



Australian Government

AURVTN033 Service and repair air compressors and components

Release: 1

AURVTN033 Service and repair air compressors and components

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to test, service and repair air compressors and associated components. It involves preparing for the task, cleaning and replacing filters, making adjustments and necessary repairs according to workplace instructions, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The compressors are for workshop air supply, drilling rigs or mobile compressors. This unit is not for air brake compressors on heavy vehicles.

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

Competency Field

Vehicle Body

Unit Sector

Technical - Body

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 service and repair air compressor and components	1.1 Job requirements are determined from workplace instructions 1.2 Service and repair procedures and information are sourced and interpreted 1.3 Hazards associated with the work are identified and risks are

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.
	managed 1.4 Tools, equipment and materials are selected and checked for serviceability
2. Determine service and repair requirements	2.1 Air compressor and components are inspected and tested according to manufacturer specifications, workplace procedures, and <i>safety and environmental requirements</i> 2.2 Inspection findings are reported according to workplace procedures, including recommendations for necessary service, repair, replacement or adjustment
3. Service and repair air compressor and components	3.1 Service and repair options are analysed and those most appropriate to the circumstances are selected 3.2 Service, repair, and component replacement and adjustment, are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or systems 3.3 <i>Post-repair testing</i> 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 air compressor is presented ready for use, including protective guards, cowlings and safety features 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 sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking air compressor system specifications and

Skills	Description
	procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting diagnostic findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	- clarify workplace instructions and determine job requirements - gain information from appropriate persons and assistance as required.
Numeracy skills to:	measure air compressor system components and use basic mathematical operations, including addition and subtraction, to calculate distances, tolerances and deviations from manufacturer specifications.
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 and air 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: - selecting and using personal protective equipment (PPE) - working with compressed air - working with rotating shafts, belts and pulleys - environmental requirements, including procedures for trapping, storing and disposing of air compressor fluids released during service and repair process.
<i>Post-repair testing</i> must include:	- compressor cut-out pressure - minimising unintended air loss - automatic timing switch adjustment.

Unit Mapping Information

Equivalent to AURVTN2033 Service, repair and replace air compressors and components

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 AURVTN033 Service and repair air compressors and components

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Performance Evidence

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

- service and repair two different air compressors, in which the work must involve the following components:
 - air compressor motor
 - air compressor tank
 - drive system
 - pressure regulator
 - water trap and filters
 - air lines and fittings.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to servicing and repairing air compressors and components, including procedures for:
 - selecting and using personal protective equipment (PPE)
 - working with compressed air
 - working with rotating shafts, belts and pulleys
- environmental requirements, including procedures for trapping, storing and disposing of air compressor fluids released during service and repair process
- types of air compressors and principles of operation, including:
 - reciprocating compressors
 - rotary screw compressors

- vane
- diaphragm
- single and two-stage compressors
- identification, function and operation of air compressor system components, including:
 - air compressor motor
 - air compressor tank
 - drive system
 - pressure regulator
 - water trap and filters
 - air lines and fittings
- types and applications of compressor lubricants
- procedures for final inspection and adjustment of air compressors and components, including:
 - compressor cut-out pressure
 - minimising unintended air loss
 - automatic timing switch adjustment.

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 air compressors 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 workplace or simulated workplace
- workplace instructions
- manufacturer air compressor specifications
- two different operating air compressors and components as specified in the performance evidence requiring service and repair
- tools, equipment and materials appropriate for servicing and repairing air compressors and components.

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