

<b>Title</b>	<b>Operate a diesel-electric main line locomotive</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	People credited with this unit standard are able to: ensure diesel-electric main line locomotive is fit for purpose and ready for operation; start up, drive, and shut down a diesel-electric main line locomotive; identify faults in a diesel-electric main line locomotive and take appropriate action; couple diesel-electric main line locomotives for multiple unit operation; and couple diesel-electric main line locomotives for towing dead.
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<b>Classification</b>	Rail Transport > Rail Operations
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 Recommended skills and knowledge for entry:  
Unit 19281, *Perform core stationary shunting duties*.
- 2 Assessment against this unit standard must be carried out within the context of an organisation operating under a current, valid Rail Licence issued in accordance with the provisions of the Railways Act 2005. The organisation's operating rules, codes, and instructions, referred to in this unit standard, are those the organisation has in place to meet the requirements of the Rail Licence.
- 3 Legislation relevant to this unit standard includes the:  
Health and Safety at Work Act 2015.  
Railways Act 2005 and subsequent amendments.
- 4 Range  
Main line locomotives for this unit standard may include but are not limited to –  
General Electric; or General Motors;  
evidence is required for the servicing and operation of at least one class of locomotive.
- 5 Definitions  
*Organisational procedures* refer to documents that include: operating rules, codes, instructions, and practices; equipment operating instructions; documented quality management systems; and health and safety requirements.  
*Running locomotive* refers to a locomotive generating tractive effort under its own source of power.  
*Towing dead* refers to a locomotive that is being towed without tractive effort.

- 6 Assessment information
- a All activities and evidence must be in accordance with organisational procedures.
  - b Assessment against this unit standard requires the candidate to drive the locomotive to demonstrate operation of the locomotive controls. Driving and positioning of the locomotive is restricted to yard limits and must not include the coupling of any other rail vehicles.
  - c Operation of the locomotive must be via a driver operating from the cab of the locomotive as distinct from the use of a remote-control system.

## Outcomes and performance criteria

### Outcome 1

Ensure diesel-electric main line locomotive is fit for purpose and ready for operation.

#### Performance criteria

1.1 Safety checks are carried out.

Range includes but is not limited to – repair book entries, no staff working on or under, presence of warning signs, clear of adjacent equipment.

1.2 Locomotive checks are performed.

Range fluid levels, head and auxiliary lights, running gear, brake rigging, brake shoe wear, draw gear, footplates, handrails, steps, windows, sand box level, airbrake systems, traction motor leads.

1.3 Locomotive communications equipment is checked to ensure correct operation.

Range train control radio, auxiliary radio.

1.4 Exceptions are managed.

Range may include but is not limited to – fluid leaks, light failures, excessive wear, missing equipment, internal and/or external damage to locomotive, low air pressure.

### Outcome 2

Start up, drive, and shut down a diesel-electric main line locomotive.

#### Performance criteria

2.1 The status of control equipment is determined prior to starting the locomotive.

Range throttle lever, handbrake, airbrake levers, instrumentation, switches, circuit breakers, warning devices; evidence is required for at least six types of control equipment.

- 2.2 Locomotive is started.
- 2.3 Locomotive safety devices are checked for correct operation.
- Range may include but is not limited to – vigilance device, head-end receiver, and air brake systems.
- 2.4 Locomotive is driven to a designated position at least 10 metres in accordance with job requirements.
- Range half wheel test, rate of acceleration, emergency stop, service stop.
- 2.5 Locomotive is secured and stabled.
- 2.6 Locomotive is shut down.

### Outcome 3

Identify faults in a diesel-electric main line locomotive and take appropriate action.

#### Performance criteria

- 3.1 Faults are identified.
- Range may include but is not limited to – insufficient air pressure, excessive motor noise, excessive exhaust emissions, malfunctioning auxiliary equipment, failure to start or idle, locomotive fails to move with increased engine revolutions. evidence is required for at least two locomotive faults.
- 3.2 The status of warning devices is interpreted.
- Range warning lights, audible alarms.
- 3.3 Locomotive faults are corrected and/or reported for further action.

### Outcome 4

Couple diesel-electric main line locomotives for multiple unit operation.

Range two compatible locomotives.

#### Performance criteria

- 4.1 Running locomotives are coupled.
- Range mechanical coupling, airbrake coupling, electrical control systems.

4.2 Control mechanisms are set for coupled operation.

Range locomotive brake, train brake, dynamic brake, reverser, throttle, air cut-out cocks.

### Outcome 5

Couple diesel-electric main line locomotives for towing dead.

Range one running and one dead diesel electric main line locomotives.

### Performance criteria

5.1 Running locomotive and towed dead locomotive are coupled.

Range mechanical coupling, airbrake coupling and air cut-out cocks.

5.2 Dead locomotive control mechanisms are set.

Range may include but is not limited to – the dead engine device, MU2A valve, break cut out valve, 26L brake, independent brake.

<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	19 December 2001	31 December 2022
Review	2	23 May 2005	31 December 2022
Review	3	20 November 2009	31 December 2022
Review	4	29 April 2021	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0013
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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 Competenz [qualifications@competenz.org.nz](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.