



Australian Government

AHCIRG309 Install irrigation pumps

Release: 1

AHCIRG309 Install irrigation pumps

Modification History

Release Number	TP Version	Comments
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to install and commission irrigation pumps.

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. Plan and sequence installation tasks from instructions	1.1 Obtain drawings and specifications 1.2 Plan and sequence tasks 1.3 Select tools and equipment and check for serviceability
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

Element	Performance criteria
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

Foundation Skills

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

Range of Conditions

Unit Mapping Information

This unit is equivalent to AHCIRG309A Interpret and apply instructions to install pumps.

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 AHCIRG309 Install irrigation pumps

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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.

The candidate must provide evidence that they can:

- follow plans, charts and instructions
- handle materials safely
- identify and respond to operational problems
- match pump output and flow rate to pipe diameter
- monitor the performance of valves
- open and close valves
- organise equipment and materials for installation work
- perform work-related calculations
- position pumps and valves
- prime and operate pumps
- set out and prepare the site
- use power tools and hand tools
- weld in both poly and steel

Knowledge Evidence

The candidate must explain:

- advantages and disadvantages of each pump type
- automatic pump switches including timers, pressure switches, irrigation controllers and flow switches
- basic principles of hydraulics (flow vs. pressure), energy loss due to friction
- characteristics and application of different valves, pipes and fittings including fixing and joining techniques and methods
- discharge and flow rates
- impellers, rotors, stators
- installation procedures for irrigation pumps

- properties of water including pressure and flow rates
- pump components and their principles of operation
- pump gauges and controls
- pump performance and pressure testing
- servicing requirements for pumps
- types of pumps and their application in irrigation, such as centrifugal, vertical turbine, submersible and propeller
- types of valves
- types suitable as booster and floating pumps

Assessment Conditions

Assessors must satisfy current standards for RTOs.

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