

<b>Title</b>	<b>Manually produce and interpret engineering sketches under supervision</b>		
<b>Level</b>	<b>2</b>	<b>Credits</b>	<b>4</b>

<b>Purpose</b>	People credited with this unit standard are able to, under supervision, manually produce and interpret engineering sketches, and confirm the interpretation and preparation of engineering sketches.
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<b>Classification</b>	Mechanical Engineering > Engineering Drawing and Design
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<b>Available grade</b>	Achieved
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### Guidance Information

#### 1 References

Sketches must be in accordance with the following Standards, or international equivalent:

AS 1100.101:1992, *Technical drawing – General principles*;

AS 1100.201:1992, *Technical drawing – Mechanical engineering drawing*.

An abridgement of these standards, suitable for the purposes of this unit standard, is SAA/SNZ HB1: 1994, *Technical Drawing for students*. Available from Standards New Zealand.

#### 2 Definitions

*Aided* – a means of producing two-dimensional engineering sketches with the aid of appropriate guiding instruments (such as ruler, set-square, and compass, but excluding computer software), and requiring the precise calculations of angles and dimensions.

*Freehand* – a means of producing two-dimensional engineering sketches without the aid of guiding instruments, and involving the estimation of angles and dimensions.

*Interpretation* – the explanation in practical terms of features shown graphically in the sketch. Typically this would involve re-sketching the object in an alternative projection.

*Pictorial* – either isometric, general oblique, or single point perspectives.

*Orthographic* – the projection of an object in which the line of sight is perpendicular to the plane of projection and is a means of representing a three-dimensional object in two dimensions.

#### 3 Assessment information

- This unit standard covers production and interpretation of engineering sketches used within the engineering industries. Sketching and interpretation at this level includes sketching in orthographic and pictorial projections and may include but are not limited to hydraulic cylinders, mounting brackets, guards, jigs, duct

transitions, pipe joints, bolted flanged joints, turned components, and assemblies of typically not more than five major parts.

- Sketches presented as evidence must show a mix of sketching techniques. This will typically involve a minimum of three freehand and two aided sketches. The sketches must also contain a minimum of four of the following shapes: rectangle; round (circle); cylinder; cone; ellipse; pyramid.

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## Outcomes and performance criteria

### Outcome 1

Manually produce engineering sketches under supervision.

#### Performance criteria

- 1.1 Objects to be sketched are identified and measured to meet job requirements.
- 1.2 Sketches produced communicate job requirements.  
Range unambiguous, in proportion, clear.
- 1.3 Dimensions and related notes meet job requirements.

### Outcome 2

Interpret engineering sketches under supervision.

Range includes – orthographic from pictorial, pictorial from orthographic.

#### Performance criteria

- 2.1 Sketches are identified and interpreted to meet job requirements.
- 2.2 Baseline and datum points are identified to meet job requirements.
- 2.3 Detailed dimensions and related notes are interpreted to meet job requirements.

### Outcome 3

Confirm the interpretation and preparation of engineering sketches under supervision.

#### Performance criteria

- 3.1 Sketches are checked to ensure compliance with job requirements.  
Range orientation, proportion, dimensions, related notes.
- 3.2 Any non-conformance is corrected to meet job requirements.

<b>Replacement information</b>	This unit standard was replaced by unit standard 29655.
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**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	31 October 1994	31 December 2011
Revision	2	14 April 1997	31 December 2011
Revision	3	5 January 1999	31 December 2011
Revision	4	23 May 2001	31 December 2011
Review	5	26 July 2004	31 December 2011
Rollover and Revision	6	20 March 2009	31 December 2016
Review	7	17 November 2011	31 December 2021
Review	8	15 September 2016	31 December 2021
Rollover	9	29 April 2021	31 December 2022

<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>.