



Australian Government

FWPCOT3233 Sharpen and align blades and knives

Release: 1

FWPCOT3233 Sharpen and align blades and knives

Modification History

Release	Comment
1	Replaces equivalent unit FPICOT3233B Sharpen and align blades and knives, which was first released with FPI11 Forest and Forest Products Training Package Version 2.2. This is the first release of this unit in the new standards format.

Application

This unit of competency describes the outcomes required to sharpen and align straight and angled blades and knives for a variety of machines that use either babbitting or set screw processes for positioning blades and knives in disc chippers, canters, chipping heads and/or reducers. 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

Common Technical

Elements and 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 blades and knives for sharpening	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. 1.3 Plan sharpening and aligning process in line with work order.
2. Assess condition and	2.1 Follow organisational safety procedures and manufacturer's

set up blade and knife assemblies	recommendations throughout all repair and maintenance processes. 2.2 Remove blade or knife for sharpening from designated machinery. 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 in line with organisational procedures. 2.6 Select jig type and setting for required blade or knife setup.
3. Set up equipment	3.1 Clean blades or knives of excess build-up, inspect babbitts for defects and replace where unserviceable. 3.2 Select angle for sharpening blade to suit its use in specified equipment. 3.3 Set up grinder with suitable attachment for holding knife or blade and examine and dress grinding wheel. 3.4 Select grinding wheel speed and feeds to suit blade or knife, grinding wheel material and configuration.
4. Operate grinder to sharpen blades and knives	4.1 Feed grinding wheel across and into cutting edge to sharpen blade to geometric requirements without defects or burns. 4.2 Monitor grinder for operational effectiveness and apply coolant as required. 4.3 Inspect blade or knife after sharpening for accuracy and hone remaining burrs to obtain sharp cutting edge. 4.4 Dispose of unserviceable and damaged blades and knives in line with environmental protection practices.
5. Align blades and knives	5.1 Inspect babbitts to assess reconditioning requirements. 5.2 Heat babbitt material to required pouring temperature. 5.3 Set up blade or knife in pouring jig to required dimensions. 5.4 Pour babbitt without to minimise material waste and avoid cavities and shrinkage. 5.5 Cool assembly and remove excess material to allow correct positioning in machinery. 5.6 Inspect set screws and replace bent or broken screws. 5.7 Adjust set screws to position knife or blade at correct depth and lock into position to avoid knife or blade movement. 5.8 Record and report processing problems and equipment faults to

	appropriate personnel.
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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:	• read basic grinding wheel settings; set and adjust speeds to suit blade and knife requirements • complete precise calculations involving measurement of angles, depth and temperature to specifications.
Oral communication skills to:	• ask open and closed probe questions and actively listen to clarify contents of work orders.
Reading skills to:	• interpret: • workplace health and safety and other organisational procedures • work orders • manufacturers' maintenance recommendations.
Writing skills to:	• complete basic accurate records for processing problems and equipment faults.
Planning and organising skills to:	• efficiently and logically sequence the stages of preparation and repair work using work order to guide activities.

Range of Conditions

Not Applicable

Unit Mapping Information

FPICOT3233B Sharpen and align blades and knives

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 FWPCOT3233 Sharpen and align blades and knives

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1	Replaces equivalent unit FPICOT3233B Sharpen and align blades and knives, which was first released with FPI11 Forest and Forest Products Training Package Version 2.2. This is the first release of this unit in the new standards format. Assessment requirements now specify the performance and knowledge evidence, as well as assessment conditions for this unit of competency. These sections simplify and replace components used in the previous unit format, including Required Skills and Knowledge, Evidence Guide and Range Statement

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 sharpening and aligning blades and knives
- remove and replace babbits and set screws in line with standard operating procedures and machine settings
- pour babbits to site procedures and finishing standard

Knowledge Evidence

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

- purpose, features and operation of equipment for which blades and knives are sharpened
- blade and knife properties, at a basic level of understanding:
 - metal from which blades and knives are made
 - tensile strength
 - geometry
- features of typical blade and knife defects:
 - burrs
 - burns
 - chips
 - splits

- dents
- purpose, features and operation of tools and equipment used to sharpen blades and knives:
 - grinding machines
 - grinding machine attachments
 - abrasive grinding wheels
 - babbitt making equipment
- methods for:
 - removing blades and knives from machinery
 - assessing blade and knife condition
 - selecting appropriate grinding wheels; diameter and material
 - cleaning blades and knives
 - sharpening blades and knives to specified requirements
 - reconditioning babbitts
 - aligning blades and knives to specified requirements
- angles at which blades and knives are sharpened
- range of speeds at which abrasive wheels can be operated without damaging blades and knives
- organisational procedures specific to sharpening and aligning blades and knives:
 - workplace health and safety with particular emphasis on equipment lock out and use of personal protective equipment
 - communication reporting lines
 - recording and reporting processing problems 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 sharpen and align blades and knives:
 - grinding machines
 - grinding machine attachments
 - abrasive grinding wheels in a variety of diameters
 - babbitt making equipment
- machinery for which which blades and knives are to be sharpened
- blades and knives for sharpening including one or more of the following:
 - chipper and canter or reducer knives
 - planer and thicknesser blades
 - spindle moulder knives

- guillotine blades
- other blades and knives that can be sharpened through a parallel grinding process
- consumable coolant and screws
- personal protective equipment suitable for sharpening and aligning blades and knives
- manufacturers' instructions for use, repair and maintenance of equipment
- work order for repair and maintenance activities with specific instructions for sharpening and aligning blades and knives in specified equipment
- template documents for recording processing problems and equipment faults
- organisational policies and procedures for sharpening and aligning blades and knives.

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.

Links

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