

<b>Title</b>	<b>Demonstrate knowledge of hydraulic brakes and testing hydraulic brakes on heavy vehicles or machines</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	People credited with this unit standard are able to: demonstrate knowledge of hydraulic braking systems used on heavy vehicles or machines; and describe testing a hydraulic brake system.
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<b>Classification</b>	Motor Industry > Vehicle Braking Systems
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 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.
- 2 Performance of the outcomes of this unit standard must comply with the following:  
Health and Safety at Work Act 2015;  
Land Transport Rule: Heavy Vehicle Brakes 2006;  
Land Transport Rule: Heavy Vehicles 2004;  
Land Transport Rule: Vehicle Standards Compliance 2002.
- 3 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.
- 4 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.  
*Heavy Vehicle* refers to classes MD3, MD4, ME, NB, TC and TD as specified in the Vehicle equipment standards classifications at <https://www.nzta.govt.nz/vehicles/vehicle-types/vehicle-classes-and-standards/vehicle-classes/>; or has a gross vehicle mass that exceeds 3500kg and is not of a class specified in the Vehicle equipment standards classifications.  
*Service information* refers to information such as 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.

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## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of hydraulic braking systems used on heavy vehicles or machines.

#### Performance criteria

- 1.1 Legal requirements of hydraulic braking systems are identified.
- 1.2 Hydraulic brake fluid service requirements are identified.
- Range classification, types, handling precautions, characteristics.
- 1.3 Hydraulic principles relating to braking systems are identified.
- Range forces, energy transfer, work, power.
- 1.4 Hydraulic brake systems are described.
- Range system layout, system components, application, balance, release, fail safe.
- 1.5 Assisted brake systems are described.
- Range system layout, system components, application, balance, release, fail safe.
- 1.6 The operation of park and emergency brakes is described.
- Range button type, lever type, graduated lever, circuits.

### Outcome 2

Describe testing a hydraulic brake system.

#### Performance criteria

- 2.1 Testing hydraulic brake system components is described.
- Range foot valve, master cylinder, wheel cylinder, brake calliper, leaks, damage, brake fluid.
- 2.2 Procedures for testing brake lines are described.
- Range hydraulic brake pipe, pneumatic brake pipe, leaks, damage.

<b>Replacement information</b>	This unit standard and unit standard 24421 replaced unit standard 15478.
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<b>Planned review date</b>	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	25 January 2008	31 December 2022
Review	2	29 July 2021	N/A
Revision	3	16 December 2021	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	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 Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council [qualifications@hangaarorau.nz](mailto:qualifications@hangaarorau.nz) if you wish to suggest changes to the content of this unit standard.