



Australian Government

FWPCOT3283 Sharpen and position blades or knives in chipper, canter and reducer

Release: 1

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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 set up, sharpen and use either Babbitt or set screw processes for positioning straight and angled blades or knives in disc chippers, chipping heads, canters and reducers to process logs.

The unit applies to individuals who work as saw technicians to sharpen and position blades and knives in a 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

Common Technical (COT)

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 work	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

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	handling techniques 1.3 Identify, assess and take actions to mitigate risks and hazards associated with sharpening and setting up blades and knives for chipper, canter or reducer 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 grinding and Babbitt or set screw equipment and check for operational effectiveness
2. Assess condition and set up the blade or knife assembly	2.1 Set up chipper, canter or reducer blade or knife assembly according to workplace safety procedures and manufacturer recommendations 2.2 Remove and replace blade or knife for sharpening from chipper, canter or reducer 2.3 Assess cutting performance of blade or knife to determine sharpening requirements 2.4 Assess condition of knife holder, jig and chuck, and correct defects 2.5 Clean and secure knife holder to chuck according to workplace procedures 2.6 Select jig type and setting for the required blade or knife set-up
3. Set up grinding equipment	3.1 Clean blades or knives of excess build-up, inspect Babbitts for defects and replace where unserviceable 3.2 Set up grinding equipment for sharpening blades or knives according to workplace safety procedures and manufacturer recommendations 3.3 Select angle for sharpening blade or knife to suit its use in the machine 3.4 Set up the grinder with suitable ancillary equipment for holding knife or blade, and examine and dress grinding wheel 3.5 Select grinding wheel speed and feeds to suit blade or knife, grinding wheel material and configuration
4. Operate grinder to sharpen blades or knives	4.1 Operate grinder according to workplace safety procedures and manufacturer recommendations 4.2 Feed grinding wheel across and into cutting edge to sharpen blade

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	or knife to geometric requirements without defects or burns 4.3 Monitor grinder for operational effectiveness and apply coolant as required 4.4 Inspect blade or knife after sharpening for accuracy, and hone remaining burrs to obtain sharp cutting edge 4.5 Dispose of unserviceable and damaged blades or knives according to workplace procedures and environmental protection practices
5. Apply Babbitt to blades or knives	5.1 Apply Babbitt to blades or knives for chipper, canter or reducer according to workplace safety procedures 5.2 Inspect Babbitt to assess reconditioning requirements 5.3 Heat Babbitt material to required pouring temperature 5.4 Set up blade or knife in pouring jig to required dimensions 5.5 Pour Babbitt to minimise material waste and avoid cavities and shrinkage 5.6 Cool assembly and remove excess material to allow correct positioning in the machine
6. Adjust set screws on blades or knives	6.1 Inspect set screws and replace bent or broken screws 6.2 Adjust set screws to position knife or blade at the correct depth, and lock into position to avoid knife or blade movement 6.3 Record and report processing problems and equipment faults 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
Reading	Reads basic grinding wheel settings
Numeracy	- Completes precise calculations involving measurement of angles - Interprets machine scale to set grinding wheel down-feed for appropriate stock removal rate

Skill	Description
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
FWPCOT3283 Sharpen and position blades or knives in chipper, canter and reducer	FWPCOT3233 Sharpen and align blades and knives	Split element 5; reworded elements; revised performance criteria, performance evidence, knowledge evidence and assessment conditions; updated unit code and title to reflect changes and for compliance	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 FWPCOT3283 Sharpen and position blades or knives in chipper, canter and reducer

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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 sharpened and set up blades or knives for one or more of the following timber sawing machines:

- chipper
- canter
- reducer.

In doing the above, the individual has:

- read and clarified work order to determine job requirements
- applied workplace health and safety requirements, including the use of personal protective equipment (PPE), equipment lock-out and safe manual handling techniques
- removed and replaced blade or knife for sharpening from the designated machine
- assessed blade or knife condition
- set up and operated grinder to sharpen blades or knives
- applied Babbitt process and set screw process for positioning blades or knives in the designated machine
- recorded and reported processing problems and equipment faults to appropriate personnel.

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:

- purpose, features and operation of one of the following sawing machines for which blades and knives are sharpened:
 - chipper
 - canter
 - reducer
- fundamental blade or knife properties:

- metal from which blades and knives are made
- geometry
- features of a typical blade or knife defect:
 - burrs
 - burns
 - chips
 - splits
 - dents
- basic knowledge of physics of timber sawing:
 - blade or knife material and properties
 - impact of timber properties on blades or knives
 - direction of cut
 - forces on a blade or knife
 - heat removal
- purpose, features and operation of equipment used to sharpen and set up blades or knives:
 - grinding machines
 - grinding machine attachments
 - abrasive grinding wheels
 - Babbitt making equipment
 - set-screw equipment
- methods for:
 - removing blades or knives from machine
 - assessing blade or knife condition
 - selecting appropriate grinding wheels, diameter and material
 - cleaning blades or knives
 - sharpening blades or knives to specified requirements
 - reconditioning Babbitts and set screws
 - setting up blades or knives to specified requirements
- angles at which blades or knives are sharpened
- range of speeds at which abrasive wheels can be operated without damaging blades or knives
- coolants used in sharpening process, and impact on efficient sharpening
- types of risk and hazards and mitigation measures associated with sharpening and setting up blades and knives
- workplace procedures specific to sharpening and setting up blades and knives:
 - workplace health and safety, with particular emphasis on machine lock-out, the use of PPE and safe manual handling techniques
 - communication reporting lines
 - recording and reporting of processing problems and equipment faults
- environmental protection practices applicable to timber processing or manufacturing facilities.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a timber processing or manufacturing facility or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - grinding machines and ancillary equipment
 - abrasive grinding wheels in a variety of diameters and types
 - Babbitt making equipment
 - one or more of the following machines for which blades and knives are to be sharpened: chipper, canter, reducer
 - suitable blades or knives for sharpening
 - consumable coolant and set screws
 - PPE suitable for sharpening and aligning blades and knives
- specifications:
 - template documents for recording production output, processing problems and equipment faults
 - manufacturer instructions for use, repair and maintenance of equipment
 - work order with specific instructions for sharpening and aligning blades and knives in specified machines
 - workplace procedures for sharpening and aligning blades and knives.

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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