

Title	Demonstrate knowledge of power boat hydraulic principles, systems and components		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to demonstrate knowledge of power boat hydraulic principles and power boat hydraulic systems and components.
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Classification	Motor Industry > Trailer Boat Systems
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Available grade	Achieved
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Guidance Information

- 1 This unit standard is a prerequisite for Unit 33474 *Install, disassemble and repair a hydraulic system on a power boat*.
- 2 Definitions
Manufacturers' specifications refer to technical information of a boat or product detailing: operation, installation and servicing procedures; technical terms and descriptions; and illustrations. Manufacturer specifications must be followed to ensure compliance with manufacturer warranty, safe operation, and operation that meets manufacturer performance claims.
Workplace policies and procedures refer to the documented procedures and policies providing guidelines for the tasks and activities carried out in the workplace. This typically includes relevant health and safety requirements to eliminate hazards and/or risks in the workplace.

Outcomes and performance criteria

Outcome 1

Explain power boat hydraulic principles.

Performance criteria

- 1.1 The basic principles of hydraulics are explained in relation to power boat components.
Range principles – pressure, flow, force.
- 1.2 Proportional hydraulics is explained in terms of hydraulic circuits.

- 1.3 Safety precautions are explained in relation to working with hydraulic equipment in accordance with manufacturers specifications and workplace policies and procedures.

Range safety precautions include – relieving system pressure before disconnecting oil lines, leaving the system unattended, working and blocking a raised system, removing components, checking line connections, observing safety signs, correct use of personal protective equipment, making repairs on the system, avoiding hot fluids and parts.

Outcome 2

Demonstrate knowledge of power boat hydraulic systems and components.

Performance criteria

- 2.1 Hydraulic components are explained in terms of their marine application.

Range components may include – directional control valves, pressure regulating valves, flow control valves, load control valves, counterbalance valves, hydraulic pumps, hydraulic cylinders, hydraulic motors;
evidence of five components is required.

- 2.2 Hydraulic circuits are explained in terms of marine application.

Range hydraulic circuits – series, parallel, synchronized, regenerative, closed, accumulator, motion control.

- 2.3 Installation procedures for hydraulic lines, hoses, and pressure fittings are described in accordance with manufacturer specifications.

Planned review date	31 December 2030
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 September 2007	31 December 2018
Review	2	28 September 2017	31 December 2027
Review	3	26 June 2025	N/A

Consent and Moderation Requirements (CMR) reference	0136
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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 Hanga-Aro-Rau Engineering, Manufacturing and Logistics Workforce Development Council at qualifications@hangaarorau.nz if you wish to suggest changes to this unit standard.