

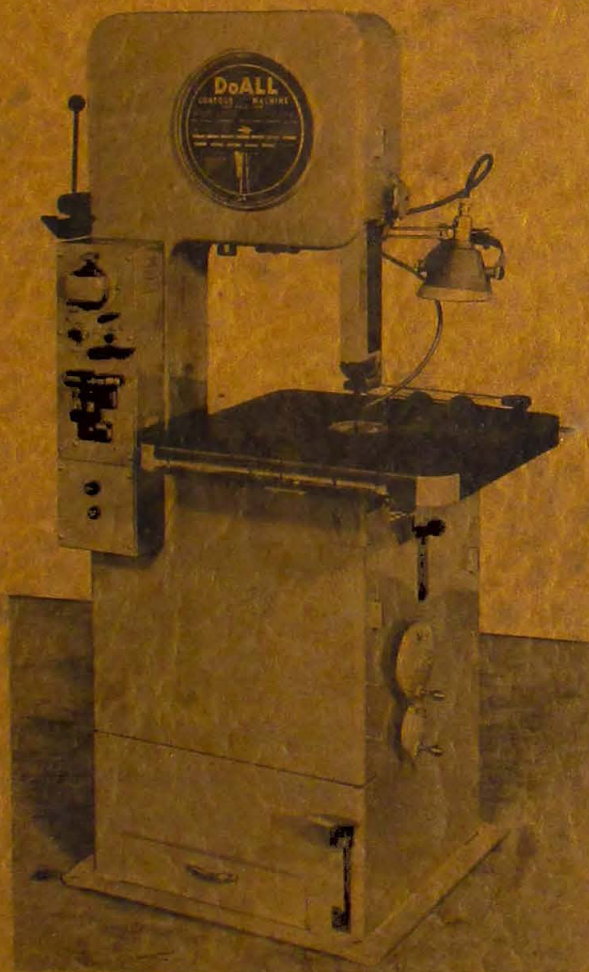
# **OPERATOR'S INSTRUCTION MANUAL**



## **BAND MACHINES**

### **MODELS**

**16-M, 30-M, 16-HM, 30-HM**



**THE DoALL COMPANY**

254 N. Laurel Ave., Des Plaines, Ill., U.S.A.



## MACHINE SPECIFICATIONS

MACHINE TYPE   SERIAL NUMBER  
VOLTAGE  PHASE  CYCLE   
SAW BAND LENGTH  FILE BAND LENGTH

---

## BELT SIZES

<input type="text" value="D-16218"/>	<input type="text" value="D5-11502"/>	<input type="text"/>
DRIVE	AIR PUMP	OIL PUMP
<input type="text" value="D-16219"/>	<input type="text"/>	
DRIVEN	SPEED INDICATOR	

You can avoid unnecessary delay and inconvenience by specifying correct model and serial number on all parts orders and correspondence.

For your information and future reference, pertinent data concerning your machine may be inserted in the spaces provided above. This information is stamped on the data plate mounted on the frame of the machine.

Always include the model and serial numbers in parts orders or correspondence concerning your machine.

## **FOREWORD**

This manual has been prepared to act as a guide to the owner and operator of DoALL Band Machines.

In order to attain the maximum life and efficiency from your DoALL we suggest reading this manual thoroughly and following all instructions carefully.

The specifications contained herein were in effect at the time this book was approved for printing. The DoALL Company, whose policy is one of continuous improvement, reserves the right, however, to change specifications or design at any time without notice and without incurring obligations.

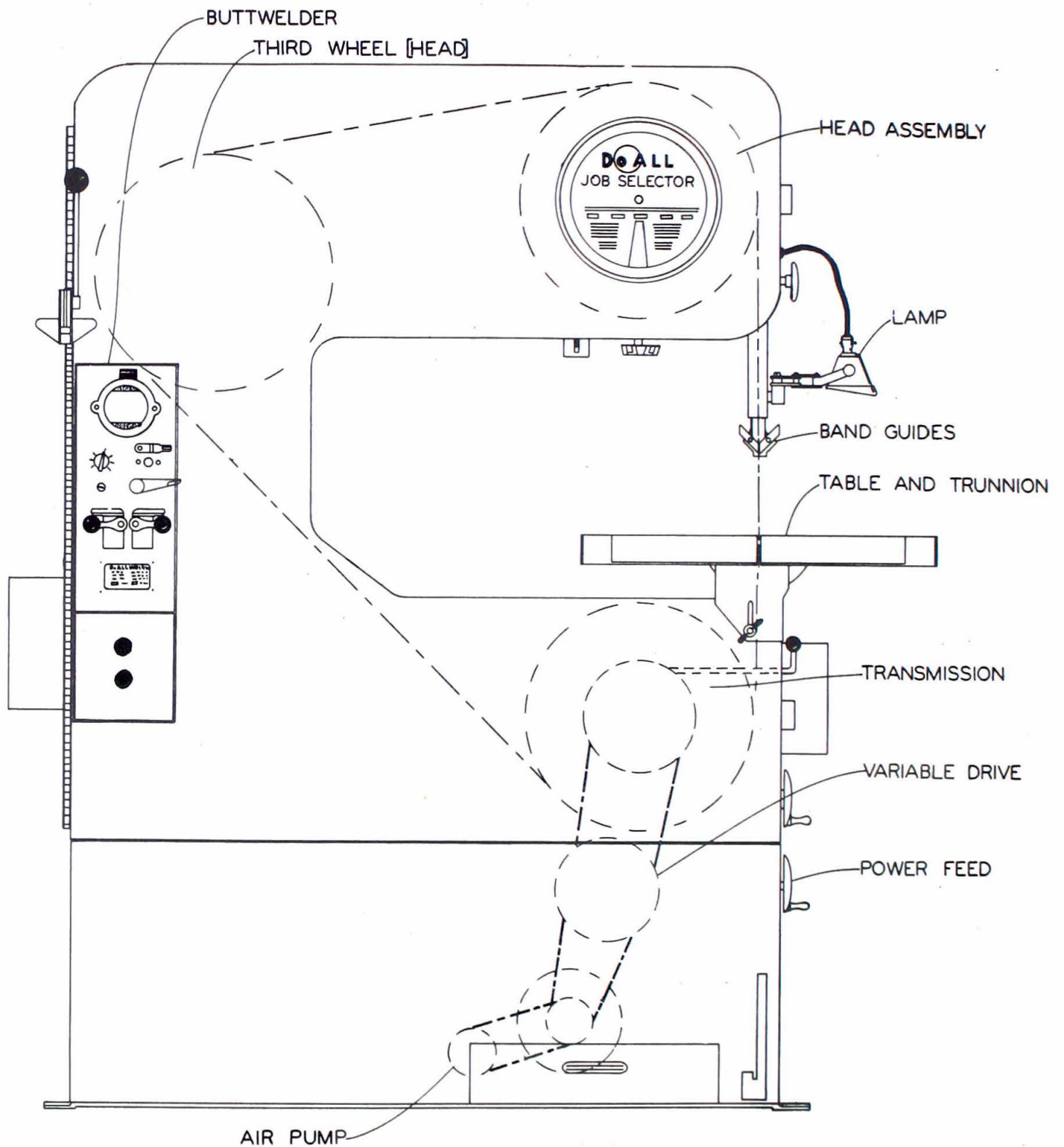
**THE DoALL COMPANY**  
Des Plaines, Illinois



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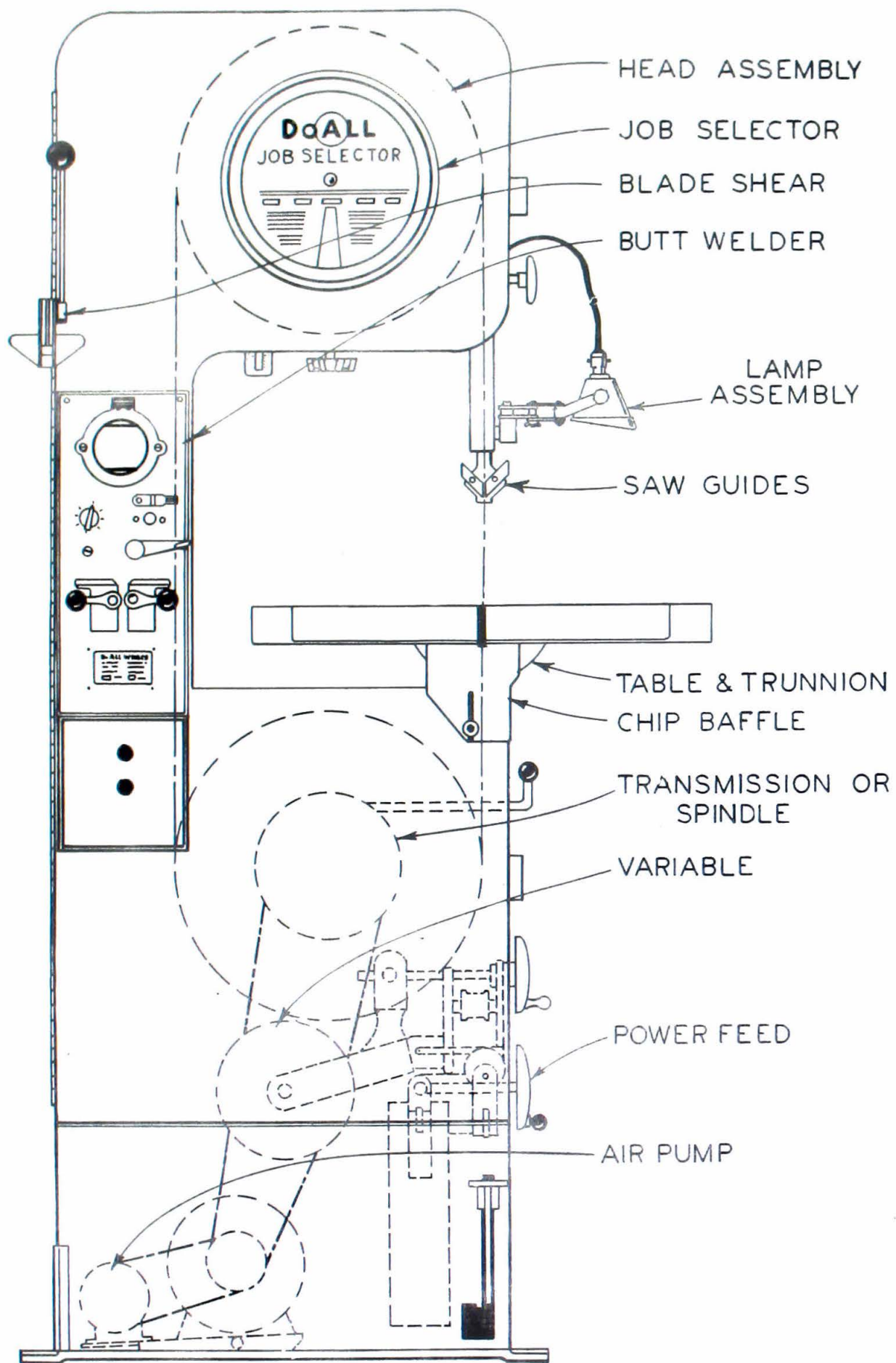
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MODEL 30 M





MODEL-16M

Figure 1



# INSTALLATION



## LOCATION

Place the machine so that any overhead light will strike the table over the operator's right shoulder when he is in position for sawing. The DoALL should be centrally located for your sawing needs. Provide sufficient work space around the machine for the machining of large pieces of material.

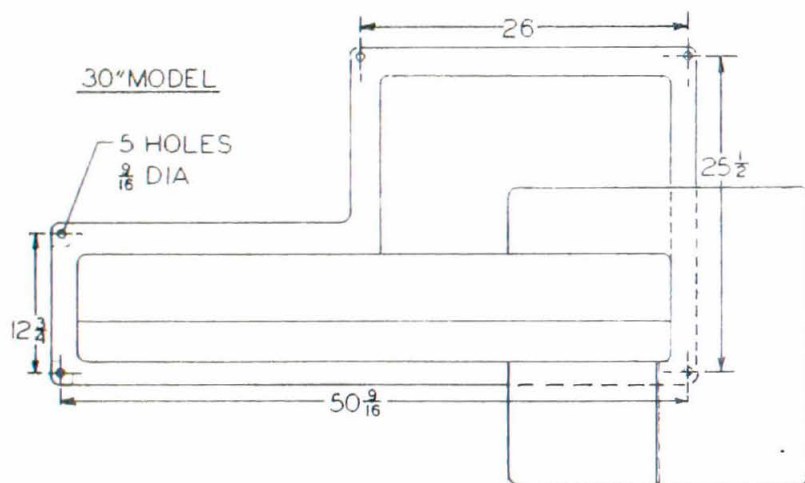
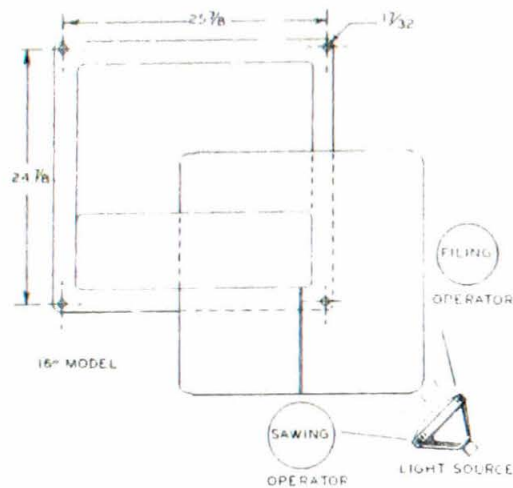


Figure 2

## UNPACKING

After the machine is uncrated, cut the twine holding the upper wheel to the machine frame. If the machine has a weight type power feed attachment, remove the shipping bracket which holds the weight to the base plate. Remove the block of wood from under the drive motor. Check all ac-

cessories for missing or damaged parts. All machined surfaces are coated with a rust-proofing compound. Remove this compound with clean rags and solvent. A 3/4 inch eye bolt may be threaded into the hole at the top of the machine for lifting purposes.

## ALIGNMENT

When the DoALL is bolted into position, or whenever the machine is moved, check the alignment and shim the base if floor is not level. Use the following procedure to align the machine:

1. If table is mounted on the machine, remove the center disc. Also remove band guides, if they are attached.

2. Place a 1/2" sawband over the wheels, tighten tension handwheel properly and track the band until the center of the band rides directly on the crown of the wheel.

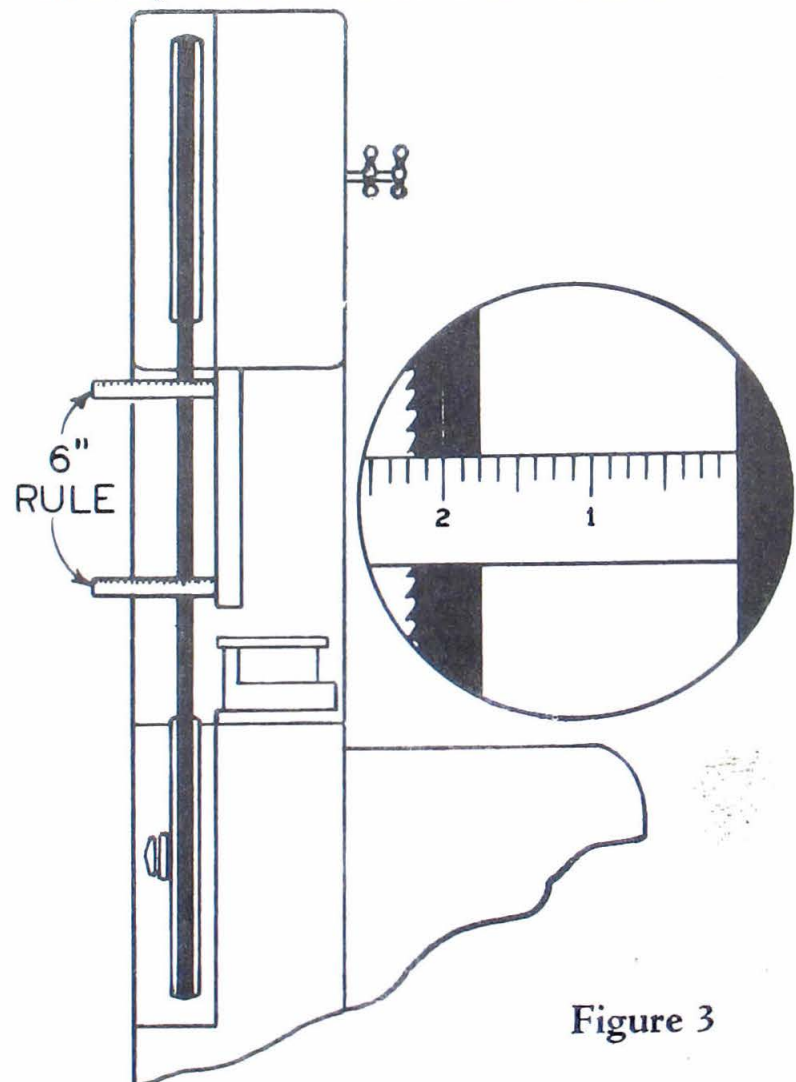


Figure 3



3. If necessary shim the base of the machine until the band runs parallel to the face of the post. When properly shimmed the center of the blade will be 2 inches from the face of the post. (see fig. 3). This dimension must be constant at both upper and lower ends of the post with post in lowered position. If the saw band is not the correct distance from post, loosen set screw holding upper wheel and move wheel in or out to correct, then reshim base until band is parallel.

4. Remove saw band. If table was removed from machine place it in position on trunnion and fasten loosely with four hex cap screws. With post in lowest position, clamp a straight edge to side of post and align table so saw slot is parallel to straight edge. Then tighten cap screws.

5. Square the table to the post and if necessary adjust trunnion pointer to zero. Mount proper upper and lower band guides on upper post and lower guide block. Place band in position and adjust tension hand-wheel. (See paragraph Tracking and Tensioning).

### ELECTRICAL INSTALLATION

If a motor and switch are furnished with the machine, your line circuit can be con-

nected directly to the terminals in the switch box. Follow the wiring diagram included with the machine. Be sure your lines are not overloaded and are heavy enough to carry the required amperage.

Provisions for operation on odd cycle A.C. or D.C. power have been taken care of at the factory when so specified. A 100 watt transformer is available to operate the table lamp and magnifier.

### INITIAL LUBRICATION

The transmission (machines with geared transmission) has been drained before shipping and must be filled with oil before the machine is operated. A quart of SAE No. 20 transmission oil is included with the parts shipment. Fill the transmission until the oil appears in the filler pipe elbow. Keeping the oil level higher than this point may cause overflow which will be indicated by drippings under the transmission, or under the lower wheel of the machine.

Lubricate the "Speedmaster" variable speed pulley with a few drops of SAE No. 10 oil through the oil cup at the end of the pulley shaft.

Place a few drops of oil on the post and move it up and down to lubricate post and guide block.

# **OPERATION**



The DoALL is very easy and safe to operate, but to make the saw follow a line to within a few thousandths of an inch requires some experience. We recommend that the operator practice on sample material before attempting to do actual production work on the machine.

Accessories and attachments have been developed to make operation of the DoALL as easy as possible with maximum accuracy.

### JOB SELECTOR DIAL

The Job Selector Dial, mounted on the upper door, (variable speed models) enables quick selection of the correct saw bands, file bands, feeds and speeds used in the machining of various basic materials. A study of this dial will familiarize the operator with the machine's different working capacities within its speed range.

### TABLE

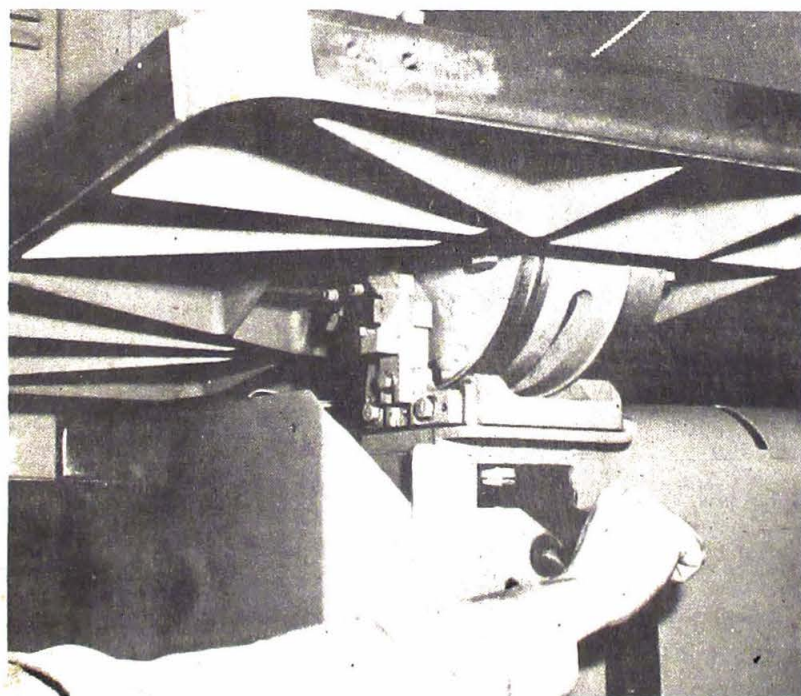


Figure 4

The work table is of heavily ribbed cast iron construction 24" x 24" x 2". It is mounted on a heavy cast iron single trunnion pro-

viding adjustment of 10 degrees to the left and 45 degrees to the right. The open end wrench supplied is for locking the table at any desired angle. Pointer and degree segments attached directly to the trunnion and cradle indicate the angle at which the table is set. The saw slot terminates in a large circular center plate which is easily removed for quick changing of band tools.

### SAW WHEELS

The saw wheels are accurately balanced and are arranged with a crown face to cause the band to stay on the wheel. The crown of the wheel is located  $\frac{3}{8}$ " in. from the rear edge of the wheel. The upper wheel is equipped with sealed ball bearings, and the lower wheel is mounted on the output shaft of the transmission or spindle. The wheels are covered with tires of oil resistant rubber impregnated on a fabric backing. The tire eliminates wear on the saw teeth and will last for a long time.

### OPERATING SPEEDS

Model HM is equipped with a single groove V-type pulley to produce any one speed of 2000, 3000, 4000 or 5000 feet per minute.

The Model HM4 has a set of 4-step cone pulleys to produce any of the above speeds merely by changing the belt from one groove to another.

Model H MV has a "Speedmaster" variable pulley unit allowing an infinitely variable speed range of 850 to 5000 feet per minute controlled by a speed change handwheel located below the table.

Model LMV with a gear reducing transmission and a "Speedmaster" variable pulley unit is a slow speed machine especially adapted for filing and precision sawing. It has an infinitely variable speed range of 50 to 375 F.P.M.



Model M drive consists of a two speed totally enclosed transmission in addition to the "Speedmaster" variable unit. This combination allows a low speed range from 50 to 300 F.P.M. and a high speed range of 860 to 5200 F.P.M. as shown on the speed indicator plate above the speed change hand-wheel.

### BUTT WELDER

If your machine is equipped with an automatic blade welder, Fig. 5 shows the general arrangement.

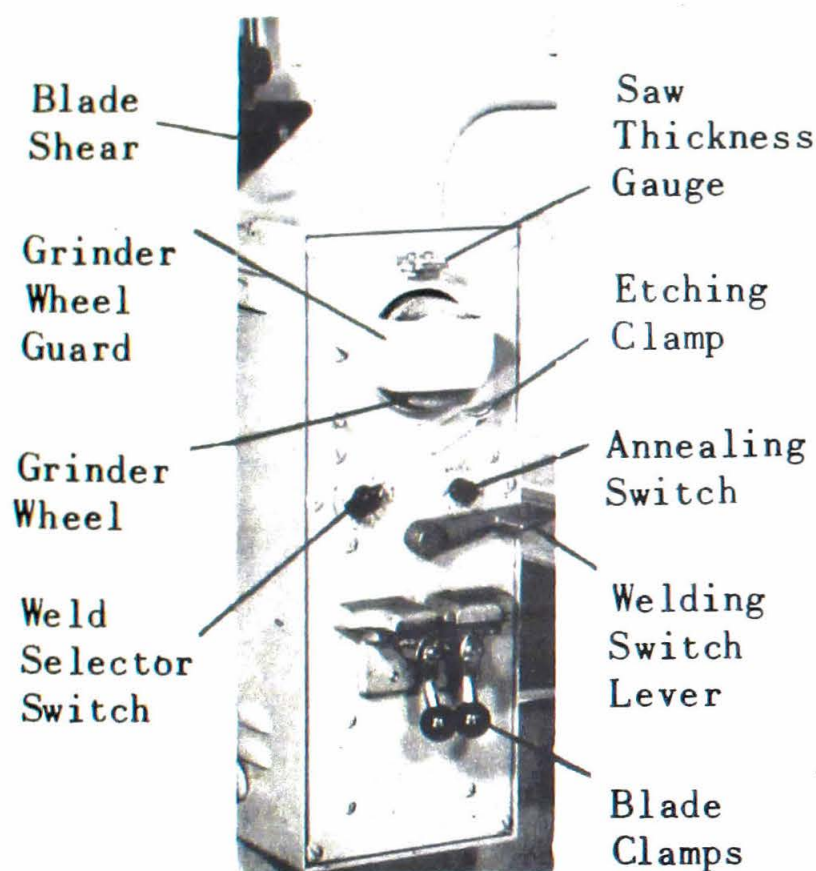


Figure 5

On the machine column above the welder is a blade shear. This is a lever operated cam type shear which cuts the blades square to prepare them for welding.

The two clamping jaws of the welder hold the butted saw ends together. When the welding switch lever is depressed, an electric current is induced through the butted ends creating enough heat to soften them. De-

pressing the welding lever also releases a spring which causes the jaws to squeeze the blade ends together. When the right hand jaw has moved .047 inches toward the other jaw the electric current is automatically cut off. The spring tension on the jaws is released when the welding lever is released. Do not hold the welding jaws when depressing the welding lever. Doing this may interfere with their free movement.

Wider saw bands need greater pressure between the jaws than narrow saws, and since too much pressure on small saws will cause climbing or lapping of the ends, a weld selector switch, located directly above the stationary jaw, provides variable pressure control.

Directly above the welding switch lever is the annealing switch. When the band is heated up in the butt welding process, the steel at the point of weld air hardens and is brittle. It is necessary to anneal the weld by reheating and allowing it to cool slowly. This returns the blade to an approximation of its original temper.

The welding switch is a two-circuit switch on which the annealing circuit is normally closed and the welding circuit normally open. This prevents shorting the transformer or blowing out fuses, should the annealing switch accidentally be pressed while the welding lever is held down. An etching clamp holds the annealing switch down to supply current for the etching pencil described under Attachments.

At the top of the panel is a grinding wheel for removing flash from the weld. The wheel guard is exposed at both top and bottom to permit grinding both sides of the weld. The gage at the top of the wheel guard is used to check for complete removal of the flash. The saw should pass freely through this gage.



The grinder circuit is coupled through the annealing side of the welder switch. When the welding lever is depressed, the circuit to both the annealing switch and the grinder is open. If the grinder motor is running while a weld is being made, it will momentarily shut off when the welding lever is depressed.

### SELECTING THE SAW BLADE

A special DoALL plant is devoted entirely to the manufacture of band saw blades and band files. The tremendous variety of band cutting tools assures the finest possible results from your machine.

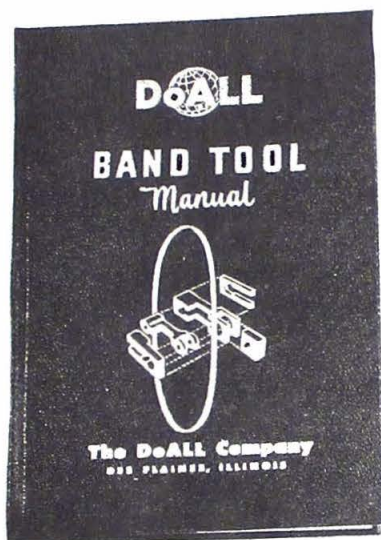


Figure 6

To fully understand the range of tasks your machine can perform, the DoALL Band Tool Manual should be consulted regularly. In it, the results of years of experimentation are listed in tables and charts, showing exactly how to get the maximum in performance.

For general metal cutting and wood working, the Job Selector Dial on the machine will serve as a guide. There are 15 basic types

of DoALL band tools, but three of these, the precision, the buttress and the claw tooth saws will serve most shop purposes.

DoALL precision saws are used for accurate sawing of hundreds of materials and friction cutting of such metals as carbon steel No. 1010-1095, manganese steel, chromium steels, armor plate, stainless steel, and many other ferrous alloys.

Buttress saws are used on such materials as wood, plastic, cork, foam glass, corrugated paper, insulation materials and many other substances. They are also used for cutting extremely heavy work thicknesses of ferrous alloys. They have a coarser pitch than the precision saw.

The claw tooth bands differ from other hard edge flexible-back bands in that the teeth have a positive rake angle. The durability of the hard edge plus the faster penetration of the forward slanting teeth results in a band of superior performance for many operations.

DoALL saws are offered in the following combinations:



Figure 7

WIDTH IN INCHES	PRECISION SAWS										BUTTRESS SAWS			CLAW TOOTH SAWS			
	Pitches—(Raker Set)							Pitches—(Wave Set)			Pitches			Pitches			
	6	8	10	12	14	18	24	10	14	32	3	4	6	2	3	4	6
	THICKNESS OF SET							THICKNESS OF SET			THICKNESS OF SET			THICKNESS OF SET			
1/16							.038			.038							
3/32						.042				.042							
1/8					.043	.042	.042										
3/16			.044		.043	.042	.042			.042		.043					
1/4			.044	.043	.043	.042	.042			.042		.043	.042			.044	.042
3/8		.045	.044		.043	.042	.042				.045	.043			.046	.044	.042
1/2	.045		.044		.043	.042	.042	.044	.043		.043	.043		.050	.048	.046	.042



Types of tooth construction:

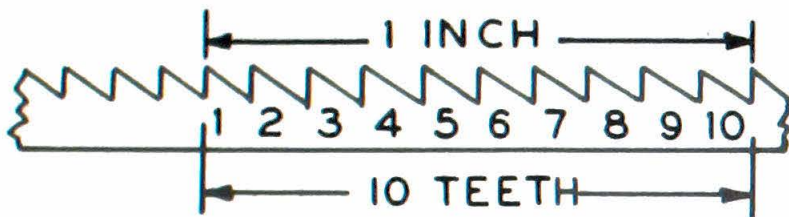
### RAKER SET



### WAVE SET



Saw pitch is the number of teeth per inch:



### BLADE LENGTHS

Precision, Buttress and Claw Tooth saw bands are available in cut and welded lengths to fit your machine, or they may be obtained in 100 foot and 500 foot coils in the exclusive "strip out" containers. They can be cut either with a saw snips or with the blade shear on the frame column. When cutting these saw lengths, start the cut on the back or non-cutting edge of the band. This will keep the shear blades sharp longer.

### WELDING THE SAW

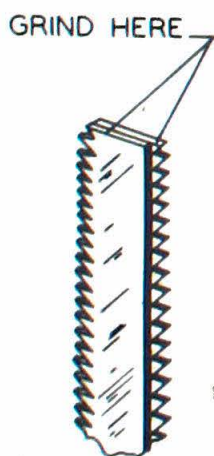
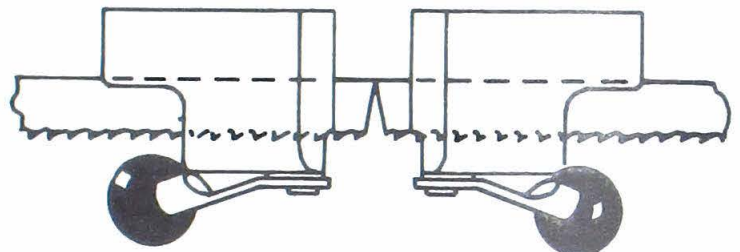
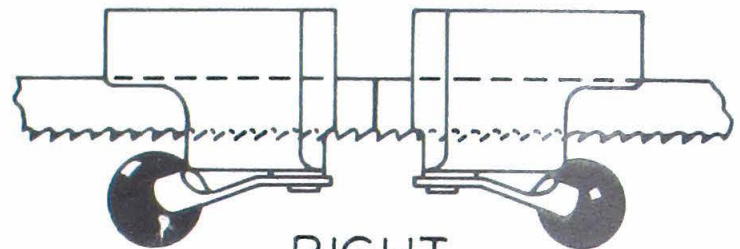


Figure 8

If saw snips have been used to cut the blade, square the saw ends before welding. Grind both ends of the saw in one operation as shown in Fig. 8. Hold the ends so that the teeth point in opposite directions. Regardless of the angle of grinding, the two ends will match perfectly when turned over.

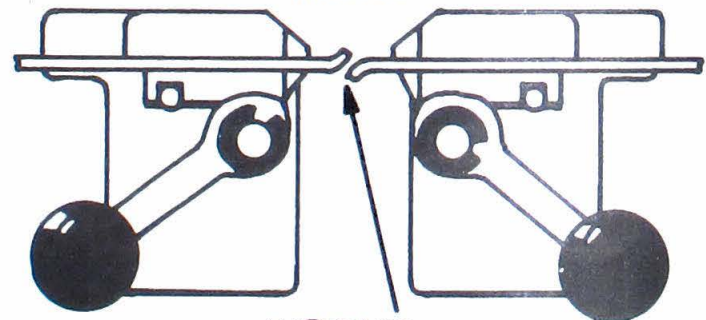
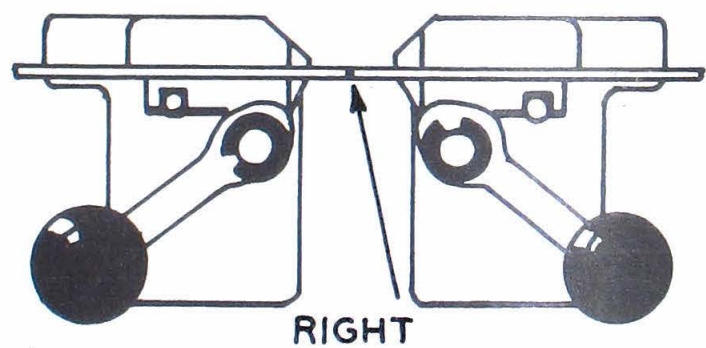
If internal sawing is to be done, the blade is inserted through the starting hole in the work and the ends of the saw are then ready to be clamped into the terminals of the butt welder.



WRONG

Figure 9

Insert the saw between the jaws with the back against the aligning ledge at the back of the jaws as shown in Fig. 9. This ledge lines up the saw, so that it will be in a straight line after welding.



WRONG

Figure 10



The ends of the saw should meet at the center of the welding gap without any offset either in thickness or across the width as shown in Fig. 10. If the ends are clamped in an offset manner an overlapping weld will result which will have to be ground too much, making the saw weak at the weld. If the contact across the width is not complete when the ends are clamped in the jaws, remove one end and recut it. An incomplete joint will cause an incomplete weld.

After the saw ends are lined up, clamp them securely (but not so tightly as to injure the saw set) between the welder jaws. The tension control switch should be set to the correct position for the width of saw being welded. Use the narrow position for  $1/16''$ ,  $3/32''$  and  $1/8''$ ; medium for  $3/16''$  and  $1/4''$ , and wide for  $5/16''$ ,  $3/8''$  and  $1/2''$  wide saws.

Then press the operating lever to make the weld. The lever should be held down until the weld has cooled. Before releasing this lever, release the stationary jaw clamp to prevent scoring the welder jaw surface. When the lever is released, the butt welder mechanism and electrical switches are automatically recocked and the saw is then ready to be annealed.

Cut out old weld as each new weld is made. One weld only in a saw is recommended. Use the blade shear to cut away the small portion of the saw ends which become brittle during the butt welding process. Since the welding operation uses up no more than  $1/16''$  of the blade, the band will not shorten appreciably even after several welds have been made. Starting with a full size saw band, approximately 3" of saw can be used in making welds before the saw band will be too short to fit over the saw wheels.

If it is found after making a weld that the teeth of the band point in the wrong

direction, the saw can be reversed by turning the band inside out. However, this cannot be done when the saw is welded through a piece of material for internal sawing. In this case, the saw must be cut and properly re-welded.

### ANNEALING THE BLADE

To anneal the weld, unclamp the saw from the welding jaws, move it forward to the wide gap position at the front of the welding jaws, and reclamp the saw just back of the saw teeth. Then press the annealing switch button until the saw comes up to a **dull cherry red** color. It is important that the weld be annealed properly or it will be too brittle to flex over the wheels. If the weld is allowed to get beyond a **dull cherry red** color, it will reharden causing the joint to be brittle. If heat color does not appear, it may be due to scale formed in welding. Remove this scale with abrasive. There may be oil or grease on the saw. This should be removed. These two items are often the cause of a slow anneal heat. Allow the saw to cool slowly by pressing the annealing button intermittently to prevent rapid air cooling.

### GRINDING THE BLADE

After the weld is annealed, remove it from the jaws and grind off the flash on the small grinding wheel. It is important that the welded joint in the saw be no thicker than the rest of the saw. The thickness of the weld should be tested in the gaging slots on the grinding wheel guard before placing the saw on the wheels.

### SAW GUIDES

Considerable research has proved that use of the right type of saw guide for the job contributes much to sawing efficiency and operating economy.



### LOW SPEED INSERT GUIDES

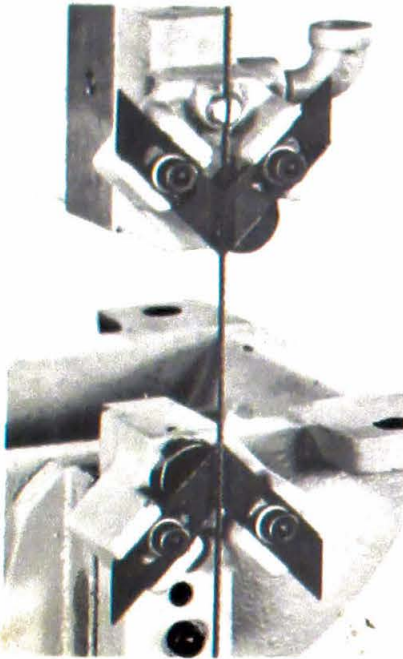


Figure 11

These guides are for precision contour sawing operations with blade velocity to 1500 F.P.M. They have a permanently greased ball bearing back-up and hardened steel inserts for blades  $1/16''$  to  $1/2''$  wide. A pipe fitting and a lubricating screw allow the easy application of Saw Eez blade lubricant.

### HIGH SPEED INSERT GUIDES

A heavy duty back-up bearing allows

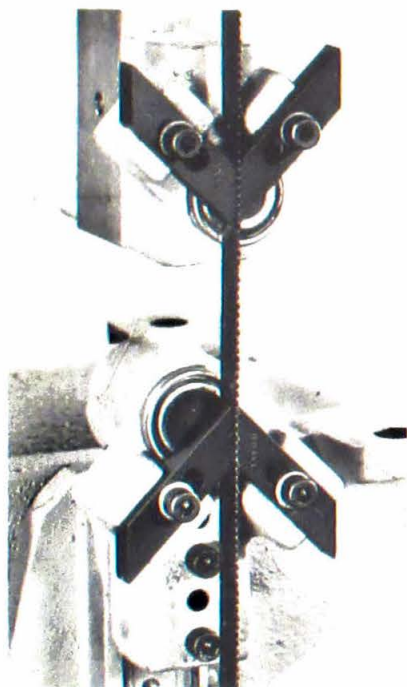


Figure 12

speeds up to 5500 F.P.M. The ball bearing back-up has large anti-friction bearings and a  $3/4''$  thrust roller cap of wear resistant steel hardened to 55-60 Rockwell "C". They are adjustable for  $1/16''$  to  $1/2''$  blades by means of hardened steel inserts. A grease fitting permits lubrication of the ball bearings.

### ANGLE SAW GUIDES

These blocks permit cutting off lengths greater than the throat capacity of the machine by twisting the blade. Blocks are available to give  $45^\circ$  angle cutting for small bars and tubes and  $90^\circ$  adaptors allow cutting long



Figure 13

work pieces to  $15\frac{1}{2}$  inches wide. Operate these guides at speeds under 1500 F.P.M. because higher speeds will cause excessive insert wear and blade strain.

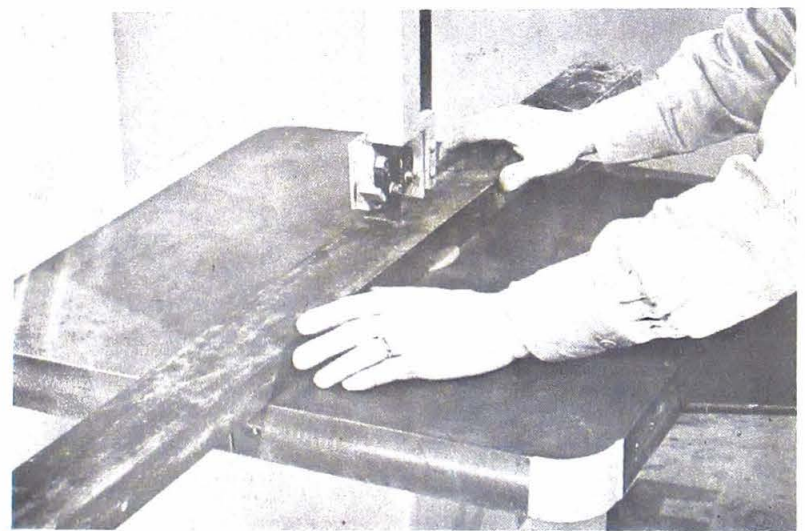


Figure 14

### MICARTA INSERT GUIDES

These are low cost guides for general purpose sawing of wood, plastics and light metals at blade velocities up to 5000 F.P.M. One set of micarta inserts are adjustable for all blade widths from  $1/8''$  to  $1/2''$  by re-

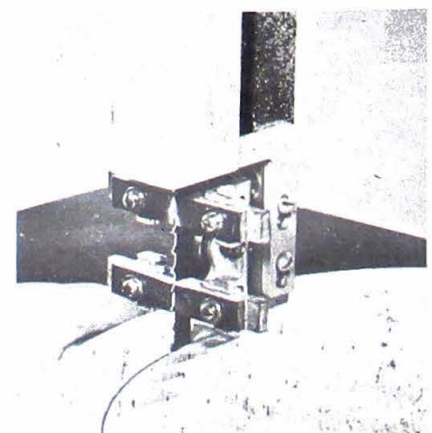


Figure 15



versing the inserts and adjusting the back-up roller. The ball bearing back-up roller is sealed and needs no future lubrication.

### SPIRAL SAW GUIDES

These are for use with spiral saw blade.

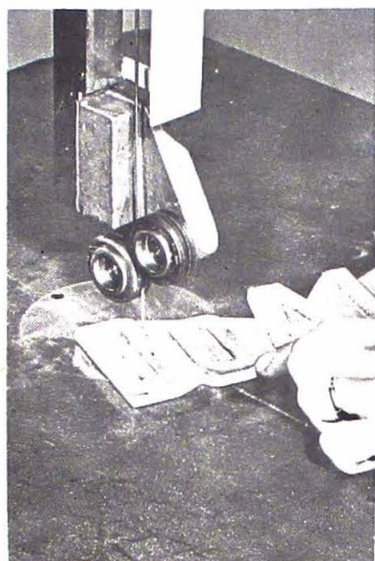


Figure 16

This blade has a 360 degree cutting edge, and is especially adapted for sawing intricate patterns in plastics, woods and light gauge metals where it is advantageous to saw contours without turning the work piece. Keep saw blade speed under 2000 F.P.M.

### ROLLER SAW GUIDES

For continuous high speed operation or under abnormal conditions arising from the character of the material being sawed, the high speed roller saw guides are recommended.

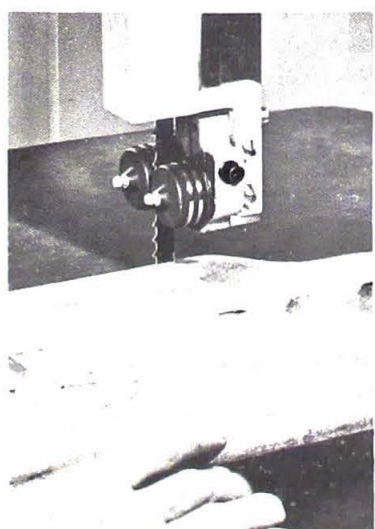


Figure 17

These guides reduce friction and wear on both blade and guides and are suitable for all speeds within the capacity of the machine. Side rollers turn on anti-friction ball bearing spindle assemblies. Two of these rollers have radial thrust flanges and all rollers are hardened and ground steel. Rollers are available for  $\frac{1}{4}$ ",  $\frac{3}{8}$ " and  $\frac{1}{2}$ " blade. A zirk type grease fitting allows periodical lubrication without disassembling the unit.

### SETTING UP THE SAW GUIDES STEEL INSERT SAW GUIDES

To set up guides for any width of saw from  $\frac{1}{16}$ " to  $\frac{1}{2}$ " use the following procedure.

1. With the guide removed from the machine, select the set of inserts that corresponds to the width of saw being used.
2. Place one insert in the milled slot on the bearing side of the block, and tighten the screw lightly so that the insert will slide in the slot, but will hold its position.
3. Insert the saw gage in the opposite slot as shown in Fig. 18, and adjust the insert so that it meets the two gaging edges. Then tighten the insert securely in place.
4. Place the second insert in its slot and set the gage edgewise between the two inserts, Fig. 19. Then bring the second insert in so that it rests against the thickness gage and tighten the screw securely. When the gage is removed the gap left will be the proper thickness for the saw blade.
5. Mount the saw guides, place the saw band on the wheels and apply proper tension. Adjust the upper wheel tilt so that the saw will track just touching the back-up bearings of the guides. (See Tracking and Tensioning of Blade.)

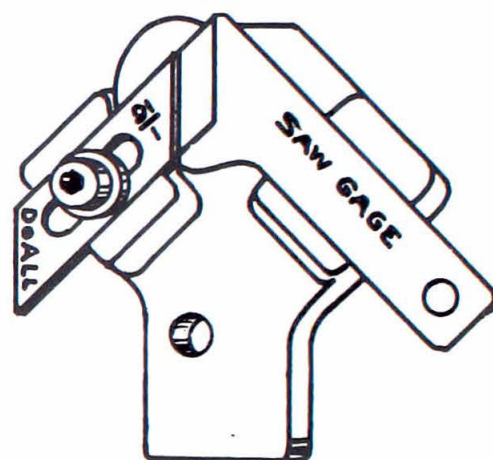


Figure 18

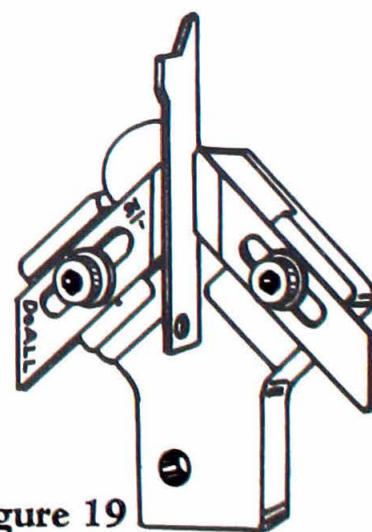


Figure 19



### ROLLER SAW GUIDES

1. Select correct rollers for the width of blade to be used.
2. Place one back-up and one side roller in each block.
3. After the guides are placed on the machine, place the saw band over the wheels and adjust the tension.
4. Turn the roller cams to bring the rollers up to the blade. The rollers should be just free enough to turn without moving the blade.
5. Tighten the roller lock screws and adjust the upper wheel tilt until the saw tracks just touching the flange on the back-up roller.

### MICARTA INSERT GUIDES

1. Mount the assemblies with the 10/24 x 1/2" socket head cap screws furnished.
2. Place the saw band over the wheels and apply proper tension.
3. Fasten the inserts loosely in place using the step end for saws 1/4" or narrower or the full end for 3/8" and 1/2" saw.
4. With the back-up rollers away from the blade track the band by adjusting the upper wheel tilt screw so there is about 1/32" clearance between the gullet of the tooth and the front edge of the insert.
5. Bring the inserts up to the blade, tighten the holding screws and bring the back-up rollers ahead until they just touch the saw band.

### SPIRAL SAW GUIDES

The rubber tired rollers are mounted on ball bearing shafts. The rubber tires are grooved to properly guide the blade.

1. When the saw guides are installed, place the band in position, apply a light tension, same as for 3/16" blade, and track the band until it rides freely in the grooves of

the rollers. One roller on each guide has an eccentric shaft. Loosen set screw on guide block and turn eccentric with a screw driver until the band rides the bottom of the groove on both rollers. Be sure the cutting edges of the band are facing down to the table when the band revolves.

### TRACKING AND TENSIONING THE BLADE

To facilitate "tracking" or fitting the blade onto the wheels of the saw, the upper saw wheel is tiltable in and out as well as adjustable up and down. A handwheel at the center of the upper wheel at the rear of the frame allows close and accurate tilting of the band wheel. A handwheel for adjusting band tension is located below the frame head (30" models also have one at the left side of the frame to adjust the third wheel).

Thread the band through the table slot, place it around the wheels and take up the slack with the tension handwheel.

The saw has been correctly "tracked" when it runs on the crown of the wheels and its back just touches the thrust bearings on the saw guides. If the blade starts turning the thrust wheels, or if there is a noticeable gap between the blade and the wheels, the tilting handwheel should be adjusted by turning it clockwise for inward tilting, counter-clockwise for outward tilting. If the teeth of the saw run so far in the saw guide slot that a clicking noise is heard, or if the saw does not run deep enough in the slot to be guided perfectly,

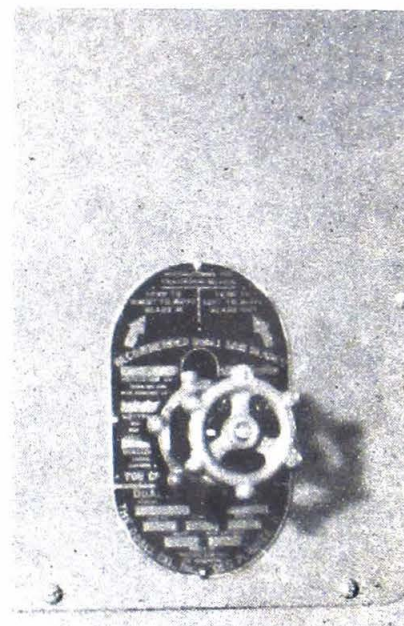


Figure 20



an incorrect insert is being used for that particular width of blade.

A new blade will stretch slightly after it has been used. In making a long cut with a new blade, it is important to watch the tension of the saw so that it does not become too slack.

### SAWING

Before starting to saw, each particular job should be considered to determine the necessary blade and attachments to be used in order to give best results. Hand feeding is best for small dies, templates and light work, and also for cutting small curves. Use the power feed for production work whenever possible. When heavy pieces are being sawed place them on the table with care to prevent damage to the table surface. Many attachments are included with or are available for the DoALL to make operation of the machine easier and more accurate. Operation of these attachments is discussed under Attachment section.

As a general rule a hole is drilled wherever there is a sharp corner to be cut. However, this is not absolutely necessary. A corner

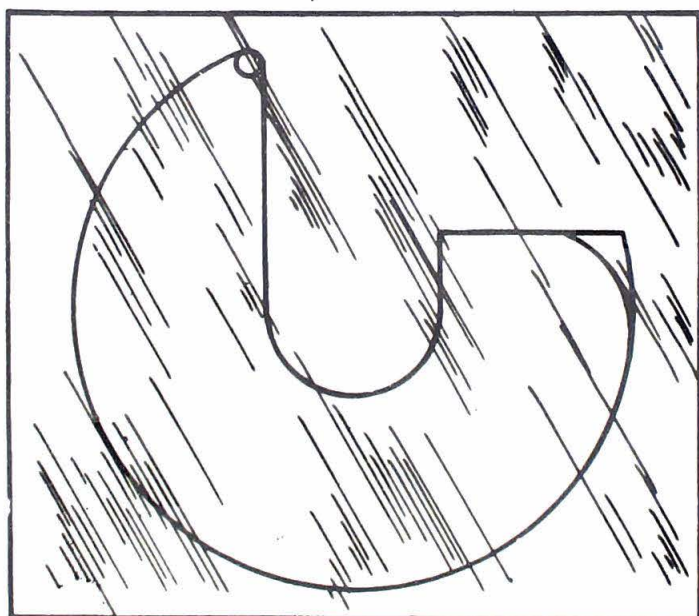


Figure 21

may be by-passed with a curve and the remainder notched out later.

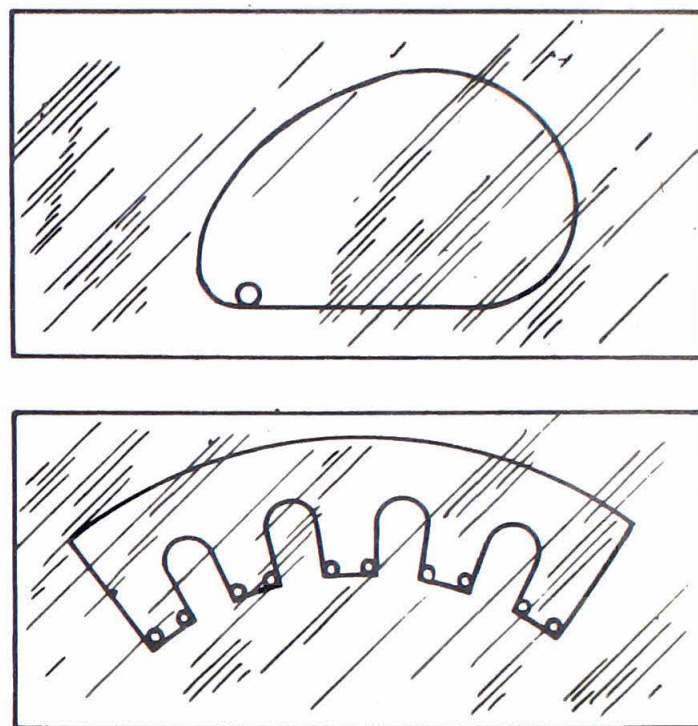


Figure 22

When drilling corner holes, the hole size is determined by the width of the saw blade. Use the widest saw possible for the curve to be cut.

Keep the upper post as close to the work as possible. If the correct speed is maintained, the saw will cut swiftly and cleanly. The pressure exerted on the work depends on the condition of the saw, the stock thickness and the skill of the operator. Avoid attempting to

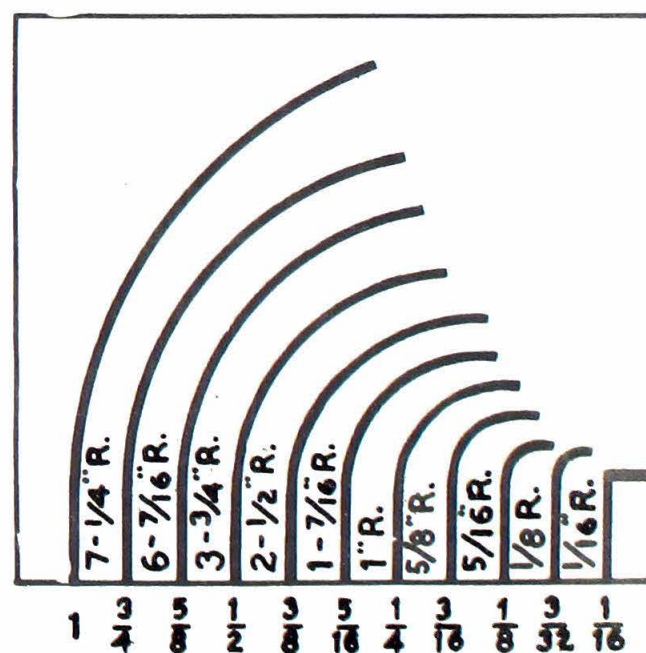


Figure 23  
Minimum Radii Cut



cut too small a radius with too wide a saw. This will bind the saw causing the lower wheel tire to become grooved.

### FILE BANDS AND GUIDES

File bands provide a method of filing that is continuous. Production band filing by this method is 9 times as fast as hand filing. It is the fastest and most accurate means of filing difficult production jobs because the operator feeds the work instead of the file.

File bands are available in various cuts, shapes and widths and consist of three inch segments riveted onto a flexible steel tape having a snap joint permitting the tape to be unlocked and rejoined. This makes possible internal as well as external filing jobs.

The available sizes and types are as follows:

	Flat	Half Round	Oval
Short Angle 10 teeth	$\frac{3}{8}'' - \frac{1}{2}''$	$\frac{3}{8}''$	$\frac{3}{8}'' - \frac{1}{2}''$
Bastard 12 teeth	$\frac{3}{8}''$		
Bastard 14 teeth	$\frac{1}{2}''$		$\frac{3}{8}'' - \frac{1}{2}''$
Bastard 16 teeth	$\frac{3}{8}''$	$\frac{3}{8}''$	
Bastard 20 teeth	$\frac{3}{8}'' - \frac{1}{4}''$		
Bastard 24 teeth			$\frac{1}{4}''$

### SETTING UP THE MACHINE FOR FILING

The following steps should be followed for both internal and external filing:

1. If the machine is already set up for sawing, remove the saw blade, guides, table center disc and lower post, and place the table center disc for filing in position.
2. Mount file guide support, as shown in Fig. 24, on the lower post block. There are three different width slots to properly support the different guides. Be sure the proper slot is turned to hold the guide being used.
3. Mount the file guide to the upper post, locking it firmly with the saw guide hold-

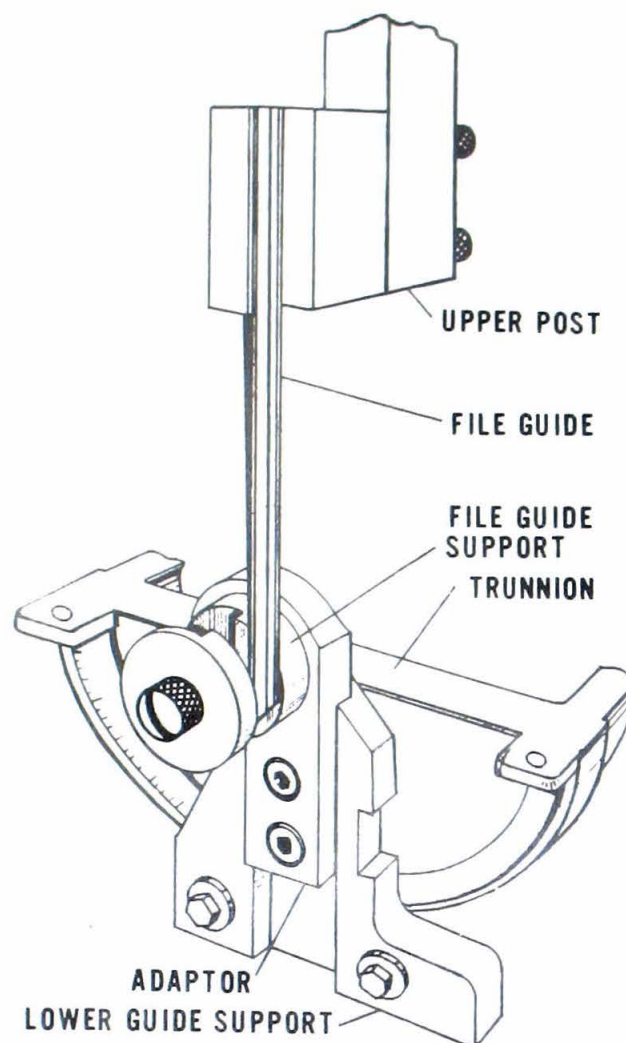


Figure 24

ing screws, and lower the post until the lower end of the guide rests on the support below the center line. Work thickness capacity when using the  $\frac{1}{4}''$  band is two inches and four inches with the  $\frac{3}{8}''$  or  $\frac{1}{2}''$  file bands. Longer guides are available that will permit filing of seven inch thicknesses with the  $\frac{1}{4}''$  band and eight inch thicknesses with the  $\frac{3}{8}''$  and  $\frac{1}{2}''$  bands.

### JOINING THE FILE BAND

1. Thread the file band upwards thru the hole in the table center disc.
2. With one end of the file band in each hand, (the yellow painted end in the left hand) hold the file ends at right angles with the filing surface up.



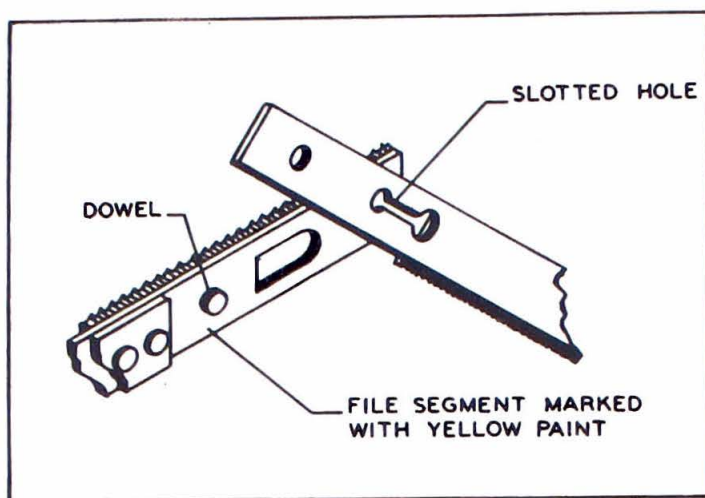


Figure 25

3. Depress the tip of the spring steel band held in the right hand with the lock rivet of the yellow segment held in the left hand.
4. Allow the rivet head to slip into the slotted hole. Slide the rivet head into the small end of the slot.
5. Straighten file band, allowing spring steel end to snap over the dowel.
6. Make sure the ends of the band are flush before running.

### TRACKING AND TENSIONING THE FILE BAND

The file bands are properly aligned and tensioned on the wheels in the same manner as used in tracking the saw bands.

The band can be made to run on the crown of the wheel by turning the handwheel located on the rear of the frame behind the upper wheel. A clockwise rotation of the tilting screw will make the band run to the inside. The file band should run freely in the file guide channel when properly tracked.

Too much tension on the file band will cause the file segment rivets to break when heavy filing pressure is applied. While at first it might seem that with excess tightening of the file band better filing results are obtained, this is not the case. Most accurate filing can be obtained with the band at the proper tension.

Check the file band to see that it is in align-

ment and passing freely over the channel in the file guide. This can be accomplished by hand movement of the upper wheel. Then start up the motor and set the machine at lowest speed, so that the band will run slowly while it is properly tracked on the wheels.

### FILING

Work pressure on the file band should not be excessive. Light pressure on all filing gives a better finish and files just as quickly. Heavy pressure may cause the file band to break or stall, resulting in a grooved lower wheel tire. It may also prevent the file from cutting because its tooth gullets will clog.

The correct combination of speed and pressure will produce curled chips. The best filing speeds are between 50 and 100 feet per minute. Use the Job Selector Dial for complete information on filing speeds.

Keep the files clean. Do not file when the teeth are clogged. Loaded files cause bumpy filing and scratch the work. Excessive filing pressures, when the file segments are clogged with chips, will cause the file teeth to strip out, damaging the band. Use a file card to clean the band before returning any file band to the storage cabinet.

To facilitate this carding, start the motor and set the DoALL running at its slowest speed. Then shift the machine into neutral position to release the transmission so that the file band can be easily hand moved in locating clogged spots.

### REMOVING THE FILE BAND

To remove the file band from the machine, release the tension on the file band by lowering the upper wheel, slip it off the wheels and unjoin band. It can be stored in a coil; but do not coil it into more than three loops. By far the best means of storing file bands is in the DoALL Supply Cabinet. Here the bands



are looped over a 16" radius and the ends hang in a compartment. Thus, they are kept clean and are not likely to be kinked. Another satisfactory means for storing the bands is to suspend them vertically from a pin which fits through the tail gate rivet hole.

To unjoin the band after it has been removed from the wheels proceed as follows:

1. Hold band at joint with both hands, the yellow segment being held with the left hand.

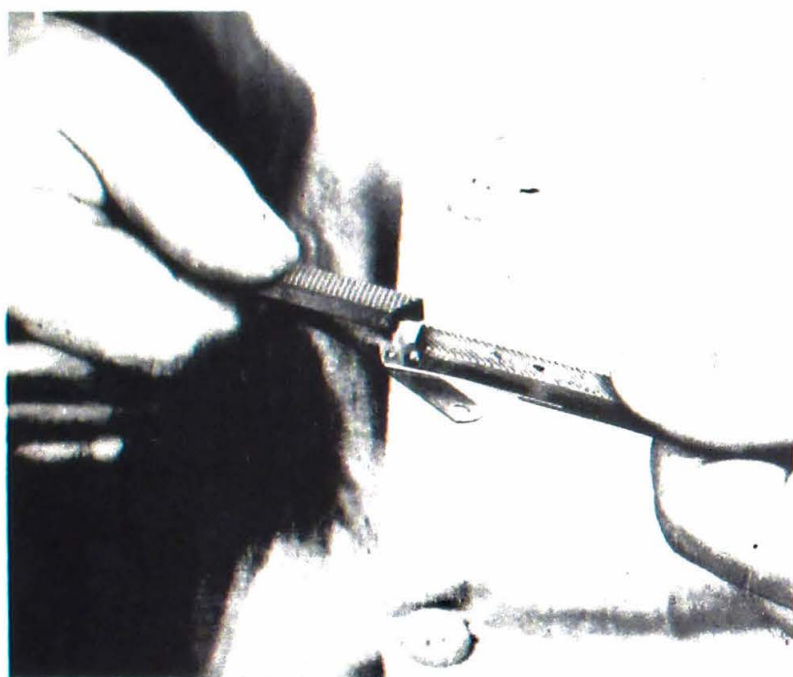


Figure 26

2. Bend the joint to not more than a 12-inch radius, exposing the joint slot.
3. Using the forefinger of the left hand, depress the front end of the yellow file band. With the thumb and forefinger of the right hand, disengage the dowel.
4. Slide the lock rivet to the open end of the slot and lift off.

**Do not bend the band more than necessary.** This band is made of the finest special spring steel obtainable, but it is possible to put a kink in it if not properly cared for. Extra file segment rivets for repairs are in a bag attached to the file band.

## BAND POLISHING AND GRINDING

This easily installed unit permits excellent polishing and finishing of parts and is a quick means of removing burrs. It makes your DoALL a three in one machine tool.

Abrasive bands are 120" long for 16" models and 160" long for 30" models. They are available in three grain sizes.

- A. (150 grain) Fine, for high polish and light stock removal.
- B. (80 grain) Medium, for general surface finishing.
- C. (50 grain) Coarse, for heavy stock removal and soft materials.

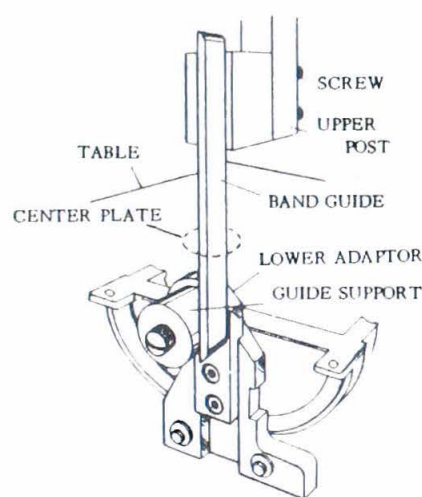


Figure 27

Physical properties of the material to be polished, amount of material to be removed and the finish desired should be considered when selecting abrasive bands for the job to be done.

1. Mount the polishing band guide support on the lower post block, as shown in Fig. 27. The same mounting screws are used for both the band polishing and filing attachments.
2. Mount the polishing back-up guide to the post and lower the post until the lower end of the guide rests on the support below the center line.
3. Rub graphite powder into the guide fabric to lubricate and increase the life of the polishing bands.
4. Mount and track the polishing band in the same manner as the file band. Have tension "snug" and run machine at high speed for polishing.
5. Place the table center disc in place. A special disc is furnished for band polishing.



# ATTACHMENTS



### RATCHET FEED

This is used for sawing heavy sections where manual feeding becomes tiring. It

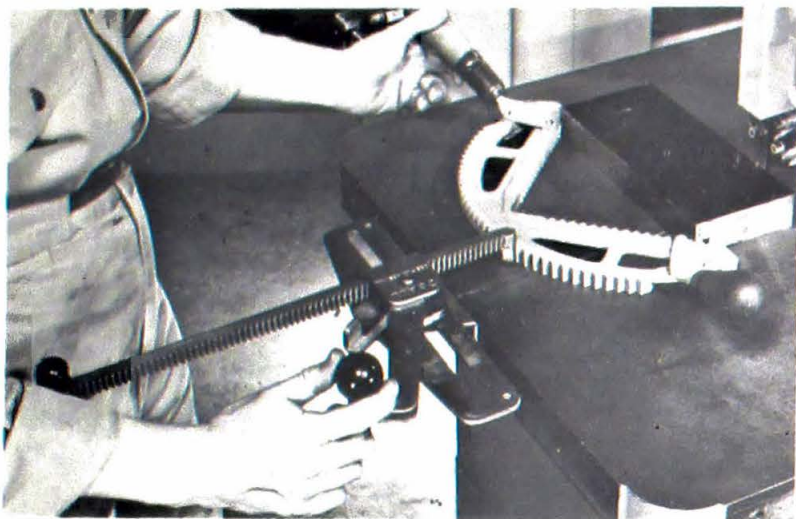


Figure 28

consists of a  $\frac{1}{2}$ " square steel rack gear with a hardened point which forces the work into the saw by means of a hand-operated ratchet lever and gear assembly. It allows 12" of forward travel, advancing approximately  $1\frac{7}{8}$ " with each stroke of the ratchet lever. To permit contour cutting it has a cross-travel of  $3\frac{1}{4}$ " each way from the center line of the table.

The ratchet table-feed is mounted by means of two studs in the base plate which set into two holes in a bracket mounted on the front edge of the table.

The rack gear can be readily adjusted from one position to another by pressing the thumb lever forward and sliding the rack gear into position. Releasing the thumb lever re-engages the gears. Using the work-holding jaw helps keep the work in correct alignment.

### WEIGHT TYPE POWER FEED

The weight-type power feed is an automatic feed which allows the operator to use both hands to guide the work without having to push it.

A weight on a beam within the machine

pulls the work holding chain to feed the work against the blade. The position of the weight on the beam determines both the rate and pressure of feed. Turning the feed hand-wheel counter-clockwise changes the position of the weight on the beam to reduce the feed

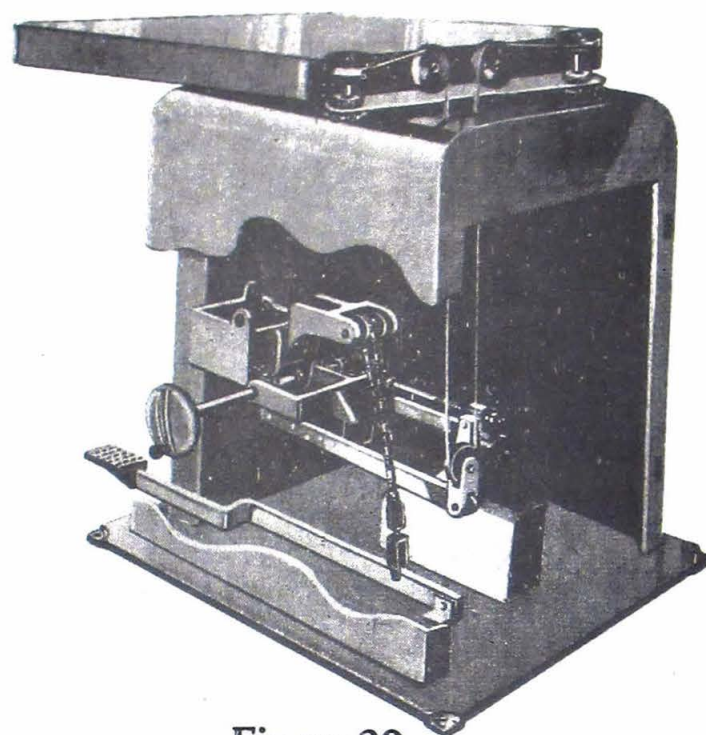


Figure 29

rate and pressure. Turning the handwheel clockwise increases them. At the maximum rate of feed, when the handwheel is in the farthest clockwise position pressure against the blade is 30 lbs. With the weight midway on the travel beam applied pressure at the blade is 20 lbs., and at the minimum rate a pressure of 10 lbs. is applied to the saw blade.

Use the maximum setting only when using saws  $\frac{1}{4}$ " or wider. With saws  $\frac{1}{8}$ " or less, always reduce the pressure to the minimum. A greater speed can be used when cutting straight lines than when cutting curves. Always adjust the feed rate to give maximum cutting speed without overstraining the blade.

The foot pedal in the base of the machine releases the pressure and stops the feed without the operator removing his hands from the work. Press the foot pedal all the



way down and lock it in the notch of the frame to remove work from saw. To obtain pressures of less than 10 lbs., shift the weight on its beam to its lowest pressure, then put partial pressure on the foot pedal.

To operate: Turn weight control hand-wheel to give desired feed pressure. Press foot pedal to bottom and lock in notch at

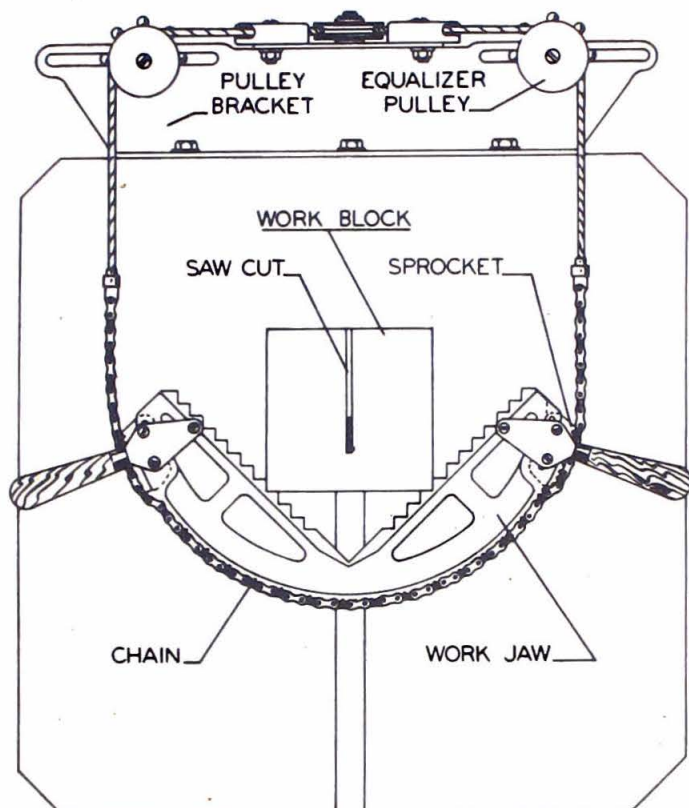


Figure 30

side of slot. Take up slack of table chain, loop it around work piece or work holding jaw and connect the ends together using the quick lock provided. Start the drive motor and release the foot pedal gradually until saw blade has started to cut.

If a curve is too sharp to cut at the speed used for straight cutting, reduce the feed by partial pressure on the foot pedal while the curve is being cut. Do not feed the work into the saw so rapidly that it causes the blade to twist or bow. When cutting into an opening, reduce the feed to prevent damage to the saw blade and work piece.

When the power feed is not in use, place

the foot pedal in the upper position. This guards against injury to the operator and machine for then the foot pedal cannot be accidentally dislodged from the notch.

### CUT-OFF AND MITERING ATTACHMENT

This attachment provides accurate straight or angle cut-off operations. When used in conjunction with the tilting table it permits

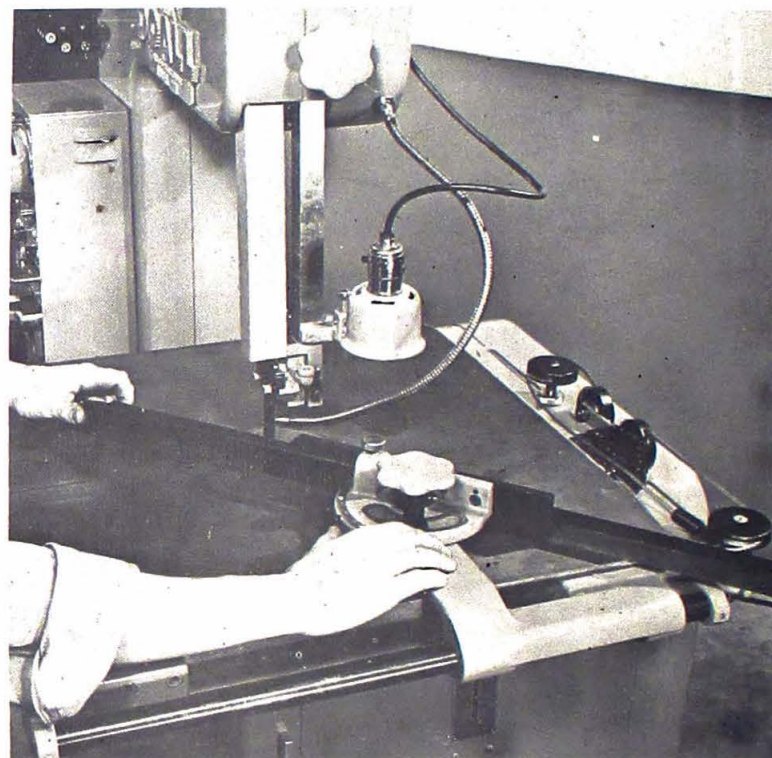


Figure 31

machining compound angles easily and accurately. The gage rod can be mounted to use as a measuring cut-off guide on either side of the saw blade.

Set up this attachment as shown in Fig. 31, making sure the edge of the mitering bar is in even contact with the table surface. Place a combination square against the saw slot of the table and the face of the miter bar. Loosen clamping handwheel and adjust miter bar until it is parallel with the blade of the combination square. If necessary, loosen the two screws holding the pointer and adjust it to show 90°. For angle sawing, merely loosen clamping handwheel and turn miter



head until calibrations show desired angle. To use with the automatic power feed move the cable pulleys to the extreme right and place the feed chain around the shaft directly below the clamping handwheel. When not in use, swing the attachment on the slide rod so that it hangs below the table. A stop collar is provided on the slide rod. Before starting a cut, clamp this collar in position to prevent the saw blade cutting into the gage rod.

### RIP FENCE

The Rip Fence makes fast precision cutting or ripping a simple job. Mount the table guide bar to the front of the table with the two socket cap screws furnished. Align top edge of bar so it is parallel to the top surface of the table. Slide the Rip Fence onto the guide bar until it is flush with the saw slot

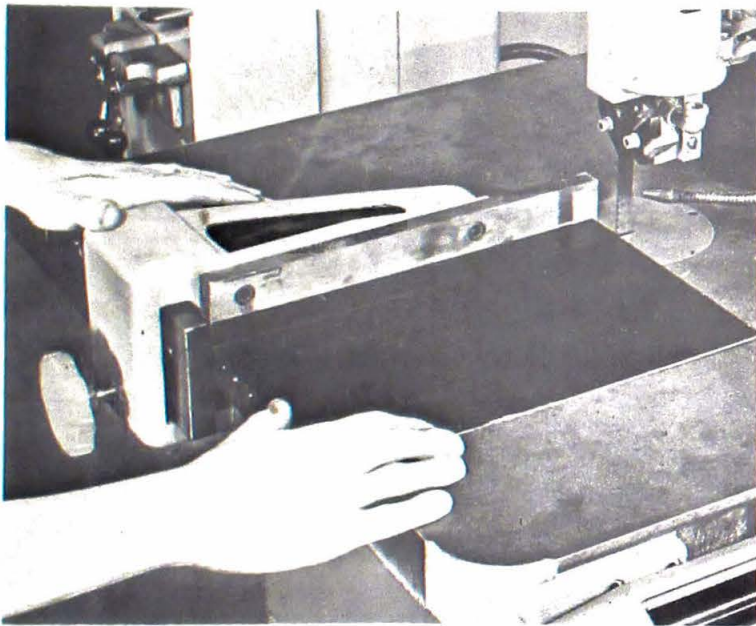


Figure 32

in the table and clamp the handwheel snug. Adjust the two hex head adjustment screws behind the table guide bar until the rip fence guide bar is parallel with the table saw slot.

In making a long cut be sure that the saw band being used is not worn on one side. This will cause the work to wander away from the rip fence guide. The assembly can

be adjusted instantly for any width cut within its limits by means of a single hand-wheel. It is easily removed when not being used.

### DISC CUTTING ATTACHMENT

The Disc Cutting Attachment permits the cutting of true circles, either internal or external, of any diameter from 2½" to 24".

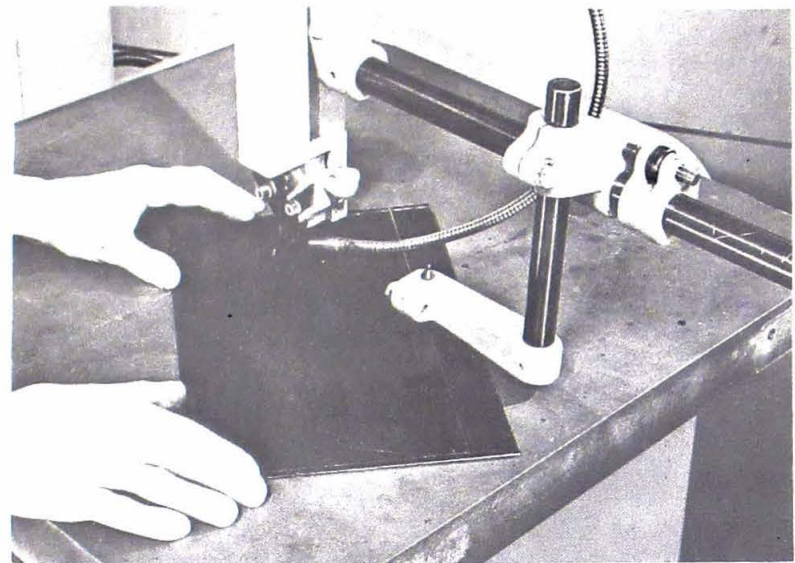


Figure 33

Bolt the attachment to the post using the two socket-head cap screws and washers furnished. Place the flat washers against the post to prevent damage. Lower the post until the saw guides are approximately ⅜" above the table. Loosen the two bolts holding the radius arm clamp and adjustment housing, and slide the unit along the radius arm to approximately the distance of radius to be cut. Clamp the adjustment housing tight.

The center of the centering pin must be directly in line with the cutting edge of the saw blade. To accomplish this, place a square against the side of the saw slot in the table with the blade of the square against the tip of the saw tooth. Line up the centering pin with the edge of the square's blade and clamp tight. Make final radius adjustments with the fine adjustment wheel. Tighten bolt on radius arm clamp making sure center pin is



square to table. Adjust unit for work thickness by raising or lowering post.

The machine alignment as given in the section under "INSTALLATION", must be correct to insure extreme accuracy with the Disc Cutting Attachment.

### HEAVY WORK SLIDES

Using the Heavy Work Slide permits easy

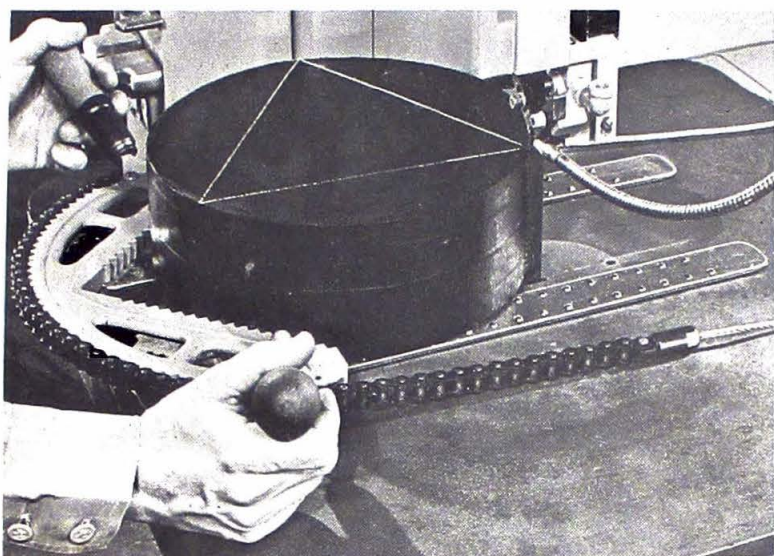


Figure 34

movement of heavy parts that would otherwise be difficult to feed into the saw. The slides contain inserted ball bearings which greatly reduce friction on the work table and make it easy to follow the layout line. This unit can be used with or without the power feed attachment.

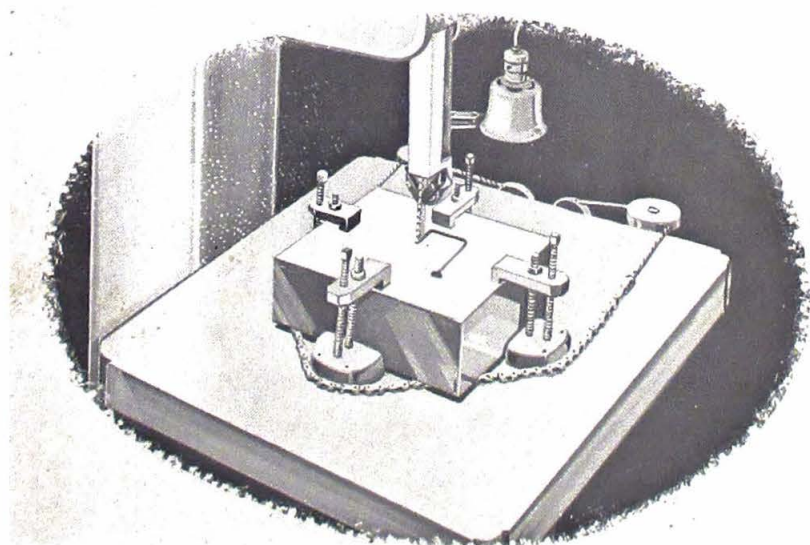


Figure 35

### HEAVY WORK CLAMPS

The Heavy Work Clamps are used in the contour sawing of particularly heavy material as well as stacked parts to produce multiple parts in one operation. These clamps have a ball bearing base and have a standard clamping capacity of four inches.

Clamp the four work-holding clamps on the material and square the work with the saw through the use of the table tilting device.

Each clamp is provided with gripping teeth so that the power feed can be applied in moving the material into the saw.

### MAGNIFYING ATTACHMENT

This attachment consists of a 3" rectangular lens mounted on a flanged housing. The

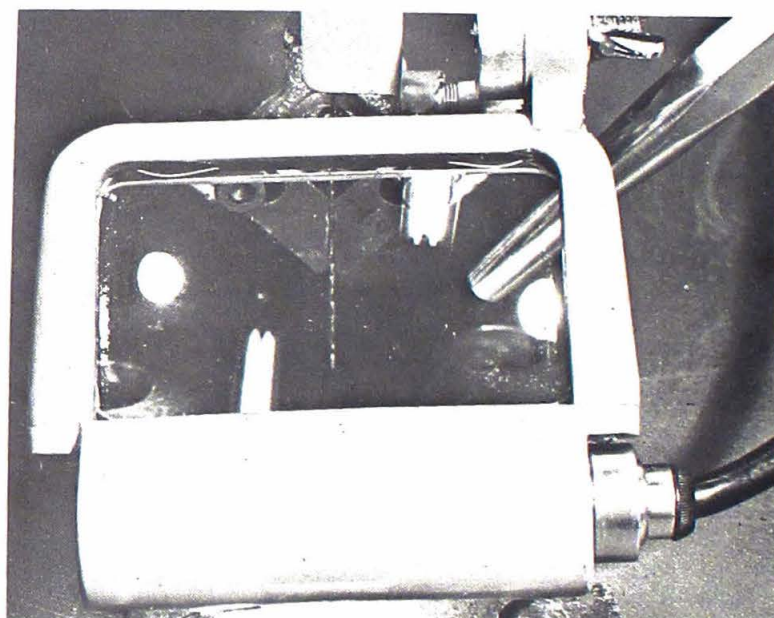


Figure 36

housing contains a light socket for a 15-watt candelabra type lamp. The lens and light are supported on a swivel-joint arm secured to the post by means of a "C" type clamp. The glass can be adjusted to any position for both sawing and filing. A special plug connector on the extension cord connects with the outlet located on the front of the machine, above the table light outlet. The lamp has no switch and is "on" when plugged into the outlet. This outlet should not be



used for any other light extension where more than 15 watts will be consumed.

### DoALL SAW LUBRICATOR

The DoALL Saw Lubricator is designed to give a controlled flow of lubricant at the

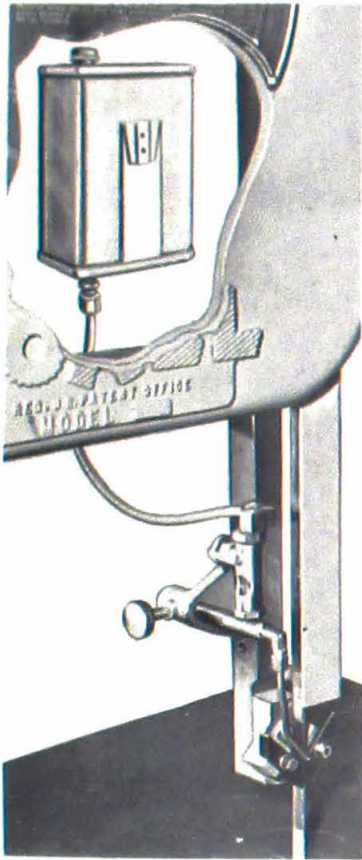


Figure 37

point of work. This will increase the saw life and speed of cutting, and give a finer finish.

A bracket is provided for mounting the one-quart container which holds the lubricant. This bracket should be installed on the panel at the rear of the machine.

The lubricator is fastened to the post by means of a set screw. The slide rod on the lubricator is adjustable for all saw widths and

should be adjusted so that the copper tube outlet is just touching the edge of the saw teeth. This will assure lubricant flowing on both sides of the saw. Adjust the sight feed valve to deliver not more than 10 drops per minute. Too much oil will cause the saw to slip off the lower wheel. Soluble oil and water or kerosene solutions are recommended. It is not good practice to use lubricant on cast iron, fibers and plastics.

### DoALL SAW EEZ

As a substitute for the DoALL Saw Lubricator, we recommend DoALL Saw EEZ which has been specially prepared for contour sawing. This Saw EEZ comes in four ounce tubes. It is applied directly to both sides of

the saw band while it is in motion. Apply only enough Saw EEZ to maintain a protective film on the saw. This will require a new application after four or five inches of contour cutting. This Saw EEZ keeps "scoring" on the narrow band saws to the minimum, increases saw life about four times and leaves a smoother, cleaner sawed surface. The precision saw guides are provided with a fitting to facilitate applying the Saw EEZ.

### ETCHING PENCIL

The Etching Pencil is used with the butt welder to mark the jobs finished on the DoALL or any tools, jigs, fixtures, templates, etc.

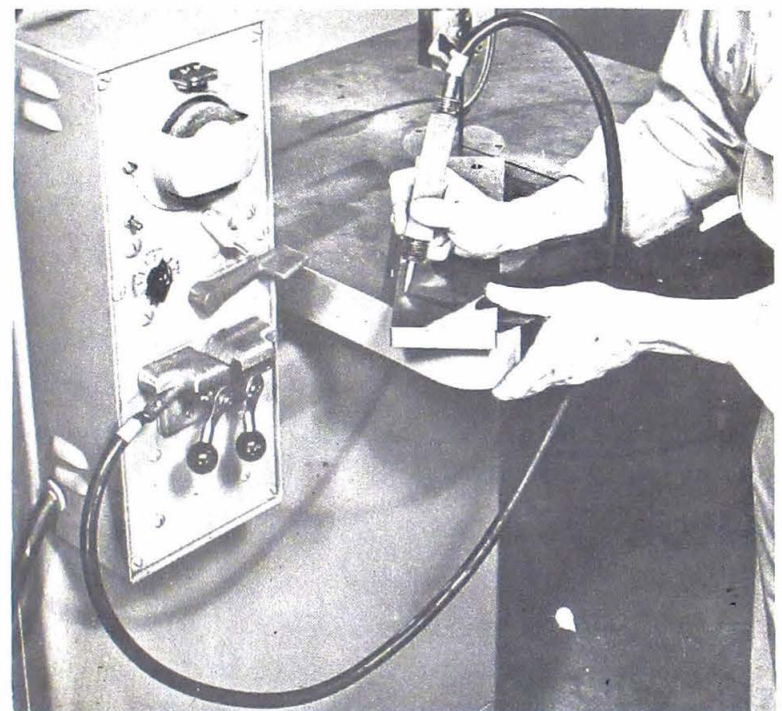


Figure 38

Instructions for applying the etching pencil are as follows:

1. Clamp the terminal strip of the etching pencil in the stationary jaw.
2. Depress the anneal and etching switch and clamp the button down with the etching pencil clamp. This closes the circuit through the welder and also grounds the etching current through the machine.
3. Place the work to be marked on the table



of the machine. Since the machine is "grounded" there is no second lead required to the work.

4. Etch with sufficient pressure to prevent the point from arcing, but not great enough to destroy the copper point.
5. The copper point should be kept sharp to secure best results.

### SCREW FEED

For precision contour sawing heavy sections, the screw feed may be used. This feed

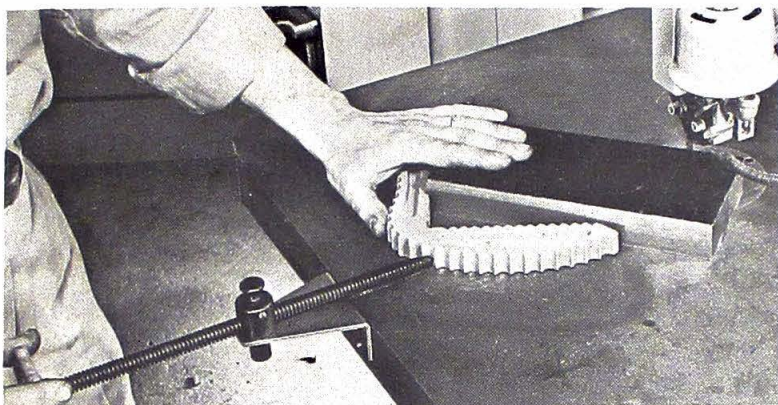


Figure 39

is an Acme Thread,  $\frac{1}{2}$ " screw, the point of which is hardened. The screw swivels in its housing so that curves can readily be navigated. This attachment is mounted to the front edge of the table by means of a bracket.

The screw can readily be adjusted from one position to another, by lifting the key in the slot of the swivel and sliding the screw to position. The key is then dropped into place. Using the work holding jaw to hold the work block when using the screw feed facilitates keeping the work in correct alignment with the saw.

### TEMPLATE GUIDE

The Template Guide is designed for production sawing of identical parts from a template. The guide is fastened to the back of the post with two machine screws. It should be adjusted so that the prongs extend  $\frac{1}{32}$ " past the edge of the saw tooth and so that the

blade is centered between the prongs.

The Template Guide is designed to be used with  $\frac{1}{4}$ " saw blade only. When making the template, it should be  $\frac{1}{32}$ " smaller than the part to be sawed.

### CARBIDE TOOL FINISHER

This attachment makes possible the grinding of carbide tool bits to a finish of 3MU RMS. It consists of a carbide faced back-up platen, silicon carbide bands, tool holder and table center disc. The bands are available in three grain sizes; 24 and 50 grit for rough grinding and 150 grit for finish grinding. DoALL Cool Grinding Concentrate and water mixed 100 parts water to 1 part concentrate is recommended for Cool-

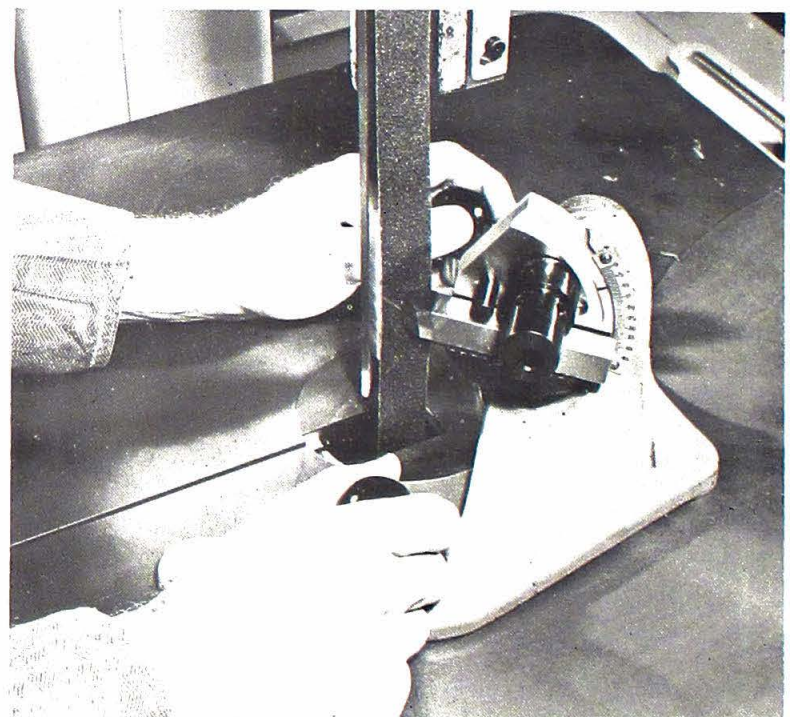


Figure 40

ant. It can be applied with the DoALL Saw Lubricator. Run the machine at band speeds of 4000 to 5000 F.P.M. for best results.

As tool finishes drop below 7 or 8 Micro-inches RMS every slight improvement in finish and sharpness greatly increases tool life. Because these slight improvements are not visible to the naked eye it is necessary to



find some easily controllable method that will insure good results. The features designed into the DoALL Tool Finisher makes this possible.

The surface finish is controlled by simply following the procedure outlined in the following instructions. Control of the sharpness of the cutting edge is achieved through the use of the tool positioning fixture.

Its features provide a means for easily controlling the amount of material to be ground away in order to remove the jagged edge left from rough grinding, by obtaining the proper difference between the primary and secondary clearance angles and correct land widths. It is not necessary to have any other equipment than the tool finisher and a scale to obtain these results.

Tools can be ground either directly on the table or in the tool holding fixture. The fixture makes it possible to increase cutting pressure as the band dulls thus increasing band life. If these same pressures were attempted while guiding the tool with the fingers, tipping and rocking of the tool would be very hard to prevent and as a result you would not get the best cutting edge possible.

The tool holding fixture provides stable support for the tool bit and, used in conjunction with the tilting table is easily adjustable to obtain all clearance and rake angles without figuring compound angles. An eccentric type clamp holds the tool bits in position. Its tool bit capacity is from  $\frac{1}{4}$ " to  $\frac{3}{4}$ " adjustable by changing the eccentric's position on the pivot pins.

#### Installation:

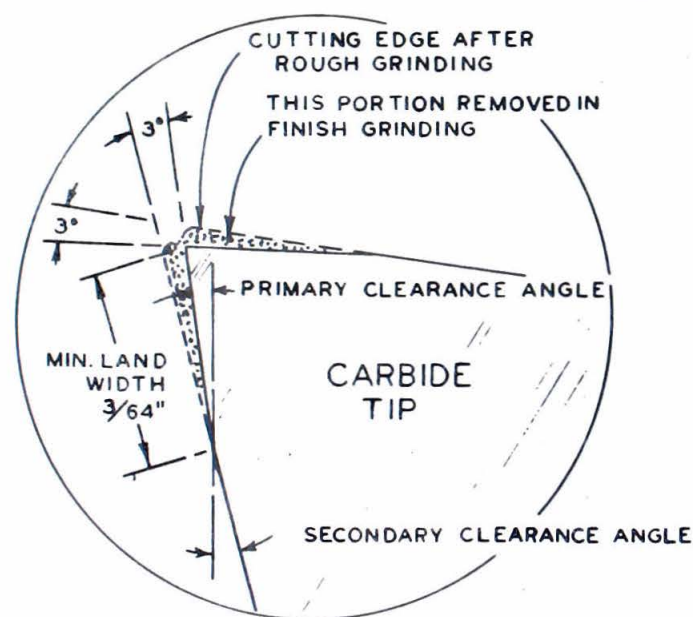
1. Remove band tool guides and table center disc and raise upper post to maximum capacity.
2. Mount the platen on the upper post with

the saw guide holding screws and place the table center disc in position.

3. Mount and track the abrasive band in the same manner as the file band. Apply tension until pointer is on  $\frac{3}{8}$  mark on tension indicator escutcheon.
4. Set up the drip lubricator and adjust machine for proper band speed. (4000 to 5000 F.P.M.)

### OPERATION

For maximum band life and minimum grinding time only a narrow land is finish ground on each surface of the cutting edge. To achieve this condition the tool is first rough ground to secondary clearance and rake angles 3 degrees greater than that desired in the finished tool. Then a land at least  $\frac{3}{64}$ " wide is finished at the proper



Cross Section of Cutting Edge

Figure 41

angle. When this is done enough material will have been removed at the cutting edge to insure a chip free edge and a very smooth surface adjacent to it with a resultant increase in tool life.

The setup and operation procedure is the same whether for rough or finish grinding except for clearance angles and grit sizes.



The attachment may be used without the tool holder but for best results the tool holder is recommended.

1. Clamp the tool in the fixture so that the surface to be ground is in a vertical plane.
2. Tilt and lock the vertical protractor head so that the cutting edge being ground is parallel to the saw table.
3. Always tilt the saw table for the desired clearance or rake angle.
4. Adjust the post until the carbide surface

of the platen is at the proper level to support the band at the point where the tool is being ground.

5. Start the machine and coolant flow. Then manipulate the fixture to grind the profile and land width desired. Keep the tool moving back and forth across the belt when grinding. Do not allow the tool to slip off the edge of the belt.
6. Reset the tool in the holder and repeat those steps necessary to grind all surfaces.



# **MAINTENANCE**



## LUBRICATION

The following points should be lubricated regularly as specified. If the machine is used continually by more than one shift of workers we recommend that the machine be lubricated more frequently than specified.

1. Upper Wheel Slide—Every three months remove the rear cover and grease the Upper Wheel Slides with No. 2 cup grease. Place a few drops of S.A.E. No. 20 oil on the tension screw and tilt screw.
2. Upper Wheel—Lubricate monthly with high pressure bearing grease. A zirk type grease fitting is provided on the hub of the wheel. Avoid breaking grease seals with too much grease.
3. Post—Lubricate monthly. Place a few drops of S.A.E. No. 20 oil on the post and work it up and down in the post block.
4. Power Feed Pulley Bearings—Place a few drops of S.A.E. No. 20 oil on each bearing monthly.
5. Transmission or Spindle—On Models 16M and 30M, check the transmission monthly. Fill the case until oil appears in filler pipe elbow, with a top grade S.A.E. No. 20 transmission oil. The transmission should be drained and refilled with new oil every six months or every 1000 hours of operation. On Models HM and H MV the lower spindle is greased at the factory, but should be greased every six months with a good grade of high temperature bearing grease. About 15 shots from a pressure gun is sufficient. Once a year disassemble the spindle, wash out the bearings and replace the old grease with new. When the spindle is replaced, check the machine for alignment. (See paragraph, "Correcting for True Alignment"). If the adjustment studs holding

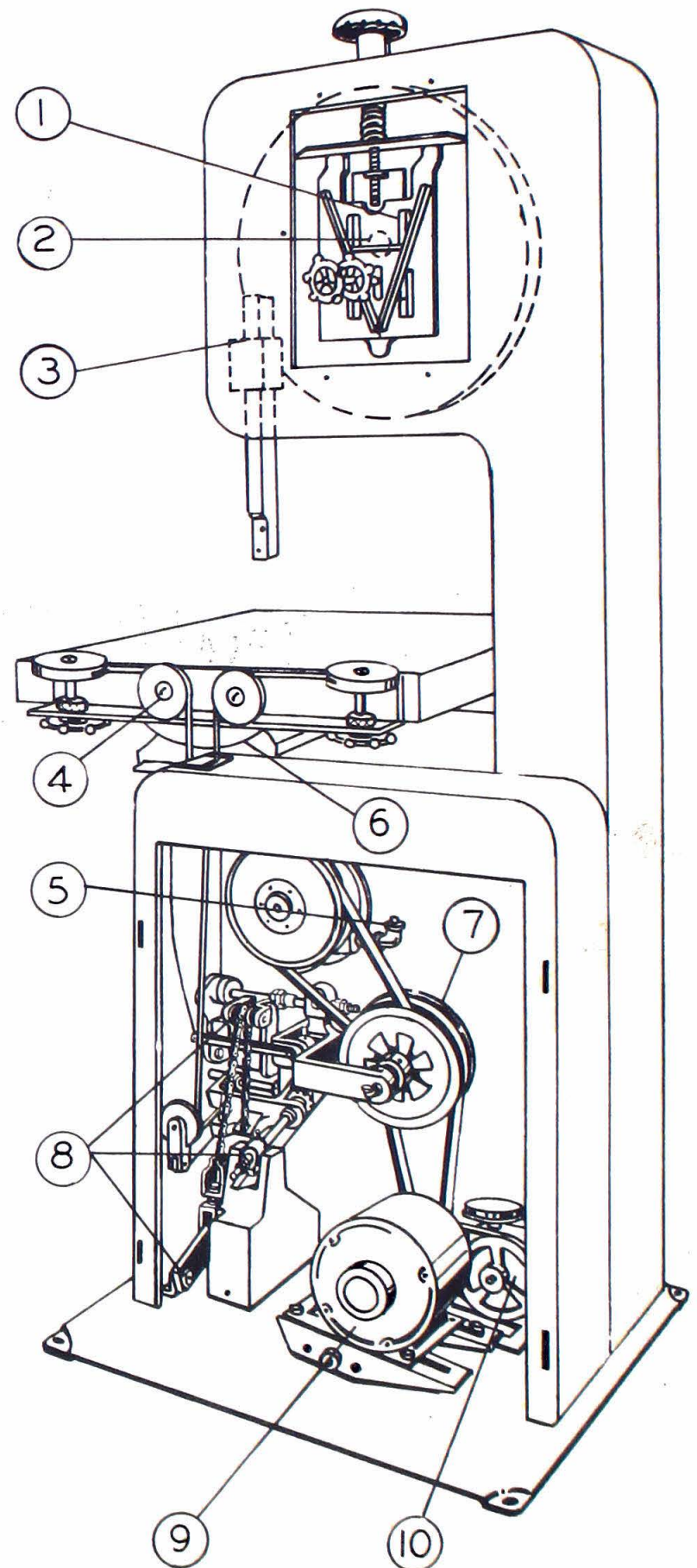


Figure 42



the spindle to the frame are not turned realignment should not be necessary.

6. Trunnion—Place a few drops of S.A.E. No. 20 oil on the slide surface and clamp bolt monthly.
7. Variable Speed Pulley—Lubricate weekly with No. 10 high speed spindle oil. Do not over oil the variable speed pulley as the excess will coat the V-belts and cause slippage.
8. Drive Assembly and Power Feed—Lubricate monthly. Place a few drops of S.A.E. No. 20 oil on the speed change screw, weight adjustment screw, pivot pins, weight slide and chain roller.
9. Motor—Follow motor manufacturer's specifications for lubrication and maintenance. Place a few drops of oil on the hinge shaft monthly.
10. Air Pump—Do not oil the rotary air pump. Use powdered graphite very sparingly. This graphite is forced into the pump through the air inlet while the pump is in motion. The vanes are made of plastic and oil tends to destroy them. Remove air cleaner and wash in gasoline or solvent monthly.

Item 7 applies to machines having variable drive.

Items 4 and 8 apply only to machines equipped with power feed.

Item 10 applies only to machines equipped with air pump.

### POINTS OF WEAR TO BE CHECKED MONTHLY

**Wheel Tires**—When the tires are completely worn out, replace them by loosening the tire with a screw driver or other flat tool and stretching it until it can be taken off. Scrape the wheel clean, and apply new cement before installing new tire.

**Variable Pulley**—Check the pulleys and sleeve for grooving.

**Saw Guide Back-Up Bearings**—Replace the roller bearing caps before they wear through to the bearing.

**Saw Guide Inserts**—The inserts are extremely hard and will last a long time before grinding becomes necessary. Care should be taken to avoid dropping them. They have been made extremely hard for long wear and as a result are very brittle. When the insert is worn so that the saw slot is not parallel it should be reground to a true 45 degree angle. Do not grind the flat or notched surfaces. They are accurately determined at the factory and are not subject to wear. Stone the point of the inserts after grinding so that there is a slight curve on the point and point edge.

**Blade Shear**—If the knife blades are dull resharpen them by grinding on a surface or bench grinder. Disassemble by removing the snap rings from the pivot pin and eccentric disc, and then remove the retaining screws on the bottom blades.

### BUTT WELDER ADJUSTMENTS

Before servicing the Butt Welder, be sure to disconnect from the electric power.

The moving welder jaw is rigidly mounted on a single slide rod that slides in the welder frame. Viewed from the front of the panel the slide rod carries a switch cut-off knob at its left end. This knob is mounted on a socket head set screw so that it can be adjusted in or out, thus regulating the timing of the weld. The cut-off knob operating against the leaf of the cut-off switch, opens the circuit when the moving jaw is in the closed position.

The moving welder jaw has been set to allow a movement of .047". The length of this movement cannot be changed. If too



much flash is formed in welding  $1/16''$  to  $1/8''$  bands, place saw in the jaws as usual but leave  $1/64''$  gap between the ends of the band. A scant gap cuts down the travel of the movable jaw.

The most important adjustment of the welding unit is the adjustment of the length of time the current flows through the jaws. Two failures in welding will indicate when this adjustment is needed:

1. If the jaws move when the stationary jaw clamp is released, the circuit has been broken before the jaw has moved its full  $.047''$ .
2. If a weld "burns out", the circuit has not been broken when the jaws have completed their full  $.047''$  travel.

These two failures can be corrected by adjustment of the cut-off switch which controls the length of time the current flows through the jaws.

This switch is a leaf switch which is opened and closed by the slide rod connected to the movable welder jaw. When the welding switch lever is depressed, the jaw closes, pushing the slide rod over until the leaves of the cut-off switch open.

A hole in the outside leaf of the cut-off switch permits insertion of an Allen type wrench into the end-knob of the slide rod. This knob screws in and out to permit careful adjustments of the timing. A quarter turn of the knob will cause a movement of  $.008''$  in or out. Each click of the ratchet is equivalent to  $.002''$  movement. A clockwise rotation of this knob produces a slower breaking of the welder circuit. This will produce more heat at the point of the weld and correct for jaw movement after the weld has been made. A counter-clockwise adjustment will

allow less heat to prevent "burning out" of the weld.

To adjust the timing proceed as follows:

- A. Disconnect electric power cable.
- B. Remove the welder from the case by removing the six panel screws.
- C. Depress the welding lever and check the cut-off switch. There should be a gap between the contact points of  $1/32''$  to  $3/64''$ . Adjust with the Allen type wrench if necessary.
- D. If the welds still tend to burn out, two other points should be checked.
  - (a) The slide rod may be sticking. Check to see that the movable jaw has a free movement of  $.047''$ . A drop of oil on the slide rod worked along by repeated depressing of the lever may correct this trouble. If it does not, remove the slide rod and clean it. Before removing the slide rod, clamp a piece of saw band securely between the welder jaws to maintain the  $13/64''$  spacing between them.
  - (b) The web strap which conducts electricity to the movable jaw may have become kinked causing it to bind the jaw. Check the jaw for free movement. To secure consistent results, wipe the welder jaws and clamps clean of all scale and flash after each weld.

### CHIP COLLECTOR BOX

The Chip Collector Box is located in the base of the machine. A handle located at the base of the machine on the left side facilitates cleaning. Clean chips and dust from the machine and empty chip collector box daily.



## **AN INVITATION**

The DoALL Company maintains for your use the **DoALL Technical Institute** and **two laboratories**.

### **Training**

The **DoALL Technical Institute** offers a course in **DoALL** operation, application and maintenance to employees of **DoALL** users in the form of a self-instruction book complete with typical work applications and their proper execution. This book is titled "**DoALL Band Tool Manual**" and is available to **DoALL** users.

### **Laboratories**

These laboratories are equipped to handle your sawing or filing problems.

If you have a difficult cutting job, we would be glad to have you send samples of the material to our Saw-File Research Laboratories located at The DoALL Company, 254 North Laurel Ave., Des Plaines, Illinois. A research report will be sent you at the completion of the sawing or filing tests on the material. This report will show the proper saw or file to be used along with recommended feeds and speeds. The material tests will be returned to you for your inspection of the finished results obtained on the test. This free service can easily be arranged through your local DoALL representative.

If you have a difficult job to machine and wish to have us analyze the job for **DoALL** application, send drawings and sketches to the DoALL Company, 254 North Laurel Ave., Des Plaines, Illinois. You will receive a report including proper procedure for setting up your **DoALL** to handle the job. Estimates of cutting time and recommended attachments will be given for your job. These will be based on actual job experience at other plants having similar work.





*Danny DoAll* SAYS,  
"USE GENUINE DOALL BAND  
TOOLS FOR LONG LASTING  
EFFICIENT SERVICE"