



Australian Government

DEFWDV030 Employ power tools in an underwater environment

Release: 1

DEFWDV030 Employ power tools in an underwater environment

Modification History

Release 1. This is the first release of this unit of competency in the DEF Defence Training Package.

Application

This unit describes the performance outcomes, skills and knowledge required to use power tools in an underwater environment.

It includes operating a compressor; selecting appropriate tools for work task; inspecting them for serviceability prior, during and post-activity ensuring tools are secured on own body throughout dive; employing tools during work task; recovering waste arising from work task; maintaining and storing tools for ongoing use.

This unit relates, in part, to existing standards in the Australian Diver Accreditation Scheme (ADAS).

This unit applies to persons working as Defence divers but is applicable to all individuals who work in this field.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies, dive plan and procedures must be consulted and adhered to.

Persons undertaking this unit work independently and perform specific tasks in a range of contexts that could be unpredictable.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

Defence Work Diving.

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Prepare to use power tools under water

- 1.1 Determine specific requirements for power tools in accordance with work task, worksite and work object requirements
- 1.2 Assess access obstructions and other hazards, and manage risks as required
- 1.3 Develop a work plan consistent with dive plan
- 1.4 Select and inspect power tools, protective equipment and compressor to meet task requirements
- 1.5 Secure power tools, compressor, and associated leads and hoses for transport to and from dive site

2 Operate power tools under water

- 2.1 Secure power tools on self during dive for ease of accessibility and lack of interference with mobility and dive equipment
- 2.2 Determine safe route for leads and hoses for dive activity
- 2.3 Determine work safe area and location and confirm safety of divers prior to commencing work tasks
- 2.4 Operate power tools under water ensuring management of associated hazards
- 2.5 Conduct operator maintenance at worksite on power tools, leads and hoses, as required
- 2.6 Disconnect power tools temporarily and render safe to evaluate work task in accordance with operational procedures

3 Operate compressor

- 3.1 Perform pre-start checks and connect hoses and leads in accordance with manufacturer instructions
- 3.2 Develop pressure gradually without surging and stabilise compressor to establish required output
- 3.3 Conduct routine operational checks, identify faults and report potential defects in accordance with organisational policy and procedures

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| | 3.4 | Shut down compressor or conduct an emergency shutdown procedure in accordance with dive plan |
| 4 Conclude power tool operations | 4.1 | Minimise environmental impact arising from use of power tools and recover waste products in accordance with operational procedures |
| | 4.2 | Undertake post-dive equipment and compressor serviceability checks in accordance with manufacturer specifications and report defects, as required, in accordance with organisational procedures |
| | 4.3 | Complete equipment logbooks and recording requirements, as required. |

Foundation Skills

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

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the DEF Defence Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to DEFWDV010 Employ power tools in an underwater environment.

Links

Companion Volume Implementation Guides are found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6bdbab1e-11ed-4bc9-9cba-9e1a55d4e4a9>

Assessment Requirements for DEFWDV030 Employ power tools in an underwater environment

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and include:

- applying operating techniques relevant to diving set in use
- applying relevant industry standards, and organisational policies and procedures
- maintaining records according to organisational policies and procedures
- operating a pneumatic or hydraulic compressor, including one or more of the following:
 - adjusting output power
 - connecting hoses and leads
 - connecting to power supply
 - switching compressor on and off
- operating any four of the following power tools on one or more dive occasion:
 - angle grinder, including cleaning and smoothing a fillet, chamfering a 12 mm plate and changing disc on site
 - chainsaw, including cutting wooden beams 230 mm x 100 mm
 - disc cutter, including cutting steel or concrete and changing disc on site
 - drill, including drilling a hole in a steel plate and changing bits on site
 - jack hammer, including breaking concrete
 - power wrench, including changing sockets on site, tightening and loosening nuts
 - scrubber, including cleaning 2 m² of horizontal and vertical surface
- wearing of diving set

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and include knowledge of:

- self-contained underwater breathing apparatus (SCUBA), surface-supplied and/or closed-circuit breathing apparatus (CCBA) operating techniques
- dive equipment
- dive physics
- dive physiology and medicine, including:

- compression illnesses
- decompression illnesses
- heat and cold illnesses
- diving descent and ascent techniques
- equipment logbook recording requirements
- general diving safety awareness, including:
 - diving in harbours
 - diving in tidal waters, currents and tides
 - diving on and/or near a ship's bottom
 - entrapment/foul lines
 - lost/separated
 - marine animal threats
 - pollution/weeds
 - working in confined spaces
- oceanography
- power tool equipment, compressor, hoses and leads for the power tools operated, including:
 - causes and remedies for surging
 - control of output
 - effects of temperature and compression ratio pressure/temperature relationships and effects on condensation (e.g. moisture and/or breathing gas)
 - methods of resolving problems
 - physics of operation
 - principles of operation
- organisational policies and procedures
- relevant industry standards
- relevant workplace hazards and hazards of operating power tools in an underwater environment
- use of compressor
- use of power tools.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy

requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation, including legislation, regulations, codes of practice, workplace procedures and operation manuals
- documentation specific to the dive operation, including dive plan and risk assessment
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6bdbab1e-11ed-4bc9-9cba-9e1a55d4e4a9>