



Australian Government

FWPSAW3247 Replace tungsten tips

Release: 1

FWPSAW3247 Replace tungsten tips

Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 5.0.

Application

This unit of competency describes the skills and knowledge required to remove worn or damaged tungsten tips from circular saw blades, and braze, clean and prepare replacement tips for grinding and return to service.

The unit applies to individuals who replace tungsten tips in a saw technician workshop or timber processing facility.

All work must be carried out to comply with workplace procedures, according to state/territory health and safety regulations, legislation and standards that apply to the workplace.

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

Pre-requisite Unit

Nil

Unit Sector

Sawmilling and Processing (SAW)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for replacement	1.1 Review work order to determine job requirements and, where required, seek clarification from appropriate personnel 1.2 Review workplace health and safety procedures, including the use of personal protective equipment, equipment lock-out and safe manual handling techniques

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Identify, assess and take actions to mitigate risks and hazards associated with replacing tungsten tips 1.4 Identify workplace environmental protection procedures for minimising and disposing of waste material, cleaning tools and equipment, and maximising energy efficiency 1.5 Select appropriate tools and equipment, and check for operational effectiveness according to manufacturer recommendations
2. Remove worn, damaged or broken tips	2.1 Remove and replace saw blade according to manufacturer instructions 2.2 Assess saw blade condition 2.3 Clean foreign matter from saw and check for defects 2.4 Identify and mark broken tips 2.5 Remove broken tips, minimising damage to the tooth seat, and dispose of according to environmental protection practices 2.6 Repair tooth seats to specified tolerance and dimensions
3. Replace tips	3.1 Set up saw in brazing jig according to manufacturer 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 braze one tip, check tip is correctly positioned and the silver alloy has flowed evenly to both sides of the tip 3.5 Inspect and verify tip position, side clearance, and joint quality objectives have been achieved 3.6 Set manual or automatic feeds according to number of tips to be brazed 3.7 Identify routine processing and equipment faults, and resolve or report to appropriate personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Numeracy	• Uses standard units of measurement and symbols for temperature and volume • Uses basic arithmetic skills to determine amount of brazing material required when replacing tips
Navigate the world of work	• Understands main tasks, responsibilities and boundaries of own role
Interact with others	• Uses modes of communication suitable to purpose to confirm and clarify understanding
Get the work done	• Recognises and responds to routine problems

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPSAW3247 Replace tungsten tips	FWPSAW3218 Replace tungsten tips	Renamed element; updated performance criteria; revised performance evidence for clarity; updated knowledge evidence	Equivalent unit

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>

Assessment Requirements for FWPSAW3247 Replace tungsten tips

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that, on at least one occasion, the individual has:

- followed work order and relevant workplace health and safety and environmental protection procedures
- removed worn tungsten tips from circular saw blades
- replaced tungsten tips for circular saw blades
- assessed condition of tungsten tips in line with workplace procedures.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- basic knowledge of physics of sawing, including:
 - saw blade material and properties
 - impact of timber properties on saw blades
 - direction of cut
 - forces on a blade
 - heat removal
 - saw tooth configuration
- purpose, features and operation of saws for which tungsten tips are replaced:
 - circular 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
- cleaning excess braze alloy and carbide fragments from tip seats
- lengthening or deepening tip seats to match replacement tip requirements
- selecting size and type of replacement tip
- pre-tinning new tips
- brazing new tungsten tips onto the tooth face or tooth seat
- appropriate tolerances for brazing alloy joint thickness, replacement tip sizes and side clearance objectives
- characteristics of metal used in saw blades, and effects of brazing
- types of risk and hazards and mitigation measures associated with replacing tungsten tips
- workplace procedures specific to replacing tungsten tips:
 - workplace health and safety, with particular emphasis on equipment lock-out and use of personal protective equipment (PPE)
 - communication reporting lines
 - recording and reporting processing and equipment faults
- environmental protection practices applicable to saw technician workshops or timber processing facilities:
 - reducing water and energy use
 - cleaning plant, tools and equipment
 - disposing of, recycling and reusing materials.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a saw technician workshop, timber processing facility or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - brazing equipment
 - brazing jigs
 - circular saws
 - tungsten tips
 - brazing material: silver alloy, flux in the form of a liquid or paste
 - side clearance dial indicator: Kafer Gauge
 - PPE suitable for replacing tungsten tips
- specifications:
 - documents, spreadsheets and templates for recording operation and equipment faults
 - manufacturer instructions for use, repair and maintenance of equipment
 - work order with specific instructions for replacing tungsten tips for circular saws

- workplace procedures for replacing tungsten tips.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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