

**Modification history**

Release	Comments
Release 2	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 4.0.
Release 1	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 1.0.

<b>AHCIRG335</b>	<b>Operate and maintain moving irrigation system</b>
<b>Application</b>	<p>This unit of competency covers the skills and knowledge required to install, operate and maintain moving irrigation systems.</p> <p>The unit applies to individuals who operate and maintain moving irrigation systems under broad direction and take responsibility for their own work.</p> <p>No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
<b>Prerequisite Unit</b>	Nil
<b>Unit Sector</b>	Irrigation (IRG)

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Install a moving sprinkler irrigation system	1.1 Select and use required materials, tools and equipment and check for safe operations 1.2 Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe working practices to manage risks 1.3 Select, fit, use and maintain safety and personal protective equipment applicable to the task 1.4 Join span pipes with correctly tensioned bolts 1.5 Connect V-jack trusses in sequence to bow the span 1.6 Connect goose necks and hose connectors 1.7 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
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 according to operation and maintenance manual and 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 transport mechanism 4.4 Check irrigation controller for programming and efficiency 4.5 Correct or repair all malfunctions, leaks and blockages
5. Monitor irrigation operation	5.1 Implement 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 irrigated area for wheel ruts and other signs of waterlogging

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
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 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

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<b>Foundation Skills</b>	
<i>This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.</i>	
<b>Skill</b>	<b>Description</b>
Reading	<ul style="list-style-type: none"> <li>Interpret textual information from a range of sources to identify relevant and key information about workplace operations</li> </ul>
Writing	<ul style="list-style-type: none"> <li>Document moving irrigation system damage and blockages</li> <li>Document irrigation activities</li> </ul>
Oral communication	<ul style="list-style-type: none"> <li>Initiate discussions with supervisor using clear language to communicate damage and blockages and report irrigation activities</li> </ul>
Numeracy skills	<ul style="list-style-type: none"> <li>Calibrate testing and monitoring equipment</li> <li>Measure sprinkler performance, water flow rates and pressures</li> <li>Measure outlet pressure, flow rate and energy use</li> </ul>
Navigate the world of work	<ul style="list-style-type: none"> <li>Recognise and follow workplace requirements, including safety requirements, associated with own role and area of responsibility</li> </ul>
Interact with others	<ul style="list-style-type: none"> <li>Use appropriate language and communication skills to disseminate information about system damage and blockages</li> </ul>

<b>Unit Mapping Information</b>			
<b>Code and title current version</b>	<b>Code and title previous version</b>	<b>Comments</b>	<b>Equivalence status</b>
AHCIRG335 Operate and maintain moving irrigation system Release 2	AHCIRG335 Operate and maintain moving irrigation system Release 1	Minor changes to performance criteria and foundation skills	Equivalent unit

<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72">https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72</a>
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<b>TITLE</b>	<b>Assessment requirements for AHCIRG335 Operate and maintain moving irrigation system</b>
<b>Performance Evidence</b>	
<p>An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.</p> <p>There must be evidence that the individual has operated and maintained moving irrigation systems on at least one occasion and has:</p> <ul style="list-style-type: none"> <li>• changed engine oil and filter</li> <li>• checked all bolts for correct torques</li> <li>• checked for malfunctioning sprinklers</li> <li>• checked injection pump and safety equipment operation</li> <li>• completed regular and end of season maintenance tasks</li> <li>• fitted control panel and wheels</li> <li>• greased drive shafts on pump and motor</li> <li>• inspected lift base and arms for any stress marks or cracks</li> <li>• measured and interpreted flow rates and pressures</li> <li>• monitored system effectiveness</li> <li>• operated pressure and flow testing equipment</li> <li>• read and followed operations manuals and irrigation schedules</li> <li>• shut down, cleaned equipment and disposed of waste</li> <li>• start-up system and carried out operational checks</li> <li>• taken and recorded measurements of output and efficiency</li> <li>• tensioned span pipes with V-jack trusses</li> <li>• used control systems.</li> </ul>	
<b>Knowledge Evidence</b>	
<p>An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:</p> <ul style="list-style-type: none"> <li>• safe working practices applicable to operating and maintaining moving irrigation systems</li> <li>• calibration and testing equipment operation and maintenance manual and manufacturer specifications</li> <li>• behaviour of water on varying terrain and soil types</li> <li>• calculations used when installing irrigation systems</li> <li>• common operational and maintenance problems</li> <li>• components of a moving sprinkler irrigation system and their maintenance requirements</li> <li>• installing a moving sprinkler irrigation</li> <li>• irrigation methods for moving sprinkler systems</li> <li>• maintenance requirements for moving sprinkler systems</li> <li>• monitoring soil compaction and drainage</li> <li>• moving sprinkler irrigation maintenance</li> <li>• pump used in moving sprinkler irrigation systems and their operation</li> <li>• shutdown sequence</li> <li>• soil water retention testing techniques</li> <li>• soil, plant and water relationships</li> <li>• water quality and water filtration techniques</li> <li>• water requirements of plants and crops consistent with sound environmental management.</li> </ul>	
<b>Assessment Conditions</b>	
<p>Assessment of skills must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>• physical conditions: <ul style="list-style-type: none"> <li>• a workplace setting or an environment that accurately represents workplace conditions</li> </ul> </li> <li>• resources, equipment and materials: <ul style="list-style-type: none"> <li>• work instructions and workplace procedures applicable to operating and maintaining moving irrigation systems</li> <li>• moving irrigation system materials, tools and equipment</li> <li>• personal protective equipment applicable to operating and maintaining moving irrigation systems</li> </ul> </li> </ul>	

### Assessment Conditions

- specifications:
  - calibration and testing equipment operation and maintenance manual and manufacturer specifications
- timeframes:
  - according to job requirements.

Assessors of this unit must satisfy the requirements of assessors in applicable vocational education and training, legislation, frameworks and/or standards.

### Links

Companion Volumes, including Implementation Guides, are available at VETNet:  
<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>