

Title	Operate an excavator to handle logs in port and shipping operations		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: describe the safety requirements and maintenance of an excavator; demonstrate pre-start checks on an excavator; start up an excavator; operate an excavator in a port handling or vessel loading operation; shut down the excavator; and demonstrate general maintenance procedures for an excavator.
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Classification	Stevedoring and Ports Industry > Port Machinery Operations
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Available grade	Achieved
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Entry information	
Critical health and safety prerequisites	Prerequisite: Unit 18950, <i>Demonstrate knowledge of log handling for port and shipping operations</i> , or demonstrate equivalent knowledge and skills.

Explanatory notes

- 1 Legislation relevant to this unit standard includes: Health and Safety in Employment Act 1992.
- 2 Any new, amended or replacement Acts, regulations, Rules, standards, codes of practice, or Land Transport New Zealand requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- 3 Definitions
An *excavator* is a hydraulic excavator fitted with a bucket or a grapple and/or push plate.
Organisation can mean company or employer.
Organisational requirements include any legal requirements, standards, codes of practice, organisational and/or site requirements, industry best practice, and manufacturers' instructions. These must be available to candidates, providers, and assessors.
Owner instructions refer to organisational requirements when the company owns the machinery, but may also refer to instances where the machinery is leased.
- 4 All actions carried out must be in accordance with legal, safety, organisational, and site requirements that are applicable to each situation.

Outcomes and evidence requirements

Outcome 1

Describe the safety requirements and maintenance of an excavator.

Evidence requirements

- 1.1 Description includes safety features required on an excavator.
- Range protective structures, seatbelt, hydraulic lockout lever, machine guarding, emergency exit.
- 1.2 Description of the checks required before starting an excavator is in accordance with organisational requirements.
- Range fluid levels, belt tension, location of personnel.
- 1.3 Description of the purpose, scope, and timing of the visual inspection, is in accordance with organisational requirements.
- Range structural damage, worn components, hydraulic lockout lever, machine guarding, emergency exit.
- 1.4 Description of the purpose of all gauges and warning symbols is in accordance with organisational requirements and manufacturer instructions.
- 1.5 Description of daily maintenance procedures is in accordance with organisational requirements and manufacturer instructions.
- Range lubrication, adjustments, fluid levels, items requiring cleaning, reporting any faults and/or maintenance requirements.
- 1.6 Description of periodic maintenance needs is in accordance with organisational requirements and/or manufacturer instructions.
- 1.7 Description includes organisational requirements for refuelling and topping up fluids.
- 1.8 Description includes organisational requirements for reporting excavator malfunctions and/or damage.

Outcome 2

Demonstrate pre-start checks on an excavator.

Evidence requirements

- 2.1 Check procedure is demonstrated in accordance with manufacturer instructions and/or owner instructions.

Range engine oil, hydraulic oil, coolant, fan belt, air filter indicator.

2.2 Check includes a visual inspection to ensure excavator readiness.

Range tracks, undercarriage, operator's cab, protective structures, main boom, stick, one of – grapple and/or push plate, bucket.

2.3 Check includes an inspection of the fire extinguisher to ensure it is secured and charged.

Outcome 3

Start up an excavator.

Evidence requirements

3.1 Protective equipment is worn when preparing to operate the excavator.

3.2 Safe methods are used to enter the operator's cab.

Range machine stationary, facing the machine, using steps and grab rails, three-point contact.

3.3 Excavator is started in accordance with safe operating practices.

Range includes but is not limited to – seating, controls, location of personnel.

3.4 Gauges and warning symbols are checked during warm-up.

3.5 Controls are tested as functioning before being operated.

Outcome 4

Operate an excavator in a port handling or vessel loading operation.

Evidence requirements

4.1 Door is securely closed, seat belt is fastened, and operator protective structure is in place throughout the operation.

4.2 Gauges and warning devices are monitored.

4.3 Travel and operation of excavator are controlled and are in accordance with manufacturer instructions and/or organisational requirements.

Range track orientation, underfoot conditions, wear and damage to undercarriage, machine stability, damage to logs.

4.4 Communication with other personnel is maintained.

4.5 Operation of boom and stick functions is safe, smooth, and efficient.

Range indicators – no unplanned contact with objects, arc of the boom controlled.

4.6 Control of the bucket or the grapple and/or push plate functions is precise.

Range indicators – the bucket or the grapple and/or push plate heights kept constant, logs accumulated in a single movement, rotation controlled, no unplanned contact with objects.

4.7 The operation is completed in a minimum number of cycles.

4.8 Operation avoids unnecessary wear and damage to excavator features.

Outcome 5

Shut down the excavator.

Evidence requirements

5.1 The excavator is parked in preparation for shut down.

Range as level as practicable, cleared area, equipment lowered, hydraulic system isolated, clear of other operations.

5.2 Engine is idled down and switched off in accordance with manufacturer instructions and/or organisational requirements.

5.3 Safe methods are used to exit the operator's cab.

Range machine stationary, facing the machine, using steps and grab rails, three-point contact.

5.4 The excavator is secured to prevent unauthorised access and use.

Range battery isolation engaged, key removed, door locked.

Outcome 6

Demonstrate general maintenance procedures for an excavator.

Evidence requirements

6.1 Operator's cab is kept clear of loose items.

Range includes but is not limited to – tools, paint cans, extinguisher.

6.2 The daily maintenance schedule is followed in accordance with manufacturer instructions and/or organisational requirements.

Planned review date	31 December 2020
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 January 2002	N/A
Review	2	27 October 2006	N/A
Rollover	3	17 September 2015	N/A

Consent and Moderation Requirements (CMR) reference	0145
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact the SSB ssb@email.address if you wish to suggest changes to the content of this unit standard.