

Title	Operate portable pumps for firefighting		
Level	3	Credits	3

Purpose	<p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> - demonstrate knowledge of basic hydraulic phenomena, properties and characteristics; - demonstrate knowledge of portable pumps used in firefighting; - establish a portable pump; - operate a portable pump; and - restore site, recommission a portable pump for firefighting and complete documentation.
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Classification	Fire and Rescue Services > Fire and Rescue Services - Generic Fire Fighting
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Available grade	Achieved
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Prerequisites	Unit 3270, <i>Establish and deliver water supplies for fire and emergency operations</i> ; or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 Compliance with the fire and emergency agency's Health and Safety policy and procedures is mandatory.
- 2 Definitions

Fire and emergency agency's requirements refer to policies, procedures and supporting documentation on safety and operations set down by each fire and emergency agency employer or host organisation.

Portable pumps refer to pumps that can be carried by firefighting personnel and that are not permanently fixed or mounted to a chassis of a vehicle and which may incorporate instrumentation, such as compound gauges. Examples include Tohatsu, Rabbits, Coventry Climax, Angus, featherweight medium pump (FWMP), featherweight pump (FWP), Waterous, Millennium, Superjet, Maxflo, Godiva, Darley, Brown Brothers, Wajax, Aqualite, and Floating.

Pressure fed refers to water entering the pump with a positive pressure, ie from a hydrant or another pump.

Static refers to water entering the pump with zero or negative pressure, ie during drafting operations.
- 3 Assessment against this unit standard must take place under real or simulated conditions.

- 4 Assessment against all outcomes must be in accordance with the fire and emergency agency's requirements, and where required, the manufacturer's specifications.
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Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of basic hydraulic phenomena, properties and characteristics.

Performance criteria

- 1.1 Jet reaction, water hammer, and safety considerations to prevent loss or damage from hydraulic pressure are explained.
- 1.2 Properties of water are described.
- Range mass, force, compression, expansion.
- 1.3 Hydraulic characteristics that affect the flow of water are described in terms of flow and pressure.
- Range head, suction lift, barrier height, flow in hose lines, pump output, nozzles.

Outcome 2

Demonstrate knowledge of portable pumps used in firefighting.

Range may include – manually primed, mechanically primed pumps.

Performance criteria

- 2.1 The components of a portable pump are identified and explained.
- Range a minimum of five of – pump casing, impeller, inlet, outlet, power plant, primer, gauges, safety features, foam systems, common accessories.
- 2.2 Basic specifications and limitations of portable pumps are listed and explained.
- Range high pressure/low volume pump, high volume/low pressure pump, suction lift.
- 2.3 Principles of relay pumping are described.
- Range open relay, closed relay.
- 2.4 Fault-finding and resolution are described.

Outcome 3

Establish a portable pump.

Performance criteria

- 3.1 Site to be used for pump operations is selected.
- Range environment, operator.
- 3.2 The pump is established to allow volume and pressure of water to be delivered to achieve the required outcome.

Outcome 4

Operate a portable pump.

Performance criteria

- 4.1 Personal protective equipment is selected and worn.
- 4.2 Pump is primed, started, operated, monitored and shut down.
- Range priming – normal, emergency;
start – manual, electrical (where fitted);
fuel – type and mix, additive (where required).
- 4.3 Communication is maintained between the pump operator and relevant personnel.
- 4.4 Where fitted, instrumentation is monitored to provide optimum performance.
- 4.5 Pump is operated to meet output requirements.
- Range water supply – static, pressure-fed;
water discharge – controlled deliveries, uncontrolled deliveries.

Outcome 5

Restore site, recommission a portable pump for firefighting and complete documentation.

Performance criteria

- 5.1 Pump site is restored and pump is recommissioned in accordance with the manufacture's specifications.
- Range pump site – equipment, environment;
pump – drained, cleaned, refuelled, refilled.
- 5.2 Documentation is completed.

Replacement information	This unit standard and unit standard 20387 replaced unit standard 3268, unit standard 10612, and unit standard 10620.
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Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 March 2004	N/A
Review	2	20 November 2009	N/A
Revision and Rollover	3	30 September 2021	N/A

Consent and Moderation Requirements (CMR) reference	0039
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.