

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 an 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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Prerequisites	Unit 18950, <i>Describe log handling for port and shipping operations</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- Legislative and regulatory requirements relevant to this unit standard include – Health and Safety at Work Act 2015;
Approved Code of Practice for Health and Safety in Port Operations, available at [Health and safety in port operations | WorkSafe](#);
New Zealand Port and Harbour Marine Safety Code, available at [New Zealand Port and Harbour Marine Safety Code - Maritime NZ](#).
- Any new, amended or replacement Acts, regulations, Rules, standards, codes of practice, or Waka Kotahi NZ Transport Agency requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with company requirements, legislative requirements and regulatory requirements.
- Definitions
Company requirements refer to instructions to staff on policy and procedures that are available in the workplace. These requirements may include – company policies and procedures, work instructions and legislative requirements.
An *excavator* is a hydraulic excavator fitted with a bucket or a grapple and/or push plate.
Organisation can mean company or employer.

Regulatory requirements refer to regulations set by but not limited to the New Zealand Customs Service, Ministry for Primary Industries and WorkSafe New Zealand.

Outcomes and performance criteria

Outcome 1

Describe the safety requirements and maintenance of an excavator.

Performance criteria

- 1.1 Safety features required on an excavator are described.
- Range protective structures, seatbelt, hydraulic lockout lever, machine guarding, emergency exit.
- 1.2 Checks required before starting an excavator are described.
- Range fluid levels, belt tension, location of personnel.
- 1.3 The purpose, scope, and timing of the visual inspection are described.
- Range structural damage, worn components, hydraulic lockout lever, machine guarding, emergency exit.
- 1.4 The purpose of all gauges and warning symbols are described.
- 1.5 Daily maintenance procedures are described.
- Range lubrication, adjustments, fluid levels, items requiring cleaning, reporting any faults and/or maintenance requirements.
- 1.6 Periodic maintenance needs are described.
- 1.7 Company requirements for refuelling and topping up fluids are described.
- 1.8 Company requirements for reporting excavator malfunctions and damage are described.

Outcome 2

Demonstrate pre-start checks on an excavator.

Performance criteria

- 2.1 Check procedure is demonstrated.
- Range engine oil, hydraulic oil, coolant, fan belt, air filter indicator.

2.2 A visual inspection is carried out to ensure excavator readiness.

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

2.3 An inspection of the fire extinguisher is carried out to ensure it is secured and charged.

Outcome 3

Start up an excavator.

Performance criteria

3.1 Operator's cab is entered safely.

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

3.2 Excavator is started.

Range seating, controls, location of personnel.

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

3.4 Controls are tested as functioning before being operated.

Outcome 4

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

Performance criteria

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.

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 Boom and stick functions are operated safely.

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

4.6 The bucket or the grapple and/or push plate functions are controlled.

Range indicators – the bucket or the grapple and/or push plate heights are suitable for the work being undertaken, 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.

Outcome 5

Shut down an excavator.

Performance criteria

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.

5.3 The operator's cab is exited safely.

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.

Performance criteria

6.1 Operator's cab is cleared of loose items.

Range tools, paint cans, extinguisher.

6.2 The daily maintenance schedule is carried out.

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	24 January 2002	31 December 2023
Review	2	27 October 2006	31 December 2023
Rollover	3	17 September 2015	31 December 2023
Review	4	24 February 2022	N/A

Consent and Moderation Requirements (CMR) reference

0014

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

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.