



Australian Government

Department of Education, Employment and Workplace Relations

MSARVS201A Install LP gas systems in a recreational vehicle

Revision Number: 1

MSARVS201A Install LP gas systems in a recreational vehicle

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the skills and knowledge required to determine LP gas system requirements, and install and commission LP gas systems in a recreational vehicle. It applies to those involved in the manufacture of recreational vehicles in various types of enterprises. This unit is based on and equivalent <i>CPCPGS3006A Install LPG systems in caravans, mobile homes, water craft and mobile workplaces</i> .
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Application of the Unit

Application of the unit	This unit of competency applies to those involved in recreational vehicle manufacturing. It may be applied in different workplaces, sectors and circumstances and applies only where relevant state/territory licensing requirements permit the installation of LP gas systems in a recreational vehicle. Licensing arrangements required by state/territory and national authorities may vary. This unit requires the determination of requirements, the installation and commissioning of LP gas systems with an operating pressure not exceeding 2.75 kPa in a recreational vehicle.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine LP gas system requirements	1.1. Use appropriate personal protective equipment and read and interpret any safety information relevant to the job 1.2. Obtain and interpret plans/specifications 1.3. Identify and adhere to quality assurance requirements for enterprise operations 1.4. Determine gas load/design requirements from design drawing or specifications 1.5. Calculate storage capacity using recognised formulae or tables to ensure adequacy for the required load and compliance with standards and job requirements 1.6. Identify appropriate regulator and piping in terms of size, connection sizes and capacity in accordance with standards and enterprise requirements 1.7. Check that piping selected provides minimum inlet pressure to each appliance and is appropriate for the dimensions and loads given in the design drawings or instructions 1.8. Identify location of cylinders, appliances and piping set-out according to job requirements, standards and enterprise requirements 1.9. Estimate quantity of piping, components and fittings in accordance with standards and enterprise requirements 1.10. Check that type of system selected (one or two cylinders) is appropriate for given design information
2. Prepare for installation	2.1. Estimate required materials, equipment, appliances and cylinders from design drawing or on-site dimensions, and check for compliance with docket/order form and confirm acceptable condition 2.2. Identify and select appropriate tools and equipment for the installation 2.3. Use appropriate personal protective equipment, and read and interpret any safety information relevant to the job 2.4. Set out the piping system in accordance with design drawing or instructions, standards and enterprise requirements
3. Install the system	3.1. Install cylinders, regulators, associated pipework,

ELEMENT	PERFORMANCE CRITERIA
	appliances and fixings, including ventilation, in accordance with job requirements, standards and enterprise procedures 3.2. Locate and fit consumer instruction plates and labels in accordance with regulatory requirements, standards and enterprise requirements
4. Test the system	4.1. Adjust regulator to provide flow pressure in accordance with standards and enterprise requirements 4.2. Select test apparatus appropriate for the work 4.3. Test the system, including ventilation, in accordance with standards and enterprise requirements 4.4. Adjust the system to provide the required flow pressure in accordance with standards and enterprise requirements 4.5. Record test data in the format required by relevant regulatory and enterprise requirements
5. Finalise the job	5.1. Assess job against the requirements of the job specification 5.2. Conduct a final inspection in accordance with enterprise quality standards and requirements 5.3. Complete any paperwork required in accordance with enterprise requirements 5.4. Complete required clean-up procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills include:

- reading and interpreting instructions and specifications
- using and selecting tools and equipment
- using and caring of tools and equipment, including portable and fixed power tools
- planning and organising work activities
- maintaining work area

Required knowledge

Required knowledge includes:

- components and products manufactured by the enterprise
- general duty of care requirements
- properties of gas, gas and electrical safety, combustion principles, pressure and flow rates, and types of systems
- relevant statutory and authority requirements related to the installation and testing of gas systems
- the International System of Units (SI) and calculation of storage capacity
- installation procedures and processes
- sources of information, including the appropriate standards
- the materials requirements determination process
- procedures for installing and commissioning gas systems in recreational vehicles
- occupational health and safety (OHS) requirements, including staff responsibilities, when working with gas, emergency procedures in case of an LP gas leak, LP gas material safety data sheets (MSDS), safety when working with fumes, and the selection and use of personal protective equipment
- signage for hazardous materials and chemicals
- working drawings of components manufactured by the enterprise

Evidence Guide

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 of assessment

Evidence of the following is critical:

- installing an LP gas container, piping and two (2) appliances (stove and refrigerator) in a recreational vehicle
- completing work to specifications, plans and drawings
- complying with regulations, standards and enterprise quality procedures and processes
- complying with all safety and OHS requirements, including use of personal protective equipment
- effectively communicating with others in the team.

Context of assessment and resource implications

Assessment must ensure:

- demonstration of the installation of a gas container, piping and a minimum of two (2) appliances for a recreational vehicle
- demonstration of skills within a suitable workshop with appropriate tools, equipment and materials, and access to appropriate standards.

Guidance information for assessment

Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

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.

Recreational vehicles	Recreational vehicles may include: • caravan • pop-top caravan • camper trailer • tent trailer • 5th wheeler • slide-on camper • campervan
Manufacturing enterprise	The manufacturing enterprise may include: • sole proprietor • subcontractor • subcontracting manufacturer • employer/manufacturer
The LP gas system	The LP gas system includes: • cylinder (one or two) • regulator • piping • appliances and fixings • air supply • ventilation
Quality assurance	Quality assurance requirements include: • International Standards Organisation (ISO) • internal enterprise quality assurance policy and risk management strategy • Environment Protection Authority (EPA) • AS 5601:2004 Gas installations • AS/NZ 1596:2008 The storage and handling of LP gas • site safety plans • enterprise operations and procedures • relevant industry codes of practice, such as

RANGE STATEMENT	
	those issued by the Recreational Vehicle Manufacturer's Association of Australia (RVMAA)
Tools and equipment	Tools and equipment may include: • hacksaws • power cutting/grinding tools • measuring equipment • wrenches and spanners • files • flaring tools • silver brazing equipment • testing equipment • lifting/load shifting equipment, including trolleys, rollers, forklifts, blocks, hoists and jacks
Materials	Materials must comply with job specifications and appropriate standards for installation of LP gas systems and include: • gas operated appliances • gas regulators • gas cylinders • copper tubing • stainless steel • non-metallic hose assemblies • fitting/fixing materials
Occupational health and safety (OHS) requirements	OHS requirements are to be in accordance with state/territory legislation and regulations and include: • safe workshop environment/worksite work practices • safe use of tools and equipment • safe handling of materials • hazard control and hazardous materials and substances • use of personal protective equipment
Personal protective equipment	Personal protective equipment may include: • overalls • boots • hard hat/cap

RANGE STATEMENT	
	• safety glasses/goggles • gloves • ear plugs/muffs • face masks/respirators
Clean-up procedures	Clean-up procedures may include: • cleaning working surfaces and areas • cleaning and storing all tools and equipment • disposing of waste materials correctly
Sources of information	Sources of information may include: • job instructions, signage, plans, specifications, drawings, MSDS and diagrams • safe work procedures relating to the installation of LP gas systems for a recreational vehicle • regulatory/legislative requirements, pertaining to plumbing and gas fitting regulations, building codes, OHS and environmental requirements • enterprise specifications and instructions • recognised formulae or tables accepted by the regulatory authority • instructions issued by authorised enterprise personnel • relevant standards, such as: • AS 5601:2004 Gas installations • AS/NZ 1596:2008 The storage and handling of LP gas

Unit Sector(s)

Unit sector	
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		