

CPPSPS4005 Install, service and repair swimming pool and spa heating systems

Application

This unit specifies the skills and knowledge required to install, service, test and repair swimming pool and spa heating systems.

This unit is suitable for swimming pool and spa technicians who work independently using specialised knowledge and skills to solve predictable and unpredictable problems in swimming pool and spa heating systems in accordance with regulatory requirements in:

- private swimming pools and spas
- public swimming pools and spas, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

All work must be carried out to comply with workplace procedures, in accordance with state/territory work health and safety (WHS), regulations and legislation that applies to the workplace. Legislative and regulatory requirements apply to swimming pool and spa technicians but vary according to state/territory jurisdictions. Users must check with the relevant regulatory authority before delivery.

Service technicians are not permitted to undertake any installation, replacement, maintenance and repair functions that are restricted to licensed trades or occupations.

Prerequisite Unit

Nil.

Elements and Performance Criteria

1. Assess job requirements.	1.1 Identify relevant Australian standards and regulatory, manufacturer and enterprise requirements related to heating systems. 1.2 Review work instructions and confirm installation or repair activities required. 1.3 Determine heating type according to client and site requirements. 1.4 Identify hazards and assess and control risks in the work area in line with WHS and enterprise requirements.
2. Install and test swimming pool or spa heating system and components.	2.1 Apply relevant regulations, Australian standards and manufacturer, client and enterprise requirements throughout swimming pool or spa heating system or component installation. 2.2 Fit heating system or component to swimming pool or spa. 2.3 Coordinate installation work with relevant licensed personnel. 2.4 Test and commission swimming pool or spa heating system or component.
3. Maintain swimming pool or spa heating systems.	3.1 Identify service and maintenance requirements from manufacturer instructions in line with enterprise requirements. 3.2 Check and fit replacement components in line with manufacturer specifications.

	3.3	Service swimming pool or spa heating system in line with WHS, manufacturer instructions and enterprise procedures.
4. Resolve faults in swimming pool or spa heating systems.	4.1	Apply system knowledge and technical resources to analyse faults and defects.
	4.2	Diagnose faults that are not covered fully by maintenance manual fault diagnosis guides.
	4.3	Seek advice and repair work assistance from relevant personnel for activities outside scope of own expertise or licensing.
	4.4	Apply WHS and sustainability practices related to materials, equipment, and the surrounding environment during fault finding and repair or replacement activities.
	4.5	Repair or replace components in line with manufacturer instructions, and regulatory, client and enterprise requirements.
	4.6	Test and commission swimming pool or spa heating system in line with specifications.
5. Complete installation and repair.	5.1	Reinstate work area and swimming pool or spa heating system to operational condition.
	5.2	Document and report procedures undertaken, and system or component malfunctions, faults, wear or damage.
	5.3	Advise client of operational and maintenance requirements of the heating system in line with enterprise requirements.
	5.4	Advise appropriate persons of non-compliance of swimming pool or spa and environs with safety and regulations.

Foundation Skills

Candidates require:

- reading skills to source and interpret technical information, regulations, standards and codes of practice
- oral communication skills to interact with clients from diverse social, economic and cultural backgrounds
- numeracy skills to perform calculations related to troubleshooting faults.

Unit Mapping Information

Supersedes and equivalent to CPPSPS4005A Install, service and repair swimming pool and spa heating systems.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSPS4005

Install, service and repair swimming pool and spa heating systems

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by safely:

- installing and testing a swimming pool or spa water heating system and a component in a minimum of two swimming pools and one spa in line with regulatory requirements
- applying technical knowledge and advanced diagnostic skills to identify and repair one heating fault in a swimming pool and one fault in a spa in line with regulatory requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- key requirements of relevant commonwealth, state or territory, and local government regulations and Australian standards related to swimming pool and spa servicing:
 - work health and safety
 - public health
 - dangerous goods
 - environment and waste disposal
 - Australian Competition and Consumer Commission product safety guidelines
 - electrical and plumbing regulations related to own work
- enterprise policies and procedures:
 - compliance with regulations
 - maintenance of knowledge of regulations
 - roles, responsibilities and limitations of own role
- work instructions:
 - site requirements, including access
 - personal protective clothing and equipment requirements
 - equipment and systems location information
 - system information
 - warranties and guarantees
- hazards associated with heated water in swimming pools and spas
- energy efficiency:
 - energy consumption of different heating systems
 - ways of maximising energy efficiency of swimming pool and spa heating systems
- swimming pool and spa heating system:
 - purpose and operating principles
 - types and components:
 - heat pump or exchanger
 - gas (fossil fuel)
 - solar

- electric
- determining heating requirements:
 - sizing
 - temperature needed
 - time of year pool or spa used
 - pool or spa measurements
 - solar roof space availability and access
 - gas fitting regulations
 - heat pump electrical needs
 - impact of heat blanket
 - purchase, installation and running costs
 - Coefficient of Performance (COP)
- installation requirements:
 - venting and air circulation
 - installation before chemical or salt chlorination equipment
 - correct pipework and flow rates
 - bypass valves for servicing and water flow adjustments
 - available support staff to safely install heater
- operation, maintenance and servicing of heating systems:
 - common faults
 - inspection and cleaning
 - manufacturer requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be undertaken in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- relevant manufacturer instructions, regulations, codes, standards and enterprise policies and procedures
- relevant tools and equipment, personal protection equipment (PPE)
- technical references with current information on swimming pool and spa heating systems:
 - operating principles
 - components
 - faults and troubleshooting.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>