



# Mark V (Model 500) Lower Saw Guard Retrofit Kit 555294

## Installation

This Lower Saw Guard Retrofit Kit will greatly improve the dust collecting capabilities of your Shopsmith Mark V Model 500. During the retrofit procedures you'll drill holes in the lower saw guard in order to mount the deflectors, cut off a portion of the tie bar assembly, and replace the tie bar shield and parts of the lower saw guard.

**Tools Required:** medium Phillips screwdriver, medium slot screwdriver, hand-held electric drill, 3/32" drill bit, silicone spray, scratch awl, hacksaw, coarse double-cut metal file, light-colored grease pencil.

### WARNING

Turn off and unplug the Mark V.

1. Remove the upper and lower saw guards from your Mark V.
2. Disassemble the lower saw guard and tie bar. (See Figure 1.)
  - a. Remove four screws (B) and the outer guard (A) from the inner guard (C). Discard outer guard (A).
  - b. Remove screws (D) and shields (E, F) from the inside of the tie bar (J). Discard screws (D) and shields (E, F).
  - c. Turn the tie bar shield thumbscrews (G) horizontal. Remove and discard the tie bar shield (H).
3. Modify the lower saw guard. (See Figure 2.)
  - a. Insert the plug (2) into the slot in the new outer guard (1). Then mount the outer guard (1) to the inner guard (C) using four screws (B).

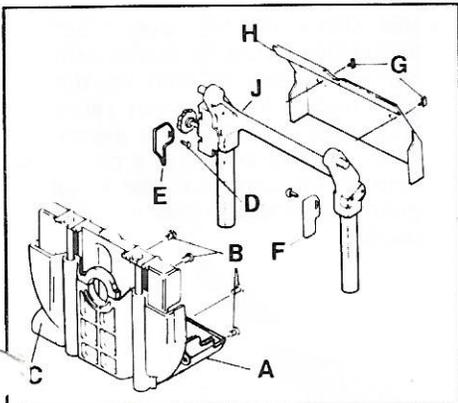
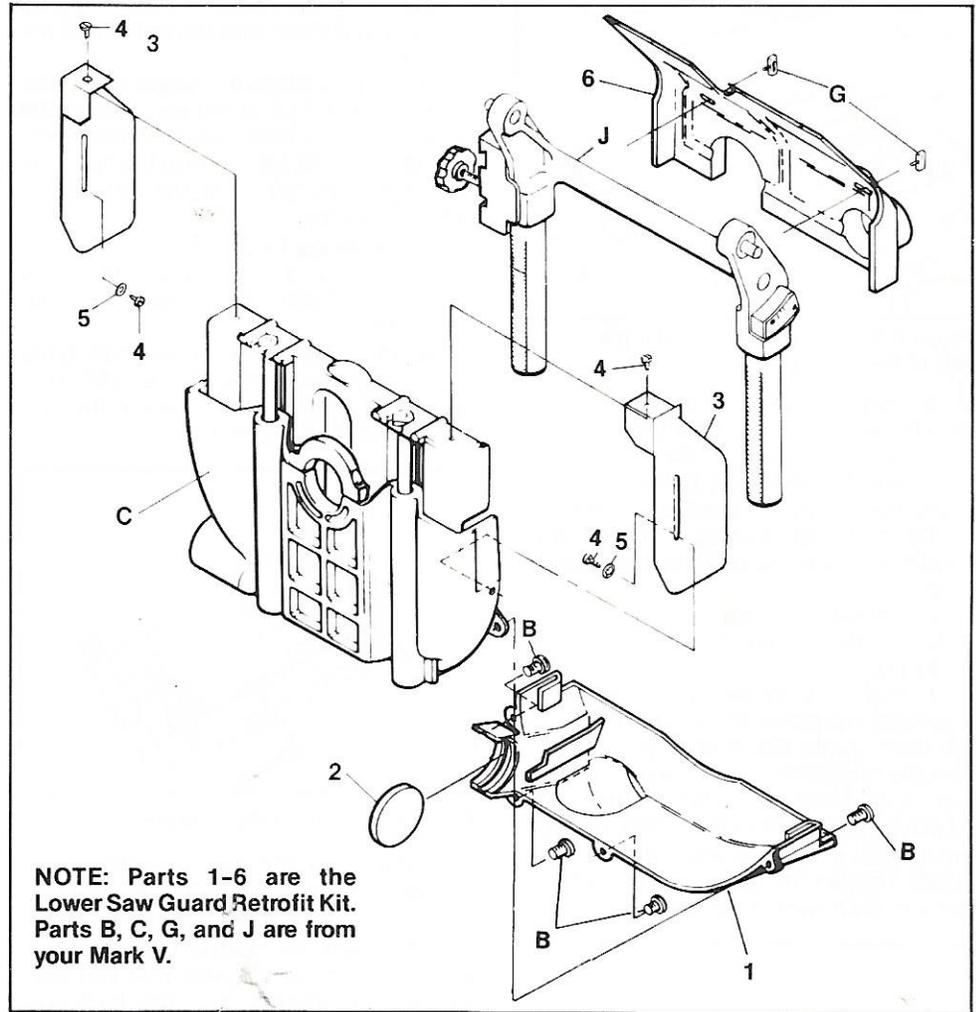


Figure 1. Your Mark V Lower Saw Guard, Tie Bar and Tie Bar Shields.



**NOTE:** Parts 1-6 are the Lower Saw Guard Retrofit Kit. Parts B, C, G, and J are from your Mark V.

Figure 2.

### NOTE

Be sure the deflectors are at room temperature before folding tabs.

- b. Mark the tabs of one of the deflectors (3) with a grease pencil. (See Figure 3.) Bend the tabs back and forth a couple

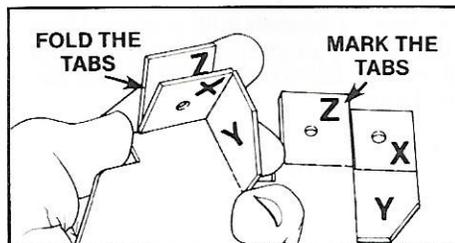


Figure 3. Folding the tabs for the front side of the inner guard.

## Parts List

Ref. No.	Part Number	Description	Qty.
<b>Lower Saw Guard Retrofit Kit</b>			
1	514877	Outer Guard	1
2	515263	Plug	1
3	515370	Deflector	2
4	514881	Self-Tapping Screw, #6-20 x 3/8"	4
5	513633	Flat Washer, #6	2
6	515288	Tie Bar Shield	1
—	514521	Elbow, 2-1/2" Dia.	2
—	PL-5198	Template	1

of times on the dotted line. Do not over-bend. Then fold tabs (X) and (Y) up, fold (X) to the left, and fold (Z) up against (X). The small hole must be on top.

c. Slide the folded deflector (3) into the front side of the inner guard (C). (See Figure 4.)

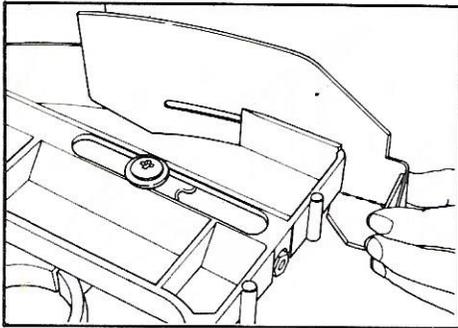


Figure 4. Sliding the deflector into the front side of the inner guard.

d. Position and hold the folded tabs, with holes aligned, against the rib on the top and the left side of the inner guard (C). Using the deflector holes as a template, mark the hole position on the top of the inner guard using a scratch awl. Unfold the tabs and drill the hole using a 3/32" bit.

e. Refold the tabs and secure the deflector to the top of the guard using screw (4).

f. Mark the center of the hole for mounting the screw (4) on the outside of the inner guard (C). (See Figure 5.) Drill the hole perpendicular to the outside surface of the inner guard. Mount the screw (4) and washer (5) from the inside, through the bottom of the slot and into the inner guard. Tighten the screw until it bottoms out and then back it out 1/4 turn.

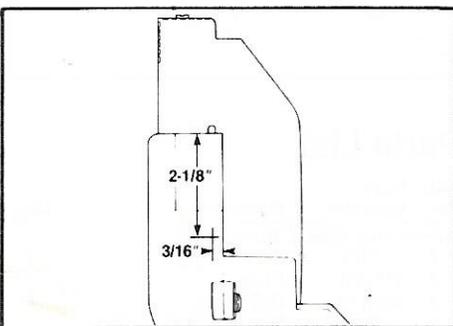


Figure 5. Marking the position for the screw hole.

g. Depress the sliding side and check that it moves freely. If it doesn't, lightly spray the surfaces with silicone. If side still binds, loosen (1/4 turn) the screw (4)

that secures the deflector. File off the tip of the screw flush with the outside of the guard.

h. Repeat Steps b thru g to mount the other deflector (3) to the rear side of the inner guard (C). When you fold the deflector tabs (Step b), fold them in the opposite direction. The tab with the small hole must be on top.

#### 4. Modify the tie bar.

a. Remove the worktable from the carriage and place it face down on your workbench.

b. Place the template over both table tubes with the words "THIS SIDE UP" facing up and the angled slot at the out-feed tube. (See Figure 6.)

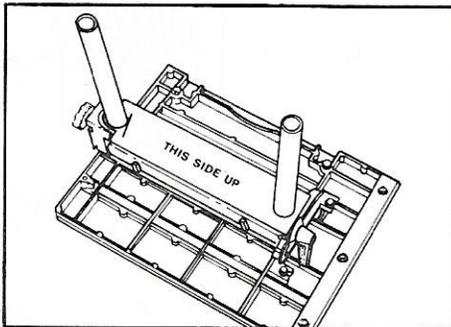


Figure 6. Positioning the template.

c. Use a scratch awl to scribe a line through the template slot and onto the tube boss. Remove the template.

d. Securely clamp the table to your workbench in such a way that you can easily align yourself and the hacksaw with the scribed line. Be sure that the frame of the hacksaw will not interfere with any part of the table or tie bar.



The cut must be vertical and not tapered in toward the tube. If the cut is tapered, the tie bar will be weakened.

e. Use a hacksaw with a sharp blade to cut vertically through the tube boss but not into the horizontal part of the tie bar. (See Figure 7.)

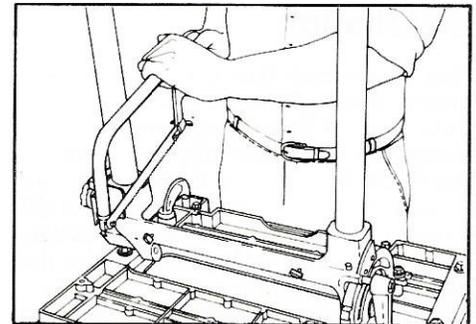


Figure 7. Cutting the tube boss.

f. After the cut is made, file the sawn surface with a coarse, double-cut, metal file. Use Shopsmith touch-up paint to cover the raw metal (optional).

5. Mount the new tie bar shield (6) over the thumbscrews (G). (See Figure 2.) Tighten the thumbscrews.

6. Mount the upper and lower saw guards on the Mark V. Then attach the two elbows to the outer guard (1) and the tie bar shield (6). Then connect the dust collection hose(s).

For high efficiency dust collection connect one 2-1/2" dia. hose from the Shopsmith Dust Collector or a dust collection system to the elbow on the outer guard. Connect a second hose to the elbow on the tie bar shield. If your dust collection system has only one hose, connect it to the outer guard elbow. You'll still get improved dust collecting capabilities using just one hose.



- Position the elbows so that the stock will not hit them or the hoses when the table is tilted to make 45° bevel cuts.
- Use ONLY the 5/8" saw arbor (555118) to mount 10" blades with 5/8" arbor holes. DO NOT use the 5/8" molder/dado arbor (also known as the universal arbor). The rotating saw blade could contact the screws in the inner guard if the wrong saw arbor is used.

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## SHOPSMITH SAW GUARD SYSTEM

If your Mark V did not come with a sawguard system like the one enclosed, you will need to make some modifications to your unit. We recommend that Shopsmith or a qualified machine shop perform those modifications. For Factory information call 1-800-543-7586 (OHIO 1-800-762-7555). We will provide shipping instructions and a quoted cost for the work. If you wish to have a showroom do the work, give them a call first so they can schedule a time to provide prompt service. If, however, you do prefer to re-work the unit yourself, please follow the instructions and procedures below.

### Tools For The Job

Drill bits - #7 and #21  
Taps -  $\frac{1}{2}$ -20 and 10-32 (right-hand thread)  
Tap handle  
Center punch or other pointed tool  
Clear tape  
5/32" hex key  
Blade screwdriver  
9/16" wrench  
Scissors or art knife and straight edge  
Light weight oil (sewing machine oil)  
1 flat file

You will want to be very precise in your work. A center punch or other pointed tool will help you set the drill point so the bit does not wander as you start a hole. Please refer to Page 2 of the enclosed Saw Guard System brochure for nomenclature and the assembled location of the parts.

1. Set the table to the 0° position. Place the front edge on your work surface. Cut out the two templates that have been provided in this package. The template with one notch at the top is for the rear shield. Although you will drill the hole on this template later on, tape it now on the flat of the tie bar just below the trunnion boss. Visually check the surface of the flat below the template. If there is a radius of metal extending left from the tube collar, file it flat.

Now, place the Upper Saw Guard Mounting Bracket on the rear of the tie bar as shown in the Saw Guard System brochure. You will be using the bracket to locate the holes. Slide the bracket up until it fits snug against the tie bar shoulder. It should not ride up on the tie bar shoulder. Assure that the face of the bracket is parallel with the rear surface of the table by sighting along the table tube from the bottom. Hold the bracket firmly to the tie bar keeping it parallel and mark your holes with the center punch. Remove the bracket. Take your #7 drill bit and drill two through holes being careful to remain squared-up with the table top surface. The lower hole need only be drilled through to the center of the tube.

2. Before tapping these holes, remove tie bar from the table. To do so, remove the four 9/16" hex screws which hold the trunnions. Remove the rear trunnion by sliding it off the pivot pin. To remove the front trunnion, first remove the table locking handle, then loosen the vernier plate and slide the trunnion off the pivot pin. Leave the pivot pins and the trunnion stud attached.

Before tapping, apply a generous coat of light weight oil or spray lubricant to the drilled hole and tap. Be sure the tap is aligned with hole. After the tap has penetrated past the tapered end - use a half turn forward/quarter turn back motion. Do not force the tap through the tie bar. Taps are brittle and will fracture or break if stressed. Be sure the tap is well lubricated at all times.

3. The Tie Bar Shield. Again you will be using the part to establish hole locations. Find the tie bar shield and note its position on the tie bar as shown in the Saw Guard System brochure. Change to your #21 drill bit.

Place the shield on the tie bar. It should fit comfortably against the bar. The slots in the shield should be resting against the bar. Again, center punch your two hole locations while holding the shield against the tie bar. The two holes you drill with your #21 bit should be perpendicular to the chrome tie bar posts. Tap and check fit using the two screws with the big square tab heads.

4. Now all that remains is one hole each for the small front and rear shields. Don't neglect these as they are both an important link in sealing for sawdust collection and for your safety. These two holes also require your #21 drill bit.

The template with two notches is for the front face of the tie bar. It should fit snugly against the face just below the trunnion stud boss and flush with the left and right edges. Tape it in place and center punch the hole location. Through drill the hole and tap. The shield fits onto the back side of the front vertical not the front face where you located and drilled the hole. Check for fit using one of the small slotted rectangular head screws. DO NOT use the large tab screws here as 10" saw blades will not clear them!

To drill and tap for the rear shield, remove the upper guard mounting bracket if you have left it in place. Check the template you left taped to the rear face for position. Adjust if necessary, center punch the hole location and drill a through hole. Tap and check fit, again mounting the shield on the inside face using the remaining slotted rectangular head screw.

Reassemble the table and check its alignment to the spindle. Complete alignment procedures are found in the Owner's Manual and in "Power Tool Woodworking for Everyone". Once the table is aligned with the spindle, check the alignment of the Saw Guard with the table slot. If you have hand drilled and tapped the holes you may find a slight misalignment. If this occurs, use a washer to shim between the splitter blade and plastic block until aligned. This may only be required on one of the screws.



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