



Australian Government

FWPSAW3218 Replace tungsten tips

Release: 2

FWPSAW3218 Replace tungsten tips

Modification History

Release	Comments
Release 2	This version released with FWP Forest and Wood Products Training Package Version 3.0.
Release 1	This version released with FWP Forest and Wood Products Training Package Version 2.0.

Application

This unit of competency describes the outcomes required to remove worn tungsten tips from saw blades and to braze, anneal, clean and prepare replacement tips for grinding and return to service. Work is completed in a forest products factory setting.

The unit applies to Sawdoctor, Saw Repairer.

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

Pre-requisite Unit

Nil

Unit Sector

Sawmilling and Processing

Elements and Performance Criteria

Element	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.</i>
1. Prepare for replacement	1.1 Review work order and where required check with appropriate personnel. 1.2 Select appropriate repair, maintenance and personal protective equipment and check for operational effectiveness in line with manufacturer's recommendations.

	1.3 Plan replacement process in line with work order.
2. Remove worn tips	2.1 Follow organisational safety procedures throughout all maintenance and repair processes. 2.2 Clean foreign matter from saw and check for defects. 2.3 Identify and mark broken tips. 2.4 Remove broken tips minimising damage to the tooth seat and dispose of in line with environmental protection practices. 2.5 Repair tooth seats to specified tolerance and dimensions.
3. Replace tips	3.1 Set up saw in brazing jig in line with manufacturer's instructions. 3.2 Select brazing material and suitable technique for application and heat control. 3.3 Select appropriate replacement tip and braze into position. 3.4 Trial weld one tip and adjust to confirm weld pressure, current temperature and annealing settings against specifications. 3.5 Segregate and dispose of tips with sub-standard welds in line with environmental protection practices. 3.6 Set manual or automatic feeds in line with number of tips to be welded. 3.7 Complete tip replacement regularly; check and adjust annealing process temperatures to keep within specified range. 3.8 Remove surplus brazing material from saw surfaces and dress tip faces for sharpening. 3.9 Identify routine processing and equipment faults and resolve or report to appropriate personnel.

Foundation Skills

This section describes those core and employment skills that are essential to performance and are not explicit in the performance criteria.

Numeracy skills to:	- complete routine calculations to: - measure amounts of brazing materials - select temperatures for annealing process - estimate tolerances.
Oral communication skills to:	ask open and closed probe questions and actively listen to clarify contents of work orders

Reading skills to:	- interpret documents: - workplace health and safety and other organisational procedures - work orders - manufacturers' instructions and maintenance recommendations.
Writing skills to:	complete accurate basic records of processing and equipment faults.
Planning and organising skills to:	efficiently and logically sequence stages of preparation and repair work using work order to guide activities.
Problem-solving skills to:	- assess tip condition and rectify faults through correct welding process - identify and dispose of tips with sub-standard welds. - recognise faulty equipment and resolve by reporting or rectifying.
Technology skills to:	- select and use appropriate repair, maintenance and personal protective equipment for welding tungsten tips - efficiently and safely replace tungsten tips.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPSAW3218 Replace tungsten tips Release 2	FWPSAW3218 Replace tungsten tips Release 1	Minor typographical errors corrected.	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>

Assessment Requirements for FWPSAW3218 Replace tungsten tips

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Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. If a specific volume or frequency is not stated below, then evidence must be provided that the following requirements have been performed on at least one occasion:

- follow organisational policies and procedures relevant to replacing tungsten tips
- replace tungsten tips in line with the work order and within prescribed organisational requirements
- remove and replace tungsten tips from equipment
- remove and assess the condition of tungsten tips in line with standard operating procedures.

Knowledge Evidence

A person competent in this unit must be able to demonstrate knowledge of:

- purpose, features and operation of saws for which tungsten tips are replaced:
 - band saws
 - circular saws
 - gang saws
- features and names of different parts of saw blades
- purpose, features and operation of tools and equipment used to replace tungsten tips:
 - brazing equipment and brazing material
 - brazing jigs
- methods for:
 - removing saw blades from saws
 - assessing saw blade condition

- removing tungsten tips from saw blades
- brazing new tungsten tips onto the tooth face or tooth seat
- annealing processes and temperatures for tungsten tips and saw blades
- appropriate tolerances for weld deposits and replacement tip sizes
- characteristics of metal used in saw blades and effects of brazing
- organisational policies and procedures specific to replacing tungsten tips:
 - workplace health and safety with particular emphasis on equipment lock out and use of personal protective equipment
 - communication reporting lines
 - recording and reporting processing and equipment faults
- environmental protection practices for repairing and maintaining tools and equipment in forest products factory settings:
 - reducing water and energy use
 - cleaning plant, tools and equipment
 - disposing of, recycling and reusing materials.

Assessment Conditions

The following resources must be made available:

- tools and equipment used to replace tungsten tips:
 - brazing equipment
 - brazing jigs
- one or more of the following types of saws to be repaired and maintained:
 - band saws
 - circular saws
 - gang saws
- tungsten tips
- brazing material:
 - silver braze (silver solder)
 - special shock absorbing shim
 - flux in the form of a liquid or paste
- personal protective equipment suitable for replacing tungsten tips
- manufacturers' instructions for use, repair and maintenance of equipment
- work order for repair and maintenance activities with specific instructions for replacing tungsten tips in specified equipment
- documents, spreadsheets and commonly used proformas for recording processing and equipment faults
- relevant personnel for the purposes of communicating information
- organisational policies and procedures for replacing tungsten tips.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessor requirements

Assessors must:

- hold the appropriate assessor competency standards as outlined in regulations; and
- be able to demonstrate vocational competencies at least to the level being assessed; and
- be able to demonstrate how they are continuing to develop their VET knowledge and skills as well as maintaining their industry currency and assessor competence.

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