

<b>Title</b>	<b>Maintain pneumatic controllers</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to: – calibrate a pneumatic controller; and – maintain and repair a pneumatic controller.
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<b>Classification</b>	Industrial Measurement and Control > Industrial Measurement and Control - Maintenance
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 This unit standard has been developed for learning and assessment in a workplace environment.
- 2 References  
ANSI/ISA-51.1-1979 (R1993) *Process Instrumentation Terminology*;  
Electricity Act 1992;  
Electricity (Safety) Regulations 2010;  
Health and Safety at Work Act 2015 and associated regulations;  
ISSN 0114-0663, *New Zealand Electrical Codes of Practice*, available from Worksafe, <https://worksafe.govt.nz/>;  
and all subsequent amendments and replacements.
- 3 Definitions  
*Industry requirements* – includes all asset owner requirements, manufacturers' specifications; and enterprise requirements which cover the documented workplace policies, procedures, specifications, business requirements; and quality management requirements relevant to the workplace in which the assessment is carried out.  
*Maintain* – planned activity during normal operation, to conserve or keep an item or piece of equipment in a state of repair and to ensure that this is done in a sustainable way.  
*Repair* – unplanned and often urgent work that needs to be carried out to restore plant or equipment to normal operation.
- 4 Recommended skills and knowledge: Unit 2654, *Demonstrate knowledge of on/off and proportional integral derivative mode control theory and controllers*.

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## Outcomes and performance criteria

### Outcome 1

Calibrate a pneumatic controller.

#### Performance criteria

- 1.1 Identify types and causes of typical errors.
- Range may include but is not limited to – relay wear, bellows failure.
- 1.2 Explain and follow safe work procedures.
- Range may include but is not limited to – isolation, pressure.
- 1.3 Select test equipment to match accuracy and range of device.
- Range may include but is not limited to – 20-100kPa, 3-15psi gauges and pressure sources.
- 1.4 Calibrate the controller for indication in accordance with manufacturer's instructions.
- Range indication – process variable (input);  
setpoint – controlled variable (output);  
adjustments – zero, span.
- 1.5 Test the controller for operation in the control modes selected, and obtain open loop response characteristics.
- Range may include but is not limited to – on/off control, proportional, proportional and integral, proportional and derivative, proportional integral and derivative.
- 1.6 Test the controller for bumpless transfer operation.
- 1.7 Document test results in accordance with industry requirements.

### Outcome 2

Maintain and repair a pneumatic controller.

#### Performance criteria

- 2.1 Explain and follow safe work procedures.
- Range may include but is not limited to – isolation, pressure.
- 2.2 Locate, interpret, and apply technical information for maintaining equipment.

2.3 Maintain and repair controllers to ensure continued operation.

Range may include but is not limited to – tools, materials, parts, techniques, specifications.

2.4 Produce maintenance reports in accordance with industry requirements.

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<b>Planned review date</b>	31 December 2021
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	31 October 1995	31 December 2013
Revision	2	30 October 1997	31 December 2013
Revision	3	3 April 2001	31 December 2013
Review	4	22 June 2001	31 December 2013
Review	5	19 May 2008	31 December 2019
Review	6	21 November 2013	N/A
Rollover and Revision	7	28 June 2018	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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**Comments on this unit standard**

Please contact The Skills Organisation [reviewcomments@skills.org.nz](mailto:reviewcomments@skills.org.nz) if you wish to suggest changes to the content of this unit standard.