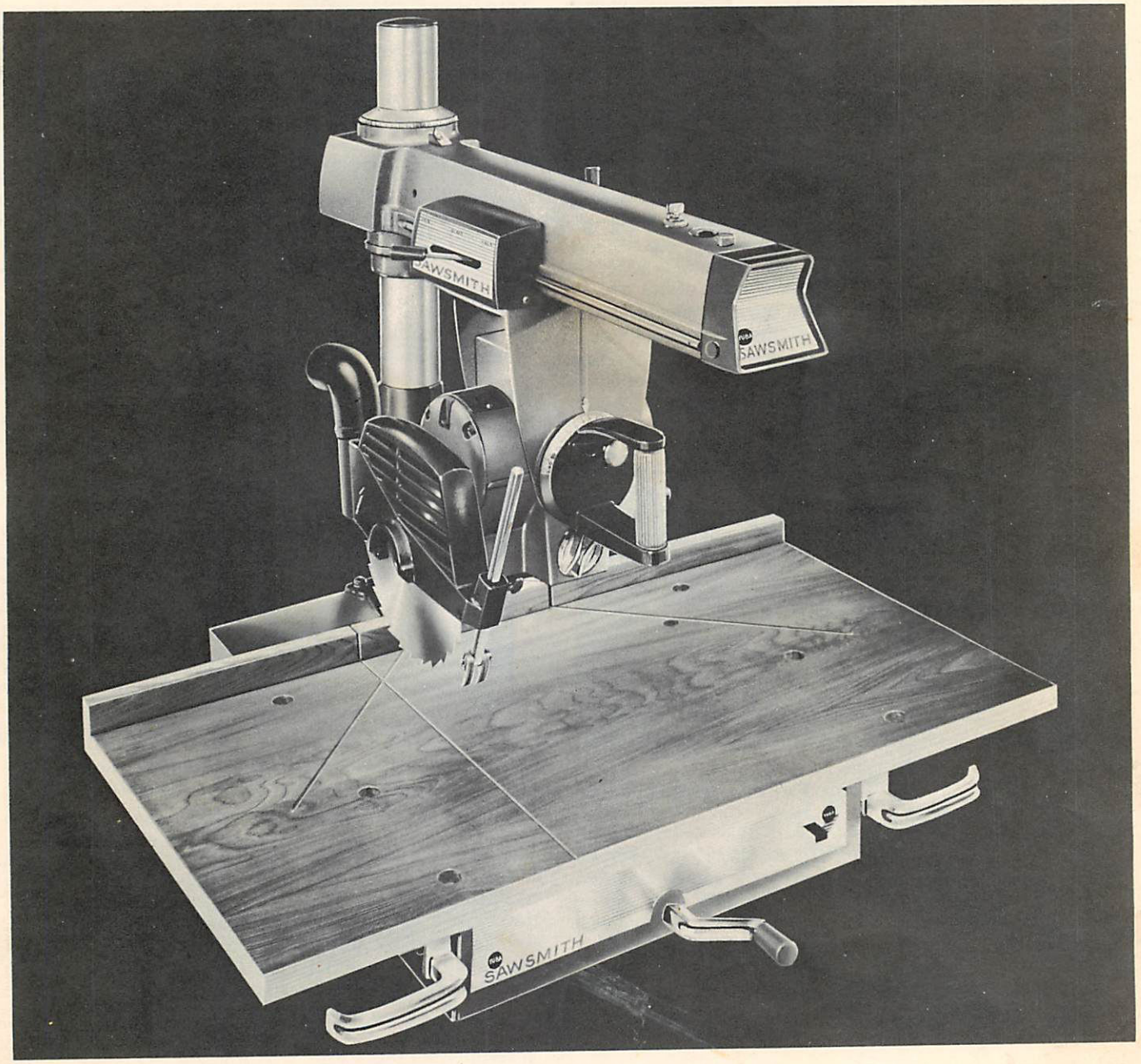
OWNER'S MANUAL

YUBA

SAWSMITH

Item No. 700000
Article No. 84-2265



Manufactured by

YUBA POWER PRODUCTS, INC.
800 EVANS ST., CINCINNATI 4, OHIO

A Subsidiary of
YUBA CONSOLIDATED INDUSTRIES, INC.

YUBA

Bulletin No. 9187 1/60

SAWSMITH

CONGRATULATIONS! Your new SAWSMITH is the world's finest, most versatile Radial Arm Saw - distinctively different, unequalled for ease of operation, accuracy and safety. Not an adaptation of an industrial machine, SAWSMITH is totally new, designed as a craftsman's tool and perfected for workshop use.

With your SAWSMITH you'll have all the power you'll ever need, delivered through the exclusive vari-speed drive, for POWER sawing of softest pine or toughest oak! You'll get SAWSMITH'S built-in, built-to-last precision, too, with features designed for accuracy and the easy renewal of accuracy, should wear occur. Convenience ... your convenience ... was uppermost in the minds of the engineers who designed and perfected SAWSMITH ... engineers famous for practical innovations in power tools! And finally, you'll have all the versatility you'll ever need, because SAWSMITH gives you the time and labor-savings of a shop full of conventional tools!

This Owner's Manual will help you check out your new SAWSMITH for correct adjustment and alignment. It will help you keep it in perfect condition down through the years. Read it ... heed it ... and keep it! It's your guide to top quality workmanship and professional results in all your power projects.

SAWSMITH ADJUSTMENTS

A good craftsman makes periodic checks of his machine to be sure that parts are in correct alignment. Here is what to look for and good methods for checking.

1. Parallelism of Spindle to Arm Guide Rails

Place a block (wood or metal) on the base or table so that the exposed spindle shaft will locate on the top surface of the block. (Figure 1) with the spindle just touching the block, release the Yoke Lock and turn the motor cradle assembly 180°. If both ends of the spindle shaft touch the top of the block, no adjustment is necessary.

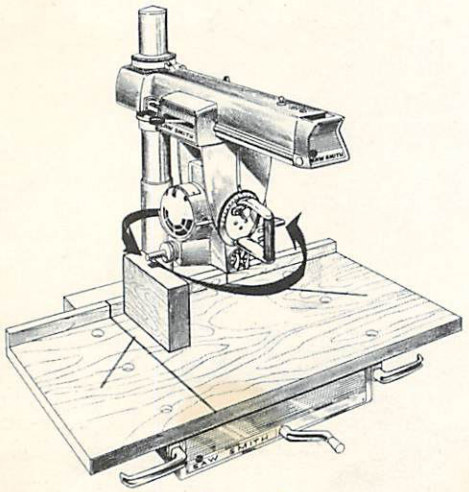


Figure 1

If both ends of the spindle shaft do not locate the same on the top of the block, the following adjustments should be made. (Figure 2) Loosen the two socket head screws which hold the pivot lock mount casting in place. Turn the twist lock handle to lock position and check the location of the spindle shaft over the block. Turn the cradle assembly 180° and check the other end of the spindle shaft over the block. By

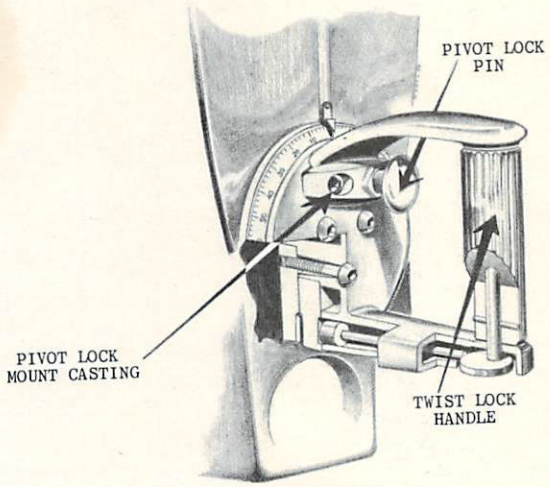


Figure 2

using the twist lock handle, move the motor-cradle assembly until both ends of the spindle shaft locate the same on the top of the block. Always check shaft location with yoke lock in lock position.

With the twist lock handle in lock position, push in on the pivot lock pin while tightening the two pivot pin mount screws. Unlock the twist lock handle, pull out the pivot lock pin and move the motor-cradle assembly. Release the pivot lock pin and let it index at O. Check both ends of the spindle shaft over the block to see that nothing moved while tightening the two screws.

2. Adjusting the Table

The table is shipped completely assembled with the exception of the stop bolt which is placed in the only empty table hole after the table is assembled on the two rails which are located on either side of the base. The table lock handles should be positioned parallel to the table surface, or "unlocked" when the table is placed on the rails. (Figure 3)

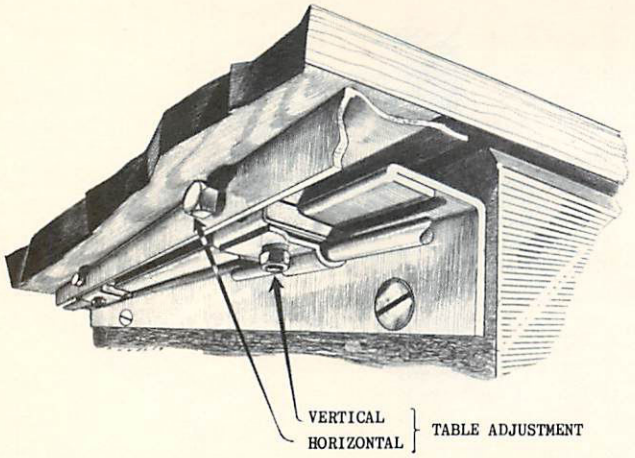


Figure 3

The first adjustment is to take out all of the up-and-down table motion. The four nuts, one under each table glide assembly, should be adjusted to permit the table to move back and forth easily but not let the table move up-and-down. The four screws, one on the outside of each table glide assembly, should be adjusted to remove any sideways table motion but still permit the table to slide back and forth easily. Both of these adjustments should be made with the table lock handles in the unlocked position (handles parallel with table surface). The table should now lock when the handles are moved to lock position (handles down).

3. Parallelism of Table and Arm

To adjust the table for parallelism, the saw blade is put on the spindle and is used as an indicator. (Figure 4) Move the blade over the surface of the table by moving the carriage back and forth on the arm and by swinging the arm from right to left. This will cover the table sufficiently. Keep in mind that a wood surface is never perfectly flat.

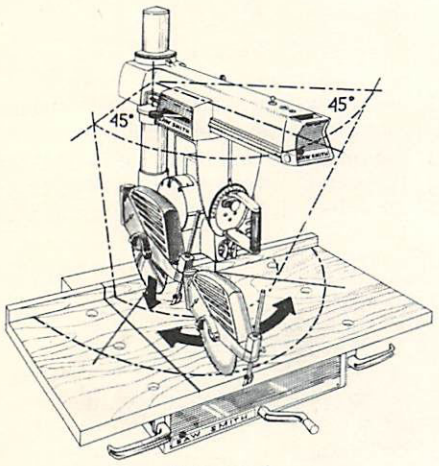


Figure 4

If the table needs adjusting, loosen the four track mounting bolts and move the track up or down as required, using the 4 adjusting cams under the track. (Figure 5) When the surface of the table is parallel with the arm the four track mounting bolts can be retightened. Be sure the track does not move when these bolts are being tightened.

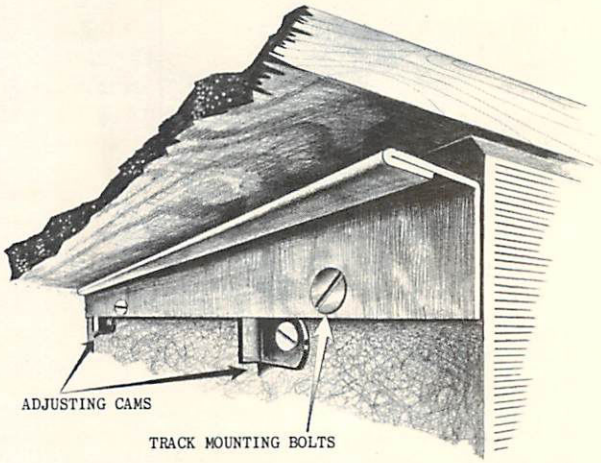


Figure 5

4. Remove "Heeling" in Sawcut

To check parallelism of the blade and the arm, make a cross-cut in a board approximately 6 inches wide. Make this cross-cut through the board, but stop the blade with the back of the blade still in the wood. If there is a ridge on the end of the board where the blade stopped, the unit needs adjustment. (Figure 6)

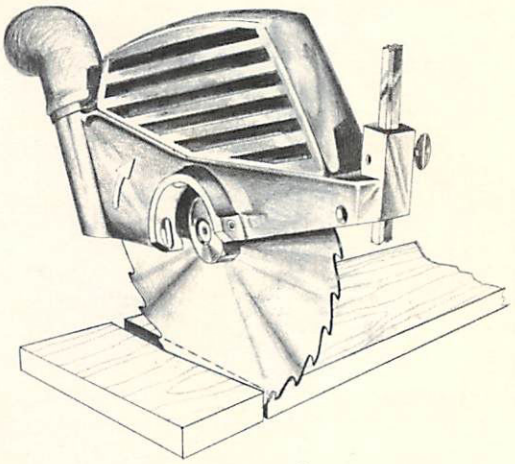


Figure 6

Standing in front of the Sawsmith, if the "Heel" marks are caused by the right side of the blade, the rear edge of the blade should be shifted to the left and visa versa.

To adjust for "Heeling", pull the plastic knob off of the Yoke Lock Handle. Remove the four small screws which hold the yoke lock cover in place and remove the cover. With the yoke lock handle at 90° from the arm, loosen the two socket head cap screws, which hold the yoke lock mount casting onto the carriage. (Figure 7) Move the saw blade in the desired direction and retighten the two screws. Make another cut and see if the "Heel" marks are gone. If so, reassemble the cover and plastic knob. If not, repeat this procedure until no heel marks show on the board ends.

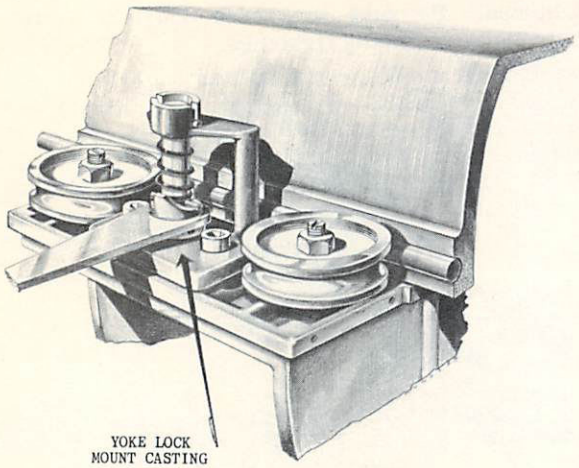


Figure 7

5. Blade Square to Fence

To check squareness of the blade to the fence, lay a good steel square on the table with the short leg of the square against the fence. With the blade just clearing the table, pull the carriage the full length of the arm. If the blade is not perpendicular to the fence, the blade will move toward or away from the edge of the square as the carriage is moved back and forth. (Figure 8)

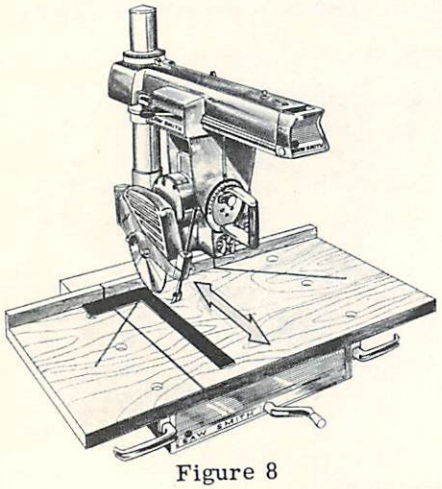


Figure 8

This misalignment is corrected by loosening slightly the four bolts that hold the column onto the base. (Figure 9) These screws should be loosened only enough to permit movement when pressure is put on the end of the arm. After the column has been rotated to desired position or when the blade follows along the edge of the square without moving toward or away from it, the four bolts should be retightened.

Check again to see that the column did not move when the four bolts were tightened.

6. Adjusting the Carriage Glide Bearings

If play should develop between the carriage glide bearings and the arm guide rails, it is possible to take up the slack by adjusting the glide bearing eccentric

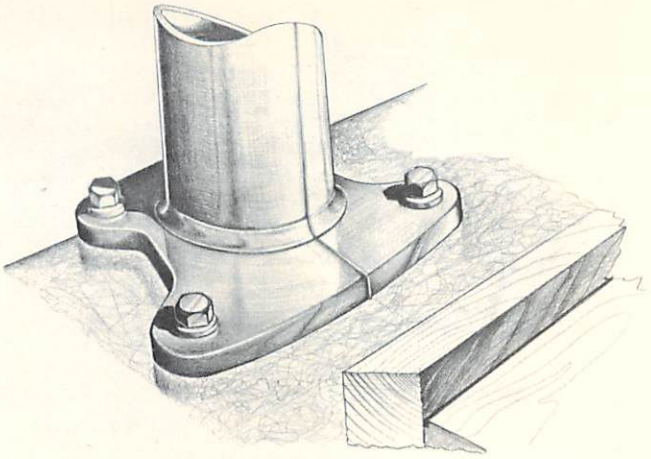


Figure 9

shafts on the right side of the carriage. Remove the plastic knob from the carriage lock handle and remove the cover which is held in place by four small screws. Loosen slightly the nuts on the eccentric shafts and turn the shaft using a screw driver in the slotted end. Turn the eccentric shaft, with the screw driver, until all of the slack is taken up. (Figure 10)

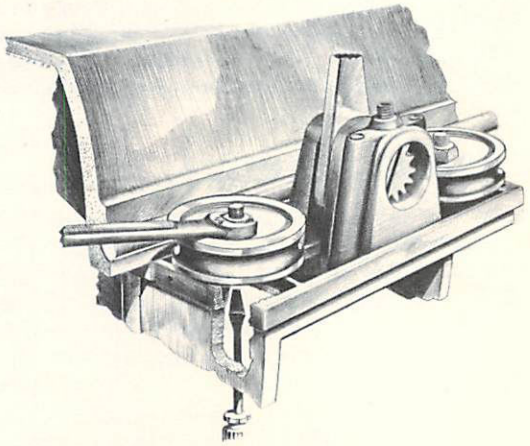


Figure 10

When the nuts are tightened, the screw driver should be used to hold the desired setting of the eccentric shaft. If the shaft is not held, it will turn when the nuts are tightened. Move the carriage the full length of the arm to detect tight spots. Readjust if necessary.

Replace the cover, four cover screws and plastic knob.

7. Adjusting the Carriage Lock

If during use, it is evident that the carriage lock does not hold the carriage assembly firmly on the arm, the brass carriage lock screw can be adjusted to hold better. (Figure 11)

Remove the plastic knob from the carriage lock handle and remove the cover which is held in place by four small screws. Loosen the cone point set screw so that the brass lock screw can be turned by using the slot provided. Position the brass lock screw so that

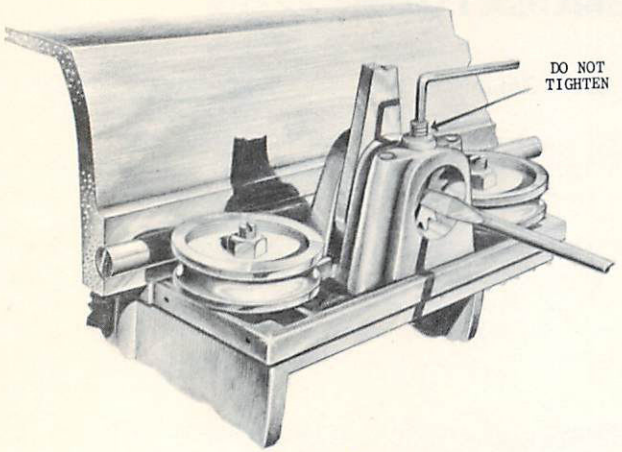


Figure 11

it will just clear the arm guide rail while moving the carriage the entire length of the arm. Position the cone point set screw so that the point will keep the brass lock screw from turning but will permit it to slide in and out when the lock handle is moved.

Replace the cover and be sure the lock will engage before the lock handle hits the end of the cover slot. Complete the reassembly by putting the plastic knob on the lock handle.

8. Adjusting the Arm Lock

The arm lock has three positions: Lock, Index, and Release. When the arm lock is against the front of the arm it is in Lock position, when pulled out to approximately 45° it is in Index position, and when pulled all the way down it is in Release position and the arm can be swiveled 360°.

The arm has five index stops, 90°, 45°, 0°, 45°, & 90°. If a miter setting is desired, other than the five index stops, the arm is held in place by a friction lock. This friction lock may require adjustment after some usage.

To adjust the arm friction lock, the arm lock handle is put in the index position and the two nuts on the lock rod are moved. (Figure 12) Moving the nuts away from the column will increase the holding power of the friction lock. The only limitation, to the amount of holding power, is determined by how hard the operator wishes to push on the handle to lock the arm.

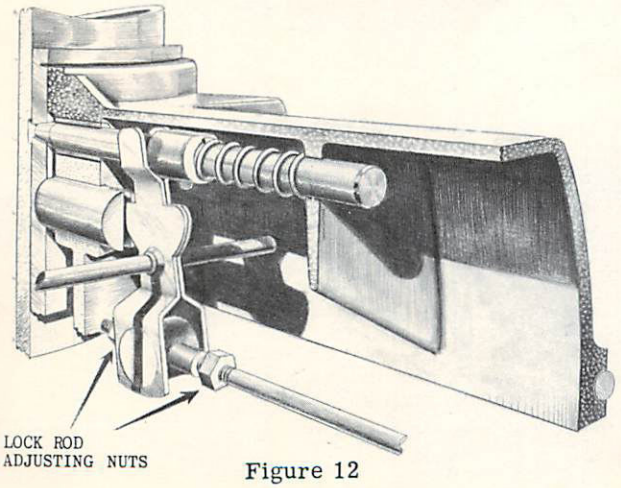


Figure 12

9. Adjusting the Collar Plug

Radial location of the collar is achieved by a tapered plug in the rear of the collar, which travels in a tapered slot in the rear of the column. The location of the pin in the column is very critical if precision work is to be performed on the Sawsmith.

Radial play is removed by loosening the set screw, shown in Figure 13, and moving the plug in toward the column. To assure proper plug location, the plug should be tapped with the end of a wooden hammer handle while the set screw is being tightened. This procedure will create a slight amount of pressure between the pin and the tapered slot edges assuring good contact. Care should be taken not to create too much pressure which would cause the raising and lowering mechanism to work hard. The proper pin adjustment is achieved when there is no radial play and when the arm is raised and lowered with ease.

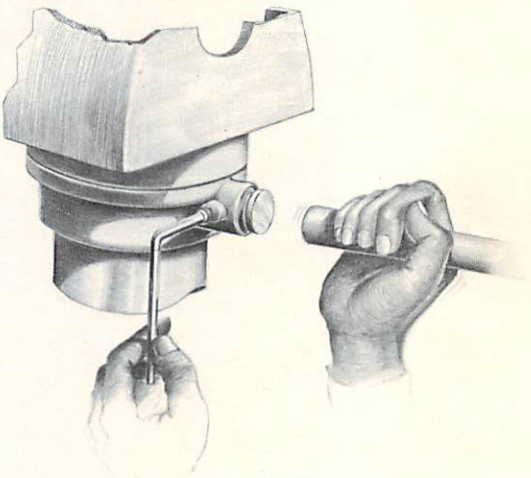


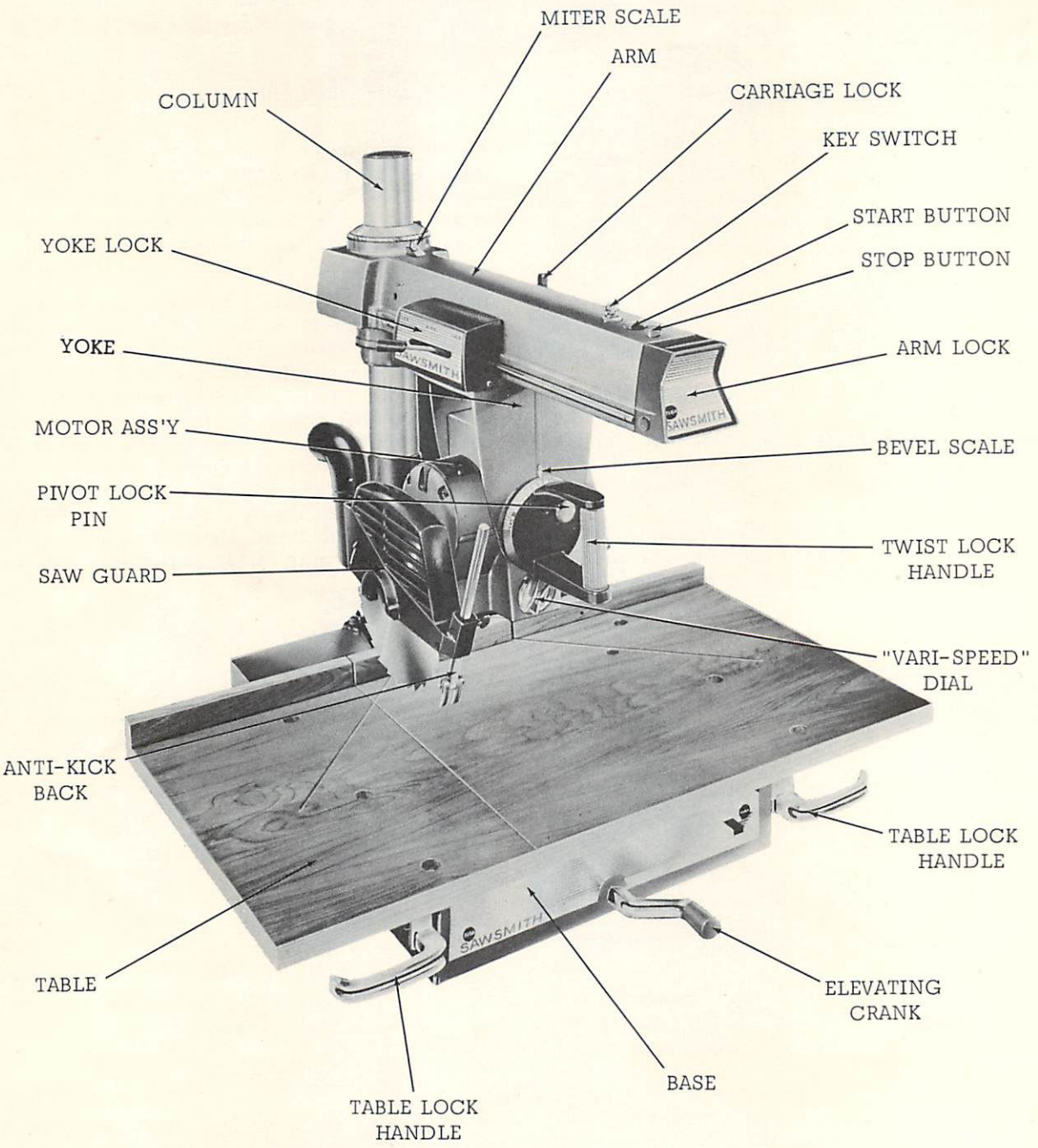
Figure 13

10. Adjusting the Scales

Both the miter scale and the bevel scale pointers are adjustable for accuracy. Set the arm at right angles to the fence by pulling down on the arm lock handle and moving the arm to one side, raising the arm lock handle (to about 45°) and move the arm back so that the indexing pin will stop the arm. Check the miter scale pointer to see that it is pointing at "O". If it is not, loosen the pointer screw and make the correction.

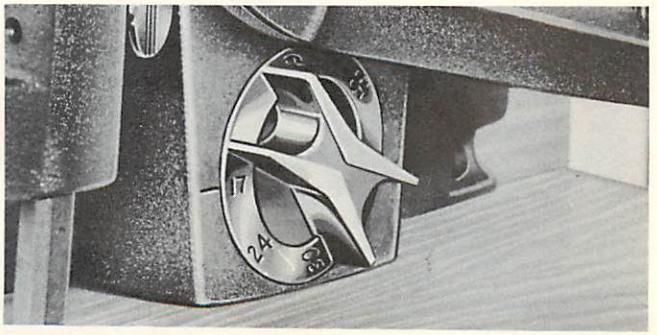
The same basic procedure is used for the bevel scale setting. Rotate the twist lock handle to unlock and pull out the pivot lock pin, pivot the motor-cradle assembly and release the pin. Return the motor-cradle assembly to a horizontal position and the pivot pin will relocate. Check the bevel scale pointer and make the correction as described above.

SAWSMITH NOMENCLATURE



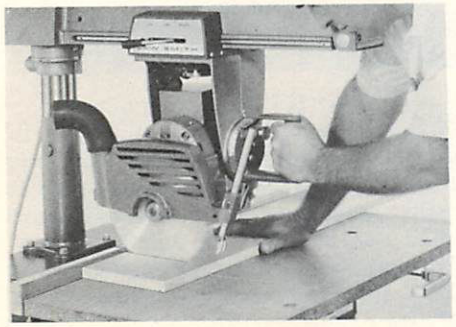
Sawsmith "Vari-Speed" makes speed selection as easy as dialing a phone. The settings for most operations are shown on the back cover of this manual in the "Sawsmith Speed Chart."

Turning the dial clockwise increases the shaft speed; turning the dial counter-clockwise reduces the Shaft speed. Never attempt to change speeds when the motor is turned off.



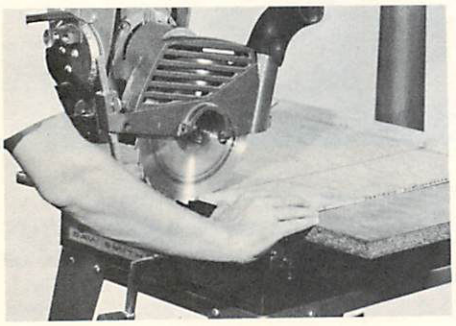
Cross Cut - Table Out

Move the Saw blade back on the arm as far as it will go. Position the table so that the blade is behind the work. Set the arm at "O" on the miter scale and set the motor-cradle at "O" on the bevel scale. Be sure the arm lock handle is in lock position, the twist lock handle is in lock position, and the carriage lock is in release position. Place the material, to be cut, on the table against the fence and pull the saw blade across the material. Return the saw blade behind the fence.



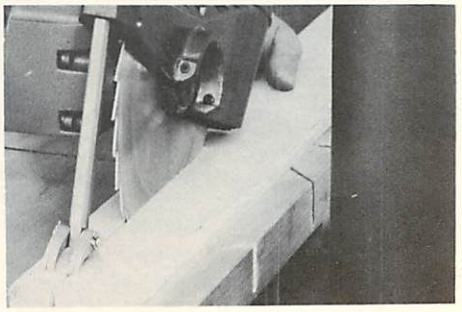
Cross Cut - Table In

To cut off material up to 20" wide, the cut can be started as described in CROSS CUT - TABLE OUT. When the blade has been pulled all the way out, the carriage should be locked, the table should be unlocked, and the material pushed into the blade. This action will continue the cut to the full capacity of the saw.



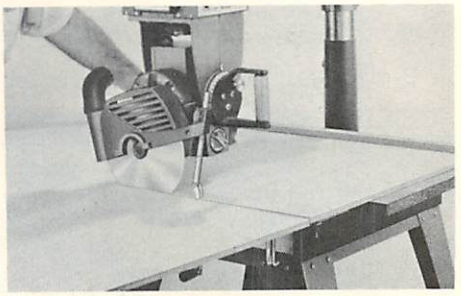
Rip-in

If a narrow rip cut is desired the table can be positioned in the cross cut - table out position. The arm should be set at "O" on the miter scale, the yoke lock handle should be moved to "release" position, the yoke swiveled a few degrees, and the yoke lock handle set at "index" so that the yoke will stop automatically at 90°. The yoke lock handle may then be placed at "lock" position. Position the saw blade for the rip width desired and lock the carriage. Lower the guard to clear the material on the in-feed end, adjusting the anti-kick back attachment as shown. Place the material on the table and against the fence and push past the saw blade. Do not feed the material into the anti-kick back side of the guard.



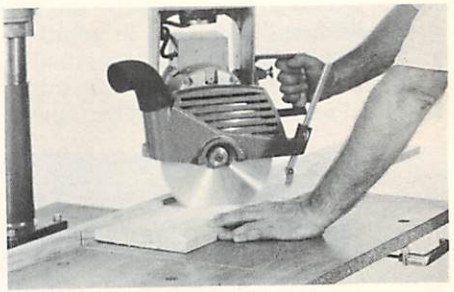
Rip-out

If a wide rip cut is desired, up to 27", the same basic procedure, as outlined in "Rip-in", can be followed. The table should be moved all the way back and locked in this position. The carriage is then moved to position the blade for the correct cut width and locked in position.



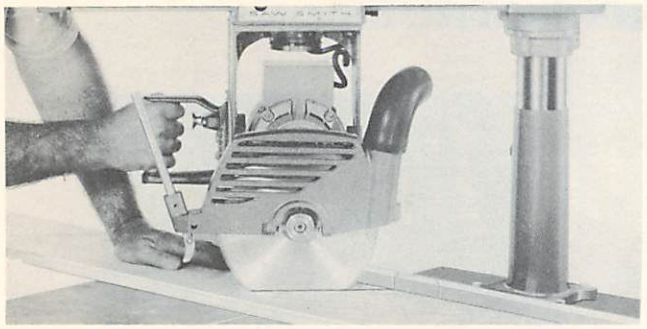
Miter Cut - Right Hand

Release the arm lock and swing the arm to the desired angle on the miter scale and lock the arm. Following the basic cross cut procedure, the miter cut can be made. The most common mitering angles are 45° right and 45° left. Both of these 45° angles are indexed for accurate location. All other angles are set on the miter scale and held in place by the arm lock.



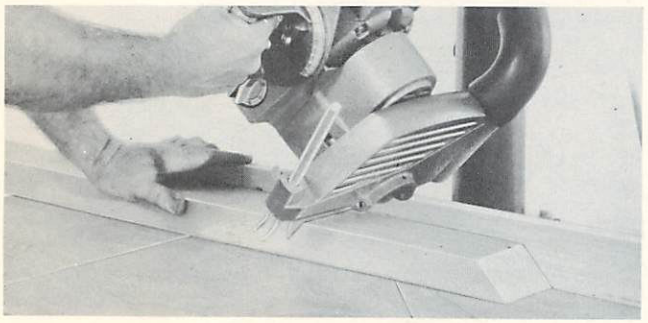
Miter Cut - Left Hand

When a left hand miter cut is desired, the basic procedures for cross cut and right hand miter cut are used. However, when the miter cut angle approaches or exceeds 45° the blade and guard should be moved from the left end of the spindle shaft to the right end of the spindle shaft. This will position the blade in the center of the table rather than over the left rear corner of the table.



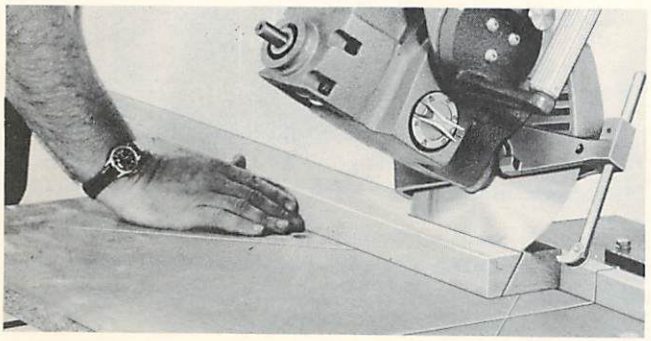
Bevel - Cross Cut

With the arm set at "O" on the miter scale, raise the arm using the crank located in the center of the base front panel. Unlock the twist lock handle and pull out the pivot lock pin. Tilt the saw blade down to the desired angle shown on the bevel scale. If 45° angles are used, the pivot pin will index and lock in position. If in-between angles are used, the angle is held by the twist lock handle. Always lock the twist lock handle when making a cut regardless of the angle. Place the material on the table against the fence and pull the saw blade across the material. Return the saw blade behind the fence or use the cross cut - table in procedure for wide bevel - cross cuts.



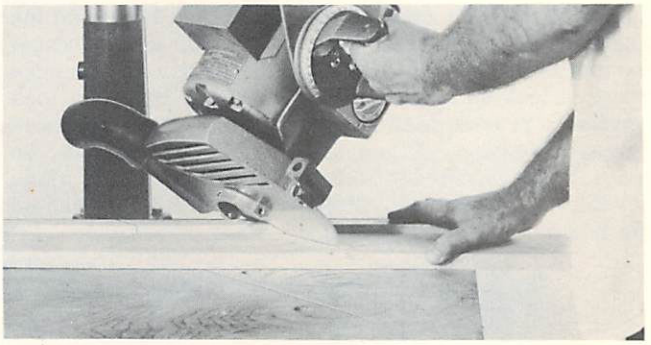
Bevel - Rip Cut

Set the arm at "O" on the miter scale and set the yoke at 90°. With the arm lock and yoke lock both in lock position, raise the arm and tilt the saw blade down to desired angle. Position the carriage and table fence for desired rip width and lock both in position. Adjust the guard and anti-kick back as described in rip cut procedure. Place the material on the table against the fence and feed as in normal ripping operation.



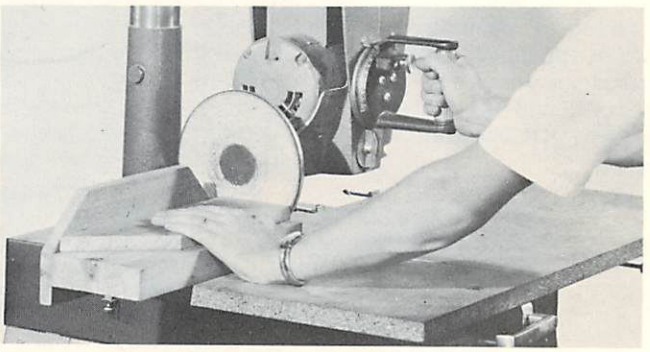
Compound Miter Cut

Swing the arm to the desired angle indicated on the miter scale and lock the arm. Tilt the saw blade down to the desired angle, indicated on the bevel scale, and lock with twist lock handle. Pisition the table as described in cross cut - table out procedure. Place the material on the table against the fence and pull the saw blade across as in cross cut.



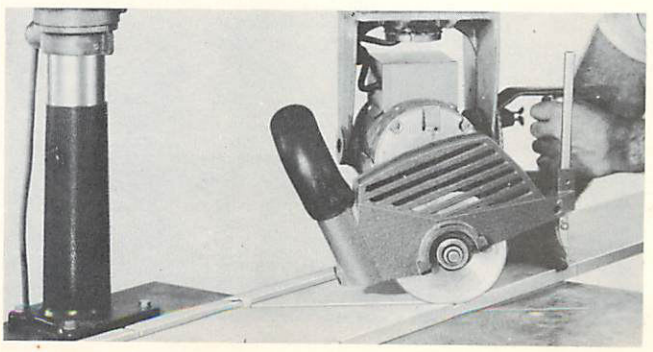
Disc Sand

Place the sanding disc directly on the spindle shaft and locate the sanding disc in the same position as the saw blade that made the cut which is to be sanded. The sanding disc can be used for sanding in any position that can be cut. A sanding table, described on page 10, should be used for all disc sanding operations except surfacing. This sanding table positions the material above the saw table. See the back cover for disc sanding speeds.



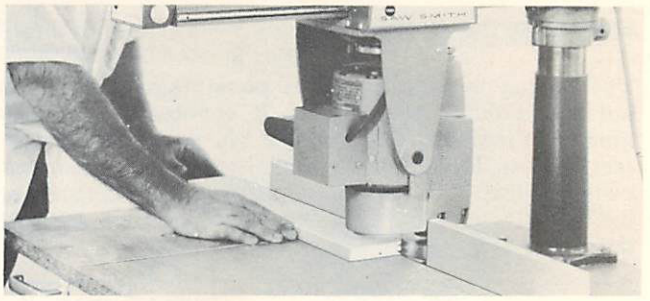
Dado

Replace the saw blade with the dado blade (both 6" and 8" dado blades are available) as described on page 9. When determining the depth of cut simply lower the dado until it just touches the top of the material. Then lower the dado blade using the crank. Each full turn of the crank lowers the arm 1/8", one-half turn 1/16", etc. Wide dado cuts can be made by successive passes across the material.



Shaping and Molding

Shaping and molding operations are performed by placing the molder on the spindle or the 1/2" arbor on the spindle for the shaper cutters. See pages 10 and 11 for shaper and molder information. Shaping and molding operations are performed best with the spindle in a vertical position. For most cuts it is best to move the material rather than the cutters. Feed the material firmly and evenly into the cutters.



SAWSMITH ACCESSORIES

SAW BLADES

Most woodworkers like to have a full assortment of blades on hand, and use each for the job it was designed to do.

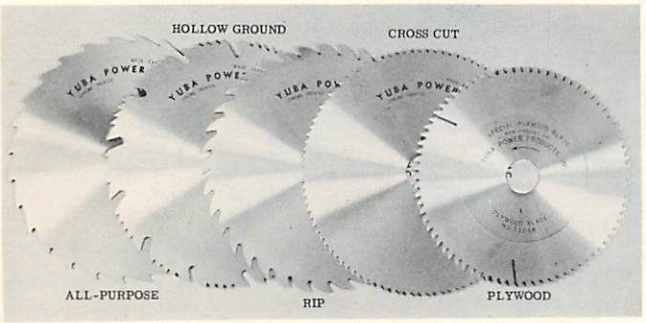
The ALL-PURPOSE Sawsmith blade is a combination type with a special tooth design. It will do a good job on all general types of cutting and is standard equipment on Sawsmith. The item number for the combination blade is 22051.

The HOLLOW GROUND BLADE is the only blade available which will produce an edge smooth enough to glue or otherwise assemble without jointing or sanding. This is usually the choice for a second blade and carries an item number of 22053.

The RIP BLADE is the best performer on ripping and sizing cuts. The rip blade item number is 22055.

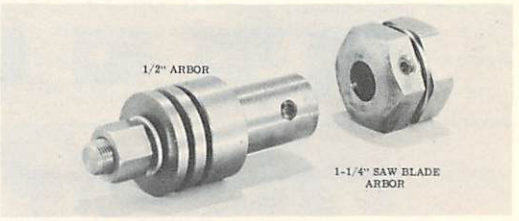
The CROSSCUT BLADE, or cutoff blade as it is sometimes called, is the best performer for cutting across the grain. The teeth are designed to provide knife-like edges to the left and right that shear across the grain of the wood. This is the best blade to use when you have a lot of crosscutting to do. Item number 22054.

The PLYWOOD BLADE has been specially designed to produce a smooth edge when cutting plywood. This blade is a combination of both the hollow ground and crosscut type blades and was designed to prevent splintering and produce a smooth edge. Item number 22058.



ARBORS

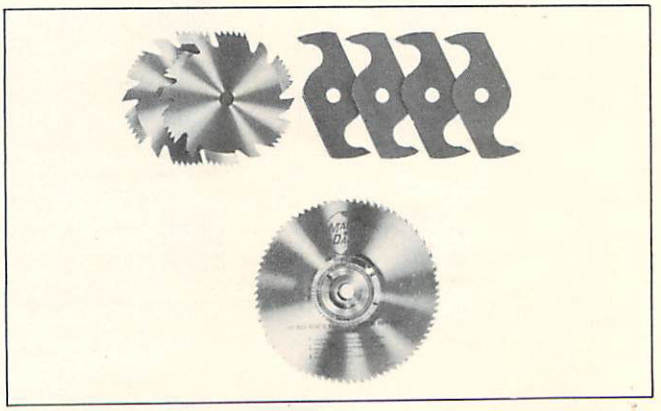
Sawsmith arbors are economically priced so that each saw blade and each applicable accessory can be ready mounted on its own arbor, ready for placing on the spindle. The 1-1/4" arbor is used to mount all of the saw blades with 1-1/4" hole. The 1-1/4" arbor item number is 27032. The 1/2" arbor is used to mount all accessories with 1/2" hole and is item number 27030. Some accessories can be mounted directly onto the spindle shaft which is 5/8".



DADO TOOLS

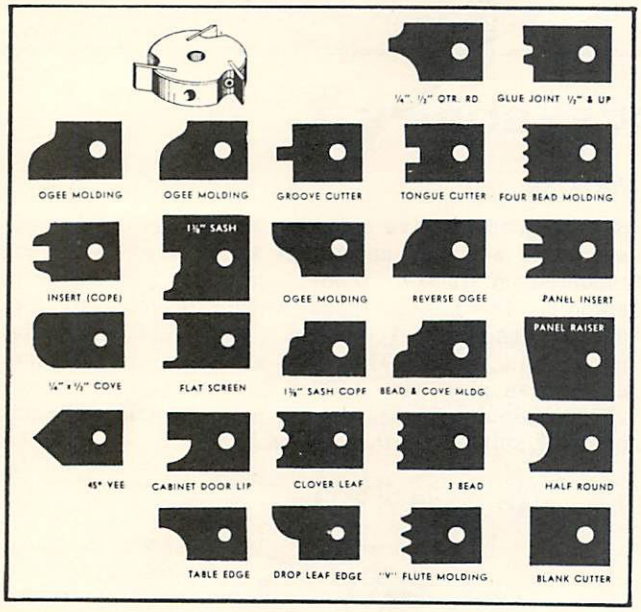
The Magna 8" Dado mounts directly onto the spindle with the spindle nut and washers. It has a special extra heavy blade which cuts a normal kerf of 5/32" wide and is infinitely adjustable to a maximum of 7/8". The kerf width is adjusted by turning a square wrench. The speed chart, on the back cover will show operating speed for the 8" and 6" Dado blades.

The 6" Dado is a standard tool which employs two outside blades and a set of inside chippers. The size of the groove is determined by the number and size of the chippers used between the blades. The 8" Dado is item number 12060 and the 6" Dado item number is 12063.



MAGNA MOLDER

The magna molder makes it possible to do edge and surface molding operations. It enables even the beginner to increase the scope of his woodworking projects and will add a professional touch to the simplest construction. The Magna molder mounts directly on the spindle shaft by using the setscrew included with the cutter head.



9" SANDING DISC

Nothing does a crossgrain smoothing job like a disc sander. It can also be used for sanding the sides or surface of stock. All sanding operations, except surfacing, require the work be raised up off of the table by using a work block or a sanding table. The sanding table can easily be made by attaching a 1" x 4" board on the 2" side of a 2" x 6" or 2" x 8". The length of the work table is optional. The 1" x 4" should be attached so that one side will replace the table fence and not hit the brackets which hold the thumb screws. This will permit the 2 by to lay flat on the table. The other side of the 1" x 4" will be used as a fence to locate the material when sanding.

The sanding procedure should be same as the procedure used to make the cut. If a crosscut is to be sanded, the material should be placed on the sanding table, locating on the sanding table fence, and just touching the sanding disc. Pull the sanding disc so that the entire surface is sanded. Remember that the material must be held very firmly because the sanding disc will tend to lift the material as it finishes the pass.

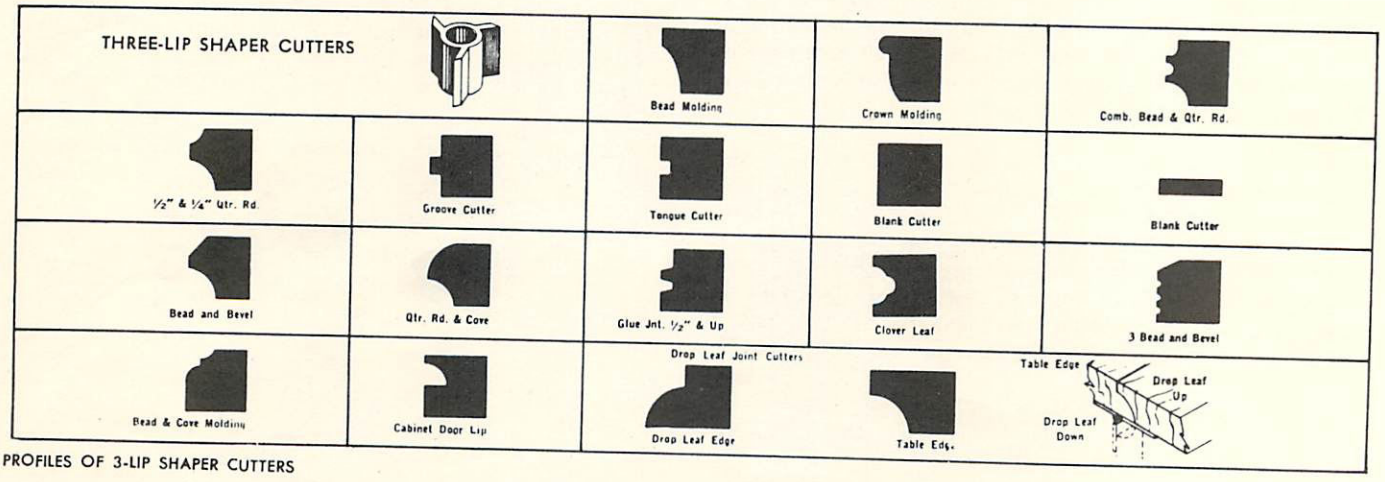
The 9" sanding disc is item number 27101, package of assorted sandpaper is item number 27110, Coarse sandpaper - item number 27111, Medium sandpaper - item number 27112, and fine sandpaper - item number 27113.

SHAPING

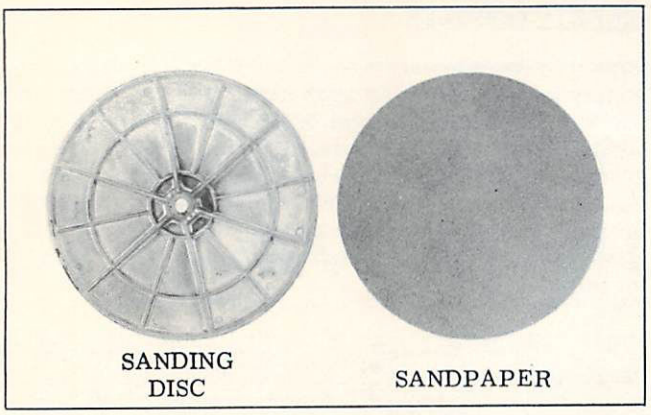
Shaping accessories will enable you to form intricate edge designs or moldings that mean so much to the final appearance of a project.

The 1/2" arbor, #27030, can be placed on either end of the spindle. Care should be taken, when placing cutters on the arbor, that they face the direction of rotation. The washers, on the arbor, may be used as depth control guides. If additional adjustments and settings are desired, a set of four shaper collers are available under the item number of 12235.

When shaping, the cutters may be drawn over the work as in sawing, or the spindle may be positioned vertically and the work moved along the split fence. See page 11 for split fence information.



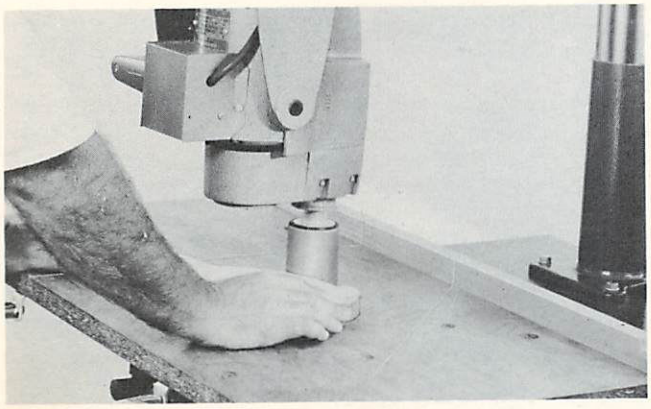
PROFILES OF 3-LIP SHAPER CUTTERS



DRUM SANDER

The drum sander, item number 12126, will sand inside and outside curves and internal circular cutouts with the speed and efficiency impossible to achieve with any other means. The drum sander can also be used for sanding long board edges when used with the special fence described on page 11.

The sandpaper used on the drum sander is available in sleeve form. The assorted package is item number 12134, Coarse sleeves are item number 12135, and Medium sleeves are item number 12136.

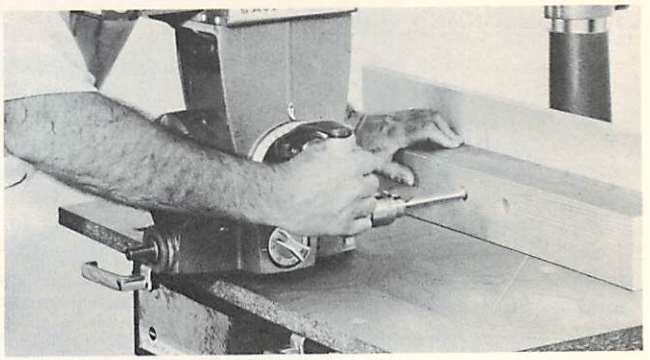


DRILLING

Drilling operations can be performed on the Sawsmith in either horizontal or vertical position. For most drilling operations the horizontal set up is best. Place a back-up board in place of the fence; attach the chuck to the right spindle end, and swivel the yoke 90° so that the chuck is toward the column. Place a drill in the chuck, position the material in front of the back-up board and push the drill into the material.

If vertical drilling is to be done, lower the right end of the spindle shaft until the spindle shaft is in a vertical position. Use the elevating crank to move the drill into the material. If a definite drill depth is desired, each turn of the elevating crank will move the drill 1/8".

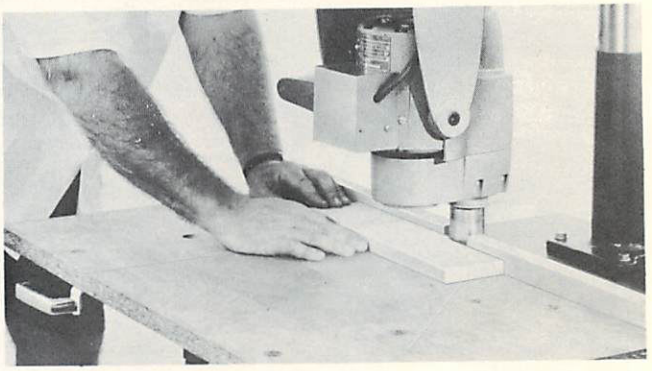
A set of 5 auger bits, item number 12201, are best for this type of wood drilling. The set encludes 1/4", 3/8", 1/2", 5/8", and 3/4" auger bits. The 1/2" Jacobs chuck is item number 27070.



2-1/2" JOINTER CUTTER

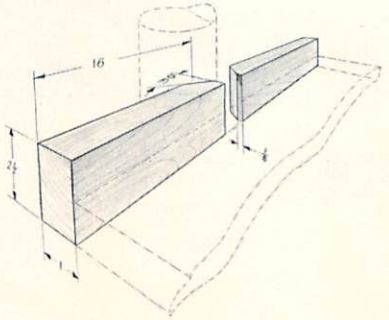
The Sawsmith spindle is set the same as in shaping and the 2-1/2" Jointer cutter is put on the left spindle end with two set screws. When cutting, the split fence is used. The cutter is set so that the right fence is tangent to the cutting circle. The left fence, or in-feed fence, is adjusted for the depth of cut. Shims are placed between the fence and table edge for depth of cut which should not exceed 3/16".

Rabbeting operations can be accomplished with the 2-1/2" Jointer cutter by setting both fences in line and moving the cutter up and forward. The work should be kept firmly on the table and against the fence and the pass should be made slowly and evenly. The 2-1/2" Jointer cutter is item number 12230.



MAKE A SPLIT FENCE

A split fence should be used when shaping, molding, or jointing operations are to be performed. The split fence should be made of good stock 1" x 2-1/2". Two pieces are required, each should be about 16" long. One end of each piece should be cut with the miter scale set at 30°.



RUBBER-BONDED WHEEL

A grinding wheel is always used when an edge is nicked or so dull it must be re-edged. The rubber-bonded abraisive wheel, a high quality honing tool, is used to add the final keen edge. Since tools can be mounted on both ends of the Sawsmith spindle, you can mount a grinding wheel and a honing wheel at the same time, so the honing can immediately follow the grinding job without inconvenience. Tools carefully ground and used can be honed three or four times before re-edging is necessary. Item number 22140.

8" CUTOFF WHEEL

The cutoff wheel has come into its own in the home workshop because it will cut easily through steel, aluminum, and other metals in bar stock, extruded shapes, and tubing forms. The feed should always be slow and steady. The 8" cutoff wheel is item number 12067.

SAFETY GOGGLES

Safety goggles are a comparatively inexpensive safety device which can prevent a serious eye injury which could cause the total loss of sight. Many factories have very strict safety rules which should also be followed in the home workshop. In fact, the people who made your Sawsmith are required to wear safety glasses whenever they are in the manufacturing area of the factory.

Always have your safety goggles handy and ready to wear when performing operations which could cause eye injury. Your first consideration, when operating any power tool, should be safety.

Safety goggles are item number 22372.

SAWSMITH MAINTENANCE

Arm Glide Rails should not be oiled. Wipe them with a clean dry cloth about once a month.

The column requires occasional cleaning and should be coated with a very thin film of good machine oil. The tapered slot sides should be oiled at the same time.

The Elevating Screw should be lubricated monthly with a few drops of good machine oil.

The Elevating Gears should be lubricated monthly with a good grade of grease. Magnalube #12048 is recommended.

The Table Guide Rails require no oil. Keep them clean with occasional wiping.

Bearings do not need lubrication. They are grease sealed and will operate for the life of the machine.

Sawsmith Sliding Sheaves need lubrication about every fifteen hours of actual running time. All tools should be removed from both ends of the spindle and the speed dial should be set at 64. Turn off the Sawsmith and pull the plug out of the outlet. Remove the four cap screws which hold the cover to the cradle (right side of spindle) and pull the cover off. Dip a wire or slender stick into a good grade of light weight machine oil, and allow a few drops of oil (about three) to drop on the shaft between the open sheave halves. Replace the cover and operate the unit moving the speed dial from 64 to 17 and back again.

SAWSMITH SPEED CHART

	Operation	Setting
SAWING	General	38
	Heavy	30
	Trim Cuts	38
DADO	6" Dado	24
	Magna Dado	24
DRILLING	Up to 1/4"	38
	1/4" to 1/2"	30
	1/2" to 3/4"	24
	3/4" to 1"	17
	Over 1"	17

	Operation	Setting
DISC SAND	Coarse Paper	17
	Medium Paper	17
	Fine Paper	24
DRUM SAND	Coarse Sleeve	24
	Fine Sleeve	24
2-1/2" JOINTER	Finish Cuts	55
	Heavy Cuts	45
SHAPING	Magna Molder	38
	Shaping	55