



Australian Government

MSMPCII295 Operate manufacturing equipment

Release: 1

MSMPCII295 Operate manufacturing equipment

Modification History

Release 1. Supersedes and is equivalent to MSAPCII295A Operate manufacturing equipment

Application

This unit of competency covers the skills and knowledge required to operate production equipment, and to resolve routine problems in a simulated or trial manufacturing environment where there is a high degree of direct supervision. This competency is intended to be applied to any item of routine production equipment.

This unit of competency applies to learners seeking practical skills that are relevant and useful to the area in which the learner hopes to gain employment, is currently working, and/or as a pathway to further study.

This unit can be performed by operators working either independently or as part of a work team.

This unit of competency applies to a learning and assessment environment where access to normal production operations is not available. Typically this will be a VET in Schools delivery environment but it may be another simulated or trial manufacturing environment where a high degree of supervision exists. Students may be on work placement.

When delivered/assessed as part of a qualification the unit must be customised to ensure its relevance to real or simulated work activities and related workplaces.

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

Pre-requisite Unit

Nil

Competency Field

Manufacturing pathways

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes

Performance criteria describe the performance needed to demonstrate achievement of the element

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| 1 | Check job requirements | 1.1 | Identify workplace requirements by following established procedures and practices, including work health and safety (WHS) requirements |
| | | 1.2 | Identify product, materials and equipment requirements for job, including personal protective equipment (PPE) |
| 2 | Control hazards | 2.1 | Identify hazards in the production work area |
| | | 2.2 | Assess the risks arising from those hazards |
| | | 2.3 | Implement measures to control or avoid those risks in line with procedures and duty of care to fellow workers |
| 3 | Prepare equipment for operation as required | 3.1 | Perform pre-start checks |
| | | 3.2 | Report suspected unusual or non-standard product, materials and equipment to an appropriate person |
| | | 3.3 | Notify other team members, if required, on the intended equipment function and start-up |
| | | 3.4 | Check/supply materials to equipment as required |
| | | 3.5 | Start up the item of equipment as required |
| | | 3.6 | Bring equipment to specified conditions and build the operating rate steadily, checking expected performance at various stages in accordance with procedures |
| 4 | Operate equipment | 4.1 | Monitor equipment operating conditions |
| | | 4.2 | Monitor product characteristics |
| | | 4.3 | Recognise conditions and characteristics which indicate a problem or a potential problem |
| | | 4.4 | Take appropriate action in response to problem or potential problem |
| | | 4.5 | Maintain supply of materials and removal of products as required |
| | | 4.6 | Complete required records |

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|---|--------------------------------|-----|---|
| | | 4.7 | Keep equipment and work area in a clean, organised and safe condition |
| 5 | Prepare equipment for shutdown | 5.1 | Perform emergency pause, stop or shutdown as required |
| | | 5.2 | Ensure equipment is free of product or purged as required |
| | | 5.3 | Shut down equipment in accordance with procedures |
| | | 5.4 | Make sure equipment and area is left in a safe condition and ready for restart, maintenance or medium /long-term shutdown |

Foundation Skills

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

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

Range of Conditions

This field allows for different 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.

Procedures

Procedures may be written, verbal computer-based, or in some other form and include one or more of the following:

- work instructions
- standard operating procedures (SOPs)
- formulas/recipes
- batch sheets
- temporary instructions and similar instructions provided for the smooth running of equipment and processes

For the purposes of this Training Package, ‘procedures’ also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Equipment	Equipment for the purposes of this unit covers routine or common manufacturing equipment suitable for students operating in a simulated or trial manufacturing environment where there is a high degree of direct supervision. examples includes, but is not limited to, one or more of the following: • guillotines • bending and folding machines • non-computer numerically controlled (CNC) lathes, especially bench and training lathes • soldering equipment • pedestal drills • bench grinders
Workplace hazards	Workplace hazards include, but are not limited to, one or more of the following: • hazardous materials • gases and liquids under pressure • moving machinery • cutting edges • electrical equipment • materials handling • environments subject to heat, noise, dusts or vapours
Pre-start checks	Pre-start checks include one or more of the following: • visual checks • completing checklists • checking that safety guards, gates and so on, are in position and are operational • other checks required by SOPs and manufacturer instructions
Equipment operating conditions	Equipment operating conditions will be monitored using a range of techniques including: • monitoring of measured or indicated data as shown by gauges and charts (e.g. speed, hours on line, pressure, temperature, flow and vibration) • the senses of smell, sight, sound and feel, as appropriate
Product	Product characteristics include one or more of the following:

characteristics

- product quality
- production rate
- defect rate

Problem/potential problems

Problem/potential problems include, but are not limited to, one or more of the following:

- changes to operating conditions
- adverse changes to product characteristics
- adverse changes to waste

Appropriate actions Appropriate actions include one or more of the following:

- making adjustments in accordance with procedures
- stopping the equipment in accordance with procedures
- reporting to appropriate person

Records

Records include one or more of the following:

- log sheets/books
- job/work sheets
- electronic/paper records
- verbal/voicemail/email reports

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=d1287d36-dff4-4e9f-ad2c-9d6270054027>

Assessment Requirements for MSMPCII295 Operate manufacturing equipment

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria, and demonstrate the ability to:

- carry out the day-to-day operation of a routine piece of production equipment, meeting the demands of productivity and quality while resolving routine problems
- follow work instructions, operating procedures and inspection practices to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment or products
 - achieve required production output and product quality
 - modify activities to cater for variations in workplace contexts and environment
- use hand tools and power equipment correctly and safely
- perform normal operator maintenance of work area to enable work to be conducted safely and efficiently
- check specifications and work requirements
- recognise early warning signs of equipment/processes needing attention, including changes to operating conditions, product quality and amount of waste
- make pre-start visual checks, including completing checklists and checking that safety guards and gates are in position and are operational
- use start-up and shutdown processes
- monitor equipment operation as shown by gauges and charts (e.g. speed, hours on line, pressure, temperature, flow and vibration)
- monitor equipment using the senses of smell, sight, sound and feel, as appropriate
- monitor product quality, production rate and defect rate
- report process variations to ensure process conditions are maintained within limits
- respond signals and alarms immediately
- check product for quality and conformity to specifications
- address non-conforming products/materials in accordance with procedures
- identify and rectify/report routine process problems
- complete proforma production logs and reports
- communicate and work effectively and safely with others
- comply with work health and safety (WHS) requirements and safety instructions
- apply safe handling requirements for equipment, products and materials, including the use of personal protective equipment (PPE)
- collect, organise and understand information related to equipment operation

- use mathematical ideas and techniques for measuring product specifications and estimating materials requirements
- follow instructions and specifications and ask for help where needed
- prepare and plan the work
- modify activities to cater for variations in workplace contexts and environment.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- major components and functions of the equipment
- principles of equipment operation
- equipment operating parameters
- equipment and product variables and their interactions
- critical material properties, settings and readings
- impact of materials and properties
- construction and limitations of the equipment
- out-of-specification situations
- distinguishing between causes of faults, including:
 - raw materials
 - instrument failure/malfunction
 - electrical failure/malfunction
 - mechanical failure/malfunction
 - variations in product parameters (temperature, flows, pressure and levels).

Assessment Conditions

- Assessment must occur in a simulated environment or a workplace on an operating item of production equipment.
- Workplace for this unit covers a manufacturing environment specifically established for learning introductory manufacturing skills. It may be:
 - a school classroom or workshop equipped to teach manufacturing principles and practices
 - RTO premises equipped to teach manufacturing principles and practices with access to an operating item of production equipment over an extended time
 - an enterprise environment where above average supervision exists and training is occurring. The normal production imperatives have been modified to take into account the training being delivered.
- This unit must always be assessed holistically in conjunction with other units of competency that form part of a specified job function.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Performance must be demonstrated consistently over a period of time.
- Materials and equipment must include:

- workplace procedures such as work instructions, standard operating procedures (SOPs), batch sheets. They may be written, verbal, computer based or in some other form.
- routine or common manufacturing equipment suitable for students operating in a simulated or trial manufacturing environment where there is a high degree of direct supervision.
- Equipment / materials include but are not limited to one or more of the following:
 - guillotines
 - bending and folding machines
 - non CNC lathes, especially bench and training lathes
 - soldering equipment
 - pedestal drills
 - bench grinders
 - records including log sheets/books, job/work sheets, electronic/paper records, verbal/voicemail/email reports
- Assessors must:
 - as a minimum, satisfy the Standards for Registered Training Organisations 2015 assessor requirements
 - have vocational competency in the manufacturing industry at least to the level being assessed, with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the manufacturing industry.

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