

# SAFETY IN THE USE OF PORTABLE GRINDERS



## **Please note**

This information is for guidance only and is not to be taken as an expression of the law. It should be read in conjunction with the *Workplace Health and Safety Act 1995*, the *Workplace Health and Safety Regulations 1998* and any other relevant legislation. Copies of the legislation can be purchased from Print Applied Technology: call (03) 6233 3289 or freecall 1800 030 940. It is also available on the Internet at [www.thelaw.tas.gov.au](http://www.thelaw.tas.gov.au)

This guide was produced by staff from WorkCover Tasmania and Workplace Standards Tasmania.

We welcome your feedback on this guide. Send to: [wstinfo@justice.tas.gov.au](mailto:wstinfo@justice.tas.gov.au)

## **Introduction**

This guide will alert operators to hazards and problems associated with using portable grinders, whether they are electrically or pneumatically powered.

## **What are grinders used for?**

Portable grinders (including angle grinders) are intended for cutting, grinding, sanding or brushing metal, stone and timber materials, depending on the type of disc fitted to the machine.

## **Types of discs**

In this guide, the term 'disc' is applied to any of a number of different tools that may be fitted to a portable grinder. For example:

- bonded grinding and cutting discs
- bonded wheels
- diamond grinding and cutting discs
- flap discs
- flexible and semi-flexible discs
- pneumatic wheels
- rotary hacksaws
- ultra-thin cutting discs
- wire brushes
- woodcarving blades.

## **What are the hazards?**

In operation, the disc may come in contact with a part of the operator's body; or the disc may shatter, throwing off fragments at very high speed. The resulting injuries may range from cuts and abrasions to death.

## **Controlling the risks**

### **1 Follow the manufacturer's information**

Before using a portable grinder for the first time, read the manual.

### **2 Ensure operators are trained**

Operators must be trained in selecting, fitting and removing, caring for and inspecting discs; and the safe use of portable grinders.

### **3 Ensure operators are supervised**

Employers, managers and/or supervisors must carry out checks to ensure grinding operations are being done in a safe manner, and that operators are observing the required safety precautions.

## 4 Fit discs correctly

Ensure any disc to be fitted to the grinder is:

- the correct type for the material to be worked
- capable of being safely used at the maximum speed of the machine, stated as revolutions per minute, metres per second or feet per second
- the correct size for the grinder
- free of any damage, flaws, dampness, warping or distortion that may result in the disc shattering
- fitted in accordance with the manufacturer's instructions (discs may be flat or have depressed centres and require different methods of setting up. Refer to the machine's manual and also Australian Standard AS1788—1987 *Abrasive Wheels*).

Always unplug the grinder from the power supply, or remove the battery, before fitting or removing a disc.

## 5 Use personal protective equipment

When using a grinder, always use personal protective equipment (PPE):

- eye protection that meets the requirements of AS/NZS 1336:1997 *Recommended practices for occupational eye protection*
- hearing protection that meets the requirements of AS/NZS 1269.3:2005 *Occupational noise management — Hearing protector program*
- any additional safety equipment, including respiratory protection, gloves, sturdy shoes, apron and hard hat.

Beware of loose clothing that may be grabbed by the grinder.

## 6 Ensure guarding is in place

Never use a portable grinder without the guard in place and correctly adjusted. A properly adjusted guard will minimise sparks hitting the operator and injury in the event of disc shatter.

## 7 Hold the grinder correctly

Never use a portable grinder one-handed. Always have the auxiliary handle fitted; hold the grinder with both hands and have a stable stance.

If it's not possible to use the grinder with both hands in place, then the grinder is the wrong tool for the job.

## 8 Secure the workpiece

Ensure the workpiece is rigidly supported and firmly clamped. Movement in the workpiece during grinding may result in disc shatter or grinder kickback, with the potential for operator injury.

## 9 Other considerations when grinding

- Select a grinder appropriate for the work to be done. Remember that grinders have variable speed control, clutch systems and anti-kickback.
- Ensure the grinder is turned off before plugging in.
- Apply the grinder to the workpiece only once the grinder has reached operating speed.
- Never put a grinder down while the disc is still turning.
- Be aware of others in the vicinity of the work area, as sparks and material may be ejected over considerable distance.
- Check to make sure there are no flammable materials that may be hit by sparks and check the area for any smouldering material when the work is completed.
- Never clamp a portable grinder in a vice — a portable grinder is **not** a bench grinder nor a substitute for one.
- Use a dust collection/control system whenever possible — some dusts may be carcinogenic, flammable or explosive.

**1300 366 322** [www.workcover.tas.gov.au](http://www.workcover.tas.gov.au)

**HOBART** 30 Gordons Hill Road, PO Box 56, Rosny Park 7018  
**LAUNCESTON** Henty House, 1 Civic Square, Launceston 7250  
**BURNIE** Reece House, 46 Mount Street, PO Box 287, Burnie 7320

**ISBN: 978 1 876712 21 X**

SB018  
Revised November 2008

For more information contact  
Workplace Standards Tasmania  
Phone: 1300 366 322 (within Tasmania)  
(03) 6233 7657 (outside Tasmania)  
Fax: (03) 6233 8338  
Email: [wstinfo@justice.tas.gov.au](mailto:wstinfo@justice.tas.gov.au)