

Title	Test and service hydraulic systems on equipment, vehicles, or machines		
Level	3	Credits	6

Purpose	<p>This unit standard is intended for people in the automotive repair industry.</p> <p>People credited with this unit standard are able to: test the hydraulic system; carry out sensory checks on a hydraulic power system; prepare to service a hydraulic power system; and service the hydraulic system on a piece of equipment, a vehicle, or a machine.</p>
----------------	--

Classification	Motor Industry > Automotive Hydraulics
-----------------------	--

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 It is recommended that people hold credit for Unit 23928, *Demonstrate knowledge of automotive hydraulic circuit diagrams and oil requirements* before being assessed against this unit standard.
- 2 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, and company requirements and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 3 Performance of the outcomes of this unit standard must comply with the following:
Health and Safety at Work Act 2015;
Vehicle Inspection Requirements Manual (VIRM) In-service Certification;
Land Transport Rule: Heavy Vehicles 2004;
Land Transport Rule: Vehicle Repair 1998;
New Zealand Standard NZS/ANSI/ITSDF B56.1:2005 *Safety standard for low lift and high lift trucks*.
- 4 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- 5 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, product quality specifications and legislative requirements.

Service information refers to technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.

Suitable tools and equipment refer to industry approved tools and equipment that are recognised within the industry as being the most suited to complete the task in a professional and competent manner with due regard to safe working practices.

- 6 For this unit standard, it is essential that the practical assessment evidence is obtained in the workplace under normal workplace conditions.

Outcomes and performance criteria

Outcome 1

Test the hydraulic system on a piece of equipment, a vehicle, or a machine.

Performance criteria

- 1.1 Precautions are observed throughout the task.
- Range working with high pressure fluid, disabling circuits, supporting raised components, disconnecting components with load relieved.
- 1.2 Hydraulic circuit diagrams for hydraulic equipment are identified.
- 1.3 The hydraulic oil condition is checked, and the system level is correct before any testing is carried out.
- Range oil condition – foamy, milky, smell, overheated, dirty, metallic particles present.
- 1.4 The system is tested for correct operation, and the results are recorded.
- Range inspection for leaks; damaged hoses; noisy operation; vibration; excessive heat; slow, erratic and/or non-operation of the system; may include – pressure testing; flow testing.
- 1.5 A report on the condition of the system with comparison to manufacturer specifications is given to the supervisor.

Outcome 2

Carry out sensory checks on a hydraulic power system on a piece of equipment, a vehicle, or a machine.

- Range senses – sight, sound, touch, smell;
checks may include but are not limited to – leaks, levels, hose condition, filters, couplings, temperatures, gauges and indicators, excessive or unusual noise, fluid odour.

Performance criteria

- 2.1 Checks are carried out.
- 2.2 Results are checked, interpreted, and verified with the supervisor.

Outcome 3

Prepare to service a hydraulic power system on a piece of equipment, a vehicle, or a machine.

Performance criteria

- 3.1 Suitable tools and equipment are selected to maintain a hydraulic power system.
- Range may include but is not limited to – containers, blanking flanges, plates and plugs, absorbent materials, hand tools, cleaning equipment and fluids.
- 3.2 Hydraulic power system is made safe.
- Range may include but is not limited to – isolation, depressurisation, PPE (Personal Protective Equipment), safety supports.
- 3.3 System and adjacent environment are cleaned, and waste is disposed of.

Outcome 4

Service the hydraulic system on a piece of equipment, a vehicle, or a machine.

Performance criteria

- 4.1 Suitable tools and equipment are selected and used that enable hydraulic system faults to be repaired.
- Range may include but is not limited to – containers, blanking flanges, plates and plugs, absorbent materials, hand tools, cleaning equipment and fluids.
- 4.2 Safety precautions are taken before work is started.
- Range engine stopped, hydraulic pressure removed, suspended loads lowered and/or blocked.
- 4.3 The system is drained, and the oil replaced.
- Range type, grade, level.
- 4.4 System service requirements are completed.

- 4.5 Hydraulic connections to be opened are cleaned before being opened; and the unused openings are plugged.
- 4.6 Leaks are repaired.
- Range may include but is not limited to – damaged hoses, seals, pipes, connections.
- 4.7 Components are removed.
- Range may include but is not limited to – pump, cylinders, control valves, relief valves, actuators, oil cooler, motors.
- 4.8 Components are replaced without damage to the system or component.
- Range may include but is not limited to – pump, cylinders, control valves, relief valves, actuators, oil cooler, motors.
- 4.9 Fluid samples are collected for analysis.
- 4.10 The system is retested for oil leaks and correct operation.

Planned review date	31 December 2025
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 September 1994	31 December 2022
Review	2	21 February 1999	31 December 2022
Review	3	21 September 2007	31 December 2022
Review	4	29 April 2021	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 MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.