



Australian Government

PMBPROD384E Operate multi-axis router

Release: 1

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Modification History

Release 1. Unit code changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBPROD384 Operate multi-axis router.

Application

This unit describes the skills and knowledge required to set up and operate a multi-axis router to cut shapes from plastic sheets, trim formed plastic products, and assist with 3D mouldshaping.

This unit applies to an experienced technician working alone or as part of a team.

The unit principally refers to multi-axis routers that are generally used for 2D pattern cut-out work, but 3-axis routers are used to assist with 3D mould work and trimming of products during the production process.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil.

Competency Field

Production – Plastics 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.
1. Plan work requirements	1.1 Identify requirements from job specifications 1.2 Perform pre-operational checks including checking for and controlling hazards and ensuring personal protection needs are met 1.3 Select material for machining and inspect for quality against job specifications 1.4 Design time-efficient and economical work plans that achieve quality standards while maximising energy efficiency and minimising materials wastage 1.5 Identify checks and testing processes required for equipment,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	materials, quality and production management to meet job specifications
2. Prepare multi-axis machining system	2.1 Set program based on job requirements 2.2 Identify and check safety equipment, including emergency stops, gauges, guards and controls 2.3 Set and adjust machining and processing according to job requirements and machining, processing and tool manufacturer instructions 2.4 Check machining and processing, cutting tools and jigs for safe and effective operation 2.5 Perform test run to check machining and processing operation and quality of finished work meet job specifications 2.6 Make final adjustments to programs and equipment to ensure output will meet job specifications
3. Operate machining and processing centres	3.1 Operate and monitor machining and processing centres to ensure product quality and output meet job specifications 3.2 Follow checking and testing processes to confirm if output meets job specifications and quality standards, and apply strategies to manage nonconforming outputs 3.3 Apply waste management strategies to minimise waste, and collect excess, discarded or nonconforming materials to be disposed of, recycled or reprocessed according to workplace procedures 3.4 Follow any authorised changes made to working procedures
4. Perform post-production tasks	4.1 Collect and store material that can be reused according to workplace procedures 4.2 Apply waste management strategies to collect and segregate scrap, trim and other materials according to workplace procedures 4.3 Clean and inspect equipment and work area for serviceable condition according to workplace procedures 4.4 Complete operator maintenance according to manufacturer specifications 4.5 Tag unserviceable tools and equipment and identify faults 4.6 Maintain equipment and tooling according to workplace procedures

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
5. Anticipate and solve process control variances	5.1 Recognise existing or potential process control variances and their causes 5.2 Determine, prioritise and implement remedial and preventative actions based on identified issues and causes 5.3 Monitor process control variances and corrective actions taken until resolved 5.4 Accurately maintain records and logbooks

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Numeracy skills to monitor equipment readings and assess production outputs.
- Reading skills to interpret job and equipment specifications and workplace procedures.
- Writing and oral communication skills to record and report on multi-axis router operation and process control variances.

Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to PMBPROD384 Operate multi-axis router.

Links

Companion Volume implementation guides are found in VETNet – -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090>

Assessment Requirements for PMBPROD384E Operate multi-axis router

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- operate a multi-axis router at least once to meet job specifications, and:
 - download CAD files to the machining centre
 - perform a test run, digitising directly using a ‘teach pendant’
 - import and use STP files.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- functions and operating principles of multi-axis routers and ancillary equipment
- types, characteristics, uses and limitations of multi-axis routers
- operating practices and techniques applicable to multi-axis router software
- production workflow sequences
- types of materials and their characteristics
- the criteria for overall process/equipment readiness for the process or equipment being used
- typical quality standards required at each stage of production
- key variables and common adjustments that may affect product quality and production output, and the impact of variations in machine process on product quality and production output, including:
 - speeds, including tool speed and travel
 - surface finish and appearance
 - output rate
 - product integrity and general conformance to specification
- typical and atypical process and product problems, including early warning signs, possible causes and corrective actions
- organisational procedures relevant to the work environment or job role, including procedures for the emergency shutdown of equipment
- hazards that may arise in the job or work environment, and:
 - their possible causes

- potential consequences
- appropriate risk controls.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

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