



Australian Government

**Assessment Requirements for AURTTM001
Operate and monitor computer numerical
control machines**

Release: 1

Assessment Requirements for AURTTM001 Operate and monitor computer numerical control machines

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:

- conduct computer numerical control (CNC) machining of a shape in aluminium alloy, in which the work must involve:
 - drilling and tapping four holes
 - machining a pocket in the shape
 - surface machining one face on the shape
- conduct CNC machining of a shape in cast iron, in which the work must involve:
 - drilling and tapping four holes
 - machining a pocket in the shape
 - surface machining one face on the shape.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to operating and monitoring CNC machines, including operational risk assessment and treatments associated with:
 - selecting and using personal protective equipment (PPE) when working with CNC machines and using chemical cleaning and lubricating agents
 - safe operating procedures for operating CNC machinery
- environmental requirements, including procedures for trapping, storing and disposing of cooling and lubricating fluids released during machining process
- procedures for accessing computer-controlled programs installed in the machine controller, including:

- posting appropriate program to the machine
- selecting tool specified by the program and for the material to be machined
- selecting appropriate speeds and feeds
- computer-controlled machine operating procedures, including:
 - zeroing the machine axes
 - engaging warm-up procedures, and checking lubricant levels, coolant levels, and machine slide ways
 - mounting tools in tool holders
 - setting tool speed and feed rates
 - setting tool height manually
 - setting machine offset parameters to correct tool number and height
 - setting work piece datum
 - recording data in machine offsets
 - selecting dry run mode on CNC controller and single block to test program
- procedures for basic editing of computer program to reflect specific job requirements
- typical machine malfunctions, including:
 - programming
 - non-optimal speeds and feeds
 - inflexible controller
- tool wear and effect of wear on product or part specifications
- procedures to be followed once tool wear has been detected
- pre-set tool replacement procedures
- adjustment procedures for tool offsets
- effects of adjustments on machining specifications.

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 CNC machines that they have operated and monitored, 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 engine component specifications

- CNC machines appropriate for machining automotive engine components
- precision measuring equipment relevant to the component and work process
- cast iron and aluminium alloy shapes suitable for the CNC work specified in the performance evidence.

Links

Companion Volume implementation guides are found in VETNet -

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

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