

# Abrasive Wheels

## Abrasive Wheels - Use of Portable Grinders

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### What safety precautions should be followed when using a portable grinder?

- An operator must be fully trained and instructed in the safe use, care, and protection from the grinder before use.
- Guards must be provided and adjusted properly as per the manufacturer's manual. Replace damaged guards because if an abrasive wheel breaks while rotating, it can cause a serious injury.
- Before use, check the manufacturer's stated running speeds or markings on the grinder, and grinder wheel for the maximum speed that it can be used.
- Follow the manufacturer's manual for the safe use of grinder wheel guards.
- Clean and service grinders according to manufacturers' recommendations. Record all maintenance for grinders.
- Make sure that a machine will not operate when unattended by checking the dead-man (constant pressure) switch.
- Wear safety glasses or goggles, or a face shield (with safety glasses or goggles) to protect against flying particles. Gloves, aprons, metatarsal safety boots, [hearing protection](#), and [respiratory protection](#) may be required, depending on the work.
- Ensure the floor around the work area is clean.
- Do not use wheels that are cracked or those that excessively vibrate.
- Use both hands when holding the grinder.

- Keep the power cord away from the grinding wheel and the material being ground.
  - When required, have a hot work permit before use.
  - Make sure the work area is clear of [flammable products](#) and that [combustible dust](#) is not allowed to accumulate.
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## When and how should you check the speed of the wheel?

- The maximum speed in revolutions per minute (RPM) is marked on every wheel. Never exceed this speed.
  - Check that the wheel speed marked on the wheel is equal to or greater than the maximum speed of the grinder.
  - Measure the speed of any new machine. Take several readings.
  - Measure the speed of governor-controlled air-driven grinders after twenty hours of use or every week, whichever comes first. Measure the speed after any repairs.
  - Measure the speed of electrically driven grinders monthly and after repairs.
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## What should you do when using portable grinders?

- Check that grinders do not vibrate or operate roughly.
  - Hold grinders as follows:
    - Horizontal grinder - the full grinding face width of the wheel is in contact with the grinding surface.
    - Right-angle grinder - the grinding face of the wheel or disc is at an angle of between 5 and 15 degrees from the grinding surface.
    - Vertical grinder - the grinding wheel face is in contact with the surface.
  - Use racks or hooks to store portable grinders.
  - Stand away from the wheel when starting grinders. Warn co-workers to do the same.
  - Inspect all wheels for cracks and defects before mounting.
  - Perform a [“ring test”](#) to check if the wheel is damaged. Ring tests do not apply to small wheels that are 10 cm (4 in.) in diameter or smaller.
  - Ensure that the mounting flange surfaces are clean and flat.
  - Ensure the wheel guard is in place while operating the grinder.
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- Use the mounting blotters supplied.
- Run newly mounted wheels at operating speed for 1 minute before grinding.
- Wear appropriate eye, ear and face protection. Use other personal protective equipment or clothing, as required under the circumstances.
- Use an appropriate ventilation exhaust system to reduce inhalation of dusts, debris, and coolant mists. Exhaust systems must be designed and maintained appropriately.

Refer to [Abrasive Wheels](#) for further information.

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## What should be avoided when using portable grinders?

- Do not use grinders near flammable materials.
  - Do not clamp portable grinders in a vise for grinding hand-held work.
  - Do not use any liquid coolants with portable grinders.
  - Do not operate the grinder on wet floors.
  - Do not force wheels onto a grinder that is the wrong size or change mounting hole sizes.
  - Do not tighten the mounting nut excessively.
  - Do not put the grinder on the floor or working surface until the wheel has stopped turning.
  - Do not use a wheel with a maximum RPM that is lower than the RPM rating of the grinder.
  - Do not keep any materials close to the grinding wheel when it is not in use.
  - Do not wear loose clothing or dangling jewellery as they may get caught in the moving parts of the grinder. If you have long hair, keep it tied back.
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