

Title	Demonstrate knowledge of welding in the motor industry		
Level	3	Credits	3

Purpose	<p>This unit standard is for people who wish to enter or are employed in the motor industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of oxyacetylene welding (OAW), gas metal arc welding (GMAW), and gas tungsten arc welding (GTAW).</p>
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Classification	Motor Industry > Automotive Workshop Engineering
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Available grade	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 and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 2 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.
- 3 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 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 the welding process.

Performance criteria

- 1.1 Preparation of metal for welding is described.

1.2 Welding faults and causes are identified.

Range undercut, lack of penetration, lack of fusion, porosity, excessive spatter, distortion.

1.3 Types of welded joints are identified.

Range lap, butt, tee, plug.

1.4 The effects that welding may have on a vehicle's electronic systems are identified.

Outcome 2

Demonstrate knowledge of OAW.

Range may include – brazing, fusion welding, soldering, heating, cutting.

Performance criteria

2.1 Uses of OAW are described.

2.2 Set-up and shutdown of OAW equipment is described.

2.3 The OAW process is described.

Outcome 3

Demonstrate knowledge of GMAW.

Performance criteria

3.1 The GMAW process is described.

Range machine set-up, electrode wire, wire drive system, shielding gas supply, stick-out length, travel speed, nozzle angle, voltage setting, wire speed, work clamp.

3.2 Shielding gases used for different metals are identified.

Outcome 4

Demonstrate knowledge of GTAW.

Performance criteria

4.1 The GTAW process is described.

Range machine set-up, tungsten, amperage setting, torch, shielding gas supply, torch angle, work clamp.

4.2 Shielding gases used for different metals are identified.

Replacement information	This unit standard replaced unit standard 21682 and unit standard 21683.
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Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 October 2017	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.