

Title	Operate a hydraulic excavator for agricultural contracting		
Level	4	Credits	20

Purpose	<p>People credited with this unit standard are able to: demonstrate knowledge of hydraulic excavators and attachments; prepare for hydraulic excavator operations; manoeuvre and control excavator on an agricultural contracting site; load, mix, and place materials on an agricultural contracting site with a hydraulic excavator; scrape, excavate, and strip a site for land development with a hydraulic excavator; use a hydraulic excavator for land drainage works and trenching; handle rock, non-earth materials, and silage with a hydraulic excavator; carry out post-operational procedures; and move a hydraulic excavator from site to site.</p>
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Classification	Rural Contracting > Agricultural Contracting
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Available grade	Achieved
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Prerequisites	Driver licence and any driver licence endorsement appropriate to the machine or vehicle being used.
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Guidance Information

- The following legislation and requirements apply to this unit standard:
 - Health and Safety in Employment Act 1992;
 - Resource Management Act 1991;
 - Territorial authority and/or regional council requirements;
 - Transport (Vehicle and Driver Registration and Licensing) Act 1986;
 - Land Transport (Road User) Rule 2004;
 - Land Transport Act 1998;
 - The Official New Zealand Truck Loading Code – Code of Practice for the Safety of Loads on Heavy Vehicles* (Truck Loading Code) (current edition), available from booksellers;
 - Guidelines for the Provision of Safety, Health and Accommodation in Agriculture* (Wellington: Department of Labour, 1996); and
 - Approved Code of Practice for Excavation and Shafts for Foundations* (Wellington: Department of Labour, 1996); and
 - Guarding Farm Machinery – Tractor power take-offs and transmission machinery* (Wellington: Department of Labour, 1984); and
 - Approved Code of Practice for the Management of Noise in the Workplace* (Wellington: Department of Labour, 2002); and

Approved Code of Practice for Operator Protective Structures on Self-Propelled Mobile Mechanical Plant (Wellington: Department of Labour, 1999); all available from <http://www.osh.govt.nz/order/catalogue>;

Operator Safety Manual for Earthmoving Machinery, 2006, Connexis Infrastructure ITO;

RMA Operator's Manual (Wellington, New Zealand Contractors' Federation, 1998), New Zealand Contractors' Federation, Telephone 04 496 3270;

Manufacturer's instructions.

Any legislation or other requirement superseding any of the above will apply, pending review of this unit standard.

- 2 Assessment against this unit standard must be based on evidence from a workplace context.
- 3 Personal protective equipment, appropriate for the work being carried out, is to be selected and worn in accordance with company requirements and manufacturer's instructions.
- 4 Operators must use the hand signals endorsed by their company.
- 5 Definitions
Company requirements refer to all policies, procedures, and methodologies the candidate's organisation has in place including but not limited to those relating to health, safety, environment, quality, and operations.
Manufacturer's instructions may include specifications, installation, handling, use, and maintenance instructions and safety data sheets.
Sloping terrain means terrain that exceeds 20°.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of hydraulic excavators and attachments.

Performance criteria

- 1.1 Hydraulic excavators are identified and described in terms of their types and components.

Range	types – tracked, rubber-tired, front-end loader with backhoe; components – operator compartment, mountings, hydraulic pump or motor, sprocket track frame and track, shoes, stabilisers and mainframe, boom or stick attachments, bucket and bucket cylinder, arm or dipper stick, arm cylinder or crowd cylinder, boom and boom cylinder, swing cylinder.
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- 1.2 Hydraulic excavators are described in terms of the jobs they perform in the agricultural contracting industry.

Range five of – stripping, bulk excavating, trenching, trimming, battering, loading, dumping, spreading, mixing, lifting, stacking, root raking, stump removal, tree removal, demolition, tracking, drain clearing, post pushing or driving.

1.3 At least three attachments are described in terms of how they are fitted and how they are operated for specified tasks.

Range may include but is not limited to – clay spade, face shovel bucket, general-purpose bucket, rock bucket, depth control devices, chains, slings, strops, cleaning bucket, compactors, root rake, ripper, mulcher, hammer, slasher, thumb.

Outcome 2

Prepare for hydraulic excavator operations.

Performance criteria

2.1 Site hazards are identified and controlled in accordance with company requirements.

2.2 Logistical readiness is established in accordance with company requirements.

Range may include but is not limited to – access, fuel and oil supplies and storage, communications.

2.3 Excavator is checked for condition, damage, wear, and faults; problems are identified; and corrective action is taken in accordance with manufacturer's instructions and company requirements.

2.4 Checks are made and any necessary actions are taken or adjustments made to ensure the tractor complies with legal and company requirements for operator health and safety.

Range may include but is not limited to – fire extinguisher, first aid equipment, seat, safety belt, mirrors, controls, climate control, sound equipment, communications equipment.

Outcome 3

Manoeuvre and control excavator on an agricultural contracting site.

Performance criteria

3.1 Excavator is manoeuvred on site with adequate clearances in accordance with manufacturer's and job instructions.

Range two of – trenching works, working a face, handling loads; clearances may include but are not limited to – overhead wires, underground services, in-ground services, proximity of people and plant, survey pegs and settings, structures, adjacent property, protected trees, protected sites.

3.2 Smooth movement of bucket through all positions is demonstrated.

Range trenching works, working a face, handling loads.

3.3 Excavator is controlled on sloping terrain in accordance with manufacturer's instructions and/or company requirements.

3.4 Production is maintained at economic usage rate relative to achieving job requirements in allotted time and the safety of the operator.

Outcome 4

Load, mix, and place materials on an agricultural contracting site with a hydraulic excavator.

Performance criteria

4.1 Communication is maintained with load vehicle driver at all times during loading operations.

Range includes giving directions for the positioning of load vehicle.

4.2 Excavator is positioned strategically and material is placed in load vehicle in accordance with company and job requirements and the Truck Loading Code.

4.3 Materials are mixed and stockpiled in accordance with client and company requirements.

4.4 Materials are placed with minimal spillage in accordance with client requirements.

Outcome 5

Scrape, excavate, and strip a site for land development with a hydraulic excavator.

Performance criteria

5.1 Topsoil is stripped to line, level, and grade in accordance with client requirements.

5.2 Area for specified jobs is excavated to level and grade in accordance with client and company requirements.

5.3 Excavator is used to dig up to and beneath underground services in accordance with client and company requirements.

- 5.4 Excavator is used to dig saturated materials in compliance with client, contract, and company requirements, and permits.
- 5.5 Materials are carried in safe load position and demonstrating awareness of the operating environment at all times.

Range includes but is not limited to – reversing, working on sloping terrain.

Outcome 6

Use a hydraulic excavator for land drainage works and trenching.

Performance criteria

- 6.1 Open drains and ditches are constructed to line, level, and grade in accordance with client requirements.
- 6.2 Open drains are maintained by clearing debris and vegetation and placing the spoil in accordance with client requirements.
- Range spoil for removal may be placed on truck.
- 6.3 Trenches are excavated to line, level, and grade in accordance with client requirements.
- 6.4 The selected angle of repose prevents the excavation being filled with loose material and/or the sides caving in.
- 6.5 Trench excavation is backfilled in accordance with company requirements for material and compaction.

Outcome 7

Handle rock, non-earth materials, and silage with a hydraulic excavator.

Performance criteria

- 7.1 Rocks are extracted, sorted to size, and placed in accordance with client and company requirements.
- 7.2 Non-earth materials are extracted, carried, and placed in accordance with company requirements.
- Range two non-earth materials which may include but are not limited to – pipe section, tree, stump, heavy object.
- 7.3 Silage is extracted, stacked, and compacted in accordance with client and company requirements.

Outcome 8

Carry out post-operational procedures.

Performance criteria

- 8.1 Shut-down procedures are carried out in accordance with manufacturer's instructions.
- 8.2 Any damage or faults including any missing, bent, broken, or loose parts are identified and are repaired, replaced, or reported in accordance with manufacturer's instructions and/or company requirements.
- 8.3 Excavator is stored in accordance with company requirements.
- 8.4 Documentation for the operation is completed in accordance with company and client requirements, and is stored in accordance with company requirements.

Outcome 9

Move a hydraulic excavator from site to site.

Performance criteria

- 9.1 Machine is driven on road in compliance with Land Transport (Road User) Rule 2004 and manufacturer's instructions.
- 9.2 Excavator is loaded onto and unloaded from transporter in accordance with manufacturer's instructions and company requirements.

Range positioning of attachments, parking machine; permit and securing are the responsibility of the driver of the transporter not the operator of the excavator.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	31 October 2002	31 December 2021
Review	2	25 June 2007	31 December 2021
Review	3	26 March 2020	31 December 2021

Consent and Moderation Requirements (CMR) reference	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.