



# Men in Sheds Winslow

Health & Safety Manual  
and  
Safety Instructions

November 2019



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**All Members have a PRIMARY responsibility to keep themselves safe.  
All Members also have a SECONDARY responsibility to help keep others safe.  
All Members must read and comply with this plan and instructions.**

## **1. Training Brief**

The purpose of training is to give a basic handling instruction to the Member so that the machine can be used safely and within its design limits.

Training may only take a few minutes by an agreed competent person and will cover:

The features of the machine, its purpose and limitations.

Familiarity with machine operation and specific associated risks.

Setting up and using safety devices, guards, guides and fences as appropriate to the job in hand.

Changing and/or adjusting the cutting tools.

Security of the work piece and safe handling of the materials.

Demonstration of use.

Hands on user test.

Personal Protective Equipment.

On completion, the user should be seen to be competent to safely and effectively operate the machine.

It is suggested that at least two operations are undertaken with supervision or as required until the user feels competent.

On successful completion, the user record will be signed off for the specific machine.

## **2. Induction**

**All members or prospective members must undergo an initial induction.**

The purpose of this is to provide sufficient information for the prospective member to:

Know how to be safe;

Know what is available in the Shed;

Know who to ask for assistance;

Find out what policies there are with respect to health and safety

Know what to do in the event of an emergency;

Know where to find additional information;

Provide MISW with appropriate personal information to register the member.

Induction includes:-

Provision of personal details for records;

Signing in book;

Health and Safety Policy;

Committee members;

Rules for using machinery including the need for appropriate training;

Medical equipment and procedures;

Emergency numbers for contacts and First Aiders;

Emergency first aid document;

Attendance fees, where appropriate;

General workshop layout, equipment and opportunities available;

Opening times, activities and key holders;

Evacuation

### **3. Health and Hygiene**

A fundamental benefit of the Men's Shed concept is that time spent in the company of other men provides a positive health outcome. Sheds provide a place for men to meet and share in a variety of activities with other men. An activity can be as simple as a friendly chat with other men through to operating machines connected to Shed activities.

Membership is open to anyone who wishes to join. There is a minimal joining fee so that everyone can become fully participating members regardless of their age or background. Members are required to respect other members including those who supervise activities in order that the Shed operates safely.

Members will be asked to provide some personal information when they join. This is to ensure that member's specific health risks are known. This information might prove useful in the event of an emergency. However members are entitled to personal privacy in this regard and at their discretion and risk, may withhold such information.

It is important that physical restraints or risks have been accepted. People may be asked to provide confirmation of suitability from a doctor in cases of severe disability either to be safe to operate machinery or to be able to attend the Shed for sociable reasons only. The committee has the final say in its discretion in such rare cases.

The Shed will provide sufficient equipment / material to ensure that acceptable hygiene standards are maintained, e.g. washing materials etc.

Water, tea, coffee, milk and biscuits will be available for refreshment; one member is delegated to maintain supplies and ensure they are fresh and in-date. All members are responsible for maintaining the kitchen area in a clean and tidy state. There is no charge for refreshments; costs are covered by members' session fees and their annual membership fee.

Members need to be aware of risks associated with skin/eye/mouth/ etc, when in contact with chemicals, solvents, paints and other materials used in the Shed. Members must wear appropriate protection advised by the manufacturer when handling such materials. If in doubt, ask the Workshop Manager to provide safety information before using materials. Safety information should be available either on the product itself or, in a Materials Safety Data Sheet (COSHH). All such materials must be stored in the yellow COSHH cabinet.

Machines may only be operated with guarding as appropriate to the operation to prevent injury to operators and people in the vicinity.

Operators need to wear Personal Protection Equipment. The Shed will provide basic eye protection, ear defenders and masks. All this equipment is kept in the workshop area.

Operators are also required to check the condition of tools and equipment prior to and after use and to comply with safety standards and signage.

In the event of an injury, the injured person may be in need of First Aid. The Shed has at least three members trained in First Aid; one is usually in attendance during Shed opening times. If a trained MISW first-aider is not available then nearby Norden House Surgery can be contacted on 01296 713434 or, in serious cases, call 999.

All members will be provided with an Emergency First Aid leaflet and a copy will be placed near the first aid kit

All injuries regardless how slight need to be recorded in the First Aid Register. The Register is kept adjacent to the First Aid Box. This information will help identify trends at the Shed so that problems can be monitored and corrected.

The book will be reviewed at Committee at least twice a year.

A First Aid kit is available in the workshop area and will be maintained to comply with British Red Cross 'basic' kit standard. As a minimum, it will contain:

- First aid emergency notes card.
- Emergency foil blanket.
- 10 plasters.
- Large and medium dressings.
- 1 pair of nitrile gloves
- 2 alcohol free antiseptic wipes.
- 6 safety pins.
- 4 blister plasters.
- Crepe bandage.
- Tough cut scissors.
- Hypo- allergenic tape.
- 1 pack of gauze swabs.
- Pen.

The kit will be routinely checked and, where necessary, restocked with fresh supplies.

Some items will be time limited and must be replaced at the correct time.

A Committee nominee is responsible to oversee the maintenance and replacement of the kit.



## **5. Labelling**

MISW requires that labels on containers, adequately and accurately display the contents of the container.

If smaller amounts are transferred from the main container to a smaller one, then proper care needs to be taken when using/disposing of the smaller/work containers because harm could result otherwise.

For example, a plastic water bottle filled with mineral turpentine would poison and possibly kill a drinker who mistook the contents for water.

All chemical liquids must carry a proper identification label.

All flammable or noxious materials including oil-based paints, polishes, lacquers or mineral fuels must be stored in the yellow COSHH cabinet.

**'Portable Appliance Testing'** does not apply (as such) to members' clubs such as MISW so conventional labelling will not feature on plugs etc. All portable electrical devices will, however, be regularly checked by a delegated and suitably experienced member. In addition, members must carry out a basic visual check on the integrity of all electrical systems before using any power tool or plug-in device. Any concerns should be reported to the Workshop Manager and the device should be put out of use until suitable checks and/or repairs have been made.

## **6. Shelf Life Monitoring**

MISW needs to identify items that have a defined shelf life and ensure that a diary system is implemented to track and, if appropriate, replace items prior to them exceeding their shelf life.

Of particular concern are food items: -

- The use of out of date food items should be avoided. Such items should be disposed of. This applies to items such as milk stored in the kitchen fridge.
- Chemicals/glues/paints/solvents that have shelf lives are also to be treated cautiously.

If any of these items are to be disposed of, then this needs to be done correctly.

Please refer to the manufacturer's instructions in the first instance. Disposal information may also feature on the product packaging.

If doubt still exists, then check with a Committee member.

## **7. Waste Disposal**

Waste must be disposed of correctly to ensure a safe environment and to comply with environmental requirements locally.

The Shed may generate:

- Food Waste;
- Wood Waste;
- Shavings and Dust;
- Chemical Waste;
- Paints and Toxic Waste.

In general, MISW has no provision for waste disposal for waste generated from personal projects and take it away for disposal.

Some bins and containers are provided for tidying away non-hazardous waste such as timber off-cuts and shavings generated by Shed projects. An arrangement is in place for the disposal of sawdust and small/wood offcuts. The remaining bins/containers will be emptied as required by Committee members using their own household waste facility or by taking it to an authorised AVDC site.

Skips and bins in the yard adjacent to The Shed are maintained by companies sharing the MISW site – **they must not be used for Shed waste.**

## **8. Risk Management**

Risk Management is the process used to analyse a situation and then work towards minimising the potential for harm towards people or property. This can be divided into three main areas:

- Personal risks e.g. using tools
- Risks involving the Shed's building e.g. the risk of fire
- Risks that could impact the organisation

Everyone is responsible for contributing to risk management by reporting risks and, where possible, eliminating the source e.g. electrical leads left out creating trip hazards, tools left out which could cause injury, distracting members when using tools and machinery.

The Committee is responsible for reviewing and assessing risk and developing the necessary actions to mitigate or eliminate hazards. Risk is a regular agenda item for committee meetings. The Committee will assess risks and decide the appropriate actions to minimise them.

### **Personal Risks and Assessing Risk Process**

#### **Spot the Hazard**

The first step is to walk around the Shed and find the obvious things that could put the health or safety of anyone in danger. A hazard is anything that has the potential to cause injury, illness, damage to anyone's health or damage to the building, fixtures & fittings, or equipment. Some hazards can be fixed straight away such as picking up a lead that may cause someone to trip, cleaning up a spill on the floor or moving a frequently used item onto a lower shelf. Also, talk to members – the people who do the job regularly are the best people to advise about any risks associated with their work. Also ask members which tasks cause problems or make them concerned.

- **Use safety checklists**  
These are a good way to help identify some of the common risks.
- **Review manufacturers information**  
Review the information available from designers or manufacturers including materials safety data sheets, instructions and product labels.
- **Check injury records and incident reports**  
By looking at these records, you will be get a good idea of what is causing injuries and/or incidents.

### Assess the Risk

When hazards are identified, the level of risk needs to be established. It is necessary to identify the likelihood of an accident occurring and the severity of the consequences. Each potential hazard then carries a Risk Factor which may be reduced taking an appropriate action. Risks are unlikely to be eliminated completely; the Residual Risk Factor (RRF) shows the scale of risk after precautions have been taken. The aim is always to reduce RRF to the minimum possible and then decide what further precautions need be taken.

Severity	
1	Minor injury – full recovery in <1day
2	Significant injury – full recovery after >1day
3	Temporary disability/impairment lasting several weeks or months
4	Permanent disability/ loss of limb
5	Fatal

Probability	
1	Unlikely
2	Slight chance
3	Possible
4	Probable
5	Almost certain

Risk Assessment								
Machine: Pillar Drill								
Hazard	Raw Score			Action	Residual Score (RRF)			Further Action
	Severity	Probability	Risk Factor		Severity	Probability	Risk Factor	
Injury from flying swarf/chips	2	3	6	Secure work piece, wear eye protection, guards in place.	2	2	4	Feed drill bit in stages to allow progressive egress of swarf.
etc.								
etc.								
etc.								

Risk Factors	
<9	<b>Low</b> – Safe to proceed with normal safety precautions.
9 - 14	<b>Moderate</b> – Consider additional precautions. Proceed with caution.
14>	<b>High</b> – Additional precautions needed, consider alternative methods.

**Infrastructure Risks and Risk Assessments**

This is also based of severity and probability. However the severity factors are different from personal risk assessment. The following criteria are used:

<b>Severity</b>	
1	Trivial – very little or no impact on operations
2	Minor – some impact on operations but can be fixed short term
3	Significant –more impact on operations and/or taking longer to correct
4	Major – high impact resulting in loss of part(s) of the Shed
5	Showstopper – severe impact resulting in close down of the Shed

For example a fire in the workshop would be rated as High (probably 4 or 5). The assessments include the original rating and the final risk rating once any necessary corrective actions have been taken.

Risk Assessments have been carried out and are reviewed/updated either annually or after an event considered to be Severity 4 or 5. Copies are available for review in the 4 drawer filing cabinet in the main area of the Shed

**Organisational Risks**

This uses the same severity and probability criteria as Infrastructure risks but examines risks that may affect the organisation as a whole. The risks are framed in “If Then” statements and rated as above.

For example, there is a risk to the Shed’s location which can be summarised as “If the current site is re-developed then the Shed would have to close”. This would have an impact of 25 as it is a Showstopper and almost certain to happen. The risk would be reduced and the score lowered if plans are made and executed e.g. find a suitable new site, raise funds to build new building, look for rented accommodation, etc. This could reduce the overall impact to 15 or 20 (the probability can’t be changed).

The committee will start assessing future risks to the Organisation at some point and will produce a Risk Register containing all relevant items. This will be reviewed annually.

## **9. Electrical Safety Policy**

### **Scope**

MISW is not responsible for the electrical supply to the Shed or to the outlets provided within it. Any work required on this infrastructure must be handled in discussion with the Committee who will decide whether the premises owner needs to be contacted for approval.

MISW has to provide distribution to machines which are self standing or secured to benches, and to provide connectivity to hand held powered machines.

This policy is to fulfil the requirements for electrical appliances and cables etc beyond the supply socket only.

### **Equipment connectivity**

Self standing machines will be powered by extension cables from the wall sockets. Wherever possible, these will be run at ceiling height and dropped down locally. However, where this is not possible the supply cables will be routed on the floor as far away from walkways as practical and, where possible, with rubberised capping to protect them and reduce the tripping hazard.

Supplies to bench mounted equipment will have an accessible multiway connection block and the cable runs on the floor will be contained in rubberised floor protection to reduce wear and tear and tripping hazards.

All equipment is to be powered through a Residual Current Device (RCD) to maximise users' safety.

### **Identification**

All plugs will carry an appropriate label to aid identification of the appliance to which they connect.

### **Maintenance and Testing**

**'Portable Appliance Testing'** does not apply (as such) to members' clubs such as MISW so conventional labelling will not feature on plugs etc. All portable electrical devices will, however, be regularly checked by a delegated and suitably experienced member. In addition, members must carry out a basic visual check on the integrity of all electrical systems before using any power tool or plug-in device. Any concerns should be reported to the Workshop Manager and the device should be put out of use until suitable checks and repairs have been made.

Plugs are fitted with fuses that are rated in line with the electrical load generated by the piece of equipment. On no account should any member attempt to replace a blown fuse nor should they fit a fuse with a different rating.



Repair and or rewiring of machines or plugs will be carried out by a competent person nominated by the Committee or where appropriate by return to the supplier or a professional repair shop. The decision will be made by the competent repair nominee.



## **10. Safe Use of Chemicals**

Members must avoid or minimise the exposure/use of harmful chemicals if possible.

Chemicals that are stored at the Shed need to be kept in the yellow COSHH cabinet and in accordance with the supplier's instructions.

MISW will use glues, solvents and possibly bleaching agents such as oxalic acid. The list may grow as the Shed's activities widen in time.

All members who use these and other chemicals need to follow the applicable instructions.

All chemicals where possible, need to have the packaging/labelling prominently displayed on the container to ensure that the chance of confusion about the contents is minimised.

If a member has any doubts about a chemical, how to use it safely, store it or dispose of it, they should seek advice prior to use.

Any spillages must be dealt with immediately and other Sheddens warned if necessary.

Members should be sure of the risks of use and how to clean up after use or spillage.

## **11. Minimum Numbers in Shed and Visitors**

It is a requirement that a minimum of two people be in attendance while the Shed is open. This is particularly important if power tools are to be used.

The reason is to ensure that if a member needs help, another person is there to provide assistance.

Members must sign into the **Attendance Book** when they enter the Shed and sign out when they leave.

### **Safety of Visitors**

Visitors must be asked to sign in the **Attendance Book** when they enter the Shed and sign out when they leave.

Members have a duty of care to ensure that visitors are safe. Visitors also have a corresponding responsibility to follow the safety policy and procedures and to take care not to endanger other people.

In practical terms, visitors should be advised about any known dangers/risks they could encounter in the Shed. Visitors will not be permitted to undertake any work tasks and must be accompanied at all times.

If venturing beyond the social/lounge area of The Shed, normal safety practices that apply to members also apply to visitors and include:

- Appropriate footwear that covers the toes.
- PPE to be worn including protective eyewear.
- Safety signage to be observed.
- Long hair to be tied back and loose clothing secured

Children may be permitted access to the Shed but must be supervised by a suitable, responsible adult.

Animals, currently restricted to members' pet dogs, may be permitted access to the Shed. They must be adequately controlled and, unless there are extenuating circumstances, are not allowed in the workshops.

## **12. Basic Safety Rules for Using Machinery & Power Tools**

- 1 Members may only use machines they have been signed-off as competent to operate. This requires reading the training notes and receiving familiarisation, operational and safety instruction from a delegated MISW trainer.
- 2 Unplug the machine from the mains and check for damage and the integrity of electrical fittings, cables etc. before use.
- 3 Set the machine up for your needs before plugging into the mains. Make sure all safety guards and guides are properly fixed and secure.
- 4 Dry run the work process to ensure that it will pass unimpeded through the machine or the machine will pass over the work piece properly. Beware of clamps and mains cables getting in the way and ensure there is sufficient clearance for your work to pass right through and is correctly supported on the out-feed. If necessary, recruit a colleague to assist in supporting the work. Make sure any push-sticks or push blocks that may be required are easily to hand.
- 5 Ensure that your colleagues around you are aware that you are about to use the machine so that you have proper work clearance and will not be distracted by them whilst running your piece.
- 6 Wear the recommended Personal Protection Equipment (PPE) and make sure your clothes are not loose and cannot snag in the machine. Make sure you have secure footing.
- 7 If using a machine that creates dust, ensure that the dust extraction system is turned on and up to full speed before commencing the work.
- 8 Check switches are off and plug in the machine.
- 9 Switch on allowing the machine to achieve full running speed before commencing a cut.
- 10 Run your work piece using the appropriate methods, push-sticks etc. for the specific machine.
- 11 If you need to adjust the machine for further cuts, switch off and wait for the machine to come to a stop. If this requires touching moveable parts you must unplug the machine first.
- 12 Switch off when done and wait for the machine to fully stop. Do not remove off-cuts until the machine has fully stopped.

- 13 Switch off the dust extraction system if used.
- 14 Never leave a running machine unattended and stay with the machine until any over-run has come to a stop. Do not 'stop' the over-run by introducing scrap material (etc.) against moving parts.
- 15 Always **UNPLUG** the machine when you have finished and clean up the machine and floor area. Portable tools to be returned to their normal storage location.

## **13. Training and Instruction**

Training and instruction is required for all members using powered machinery.

(Where a member is accompanied or supported by a carer it is compulsory that the carer also receives the same training and achieves the same competence level.)

Machines must not be used unless adequate competence has been achieved and recorded.

The purpose of this is to ensure that proper safety precautions are taken and awareness of correct operation is achieved to prevent accidents and damage.

The Shed has developed a set of training briefs which outline the aspects of training to be completed, and will nominate suitable people capable of undertaking the training with members.

Each machine has a one sheet briefing document which outlines the principle risks, preventive measures and basic operation of the machine. This is available in this document and where practical, posted on or beside the machines.

The Shed will maintain a Training Log with entries for each member and the machines they are competent to use. Entries will be signed off by a suitably competent Trainer nominated by the committee.

## 14.1 Circular Saw (Table Saw)

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Woodchips/dust in eyes.	Wear eye goggles.
Can cut fingers on blade.	Keep fingers clear of blade.
Kick back from work piece.	Ensure blade is running at full speed before commencing cut. Never use a circular saw with the riving knife/crown guard removed. Grooving /rebating is best carried out with a router.
Noise.	Wear ear protectors.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. If in any doubt and always when sawing hardwoods/ MDF - wear appropriate face mask and warn others in the work area.

<b>Procedure</b>
Check lower blade guards are in place and functioning satisfactorily.
Check crown guard and riving knife are in place and secure.
Adjust depth of cut – aim for material depth + one full tooth.
Adjust crown guard clearance – aim for 5mm maximum.
Fit and adjust fences / sliding tables etc. for dimensions required.
For longer pieces of work, arrange support tables at in-feed and out-feed sides of operation and/or recruit an assistant. The work piece must be under full control at all stages.
Attach and turn on dust extraction.
Ensure blade is clear of timber and the surrounding area is clear before starting machine.
Never reach over the blade when feeding work piece. Locate push-sticks as required to prevent this becoming necessary and to allow control with hands well away from the blade.
With ' <b>BOTH</b> ' hands on the saw, switch ' <b>ON</b> ' and wait until blade has reached full operating speed.
Feed the timber steadily being careful to maintain contact with fences as needed. Use a push stick for small pieces and for the last 200mm of any longer cut.
Switch machine off and wait for blade to stop.
Unplug machine, remove work piece and clean up when finished.

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Woodchips/dust in eyes.	Wear eye goggles.
Can cut fingers on blade.	Keep fingers clear of blade.
Kick back from work piece.	Ensure work piece is unable to roll or tilt when cutting.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. If in any doubt and always when sawing hardwoods/ MDF - wear appropriate face mask and warn others in the work area.

<b>Procedure</b>
MISW bandsaws must not be used for cutting flooring or worktop laminates, Formica – type material or chipboard. These materials are highly abrasive and will quickly destroy the HSS or carbon-steel blades that MISW machines use. (TC tipped blades are not available for these smaller machines)
Re-claimed timber must be thoroughly checked for residual nails etc. and, in addition, pallet wood and scaffolding boards often contain ingrained grit and stones. Cutting these materials on the bandsaw should be avoided.
Use the right bandsaw and blade combination for the job. In general; the smaller MISW bandsaw is fitted with a 6mm blade and should be used for cutting curves. The larger MISW bandsaw is fitted with a 12mm (or wider) blade and is for straight cuts. (N.B. Once a machine has been used for freehand curve cutting it is unlikely to be able to provide accurate straight line cutting. For this reason, and to avoid having to swap blades frequently, MISW maintains two machines.)
Check upper and lower blade guides are adjusted correctly and supporting the blade.
Briefly run the machine with the blade fully guarded – listen and watch for smooth running, no blade wobble and stable tracking within the guides. Switch machine off; watch and listen for any vibration or mechanical noises as the blade comes to a halt.
Adjust depth of cut – aim for material thickness + 5mm clearance.
Choose or fabricate any jig or fence needed to ensure the work piece is secure and unable to roll or tilt.
Fit and adjust fences / sliding tables etc. for dimensions required.
For longer pieces of work, arrange support tables at in-feed and out-feed sides of operation and/or recruit an assistant. The work piece must be under full control at all stages.
Locate push-sticks as required to allow full control of the work piece with hands at least 100mm away from the blade at all times.

Plan the work so that blade will exit the work piece in the direction of the cut. 'Backing –out' the blade from a blind cut will cause the blade to de-rail.
Attach and turn on dust extraction.
Ensure blade is clear of timber and the surrounding area is clear before starting machine.
Switch ' <b>ON</b> ' and wait until blade has reached full operating speed.
Feed the timber steadily being careful to maintain contact with fences as needed. Use a push stick for small pieces and for the last 200mm of any longer cut.
Switch machine off and wait for blade to stop. 'Drop' the upper blade guide so that the machine is left with the blade fully covered.
Unplug machine, remove work piece and clean up when finished.



## 14.3 Slide Compound Saw

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Woodchips/dust in eyes.	Wear eye protection, ensure guards are secure and in place.
Can cut fingers on blade.	Keep fingers clear of blade.
Kickback from work piece.	Ensure blade is running at full speed before commencing cut.
Noise.	Wear ear protectors.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. If in any doubt and always when sawing hardwoods/ MDF - wear appropriate face mask and warn others in the work area.

<b>Procedure</b>
Check guard is in place and functioning satisfactorily.
Set up cutting angles and/or depth stops.
Turn on dust extraction.
Place timber flat onto cutting bed and clamp into position against machine fence.
For long cut, pull saw back and keep well above the timber.
Switch ' <b>ON</b> ' and hold button down until blade has reached full operating speed.
Lower and <b>PUSH</b> blade through timber: Do <b>NOT</b> pull to cut.
Release ' <b>ON</b> ' switch and wait for blade to stop.
Lift saw and return it to its resting position.
Remove work piece, clean up and unplug when finished.

## 14.4 Hollow Chisel Mortiser

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Woodchips/dust in eyes.	Wear eye goggles.
Risk of entanglement.	Eliminate loose clothing/long hair.
Fire risk from overheated work.	Ensure centre auger is sharp and correctly adjusted to hollow chisel.

<b>Procedure</b>
Mark out extents of mortices required.
Set up length and depth stops as required.
Check auger is sharp, mount auger and hollow chisel to allow <1mm clearance.
If cutting through-mortices, place sacrificial timber sub-base below work piece.
Clamp work piece to table and fence.
Switch machine on at the wall. Switch on at the machine and allow auger to reach full speed.
Feed the chisel firmly into the work – enough pressure to provide a steady stream of chips. Back out the chisel periodically to allow chips to clear. Watch for smoke and smell indicating overheating.
Switch off machine, adjust for next cut. Subsequent cuts should just overlap until mortice length is achieved.
Switch off at the wall.
Clean down work table. Take care not to touch chisel – it may be hot.

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Woodchips in eyes.	Wear eye goggles.
Rotating cutter very dangerous.	Keep fingers clear of cutter bit.
Kickback from work piece.	Wait until cutter rotation stops.
Noise.	Wear ear defenders and be aware of others in the work area.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. Always use PPE/ filter mask when working hardwoods/ MDF or when on-board extraction is not provided or possible. Be aware of others in the work area.

<b>Procedure</b>
With machine unplugged, ensure cutter bit is tightly locked in the collet and free to rotate. Cutter shank should engage within collet by at least 2x cutter diameter.
Secure work piece and templates and/or fence. Set depth stops and ensure guards are in place.
Adopt a comfortable, stable stance and ensure a firm grip on both handles. Check On/Off switch falls easily to hand.
Check that the machine will not foul cables or clamps.
Switch on dust extraction.
Plug in and switch ' <b>ON</b> '. Allow machine to reach full speed.
Plunge to depth stop. Always use both hands on the machine handles.
Always feed the work against the direction of rotation of the cutter bit.
Use repeated small cuts rather than one deep cut.
Un-plunge and switch off at the machine, (not wall), wait until cutter bit stops rotating.
Adjust depth settings to continue or remove work piece if complete and clean up.
Unplug machine when finished.

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Woodchips in eyes.	Wear eye goggles.
Rotating cutter very dangerous.	Keep fingers clear of cutter bit.
Kickback from work piece.	Wait until cutter rotation stops.
Noise.	Wear ear defenders and be aware of others in the work area.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. Always use PPE/ filter mask when working hardwoods/ MDF or when on-board extraction is not provided or possible. Be aware of others in the work area.

<b>Procedure</b>
With machine unplugged, ensure cutter bit is tightly locked in the chuck and free to rotate. As a guide, cutter must engage with collet by at least 2x cutter diameter.
Lock at the correct height for the first pass using machine lock and adjustment lock nuts. Use repeated small cuts rather than one deep cut.
Adjust fence for correct cut position and ensure guards are in place.
Switch on dust extraction.
Plug in and switch ' <b>ON</b> ', allow machine to reach full speed.
Hold work piece firmly to table and fence, feed edge to cutter bit. <b>Be aware of Kick back.</b> As appropriate, use feather boards, push-blocks or push-sticks to avoid fingers coming close to cutter.
Always feed the work against the direction of the rotation of the cutter bit.
Switch off at the machine (not wall) and wait for cutter bit to stop rotating.
Adjust cutter height for second pass and repeat. Continue until correct depth is reached.
Switch off at the machine and wall, wait for cutter bit to stop rotating. Remove cutter, clean up and unplug when finished.

## 14.7.1 Planer Thicknesser - Planing

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Risk of entanglement.	Eliminate loose clothing/long hair.
Woodchips in eyes.	Wear eye goggles.
Cutters rotating at high speed.	Keep hands clear of cutters. Ensure machine guards are in place.
Noise.	Wear ear defenders – be aware of others in work area.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. Always use PPE/ filter mask when working hardwoods. Be aware of others in the work area.

### **Principles of Operation**

Known as an 'Over and Under' planer, the Planer/Thicknesser allows rough sawn timber to be prepared accurately to dimension with a high degree of parallelism and surface finish. Timber that is already reasonably parallel can be prepared using just the thickening ('under') facility. Timber that is bowed or tapered must first be prepared using the planing ('over') facility. Re-claimed timber must be thoroughly checked for residual nails etc. and, in addition, pallet wood and scaffolding boards often contain ingrained grit and stones. Machine-planing these materials should be avoided.

### **Procedure – Planing**

With machine unplugged, use a push stick to rotate the cutter block. Place a smooth, flat off-cut of timber on the out-feed table and ensure the cutter knives barely brush the timber as they rotate – this indicates the out-feed table is exactly level with the cutting action. If in doubt about the result, check with a Shed trainer – the knives may need to be re-set.

Adjust the in-feed table to be about 1mm below the height of the out-feed table. Use the same smooth flat off-cut of timber as a guide. This indicates the depth of cut and should coincide with a depth of cut indicator on the machine.

Check your timber. If it is bowed then the concave side needs to be worked first.

Set the fence to guide the timber as it passes over the cutter block. There is no 'fixed' fence position - for narrow material the fence position should be varied to even- out wear on the knives.

Set the bridge guard to allow the timber to just pass under - maximum clearance should be no more than 5mm. If bowing requires a larger clearance to be set then consider band-sawing out the worst of the bow first.

Ensure the chip-extraction port is positioned correctly below the table.
Switch on dust extraction.
Plug in and switch ' <b>ON</b> ', allow machine to reach full speed.
Always feed the work piece against the rotation of the cutter pressing the material gently down onto the in-feed table with the left hand and feeding with the right. Feed firmly but steadily sliding the hand over the bridge guard as you pass – use a push block or push stick to feed the remaining 200mm or so of the cut.
Planing may require several light passes – if there is tendency for 'chatter', excess noise or vibration at any stage then try a lighter cut or check with a Shed trainer.
Always use push sticks or push blocks for small work pieces.
Switch off at the machine (not wall) and wait for cutter to stop rotating.
When cutter rotation stops, unplug machine and clean up.
When complete, the material will have one 'true' face. If required, repeat the above process on an adjacent face. The true face now needs to be pressed against the fence to create two true faces that are square to each other (Face-Side/Face Edge).

## 14.7.2 Planer Thicknesser - Thicknessing

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Risk of entanglement.	Eliminate loose clothing/long hair.
Woodchips in eyes.	Wear eye goggles.
Cutters rotating at high speed.	Keep hands clear of cutters. Ensure machine guards are in place.
Noise.	Wear ear protectors. Be aware of others in the work area.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. In addition, use PPE/ filter mask when working hardwoods. Be aware of others in the work area.

### **Principles of Operation**

Known as an 'Over and Under' planer, the Planer/Thicknesser allows rough sawn timber to be prepared accurately to dimension with a high degree of parallelism and surface finish. Timber that is already reasonably parallel can be prepared using just the thicknessing ('under') facility. Timber that is bowed or tapered must first be prepared using the planing ('over') facility. Re-claimed timber must be thoroughly checked for residual nails etc. and, in addition, pallet wood and scaffolding boards often contain ingrained grit and stones. Machine-planing these materials should be avoided.

### **Procedure – Thicknessing**

Check the material. It needs to be reasonably flat and parallel. If not, then consider sawing or planing first.

Thicknessing requires feeding from one side of the machine then moving round to receive machined material at the other side. Ensure a safe working space for this movement and consider recruiting an assistant to 'receive' as you 'feed'. For longer lengths of timber, an assistant is essential to help support material.

Ensure the chip-extraction port is positioned correctly. Check to ensure that no part of the cutter block is exposed above the table.

Check the thickness of the material and adjust the machine thickness setting to fractionally less than this. (calibration of thickness indicators on machines are seldom accurate so it's best to take a test cut first at a 'safe' setting)

Switch on dust extraction.

Plug in, switch on machine and allow cutters to reach working speed.

Gently feed material into the thickness aperture between the rollers – allow the feed roller to take up the work of feeding. **DO NOT STAND IMMEDIATELY BEHIND THE MATERIAL BEING FED.** Kick-back can occur; built-in arrestors should restrain the material from being ejected violently – but don't take the chance.

If the machine fails to take up the feed, gently pass the material through manually and remove it from the outfeed side.

Reduce the thickness setting by 1mm – repeat the feed.

The feed may need occasional, gentle manual assistance but should never need forcing. If a cut stalls, switch off the machine and allow it to stop. Drop the feed table until the material is free and then remove it.

Once a satisfactory 'first pass' result has been achieved, machine all material required to this setting then re-set and repeat until all material is machined to required thickness.

When finished, switch off at the wall and clean up.



**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Dust/metal particles in eyes.	Wear eye goggles.
Abrasion of fingers/hands.	Keep hands clear of grinding wheel.
Burns through overheating.	Have cold water quench to hand to cool tool/work piece.
Grinding wheel bursting in use – flying debris.	Make sure wheel runs true with no vibration and no damage visible when stopped. Never grind on the sides of the wheel.
Wheel becoming clogged encouraging excess force and overheating.	Only high carbon and tool steels to be worked. Mild steel and N/F metals not to be used.
Incorrect replacement of grinding wheel	Only wheels rated at the same or higher speed as the machine rating to be used. New wheels only to be fitted by approved member and must be properly balanced prior to return to operational use

<b>Procedure</b>
Check the work piece rest clears wheel by 2mm maximum and set at correct angle.
Ensure cold water quench is ready.
Switch on and wait for machine to reach full speed.
Guide work piece carefully taking small grinding cuts.
Do not cause the grinding wheel to slow by pressing too hard.
Quench frequently to keep work piece cool.
Switch off at the machine (not wall) and wait for grinding wheel to stop rotating.
When grinding wheel has stopped, clean up work bench.
Unplug machine when finished.
Guide work piece carefully taking small grinding cuts.
Do not cause the grinding wheel to slow by pressing too hard.
Quench frequently to keep work piece cool.
Switch off at the machine (not wall) and wait for grinding wheel to stop rotating.
When grinding wheel has stopped, clean up work bench.
Unplug machine when finished.

## 14.9 Woodturning Lathe

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Risk of entanglement.	Eliminate loose clothing/long hair.
Woodchips/dust in eyes.	Wear safety glasses/visor
Work piece/chuck rotating at speed.	Keep hands clear of work piece/chuck.
Work piece can snag and fly out at start up.	Check rotation of work piece by rotating by hand.
Dust inhalation	Use PPE/ filter mask for all turning operations. Be aware of others in the work area.

<b>Procedure</b>
Seek instruction if not familiar with woodturning lathe.
Check integrity of work piece – cracks could allow material to fly apart at speed.
Where possible, saw or plane away corners so that work piece is reasonably balanced before starting.
<b>Mechanical speed control machines only. (i.e. stepped-pulleys etc.)</b> Make sure machine is isolated from supply – adjust speed to suit material and operation.
Ensure holding device (chuck, faceplate, centres etc.) are appropriate for the job, installed correctly and adjusted for work piece.
Set up, adjust and centre the work piece before work starts.
Where appropriate, ensure tailstock is engaged with work piece and tool rest is in correct position for the operation and the tool to be used. In general: <ul style="list-style-type: none"> <li>• Gouges and cutting tools cut upwards into the work so the toolrest should be set below centre.</li> <li>• Scrapers are used pointing downwards to the work so the toolrest should be set above centre.</li> </ul>
Rotate the work piece by hand to check that it fully rotates without fouling on any other part of lathe.
Ensure chip collector and dust extraction is switched on.
<b>Electronic speed control machines only.</b> Switch ' <b>ON</b> ' machine and adjust speed accordingly for size of work piece being turned.
Make small cuts with appropriate woodturning chisel.
Keep work area as clear as possible and clear away large quantities of wood chips.
Switch off at the machine (not wall) and wait for work piece to stop rotating.
Unplug/isolate machine when finished.

## 14.10 Belt & Disc Sander

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Risk of entanglement.	Eliminate loose clothing/long hair.
Woodchips/dust in eyes.	Wear safety glasses/visor.
Sanding belt/disc rotating at speed.	Keep hands clear of sanding belt/disc and ensure table is locked.
Fire risk.	Stop if scorching smells detected. Do not use excessive pressure. Change/clean abrasive if blunt or clogged.
Kick-back of work piece	Only use downstroke side of abrasive discs.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. Always use PPE/ filter mask when working hardwoods/ MDF or when on-board extraction is not provided or possible. Be aware of others in the work area.

<b>Procedure</b>
Check clearance between abrasive surface and work table. Clearance should be 2mm maximum.
Check and adjust fence/work support angles as required. Check support table/fences are locked and secure.
Ensure dust extraction is connected and switched on.
Switch ' <b>ON</b> ' and wait for machine to reach full speed.
Always feed the work onto the 'down stroke' of the abrasive belt/disc to ensure work piece is fully supported.
Hold work piece firmly in position on the sanding belt/disc. Use light pressure to avoid burning – let the abrasive do the work.
Switch off at the machine (not wall) and wait for sanding belt/disc to stop rotating.
When machine rotation has stopped, unplug and clean up machine and work area.

## 14.11 Drill Press (Pillar Drill)

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Risk of entanglement.	Eliminate loose clothing/long hair.
Rotating swarf in eyes.	Wear safety glasses/visor.
Leaving chuck key in chuck.	Keep hands away from drill bit.
Work piece spinning if drill jams.	Use clamps/machine vice to secure work piece.

<b>Procedure</b>
Switch off/isolate at wall. Check/adjust belt position on pulleys to ensure correct cutting speed. Switch on at the wall.
Secure drill bit in chuck using chuck key, remove chuck key from chuck.
Locate/centre drill bit over drilling position. Hold work in machine vice or clamp down to machine table if possible.
Set depth stop accordingly.
Switch ' <b>ON</b> ' machine and wait for machine to reach full speed.
Using manual feed lever, apply pressure to drill through material backing off to clear swarf as necessary. Apply water coolant if cutting through mild steel.
Do not move material during the drilling operation.
When drilling operation is complete, raise manual feed lever, switch off and wait until rotation of drill bit stops.
Remove work piece from machine vice or unclamp from machine table.
Unplug machine when finished and clean up – take care with sharp metal swarf.

## 14.12 Circular Saw (Handheld or portable)

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Woodchips/dust in eyes.	Wear eye goggles.
Can cut fingers on blade.	Keep fingers clear of blade/check correct function and adjustment of guards. Use manufacturers hand grip positions.
Kick back from work piece.	Ensure blade is running at full speed before commencing cut. Stop if work binds on work piece. Ensure riving knife is fitted and correctly adjusted.
Noise.	Wear ear protectors.
Dust inhalation	Check and ensure dust capture hoods are in place and dust extraction system is providing adequate suction. Always use PPE/ filter mask when working hardwoods/ MDF or when on-board extraction is not provided. Be aware of others in the work area.

<b>Procedure</b>
Ensure machine is unplugged.
Check guard is in place and functioning satisfactorily.
Set up cutting angles and/or depth stops/fences and guide rails.
Attach and turn on dust extraction.
Plug machine into mains power.
Clamp timber onto cutting bench and ensure clearance below and on top from clamps and cables.
Ensure blade is clear of timber and the surrounding area is clear before starting machine.
With ' <b>BOTH</b> ' hands on the saw, switch ' <b>ON</b> ' and hold button down until blade has reached full operating speed.
Push blade through timber keeping to the guide/fence and always keeping both hands on the saw. (STOP if the blade binds. Back out of the cut with the machine OFF.)
Release ' <b>ON</b> ' switch and wait for blade to stop.
Lift saw and return it to its resting position on a safe surface.
Remove work piece, clean up and unplug when finished.

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS EQUIPMENT**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>INTRODUCTION</b>

<b>Risks</b>	<b>Safety Controls</b>
Woodchips/dust in eyes.	Wear eye goggles.
Can cut fingers on blade.	Keep fingers clear of blade.
Kick back from work piece.	Ensure blade is running at full speed before commencing cut.

<b>Procedure</b>
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Clamp timber onto cutting bench and ensure clearance below and on top from any clamps and cables that could get in the way.
Set up cutting angles, speed and pendulum action if available.
Ensure blade guard and any extraction ports are adjusted and secure.
Ensure blade is clear of timber and the surrounding area is clear before starting machine.
Switch ' <b>ON</b> ', wait until blade has reached full operating speed.
Keep the Jigsaw foot firmly pressed down onto the timber to be cut.
Push blade through timber keeping fingers away from the front of the blade.
If the cut is too curved (tight), make several cuts to create blade clearance.
Release ' <b>ON</b> ' switch and wait for blade to stop.
Lift Jigsaw and place sideways on a safe surface.
Remove work piece, clean up and unplug when finished.

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Burns and fire risk from hot sparks and hot work piece. Abrasion injury from contact with disc.	Cover up well using fire resistant close fitting clothing. Wear heavy duty leather (etc) gloves. Ensure workspace is clear of flammable material. Adjust the guard to ensure sparks are directed away from user.
Eye injury from high velocity, high temperature particulate waste.	Wear closely adjusted helmet-type visor in preference to goggles or safety spectacles. Standard prescription lenses alone offer little or no protection.
Machine kickback due to jamming.	Plan the work to avoid trapping the disc. Use tool with both hands wherever possible using the manufacturers designated grip positions. Clamp-on side grips are usually supplied. These offer enhanced grip and should be considered if they do not overly restrict access to the cut.
Fume and dust inhalation.	All operations will generate dust so consider a face mask at all times and always use one for sanding or grinding painted or filled surfaces.

### **Procedure**

With the machine unplugged, mount an appropriate disc for the job in hand – face grinding/edge grinding/slitting/wire brush/sanding. Check correct fitment of stepped centre washer and security of centre mounting nut.

Offer up the tool to the job and adjust the guard for clearance and to help direct sparks away from user and potential sources of ignition.

Think through the job before switching on:

- Is there a risk of the cut springing shut and trapping the blade?
- Where is the exit and entry point?
- What cutting approach and grip will give best control in the event of a kickback?
- What cutting approach will ensure the disc is always cutting on the downstroke- i.e. as it enters the work not as it exits.

## 14.15 Arc Welding (MIG/MMA)

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS EQUIPMENT**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

### **Welding – General description**

Welding describes the process of permanently joining metals by melting adjoining edges together. Heat is applied across the joint until the edges melt and create a weld pool where the molten edges are able to flow together. Some metal is lost to fill gaps between edges so the weld pool needs topping-up to bring it up to the surface level of the parent metal. In most cases, additional filler rod is used to create a weld bead – this sits a little proud of the parent metal thus demonstrating that maximum strength has been achieved and (e.g. for repair work) providing a margin that can be ground back to provide an invisible joint. Additional filler rod is also used for square and angled joints to build up a fillet to buttress and strengthen internal angles. Successful welding needs four things;

A heat source capable of achieving at least 1500C.

A means of melting and adding filler rod as the weld is created.

A barrier to prevent the metal oxidising as soon as it melts.

Control of how heat is applied to allow fine control of the weld pool, penetration, spread, shape and size of weld bead.

### **Welding Systems available at Winslow Shed**

#### MMA Welding (Arc or Stick Welding)

A powerful transformer converts a mains voltage AC supply into a medium-voltage, high-current supply with a pulsed DC wave form. Thick cables connect one side of the supply to the work piece via a hefty clamp. The other cable is fixed to a hand-held 'torch' which grips a welding electrode. When the electrode is introduced to the work piece, an electric arc is produced. Almost simultaneously, joint edges will melt, a weld pool is created and the electrode (filler rod) melts into the weld pool to fill gaps or provide enough for beads and fillets. To prevent oxidation and contamination of the weld pool, electrodes are coated with flux material that melts when the arc is formed and provides both chemical cleaning of the joint and blankets the joint with a shielding crust. This crust (or slag) easily chips and flakes away when the joint has cooled.

#### MIG Welding

Developed from MMA welding to provide a quicker technique to learn with less reliance on experience and practice to create neat, clean welds. As in MMA welding, a transformer provides low-voltage, high current power to hefty cables. One side is clamped (earthed) to the job, the other is connected to hand-held torch. A trigger switch on the torch feeds electrode wire from a spool in the transformer box to a nozzle on the torch and, at the same time, powers up the transformer which will



create the necessary arc and weld pool when the electrode wire is introduced to the job. Automatic feeding of the electrode wire means topping up of the weld pool is taken care of. This switch also opens an electric valve that allows shielding gas to flow and create an inert cloud around the arc. This one-switch operation means that successful welds can be achieved with minimal learned technique beyond selecting the electrode (sold as MIG wire gauge), gas type, gas flow rate, wire feed rate and welding current. In practice, most of these settings can be found as standard figures for given material thicknesses.

### **What system to use?**

Welding equipment at Winslow Shed is basic DIY grade so lacks finer controls that add versatility to more expensive commercial systems. The benefit for Shedders is simplicity. Provided the equipment is used for mild-steel only and the following thickness recommendations are adhered to, Shedders should be able to achieve satisfactory welds after just a few practice sessions.

MMA Welding – use for welding 2mm – 10mm mild steel

MIG Welding – use for welding 1mm – 4mm mild steel

Remember; MIG is easier and cleaner than MMA where thickness allows.

<b>Common Risks</b>	<b>Safety Controls</b>
Eye injury due to exposure to electric arc flash.	Approved pattern welding mask to be used at all times. Co-workers must be made aware of flash risk and kept away as needed. Screens used where needed.
Burns from hot work piece and spark emissions.	Welding grade flameproof coveralls, footwear and gauntlets to be used.
Fumes from flux action and oxidisation of impurities on parent metals.	Only weld in very well ventilated area, in addition VOC filtering mask to be used if continuous welding operations extend beyond (say) 10 minutes in any one hour.
Fire risk from spark emissions and drips from molten flux and metal.	Keep work area clear of flammable material, CO2 extinguisher to be close to hand.
Electric shock	Do not operate equipment in damp conditions.
Excess spark and fume emission.	Store electrodes in a dry place – consider 'baking' electrodes in a warm oven for 1hr before use if in doubt.

**Procedure**

Prepare the edges to be joined – steel must be clean to within at least 40mm of the edge to be welded.

Prepare the joint as needed. E.g. by bevelling edges to help penetration of the weld.

Use clamps or temporary fixings as needed to hold the joint in position.

Ensure others in the workshop are aware that welding is about to take place and take precautions to prevent exposure to flash.

Ensure personal safety equipment is clean, in good order and ready to hand.

Secure the earth clamp to the job or holding device – ensure continuity.

<b>MMA Welding</b>	<b>MIG Welding</b>
Fix an electrode to the torch.	Check spool is mounted and feeding correctly.
Adjust current settings according to the job in hand.	Open shielding gas valve and adjust flow rate/pressure to minimum (just sufficient to be able to hear gas escaping when the trigger is squeezed).
Practice striking the arc on an earthed block of steel – the move to the job in hand.	Adjust current settings according to the job in hand.
Carry out a series of short tack welds before (if needed) stitch or seam welding	Carry out a series of short tack welds before (if needed) stitch or seam welding.
Power off, remove earth clamp. Allow to cool slightly. Wear full-face protection and remove slag with chipping hammer and wire brush.	Power off, close gas valve, remove earth clamp. Allow to cool and inspect weld.

## 14.16 Air Compressor / Air Tools

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

<b>Risks</b>	<b>Safety Controls</b>
Pressure vessels and hoses bursting – explosive impact from debris.	Check integrity of hoses and pressure vessels regularly. Ensure hoses are rated to at least 150% of maximum anticipated demand.
Injury due to direct exposure to high pressure air jet.	Never use compressed air to ‘dust-off’ clothing or overalls.
Risks as appropriate to the air tool being used. E.g. Inhalation and impact risks - grinding or sanding, generation of sharp edges when using air shears etc.	Wear appropriate PPE for the task in hand. Only use blow guns for cleaning as a last resort – vacuuming/sweeping creates less airborne waste.
Explosive risk from oil residues in pressure vessels.	Drain pressure vessel regularly and look for traces of oil contamination, only use specialist Air Tool Oil for lubrication.

<b>Procedure</b>
Check compressor is on a stable surface, run power and air lines to where needed and take precautions against tripping hazard.
Check the reservoir pressure gauge is set to less than the stated SWP of the reservoir. Set the output pressure gauge to the required operational pressure for the tool to be used.
Use the PCL–type or Euro-type quick connectors to connect up. Connectors should snap together positively and easily.
Power-up the compressor and watch the pressure rise, check the compressor cuts out when the required pressure is reached.
Wear PPE as appropriate and carry out the task.
When finished, unplug and de-pressurise the reservoir. Tidy away air-hoses and cables.

## 14.17 Engineering Centre Lathe

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

### INTRODUCTION

The centre lathe is an extremely versatile tool capable of many functions including thread cutting, surfacing and machining asymmetric components. Although possible on the MISW machine, most of these advanced techniques require significant learning. For the purpose of this operational safety briefing it is assumed that work is limited to simple axial work held in a self-centring 3-jaw chuck.

<b>Risks</b>	<b>Safety Controls</b>
Injury from swarf and airborne chippings.	Wear eye protection when machining and when cleaning-up. Never handle swarf – it will be razor sharp and could be very hot. Prevent swarf forming long strands – momentarily pause tool feed to ensure short, easily managed strands.
Entanglement with machine mechanisms.	Always position the chuck guard before starting work. Always use eye protection in addition - the chuck guard prevents contact with moving parts but very limited eye protection. Wear appropriate clothing – ties, draw cords, baggy sleeves etc may all become entangled with moving parts. Stop the machine before measuring work in progress.
Work piece breaking free during turning.	Ensure the chuck has been tightened in all three positions – use tailstock support if required (see below 1).
Serious impact if key is inadvertently left in the chuck.	Never take your hand off the chuck key when tightening making it impossible to forget to remove it from the chuck. Starting the machine with a key in place is extremely dangerous.
Work overheating, damage to machine and tooling.	Check and set appropriate speeds, feeds and suitable coolant before starting. (see below 2)

### Procedure

Refer to machine manual or seek help to identify all key machine parts and controls. Before loading a work piece, try-out all controls including stop/start, speed control and all three slides.

Check the chart and set the machine speed appropriate to the material and diameter.

If required, make sure suitable coolant in a suitable dispenser is to hand.

Check the chart and determine if tailstock support is needed. Longer work pieces must not project 'outboard' of the headstock.

**None required:**

Load work piece into the chuck with sufficient stick-out for clearance and for the size of the finished component.

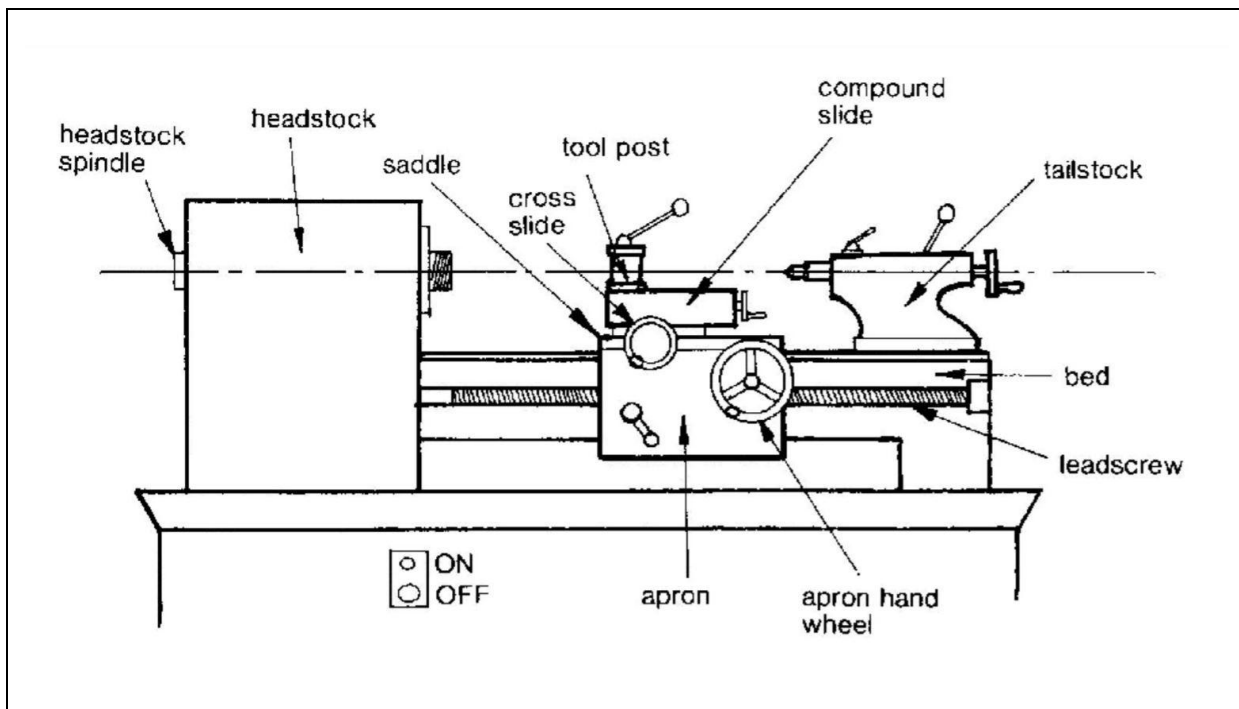
**Support required:**

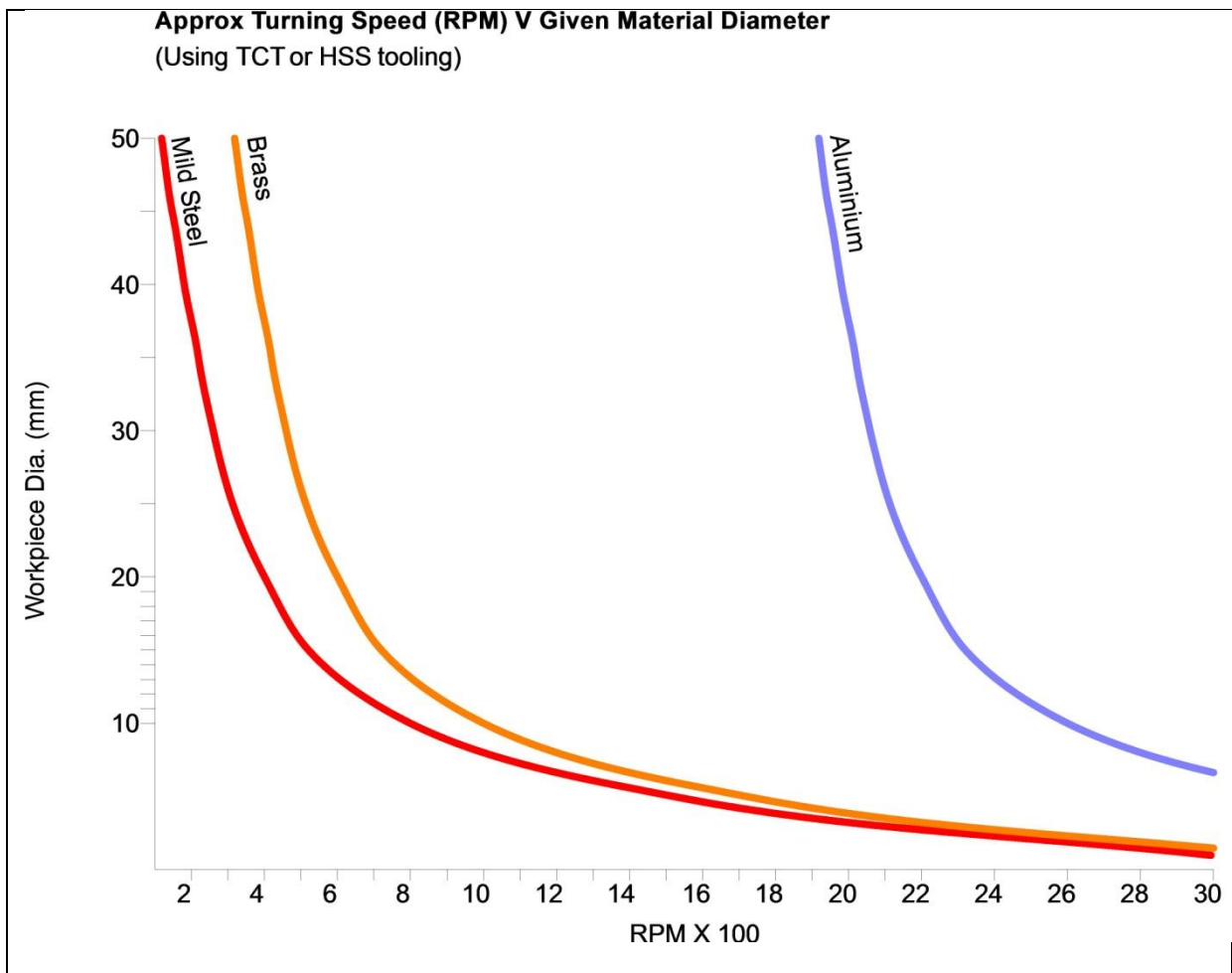
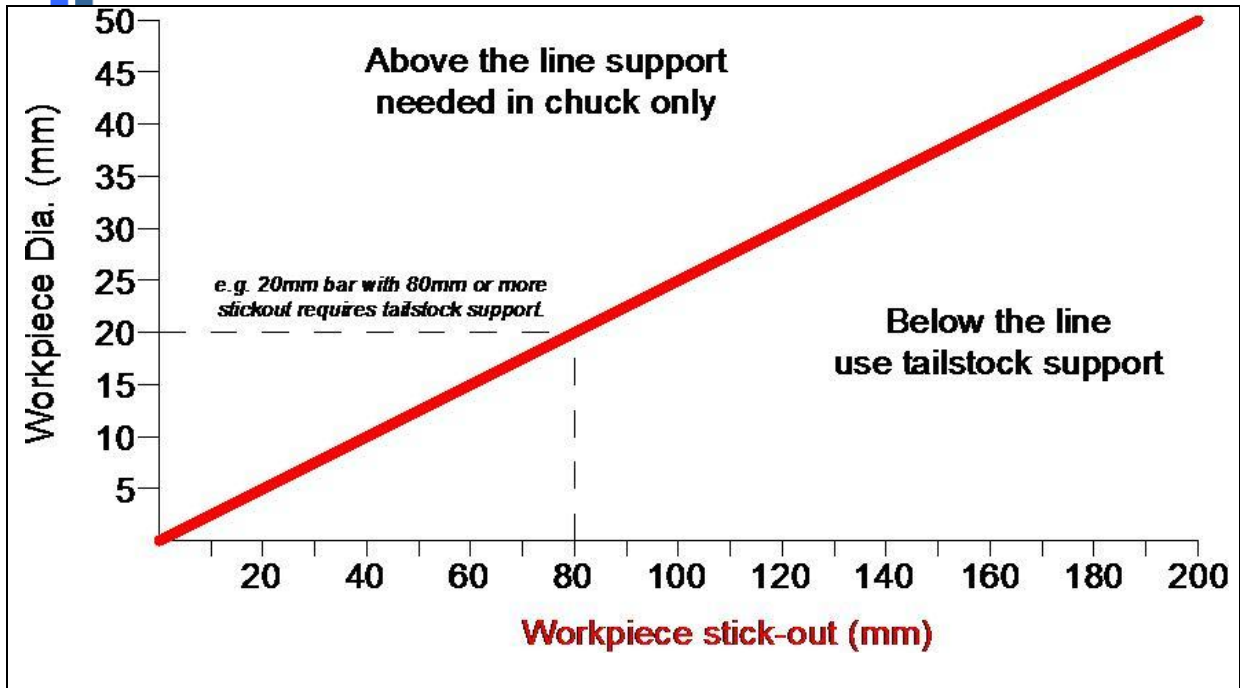
Load work piece into the chuck with minimal stick-out – load suitable tool and face-off the bar end. Fit a revolving centre into the tailstock, re-fit the work piece so that it is supported between the chuck and the revolving centre.

Load a suitable tool into the toolpost (facing, surfacing, L-hand or R-hand) tighten and ensure cutting tip is at centre height.

Position the tool, power-up the machine and take a light test cut. If all is well, continue to machine the job taking light cuts – listen to the machine to check. If cutting well, there will be no sign of motor straining, there will be a smooth finish to the work and no 'chatter', whining or screeching from the tool.

Always use the main carriage wheel for surfacing cuts, the top-slide for facing cuts and the compound slide for tapered cuts.





## 14.18 Horizontal Tool Grinder

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

### INTRODUCTION

Easy to use and inherently safe, the 'Shapedge' machine will quickly restore cutting edges on chisels and plane irons prior to final, fine, sharpening (honing) with an oilstone. Ideal if edges have become chipped or rounded-off. This machine is not needed every time the tool is sharpened, only when the cutting edge has become sufficiently out of shape for honing alone to be a long and tedious process.

<b>Risks</b>	<b>Safety Controls</b>
Skin reaction from exposure to oil	Wear disposable oil resistant gloves. Carefully control oil flow and avoid contact.
Entanglement with machine mechanisms.	Wear suitable clothing, avoid ties, baggy sleeves, drawstrings etc.
Injury from sharp edges	Clamp tool securely, handle with care once ground and have a safe, convenient place to store the tool while the next one is being worked on.

### **Procedure**

Open the machine cover and ensure it rests securely in the upright position.
Clamp tool onto the toolrest, bevel-side-down. Make sure sufficient tool projects so that the tool and not the tool clamp is contacting the stone. Adjust side screws to ensure the cutting edge presents exactly parallel to the stone.
Rest the tool and rest assembly gently onto the right-hand side of the stone. Adjust the tool rest support pillar so that the angle gauge shows the correct angle. For chisels and plane irons this is 30°. Check the oil delivery pipe is positioned over the stone.
Lift the toolrest and switch on the machine, wait until the stone becomes flooded with oil.
Gently rest the tool back onto the stone, engage the control lever with the peg on the back of the toolrest. Apply gentle pressure to the toolrest via the lever. To avoid uneven wear, slowly 'swing' the tool from side to side across the face of the stone.
Check progress regularly, adjust the clamp if needed to ensure the new bevel is square across the edge of the tool. The idea is to remove as little material as possible to achieve a flat, even bevel.

## 14.19 Scroll saw (or Fretsaw)

**ONLY APPROVED OPERATORS ALLOWED TO USE THIS MACHINE**

**CHECK GENERAL SAFETY RULES BEFORE OPERATION**

### INTRODUCTION

<b>Risks</b>	<b>Safety Controls</b>
Inhalation of wood dust	Check, adjust and use dust extraction if available. Brush (don't blow) dust from the work piece. Wear filter mask when cutting very dusty material (e.g. MDF)
Contact with blade	Power off when making adjustments. Set and use blade hold-down/finger guard.
Finger-pinching if work piece is not held down onto the table.	Ensure work piece hold-down is set, adjusted and used at all times.

### **Procedure**

Check blade is firmly secured and correctly mounted. Fretsaws cut on the downstroke so blade teeth need to slope towards the table.
Set and adjust the hold-down device so that the work will slide below it easily but is prevented from being lifted off the table.
Steer the blade around the cut, external angles need a small radius cut.
Plan you work to avoid having to back-out of a blind cut.





## Member Induction Checklist

Name.....

Date of Joining/Induction	/ /
Personal details provided for records.	YES/NO
Use of signing in book explained.	YES/NO
Session fees explained.	YES/NO
Health and Safety Policy explained and location of copies.	YES/NO
Names of committee members provided (and introduced if available).	YES/NO
Rules for using machinery including the need for appropriate training explained.	YES/NO
Medical equipment and procedures explained including location of first aid kits.	YES/NO
Emergency numbers for contacts and First Aiders.	YES/NO
Copy of Emergency first aid leaflet provided.	YES/NO
Tour and explanation of general workshop layout, equipment and opportunities available.	YES/NO
Advised of opening times, activities and key holders.	YES/NO
Advised of fire fighting equipment locations.	YES/NO
Advised of Evacuation procedure and Assembly Point.	YES/NO
Policy for personal usage of Shed materials explained.	YES/NO