

## Tip #31 Band Sawing Versatility

The bandsaw gets its name from the continuous loop or "band" formed by the flexible steel blade. This blade cuts with a downward motion, toward the table. Because it cuts continuously, you'll find the bandsaw is one of the fastest cutting tools in your shop.

The bandsaw will perform a wide variety of workshop operations. The two most common uses are cutting curves or irregular shapes in wood and resawing (slicing thin boards from thick ones). But you can also make crosscuts, rips, bevels, miters, compound curves, duplicate parts, and many other special cuts.

You can also cut materials other than wood. With the proper blade installed, the bandsaw will cut plastic, plastic laminates, particle board, and even soft, nonferrous metals such as copper, brass, and aluminum.

### BANDSAW-SETUP AND FEATURES

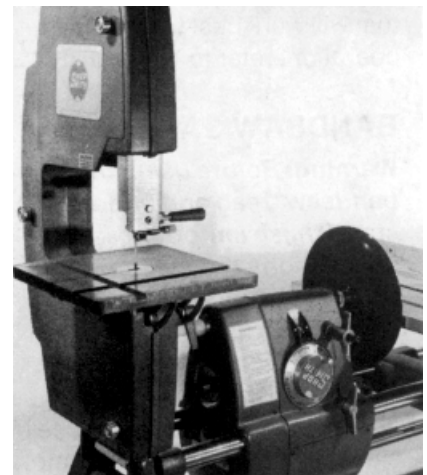
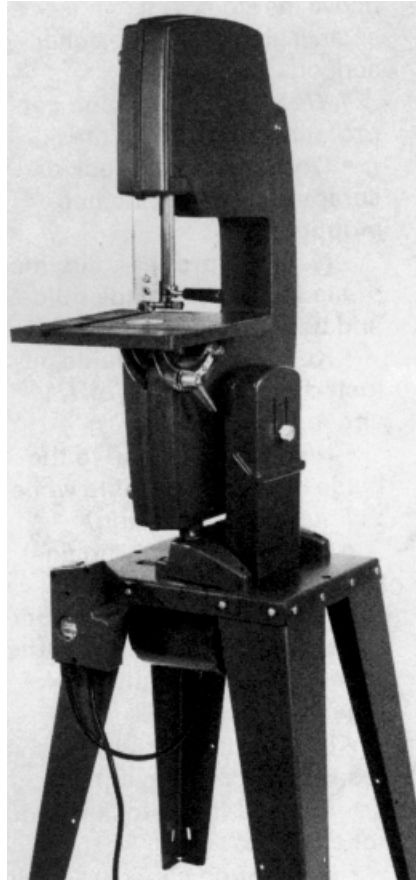
To set up your bandsaw, follow the instructions in the Owners Manual that came with your bandsaw.

As you work with the bandsaw, you'll find that it has several special features:

- The bandsaw can be mounted on the Mark V or a Shopsmith Power Stand (Figure 14-1).
- The cutoff capacity is 10-1/2"-the distance across the machine's throat. However, with the blade offset 30° right, you can cut off (freehand) any length of stock up to 3-7/8" wide. The bandsaw will cut stock up to 6" thick.
- The bandsaw accepts continuous-loop blades 72" long and 1/16" to 5/8" wide. Bandsaw blades are mounted on two wheels, 11" in diameter. Both wheels are covered with rubber tires to protect the teeth of the blades and provide traction. The idler (upper) wheel re-



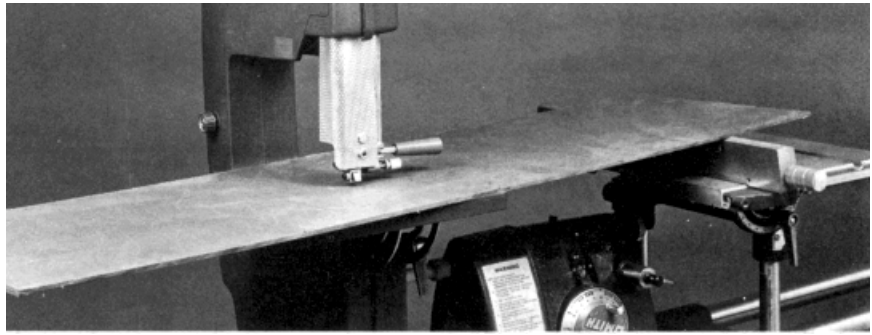
**Figure 14-1.** The Bandsaw can be mounted on (A) the Mark V or (B) on a Shopsmith Power Stand.



**Figure 14-2.** The bandsaw/disc sander is a logical dual-purpose setup, but the speeds used must be that of the bandsaw, not the disc sander.

volves on needle bearings, while the drive (lower) wheel revolves on sealed ball bearings. The blades are tensioned by adjusting the position of the idler wheel.

- The table surface is 11-3/4" (front to back) by 12" (right to left). The table can be tilted from "0" to 45° right (away from the frame). It has an adjustable positive stop at "0." If this stop is removed, it can be tilted an additional 5° left.
- The bandsaw mounts on the power mount end of the Mark V. **Warning: You can run the bandsaw together with a disc or drum sander (Figure 14-2) as long as you remember that the dual setup must run at bandsaw speeds.**
- You can supply extra support for long stock by setting up the Mark V worktable and the rip fence as shown in Figure 14-3. Since the carriage can be positioned anywhere between the power plant and the end of the machine, you can adjust to supply support where it is most needed.



**Figure 14-3.** You can get extra support for long workpieces by using the MARK B worktable and rip fence this way.

## **BANDSAW BLADES**

Your bandsaw will accept any blade 1/16" to 5/8" wide and 72" long (within 1/2"). Choosing the right blade for the job will depend on:

- the kind of material you're about to cut
- the thickness of the stock
- the bandsaw operation you're about to perform
- the intricacy of the design

Wider blades are stiffer, so the cut is straighter. Larger teeth and deeper gullets help clear the sawdust in a deep cut. Wider blades are the best choice for heavy resawing or sawing thick stock. Narrower blades are better suited for intricate work. The narrower the blade is, the tighter the radius it will cut. Choose narrow blades when you need to cut complex designs. To help select the blade that will work best for any given operation, refer to Table 14-1.

## **BANDSAW SAFETY**

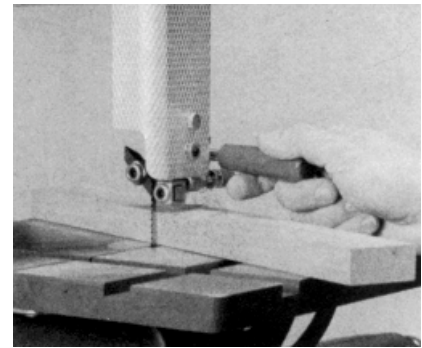
**Warning: Before using the bandsaw, read and understand these important safety instructions:**

**Danger Zone-**The bandsaw danger zone is 3" out from the blade in all directions.

Use a push stick whenever you need to maneuver a workpiece inside the danger zone. This safety device helps protect your hands and fingers. A push stick also gives you better control when you're working near the blade.

Always replace the cover on your bandsaw before you turn it on--never operate the machine without the protective cover. And remember there is a blade guard attached to the upper blade guide. This guard automatically covers the unused portion of the blade when the guides are adjusted properly. Always adjust the upper blade guides to a maximum of 1/4" above the stock. Not only is this safer; it gives the blade better support.

- **Wear proper eye and ear protection and a dust mask.**
- **Do not remove stock or scraps until the blade has stopped.**
- **Maintain proper adjustment of blade tension, blade guides and bearings.**
- **Keep the upper guide adjusted to a maximum of 1/4" above the stock.**
- **Never reach close to the blade or under the table while the machine is running.**
- **Hold stock firmly against the table.**
- **Never attempt a turn tighter than the blade will allow. Otherwise, the blade might break or jam.**
- **Use a push stick to finish a resawing or ripping cut.**



**Figure 14-4.** Adjust the upper blade guide so that it's a maximum of 1/4" above the workpiece.

**Table 14-1: Bandsaw Blades and Speeds**

Characteristics	Recommended Use	Recommended Speed**
1/16" Woodcutting Blade* - 24 teeth per inch, 1/32" minimum turning radius.	For extremely fine detail work only. Use for wood and plywood up to 3" thick. Not for heavy-duty cuts or resawing. Note: Set the tension scale at 1/8" setting.	A (750 RPM, 2160 FPM) for hardwood. B (850 RPM, 2450 FPM) for softwood.
1/8" Woodcutting Blade - 7.5 teeth per inch, 1/4" minimum turning radius.	For very fine detail work only. Use for wood and plywood up to 3" thick. Not for heavy-duty cuts or resawing.	C (950 RPM, 2750 FPM) for hardwood. D (1050 RPM, 3000 FPM) for softwood.
1/4" Combination Blade - 6 teeth per inch, 3/4" minimum turning radius.	A good general purpose blade for wood, plywood, plastics, particle board, and soft, non-ferrous metals. Limit resawing to stock 4" thick, metalwork to stock 1/4" thick. This is the blade that comes with your bandsaw.	B (850 RPM, 2450 FPM) for hardwood. C (950 RPM, 2750 FPM) for softwood. Slow (700 RPM, 2000 FPM) for other materials.
1/2" Combination Blade - 4 teeth per inch, 2" minimum turning radius.	For heavy-duty cutting of wood, plywood, plastics, particle board, and soft, non-ferrous metals. Suitable for resawing stock up to 6" thick, and metalwork in stock up to 1/2" thick.	Slow (700 RPM, 2000 FPM) for hardwood, softwood, and other materials.
5/8" Woodcutting Blade - 3 teeth per inch.	For heavy-duty resawing. Efficiently handles wood up to 6" thick. Straight cuts only. Note: Set the tension scale at the 1/2" setting.	Slow (700 RPM, 2000 FPM) for hardwood and softwood.

Several blade manufacturers make bandsaw blade stock for a variety of special purposes - intricate scrollwork, cutting iron pipe, etc. If you need a special blade, you can have it made at a well-equipped commercial saw shop. Use only high-quality blade stock 1/16" - 1/2" wide. Be sure that the finished blade is 72" long, plus or minus 1/2", and that the weld is ground perfectly smooth.

\*Caution: Do not use 1/16" blade without special guide blocks. Failure to use special guide blocks will ruin the blade and damage the standard guide blocks. \*\*Note: These speeds are for 60 hz. operations.