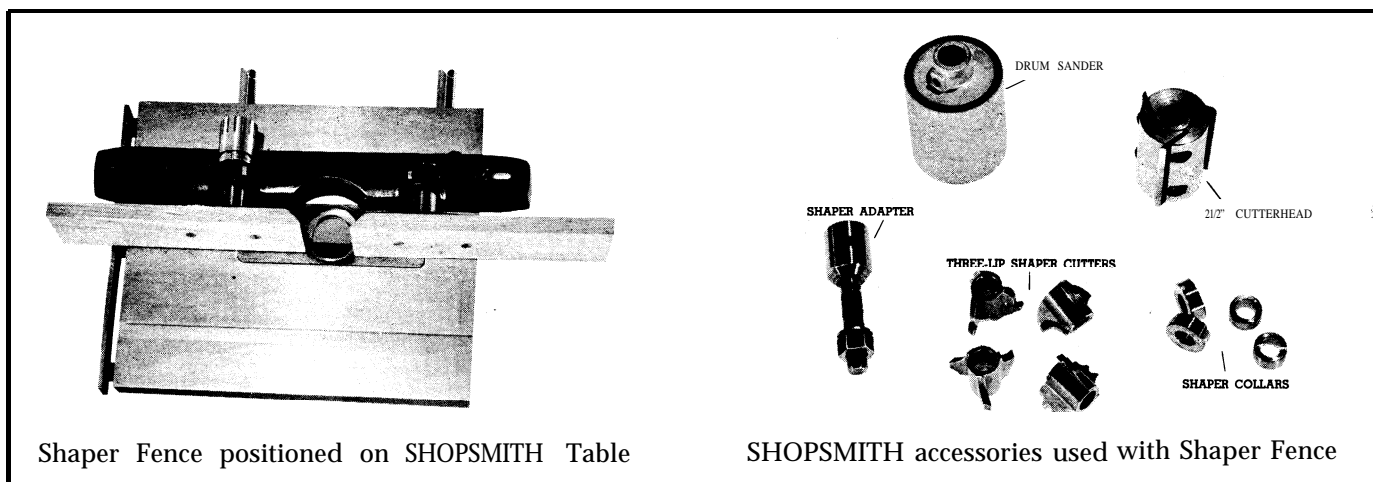


## instructions for installation and operation

# SHAPER FENCE



The SHOPSMITH Shaper Fence is intended for use not only with standard, three-lip shaper cutters, but with other accessories such as the  $2\frac{1}{2}$  cutter head, drum sander, router bits, and similar tools. The Shaper Fence in combination with the Special Shaper Insert (No. 12 363) is a complete unit capable of almost any shaping operation on the inside or outside edges of straight, curved or circular work. The infeed fence adjustment knob with its exclusive "clicker" allows adjustments as fine as  $1/64$ ".



Shaper Fence positioned on SHOPSMTIH Table

SHOPSMTIH accessories used with Shaper Fence

### Setting up the Shaper Fence

With SHOPSMTIH 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 outfeed fence is secured in a reverse position as a precaution against damage in transit. Before proceeding further, loosen the cap screw which secures the outfeed fence, remove the fence and replace it in its correct position (see illustration above).

Two U-shaped clamps and two knurled cap screws are supplied to secure the Fence to the table. Place the shorter cap screw 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 longer 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.

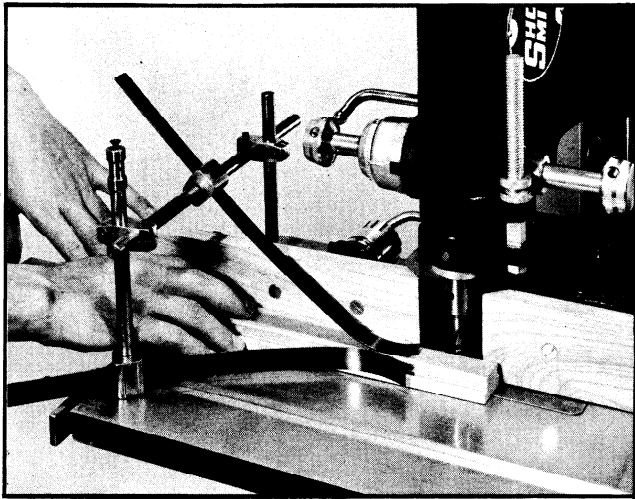
### Operation

Shaping techniques are not difficult if the operator 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. Top speed should be used (number 3 pulley or top speed with the speed changer). When a heavy cut is required, make it in stages, adjusting the fence or changing collars (when shaping freehand) after each pass, until the depth of cut has been attained. 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 workpiece, 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.

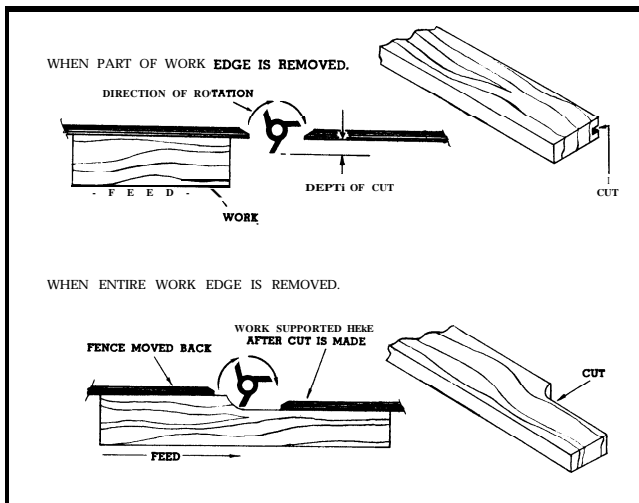
Always adjust the fence boards end-wise to minimize gap around the cutting tool. When a slim molding is needed shape it on the edge of a wider board and then cut off the shaped edge on the table saw-or-use the Universal Hold Down (No. 12 357) which is designed to provide maximum protection and as an aid in just such operations. Never rush a shaping operation: Keep fence boards waxed. Should they become worn, sand them carefully and apply a coat of shellac.

## Shaping against fence

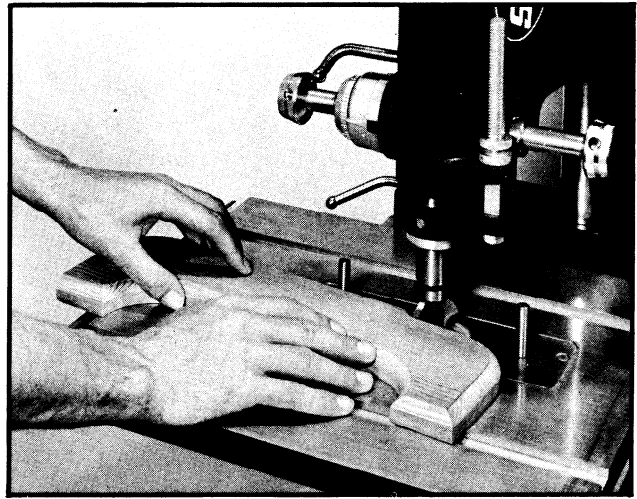


Most shaping operations involve partial cuts—that is, they do not require removal of wood from the entire edge of the stock. Therefore, both fences should be in line after the initial infeed fence adjustment for depth of cut. After the shaper adapter and cutter have been secured to the spindle and positioned 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 (see illustration top of page—note use of Universal Hold Down).

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 drawing below.)



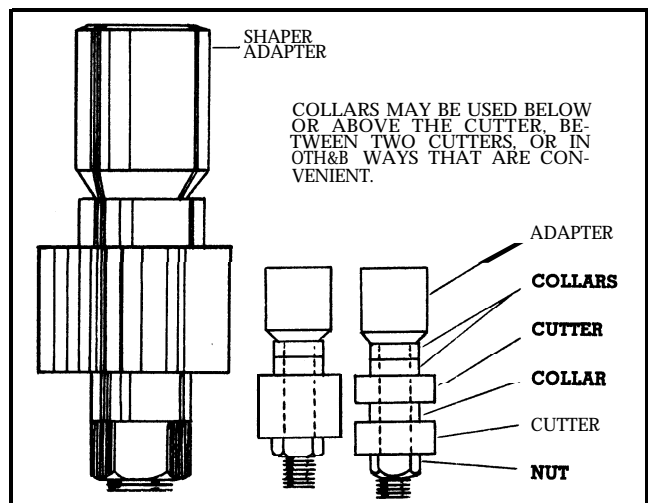
## Shaping curved or circular edges



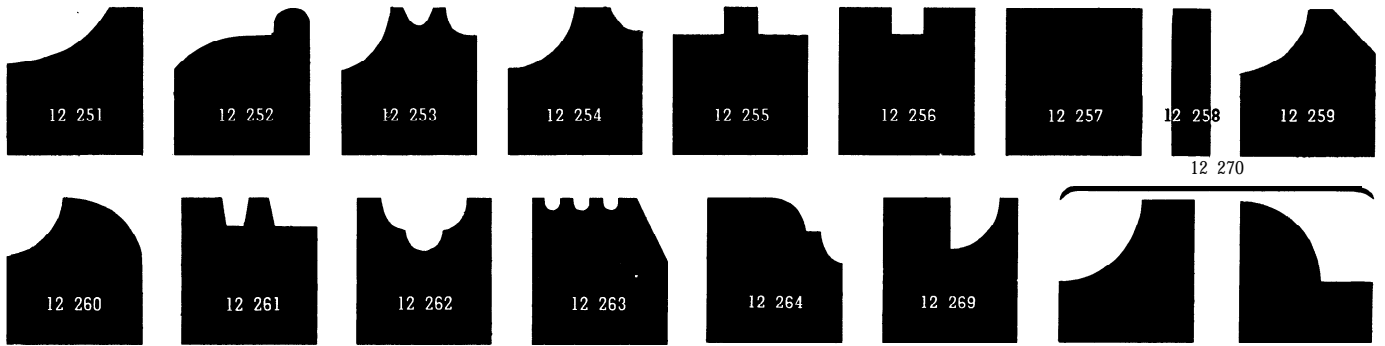
Curved or circular edges are handled as shown in the illustration above. The Shaper Fence is removed from the table and the fulcrum pins are secured in the Shaper Insert. When starting the pass place the work firmly against the left-hand pin and advance it slowly into the cutter until it comes to bear 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. 12 235) 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 knicks and burrs. Store them carefully when they are not in use. The drawing below indicates some methods of using the collars.



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



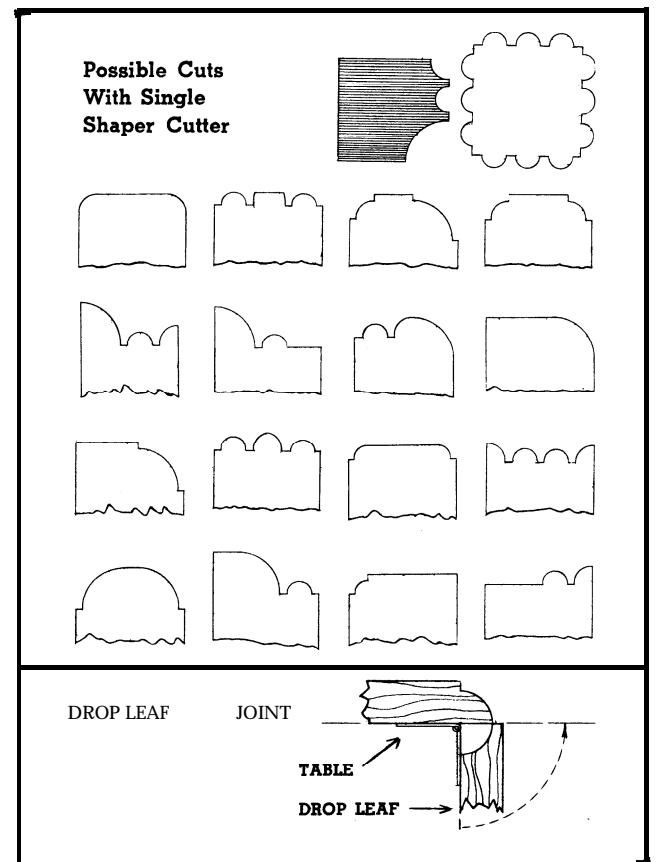
accessory no.	name
12 251	A) Bead molding
12 252	(B) Crown molding
12 253	(Ic) #Corner bead and quarter round
12 254	(D) ¼ " & 1/2" quarter round
12 255	(E) Groove cutter
12 256	(F) Tongue cutter
12 257	(G) Blank cutter
12 258	(H) Blank cutter
12 259	(J) Bead and bevel

accessory no.	name
12 260	(K) Quarter Round and Cove
12 261	U-J Glue Joint-1/2" stock and up
12 262	(W) Clover Leaf
12 263	(N) Three Bead and Bevel
12 264	(P) Bead and Cove Molding
12 269	(R) Cabinet Door Lip

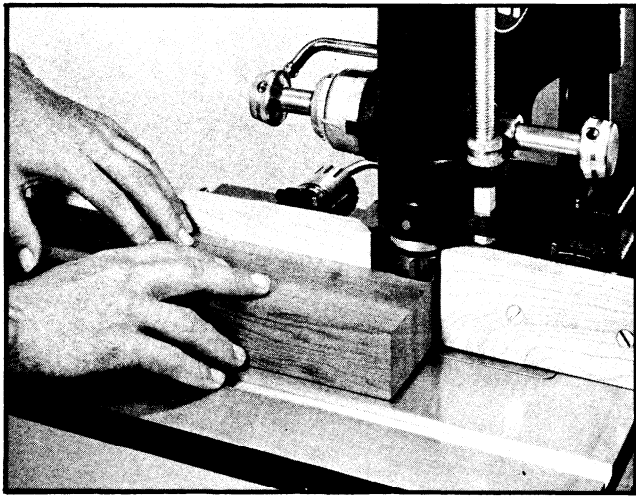
Dro\*p Leaf Joint Cutter Set  
Includes: Table Edge and Drop Leaf Edge  
**12 270**-Set of 2 cutters

**How to use Shaper Cutters**

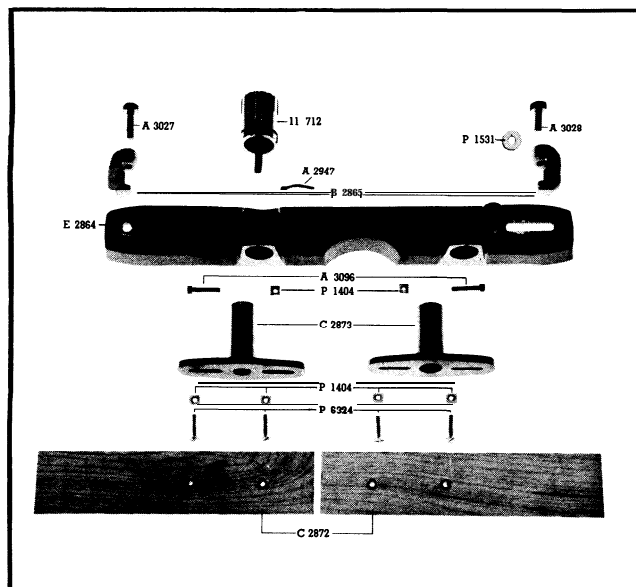
The three-lip shaper cutter, which is the safest and most practical shaper knife for home craftsmen to use, is available in a variety of shapes to take care of virtually every need. A basic assortment selected for the type of work you do should be kept 'on hand. Other cutters may be added as the need 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 Table Edge and Drop Leaf Edge (12 270), Glue Joint (12 261), Cabinet Door Lip (12 269) 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 (12 253), and Quarter Round and Cove (12 260), may be described as combination cutters and are usually set to shape a portion 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 drawing at the right 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 drawing also illustrates the popular Drop Leaf Table Joint.



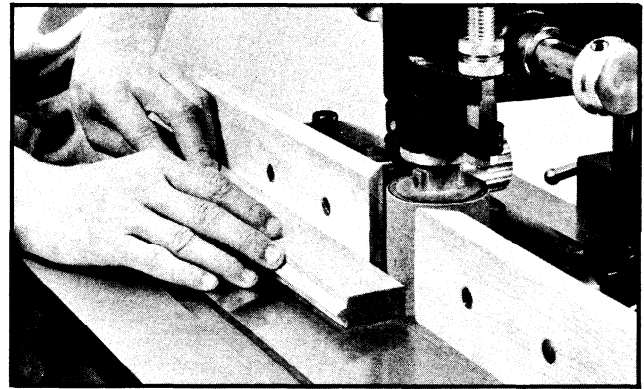
### Light jointing operations



The 2 1/2" cutter head (12 230) is a practical accessory for light duty jointing operations. It is used with the Shaper Fence and Special Insert as shown in the illustration above. After the cutter head has been secured to the spindle, the Shaper Fences are adjusted for total removal of the edge of the stock and are adjusted end-wise to minimize gap around the cutter head. Maximum jointing cuts should be 1/8". Speed for jointing is 3450 rpm (belt on small head-stock pulley) or higher with speed changer. As with shaping operations SHOPSMITH may be used in either the vertical or horizontal position. You will find it most convenient to use the horizontal position when edging wide boards (the table acts as a high fence) and to use the vertical position when edging narrow work (so that hands will not have to pass over cutter head). For rabbeting, situate the cutter head above the table for depth of cut (edge of work will pass under cutter head) and set Shaper Fences for partial edge removal. Setting the-fence for depth of cut will gauge the width of the rabbet.



### Using Sanding Drum with Shaper Fence



### Using Sanding Drum with Shaper Insert



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.

### Shaper Fence parts list

Part No.	Description	No Required	List Price Each	Shpg. Lbs.	Wt. Each oz.
E2864	Base-Fence	1	\$5.95	3	-
A3096	Screw--Cap	2	.26		3
PI404	Nut-Square	6	.05		3
A2947	Spring-Leaf	1	.10		3
II 712	Knob Assem.-Shaper	1	1.00		10
B2865	Clamp-Shaper Fence	2	.25		4
A3027	Clamp Screw-Long	1	.25		3
A3028	Clamp Screw-Short	1	.20		3
C2873	Bracket-Adjust.	2	.75		2
C2872	Board-Fence	2	1.00		12
P6324	Screw-Machine	4	.10		4
P1531	Washer	1	.05		3

Should you desire further information on shaping techniques and procedures see the new book **POWE'R TOOL WOODWORKING FOR EVERYONE** which is available through your local SHOPSMITH dealer.

Prices subject to changes without notice.

**Magna Engineering Corporation**

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