

Title	Operate a chainsaw and carry out basic chainsaw maintenance in a commercial forestry situation		
Level	3	Credits	12

Purpose	<p>This unit standard is intended for people required to use chainsaws in a commercial forestry operation.</p> <p>People credited with this unit standard are able to: disassemble and reassemble a chainsaw, identify and explain the main function of components, and perform basic maintenance; demonstrate knowledge of hazard and risk control measures associated with chainsaw use in a commercial forestry operation; perform checks and carry out basic maintenance necessary for safe and efficient operation of a chainsaw; prepare for chainsaw use in a commercial forestry operation; and operate a chainsaw in a commercial forestry operation.</p>
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Classification	Forestry > Forest Operations
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Available grade	Achieved
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Guidance Information

- 1 Legislation relevant to this unit standard includes the: Health and Safety at Work (HSW) Act 2015, Resource Management Act 1991; the Resource Management (National Environmental Standards for Plantation Forestry) Amendment Regulations 2018; and the Heritage New Zealand Pouhere Taonga Act 2014, and any subsequent amendments.
- 2 References
New Zealand Forest Owners Association, *Forest Practice Guides* (2019), and any subsequent amendments, available from <http://www.nzfoa.org.nz>.
Approved Code of Practice (ACOP) for Safety and Health in Forestry Operations, December 2012, available from <http://www.worksafe.govt.nz>.
- 3 Chainsaw users in industries other than forestry should consider Unit 6917, *Demonstrate basic chainsaw operation in a non-forestry production environment*.
- 4 Competence in this unit standard indicates compliance with current commercial practice in the forestry industry.
- 5 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider forestry industry as examples of best practice.

Current commercial practice refers to the ability to work unsupervised, demonstrating knowledge and skills that reflect the productivity, quality, and safety requirements currently accepted within the forestry industry.

Forestry operations include forest establishment, silviculture, harvesting, forest inventory, and forest and crew management.

PPE refers to personal protective equipment and may include but is not limited to high-visibility clothing, protective clothing, gloves, face and eye protection, safety helmet, footwear, hearing protection, and safety devices.

Worksite procedures refer to documented procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, quality assurance procedures, housekeeping standards, procedures to comply with legislative and local body requirements.

6 Assessment information

This unit standard must be assessed on-job.

Outcomes and performance criteria

Outcome 1

Disassemble and reassemble a chainsaw, identify and explain the main function of components, and perform basic maintenance.

Performance criteria

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| 1.1 | Safety features are identified and their main functions are explained in accordance with accepted industry practice. |
| Range | on-off switch, throttle lockout, chain brake, rear hand-guard, spark arrester-muffler, anti-vibration mounts, chain catcher, mitt. |
| 1.2 | Chainsaw starter cover assembly, top cover, air filter, side cover, bar and chain are removed in accordance with chainsaw manufacturer's recommendations. |
| 1.3 | Chainsaw components are identified and their main functions are explained in accordance with accepted industry practice. |
| Range | starter mechanism, flywheel, cooling vents, top cover, air filter, carburettor, spark plug, high-tension lead, cooling fins, choke, throttle, side cover, drive sprocket, chain tension adjuster, clutch, bar oil hole, bar rails and groove, bar sprocket, depth gauge, drive link, cutter, rivet, tie strap. |
| 1.4 | The bar is removed from the chainsaw and inspected for damage. |
| Range | inspection includes identification of any – physical damage, burrs, sprocket and/or /tip damage, bent bar, pinched bar. |

- 1.5 Any damage to the bar is repaired or damaged items are replaced in accordance with accepted industry practice and worksite procedures.
- 1.6 The bar is cleaned and re-fitted to the chainsaw in accordance with chainsaw manufacturer's recommendations.
- 1.7 Air filter is removed, cleaned and re-fitted in accordance with chainsaw manufacturer's recommendations.
- 1.8 Flywheel, cooling fins, and starter mechanism are cleaned in accordance with the accepted forestry industry practice.
- 1.9 Chainsaw drive sprocket is removed and refitted in accordance with chainsaw manufacturer's recommendations.
- 1.10 Chainsaw is reassembled to safe working condition in accordance with chainsaw manufacturer's recommendations.

Outcome 2

Demonstrate knowledge of hazard and risk control measures associated with chainsaw use in a commercial forestry operation.

Performance criteria

- 2.1 Hazards and associated risks specific to chainsaw use in a commercial forestry operation are identified and a control measure for each is explained in accordance with accepted industry practice.

Range evidence of ten risks is required.
- 2.2 Reactive forces of a chainsaw are described in accordance with accepted industry practice.

Range traction, recoil.
- 2.3 Kickback and the main causes of kickback are explained in accordance with accepted industry practice.
- 2.4 Activities where kickback may occur are identified in accordance with accepted industry practice.

Range evidence of three activities where kickback may occur is required.
- 2.5 Ways to control kickback through correct chainsaw use are explained in accordance with accepted industry practice.

Range grip, left thumb, body position, bar nose location, re-entering cuts, reach.

2.6 Chain conditions that increase the chance of kickback are identified.

Range evidence of two chain conditions is required.

2.7 The terms *tension wood* and *compression wood* are defined in accordance with accepted industry practice.

Outcome 3

Perform checks and carry out basic maintenance necessary for safe and efficient operation of a chainsaw.

Performance criteria

3.1 Requirements for running in a new chain are explained in accordance with chain manufacturer's recommendations.

3.2 Requirements of a 'safe area' for maintenance and refuelling are described in accordance with worksite procedures.

Range requirements must relate to one of the following operations – landing operations, clearfell tree felling, thinning, chainsaw pruning, land clearing.

3.3 Components prone to wear and damage are checked and maintained or replaced as required in accordance with accepted industry practice.

Range includes but is not limited to – throttle lockout, chain catcher, chain brake, on-off switch, muffler, anti-vibration mounts, spark arrester.

3.4 Chain tension is checked and adjusted in accordance with accepted industry practice.

3.5 The chain is sharpened and depth gauges set in accordance with accepted industry practice.

3.6 Loose nuts and screws are tightened.

Outcome 4

Prepare for chainsaw use in a commercial forestry operation.

Performance criteria

4.1 Factors that influence the selection of chainsaw power rating, bar length, and chain type are explained in accordance with accepted industry practice.

Range evidence of one factor for each component is required.

4.2 Pre-start checks are carried out in accordance with accepted industry practice.

Range fuel and oil, cutting unit, security of external fittings, condition of safety features.

4.3 Starting methods are used in accordance with the manufacturer's recommendations and accepted industry practice.

4.4 Chainsaw is checked after starting in accordance with accepted industry practice.

Range on-off switch, muffler, chain brake, chain, lubrication.

Outcome 5

Operate a chainsaw in a commercial forestry operation.

Performance criteria

5.1 PPE is worn, and availability of a first aid kit is confirmed in accordance with accepted industry practice and worksite procedures.

5.2 Hazards in the current operation are identified and risks are controlled in accordance with accepted industry practice and worksite procedures.

5.3 Chainsaw is carried in a safe manner in accordance with accepted industry practice.

Range carried when idling, carried when stopped.

5.4 Chainsaw cutting techniques are used to demonstrate the range of cuts required in the candidate's role in accordance with current commercial practice.

Range roles may include but are not limited to – processing stems on a skid, tree felling, trimming, pruning.

5.5 Compression wood and tension wood are identified, and cuts are planned and carried out, in accordance with accepted industry practice.

Range cuts – five cuts with compression wood and five cuts with tension wood;
kerf closing is anticipated; wedges are used when applicable;
chain jamming is minimised; log, stem, or branch movement is anticipated.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	18 December 2006	31 December 2011
Review	2	22 May 2008	31 December 2012
Review	3	19 November 2010	31 December 2016
Review	4	19 March 2015	31 December 2017
Review	5	10 December 2015	N/A
Review	6	28 May 2020	N/A
Revision	7	25 February 2021	N/A
Rollover	8	26 April 2024	N/A

Consent and Moderation Requirements (CMR) reference

0173

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

Comments on this unit standard

Please contact Muka Tangata - People, Food and Fibre Workforce Development Council qualifications@mukatangata.nz if you wish to suggest changes to the content of this unit standard.