

Safe Use of a 230 mm (9") Angle Grinder

Standard Operating Procedure (SOP)

1. Purpose

To prevent serious injury (especially amputation, eye injury, kickback, disc rupture, and burns) when using a 230 mm (9") hand-held angle grinder for cutting or grinding metal, concrete, masonry, or stone.

2. Scope

Applies to ALL 230 mm (9") angle grinders in the workplace.

3. Responsibilities

Operator: Must be trained and authorised; never remove or modify the guard.

Supervisor/PCBU: Ensure only authorised persons use 9" grinders and that all discs are in date and correct type.

4. Major Hazards

- Disc rupture and flying fragments
- Kickback / blade climb
- Contact with rotating disc
- Dust inhalation (silica, metal, fibres)
- Noise (>100 dB(A))
- Hand-arm vibration (HAVS)

5. Mandatory Personal Protective Equipment (PPE)

- Full-face visor or safety goggles + face shield (AS/NZS 1337.1 high impact)
- Class 5 hearing protection (ear muffs)
- P2 respirator (silica/metal dust) or powered air respirator for prolonged use
- Tight-fitting leather or cut-5 gloves (never loose fabric gloves)
- Steel-cap boots
- Close-fitting flame-resistant clothing – NO hoodies, loose sleeves, or synthetic fibres

6. Training & Authorisation

Only persons who have completed 9" grinder training and been signed off on this machine may operate unsupervised.

7. Pre-Operation Checks

- Disc correct type, size (230 mm), and RPM rating (≥ 6600 rpm for most 240 V models)
- Disc undamaged, in date (check expiry ring – usually 3 years from manufacture)

- Guard fitted, undamaged, and correctly adjusted (covers upper half of disc)
- Dead-man (paddle) switch working – stops when released
- Side handle fitted and tight
- Power cord or battery undamaged
- Anti-kickback clutch and soft-start functional (if fitted)

8. Safe Operating Procedure

Set-Up

- Fit correct disc:
- Type 27 depressed-centre grinding disc OR
- Type 41 flat cutting disc (max 3 mm thick)
- NEVER use saw blades, damaged, or wrong-speed discs
- Tighten disc with the two-pin spanner only – never over-tighten
- Run grinder for 30 seconds in a safe direction away from people

Cutting

- Always cut with the guard between you and the disc
- Use light pressure – let the disc do the work
- Never force or twist the disc in the cut
- Cut in a direction that throws sparks downward and away from body/feet
- Never cut with the upper half of the disc

Grinding

- Work at 15–30° to the surface
- Keep disc flat – never edge-grind with a cutting disc

9. Shut-Down & Storage

- Release trigger and wait for disc to stop completely before putting down
- Rest grinder on its back or side handle – never on the disc
- Store in dry, secure location

10. Absolutely Prohibited Actions (Zero Tolerance)

- Removing or modifying the guard
- Using a disc larger than 230 mm or past its expiry date
- Wearing loose clothing, gloves that can catch, or jewellery
- Side-grinding with a cutting disc (Type 41)
- Cutting or grinding asbestos-containing material
- Using the grinder as a polisher with flap discs unless specifically rated
- Leaving the grinder running unattended

11. Emergency Procedures

- Disc burst or kickback: release trigger immediately and step back

- Eye injury: rinse with sterile saline, seek medical help
- Laceration: apply direct pressure, call 111 if severe

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