

**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.

AHCIRG309	Install irrigation pumps
<b>Application</b>	<p>This unit of competency describes the skills and knowledge required plan and sequence installation tasks, source, install and commission pump and flow control components and complete irrigation pump installation.</p> <p>The unit applies to individuals who install irrigation pumps 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. Plan and sequence installation tasks from instructions	1.1 Obtain drawings and specifications 1.2 Plan and sequence tasks 1.3 Select required tools and equipment and check for safe operation
2. Source irrigation system requirements	2.1 Determine location of pump 2.2 Identify pump base requirements 2.3 Identify, order and collect materials and equipment 2.4 Check materials and equipment for acceptable condition and compliance
3. Install and commission pumping and flow control components	3.1 Set out and construct pump base 3.2 Install pump and pump controls 3.3 Connect suction and discharge lines and flow control devices 3.4 Connect delivery and distribution components to pump 3.5 Conduct pressure testing of pumping system 3.6 Test pump
4. Complete work	4.1 Clear work area and dispose of, reuse or recycle materials 4.2 Clean, check, maintain and store tools and equipment 4.3 Restore work site to meet environmental requirements 4.4 Complete documentation

<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 pump installation and commissioning activities</li> </ul>
Numeracy skills	<ul style="list-style-type: none"> <li>Measure pump base area</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>

<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>
AHCIRG309 Install irrigation pumps Release 2	AHCIRG309 Install irrigation pumps 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>

<b>TITLE</b>	<b>Assessment requirements for AHCIRG309 Install irrigation pumps</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 installed irrigation pumps on at least one occasion and has:</p> <ul style="list-style-type: none"> <li>• followed plans, charts and instructions</li> <li>• handled materials safely</li> <li>• identified and responded to operational problems</li> <li>• matched pump output and flow rate to pipe diameter</li> <li>• monitored the performance of valves</li> <li>• opened and closed valves</li> <li>• organised equipment and materials for installation work</li> <li>• performed work-related calculations</li> <li>• positioned pumps and valves</li> <li>• primed and operated pumps</li> <li>• set out and prepared the site</li> <li>• used power tools and hand tools</li> <li>• welded both poly and steel.</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>• advantages and disadvantages of each pump type</li> <li>• automatic pump switches including timers, pressure switches, irrigation controllers and flow switches</li> <li>• basic principles of hydraulics (flow vs. pressure), energy loss due to friction</li> <li>• characteristics and application of different valves, pipes and fittings including fixing and joining techniques and methods</li> <li>• discharge and flow rates</li> <li>• impellers, rotors, stators</li> <li>• installation procedures for irrigation pumps</li> <li>• properties of water including pressure and flow rates</li> <li>• pump components and their principles of operation</li> <li>• pump gauges and controls</li> <li>• pump performance and pressure testing</li> <li>• servicing requirements for pumps</li> <li>• types of pumps and their application in irrigation, such as centrifugal, vertical turbine, submersible and propeller</li> <li>• types of valves</li> <li>• types of pumps suitable as booster and floating pumps.</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 installing irrigation pumps</li> <li>• irrigation pump operation and maintenance manual</li> <li>• irrigation pump installation equipment</li> <li>• irrigation pump installation tools and equipment and procedures</li> <li>• personal protective equipment applicable to installing irrigation pumps</li> </ul> </li> <li>• specifications: <ul style="list-style-type: none"> <li>• recording procedures</li> </ul> </li> <li>• timeframes:</li> </ul>	

<b>Assessment Conditions</b>
------------------------------

- |  |
|--|
| <ul style="list-style-type: none"><li>• according to job requirements.</li></ul> |
|--|

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

<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>
---

DRAFT