

Title	Grind and hone straight cutters		
Level	3	Credits	5

Purpose	People credited with this unit standard are able to: manage hazards associated with grinding and honing straight cutters; clean and match cutters; prepare grinder; mount cutters and adjust grinder; grind and hone cutters; balance cutters; and store cutters.
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Classification	Solid Wood Manufacturing > Timber Machining
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Available grade	Achieved
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Guidance Information

- 1 Legislation
Health and Safety at Work Act 2015.
Resource Management Act 1991.
- 2 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider wood manufacturing industry as examples of best practice.
Cutters refer to knives prepared for timber machining operations.
Workplace procedures refer to documented policies and procedures set by the organisation carrying out the work, and to documented or other directions provided to staff, and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor’s instructions, and procedures to comply with legislative and local body requirements relevant to the wood manufacturing sector.
- 3 Assessment information
All activities and evidence must meet workplace procedures, accepted industry practice, and manufacturer's specifications.
- 4 Recommended unit standards for entry: Unit 669, *Demonstrate knowledge of grinding wheels and fluids*; and Unit 15774, *Demonstrate knowledge of timber machining*.

Outcomes and performance criteria

Outcome 1

Manage hazards associated with grinding and honing straight cutters.

Performance criteria

1.1 Hazards associated with grinding and honing straight cutters are identified and actions to be taken to manage the hazards are described.

Range hazards may include but are not limited to – grinding wheel disintegration, loose grinding wheel, exposure to grinding coolant; evidence of three is required.

1.2 Safe work practices associated with grinding and honing straight cutters are identified and applied.

Range practices may include but is not limited to – isolation procedures, lock-outs, emergency stops, machine guarding, wearing of appropriate safety equipment.

Outcome 2

Clean and match cutters.

Performance criteria

2.1 Cutters are cleaned of all foreign matter that could affect grinding.

2.2 Cutters are checked for faults and any remedial action is identified.

Range faults may include but is not limited to – warp, cracks, chips, burns, delamination, raised spots; action – grind or replace.

2.3 Cutters are matched in pairs for dimension, shape and weight, and are marked.

Outcome 3

Prepare grinder.

Performance criteria

3.1 Grinder and work area are cleaned of all foreign matter that could affect grinding.

3.2 Grinding wheel and grinding speed is selected to suit cutter steel, and grinder.

3.3 Grinding wheel is checked for faults, and any remedial action is taken.

Range faults – cracks, clogging;
action – replacement, dressing or shaping.

3.4 Grinding wheel is fitted and grinder operations are checked.

Range true running, vibration.

3.5 Grinding wheel is checked and dressed where indicated.

3.6 Grinding settings are made.

Outcome 4

Mount cutters and adjust grinder.

Performance criteria

4.1 Cutters are set in the grinder to manufacturer's specifications, with cutters in sets.

4.2 The effects of incorrect set-up of cutters in performance criterion 4.1 are explained.

Range effects of incorrect set-up of – coolant flow, traversing stops, traversing speed, wheel advance, grinding angle.

4.3 Grinding angle is set.

4.4 Clearance between grinding wheel and cutters is adjusted.

4.5 Wheel advance is set.

4.6 Traversing stops are set to clear both ends of cutters.

4.7 Coolant level is checked and topped-up.

4.8 Grind solutions are handled and stored in accordance with Safety Data Sheets (SDS).

Outcome 5

Grind and hone cutters.

Performance criteria

5.1 Grinder is cleaned and lubricated as required, correct grinding wheel is selected and fitted, and angles are set.

5.2 Cutters are mounted for grinding.

- 5.3 Operation of grinder is checked for problems after the first pass.
Range problems – burning, incorrect grinding angle, incorrect cutter set-up.
- 5.4 Coolant flow rate and cleanliness are maintained during wet grinding.
- 5.5 Cutter edges are sharpened to the specified angle and are free from defects.
Range defects – burning, chipping.
- 5.6 Cutter edges are ground to a constant straight line.
- 5.7 Cutters are honed, and burrs completely removed.
- 5.8 Grinder is cleaned.

Outcome 6

Balance cutters.

Performance criteria

- 6.1 Cutter repairs are checked and re-ground where indicated.
Range checks of or for – identical size, identical weight.
- 6.2 Balancing equipment is set-up and cleaned of all foreign matter that could affect balancing operation.
- 6.3 Cutter weight is measured, and action is taken when excess weight is detected.
Range regrind or discard.

Outcome 7

Store cutters.

Performance criteria

- 7.1 Cutters are stored in marked matched pairs or sets.
- 7.2 Cutters are stored for safety and avoidance of moisture and dust.
- 7.3 Records are completed.

Planned review date	31 December 2024
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 January 1994	31 December 2012
Review	2	24 October 1996	31 December 2012
Review	3	10 February 1999	31 December 2012
Review	4	18 December 2006	31 December 2012
Review	5	15 April 2011	N/A
Review	6	25 June 2020	N/A

Consent and Moderation Requirements (CMR) reference

0013

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.