



Australian Government

AURTTA012 Fabricate and install fluid power hose assemblies

Release: 1

AURTTA012 Fabricate and install fluid power hose assemblies

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to fabricate and install fluid power hose assemblies. It involves preparing for the task, fabricating, installing and testing fluid power hoses according to relevant industry standards, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The hose assemblies include those of agricultural machinery, heavy commercial vehicles, mobile plant machinery or outdoor power equipment.

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 fabricate fluid power hose assembly	1.1 Job requirements are determined from workplace instructions 1.2 Fluid power hose fabrication procedures and information are sourced and interpreted 1.3 Options are analysed and selected

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.
	1.4 Hazards associated with the work are identified and risks are managed 1.5 Tools and equipment are selected and checked for serviceability
2. Fabricate assembly	2.1 Fluid power hose and fittings are identified and selected according to manufacturer specifications and workplace procedures 2.2 Fluid power hose is fabricated according to relevant industry standards, manufacturer specifications, workplace procedures, and safety and environmental requirements
3. Install and test assembly	3.1 Procedures and information for hose installation are sourced and interpreted 3.2 Fluid power hose is installed and tested according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Test results are documented and reported according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and 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 sources of information efficiently.
Reading skills to:	- interpret operating procedures from manufacturer and workshop literature for fabricating power hose crimping equipment - interpret information from manufacturer and workshop literature when seeking fluid power hose assembly specifications and

Skills	Description
	procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when recording parts and material used.
Numeracy skills to:	- measure fluid power hose components - use mathematical processes, including addition, subtraction, multiplication and division, to calculate: - distances, tolerances, pressures, force, and temperature - deviations from manufacturer specifications - calculate and convert metric and imperial systems of measurement.
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 hydraulic pressure gauges - use fluid power hose crimping tool.

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 fluids under pressure - working with stored pressure hazards - isolating and stabilising vehicle or machinery - environmental requirements, including procedures for trapping, storing and disposing of oil released from hydraulic hoses.
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Unit Mapping Information

Equivalent to AURTTA3012 Manufacture and install fluid power hose assemblies

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 AURTTA012 Fabricate and install fluid power hose assemblies

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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:

- fabricate, test and install fluid power hose assemblies, using both field attachable and crimp fittings, on two of the following:
 - single wire braid hose
 - double wire braid hose
 - spiral wire hose.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to fabricating and installing fluid power hose assemblies, including procedures for:
 - working with fluids under pressure
 - working with stored pressure hazards
 - isolating and stabilising vehicle or machinery
- environmental requirements, including procedures for trapping, storing and disposing of oil released from hydraulic hoses
- requirements of industry standards for hydraulic hoses and connectors, including:
 - MDG 41 Guideline for Fluid Power System Safety at Mines
 - ISO 6805 Rubber hoses and hose assemblies for underground mining
 - SAE J517 Hydraulic Hose
- application and purpose of hydraulic hoses, including:
 - hose sizes

- hose working pressures
- hydraulic hoses, including:
 - fabric braid
 - single wire braid hose
 - double wire braid hose
 - spiral wire hose, including multi-spiral wire hose
- crimped and swaged hose fittings
- field attachable hose fittings
- couplers, connectors and fittings
- fabrication procedures for fluid power hose assemblies
- testing procedures for fluid power hose assemblies
- installation procedures for fluid power hose assemblies, including routing of hydraulic hoses and pipes
- post-repair testing procedures for fluid power hose assemblies, including visual and performance tests.

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 fluid power hose assemblies that they have fabricated and installed, 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 fluid power hose specifications
- MDG 41 Guideline for Fluid Power System Safety at Mines
- ISO 6805 Rubber hoses and hose assemblies for underground mining
- SAE J517 Hydraulic Hose
- test equipment for fluid power hose assemblies
- vehicles or machinery requiring the installation of the fluid power hose assemblies specified in the performance evidence
- tools, equipment and materials appropriate for fabricating and installing fluid power hose assemblies, including a crimping machine.

Links

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