THE SHED
KU-RING-GAI COMMUNITY WORKSHOP

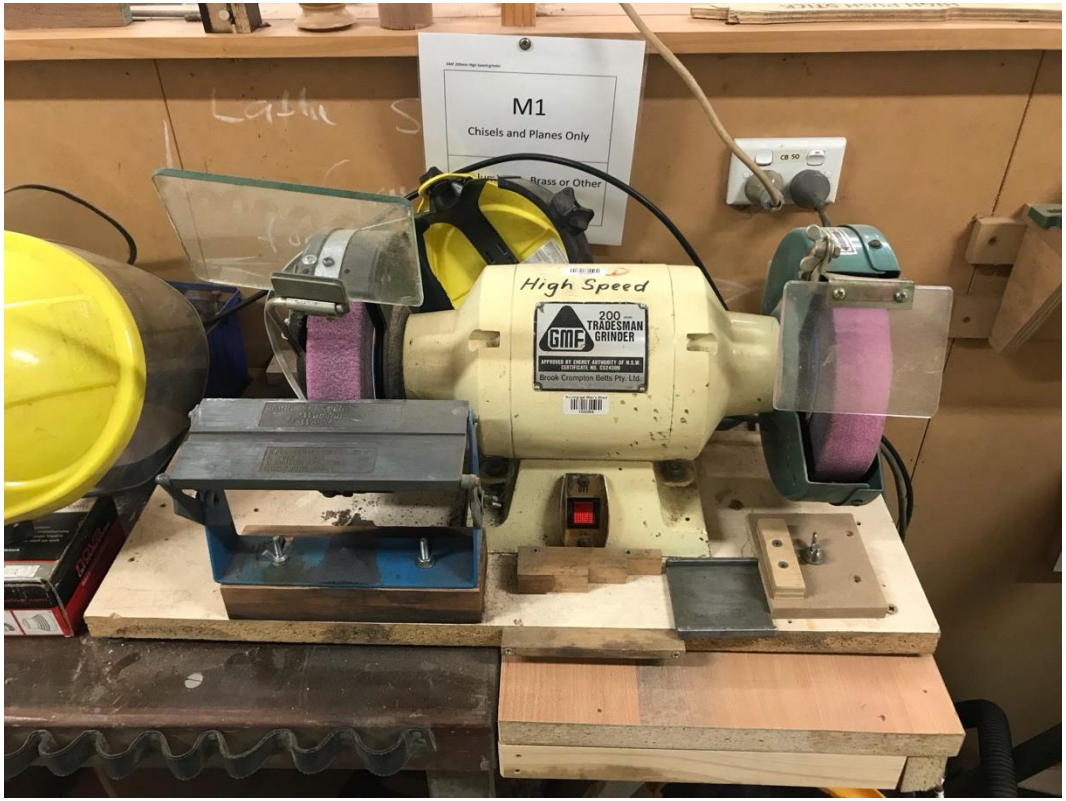
Kushed Procedures

Bench Grinders | M1

Standard 8” Grinder-Bergin

Grinder 200mm with multi-tool belt linisher- GMF

Wire Wheel & Buff –Ashby and Abbott 8” Grinder



The Shed provides items such as welding masks and gloves.

Members are required to provide their own footwear, eyewear, hearing protection and masks.

Safety

This is a very high priority for our Shed members. There are some aspects that are mandatory under our insurance policies and some which the The Shed requires members to adhere to for everyone's benefit.

The Shed Safety Induction

It is a requirement of attendance at The Shed that members have reviewed the Safety Induction Presentation

Personal Protective Equipment

This is required in various forms depending upon the equipment being used or the activity being undertaken.

Protective eyewear is always mandatory when using machinery.

The Shed schedules a Coordinator and a First Aid Safety Officer for each day of attendance and their safety directions are final and must be adhered to.

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Key Features of the Bench Grinders, Buff, Wire Wheel & Multi Tool Belt/Disc

A rotating abrasive grinding wheel, buff, wire wheel or abrasive belt (linisher) provides grinding, buffing or polishing actions. Buffing is usually for softer metals such as copper and brass whereas wire wheels are good to remove rust and polish corroded steel. Machines can have various grades of attachments, including special “Scotchbrite” polishing belts, to suit differing applications. Grinding is used for harder metal removal such as weld excess or tool sharpening.

The motors of these machines rotate at a high speed, typically in excess of 2,800 rpm and they are potentially very dangerous. The Shed has one slower tool grinding machine specifically for tool sharpening but it still operates at approximately 1,400 rpm. The softer wheels and slower speed of this machine generate less heat and help prevent “drawing the temper” of tools.

The large machinist’s grinder is particularly dangerous because of its rotational momentum and the heavy wheels take a long time to stop when the machine is turned off.

Bergin 8 in Bench Grinder

Key Features of the Bench Grinders, Buff, Wire Wheel & Multi Tool Belt/Disc

The guards that surround grinding wheels provide protection from dust and small particles generated during operation. It is unlikely to prevent pieces of the wheel or work being flung out in the event of wheel shatter or when work is grabbed by the machine.

A tool rest is used to support work or tools when grinding, however, there should NOT be a tool rest on the machine when buffing or using a wire wheel as the work needs to be manipulated on the downward moving wheel surface to access various areas of the work.

The linisher can be used to remove metal and burrs but work should always point away from the direction of belt rotation to avoid personal injury or accidents such as jamming and ripping the belt.

Linisher belts of different grades and materials can used to range between hard grinding through to fine polishing

Friction caused by all operations on these machines heats the work and can burn the operator if touched. Constant quenching of the work or slower operation is required to help prevent heat build-up.

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Bench Grinders have guards for a very good reason.
Wheels can shatter if the work is caught.

Safety & Procedural Issues

Before the Operation of the machine

If in doubt about the operation you are about to do, seek a Coordinator's assistance.

- Ensure the piece to be worked on is suitable for the machine. Some grinders may only be used for steel and other hard metals. Soft metals such as copper, lead and aluminium should not be ground or used as they clog the grinding surface. Likewise timber and plastics should not be ground on any of these machines.
- The mobile workbench on which the wire wheel & buff are mounted should be moved outside before use so that debris produced does not contaminate the picture framing and machinery areas.
- Ensure that the machine being used for general work is not the special purpose tungsten carbide grinding machine as steels and other materials will contaminate this wheel and prevent its proper operation for carbide grinding. This machine has smaller wheels and is the centre of the three bench machines.
- Examine the wheel for any signs of damage such as cracks, chips, or uneven wear. Report any problems to the Coordinator and do not use

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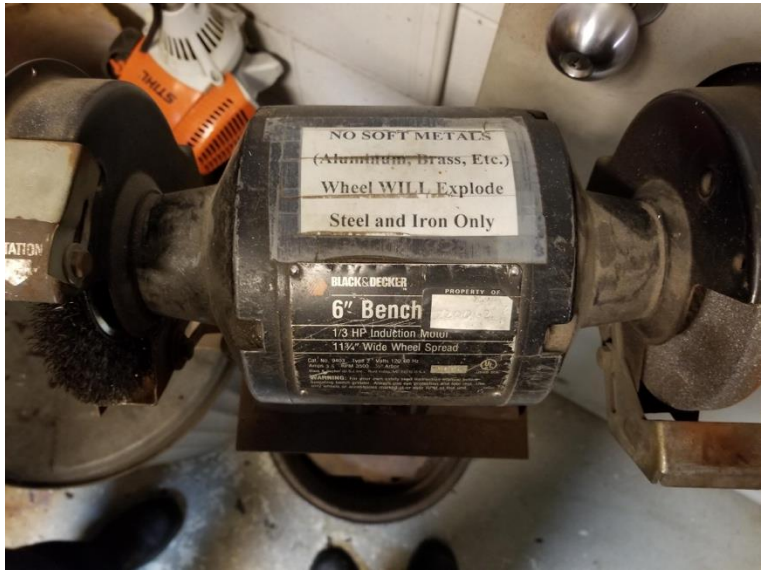

NO SOFT METALS
Soft metals can clog up the wheel and cause it to crack or explode as a result of the heat generated and subsequent expansion.

Safety & Procedural Issues

- Ensure any shield or tool rest is in place, properly set up, tightened and close to but clear of the wheel, with a gap usually of up to 3mm or no more than the thickness of the workpiece.
- Ensure the face of the wheel is clean of any debris and is unclogged. If the wheel is clogged or grooved, report it to a Coordinator for re-dressing.
- If the belt on the Linisher is damaged, has frayed edges or worn smooth, report to a Coordinator
- NEVER stand in front of a grinding wheel during start up and wait until it reaches full speed before attempting to use it. It is safer to stand to the side away from the “line of fire”.
- When the work area is clear and the machine is turned on, ensure the wheel or belt is running true and that it is running smoothly without excessive vibration. The linishing belt may require careful adjustment if not running true or if rubbing on the edge. Consult Coordinator for assistance if adjustment needed.
- Listen for any warning signs of danger such as scraping, rattles or vibrations and if heard, stop the machine and report to a Coordinator. Do not use the machine until checked.

Always use the rest

During the Operation of the machine

- Do not use gloves or rags to hold work as it can they can catch and drag your hand into the wheel
- Do not use pliers or other gripping tools to hold small pieces, as it is difficult to control movement of the piece
- Remember that the direction of rotation is downwards at the front of these machines.
- It is wise to stand slightly to the side of the wheel rather than in line with it in case debris or work is flung out.
- Do not buff or wire wheel inside hollow workpieces where the top edge of the work can catch and fling the work. This can result in broken and badly cut hands.
- When buffing, use buffing compound sparingly as excessive paste simply clogs the buff and leaves a hard black deposit on the workpiece which can be difficult to clean off.
- Ensure work is firmly supported on a tool rest when angled upwards, such as for tool sharpening or when grinding perpendicular to the grinding surface. Work on the wire wheel, buff and linisher should be angled away from the machine's operational direction. This helps to prevent a wedging and grabbing action which can cause loss of control of workpiece and damage to the machine.

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After machine use

Do not use the work piece to slow down the grinding wheel once the machine has been switched off as it can cause a lack of control.

Stay with the machine until it has come to a complete stop and ensure no one else approaches a slowing machine. Others may not be aware that the machine is still rotating.

Once the machine has completely stopped, clean up any grinding or polishing dust from around the machine and on the floor.

During the Operation of the machine

- Apply the work piece with gentle even pressure using the whole width of the wheel face, to even out the wear on the wheel.
- Do not use the sides of the grinding wheel, only the face.
- For the linisher, the top, front curved face and underside may be used however it is critical to ensure that work does not have a leading edge or point which can catch or be grabbed by the machine as the work is applied. Work should have a “trailing” action as contact is made. The top of this machine has a flat platten under the belt specifically to assist in creating flat surfaces.
- Be aware of the path of any debris, especially any hot filings. These can cause fires or burns.
- Be aware of heat build-up of the work piece which can prevent ability to firmly hold the work by hand. Allow work to cool and when grinding edged tools, use a water tray to cool the work piece and prevent loss of hardness.