

Title	Diagnose faults, overhaul, and test components in the mechanical engineering industry		
Level	5	Credits	8

Purpose	People credited with this unit standard are able to carry out fault diagnoses on defective components; dismantle and clean components; inspect and replace parts; and assemble and test components.
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Classification	Mechanical Engineering > Maintenance and Diagnostics in Mechanical Engineering
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Available grade	Achieved
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Entry information	
Recommended skills and knowledge	Unit 21911, <i>Demonstrate knowledge of safety on engineering worksites</i> , or demonstrate equivalent knowledge and skills.

Explanatory notes

- 1 References
Hazardous Substances and New Organisms (HSNO) Act 1996.
Health and Safety in Employment Act 1992.
Accident Compensation Corporation and Department of Labour. *Metal Industry Guidelines for Safe Work*. Wellington: ACC, 2007. Available from <http://www.acc.co.nz>.
- 2 Definitions
Industry practice – safe and sound practices accepted by the mechanical engineering industry.
Job specifications – instructions relevant to the safe completion of the specific task, such as technical specifications, assembly instructions, drawings, parts lists, standards, codes of practice, test and commissioning procedures, and verbal instructions.
Safety guidelines – guidelines for the safe operation of machinery and tools, such as those listed in the references, as well as guidelines for specific machines in workshops.
Worksite procedures – operational procedures put in place by the candidate's employer. These include site safety procedures, equipment operating procedures, job procedures, quality assurance processes and procedures, and other procedures for the handling and disposal of materials and waste.
- 3 The following apply to this unit standard:
 - a All activities must demonstrate safe working practices.

- b All activities must be completed independently and reported within agreed timeframes.

Outcomes and evidence requirements

Outcome 1

Carry out fault diagnoses on defective components.

Evidence requirements

- 1.1 Operational performance specifications of components are established.
- 1.2 Reported faults in components are confirmed in accordance with worksite procedures.
- Range may include but is not limited to – examination, inspection, check, test.
- 1.3 Deviations from specifications are established and recorded in accordance with worksite procedures.
- 1.4 Diagnosis of faults is carried out in a logical and systematic manner in accordance with worksite procedures.
- 1.5 Conclusions are established, and recommendations recorded, in accordance with worksite procedures.

Outcome 2

Dismantle and clean components.

Evidence requirements

- 2.1 Supporting overhaul data for components, where available, is established.
- 2.2 Methods, tools, and procedures of disassembly are established in accordance with industry practice and worksite procedures.
- 2.3 Components are dismantled in accordance with worksite procedures.
- 2.4 Parts are cleaned to specification in accordance with industry practice and worksite procedures.
- Range methods include – hand, spray, immersion, ultrasonic.

Outcome 3

Inspect and replace parts.

Evidence requirements

3.1 Component parts are inspected for conformance to manufacturer's overhaul requirements.

Range includes non-destructive testing (not ultrasonics or x-ray).

3.2 Faulty parts are assessed for repair, or replacement, in accordance with worksite procedures.

3.3 Defective parts are replaced in accordance with worksite procedures.

Outcome 4

Assemble and test components.

Evidence requirements

4.1 Components are assembled in accordance with worksite procedures.

4.2 Components are tested, to manufacturer's specification when available, in accordance with industry practice and worksite procedures.

4.3 Components' records are completed in accordance with worksite procedures.

Planned review date	31 December 2016
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 October 1994	31 December 2011
Revision	2	14 April 1997	31 December 2011
Revision	3	5 January 1999	31 December 2011
Revision	4	18 September 2001	31 December 2011
Rollover and Revision	5	25 July 2006	31 December 2011
Rollover	6	20 June 2008	31 December 2014
Review	7	17 November 2011	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz on qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.