Title	**Operate scanning and optimising systems for a machine centre**		
Level	**3**	**Credits**	**10**

Purpose	People credited with this unit standard are able to: demonstrate knowledge of the operation and operating principles of scanning and optimising systems for a machine centre; operate the scanning and optimising system for a machine centre; and monitor and control the performance of the scanning and optimising system for a machine centre.

Classification	Solid Wood Manufacturing > Sawmilling

Available grade	Achieved

Guidance Information

1 Legislation
Health and Safety at Work Act 2015.
Resource Management Act 1991.

2 Definitions
Accepted industry practice – approved codes of practice and standardised procedures accepted by the wider sawmilling industry as examples of best practice.
Corrective action referred to in outcome 3 may include communication to management, communication to on-site technical person, communication to off-site technical support person, cleaning, communication with maintenance staff, recalibration, or changes made to the operating system in accordance with worksite documentation.
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 industry sector.

3 Range
Machine centres include but are not limited to – bucking and log merchandisers, carriages, quads, twins, end dog, edgers, trimmers, dry mill rip lines; evidence of one machine centre is required.

4 Assessment information
All activities and evidence must meet workplace procedures and accepted industry practice.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the operation and operating principles of scanning and optimising systems for a machine centre.

Performance criteria

1.1 Scanning and optimising systems are described in terms of their role in the timber conversion process.

1.2 Types of scanning and optimising systems used in conjunction with a machine centre are identified and their purpose are described.

1.3 The scanning process, and the optimising process used by the scanning and optimising system are described.

1.4 Operating parameters and capability of the scanning and optimising system are explained.

Range operating parameters may include but are not limited to – what the scanner can ‘see’, what is hidden from view;
capability may include but is not limited to – characteristics of the wood the scanner can detect (thickness, shape, wane, knots, grain angle, colour, checks, stain), accuracy of items detected.

1.5 Operating components of the scanning and optimising system are identified, and their purpose is explained.

Range components may include but are not limited to – photo eye, proximity, limit switch, encoder, light curtain, laser triangulation system, laser range sensors, closed circuit digital (CCD) cameras, basic optical system, X-ray system, grain angle detection system, ultrasound system, software package.

1.6 Operation of the user display is described, and graphical and numerical information displayed is identified and explained.

Range graphical and numerical information may include but is not limited to – set position, solution, saw position, defect locations, products fitted, log or board surface.

Outcome 2

Operate the scanning and optimising system for a machine centre.

Performance criteria

2.1 Hazards associated with operating the scanning and optimising system are identified and actions to be taken to manage the hazards are described.

Range hazards may include but are not limited to – moving equipment, radiation sources, saw dust, mobile plant, noise.

2.2 Safe work practices associated with operating the scanning and optimising system are applied.

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

2.3 The scanning and optimising system is started, operated, and shut down in accordance with manufacturer's specifications.

2.4 Operator level changes are made to the scanning and optimising system using the software interface.

Range changes may include but are not limited to – changing cut, putting a product on, taking a product off.

Outcome 3

Monitor and control the performance of the scanning and optimising system for a machine centre.

Performance criteria

3.1 Scanning and optimising equipment output data are monitored and interpreted.

Range output data may include but is not limited to – error messages, actual against predicted recovery data, image matching the timber or log scanned.

3.2 Variances in the output timber from the scanning and optimising system are identified and corrective action is taken.

Range variances may include but are not limited to – poor set-up of optimisation parameters, products on the image not produced, recovery calculated is not reflected in the products.

3.3 Equipment faults and malfunctions are identified, and corrective action is taken.

Range equipment malfunctions may include but are not limited to – sensor malfunctions, sensor failures, software malfunctions.

3.4 Operator level calibration checks are completed, and corrective action is taken.

3.5 Preventative maintenance and cleaning schedules for the scanning and optimising system are carried out.

Planned review date	31 December 2024

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 August 2008	31 December 2012
Review	2	15 April 2011	N/A
Review	3	23 April 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.