



Australian Government

AHCIRG335 Operate and maintain moving irrigation system

Release: 1

AHCIRG335 Operate and maintain moving irrigation system

Modification History

Release Number	TP Version	Comments
1	AHCv1.0	Initial release

Application

This unit of competency covers the skills and knowledge required to install, operate and maintain movable irrigation systems.

It applies to individuals who take responsibility for own work and for the quality of the work of others. They use discretion and judgement in the selection, allocation and use of available resources. All work is carried out to comply with workplace procedures.

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

Pre-requisite Unit

Nil.

Unit Sector

Irrigation (IRG)

Elements and Performance Criteria

Element	Performance criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Install a moving sprinkler irrigation system	1.1 Select required materials, tools, equipment and machinery 1.2 Join span pipes with correctly tensioned bolts 1.3 Connect V-jack trusses in sequence to bow the span 1.4 Connect goose necks and hose connectors 1.5 Fit pre-cut drop hoses and connect sprinklers
2. Complete assembly of moving sprinkler components	2.1 Assemble sprinklers, pressure regulators and hose directors 2.2 Fit gear box and control panel 2.3 Fit and tension wheels

Element	Performance criteria
3. Assist in commissioning a moving sprinkler irrigation system	3.1 Connect and start pumping system and flush as required 3.2 Calibrate testing and monitoring equipment to manufacturer specifications
4. Operate the system	4.1 Prime pumps, open or close valves and controls and begin the start-up sequence 4.2 Check emitter spacing 4.3 Monitor and service the transport mechanism 4.4 Check the irrigation controller for programming and efficiency 4.5 Correct or repair all malfunctions, leaks and blockages
5. Monitor the irrigation operation	5.1 Implement the irrigation schedule and monitor soil profile for wetting 5.2 Measure sprinkler performance using catch cans 5.3 Measure flow rates using containers of known volume 5.4 Measure operating pressures using pressure gauges 5.5 Check the irrigated area for wheel ruts and other signs of waterlogging
6. Carry out system maintenance	6.1 Record damage and blockages with contaminants by damage type, location and the section of the system affected 6.2 Record and report damaged or faulty pumps, valves, sprinklers, electrical components and computer control systems and take action to effect repairs 6.3 Measure outlet pressure, flow rate and energy use and record on a regular basis 6.4 Inspect and maintain drive mechanism, frames and trusses 6.5 Implement end of season maintenance procedures 6.6 Implement routine and preventative maintenance procedures 6.7 Implement storage procedures for irrigation components
7. Shut down the system in response to irrigation indicators	7.1 Apply water for sufficient time to achieve required soil moisture levels and allowing for weather conditions 7.2 Shut down system components and drain 7.3 Check drainage and treatment systems 7.4 Record and report irrigation activities

Foundation Skills

Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Unit Mapping Information

New unit - no equivalent.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCIRG335 Operate and maintain moving irrigation system

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Performance Evidence

The candidate must be assessed on their ability to integrate and apply the performance requirements of this unit in a workplace setting. Performance must be demonstrated consistently over time and in a suitable range of contexts.

The candidate must provide evidence that they can:

- change engine oil and filter
- check all bolts for correct torques
- check for malfunctioning sprinklers
- check injection pump and safety equipment operation
- complete regular and end of season maintenance tasks
- fit control panel and wheels
- grease drive shafts on pump and motor
- inspect lift base and arms for any stress marks or cracks
- measure and interpret flow rates and pressures
- monitor system effectiveness
- operate pressure and flow testing equipment
- read and follow operations manuals and irrigation schedules
- shut down, clean equipment and dispose of waste
- start-up system and carry out operational checks
- take and record measurements of output and efficiency
- tension span pipes with V-jack trusses
- use control systems

Knowledge Evidence

The candidate must demonstrate knowledge of:

- principles and practices of moving irrigation system installation, operation and maintenance
- behaviour of water on varying terrain and soil types
- calculations used when installing irrigation systems

- common operational and maintenance problems
- components of a moving sprinkler irrigation system and their maintenance requirements
- installing a moving sprinkler irrigation
- irrigation methods for moving sprinkler systems
- maintenance requirements for moving sprinkler systems
- monitoring soil compaction and drainage
- moving sprinkler irrigation maintenance
- pump used in moving sprinkler irrigation systems and their operation
- shutdown sequence
- soil water retention testing techniques
- soil, plant and water relationships
- water quality and water filtration techniques
- water requirements of plants and crops consistent with sound environmental management

Assessment Conditions

Assessors must satisfy current standards for RTOs.

Links

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