# Grinders Pose High-Speed Danger

**Grinding wheels operate at very high speeds and can present health and safety hazards.**

**Here are the most common:**

- A grinding (abrasive) wheel can shatter, seriously injuring workers nearby.
- Grinding can produce excessive noise, sparks and metal fragments.
- Contact with a wheel can mean cuts and scrapes.
- Dropping a portable grinder can injure legs and feet.
- Dusts can cause respiratory problems.
- Contact with lubricating oils and metallic dusts can irritate skin.
- Compressed air (from a pneumatic grinder) can enter the bloodstream, with deadly results.
- Vibration can cause ‘white finger’ injury.
- Electric shock can be fatal.

Never modify a grinder to bypass an off-on switch or remove the deflector guard. Discs must have the proper rating. If the disc is rated at a lower RPM than the grinder, the disc could explode.

If a hand-held grinder is dropped, inspect for damage and do a ‘ring test’. Take the disc in one hand, holding it by the arbor or by placing a finger into the tapped plate hole. Tap the disc lightly with the wooden handle of a screwdriver or a non-metallic tool. Tap at a 45-degree angle, one or two inches (2.5 to 5 cm) from the outside edge. A disc in good condition gives a clear, metallic ring when tapped, although the pitch varies with disc grades and sizes.

**Don’t use the ring test on:**

- Wheels with diameter of four inches (10 cm) or less
- Plugs and cones
- Mounted wheels

- Segment wheels
- Inserted nut and projecting stud wheels

Cracks in abrasive wheels are often nearly invisible. Another way to determine a wheel’s condition is the vibration test. Set the wheel on its side on a test fixture. Coat the wheel with a thin layer of fine, dry sand. Turn on the test fixture so the wheel vibrates gently. If the sand moves away from an area, this indicates a crack. If the sand stays evenly distributed, the wheel is fine. Repeat for the other side of the wheel.

Ensure guards are in place and personal protective equipment is worn. Proper eye protection is goggles, or a face shield with goggles. Safety glasses are not adequate, and neither is a face shield without goggles. Wear gloves only when they will not get caught in the grinder.

Grinding can expose you to noise, flying fragments, dust, oils, vibration or electric shock. It’s essential to know grinding hazards and how to control them.