



Shaper Fence

Instructions for Installation and Operation

Item No. 505508



SHOPSMITH accessories used with Shaper Fence

Introduction

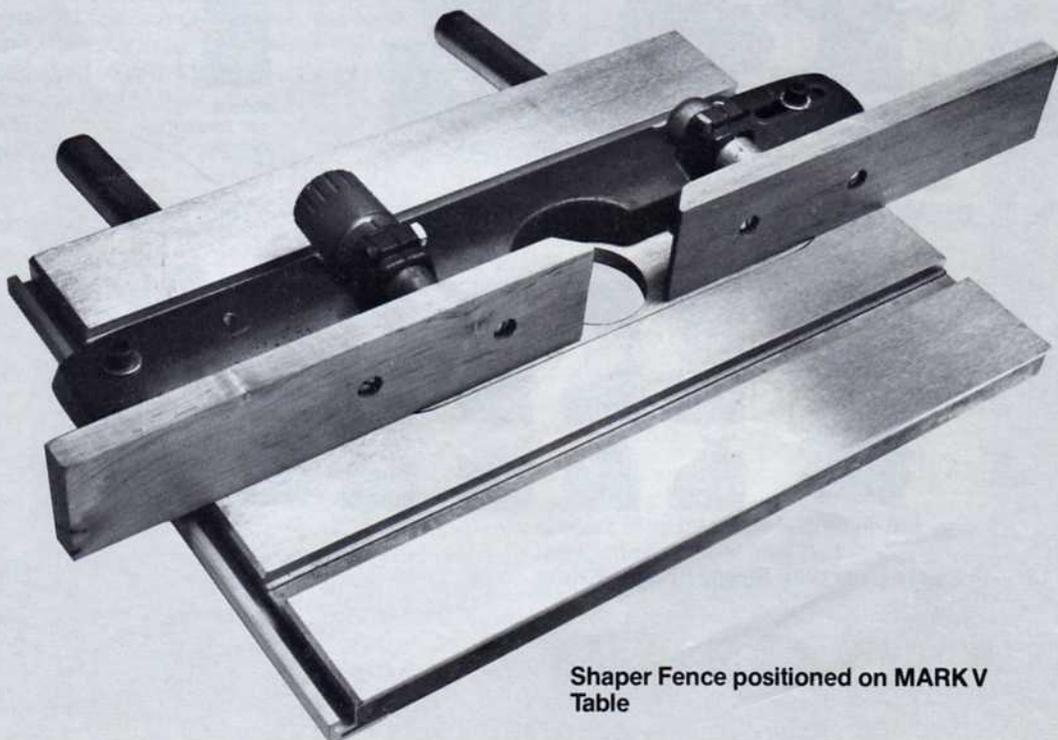
The SHOPSMITH UNIVERSAL Shaper Fence is intended for use not only with standard, three-lip shaper cutters, but with other accessories such as the drum sander and similar tools. The Shaper Fence in combination with the Special Shaper Insert (No. 505509) is a complete unit capable of almost any shaping operation on the inside or outside edges of straight, curved or circular work. The fence adjustment knob with its exclusive "clicker" allows adjustments as fine as 1/64".

Setting up the Shaper Fence

With MARK V in vertical drill press position, replace the regular table insert with the Special Shaper Insert. The fulcrum pins supplied with the Shaper Insert are not needed when the Insert is used with the Fence. Position the table to center the Insert hole under the spindle. This should place the table about 1/8" away from the table carriage. Secure this position with the carriage knobs. As packaged, the Shaper Fence boards are not

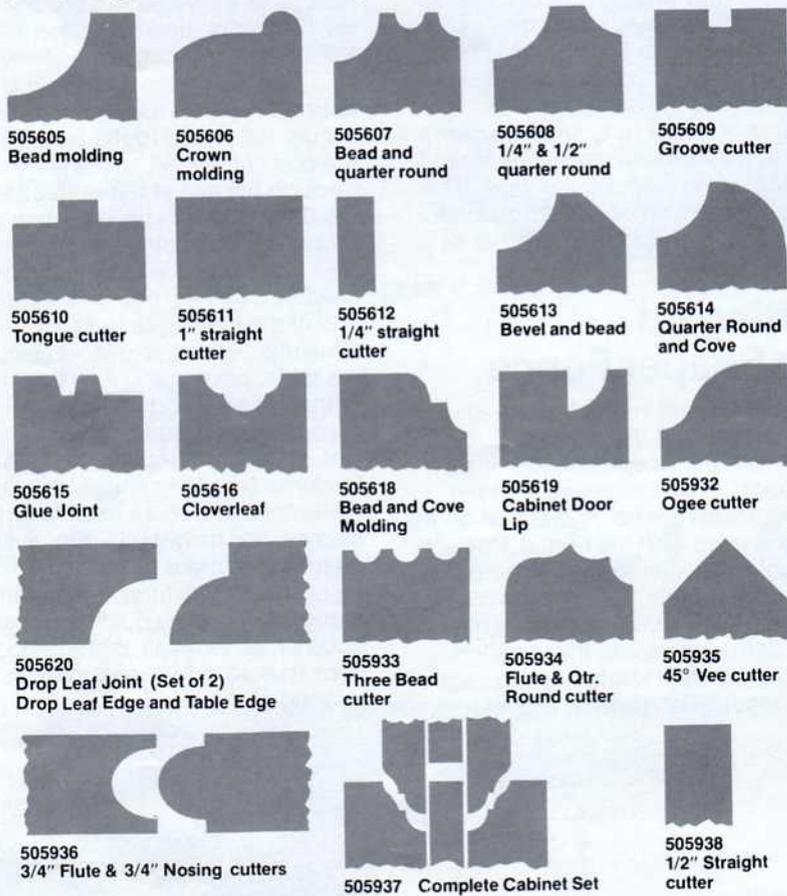
assembled as a precaution against damage in shipment. Before proceeding further, attach the two Fence Boards to the adjusting brackets with the hardware provided. (See illustration on back page.)

Two U-shaped clamps and two knurled cap screws are supplied to secure the Fence to the table. Place the one cap screw, with the washer, through the slot at the outfeed end of the Shaper Fence base casting and thread it a short distance into one of the U-clamps. The other cap screw is used through the hole at the infeed end of the casting to hold the second U-clamp. Place the Shaper Fence on the table, positioning it so that the side of the base casting nearest the table carriage just straddles the miter gauge slot and is parallel to it. The front U-clamp should fit snugly against the rip fence bar. Secure front and rear clamps. For height position, make the major adjustment by moving the table up or down. The final adjustment is made by using the quill feed lever. It is good practice on all shaping operations to hold quill extension to a minimum.



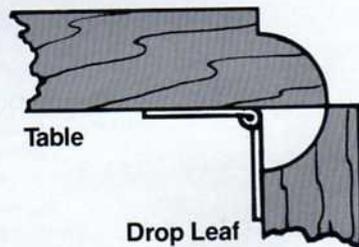
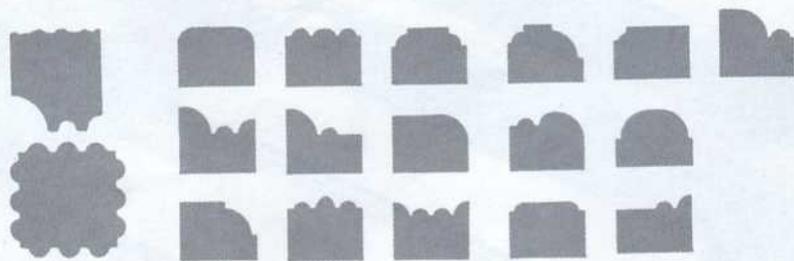
Shaper Fence positioned on MARK V Table

An assortment of Shaper Cutters will enable you to shape thousands of moldings — do hundreds of jobs.



How to use Shaper Cutters

The three-lip shaper cutter, which is the safest and most practical shaper knife for home craftsmen to use, is available in a variety of shapes to take care of virtually every need. A basic assortment selected for the type of work you do should be kept on hand. Other cutters may be added as the need for them arises. In addition to cutting full profile shapes, the cutters may be used for partial cuts (when only part of the cutter profile produces the shape desired) or they can be used in combinations to produce virtually any design needed. Cutters like the Drop Leaf Joint Set (505620), Glue Joint (505615), and Cabinet Door Lip (505619) are designed to do a specific job and usually are set to shape the full profile cut. Others like the Combination Bead and Quarter Round (505607) and Quarter Round and Cove (505614), may be described as combination cutters and are usually set to shape a portion of the of the profile. This partial cut may constitute the entire operation, or it may be just part of an edge which is produced by several passes with the same cutter or in combination with other cutters. The illustration indicates the variety of shapes possible through the use of a single shaper cutter. Variations are possible by changing cutter height, depth of cut, and sequence of passes. The illustration below shows the popular Drop Leaf Table Joint.



Possible Cuts With Single Shaper Cutter

Drop Leaf Table Joint

Operation

Shaping techniques are not difficult if you will remember never to force the work or make too deep a cut. Feed of the work, which is always against the direction of rotation of the cutting tool, should be slow and steady. The speed dial should be set at U or W. When a heavy cut is required, make it in stages, adjusting the fence or changing collars (when shaping free-hand) after each pass, until the desired depth is reached. Cuts made with the grain of the wood are always smoother and easier than cuts made against or across the grain. For this reason cross-grain cuts or cuts made against the grain should always be made more slowly and with less "bite" than with-the-grain cuts. When shaping is required on all four edges of a work-piece, make the cross-grain cuts first.

Whenever possible make the pass with the cutting tool under the work thereby using the work itself as a guard. Keep fingers away from the cutting area and hooked over the edges of the work to guard against slipping.

Always adjust the fence boards end-wise to minimize gap around the cutting tool. When a slim molding is needed, shape it on the edge of a wider board and then cut off the shaped edge on the table saw. Never rush a shaping operation: keep fence boards waxed. Should they become worn, sand them carefully and apply a coat of shellac.

Most shaping operations involve partial cuts — that is, they do not require removal of wood from the entire edge of the stock. Therefore, both fences should be in line after the initial infeed fence adjustment for depth of cut. After the shaper adapter and cutter have been secured to the spindle and positioned for height of cut, use the adjustment knob on the infeed fence to adjust for depth of cut. Feed the infeed fence forward until it is tangent to the cutting circle of the tool being used. Then adjust it back. How

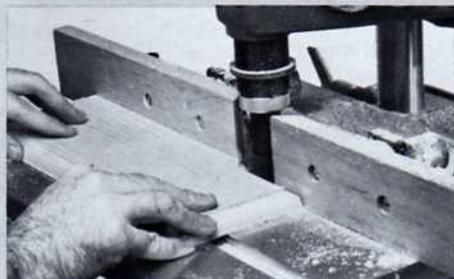
far back you move it will determine the depth of cut. Secure it in position with the split clamp cap screw and then, using a straight edge, adjust the outfeed fence so that it is in perfect alignment with the infeed fence. Then it is a matter of placing the work snugly against the infeed fence and moving it slowly past the cutter.

Cuts that remove the entire edge of the stock do not differ in execution except that the outfeed fence is adjusted to align with the infeed fence when it is set tangent to the cutting circle. The rear fence remains tangent to the cutting circle while the front fence is adjusted for depth of cut. (See Illustration.)

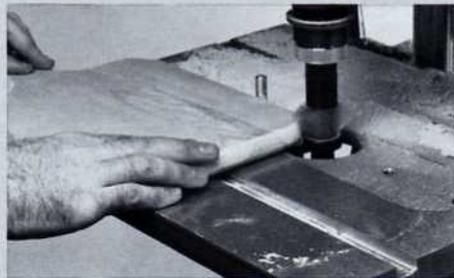
Curved or circular edges are handled as shown in the illustration. The Shaper Fence is removed from the table and the fulcrum pins are secured in the Shaper Insert. When starting the pass, place the work firmly against the left-hand pin and advance it slowly into the cutter until it comes to bear against the collar on the shaper adapter which controls the depth of cut. The work may ride both collar and pin or you can swing it free of the pin once it rests firmly against the collar. At the end of the pass, the work is swung in to rest against the right-hand pin to provide support when the work is free of the cutting tool.

Use of Collars

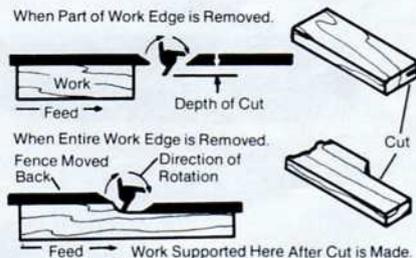
Shaper collars (No. 505604) are used as spacers between cutters, as aids in setting height of cutters, and to control depth of cut when shaping freehand. Since the collars turn with the cutter, there will be some tendency to score the wood as the pass is being made. This can be minimized by bearing against the collars just enough to maintain contact and by keeping collars clean and free of nicks and burns. Store them carefully when they are not in use.



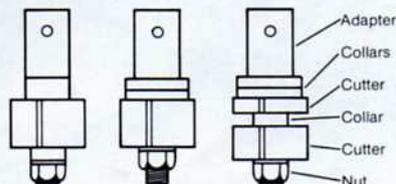
Shaping against the fence on the MARK V



Shaping curved or circular edges on the MARK V



Shaper Adapter (1/2" Universal Arbor)



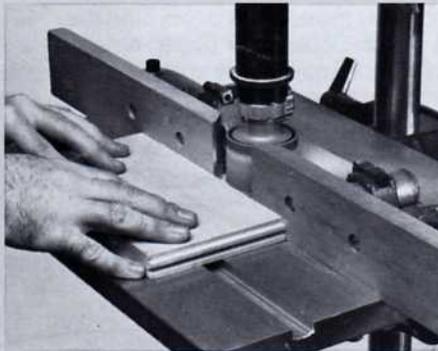
Collars May be Used Below or Above the Cutter, or Between Two Cutters.



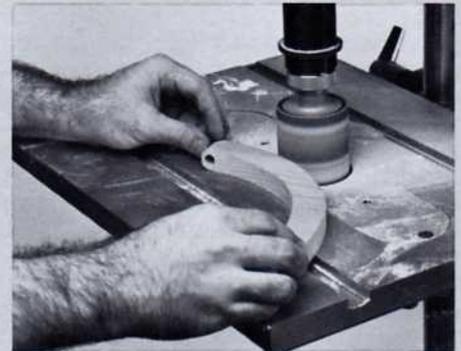
Using Sanding Drum with Shaper Fence

The drum sander may be used with the Shaper Fence for straight edge sanding, or it may be used with the Shaper Insert for freehand sanding of curved or circular edges. When used with the fence, the depth of cut setting should be very light. Its purpose here is not to remove a lot of material, but merely to smooth the edge. When curved edges are to be sanded, use the drum without the fence.

For more information on shaping techniques and procedures see the book "Power Tool Woodworking for Everyone" (505507).

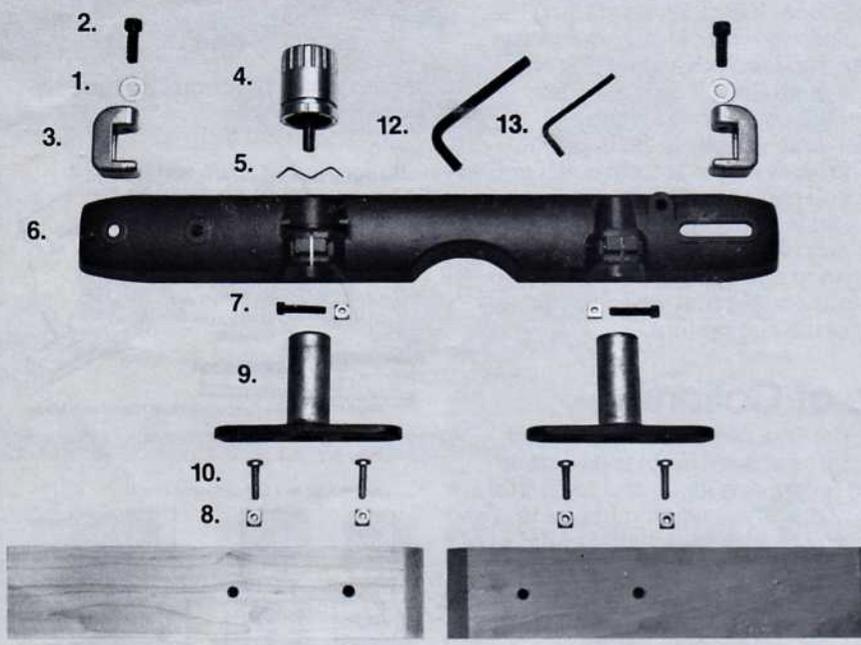


MARK V Shown



MARK V Shown

Shaper Fence parts list



Part Number and Description	Number Required
1. 120394 Washer	2
2. 426370 Clamp Screw	2
3. 513087 Clamp — Shaper Fence	2
4. 502671 Knob Assem. — Shaper	1
5. 502664 Spring — Leaf	1
6. 513086 Base — Fence	1
7. 503778 Screw — Cap	2
8. 120372 Nut — Square	6
9. 502660 Bracket — Adjust.	2
10. 9407641 Screw — Machine	4
11. 502658 Board — Fence	2
12. 502669 Key — Allen Hex (5/16")	1
13. 503701 Key — Allen Hex (3/16")	1

SHAPER CONVERSION 500 TO 510

Below you will find a rough sketch of the Shaper Fence Casting. The existing profiles are drawn in pencil. The modifications and their dimensioning is in color. You will need to drill a $13/32$ " diameter hole, $1-5/16$ " from rear edge of casting. You will find you must drill through a rib when machining the hole on the left of the drawing. This will not weaken the part. The $1-5/16$ " dimension positions the right hole next to a lengthwise rib in the casting. Do not cut through this rib. It will weaken the part if you do.

GOOD LUCK ON YOUR MODIFICATIONS. I HOPE YOU HAVE SUCCESS WITH THIS.

HARDWARE REQUIRED:

- 1) $3/8$ "-16x1 $3/4$ " bolts
- 2) $3/8$ "-16 hex nuts
- 3) $3/8$ " I.D. flat washer

