



Australian Government

AURTTA007 Inspect, service and repair pneumatic systems

Release: 1

AURTTA007 Inspect, service and repair pneumatic systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect, service and repair faults in pneumatic systems and components. It involves preparing for the task, inspecting the system to determine the service and repair requirements, carrying out the service and repair, performing post-repair testing, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The pneumatic systems include those of agricultural machinery, heavy commercial vehicles or mobile plant machinery. Work includes compressors, linear or rotary actuators, drive motors, conductors and control valves.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to inspect, service and repair pneumatic system	1.1 Job requirements are determined from workplace instructions 1.2 Inspection procedures and information are sourced and interpreted

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	1.3 Options are analysed and those most appropriate to the circumstances are selected 1.4 Hazards associated with the work are identified and risks are managed 1.5 Tools, equipment and materials are selected and checked for serviceability
2. Inspect pneumatic system	2.1 Inspection is carried out according to manufacturer specifications, workplace procedures, and <i>safety and environmental requirements</i> 2.2 Faults are identified from inspection results and causes of faults are determined 2.3 Inspection findings are reported according to workplace procedures, and include recommendations for necessary service, repairs or adjustments
3. Carry out service and repair activities	3.1 Service and repair procedures and information are sourced and interpreted 3.2 Service and repair tools, equipment and materials are selected and checked 3.3 Service and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.4 Repairs and component replacements and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.5 Post-repair testing is carried out according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle or machinery is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking pneumatic system specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	clarify workplace instructions and determine job requirements.
Numeracy skills to:	- measure pneumatic system components and use basic mathematical operations, including addition and subtraction, to calculate distances, tolerances and deviations from manufacturer specifications - understand measuring and test equipment divisions.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use precision measuring equipment, such as vernier calipers, micrometers and pressure gauges.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with stored pressure - environmental requirements, including procedures for trapping, storing and disposing of oils and fluids released from pneumatic systems.
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Unit Mapping Information

Equivalent to AURTTA2007 Inspect, service and repair pneumatic systems

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURTTA007 Inspect, service and repair pneumatic systems

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Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- inspect, service and repair two different pneumatic systems, including the following components in each system:
 - compressors and filters
 - linear and rotary actuators
 - pipes, hoses and connectors
 - control valves
- test above pneumatic systems, including:
 - adjusting and testing pneumatic components
 - setting up and testing compressor cut-out system
 - testing for system leaks.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting, servicing and repairing pneumatic systems, including procedures for working with stored pressure
- environmental requirements, including procedures for trapping, storing and disposing of oils and fluids released from pneumatic systems
- types and applications of pneumatic systems
- pneumatic system schematic diagrams and symbols
- identification, function and operation of pneumatic systems and components, including:
 - clamping systems

- hydropneumatic intensifiers
- rotary and screw compressors
- linear actuators
- rotary actuators
- drive motors
- lines, hoses and couplings
- control valves
- types of lubricants suitable for pneumatic systems, and their application and methods of lubrication
- inspection, servicing and repair procedures for pneumatic systems
- pneumatic system test and commissioning procedures
- post-repair testing procedures for pneumatic systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the pneumatic systems that they have serviced and repaired, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer pneumatic system specifications
- two different vehicles or machinery with pneumatic systems requiring service and repair
- tools, equipment and materials appropriate for inspecting, servicing and repairing pneumatic systems.

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