



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MSS402020A Apply quick changeover procedures**

**Release: 1**

## **MSS402020A Apply quick changeover procedures**

### **Modification History**

New unit, superseding MSACMT220A Apply quick changeover procedures - Equivalent

### **Unit Descriptor**

This unit of competency covers the skills and knowledge required to apply quick changeover procedures in an organisation implementing competitive systems and practices.

### **Application of the Unit**

This unit applies to individuals in an organisation which is implementing competitive systems and practices and is pursuing quick changeover as one of its competitive operations tools. The unit can apply to quick changeovers of equipment, processes, batches or product type.

This unit covers the carrying out of these quick changeovers and also recommending improvements within the scope and authority of the individual's job.

Particular technical skills may also be required in some operations sectors and for some jobs. These skills should be gained from the Training Package relevant to the individual's industry and occupation.

This unit requires the application of skills associated with applying quick changeover procedures, including the planning and organising of own work, identifying problems and making suggestions for improvement of procedures.

This unit may not be applicable to a totally continuous operation producing only the one product, or simultaneous range of products. The unit is also not applicable to a maintenance/PVI shutdown as experienced by the continuous process manufacturers.

However, where there is continuous operation on a campaign basis, it may be applied to the changeover between campaigns or similar changeovers.

### **Licensing/Regulatory Information**

Not applicable.

### **Pre-Requisites**

Not applicable.

### **Employability Skills Information**

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

1	Prepare for changeover	1.1	Determine when changeover will be required
		1.2	Review plans and instructions for quick changeover
		1.3	Identify role of others in quick changeover
		1.4	Obtain all required tools/parts/materials for changeover
		1.5	Organise process and tools/parts/materials ready for changeover
2	Make quick changeover	2.1	Plan changeover according to quick changeover principles
		2.2	Liaise and work with relevant people in quick changeover
		2.3	Complete changeover according to procedures
		2.4	Check output meets specification
		2.5	Debrief with all relevant stakeholders
		2.6	Note any steps which cause a problem
		2.7	Recommend changes to problematic steps
3	Improve occupational health and safety (OHS)	3.1	Identify hazards to self or others in all steps/actions
		3.2	Determine risks from each hazard
		3.3	Identify actions which may be performed in a more ergonomic manner

### 3.4 Recommend changes to improve OHS

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills

Required skills include:

- determining/predicting when a changeover will occur through knowledge of products and processes in own work area
- communicating with others to clarify scope and procedures for quick changeover and contributing suggestions for improvement
- planning own tasks in quick changeover
- identifying and working to target changeover time
- working as part of a team
- setting up quick changeover using appropriate tools, process skills and procedures
- following OHS procedures and regulatory requirements and notifying risks

### Required knowledge

Required knowledge includes:

- principles of quick changeover, including:
  - setting of target time for changeover
  - conversion of internal set-up time to external set-up time, where appropriate
  - simplification of changeover steps
  - monitoring and continuous improvement of changeovers
- relevant operational procedures
- target time for changeover
- relevant OHS regulations and requirements
- purposes/requirements of changeover
- methods of recommending changes
- quality requirements for products and processes
- minimisation of changeover waste (e.g. scrap and energy )

## Evidence Guide

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The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment

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## Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>A person who demonstrates competency in this unit must be able to provide evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• identify the scope and equipment to be used in a quick changeover implemented in their work area</li> <li>• identify the target time</li> <li>• understand the difference between internal and external changeover steps</li> <li>• identify own tasks and responsibilities in a quick changeover</li> <li>• identify problems in quick changeovers</li> <li>• contribute suggestions for improvement.</li> </ul>
Context of and specific resources for assessment	<p>Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices.</p> <p>Access may be required to:</p> <ul style="list-style-type: none"> <li>• workplace procedures and plans relevant to work area</li> <li>• specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee</li> <li>• documentation and information in relation to production, waste, overheads and hazard control/management</li> <li>• reports from supervisors/managers</li> <li>• case studies and scenarios to assess response to contingencies.</li> </ul>
Method of assessment	<p>A holistic approach should be taken to the assessment.</p> <p>Competence in this unit may be assessed by using a combination of the following to generate evidence:</p> <ul style="list-style-type: none"> <li>• demonstration in the workplace</li> <li>• workplace projects</li> <li>• suitable simulation</li> <li>• case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on)</li> <li>• targeted questioning</li> <li>• reports from supervisors, peers and colleagues (third-party reports)</li> <li>• portfolio of evidence.</li> </ul> <p>In all cases it is expected that practical assessment will be combined with targeted questioning to assess</p>

	<p>underpinning knowledge.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.</p>
Guidance information for assessment	<p>Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.</p>

## Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<b>Competitive systems and practices</b>	<p>Competitive systems and practices may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• lean operations</li> <li>• agile operations</li> <li>• preventative and predictive maintenance approaches</li> <li>• monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems</li> <li>• statistical process control systems, including six sigma and three sigma</li> <li>• Just in Time (JIT), kanban and other pull-related operations control systems</li> <li>• supply, value, and demand chain monitoring and analysis</li> <li>• 5S</li> <li>• continuous improvement (kaizen)</li> <li>• breakthrough improvement (kaizen blitz)</li> <li>• cause/effect diagrams</li> <li>• overall equipment effectiveness (OEE)</li> <li>• takt time</li> <li>• process mapping</li> </ul>
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	<ul style="list-style-type: none"> <li>• problem solving</li> <li>• run charts</li> <li>• standard procedures</li> <li>• current reality tree</li> </ul> <p>Competitive systems and practices should be interpreted so as to take into account:</p> <ul style="list-style-type: none"> <li>• the stage of implementation of competitive systems and practices</li> <li>• the size of the enterprise</li> <li>• the work organisation, culture, regulatory environment and the industry sector</li> </ul>
<b>Changeover</b>	<p>Changeover may refer to:</p> <ul style="list-style-type: none"> <li>• an exchange of equipment (often dies or tools (traditional))</li> <li>• a change between products/batches or between campaigns or processes. It may be any quantum change to produce a different product or undertake a different process</li> </ul> <p>In competitive systems and practices equipment-based quick changeover techniques in manufacturing can often be referred to under different names, for example:</p> <ul style="list-style-type: none"> <li>• single minute exchange of die (SMED) – The term originated with die changeovers but now often refers to the ability to perform any set-up activity in a minute or less of machine or process downtime</li> <li>• single-digit set-up – performing a set-up activity in a single-digit number of minutes (i.e. fewer than ten)</li> <li>• one touch exchange of die (OTED) – literally, changing a die with one physical motion, such as pushing a button; broadly, an extremely simple procedure for performing a set-up activity</li> </ul>
<b>Set-up</b>	<p>Set-up can be divided into two types:</p> <ul style="list-style-type: none"> <li>• internal set-up (work that can be done only when the machine or process is not actively engaged in production)</li> <li>• external set-up (work that can be done concurrently with the machine or process performing production duties)</li> </ul> <p>The same distinction can be applied to non-production equipment-based work areas where changeovers of processes or operations can be:</p> <ul style="list-style-type: none"> <li>• internal (requires work to stop, be reset, computers</li> </ul>



	<p>restarted, and so on)</p> <ul style="list-style-type: none"> <li>external (where work can continue during the changeover)</li> </ul>
<b>Set-up time</b>	<p>Set-up time includes:</p> <ul style="list-style-type: none"> <li>the work time required to change over a machine or process from one item or operation to the next item or operation</li> </ul>
<b>Procedures</b>	<p>Procedures may include:</p> <ul style="list-style-type: none"> <li>work instructions</li> <li>standard operating procedures</li> <li>formulas/recipes</li> <li>batch sheets</li> <li>temporary instructions and similar instructions provided for the smooth running of operations, processes, plant and equipment</li> <li>good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) and government regulations</li> </ul> <p>Procedures may be:</p> <ul style="list-style-type: none"> <li>written, verbal, computer-based or in some other format</li> </ul>

## Unit Sector(s)

Unit sector

Competitive systems and practices

## Custom Content Section

Not applicable.