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| Title | Repair diesel engine air intake and exhaust systems | | |
| Level | 4 | Credits | 4 |

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| 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: inspect an induction system on a diesel engine and repair faults; inspect an exhaust system on a diesel engine and repair a faulty or noisy system; and service the turbocharger on a diesel engine.</p> |
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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, 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;
Land Transport Rule: Heavy Vehicles 2004;
Land Transport Rule: Vehicle Repair 1998.
- 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

Inspect an induction system on a diesel engine and repair faults.

Performance criteria

- 1.1 The induction system is inspected, and any loose and damaged components are repaired.
- 1.2 Air flow restriction in the air cleaners is checked to comply with manufacturer specifications.
- 1.3 The induction system is tested for air leaks.
- 1.4 Air leaks in the induction system are rectified.
- 1.5 The engine is run to determine that induction pressure levels are within manufacturer specified limits.

Outcome 2

Inspect an exhaust system on a diesel engine and repair a faulty or noisy system.

Performance criteria

- 2.1 The exhaust system is inspected, any leaks are located, and their source(s) is identified.
 - 2.2 The engine is operated to identify the offending noise, and to verify whether the source of the noise is the exhaust system.
 - 2.3 The exhaust system is checked for loose internal parts and blockages, and any faults are rectified.
 - 2.4 Damaged components, and components that are the source of the noise, are replaced to comply with Land Transport Rules.
 - 2.5 Corroded, damaged, and loose parts are repaired.
- Range may include but are not limited to – pipes, stacks, mufflers, mountings; removed, tightened, welded, secured, replaced with new parts.

2.6 The exhaust system is checked to ensure it is aligned, mounted, and securely attached.

Range no system vibration, transmission of noise, system not mounted under tension, location of mounts and their condition.

Outcome 3

Service the turbocharger on a diesel engine.

Performance criteria

3.1 Cleanliness is observed at all times when working on the turbocharger system.

Range environment, personal cleanliness.

3.2 The turbocharger system is visually inspected, and any faults are identified and rectified.

Range may include but is not limited to – loose or damaged components, damaged pipes and fittings, hoses, intake and exhaust ducting, linkage, noisy operation.

3.3 Air filter is renewed at a specified time or distance interval with one that meets manufacturer specifications.

3.4 Engine oil and oil filter that meet manufacturer specifications are changed at the manufacturer's or company service schedule's specified time or distance interval.

3.5 Associated exhaust system components are checked for operation and any faults are recorded.

3.6 Turbocharger unit and its operation are checked, and any faults are recorded.

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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 | 26 February 1999 | 31 December 2022 |
| Review | 2 | 25 January 2008 | 31 December 2022 |
| Review | 3 | 29 April 2021 | N/A |

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| 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.