <td><input type="checkbox"/> Eyes</td><td><input type="checkbox"/> Hip joint, thigh, knee cap</td></tr> <tr> <td><input type="checkbox"/> Neck</td><td><input type="checkbox"/> Knee joint, lower leg, ankle</td></tr> <tr> <td><input type="checkbox"/> Back, spine</td><td><input type="checkbox"/> Foot</td></tr> <tr> <td><input type="checkbox"/> Chest</td><td><input type="checkbox"/> Toes, one or more</td></tr> <tr> <td><input type="checkbox"/> Abdomen</td><td><input type="checkbox"/> Extensive parts of the body</td></tr> <tr> <td><input type="checkbox"/> Shoulder, upper arm, elbow</td><td><input type="checkbox"/> Multiple injuries</td></tr> <tr> <td><input type="checkbox"/> Lower arm, wrist, hand</td><td><input type="checkbox"/> Other, Specify_____</td></tr> </table>				<input type="checkbox"/> Head, except eyes	<input type="checkbox"/> Fingers, one or more	<input type="checkbox"/> Eyes	<input type="checkbox"/> Hip joint, thigh, knee cap	<input type="checkbox"/> Neck	<input type="checkbox"/> Knee joint, lower leg, ankle	<input type="checkbox"/> Back, spine	<input type="checkbox"/> Foot	<input type="checkbox"/> Chest	<input type="checkbox"/> Toes, one or more	<input type="checkbox"/> Abdomen	<input type="checkbox"/> Extensive parts of the body	<input type="checkbox"/> Shoulder, upper arm, elbow	<input type="checkbox"/> Multiple injuries	<input type="checkbox"/> Lower arm, wrist, hand	<input type="checkbox"/> Other, Specify_____				
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<b>xiv</b>	<b>Consequences of the Accident/Incident:</b> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;">Fatal</td><td style="width: 10%;"><input type="checkbox"/></td><td style="width: 20%;">Date of resumption of work</td><td style="width: 10%;">Anticipated absence if not back</td><td style="width: 40%;"></td></tr> <tr> <td>Non Fatal</td><td><input type="checkbox"/></td><td>if back</td><td>4-7 days</td><td><input type="checkbox"/></td></tr> <tr> <td></td><td></td><td>Year      Month      Day</td><td>8-14 days</td><td><input type="checkbox"/></td></tr> <tr> <td></td><td></td><td>_____</td><td>More than 14 days</td><td><input type="checkbox"/></td></tr> </table>				Fatal	<input type="checkbox"/>	Date of resumption of work	Anticipated absence if not back		Non Fatal	<input type="checkbox"/>	if back	4-7 days	<input type="checkbox"/>			Year      Month      Day	8-14 days	<input type="checkbox"/>			_____	More than 14 days	<input type="checkbox"/>
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		_____	More than 14 days	<input type="checkbox"/>																				
<b>xv</b>	<b>Treatment:</b>																							
<b>xvi</b>	<b>Doctor's report and recommendation:</b>																							
<b>xvii</b>	<b>Steps taken to prevent reoccurrence of this type of Accident/Incident:</b>																							
	<b>Signature of person completing report:</b>		<b>Date:</b>																					
	<b>Print Name &amp; Job Title:</b>																							
	<b>Signature of Head of Department/School/Function:</b>		<b>Date:</b>																					
	<b>Print name:</b>																							

**(Copies of the completed Institute Accident Report are to be sent separately to the Institute Health & Safety Co-ordinator, the Secretary/Financial Controller and the Estates Office)**

## NEAR MISS REPORT FORM

**Note:**

This form should be completed whenever a Near Miss occurs - that is an incident WITHOUT injury to person or damage to property.

If personnel or property were injured or damaged during the incident, do not use this form. Use the 'ACCIDENT / INCIDENT REPORT FORM'.

NEAR MISS REPORT FORM	
<b>i</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">Date of Near Miss:</div> <div style="width: 45%;">Time of Near Miss:</div> </div>
<b>ii</b>	Location of Near Miss:
<b>iii</b>	<b>Who was involved in the Near Miss:</b>  <div style="display: flex; justify-content: space-between;"> <span><input type="checkbox"/> Student</span> <span><input type="checkbox"/> Employee</span> <span><input type="checkbox"/> Public</span> <span><input type="checkbox"/> Contractor</span> <span><input type="checkbox"/> Visitors</span> </div>
<b>iv</b>	Name of person(s) involved in Near Miss:
<b>v</b>	Name, Address & Contact details of any witnesses to Near Miss:
<b>vi</b>	<b>Description of Near Miss:</b>  <div style="height: 150px; border: 1px solid black;"></div>
<b>vii</b>	Steps taken to prevent a reoccurrence of this type of Near Miss incident:
	<div style="display: flex; justify-content: space-between;"> <div style="width: 70%;">Signature of person completing report:</div> <div style="width: 25%;">Date:</div> </div>
	Print Name & Job Title:
	<div style="display: flex; justify-content: space-between;"> <div style="width: 70%;">Signature of Head of Department/School/Function:</div> <div style="width: 25%;">Date:</div> </div>
	Print name:

**(Copies of the completed Near Miss Report Form are to be sent to the Health & Safety Co-ordinator, the Secretary/Financial Controller and the Estates Office)**

## First Aid and Emergency Contacts

### Location

Jim Connolly	Mechanical Engineering Workshop	Ext 2966
Phil Dillon	Engineering Administration	Ext 2754
Simon O' Neill	Plumbing Workshop	Ext. 2847
Larry Quigley	Plumbing Workshop	Ext. 2594
Nick O'Rourke	Plumbing Workshop	Ext. 2593
Alan Gorham	Plumbing Workshop	042 9396510

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- Ambulance/Fire Brigade: 112 or 999
  - Health Centre/Campus Nurse: 2777
  - Doctor: Dr. Shane Gleeson: 2702/ 042 9320038
  - Hospital: Louth Hospital: (042) 933 4701