



Australian Government

AURPTA010 Inspect and service pumping systems

Release: 1

AURPTA010 Inspect and service pumping systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect and service pumping systems according to manufacturer instructions. It involves preparing for the task, inspecting the system, reporting the inspection findings, servicing and adjusting the system, and completing workplace processes and documentation.

It applies to those working in the outdoor power equipment service and repair industry. The pumping systems include centrifugal pumps used for firefighting, irrigation and water transfer, high pressure piston pumps used for pressure cleaners, or diaphragm pumps used in orchard spraying.

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

Competency Field

Outdoor Power Equipment

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 and service pumping system of outdoor power	1.1 Job requirements are determined from workplace instructions 1.2 Manufacturer inspection and <i>servicing procedures</i> and information are sourced and interpreted

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.
equipment	1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools, equipment and materials are selected and checked for serviceability
2. Inspect pumping system	2.1 <i>Pumping system</i> is inspected and tested according to manufacturer specifications, workplace procedures and <i>safety requirements</i> 2.2 Inspection results are compared with manufacturer specifications 2.3 Inspection findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments 2.4 Authorisation to proceed is obtained according to workplace procedures
3. Service pumping system	3.1 Service options are selected according to manufacturer maintenance schedule and lubrication charts 3.2 Service and adjustments 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-service 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 equipment 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
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Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking service specifications and procedures relating to outdoor power equipment pumping systems.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report inspection findings and make repair recommendations.
Numeracy skills to:	interpret pressure and flow volumes and use basic mathematical operations, including addition, subtraction, multiplication and division, to calculate tolerances and deviations from manufacturer specifications.
Problem solving skills to:	refer problems outside area of responsibility to appropriate personnel.
Technology skills to:	use test equipment, such as vacuum 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>Servicing procedures</i> must include:	- inspecting seals, filters and components - testing unit for pressure, suction and discharge - replacing service items - inspecting hoses, fittings and mountings.
<i>Pumping systems</i> must include:	- centrifugal pumps - high pressure piston pumps - diaphragm pumps.
<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - safely starting and operating pumping systems - working with exhaust fume hazards - working with 240 volt equipment.
<i>Post-service testing</i> must	- running pumping system to operating conditions - checking pumping system for pressure and flow

include:	• adjusting system • re-testing pumping system.
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Unit Mapping Information

Equivalent to AURPTA2010 Service pumping 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 AURPTA010 Inspect and service pumping systems

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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:

- inspect and service the following three outdoor power equipment pumping systems:
 - centrifugal pumping system
 - high pressure piston pumping system
 - diaphragm pumping system.

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 and servicing pumping systems, including procedures for:
 - safely starting and operating pumping systems
 - working with exhaust fume hazards
 - working with 240 volt equipment
- identification and function of positive and non-positive displacement pumping systems
- application and purpose of pumping systems, including:
 - centrifugal pumps as used for firefighting, irrigation and water transfer
 - high pressure piston pumps as used in pressure cleaners
 - diaphragm pumps as used in orchard spraying
 - drive systems
- types of lubricants and fluids, and their application
- inspection procedures for pumping systems, including:
 - component wear analysis
 - system operation analysis

- service and adjustment procedures for pumping systems, including:
 - filters and strainers
 - hose and pipe fittings and attachments
 - overload devices
 - protective guards and cowlings
 - handle assembly
 - lubrication systems
 - mounting brackets and frame
 - test procedures and pump performance
 - drive systems
- post-service testing procedures for outdoor power equipment pumping 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 pumping systems that they have worked on, 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:

- outdoor power equipment repair workplace or simulated workplace
- workplace instructions
- manufacturer specifications for pumping systems
- three pumping systems specified in the performance evidence and requiring servicing
- tools, equipment and materials appropriate for inspecting and servicing pumping systems.

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