



Australian Government

MSMWJ303 Operate a vacuum loading system

Release: 1

MSMWJ303 Operate a vacuum loading system

Modification History

Release 1 - New unit

Application

This unit of competency covers the skills and knowledge required to operate a vacuum loading system which may be used to move materials from an open space or vessel into a container. The materials moved may be solids (lump or particulate), liquids or gases/vapours. The materials may also be hazardous (chemical hazard, flammable/explosive, and particulate carbonaceous particulates).

Work will be undertaken on a worksite which may be a client's site or may be public space.

Operators will also need to be competent in a range of other units of competency in order to be allowed to operate independently on site.

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

Pre-requisite Unit

Nil

Competency Field

Operations

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes

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

1	Prepare for work	1.1	Obtain required job details
		1.2	Complete site access and work control requirements
		1.3	Identify site hazards and required hazard controls
		1.4	Select, check and load equipment and personal protective equipment (PPE) required for the job

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| | | 1.5 | Ensure the adequate quantity of fuel and other consumables have been filled/loaded |
| | | 1.6 | Check work team members comply with site and job competency requirements |
| | | 1.7 | Complete required pre-work paperwork |
| 2 | Complete on-site preparation | 2.1 | Check job scope, location and requirements with job owner/contact person |
| | | 2.2 | Obtain required permits/work authorities |
| | | 2.3 | Lead tool box meeting as required |
| | | 2.4 | Interpret and follow job-related documentation |
| | | 2.5 | Define work area and check exclusion zones |
| | | 2.6 | Ensure waste management, disposal and tracking procedures are in place |
| | | 2.7 | Recognise and control job and site-specific hazards |
| 3 | Set up job in accordance with procedures | 3.1 | Prepare worksite to comply with job and safety requirements |
| | | 3.2 | Inspect, assemble and check vacuum loading equipment to procedures |
| | | 3.3 | Complete pre-start and check emergency stop |
| | | 3.4 | Liaise with other work groups as appropriate to ensure safe and efficient operation |
| | | 3.5 | Establish appropriate means of communication between operators and ensure correct positioning of personnel |
| | | 3.6 | Ensure hazard controls are operational and adequate |
| | | 3.7 | Check and use required personal protective equipment |
| 4 | Undertake | 4.1 | Start up vacuum loading system |

	vacuum loading job in accordance with procedures	4.2	Communicate with/supervise other operator as required by job
		4.3	Operate equipment to meet job requirements
		4.4	Monitor hazards and activate emergency stop, as required
		4.5	Monitor the job, conditions and equipment
		4.6	Recognise and diagnose problems
		4.7	Take appropriate action to respond to problems
		4.8	Complete required paperwork
5	Complete job in accordance with procedures	5.1	Shut down equipment
		5.2	Ensure the appropriate disposal of all waste
		5.3	Advise job owner/contact person of job completion and any relevant observations during the job
		5.4	Clean job site and equipment
		5.5	Service and inspect equipment
		5.6	Store equipment
		5.7	Ensure vehicle is fit for transit (seal truck hose)
		5.8	Return to base, including refuelling vehicle en route
		5.9	Report any issues or incidents, as required
		5.10	Debrief relevant stakeholders
		5.11	Complete required paperwork

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
- medical alert card

Procedures

Procedures include one or more of the following:

- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS), job safety and environment analysis (JSEA) or job hazard analysis (JHA)
- temporary instructions
- any similar instructions provided for the smooth running of the job

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through federal or state/territory legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Site access requirements

Site access requirements include one or more of:

- site induction
- other site/client requirements

Equipment

Equipment includes one or more of the following:

- vacuum pumps, including at least one of the following:
 - liquid piston ring
 - roots blower

- vane pump
- axial turbine
- separating systems, including at least one of:
 - bubble filter
 - bag house
 - cyclone
- antistatic hoses
- earth straps
- vacuum breakers/vacuum relief systems
- PPE
- other equipment, plant, tools and hazard control devices required by the job

Equipment variables

Equipment variables include:

- hose type/size
- pressure/vacuum
- additives to be used
- other items under the control of the operator

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

Non-routine problems are unexpected problems, or variations of previous problems and include one or more of the following:

- equipment not operating at desired conditions
- equipment failure
- hose blocking
- cross contamination of product
- leaks/spills
- injury
- motor vehicle incident
- emergency response
- job is not as described in the scope

- job owner wants a scope variation
- other unplanned event or unexpected consequence from a planned event

Operational knowledge includes one or more of the following:

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

Job owner

Job owner includes one or more of the following:

- client or their representative
- site manager or their representative
- production manager or their representative
- maintenance manager or their representative
- other person with prime responsibility for the plant/plant area which is the subject of the job

Equipment operation

Equipment operation includes one or more of the following:

- manually on the worksite
- using local controller on the worksite
- using the control system which may be remote from the vacuum loading equipment

Monitor

Monitoring vacuum loading operation includes monitoring one or more of the following:

- noise
- lump size
- correct revolutions per minute (RPM)
- vacuum pressure
- blower temperature
- quantity of load
- truck weight
- leaks/spills
- pinch points
- operator fatigue/heat stress

Job paperwork Job paperwork is be electronic, hard copy or other format and includes one or more of the following:

- tool storeroom records
- site plans
- equipment loaded records
- maintenance/inspection records/checklists
- tag out/reports for failed equipment
- safety data sheets (SDS)
- hazard controls
- work control system requirements

Communication Communication includes one or more of the following:

- hand signals
- radio headphones
- other means appropriate to the job/site

Hazards Hazards include one or more of the following:

- hazards from vacuum
- hazards arising from the materials used in/generated by the vacuum loading job
- hose set up and hose run
- hazards specific to the site/process
- dangerous goods
- slip/trip hazards
- PPE is unavailable or not functional
- emergency equipment is unavailable
- static electricity
- gas
- structural collapse
- overhead/underground obstructions
- equipment in unsafe condition with hazard controls not functional
- industrial (machinery, equipment and product)
- noise, rotational equipment or vibration
- working in restricted or confined spaces, or in environments subjected to heat, noise, dusts, vapours or darkness
- hazardous products and materials (particularly carbonaceous particulates)
- unauthorised personnel
- sharp edges, protrusions or obstructions, swarf and scrap
- sharps (e.g. syringes)

- slippery surfaces, spills or leaks
- extreme weather
- other hazards that might arise

Hazard controls Hazard controls include one or more of the following:

- controls identified in the relevant permits to work
- use of PPE
- use of emergency equipment
- other appropriate controls consistent with the hierarchy of control

Unit Mapping Information

No equivalent unit

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 MSMWJ303 Operate a vacuum loading system

Modification History

Release 1 - New unit

Performance Evidence

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

- assemble and operate vacuum loading equipment, including:
 - at least two (2) vacuum loading operations, AND
 - at least two (2) of:
 - solids
 - liquids
 - gases/vapour.
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Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job sufficient to operate independently and to solve routine and non-routine problems, including:

- hazards and hazard controls specific to the operation of vacuum loading equipment
- techniques and methodology of vacuum loading
- principles of operation and science (physics) of vacuum loading equipment and its component items
- correct methods of starting up, shutting down, operating and controlling vacuum loading equipment and its component plant items by type and duty
- relevant communication systems including hand signals
- operational parameters and limits
- types and causes of known problems for vacuum loading and its components
- corrective action appropriate to the problem cause
- the importance of monitoring and controlling job conditions
- methods, purpose (and appropriate corrective action) of monitoring job variables
- situations requiring:
 - activating emergency stop
 - stopping work until a situation is resolved
 - raising alarm (when, how, who to)
 - responding to injury.

Assessment Conditions

- Competency must be achieved before performing this work unsupervised. Therefore this unit will typically be assessed off the job. Where assessment is undertaken on the job, appropriate supervision and safety precautions must be provided.
- The unit should be assessed holistically and the judgement of competence based on a holistic assessment of the evidence.
- While vacuum loading equipment must be used, the plant/job requiring vacuum loading may be a realistic simulation of an industry plant/application/situation.
- All appropriate tools, equipment, paper work/permits and safety gear required will be available and used as required. The assessor should only intervene if it would be unsafe to allow the assessment to continue. It is expected that one assessor would not observe a group larger than ten persons at the one assessment event.
- Off-the-job assessment must sufficiently reflect realistic operational workplace conditions that 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
 - demonstration of skills
 - industry-based case studies/scenarios
 - ‘what ifs’.
- Knowledge evidence will be collected independently of the above practical assessment and may use workbooks, written assessments, interviews (provided a record is kept) or other methods.
- 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.
- Persons seeking verification of competence/retraining must meet the same evidence requirements as above.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- As a minimum, assessors must satisfy the Standards for Registered Training Organisations 2015 assessor requirements.

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