

WorkSafe Western Australia



SAFE USE OF BENCH GRINDERS



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Safe use of Bench Grinders

Good work practices will ensure that bench grinders do not expose workers to hazards. Bench grinders are one of the most commonly used tools in metal fabrication. Generally they are safe and reliable if care is taken with the grinding wheels.

Bench grinder wheels can shatter into dangerous projectiles through lack of regular inspection and maintenance or improper use.

Safety aspects to watch include:

Always check that a grinding wheel's RPM rating is consistent with the speed of the grinding machine.

Before mounting a grinding wheel on a machine, make sure the power is turned off at the power point switch and the plug removed.

Occasionally a new wheel is cracked or flawed, and is likely to shatter as soon as it is used. New wheels should always be visually checked and given a resonance test before being fixed to the spindle. Tap the side of the wheel with a small tool. It should have a clear ring. A dull noise indicates a flaw.

Ensure the hole in the grinding wheel fits closely on the spindle.

When a wheel has been newly fitted between appropriate washers and flanges, rotate it by hand to check the balance before switching on the power to use the machine.

Unless flanges and washers are evenly seated on either side of the wheel before the locking nut is tightened, the wheel can crack and shatter. Always ensure that the wheel has a soft washer or "blotter" on either side to distribute clamping pressure when the nut is tightened.

Avoid over-tightening the locking nut, as this can exert hazardous forces on the wheel.

Avoid using grinding wheels designed for steel on materials that will clog the pores between the abrasive particles - for example plastic or aluminium.

Unless the wheel is "dressed" with a special tool, when pores become blocked or it loses its cutting surface, the operator will have to press harder to achieve the same cutting effect, exerting forces that may cause the wheel to shatter.

Pressing hard on a dulled wheel surface can produce excessive heat which will cause the bonding material to glaze.

Eye and ear protection should be worn for all grinding jobs, including dressing grinding wheels.

Never remove guards from a bench grinder. They offer protection in the event of wheel failure, and protect hands and fingers from injury.

The work rest on a bench grinder should be securely fixed and close enough to the grinding wheel to prevent the job slipping off. It should be adjusted as the disc becomes smaller through wear and dressing.

Abrasive wheels should be discarded :

1. when the diameter approaches that of the driving flanges,
2. when the work rest can no longer be correctly adjusted to the wheel diameter, or
3. when the wheel no longer cuts efficiently because of reduced peripheral speed.

Wheels should never be run in excess of the maximum speed recommended by the manufacturer.

For further information, refer to Abrasive Wheels Part 1 - Design, Construction and Safeguarding (Australian Standard 1788.1-1987) and Abrasive Wheels Part 2 - Selection, Care and Use (Australian Standard 1788.2-1987).

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