



Australian Government

MSMSUP405 Identify problems in fluid power system

Release: 1

MSMSUP405 Identify problems in fluid power system

Modification History

Release 1. Supersedes and is equivalent to MSAPMOPS405A Identify problems in fluid power system

Application

This unit of competency covers the skills and knowledge required to recognise and diagnose problems in hydraulic/pneumatic control systems on process equipment, and take appropriate corrective action.

This unit of competency applies to operators who are required to apply knowledge of fluid power systems and components to the identification and isolation of faults in equipment. The key factors are the diagnosis and the recommendation of action to resolve routine and non-routine faults in order to return the equipment to production.

The unit applies to all work environments and sectors within the manufacturing industry. It requires an understanding of the operation of all relevant equipment and processes but does not necessarily require them to be used personally.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members and the control room operator, as appropriate.

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

Pre-requisite Unit

Nil

Competency Field

Support

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 | Identify pneumatic/hydraul | 1.1 | Categorise the types of equipment malfunctions due to fluid power problems |
|---|----------------------------|-----|--|

	ic system problems	1.2	Identify the effects on product quality of fluid power problems
		1.3	Describe the function of components on the fluid power circuit diagram
		1.4	Identify possible faulty components from a circuit diagram
		1.5	Identify hazards arising from the problem and implement appropriate hazard control
2	Implement appropriate corrective action	2.1	Identify other possible problems
		2.2	Short list possible fault problems
		2.3	Investigation machine, products or data to determine most likely problem causes
		2.4	Take appropriate action to ensure problem is rectified
		2.5	Follow up on action to ensure completion in an appropriate timeframe
		2.6	Recheck after corrective action to ensure problem has been rectified
3	Develop maintenance requirements	3.1	Check manufacturer instructions to determine recommended maintenance schedule
		3.2	Check fault and maintenance history to determine adequacy of current regime and special requirements
		3.3	Determine criticality of machine to production/business
		3.4	Develop maintenance schedule/requirements for machine
		3.5	Liaise with all relevant stakeholders to ensure schedule is appropriate
		3.6	Report outcome to appropriate personnel

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.

Regulatory framework

The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used, and include one or more of the following:

- legislative requirements, including work health and safety (WHS)
- industry codes of practice and guidelines
- environmental regulations and guidelines
- Australian and other standards
- licence and certification requirements

Procedures

All operations must be performed in accordance with relevant procedures.

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

- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant

Equipment using fluid power control systems

Equipment that uses fluid power control systems include one or more of the following:

- pumps
- pressure controls

- directional control valves (DCVs)
- remote operated valves (ROVs)
- flow control actuators
- accumulators
- filters
- heat exchangers
- proportional, servo and cartridge valves

Non-routine problems

Non-routine problems must be resolved by applying operational knowledge to develop new solutions, either individually or in collaboration with relevant experts to:

- determine problems needing action
- determine possible fault causes
- develop solutions to problems which do not have a known solution
- follow through items initiated until final resolution has occurred
- report problems outside area of responsibility to designated person

Operational knowledge includes one or more of the following:

- procedures
- training
- technical information, such as journals and engineering specifications
- remembered experience
- relevant knowledge obtained from appropriate people

Hazards

Hazards include one or more of the following:

- high pressures (hydraulic and pneumatic)
- hot surfaces
- equipment failures
- heat, smoke, dust or other atmospheric hazards
- flammability and explosivity
- equipment or product mass
- slippery surfaces, spills or leaks
- noise, rotational equipment or vibration
- electricity
- other hazards that might arise

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSAPMOPS405A Identify problems in fluid power system

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 MSMSUP405 Identify problems in fluid power system

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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:

- identify fluid power problem and possible problem causes
- take appropriate action in a timely manner
- apply operational knowledge to non-routine problems
- develop appropriate maintenance schedule/requirements.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- hazards and hazard controls specific to the fluid power system and the plant it is used on
- principles of hydraulics/pneumatics and circuit components
- fluid power circuit diagrams
- types and causes of known fluid power problems for the plant unit and its components
- corrective action appropriate to the problem cause
- appropriate investigation procedures and use of equipment for a range of equipment faults.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of an operating plant
 - will typically include a supervisor/third-party report focusing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - will typically include the use of an appropriate industrial item of equipment requiring demonstration of operation, start and stop procedures and responding to problems
 - may use industry-based simulation for all or part of the unit particularly where safety, lack of opportunity or significant cost is an issue.

- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment in a simulated environment should use evidence collected from one or more of:
 - walk-throughs
 - pilot plant operation
 - demonstration of skills
 - industry-based case studies/scenarios
 - ‘what ifs’.
- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept).
- 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.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- As a minimum, assessors must satisfy the Standards for Registered Training Organisations 2015 assessor requirements.

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