

designed with a "reverse taper" to keep accessories secured. All the accessories and arbors that mount on the spindles must be positioned so the locking screw seats firmly against the flat (Figure 1-30). This is a safety feature that is provided as a precaution against tools coming off the spindle should the locking screw become loose.

To properly mount an accessory, push it all the way on the spindle. Then use a 5/32" Allen wrench to tighten the setscrew against the flat of the spindle. To make sure the accessory is securely mounted, rock the accessory back and forth slightly as you tighten the setscrew and then again after it is tight, while keeping the spindle from turning. If the accessory seems to loosen, tighten the setscrew again until you've removed any 'play.' **Warning: During any prolonged operation, always check the locking screw occasionally to be sure that normal tool vibration hasn't caused the screw to loosen.**

Important Safety Equipment

Besides the built-in safety features of the machines, there is other safety equipment that you'll need to add to your shop.

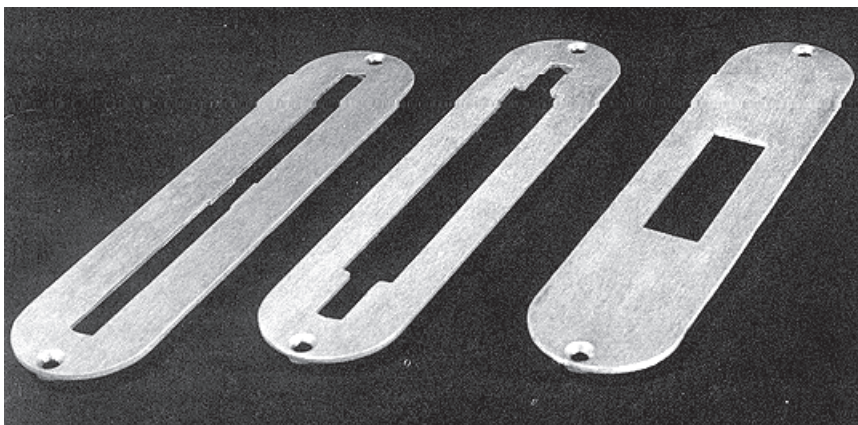


Figure 1-28. Mark V table inserts are designed to accommodate various cutting tools. Here, from left to right, are Model 500 inserts for a saw blade, dado head, and molder head. A shaper and drum sander insert is also available.

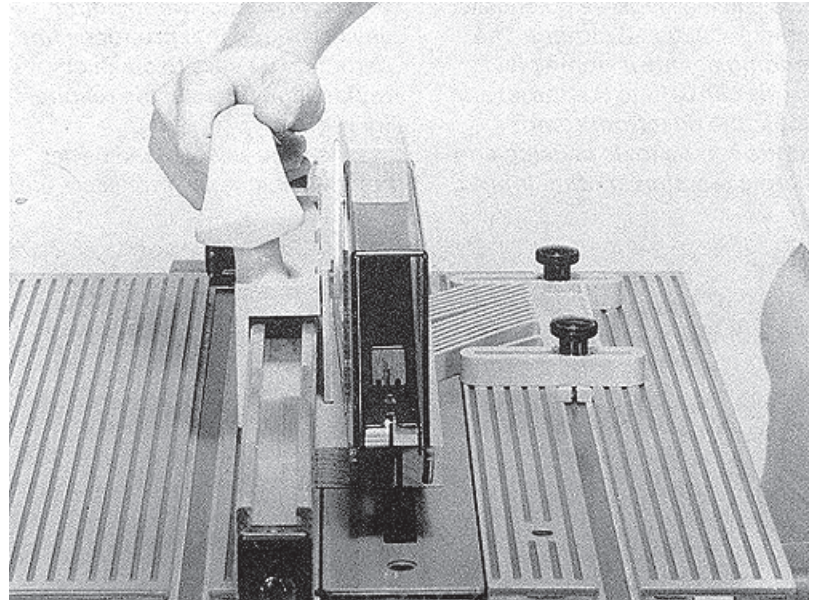


Figure 1-27. Use the fence straddler to guide small, narrow stock. The body rides on the rip fence, while the heel hooks over the back edge of the stock. To change the height of the heel, loosen the locking knob.

Eye, Ear and Nose Protection--Figure 1-31 shows products that should be standard equipment in any shop. They don't saw, sand, drill or plane, but they protect you when doing such operations. Safety glasses, goggles or a face shield should be worn for all work-shop operations. Ordinary eye-glasses do not provide adequate eye protection.

Many people feel that a dust mask should only be worn when doing sanding operations. Actually,

sawing, jointing, planing, shaping and routing can produce dust that is fine enough to accumulate in the lungs--a potentially harmful situation. **Warning: The bonding agents in some plywoods can irritate the throat and lungs; the dust from some woods can be toxic causing an allergic reaction or other injury.**

Wear a respirator when doing any operation that produces fine particles. Be sure to clean or replace the filters in the respirator regularly.

When you work around power equipment, hearing protectors are just as important as eye protectors. **Warning: High frequencies can be generated by high-speed motors and even some wood-working operations. The effects are cumulative; each prolonged exposure can have an effect that, over the years, may result in a hearing loss.** A good pair of hearing protectors will screen out high frequencies while still permitting normal conversation.

Dust Collection System--As you work, with your Shopsmith Woodworking System, you'll find there's another hazard that literally springs up under your feet if you don't do something about it- sawdust.

Sawdust like other woodworking clutter, can cause you to lose your footing and fall into the machinery. It can also be a fire hazard. Tracking sawdust from your shop into your home can be a

nuisance to those with whom you live. **Warning: Breathing sawdust can be a health hazard. Several medical studies have shown that prolonged exposure to sawdust may cause impaired breathing. Sawdust may also cause you physical discomfort, especially if you have emphysema, asthma, or an allergic reaction.**

If you work in a shop where the dust in the air can become highly concentrated, or if your wood-

working generates a lot of fine wood dust, wear a close-fitting dust mask, open a window and use an exhaust fan to ventilate your shop.

One of the most effective ways to protect yourself from the effects of sawdust and keep your shop clean at the same time is to use a dust collection system. The hoses from a system connect to the dust chutes on your power tools. The Shopsmith Dust Collector (Figure 1-32) is an extremely effective dust collection system. It will give you virtually dust-free woodworking.

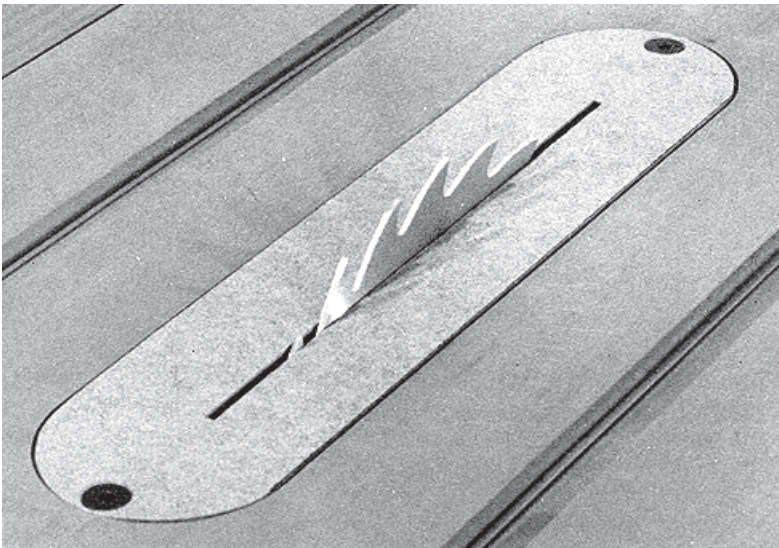


Figure 1-29. Special inserts that you can make keep thin material from being pulled down beneath the table.

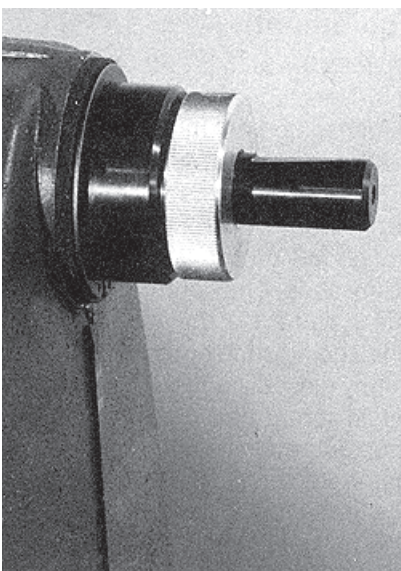


Figure 1-30. The Mark V main and auxiliary spindles have a reverse taper. The locking setscrew of all spindle-mounted accessories must seat securely against the flat.

GENERAL SAFETY RULES FOR POWER TOOLS

Here are some general safety rules to follow when operating power tools:

- Read, understand and follow the Owners Manual for any tool you operate.
- Keep your hands and fingers out of the danger zone.
- Ground all tools (unless double insulated).



Figure 1-31. These are devices that protect you from eye, ear, face and respiratory injuries. Their cost is slight when you consider the protection they afford. And they can be used for activities in addition to power tool work.

- Wear proper eye and ear protection. Also, wear a dust mask.
- Keep guards in place and in working order. Most injuries occur on unguarded power tools.
- Remove adjusting keys and wrenches.
- Do not wear loose clothing, ties, gloves, or jewelry. Roll sleeves up above your elbows, wear nonslip footwear, and tuck long hair under a hat.
- Do not operate power tools if you are fatigued, taking medication, or under the influence of alcohol or drugs.
- Do not use power tools in damp, wet or explosive atmospheres.
- Keep work areas well lit, clean, and free from clutter.
- Make sure accessories, safety devices and fixtures are properly adjusted and secured before turning on the machine.
- Secure all locks.
- Make sure the machine rests firmly on the floor when in use-not up on the retractable casters.
- Operate tools at the correct speed for the operation.
- Never stand directly in the line of rotation of a moving blade, cutter, disc or stock. If a kickback occurs you could be hit by the stock.
- Do not work with stock that is too small or too large to handle safely.
- Do not use second-hand lumber or wood that is wet, plthy or has loose knots.
- Do not force a tool; it will do the job better and more safely at the rate for which it was designed.
- Do not use a tool or accessory to do a job for which it was not designed.
- Feed the workpiece into the cutter against the rotation of the

cutter only.

- Repair or replace damaged parts before further use. If a strange noise or vibration develops, turn off and unplug the machine. Correct the problem.
- Use clamps, fixtures, and other devices to hold, support and control workpieces.
- Do not overreach. Keep proper footing and balance at all times.
- Turn off the tool and wait until it comes to a complete stop before removing workpieces and scraps.
- Never try to stop the tool by grabbing the workpiece or any part of the tool. Turn off the tool and let it come to a complete stop by itself.
- Do not leave the tool running unattended. Turn power off. Don't leave tool until it comes to a complete stop.
- Avoid unintentional starting. Make sure the switch is in the "off" position before plugging in or unplugging the tool.
- Turn off and unplug tools before changing accessories and setups, making adjustments, and performing maintenance and repair.
- Do not stand or lean on the tool. You could fall onto the tool or it could tip over injuring you and/or damaging the tool.
- Keep parts and tools sharp, clean and maintained according to the Owners Manual.
- Make your workshop child-proof. Unplug tools, use pad-locks, master switches and remove starter keys.
- Keep children away. All visitors should stay a safe distance from power tools, and wear eye and ear protection.
- Use only recommended Shopsmith parts and accessories on your Shopsmith Wood-working System. NEVER use non-Shopsmith replacement parts or

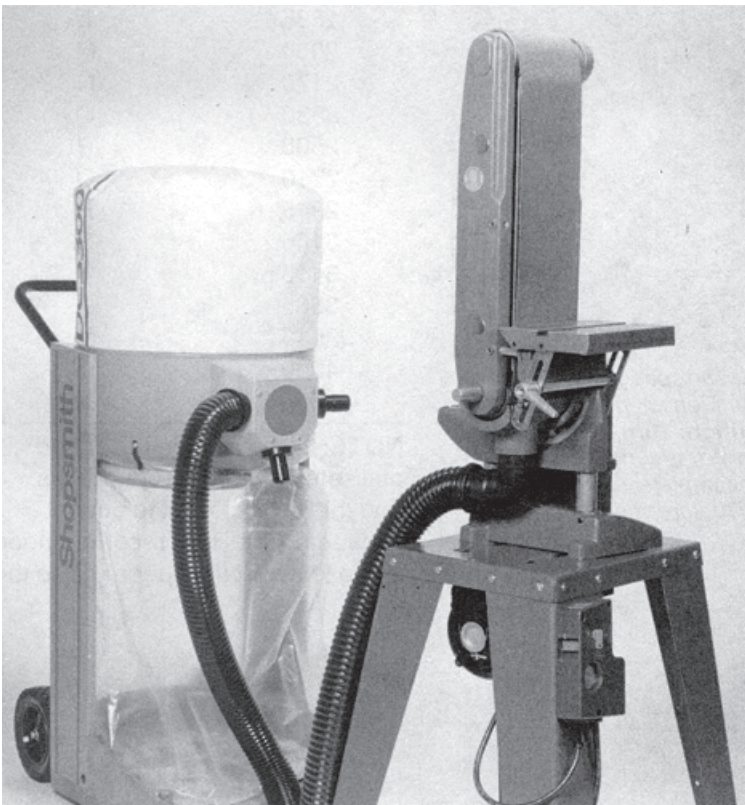


Figure 1-32. To help control sawdust, attach the hoses from your dust collection system to the dust chutes on your power tools. For virtually dust-free woodworking use the Shopsmith Dust Collector.

accessories. They are not designed like Shopsmith parts. Using non-Shopsmith parts may create a hazard and could void your warranties.

SPEEDS

The Mark V is equipped with a speed dial that is calibrated by letter through variable speed ranges (Figure 1-33). Correct speeds are important for safety and good craftsmanship. The speed setting is determined by the operation being performed and the material being processed. Speed dial settings for particular operations are given throughout the text. When there is doubt about what speed to use, start with a slow speed and increase it slowly to the point where the operation is going smoothly. The main and upper auxiliary spindles turn from 700 RPM to 5200 RPM. The lower auxiliary spindle turns 1.6 times faster than the other two, or between 1120RPM and 8320 RPM.



Figure 1-33. The speed dial is letter calibrated through an rpm range of 700 to 5200. Caution: Turn the dial only when the motor is running. When an operation is complete, always turn the dial to 'Slow' before shutting off the Mark V.

The Mark V speed dial settings with the RPM in parentheses that are given throughout the text are for 60 hz operations only. Most owners have the 60 hz machines. If you have a 50 hz machine, use Table 1-1 to convert the RPM for 60 hz operations to the proper speed dial settings for 50 hz operations.

Table 1-1: Speed Dial Conversion Chart for 50 hz Operations

RPM	Speed Dial Setting
585	Slow
625	A
710	B
790	C
875	D
960	E
1080	F
1210	G
1335	H
1460	
1580	J
1710	K
1835	L
2000	M
2170	N
2330	O
2500	P
2710	Q
2915	A
3165	S
3415	T
3665	U
3915	V
4250	W
4335	Fast

NOTE: To determine the speed dial setting for 50 hz operations find the RPM closest to but not exceeding the RPM recommended in the text. Set the speed dial to the letter given.