



WorkSafe Western Australia

Angle Grinders

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ANGLE GRINDERS

DID YOU KNOW?

Angle grinders are one of the most dangerous tools in any workplace. Most angle grinder injuries are from metal particles lodging in the operator's eye.

However the most serious injuries are from kick-back, where the disc is thrust back violently towards the operator.

Discs can shatter or explode, sending pieces flying in all directions.

Because angle grinders are designed for grinding and not for cutting, the use of cutting discs with angle grinders exposes operators to even greater risks.

WorkSafe Western Australia says:

Where a safer alternative cutting tool is available or can be obtained...

AN ANGLE GRINDER SHOULD NOT BE USED AS A CUTTING TOOL.



WHOSE RESPONSIBILITY IS SAFETY?

It is the employer's responsibility to provide and maintain a safe working environment and safe work procedures. The employer must also provide information, instruction, training and supervision to enable employees to work safely.

Employees must follow instruction and training provided, and must point out hazards to their supervisor. Employees also have a responsibility to take reasonable care to ensure their own safety and health, and to avoid adversely affecting the safety and health of others through any act or omission at work.

Hire service managers should make sure, as far as practicable, that angle grinders hired to customers do not, when used properly, expose the hirers to hazards, and that information about any likely dangers is provided at the point of hire.

OTHER TOOLS FOR CUTTING

Employers should provide purpose-designed cutting tools, for example drop saws, for materials like concrete, masonry, metal, ceramics, stone or plastic, so that there is no need for an employee to use an angle grinder for cutting.

Employees required to use angle grinders must be fully informed of the hazards, and instructed in safe work procedures. Safe work procedures should include avoiding, where practicable, the use of angle grinders for cutting.

WHEEL SAFETY

- Cutting wheels or discs should not be used for grinding jobs, and grinding wheels should not be used for cutting jobs.
- Wheels designed for a particular revolution speed should not be used on machines of different speeds.
- Wheels should be used only for the specific material and purpose for which they are designed, and according to the manufacturer's recommendations.
- Wheels worn small through use should be discarded and NEVER used on smaller machines.

If subjected to pressures for which they were not designed, wheels can shatter at high speed, with the risk of serious injury to both operator and others nearby.

SAFE WORK PROCEDURES

The employer, in consultation with employees or safety and health representatives, should provide safe procedures for angle grinder tasks.

Tasks with an angle grinder should not be allowed unless covered by an agreed safe procedure.

In your workplace, do safe work procedures determine the following?

- Is grinding work necessary? Could a different tool be used with less risk?
- Is the correct size angle grinder used for the job? Is there a risk of losing control of a heavier, more powerful tool? Could a smaller model be used for some or all of the work?
- Is the correct disc used for the job, depending on the type of material being worked on and the size of the disc?
- Does the guard cover half the disc between the operator and the disc?
- Does the grinder have an automatic cut-off or "deadman" switch as part of the hand grip, so that power is cut off as soon as finger pressure is released? Deadman switch kits are available for older models. (A deadman switch may not be appropriate for certain tasks with small angle grinders.)
- When replacement tools are purchased, does the employer choose grinders with adjustable handles that can be moved to suit different operators, and a "deadman" switch that is easy to hold?

**GUARDS ON ANGLE GRINDERS SHOULD ONLY BE REMOVED FOR
MAINTENANCE AND STORAGE.**

BEFORE STARTING

Is the operator instructed to check before each use that:

- the correct flange and locking nut is in place for the type of disc being used? (Otherwise the disc can shatter at high speed.)
- the guard and handles are secure?
- there are no defects or damage to the disc?
- any disc that has been dropped or become damp is thrown away? (Cracked or weakened discs can shatter in use.)
- no flammable materials are close by?

Is the workpiece

- held firmly in a bench vice where necessary?
- kept at waist height during grinding, where possible?
- Are all employees instructed to keep at a safe distance when an angle grinder is used?
- Are welding screens positioned to prevent flying particles hitting other workers ?

ELECTRICAL SAFETY

Is the angle grinder checked for electrical safety before every use to ensure that:

- no breaks or damage to the machine's outer body?
- all screws tight?
- brush caps intact and firmly in position?
- sheathing of flexible cord held firmly at the tool?
- no exposed wires?
- flexible cord in good condition, free from cuts and breaks?
- plugs and extension sockets free from cuts or damage?
- a safety switch or residual current device (RCD) is always used?
- any defects are repaired by a licensed electrical person?
- the angle grinder has been inspected and tagged by an electrician at the required three-monthly interval if it is used for construction work, and at least every twelve months for other work?

PERSONAL PROTECTIVE EQUIPMENT

Is appropriate protective equipment always provided and used, for example,

- wide vision goggles or safety spectacles and a faceshield?
- a hood for extra protection against particles rebounding in a confined space?
- ear plugs or muffs?
- safety boots with steel toe caps?
- overalls or other close-fitting clothing?
- gloves?

SAFE OPERATION

Are two hands always used to operate an angle grinder, including small models?

Did you know

- large angle grinders should always have a side handle?
- some makes of grinder can be used either right or left handed?

Is it a workplace safety policy never to remove the guard or handles from an angle grinder?

SAFE PROCEDURE DETAILS

Do safe work procedures require operators to

- allow the grinder to "run up" to operating speed before applying it to the job?
- hold the grinder against the workpiece with minimum pressure, so it doesn't "dig in" and cause it to kick back?
- never bump the grinder on to the job, or let the disc hit any other object while grinding?
- keep the grinding disc at a 15 to 30 degree angle to the work?

- adopt a comfortable stance, with feet apart and well balanced, and with a clear view of the job?
- wear knee pads to work at floor level?
- never use a grinder between the legs while sitting on the floor?
- stop the grinder at regular intervals for a short break to rest your arms and hands?
- disconnect the power and place the grinder on a bench with the disc facing upwards when not in use?
- never put a grinder down until the disc stops rotating?
- remove the plug from the power point before changing discs?

INSTRUCTION, TRAINING AND SUPERVISION

- Do all operators who use angle grinders receive information and training, including safety instructions provided by the angle grinder manufacturer?
- Have all operators been instructed in safe work procedures specific to tasks done at the workplace?
- Is one-to-one supervision provided for people receiving training, or who are unfamiliar with the use of angle grinders
- Is general supervision provided for all angle grinding tasks?

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