

Safe Operation of a Horizontal Metal-Cutting Bandsaw

Standard Operating Procedure (SOP)

1. Purpose

To prevent serious injury (especially amputation and crush injuries) when using a horizontal pivot-style or scissor-style metal-cutting bandsaw.

2. Scope

Applies to all manual, semi-automatic, and automatic horizontal bandsaws used for cutting metal bar, tube, and sections.

3. Responsibilities

Operator: Must be trained, authorised, and never bypass any guard or safety device.

Supervisor/PCBU: Ensure only authorised persons operate the machine and that all guarding is maintained.

4. Major Hazards

- Blade breakage and flying fragments
- Hands caught between blade and material or vise
- Blade running while head is down
- Material ejection when cut-off drops
- Coolant splash and slips

5. Mandatory Personal Protective Equipment (PPE)

- Safety glasses (AS/NZS 1337.1 medium impact)
- Hearing protection (Class 5 if >85 dB(A))
- Steel-cap safety boots
- Close-fitting clothing – NO GLOVES while blade is moving or while closing vise
- Cut-resistant gloves (Level 5) ONLY when handling cut pieces away from the machine

6. Training & Authorisation

Only persons who have:

- Completed specific horizontal bandsaw training
- Been assessed competent on this machine
- Current authorisation recorded in the training register

may operate unsupervised.

7. Pre-Operation Checks

- Blade correctly tensioned (gauge or deflection method) and tracking correctly
- Blade guards (head guard, wheel guards) in place and secure
- Blade guides and roller bearings correctly adjusted (0.5–1 mm clearance)
- Vise jaws square and undamaged
- Hydraulic fluid level and no leaks
- Coolant pump working and coolant at correct strength
- Emergency stop buttons (minimum two) and foot brake (if fitted) tested
- Work area clean, dry, and free of off-cuts
- Blade weld inspected – no cracks or missing teeth

8. Safe Operating Procedure

Set-Up

- Select correct blade type and pitch for material and size.
- Adjust blade speed and feed pressure for material (refer chart on machine).
- Clamp material firmly in vise – minimum 50 mm remaining after cut.
- For bundles or irregular shapes, use proper packing or fixtures.

Cutting

Never place hands in the cutting zone while the blade is moving or can move.

- Lower head slowly until blade just touches material – then start coolant.
- Manual machines: lower head gradually using feed valve or weight control.
- Semi-automatic/automatic machines: use cycle start only when area is clear.
- Never leave the saw unattended while the blade is running.
- When cut is complete:
- Head must rise fully and stop (auto machines)
- Vise must open only after head is fully up

Remove cut piece with tongs or hook – never by hand while blade can restart.

9. Shut-Down & Cleaning

- Raise head fully and switch off blade motor.
- Turn off coolant pump.
- Isolate at main switch if leaving the area.
- Brush or vacuum chips – never use compressed air while people are nearby.
- Drain coolant tank monthly and clean swarf tray weekly.

10. Absolutely Prohibited Actions (Zero Tolerance)

- Removing or modifying blade guards
- Reaching past the blade while it is moving or head is down
- Wearing gloves while operating controls or closing vise
- Overriding head-up limit switch or auto-shut-off
- Cutting material shorter than 50 mm without a stop or fixture
- Leaving the saw running unattended
- Using a cracked or damaged blade

11. Emergency Procedures

- Hit any red emergency stop or foot brake immediately
- If blade breaks: step back, switch off, and wait for wheels to stop
- Report all blade breakages – machine must be inspected before restart
- Call 111 for serious injury

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