



Australian Government

Department of Education, Employment and Workplace Relations

AHCIRG313A Install moving sprinkler irrigation components

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This Unit covers the process of installing movable sprinkler irrigation systems and defines the standard required to: organise resources for installation work; set out and prepare site; assemble water distribution, pumping, and locomotion components; complete installation work; and commission sprinkler irrigation systems.

Application of the Unit

This Unit applies to skilled workers in the irrigation servicing, food and fibre production and amenity horticulture industries, and is likely to be carried out under routine supervision within enterprise guidelines.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This Unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Organise resources for installation of <i>moving sprinkler irrigation systems</i>	1.1 Materials, tools, equipment and machinery are selected according to the irrigation system design requirements and enterprise work procedures 1.2 The construction site for the irrigation system and construction method is identified according to the site and irrigation system plans and enterprise work procedures 1.3 Parts and equipment delivered to site are checked according to system drawings and specifications 1.4 Pre-operational and safety checks are carried out on tools, equipment and machinery according to manufacturer specifications and enterprise work procedures 1.5 Occupational Health and Safety (OHS) hazards are identified, risks assessed, controls implemented and reported to the supervisor 1.6 Suitable safety and personal protective equipment (PPE) are selected, used and maintained 1.7 Water supply is checked to ensure that it is compatible with system specifications
2 Set out and prepare site	2.1 Measurement and marking out of irrigation lines are consistent with the plan 2.2 Trenches, where constructed, are at the specified depth without damage to services, facilities, features and established plants 2.3 Equipment operation and work practices conform to enterprise and legislative OHS requirements 2.4 Regulations and legislation relevant to the situation are observed 2.5 Work practices reflect sustainable principles and respond to local community requirements
3 Assemble spans	3.1 Span pipes with correctly tensioned bolts are joined 3.2 Vjack trusses in sequence to bow the span are connected 3.3 Goose necks and hose connectors are connected 3.4 Pre-cut drop hoses and connect sprinklers are fitted
4 Complete assembly of <i>moving sprinkler components</i>	4.1 Sprinklers, pressure regulators and hose directors are assembled 4.2 Gear box and control panel are fitted 4.3 Wheels are fitted and tensioned
5 Complete installation work	5.1 Earthworks are finished off to plan specifications and enterprise work procedures 5.2 The system configuration and capacity matches the installation plan 5.3 The site is restored and waste material is removed from the site and disposed of in an environmentally aware and safe

- manner according to enterprise work procedures
- 5.4 Tools, equipment and machinery are cleaned, maintained and stored according to enterprise work procedures
- 6 Assist in commissioning a moving sprinkler irrigation system
- 6.1 Pumping system is connected
- 6.2 Start-up sequence is in accordance with operations manual
- 6.3 System is flushed as required
- 6.4 Operating faults are identified and corrective actions taken according to the operations manual
- 6.5 Testing and monitoring equipment are calibrated to manufacturer specifications
- 6.6 Work outcomes are recorded or reported to the supervisor according to enterprise work procedures

Required Skills and Knowledge

This section describes the skills and knowledge required for this Unit.

Required skills include:

Ability to:

- identify hazards and implement safe work procedures
- organise resources for installation work
- set out and prepare site
- install movable sprinkler irrigation components
- tension span pipes with Vjack trusses
- fit control panel and wheels
- complete installation work
- perform system commissioning tasks
- implement and follow relevant enterprise OHS and environmental policies and procedures
- use literacy skills to read, interpret and follow organisational policies and procedures, follow sequenced written instructions, record information collected accurately and legibly, and select and apply procedures for a range of tasks
- use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning techniques, active listening, clarifying information and consulting with supervisors as required
- use numeracy skills to estimate, calculate and record routine workplace measures
- use interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge includes:

Knowledge of:

- methods and techniques of moving sprinkler irrigation
- components of a moving sprinkler irrigation system
- characteristics and operation of each component
- operation of pumps and water flow rates
- soil characteristics
- behaviour of water on varying terrain and soil types
- soil water retention testing techniques
- water quality and water filtration techniques
- calculations for installing irrigation systems
- environmental impacts of installing irrigation systems
- OHS legislation and enterprise OHS procedures.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this Unit

The evidence required to demonstrate competency in this Unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following:

- organise resources for installation work
- set out and prepare site
- install spans and tension correctly
- assemble water distribution, pumping, and locomotion components
- complete installation work
- commission a moving sprinkler irrigation system.

Context of and specific resources for assessment

Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.

Range Statement

The range statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Moving sprinkler irrigation systems</i> may include:	any systems that use specifically hard and soft reel self-travelling irrigators, lateral move systems and centre pivots. Moving sprinkler systems do not include movable sprinkler systems such as K-Line.
<i>Moving sprinkler system components</i> may include:	• pipes • joints • valves • sprinklers • Vjack trusses • span pipes • pressure regulators • hose directors • gear box • control panel • wheels.

Unit Sector(s)

Irrigation