

Bench Grinder Machines safety instruction notes

The workshop has several bench grinders. Two general purpose machines that are moveable and one fixed machine with a white wheel for sharpening wood turning tools. As with any kind of machinery, you should always read the instructions before use and follow safety rules to prevent injury.

1. Describe structure of Sanding machines –



- a. Has a work rest mounted in front of the wheel.
- b. Motor mounted in the centre.
- c. Rotating abrasive wheel
- d. The machines are equipped with a tongue guard, a wheel guard and a transparent eye shield.
- e. These machines are intended grinding of ferrous metals only. Copper, brass aluminium, wood, plastic, etc must not be applied to these machines.
- f. Alternative work rests/jigs are used on some of the machines.

2. PPE and extraction.

- a. No loose clothing
- b. Safety glasses or visor at all times
- c. No Gloves

3. Adjustments

Most will be previously set up by workshop cleaning/maintenance team.

- a. Check that there is no damage to the wheel surface – Cracks/chips.
- b. The adjustable work rest should be kept adjusted to within 1/8-inch of the wheel. Maintaining a small opening that is 1/8-inch or less prevents the work from being jammed between the wheel and the work rest, which is a hazard that could potentially cause wheel breakage or caught-in injuries for the user.
- c. The upper tongue guard on grinding machines also provides protection for the user, if adjusted properly. The tongue guard should be kept adjusted to within 1/4-inch of the wheel. Maintaining a small opening that is 1/4-inch or less helps deflect sparks during grinding and may also contain parts of the wheel should it shatter during operation.



Adjustments to the work rest or the tongue guard must never be made while the wheel is in motion. Ensure the work rest and the tongue guard are tightly secured after each adjustment. Because the wheel wears down over time, it is important that both the work rest and the tongue guard are regularly checked and adjusted.

4. Keep work piece clear of the wheel, start the machine, and **LISTEN**.
 - a. Rumbling, whining, or vibration indicates a problem.
5. Potential hazards
 - a. caught-in hazards that can cause crushing injuries and amputations.
 - b. wheel explosions that can cause blindness and lacerations.
 - c. sparks and heat hazards that can cause abrasions and burns.
 - d. flying particles that can cause impact injuries.
 - e. dust that can cause respiratory distress.
6. Safety precautions
 - a. Confirm the grinder is permanently and securely mounted to a solid surface like a heavy work bench.
 - b. Only trained personnel should use bench or pedestal grinders.
 - c. Inspect the grinder and all attachments before each use. Safety shields and guards must be in place, adjusted properly and secured before using the grinder.
 - d. RPM (revolutions per minute) indicates the maximum operating speed. Make sure the wheel you are using has an RPM rating that meets or exceeds the rating of the tool.
 - e. Ensure the wheel that has been selected is appropriate for the task. Do not grind material for which the wheel was not designed. Do not use a wheel that has been dropped, even if it appears undamaged. It could potentially be weakened or unbalanced enough to cause it to disintegrate when used.

Now we're ready to start Grinding.

7. Follow basic safety rules.
 - a. Wear PPE that provides the best protection for the task. Always wear approved safety glasses or goggles when using a bench or pedestal grinder. Face protection is highly recommended to protect against flying debris. Evaluate the task and work environment to determine if additional PPE is required like hearing protection or respiratory protection.
 - b. To avoid potential caught-in hazards, gloves should only be worn if using a tool grip that ensures hands are kept several inches from the wheel during the grinding operations. Don't wear loose clothing or jewellery and make sure long hair is secured.
 - c. As a precaution, in case of accidental wheel breakage, stand to one side, not directly in front of the wheel, as the grinder starts up and begins to reach maximum operating speed. Allow the grinder to come up to full operating speed before applying the work to the grinder wheel. Bring work into contact with the grinding wheel slowly and smoothly, applying gradual pressure to allow the wheel to warm up evenly.
 - d. Ensure the grinder operates smoothly and is not vibrating. If there are unusual noises or vibrations, turn off the grinder and conduct an inspection to fix the issue before work resumes.
 - e. **Only use the face of the wheel for grinding operations, not the side.** Move the work back and forth across the face of the wheel to prevent grooves from forming on the grinding wheel.
 - f. Do not walk away from a grinder that is still in motion. Turn off the grinder when the task is completed and wait until the wheel comes to a complete stop.
 - g. Never stick an object into the wheel to attempt to stop the grinder more quickly.