



Australian Government

AURTTTS001 Fabricate exhaust systems and components

Release: 1

AURTTS001 Fabricate exhaust systems and components

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to fabricate and test exhaust systems and their components. It involves preparing for the task, selecting procedures for fabrication, performing post-fabrication testing, and completing processes and documentation.

It applies to those working in the automotive service and repair industry. The exhaust systems and components that are fabricated are for internal combustion engines.

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

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical - Fabrication

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 exhaust system component	1.1 Job requirements are determined from workplace instructions 1.2 Fabrication procedures and information are sourced and interpreted 1.3 Fabrication options are analysed and those most appropriate to the circumstances are selected 1.4 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 1.5 Appropriate tools and equipment are selected and checked for serviceability
2. Fabricate and test component	2.1 Component material is selected and sourced according to job requirements 2.2 Material is shaped, machined and welded as required using approved methods and equipment according to manufacturer specifications and safety requirements 2.3 Component is measured to ensure compliance with specifications 2.4 Component fabrication is completed according to manufacturer specifications and safety requirements, and without causing damage to any component or system 2.5 Component is tested according to workplace procedures and job requirements
3. Complete work processes	3.1 Final inspection is made to ensure work is to workplace expectations and component is presented ready for use or storage according to workplace procedures 3.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 3.3 Tools and equipment are checked and stored according to workplace expectations 3.4 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 procedures from workplace and manufacturer literature for safely operating fabrication equipment.
Writing skills to:	legibly and accurately fill out workplace documentation when recording parts and material used.

Skills	Description
Oral communication skills to:	clarify instructions and report findings.
Numeracy skills to:	- understand welding gas pressures and welding wire feed rates - use basic mathematical operations, including addition and subtraction, to calculate distances and material requirements.
Planning and organising skills to:	- prepare work area and tools - design exhaust system components to fit within vehicle and other system constraints.
Technology skills to:	use fabrication equipment to cut, bend and weld.

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 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) - using tools and equipment - safely handling fabrication equipment - using welding equipment - controlling hazards, including abnormal noise and hazardous fumes.
---	---

Unit Mapping Information

Equivalent to AURTTS2001 Fabricate exhaust system 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 AURTTS001 Fabricate exhaust systems and components

Modification History

Release	Comment
Release 1	New unit of competency.

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 two different exhaust systems, in which the work must involve:
 - manufacturing flanges
 - pipe bending
 - joining components by welding.

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 exhaust systems and components, including procedures for:
 - selecting and using personal protective equipment (PPE)
 - using tools and equipment
 - safely handling fabrication equipment
 - using welding equipment
 - controlling hazards, including abnormal noise and hazardous fumes
- operating principles of exhaust systems, including scavenging and back pressure
- application, purpose and operation of exhaust systems, including:
 - mufflers
 - extractor pipes
 - catalytic converters
 - diesel particulate filters
- exhaust component fabrication, including:
 - pipe bending

- flange manufacture
- welding techniques
- exhaust fabrication tools, including:
 - exhaust pipe benders
 - pipe cutters
 - formers
 - welding equipment
- exhaust system and component testing procedures.

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 exhaust systems that they have fabricated, 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
- exhaust system fabrication material, including:
 - exhaust pipe
 - exhaust flanges
 - exhaust brackets
- tools, equipment and materials appropriate for exhaust system fabrication, including:
 - exhaust pipe benders
 - pipe cutters
 - formers
 - welding equipment.

Links

Companion Volume implementation guides are found in VETNet -

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

Companion Volume implementation guides are found in VETNet -

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