

Safe Operation of a Section Roller Bender (Pyramid-Type Rolling Machine)

Standard Operating Procedure (SOP)

1. Purpose

To prevent crush, amputation, and serious injury when rolling flat bar, angle iron, square/round tube, pipe, or solid bar using a manual or electrically/hydraulically powered pyramid-type section roller (commonly called a “roller bender” or “ring roller”).

2. Scope

Applies to all three-roll pyramid section rollers in the workplace .

3. Responsibilities

Operator: Must be fully trained, authorised, and never bypass guards or controls.

Supervisor/PCBU: Ensure only authorised operators use the machine and that rolls and guarding are maintained.

4. Major Hazards

- Crush/amputation between rolls
- Material whipping (especially flat bar on edge or long lengths)
- Fingers trapped when adjusting top roll
- Material ejection on breakthrough
- Entanglement with drive chains/gears

5. Mandatory Personal Protective Equipment (PPE)

- Safety glasses or face shield (AS/NZS 1337.1 medium impact)
- Hearing protection (Class 5 if powered model >85 dB(A))
- Steel-cap safety boots
- Close-fitting clothing – NO GLOVES while rolls are turning or when adjusting
- No loose sleeves, jewellery, or long hair (must be tied back and secured)

6. Training & Authorisation

Only persons who have:

- Completed specific section roller training
- Been assessed competent on this exact machine
- Current authorisation recorded in the training register

may operate unsupervised.

7. Pre-Operation Checks

- All guards in place (gear/chain guard, roll-end guards)
- Top-roll handwheel or hydraulic controls functioning
- Emergency stop button(s) tested (minimum one each side on powered machines)
- Rolls clean and free of damage
- Correct spacer rings or guide rollers fitted for the section being rolled
- Power lead and plugs undamaged (if electric/hydraulic)
- Floor area clear and marked with 1 m exclusion zone
- Roller tables or supports ready for lengths >2 m

8. Safe Operating Procedure

Set-Up

- Select and fit correct guide rollers for the section (flat bar requires side guides; tube may need special rollers).
- Adjust bottom rolls to slightly wider than material width.
- Lower top roll until just clear of material.

Rolling

Never place hands between the rolls while the machine is live or can move.

- Put on all PPE – NO GLOVES.
- Feed material straight and square.
- Manual machines: turn handwheels evenly; powered machines: use forward/reverse controls only.
- Take small increments (typically 1–3 mm per pass on top roll) until desired radius is achieved.
- For flat bar on edge:
 - Always use both guide rollers
 - Proceed slowly – material can whip violently
 - Have a second person to control the free end on lengths >2 m

Never reverse direction while material is tightly gripped without first loosening top roll.

9. Shut-Down & Cleaning

- Raise top roll fully.
- Remove material and supports.
- Switch off and isolate at wall (powered machines).
- Clean swarf from rolls and apply light oil.
- Store guide rollers with the machine.

10. Absolutely Prohibited Actions (Zero Tolerance)

- Removing or bypassing any guard
- Reaching between rolls while machine is powered or top roll can drop
- Rolling flat bar on edge without both guide rollers fitted
- Leaving powered machine running unattended
- Wearing gloves while rolling or adjusting
- Exceeding the machine's section capacity (refer capacity chart on machine)
- Standing in the potential whip path of long material

11. Emergency Procedures

- Hit red emergency stop immediately (powered machines)
- If someone is trapped: isolate power first, then manually raise top roll (handwheel or hydraulic release)
- Call 111 for any crush or serious injury

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