

Title	Use optical tooling to establish and maintain reference lines of sight and planes		
Level	4	Credits	15

Purpose	People credited with this unit standard are able to: prepare to use optical tooling to establish and maintain reference lines of sight and planes; align and measure items and locate positions; and carry out task completion activities.
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Classification	Aeronautical Engineering > Aeronautical Machining
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Available grade	Achieved
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Guidance Information

- 1 All tasks must be carried out in accordance with enterprise procedures.
- 2 Definition
Enterprise procedures – procedures used by the organisation carrying out the work and applicable to the tasks being carried out. Examples are – standard operating procedures, safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.
- 3 May include – establishing and maintaining reference lines of sight and planes in three dimensions;
may include – establishing the position of a specific point on a structure or in space, establishing the position of jig components, aligning machine tools, aligning work positioned on machine tools, measuring structures using precision optical tooling; precision optical tooling may include – test stands, theodolites, telescopes, prisms, mirrors, lasers.

Outcomes and performance criteria

Outcome 1

Prepare to use optical tooling to establish and maintain reference lines of sight and planes.

Performance criteria

- 1.1 Task is determined by reviewing maintenance documentation and enterprise procedures.

1.2 Resources are obtained and checked for serviceability or status.

Range may include but is not limited to – publications, tools, equipment, safety equipment.

1.3 Optical tooling is set up.

Outcome 2

Align and measure items and locate positions.

Performance criteria

2.1 Machine tools are aligned and evaluated.

Range may include but is not limited to – level, run-out, wear.

2.2 Work positioned on machine tools is aligned.

Range may include but is not limited to – drill presses, lathes, milling machines.

2.3 Specific positions are located.

Range may include but is not limited to – attachment points on structures being fabricated, hard points on damaged structures, relative surfaces and moving parts on machine tools.

2.4 The positions of specific points are established where direct measurements cannot be made.

Range may include but is not limited to – on and along compound angles, on different planes.

2.5 Jig positions are established.

2.6 Inspections are obtained.

Outcome 3

Carry out task completion activities.

Performance criteria

3.1 Completion activities specific to the task and work area are carried out.

Range may include but are not limited to – tool control, cleanliness, tidiness, return of publications, preparation for next activity, return of aircraft and systems to normal.

3.2 Documentation is completed.

Planned review date	31 December 2024
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 June 1995	31 December 2016
Revision	2	7 August 1997	31 December 2016
Revision	3	8 May 2001	31 December 2016
Review	4	26 March 2007	31 December 2016
Review	5	24 October 2014	31 December 2021
Review	6	26 March 2020	N/A

Consent and Moderation Requirements (CMR) reference	0028
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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 ServiceIQ qualifications@serviceiq.org.nz if you wish to suggest changes to the content of this unit standard.