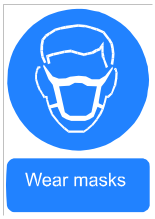
SAFE OPERATING PROCEDURE (SOP) & ACCREDITATION GUIDE	Band Saws Major & Carba-Tec 14"& Major 19"	Accreditation Code	W3

Safety Requirements whilst operating the Band Saws.

Compulsory when cutting acrylics or brittle materials



When hazardous or significant dust likely

If using the machine for extended periods or if high noise level

Long and loose hair must be contained.

Do not wear gloves unless handling blade during blade exchange

Use dust extractors to which these machines are attached.

- Knowledge of Key features of the Band Saws must be understood and clearly evident during competency assessment. Safe operation of the Band Saws must also be demonstrated.
- This document applies to the following three **Band Saws: Major 14", Carba-Tec 14" and Major 19"** and must be read in conjunction with the Manuals and appropriate guides. Recognition of the main parts of the Band Saws is necessary in order to understand descriptions below. Reference to diagrams in the Band Saw Manuals and observation of the actual machines may be useful information sources. Web tutorials are also an excellent informer eg http://www.youtube.com/watch?v=FNa1_tcDo1g , http://www.youtube.com/watch?v=qhwFk-64IBw & http://www.youtube.com/watch?v=S-vldB8iTpk *(The first two clips are a pair and still show some safety errors such as unplugging a live cord. The last clip gives a very concise list of safety tips).*
- Clear knowledge of our Shed's Safety Induction Package should also be evident and practised by aspiring Band Saw operators.
- Persons who are unable to see finer work details should not use these saws unless aided by suitable lenses.
- Persons who have had a driver's licence renewal declined because of failure to pass their driver's competency test should not operate the Bandsaws unless special Accreditation approval has been given in negotiations with the Shed's management committee.

Key Features of Band Saws

- Each of our three Bandsaws consists of a continuous flexible steel band with downwards facing teeth on the front edge. The teeth are bent (set) alternately sideways to provide a cut (kerf) which is wider than the blade thickness. This gives clearance in the cut and allows for blade manoeuvrability in the kerf for curved cutting. The blade runs through a set of upper ***and*** lower guides and a slotted throat insert in a flat work table. It is supported and driven by two large crowned wheels which are coated with "rubber-like" tyres. The blade should track on the centre of these wheels.
- The timber work piece is held flat on the work table and fed into the blade to cut where the blade contacts the work. The tables are made from cast metal, machined flat and slotted to enable new blades to be installed. The table may be tilted for cutting bevels.
- The Bandsaws are used for straight, curved or irregular shaped cutting, cross-cutting and ripping along the grain. Mitre gauges, which slide in straight grooves in the table surface, and fences may be used on the table to improve accuracy with ripping and cross cutting.
- Sawdust is drawn down through the table insert and into the machine, from where an extractor sucks the dust into a collector bag. Dust will build up in the machine if the extractor is not used

and eventually it may cause poor blade tracking or band or belt breakage if build-up occurs on tyres or pulleys.

- The 19" machine is more generally used with a large ripping blade whereas the narrower blades in the 14" machines are more suited to finer work.
- One of the 14" machines is fitted with an emergency stop pedal which switches the motor off and brakes the turning of the drive wheel. Ensure it is "lifted" back up so that the micro switch is not still activated after use.
- Blades should be tensioned correctly to ensure proper tracking and cutting action. Indicators on the machines show the tension which should suit the width of the saw blade being used. ***WARNING: The tracking tension on the Major 14" Bandsaw (with the foot brake) should not be wound lower than the minimum setting on the scale otherwise the tension mechanism may be inadvertently unseated/disconnected.***
- The speed of the machines can be adjusted to suit the work. Low speed is used for cutting soft woods over 100mm in height or hardwoods over 50mm in height. High speed is best for cutting timber under these sizes. **THE SPEEDS OF MACHINES IS ONLY TO BE CHANGED BY QUALIFIED COORDINATORS.**

Safety & Procedural Issues

Before the Cut

1. ***If in doubt about the operation you are about to do, seek a Coordinator's assistance.***
2. ***Blade changes and major maintenance should only be carried out by an experienced Coordinator. This particularly applies to guide adjustment.***
3. ***Always ensure the machine is turned off at the wall outlet before making adjustments.***
4. For safety, covers to the machine casing should be securely closed and latched after being opened and this helps ensure any micro switches fitted to them are deactivated.
5. The blade should be installed with the teeth facing toward the operator and points facing downward toward the table. The blade rotates downwards towards the table.
6. The blade should be sharp, undamaged and set correctly. The blade type should be suited to the material to be cut. For curved cutting the blade should be narrow enough to turn in its kerf and follow the radius of the curved cuts.
7. The blade should be tensioned correctly and tracking properly. It should run straight and true.
8. The blade should be square to the front edge of the table. It should not be "kinked" or twisted.
9. The saw should be in good condition and correctly adjusted.
10. Thrust and guide wheels should be in good condition, correctly adjusted and should rotate freely. They should be just clear of a free running blade.
11. ***Listening to the free running saw will give an indication of rubbing guide wheels or damaged blades.***
12. The table insert should be in good condition and free of small off-cuts which may lodge between the blade and insert.
13. Band wheel tyres should be clean and in good condition.
14. ***Guards must be fitted, correctly adjusted and secured.***
15. ***The upper guide assembly should be adjusted as close as practicable to the work (5mm – 10mm from the upper surface).*** **NEVER ADJUST THE GUIDE WITH THE MACHINE RUNNING.**
16. ***Never cut round stock without ensuring it is very firmly held so that it will not rotate into the blade and catch or kink the blade.*** A vee support block is advisable.

During the Cut

17. ***A push stick should be readily available***; a push stick should be used to keep hands away from the blade.
18. ***Long and/or wide stock should be supported with the aid of an assistant or with appropriate roller supports.***
19. ***Hands should never be in line with the cut and should be kept at least 50mm clear of the blade during sawing.***
20. The operator or observers should never stand on the right side of the blade. This could be dangerous in the event of blade breakage. Observers should stand well clear of the work area.
21. Ensure that dust collectors and duct gates are open when using the saw.
22. **NEVER START THE MACHINE WITH THE BLADE ALREADY CONTACTING THE WORK**. This places undue stresses on the machine and blade, and proper control of the saw cannot be ensured. Be sure the blade has gained full operating speed before starting the cut.
23. If ripping with a sloping table, always have the fence below the work to give it proper support.
24. ***With both hands, firmly hold the work-piece down on the table, and feed it towards the blade slowly, using the push stick to keep hands away from the blade. Put only light pressure on the work.***
25. ***Use "relief cuts" when cutting sharp curves or pre-drill in the curve to give the sharp profile required.***
26. ***Do not attempt to turn the work-piece without pushing it, as this may cause the work to jam and can bend or break the blade.***
27. ***Off-cuts and saw dust must not be removed from the table with hands while the blade is moving.***
28. When cutting thin, flexible material, a piece of firm ply or sheet material can be used as a support to prevent deflection of the work, especially when using the saw with the more flexible plastic insert. This sheet support piece is also cut and provides better support right up to the cut edge.
29. If the blade is "burning" it could be running too fast in which case the speed can be lowered by a qualified Coordinator. Other causes of "burning" are that the blade may be dull or be being forced around too sharp a curve.
30. If the blade breaks, the operator should turn the machine off and move away from the broken blade. ***A new blade must be fitted by an authorised maintainer***. Both band wheels must be stationary before guards are opened and the broken blade removed.
31. ***The material being cut should never be force fed.*** Excessive pressure on the blade can cause it to break.
32. ***Never attempt to cut curves that are too tight for the width of blade in the machine.***
33. Avoid withdrawing the material (backing out) from the blade when making long cuts. This can usually be achieved by planning the cut and making short relief cuts at 90 degees to the cutting line prior to making the long cut.
34. Constant clicking sounds when the saw is running usually indicate a cracked or kinked blade. The machine should be switched off and the blade inspected immediately by an authorised maintainer.
35. Never use the band saw for cutting operations that can be performed more efficiently or safely on another machine.
36. ***The band saw should never be left unattended with the power switched on.***

After machine use

37. Saw dust and off-cuts must be cleaned off the machine and floor area after machine use.

38. Ensure all guards and adjustment screws are left tight in case the next operator does not check them.

39. Periodic cleaning of dust build-up in and around the machines should done with a vacuum cleaner.

40. Replace any fences or tools to their correct place of storage.

41. Lower the upper guide assembly so that very little of the blade is left exposed.

COORDINATORS' OPTIONAL CHECK LIST AND NOTES *(Timber sections 19 x 100 & 40 X 50 are suitable for the following demonstrations by the Applicant)*	**INITIAL**	**DATE**
1. Carry out appropriate checks of saw prior to using it (including checking accuracy of blade angles for straight cut)		
2. Set up for straight cuts for both pieces of timber and demonstrate action of sawing off a small piece from end of each piece of timber		
3. Set up fence and rip timber to predetermined width		
4. Draw a curved line of cut and cut concave and convex vertical edged curves in timber		
5. Rotate table of the saw to angle of 30 degrees to horizontal and demonstrate straight and curved cutting action on both timber pieces		
6. Cut an internal right angle out of the corner of a piece of timber		
7.		
8.		
9.		
10. Carry out normal procedures at completion of work		

Version Date:	13/6/2013	**Version Prepared by:**	K Callinan	**Version Authorised by:**	M Bailey

Please tick ONLY ONE of the boxes:
New Accreditation to be added to records ☐ **Confirmation of existing accreditation** ☐

Accreditation seekers signature:	**Date:**	**Accred Code:**	**1st Assessor's signature:**	**2nd Assessor's signature:**
…….. **Print Name:** ……..	……..	**W3**	…… **Print Name:** ……	…… **Print Name:** ……

NB A copy of this document is to be completed and filed in the member's personal file at the Shed. Additional copies are available through email or hard copy by if requested. The member's Shed computer records and name tag will be amended when Accreditation is finalised.