

Title	Demonstrate knowledge of automotive hydraulic circuit diagrams and oil requirements		
Level	3	Credits	3

Purpose	<p>This theory-based unit standard is intended for people in the automotive engineering and/or related engineering industries.</p> <p>People credited with this unit standard are able to demonstrate knowledge of hydraulic circuit diagrams, and hydraulic oil requirements for automotive or related equipment.</p>
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Classification	Motor Industry > Automotive Hydraulics
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Available grade	Achieved
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Guidance Information

- 1 It is recommended that people hold credit for Unit 23927, *Demonstrate knowledge of automotive hydraulic principles* 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.
- 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 Hydraulic oil standards can be sourced from the following organisations:
Society of Automotive Engineers (SAE) <http://www.sae.org>;
International Standards Organisation (ISO) <http://www.iso.org>.
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Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of hydraulic circuit diagrams.

Performance criteria

- 1.1 Types of hydraulic circuit diagrams are identified, and their use described.
Range pictorial, cut-away, graphical.
- 1.2 The meaning of symbols used for hydraulic components are identified.
Range includes but is not limited to ISO symbols.
- 1.3 Assembled circuits are drawn using graphical symbols that relate to automotive hydraulics.
- 1.4 Pilot control circuits are interpreted.
Range electric, hydraulic, pneumatic.
- 1.5 Procedures for calculating hydraulic equipment system requirements are described.
Range cycle times, power requirements, cylinder thrust output.

Outcome 2

Demonstrate knowledge of hydraulic oil requirements for automotive or related equipment.

Performance criteria

- 2.1 Hydraulic system oil specification requirements are identified.
Range SAE classification, ISO classification, manufacturer classification, compatibility of oil types.
- 2.2 Hydraulic oil types are identified.
Range mineral, synthetic.
- 2.3 Oil additives for hydraulic systems are described.
Range includes but is not limited to – anti-foam, anti-wear, antioxidants, extreme pressure qualities, viscosity improvers, viscosity stabilisers.

2.4 Oil filtration requirements for hydraulic systems are described.

Range screen filters, full-flow filters, by-pass filters.

Replacement information	This unit standard and unit standard 23927 replaced unit standard 931.
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Planned review date	31 December 2025
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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 2022
Review	2	29 April 2021	N/A

Consent and Moderation Requirements (CMR) reference	0014
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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 MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.