

Title	Describe a heavy vehicle or machine induction system, turbochargers and induction and exhaust system diagnosis		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to demonstrate knowledge of a heavy vehicle or machine induction system; and describe turbochargers and the diagnosis of induction and exhaust systems.
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Classification	Motor Industry > Automotive Fuel Systems and Exhaust
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Available grade	Achieved
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Guidance Information

- 1 It is recommended that people hold credit for Unit 30559, *Demonstrate knowledge of induction and exhaust systems*, 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, company requirements and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 3 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of the Health and Safety at Work Act 2015 and any subsequent amendments or replacements.
- 4 Definitions
Company requirements refers 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 may include – a motor vehicle that is of Class MD3, MD4, ME, NB, NC, TC or TD; or has a gross vehicle mass that exceeds 3500 kg and is not of a class specified in the Table of vehicle classes as listed from New Zealand Transport Agency website <https://www.nzta.govt.nz/vehicles/vehicle-types/vehicle-classes-and-standards/vehicle-classes/#Registration-classification>.
Machines may include – forklifts, earth-moving equipment, grader equipment, loaders, dozers, tractors, agricultural equipment, dump trucks, prime movers; electric machines, including – forklift, walk-behind pallet, ride-on pallet, reach truck, order picker, counterbalance truck, turret truck.
Service information may include – technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of a heavy vehicle or machine induction system.

Range intake noise reduction, intercooler, air filtration systems; multi-element, pre-cleaners.

Performance criteria

1.1 Induction system components are identified.

1.2 Induction system operation is described.

Outcome 2

Describe turbochargers.

Performance criteria

2.1 Turbocharger operation is described.

Range compound (series) turbocharging, variable geometry turbocharger, variable nozzle turbocharger.

Outcome 3

Describe induction and exhaust system diagnosis.

Performance criteria

3.1 Methods of diagnosing induction and exhaust system faults are described.

Range induction, engine brake, exhaust brake, exhaust, turbocharger.

Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 July 2018	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.