

 DALHOUSIE UNIVERSITY <i>Inspiring Minds</i> Safe Work Instructions for Woodworking Band Saw	Policy Sponsor: Assistant Vice President Facilities Management	Approval Date: December 2015
	Responsible Unit: Trade Services	Revisions: January 2018

Known Hazards

Kick back of material, discharge of objects, dust inhalation, sharp edges, poor footing, pinch points, over reaching, moving parts, hot router blades, improper lifting techniques, overreaching, repetitive movements if cutting for sustained period, vibration, noise, clothing getting caught in moving parts electrical,

Training Requirements

Proper use of the dust collection system, proper use of router, orientation using owners manual, manual materials handling.

Personal Protective Equipment Requirements

Safety boots, dust mask, safety glasses or goggles or a face shield, hearing protection, disposable respirator, push stick or jig, dust collection system

Safe Job Procedures

These job procedures are to be followed at all times to ensure effectiveness in employee safety, production, quality of work and overall loss prevention.

Pre-Operation:



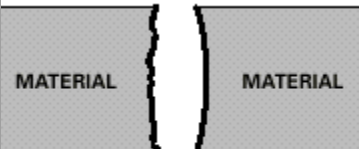
- Ensure any loose fitting clothing is tucked in and out of the way.
- Inspect saw and blade for damage or defects and if any are found report them immediately to your supervisor.
- Check electrical cords, switches and blade guards.
- Tag damaged or defective equipment as “Do Not Use” and remove from service.
- Ensure the dust collection system is engaged.
- Inspect wood for defects and foreign objects and discard any pieces that may be hazardous if used.








- Remember to follow proper lifting techniques when moving material.

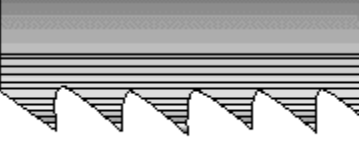



Operation:

- Ensure you are wearing all required personal protective equipment.
- Ensure that you have adequate lighting before starting to use this equipment. (Preferably a task light.)
- Ensure that all guards are in their proper position.
- Ensure that the saw blade is sharp.
- Ensure that the number of blade teeth per inch is suitable for the type of wood being cut. (fewer teeth per inch for softwood and more teeth per inch for hardwood)
- Ensure the blade is tracking properly and running freely on the upper and lower guide rollers.
- Ensure the blade is under proper tension.
- Place wood on saw table and adjust blade guard to 1/8 inch above the height of the piece of wood being cut.
- Turn saw ON.
- Hold stock flat and firmly on table, to prevent stock from turning and drawing your fingers into the blade, and feed the wood into the blade.
- Keep your hands clear of the cutting zone at all times.
- Use push sticks or jig sticks if you must move your hands closer to the blade due to the size of the stock.
- Make relief cuts to remove excess material when doing long curves or tight scroll type cuts.
- Turn saw OFF and use a push stick to move loose wood away from the blade.
- Turn the saw OFF if you have to back out of an unfinished cut or a cut where the blade is jammed.

- Keep area clean of scraps and keep saw table clear of excess stock.
- When job is complete turn the saw OFF, wait for the blade to STOP and remove wood.
- Use a push stick to avoid overreaching.
- De-energize and lock out the saw for cleaning, maintenance or service.
- Clean up the saw and surrounding work area when job is complete.
- Never leave the saw running and unattended.

Band Saw Trouble Chart		
	Probable Cause	Solution
 <p>Blade Breakage Straight Break Indicates Fatigue</p>	<ul style="list-style-type: none"> • Incorrect blade • Band tension too high • Excessive feed • Incorrect cutting fluid • Wheel diameter too small for blade being used • Worn or chipped pressure block (back-up guide) • Blade rubbing on wheel flanges • Teeth in contact with work before starting saw • Side guides too tight 	<ul style="list-style-type: none"> • Teeth too coarse. Check your cutting chart • Reduce band tension. See Machine Operator's Manual • Reduce feed pressure • Check your coolant * • Use thinner blade and lower speed • Check pressure block. Replace if worn • Adjust wheel alignment • Allow 1/2" clearance before starting cut • See Machine Operator's Manual
 <p>Premature Dulling of Teeth</p>	<ul style="list-style-type: none"> • Blade teeth inverted (backwards) • Improper break-in period • Hard spots in material (like scale) • Material work hardened (check for hardness and adjust feed) • Improper cutting fluid or mixture • Speed and feed too high 	<ul style="list-style-type: none"> • Install blade correctly • Reduce feeds and speeds during <u>break-in</u> period in accordance with manufacturers' recommendations • Check material for actual hardness - hard spots like scale or flame cut surfaces • Increase feed pressure • Check your coolant • Check your cutting chart
 <p>MATERIAL MATERIAL</p> <p>Inaccurate Cut</p>	<ul style="list-style-type: none"> • Teeth dull • Over or under feed • Improper pitch blade • Cutting fluid not applied evenly • Incorrect blade (too many teeth per inch) • Guides worn or loose 	<ul style="list-style-type: none"> • Use new blade • Check your cutting chart * • Check your cutting chart * • Adjust coolant nozzles • Check your cutting chart * • Tighten or replace guides

 <p>Band Leading in Cut</p>	<ul style="list-style-type: none"> • Over feed • Lack of band tension • Tooth set damage • Loose guide arms or set too far from work 	<ul style="list-style-type: none"> • Check your cutting chart * • Check Operator's Manual for correct tension • Check material hardness • Adjust arm as close to work as possible - tighten and align. Check guide
 <p>Chip Welding</p>	<ul style="list-style-type: none"> • Improper or lack of cutting fluid • Wrong coolant • Excessive speed or pressure • Incorrect blade (wrong pitch) 	<ul style="list-style-type: none"> • Check your coolant * • Check your coolant * • Reduce speed or pressure. Check your cutting chart * • Check your coolant *
 <p>Teeth Fracture Back of Tooth (indicates work spinning in vise)</p>	<ul style="list-style-type: none"> • Incorrect feed and/or speed • Incorrect blade (wrong pitch) • Saw guides not adjusted properly 	<ul style="list-style-type: none"> • Check your cutting chart * • Check your cutting chart * • Adjust or replace saw guides
 <p>Irregular Break (indicates material movement)</p>	<ul style="list-style-type: none"> • Indexing out of sequence • Material loose in vise 	<ul style="list-style-type: none"> • Check for correct indexing sequence (head rise) • Check hydraulic pressure
 <p>Teeth Stripping</p>	<ul style="list-style-type: none"> • Feed pressure too high • Tooth lodged in cut • No cutting fluid or incorrect coolant • Hard spots, scale, inclusions, etc. • Incorrect blade (wrong pitch) • Work spinning in vise; loose "nest" or bundles • Blade teeth running backwards 	<ul style="list-style-type: none"> • Reduce feed pressure and/or speed. See your cutting chart * • Never enter same (old blade), cut with new blade • Check your coolant * • Check hardness. Descale and/or anneal if necessary • Check your cutting chart * • Check hydraulic pressure; be sure work is firmly held • Reverse blade teeth, turn inside out
 <p>Wear on Back of Blades</p>	<ul style="list-style-type: none"> • Insufficient blade tension • Incorrect blade (back too soft) • Incorrect feed (excessive) • Back-up guide frozen in position, damaged, or worn off • Guide arms too far apart, cocked, worn or loose • Blade rubbing on wheel flanges 	<ul style="list-style-type: none"> • See Machine Operator's Manual for correct band tension • If using hard back blade, switch to a variable tooth • Reduce feed pressure. See your cutting chart * • Free pressure block and realign; if worn, replace (never regrind) • Move arms close to work as possible • Adjust wheel alignment
 <p>Rough Cut Washboard Surface Vibration and or Chatter</p>	<ul style="list-style-type: none"> • Dull or damaged blade • Incorrect feed and/or speed • Lack of band support • Insufficient band tension • Incorrect pitch blade 	<ul style="list-style-type: none"> • Replace with proper blade • Check your cutting chart *. Adjust until noise disappears • Set guide arm properly - close to work as possible • Check Operator's Manual for correct tensions

		<ul style="list-style-type: none"> • Check your cutting chart *
 <p>Wear Lines, Loss of Set</p>	<ul style="list-style-type: none"> • Saw guide inserts or roller are riding on teeth • Insufficient blade tension • Incorrect blade (width of blade incorrect) • Hard spots • Back-up guide worn 	<ul style="list-style-type: none"> • Check table and Operator's manual for correct blade width • Check for correct blade tension • Check your cutting chart * • Check material hardness • Replace back-up guide
 <p>Twisted Blade Contour Sawing</p>	<ul style="list-style-type: none"> • Band binding in cut • Side guides adjusted too tight • Work not held firmly • Incorrect (or lack of) cutting fluid 	<ul style="list-style-type: none"> • Check table and Operator's manual for correct blade width • Check for correct blade tension • Check your cutting chart * • Check your coolant *
 <p>Blade Wear / Teeth Blued</p>	<ul style="list-style-type: none"> • Incorrect blade • Incorrect feed or speed • Improper (or lack of) cutting fluid 	<ul style="list-style-type: none"> • Check your cutting chart * • Check your cutting chart * • Check your coolant *
 <p>Teeth Fracture / Front of Tooth (indicates work spinning in vise)</p>	<ul style="list-style-type: none"> • Material loose in vise • Incorrect blade (wrong pitch) 	<ul style="list-style-type: none"> • Check hydraulic pressure • Check your cutting chart *

Version: 2	Effective Date: January 2016	Revision Date:
-------------------	-------------------------------------	-----------------------