



Australian Government

MEM18022 Maintain fluid power controls

Release: 2

MEM18022 Maintain fluid power controls

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM18022 Maintain fluid power controls (Release 1).

Release 1. Supersedes and is equivalent to MEM18022B Maintain fluid power controls.

Application

This unit of competency defines the skills and knowledge required to install and repair and/or rectify fluid power controls, and adjust fluid power system control sequence and operation.

It covers fault-finding of fluid power systems control circuits, maintaining and repairing or replacing system control components, and checking and adjusting the sequence of fluid power system controls. System circuit/components are identified, traced, inspected and operational function is assessed and verified using fluid power principles to predetermined specifications interpreted from data sheets and circuit diagrams.

Where skills beyond the sequencing of programmable logic controllers (PLCs) are required unit MEM10004 Enter and change programmable controller operational parameters and unit MEM10005 Commission programmable controller programs, should be selected as appropriate.

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

Band: B

Unit Weight: 8

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities
MEM16006	Organise and communicate information
MEM18001	Use hand tools

MEM18002	Use power tools/hand held operations
MEM18003	Use tools for precision work
MEM18006	Perform precision fitting of engineering components
MEM18055	Dismantle, replace and assemble engineering components

Plus, one or more of the following, including their prerequisites:

MEM18019	Maintain pneumatic systems
MEM18021	Maintain hydraulic systems

Competency Field

Maintenance and diagnostics

Elements and Performance Criteria

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	Install/replace fluid power systems and controls	2.1	Interpret and apply fluid power control principles and system/circuit diagrams
		2.2	Identify system/circuit components and inspect for compliance with specifications
		2.3	Undertake sequential installation according to manufacturers' specifications and SOPs

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
3	Check and adjust fluid power system control sequence and operation	3.1	Check controls and system operation against operational specifications using appropriate test equipment and application principles/techniques
		3.2	Perform adjustments to sequence system to meet/align to operational requirements and specifications
		3.3	Report modifications/alterations and according to SOPs
		3.4	Check controls and system operation and commission to specifications
4	Fault find fluid power systems control circuit	4.1	Interpret and apply system/circuit diagrams and data sheets
		4.2	Identify and inspect system/circuit components
		4.3	Trace system/circuit and diagnose action of components to identify and localise faults
		4.4	Test system/circuit parts using appropriate test equipment and application principles
		4.5	Assess system/circuit parts against operational specifications
		4.6	Localise fault condition at the component level
		4.7	Evaluate faulty condition, analyse root cause and plan corrective action
5	Maintain, and repair or rectify system control components	5.1	Apply correct maintenance procedures
		5.2	Select and apply repair procedures using appropriate tools, equipment and techniques
		5.3	Test faulty items, repair or replace using sequential installation procedures according to manufacturers' recommendations
		5.4	Select replacement items from appropriate sources
		5.5	Reassemble system control components according to

Elements describe the essential outcomes.

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

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| 6 | Check and adjust sequence of fluid power system controls | 6.1 | Identify circuit sensors and controllers using circuit diagrams and fluid power system control principles |
| | | 6.2 | Make necessary adjustments to sequence system control circuit to meet operational specification |
| | | 6.3 | Check and verify correct operation of system control circuit against operational specification |
| | | 6.4 | Commission fluid power system controls to specifications |
| | | 6.5 | Adopt appropriate follow-up procedures |
| | | 6.6 | Complete service/maintenance report |

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

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| Fluid power systems control sequencing includes one (1) or more of the following: | • | PLCs |
| | • | relay logic control systems |
| | • | unitised/modular sensors |
| | • | transducers |
| | • | timers |
| | • | counters |
| | • | associated equipment |

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM18022 Maintain fluid power controls (Release 1).

Release 1. Supersedes and is equivalent to MEM18022B Maintain fluid power controls.

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MEM18022 Maintain fluid power controls

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- obtaining and interpreting specifications system/circuit diagrams, system operation data sheets and control data and identifying and inspecting system components for compliance with specifications
- planning and undertaking sequential installation of fluid power systems and controls in accordance with manufacturers' specifications and procedures
- checking and adjusting control and system operation using appropriate test equipment ensuring that the sequence of operations conforms to specifications and operational requirements
- recording/reporting any modifications/alterations to the system in accordance with standard operating procedures
- fault-finding fluid power systems control circuit using fault-finding techniques and appropriate test equipment and identifying and localising components not conforming to operational specifications for repair/replacement
- repairing/replacing faulty items after testing for compliance to specifications using appropriate tools, equipment and techniques
- reassembling control components to meet specifications
- verifying correct operation of system power control circuit and commissioning the fluid power system controls to specifications
- initiating maintenance and/or service follow-up procedures and completing maintenance and/or service reports according to standard operating procedures.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- system operational and control requirements and specifications
- application of common fluid power system components and controllers

- system/circuit components
- special installation requirements
- fluid power and common test equipment and their application
- correct operational sequence of the system
- typical adjustments to correct sequencing variations from specification
- procedures for recording/reporting modifications/alterations and consequences of not recording/reporting
- fluid power system commissioning procedures
- component(s) not complying with operational specification and typical causes of component failure
- cause of the faulty condition in the component(s) and appropriate procedures for rectifying the faulty condition
- appropriate maintenance schedule and procedures
- appropriate control component repair procedures
- typical test equipment and applications
- circuit sensors and controllers
- common adjustments that can be made to control systems and their effect
- any maintenance/service follow-up procedures
- maintenance/service recording/reporting requirements.

Assessment Conditions

- Assessors must:
 - have vocational competency in maintaining fluid power controls at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Assessment must occur in a functioning workplace. Where assessment in the workplace would be unsafe, impractical or threatens the environment, assessment must occur in a sufficiently rigorous simulated environment that reflects the circumstances that would be experienced in a functioning workplace. Assessment must cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

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