



Australian Government

MEM07039 Write programs for industrial robots

Release: 1

MEM07039 Write programs for industrial robots

Modification History

Release 1. Supersedes and is equivalent to MEM07039A Write programs for industrial robots

Application

This unit of competency defines the skills and knowledge required to plan and write computer programs for robot operations to achieve operating specifications. Programs are in accordance with manufacturers' operating procedures, manufacturer specific language and the functional parameters of the robot.

Where setting of robot cells is required unit MEM07040 Set multistage integrated processes should also be selected.

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

Band: B

Unit Weight: 4

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM10004	Enter and change programmable controller operational parameters
MEM12023	Perform engineering measurements
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM16008	Interact with computing technology

Competency Field

Machine and process operations

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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Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, drawings, job sheets or work instructions
2	Identify robot requirements	2.1	Identify robot features and specifications
		2.2	Identify robot language appropriate to the robot type
		2.3	Identify robot safety features
		2.4	Interpret manufacturers' operating procedures and engineering drawings to define robot function and tool path geometry
		2.5	Determine required operations for robot and end effectors in conjunction with appropriate technical experts or other technical reference sources
3	Plan robot program	3.1	Identify programming requirements
		3.2	Calculate coordinates for tool path or robot functions
		3.3	Select programming method
		3.4	Develop program plan
4	Write basic program	4.1	Prepare robot and computer equipment
		4.2	Write program in required language and in accordance with SOPs
		4.3	Incorporate safety features in robot program
		4.4	Prepare operation sheet

Elements describe the essential outcomes.

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

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|---|----------------------|-----|--|
| 5 | Trial program | 5.1 | Trial program by operating robot in manual mode in conjunction with operator, as appropriate |
| | | 5.2 | Verify program performance against required specifications and with appropriate technical experts or other technical reference sources |
| | | 5.3 | Edit program if necessary to adjust operation, as required |
| | | 5.4 | Check components for conformance to specifications, as required |

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

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, accessibility of the item, and local industry and regional contexts) are included.

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| Features and specifications include one (1) or more of the following: | <ul style="list-style-type: none"> • components • capabilities • speed • reach • load carrying capacity • accuracy/repeatability • classification • polar coordinate • cylindrical coordinate • Cartesian coordinate • jointed elbow • SCARA • movements • base |
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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, accessibility of the item, and local industry and regional contexts) are included.

- shoulder
- elbow
- pitch
- roll
- yaw
- applications
- required operating conditions
- limitations
- justification
- safety features

Language includes the following:

- language appropriate to robot type

Safety features include one (1) or more of the following:

- AS 2939-1987 Industrial robot safety - Safe design and usage
- physical design
- enclosures
- layout
- programming
- sensing
- personnel

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM07039A Write programs for industrial robots

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>