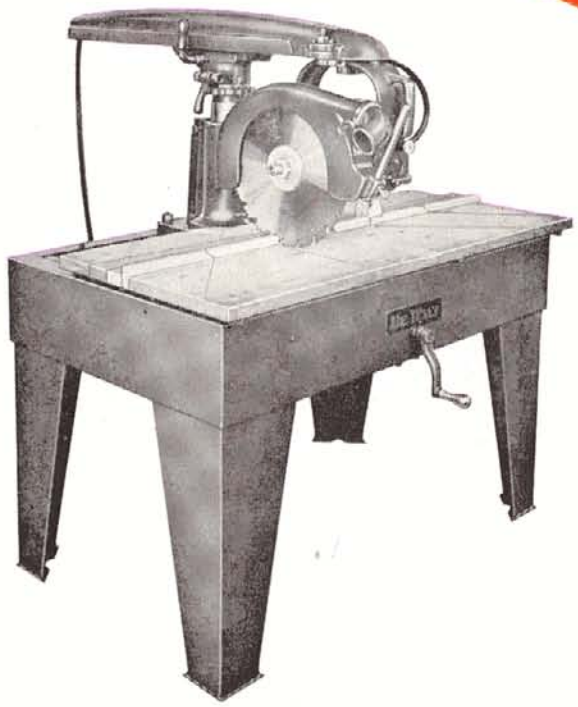
MODEL
R-2
DEWALT

INSTRUCTION BOOK



MODEL
R-2
DEWALT

DEWALT INC. • LANCASTER, PENNSYLVANIA, U. S. A.

SUBSIDIARY OF AMERICAN MACHINE & FOUNDRY COMPANY

INTRODUCTION

The DeWalt Radial Arm Saw you are about to operate is a modern and uniquely versatile precision machine. The motor of this machine can be placed in almost any conceivable position. And no matter what position you place the cutter of your DeWalt, there is no loss of the rugged DeWalt power or the famous DeWalt accuracy—the result of DeWalt's manufacturing standards and the use by DeWalt of only the finest materials available.

One thing that should be remembered, however, is that the accuracy that was built into your machine at the DeWalt factory can be expected to last only as long as you are aware of the occasional adjustments this precision machine requires. To aid you in the general maintenance of your machine, we have prepared this manual. It describes not only what your machine can do, but how you can maintain the accuracy that was built into the saw, and which you normally expect to be present in a DeWalt product.

Accuracy and versatility have been equally considered by us as we manufactured your DeWalt Radial Arm Saw. Therefore, you now own a versatile machine that can be prepared in a few seconds for any one of a large number of jobs. Your DeWalt is actually many precision machines, and the operations it can be made to perform are operations that before required single-purpose machines. As versatile as your requirements, your DeWalt can be quickly adapted for many jobs that you might have believed impossible for it.

However, it would have been impossible for us to have prepared a manual that would show all the special set ups possible with a DeWalt Radial Arm Saw. Therefore, it may be well to remember that, if events necessitate a change in your methods and a special set up is required, your local DeWalt dealer is always willing and available to talk to you about the potentialities of your DeWalt Radial Arm Saw.

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THE FLOOR SPACE REQUIRED

The floor space required for the installation of the DeWalt Model R-2 Radial Arm Saw depends upon the type arm you decide to use.

For a machine with a STANDARD arm, the floor space requirements would be 46 inches by 68 inches. For a machine with a MEDIUM arm, the floor space requirements would be 46 inches by 74 inches.

RECOMMENDED WIRE SIZES

To obtain maximum efficiency, the wires from the source of power to the machine should comply with the table below.

	Wire Sizes*—B & S Gauge	
h.p. of motor	110-120 volts	220-240 volts
2	10	12
3	6	8
5	2	6

* The listed wire sizes are to be used when the motor is less than one hundred (100) feet from the source of power.

TO PUT LEGS ON THE MACHINE

Pull the arm forward as far as possible. Lock it in that position. Then turn the arm, and lock it in the position shown in figure 1. Tilt the table until the motor rests on the floor. Bolt legs A and B to the table. Then raise the table and prop the unsupported end with a wooden brace. With the machine in that position, you can bolt legs C and D to the machine frame.

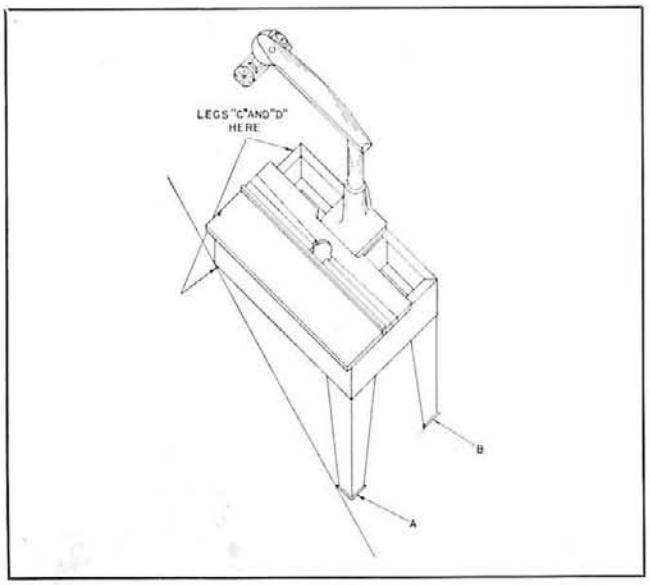


FIGURE 1

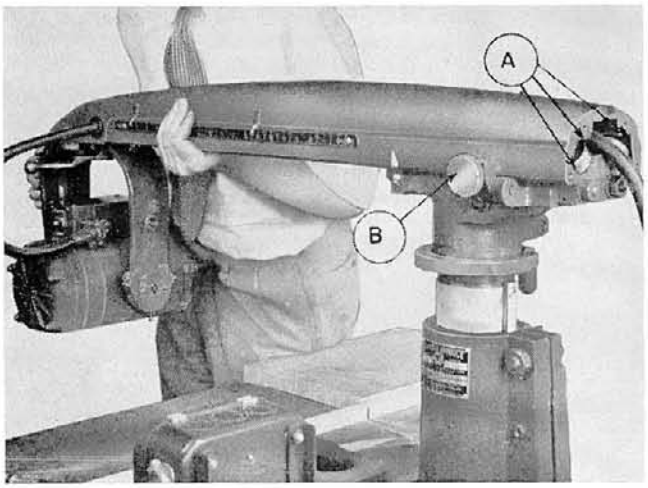


FIGURE 2

TO PLACE ARM ON ROLLER HEAD

Remove the rear end plate from the end of the arm, figure 2.

THE MACHINED WAYS, A, SHOULD BE THOROUGHLY CLEANED. CARBON TETRACHLORIDE IS THE BEST CLEANSER TO USE ON THE MACHINED WAYS. ONCE PROPERLY CLEANED, THE WAYS SHOULD BE KEPT IN THAT CONDITION DURING THE ENTIRE LIFE OF THE MACHINE. GREASE AND OIL SHOULD NOT BE USED ON THE WAYS.

After the ways have been cleaned, tilt the rip lock, B, so that it does not bump against the arm as the arm is placed on the roller head. Place the arm on the roller head assembly. Replace the rear end plate.

TO CHANGE VOLTAGE

Single-phase motors can be operated on either one of the two voltages indicated on the motor name plate. However, it is on the tag attached to the motor cable that you will find the one voltage from which your machine has been connected at the factory.

If you have a 2 h.p. machine, change the position of the toggle on the relay box of the motor if you want to change the voltage.

3 h.p. machines have no such toggle, and voltage changes must be made by changing the connections, as indicated in the drawing that is in the switch box.

Three-phase motors are wound for one voltage only—220, 440 or 550 volts.

RECOMMENDED FUSES

Lines leading to the motor of your machine should be equipped with the fuse protection listed below.

MOTOR	115 VOLTS	220 VOLTS	440 VOLTS
2 h.p. 1 phase	30 amp. Fusetron	20 amp. Fusetron	30 amp. fuse
3 h.p. 1 phase	60 amp. fuse	30 amp. fuse	—
3 h.p. 3 phase	30 amp. fuse	20 amp. fuse	15 amp. fuse
5 h.p. 3 phase	—	30 amp. Fusetron	20 amp. fuse

TO CHECK ARBOR ROTATION

To check the rotation of the arbor, a precaution that must be taken before you operate the saw, begin by removing the arbor nut and arbor collar. Then turn on the starting switch. The rotation of the motor must be CLOCKWISE. If the rotation of the arbor is not as it should be, the incoming wires are, in all probability, not properly hooked up to the switch box. To change the rotation of a three-phase motor, reverse any two of the wires leading into the switch box.

TO PLACE THE SAW BLADE ON THE ARBOR

After you have checked the rotation of the arbor, place an arbor collar on it. Then place a saw blade on the arbor. THE RECESSED SIDE OF THE COLLAR MUST BE AGAINST THE SAW BLADE.

Figure 7 will serve to show you the direction in which the teeth must point. Place a second collar, RECESSED SIDE AGAINST THE SAW BLADE, on the arbor. Tighten the arbor nut.

TO REMOVE THE ARBOR NUT

Fit an arbor wrench to the hex arbor nut. See figure 3.

Place a striking block (preferably wood) to receive the blow of the arbor wrench. You will thus prevent marring of the table top.

Throw the wrench to the left (COUNTERCLOCKWISE). The motion of the wrench will loosen the arbor nut. When the nut is loose, spin it free by hand.

TO ADJUST THE SAW GUARD

Loosen the two wing nuts that hold the guard to the bracket, slide the guard to the required position, and tighten the wing nuts.

ROLLER EXTENSION TABLES

Roller extension tables are available and can be easily attached to the table of the DeWalt Model R-2.

GAUGES AND STOPS

Gauges and stops are helpful when you wish to cross cut stock to exact lengths during production work. Right- or left-hand gauges and stops are easily attached to DeWalt extension tables.

TO CONFINE SAWDUST

DeWalt has designed a dust hood that will confine the largest percentage of the sawdust that normally results from the operation of a DeWalt Radial Arm Saw. For further information about this dust hood, write to DeWalt Inc., Lancaster, Pennsylvania.

CAUTIONS

1.

Always feed material from the side opposite the anti-kickback attachment. OBSERVE THE CAUTION TAG ON THE GUARD.

2.

Always use the anti-kickback attachment when ripping.

3.

Be sure that the electrical current being used is the current specified on the motor plate.

4.

Before operating the machine, be sure that all handles and latches are tight.

5.

Keep the saw blade sharp and properly filed.

6.

The blade guard should be adjusted to clear the material by approximately 3/8" on the in-feed side.

MAINTENANCE

Every DeWalt machine has been carefully aligned before it was shipped from the DeWalt factory. However, handling during transportation might have destroyed the perfect alignment of the machine; in time other adjustments will be necessary to retain the original accuracy of your DeWalt. The next few pages have been prepared to instruct you in the maintenance of your DeWalt in a condition as closely as possible approximating the condition in which you received it.

GUIDE STRIP, POSITION

The guide strip shown in figure 5 is located in the position in which it is located during most cutting operations. When additional capacity is required, the guide strip can be placed in back of the 2" spacer board. An additional guide strip can be permanently mounted on the extreme rear of the table top for maximum capacity.

GUIDE STRIP, ALIGNMENT

All work is done with the material against the guide strip of your machine. Therefore, a straight guide strip is a necessity if you wish to do accurate work. The guide that is now on your machine is straight. When it becomes necessary to replace the present guide, the new one must also be straight. To be sure that any new guide strips are straight, check them with a straight edge or a square. MAKE SURE THAT THE WEDGE BOARDS HAVE BEEN INSERTED TIGHTLY ENOUGH TO HOLD THE GUIDE STRIP SECURELY IN POSITION.

TO ADJUST THE TABLE TOP UNTIL IT IS PARALLEL TO THE ARM

Insert a steel bar (about ½" x ½" x 12") between the saw arbor collars, as shown in figure 4. Bring the motor forward. Using the wrench as a feeler gauge, swing the bar until the tip of it touches the table board. By swinging the arm and moving the motor to different positions, you can quickly locate the high portions of the table.

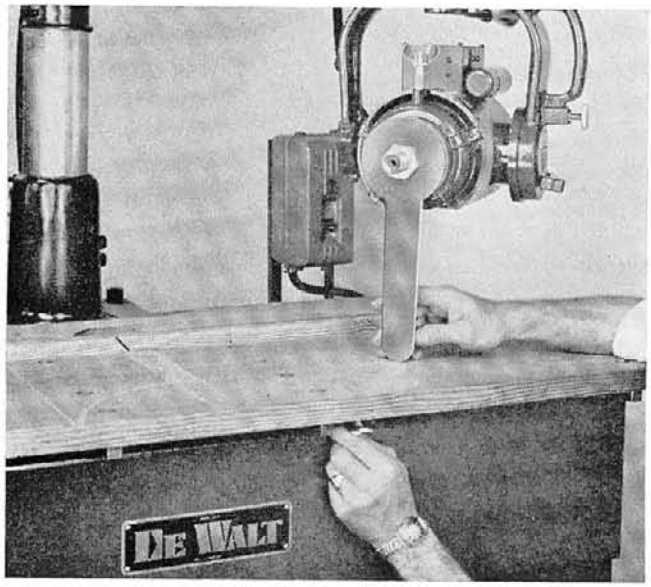


FIGURE 4

To adjust the table top, begin by loosening the jam nuts under the table frame. Then raise the jack screws as required. ALWAYS ADJUST THE LOWEST PORTION OF THE TABLE TO THE HIGHEST. When the table is level and parallel to the arm, check to see that the jam nuts are tight enough to rigidly hold the table top in position.

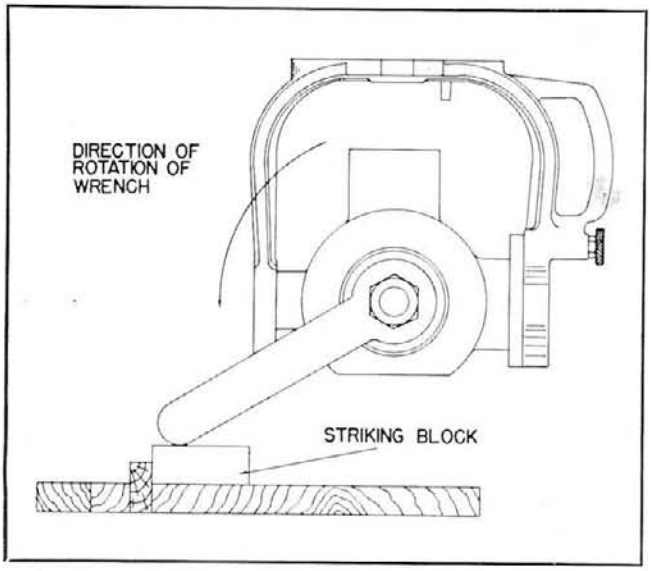


FIGURE 3

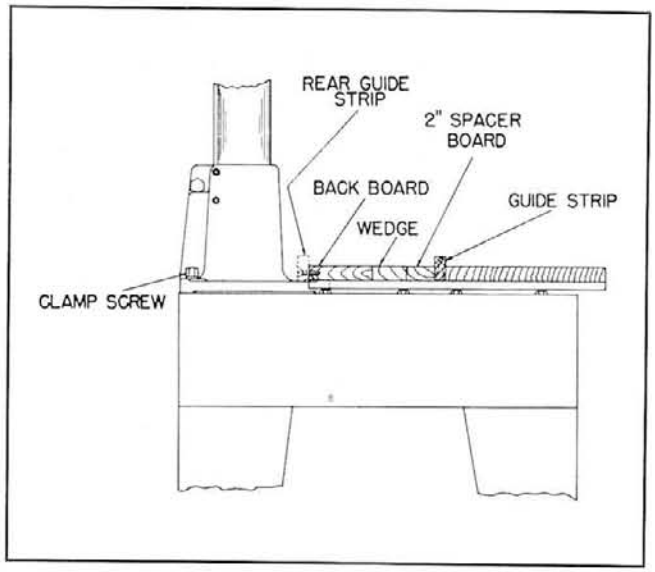


FIGURE 5

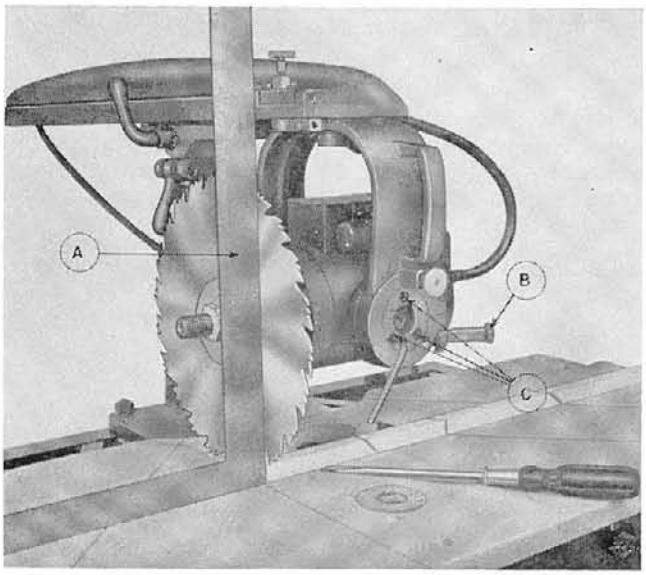


FIGURE 6

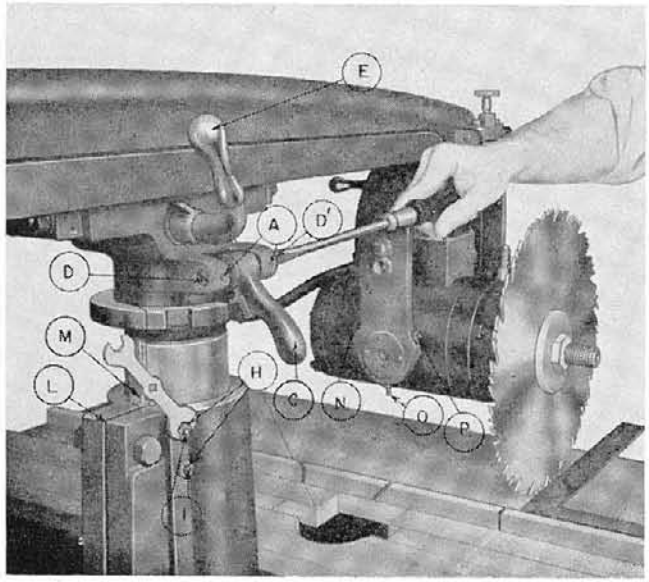


FIGURE 7

TO SQUARE THE SAW BLADE WITH THE TABLE TOP

With the saw level, place a steel square, A, figure 6, against the side of the saw blade. Place the square between the gullets. Do not place it against the saw teeth.

Release the bevel clamp handle, B.

Loosen the hollow head set screws, C. It is now possible to move the motor until the saw blade is flush against the square.

Tighten the set screws, C.

TO SQUARE THE SAW TRAVEL WITH THE GUIDE STRIP

If the saw blade does not cut square, the arm of the saw is out of alignment with the guide strip. In that case, you must adjust the saw by:

Loosening the clamp handle, E, figure 7, and the miter latch, C;

Loosening the set screws, A, which hold the adjusting screws, D, in position;

If, as it comes forward, the saw blade moves AWAY from the steel square, loosen the rear adjusting screw, D, with a screw driver, and tighten the front adjusting screw, D¹. After this adjustment, the miter latch should move freely, but without side play.

If, as you bring the saw blade forward, it moves TOWARD the steel square, make the opposite adjustment—i.e., loosen the front adjusting screw, D¹, and tighten the rear adjusting screw, D.

The arm will be square with the guide strip when the saw blade moves parallel to the steel square. When the saw blade is square with the guide strip, lock the front and rear adjusting screws by tightening the set screws with the set screw wrench. Then engage the miter latch and arm clamp handle.

TO REMOVE SIDE PLAY FROM THE ARM

Loosen the base pinch bolt, all hex jam nuts, H, and all set screws, I, figure 7.

Rotate the elevating handle to raise or lower the column. Tighten the base pinch bolt until the column moves easily within the base. This adjustment does NOT remove side play from the arm. This is merely a preliminary adjustment.

The gib, L, must shoulder firmly against the column key, M. To place the gib in its proper position, tighten the two set screws, I, until the side play is removed from the arm and the column of the arm can be easily raised and lowered.

Lock the hex nuts, H.

TO ADJUST THE ARM CLAMP HANDLE

Remove the arm clamp handle stop, A, figure 8, and drop the miter latch, B, into the slot and firmly against the column.

Unwind the arm clamp handle, C, by turning it to the right (CLOCKWISE). Turn the handle about four complete turns. Unthread the arm clamp bolt, D, from its hex socket until the hex head can be turned.

Turn the arm clamp bolt, D, about one-sixth turn to the left. That will tighten the arm clamp handle.

Turn the arm clamp bolt, D, in the hex socket to tighten the arm clamp handle, C, while it is in the upright position, and insert the arm clamp handle stop, A.

TO ADJUST THE YOKE CLAMP HANDLE

The yoke clamp handle holds the motor and yoke assembly to the arm. It should be clamped in position when the machine is operating. If it does not hold the yoke and motor assembly as it should, the following adjustments must be made:

Release the set screw, A, figure 9.

Turn the king bolt to the right (clockwise) until the set screw is in the next slot of the king bolt. This requires about one-sixth of a turn.

Turn the set screw until it is firmly seated in the key of the king bolt, B. The king bolt cannot turn when the set screw is in that position. Also, the threaded yoke clamp handle holds the yoke and motor assembly firmly against the arm.

TO ADJUST THE RIP SCALE FOR IN-RIPPING

With the saw in the in-rip position, slowly turn the saw by hand, and move the carriage to the rear until the saw blade touches the guide strip.

The pointer, A, figure 10, should then indicate zero on the UPPER edge of the rip scale, B.

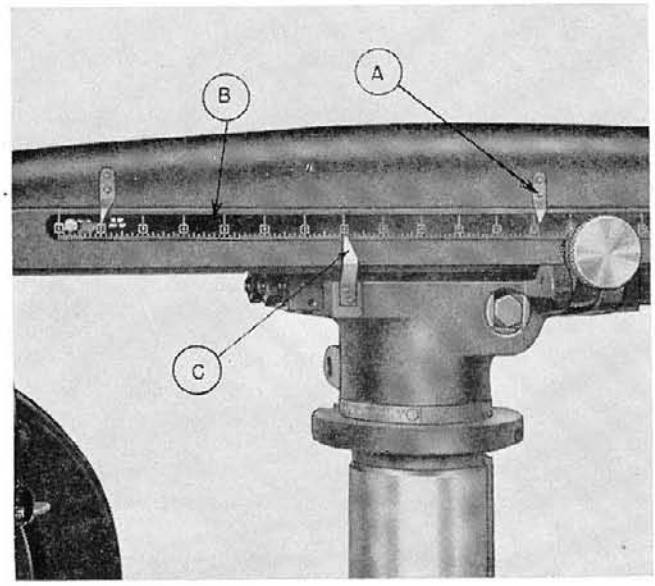


FIGURE 10

TO ADJUST THE RIP SCALE FOR OUT-RIPPING

Place a board of known width against the guide strip.

With the saw in the out-rip position, slowly turn the saw blade by hand, and move the arm until the blade touches the board.

Without changing the position of the pointers, move the rip scale until the bottom pointer, C, indicates the width of the material against the guide strip.

Tighten the screws that hold the rip scale in position.

TO ADJUST THE BEVEL CLAMP HANDLE

The bevel clamp handle has two uses: it is a clamp that locks the motor and the arbor in the 45° and 90° vertical positions after the bevel latch has been engaged in the proper position; also, the bevel clamp holds the motor and arbor in any position between the horizontal and the vertical. To adjust the bevel clamp handle:

Loosen the bevel clamp handle, F, figure 9, and the hex jam nut, D. Turn the adjusting bolt, E, to the right (CLOCKWISE), until the bevel clamp handle rigidly clamps the motor trunion. Tighten the hex jam nut, D.

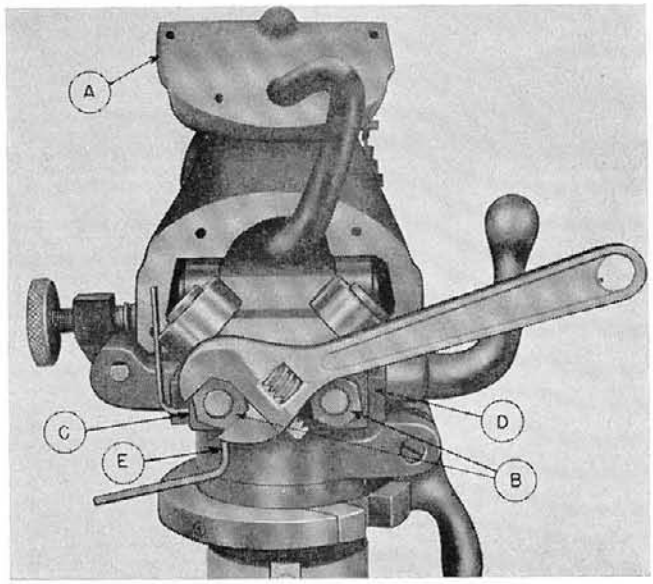
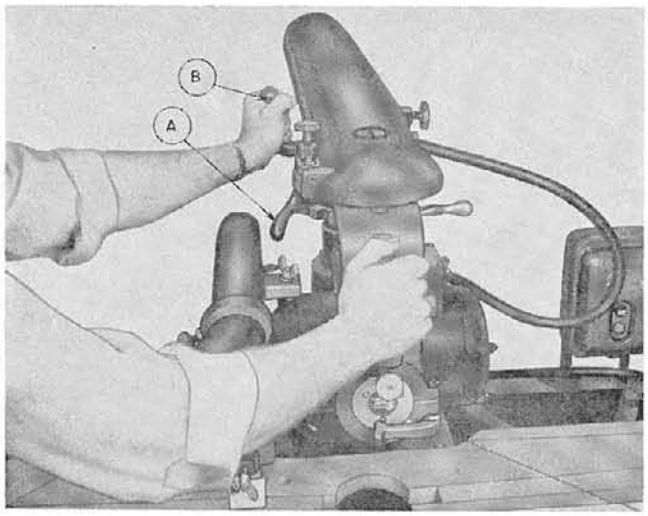


FIGURE 11

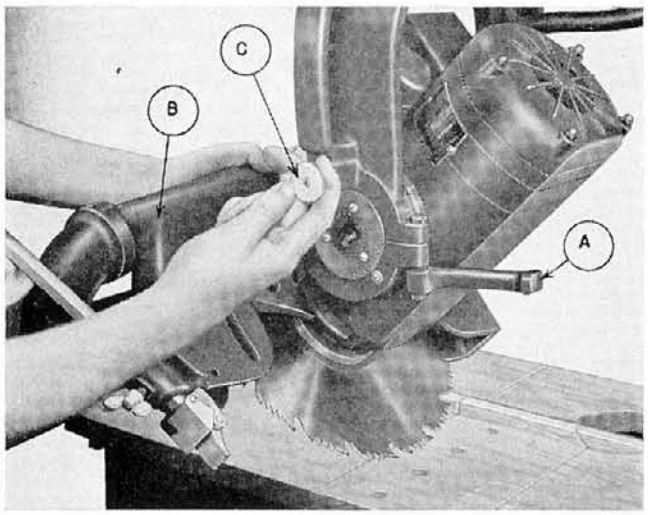
OPERATING INSTRUCTIONS

The versatility of a DeWalt Radial Arm Saw is based on the fact that the arm can be swung 360° in the horizontal plane, the motor can be swung 360° in the vertical plane, and the yoke can be swung 360° in the horizontal plane. Three complete circles. You can tilt and/or turn the cutting head of your DeWalt into almost any conceivable position. The next few pages show you a few of the many operations possible with a DeWalt machine.



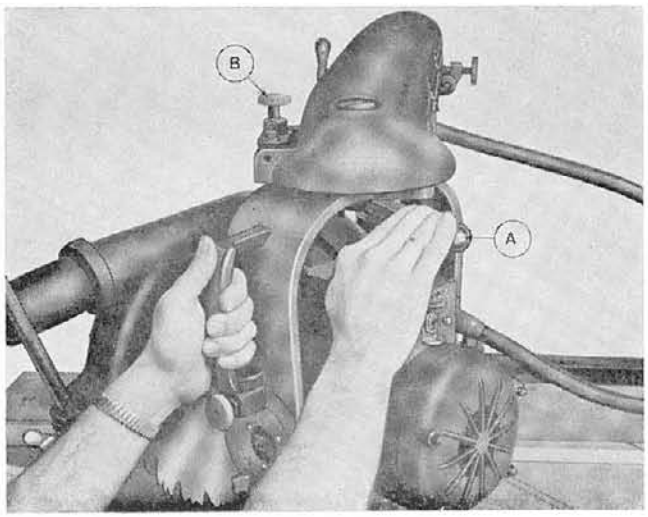
TO REVOLVE THE ARM HORIZONTALLY

To change the position of the arm, pull the ARM CLAMP HANDLE, B, forward, and lift the MITER LATCH HANDLE, A. The arm is then free. Observing the miter scale, move the arm to the desired position. The arm can be quickly located in either the 0° or the right- or left-hand 45° positions, because there are slots into which the miter latch drops when the arm is placed in those positions. When you have located the arm at the required position, lock the miter latch handle and the arm clamp handle.



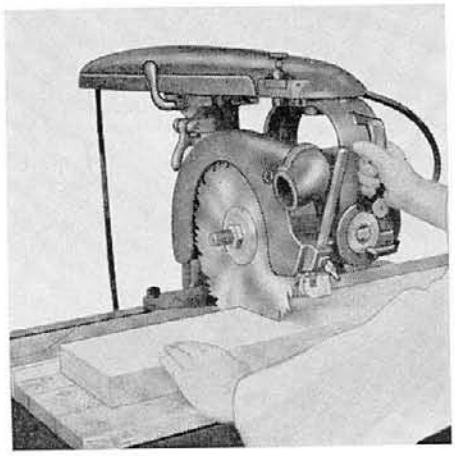
HOW TO REVOLVE THE MOTOR IN THE VERTICAL PLANE

Before the motor can be swung through the vertical plane, the arm must be locked in the 0° position. Revolve the elevating handle 26 turns to permit the saw blade sufficient clearance above the table top. Release the BEVEL CLAMP HANDLE, A. Grasp the saw guard, B, with the left hand, and pull the BEVEL PLUNGER, C, forward with your right hand. The motor is then free to be swung through the vertical plane. Then lock the motor in position by clamping the bevel clamp handle.



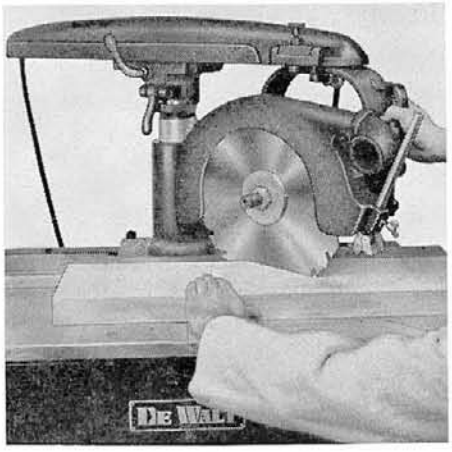
HOW TO REVOLVE THE YOKE IN THE HORIZONTAL PLANE

Lock the arm. Then pull the YOKE CLAMP HANDLE, A. Lift the FINDER PIN, B. The yoke and the motor can now be rotated. When you have located the motor in the required position, engage the finder pin, and push back the yoke clamp handle. After you have completed this adjustment, check the position of the saw guard, and place the anti-kickback attachment in the proper position. Also, be sure to observe the caution marks on the saw guard.



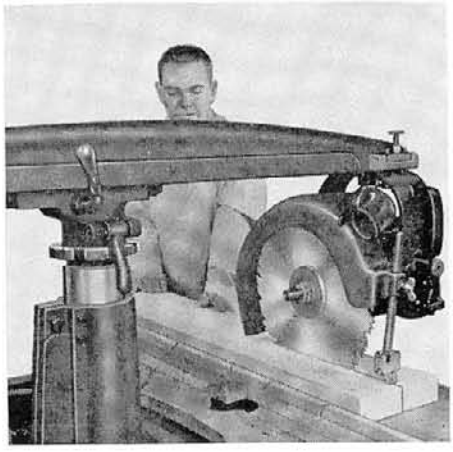
CROSS CUTTING

Lock the arm in the 0° position. Place the material against the guide strip. Draw the saw blade across the material to be cut. After the cut has been completed, return the blade behind the guide strip. Observe this order of operation for all cross cuts. **You should never push the saw blade into the material. Instead, always pull the blade slowly and firmly across the material.**



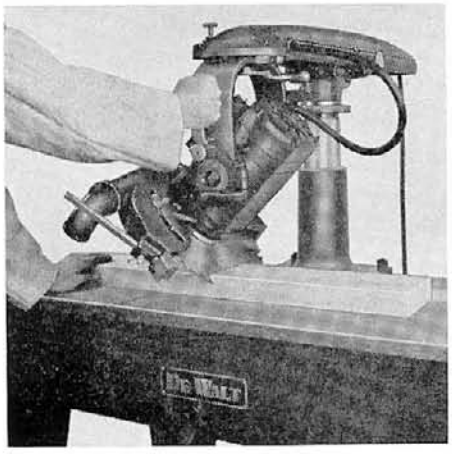
MITERING

Release the arm clamp handle and the miter latch. Swing the arm of the machine to the required angle (as indicated on the miter scale), and relock the arm clamp handle and the miter latch. Observe the same order of operation as you did for cross cutting. Bring the blade through the material from behind. Do not push the blade into the material being cut. Your cuts will be more accurate.



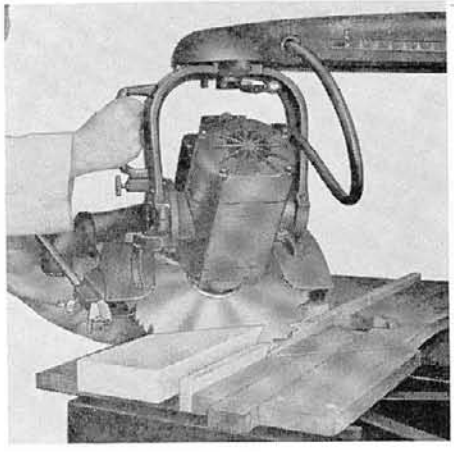
RIPPING

Place the arm in the cross cutting position and lock it in place. Then pull the arm forward. Release the finder pin and the yoke clamp handle. Swing the motor to the required position, and lock it by locking the yoke clamp handle and the finder pin. Adjust the safety guard and the anti-kickback attachment. **Do not feed material into the kickback end of the saw. Use a pusher.**



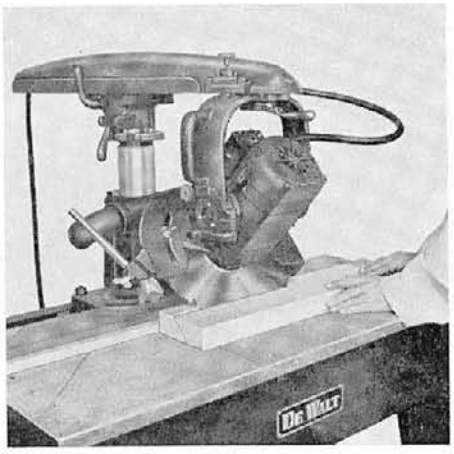
BEVEL CUTTING

Lock the arm in the cross cutting position. Raise the motor by rotating the elevating handle 26 times. Release the bevel plunger and the bevel clamp handle, and tilt the motor in the yoke. The angle is always shown on the bevel dial scale. Then clamp the bevel plunger and the bevel clamp handle. Lower the arm into cutting position. Pull the saw through as you would for cross cutting.



DOUBLE MITER

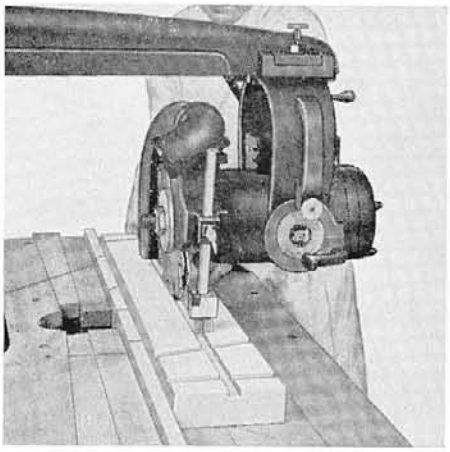
The double miter is merely a combination of the bevel cut and the miter cut. Set up the machine for bevel cutting. Then release the miter latch handle and the arm clamp handle. The arm is then free to be easily swung into position. Place the arm in the required position, and lock the arm clamp handle and the miter latch handle. Pull the blade through the double miter cut as you would for cross cutting.



BEVEL RIPPING

Lock the arm in the rip position. Elevate the motor by rotating the elevating handle 26 times. Then release the bevel plunger and the bevel clamp handle, and turn the motor to the required position. Lock the bevel plunger and the bevel clamp handle. Adjust the safety guard as you would for the ripping operation. Use a pusher as an added precaution against kickback. Do not feed the material rapidly.

HANDLES, PLUNGERS AND FINDER PINS REFERRED TO ON THIS PAGE ARE IDENTIFIED ON PAGE 7

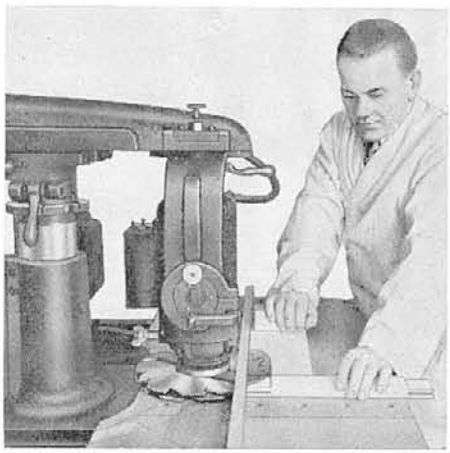


PLOWING

Place a dado on the saw spindle, and set the machine in the rip position. Adjust the dado until it just touches the top of the material. Move the material away from the cutter head, and, remembering that one turn of the elevating crank lowers the head 1/8", lower the cutter head to the required depth. Adjust the safety guard to just above the material on the in-feed side.

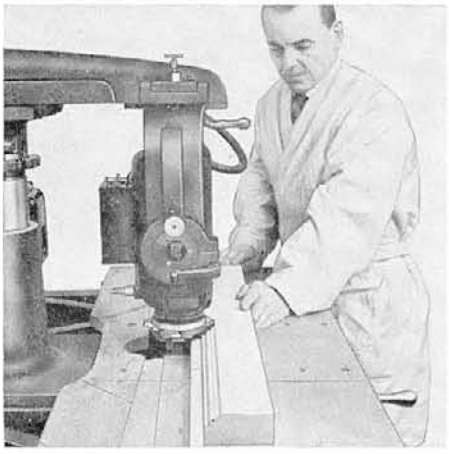
RABBET, STRAIGHT OR BEVEL

Set up for plowing. Elevate the motor. Then place it in the 90° position. To do so, release the bevel plunger and the bevel clamp handle. Swing the motor into the 90° position. Lower the cutter. Then bring the cutter head in front of the guide so that it will give the required cut, and tighten the rip lock. For bevel rabbeting, simply tilt the motor.



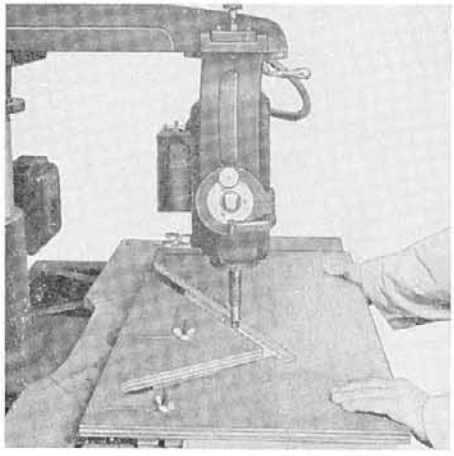
TENONING

Replace the present guide fence with one that will provide several extra inches of working space above the table top. Also, place a temporary fiber top on the table so that you can be assured of a perfectly level working surface. Then swing the motor as you would for rabbeting. With the cutter at the required distance in front of the guide, feed the material as shown. Use a pusher.



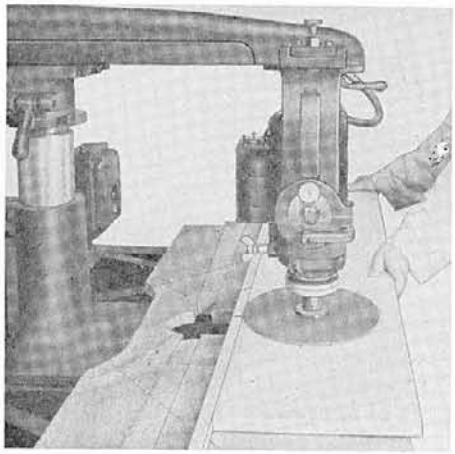
SHAPING

Place a shaper cutter on the saw spindle, and set the machine up as you would for rabbeting. Any part of the shaper can be used. Adjust the shaper until the required shape is profiled on the material. Then lock the arm by tightening the rip lock. When hand feeding the material, be sure that it shoulders firmly against the guide strip. For best results, always feed with the grain.



ROUTING

Insert a router bit with bushing into the front of the motor shaft. Lock the motor in the vertical position over the center of the table. Lock the arm. Remove the guide fence. Attach a template to the material. Lower the router to cutting depth. Then feed the template past the cutter. Free-hand routing is also possible. However, do not free-hand rout to depths greater than 1/8" per cut.



SANDING

Attach a disc sander to the saw spindle. Then tilt the motor into the 90° position, and lock it as you would for shaping. Place the sander disc in the required position. Feed the material past the sander attachment. This set-up is for miscellaneous sanding. For best sanding results, lock the motor in the horizontal position. The sander disc will be vertical and material can be held against it.

DE WALT INC.

Subsidiary of American Machine & Foundry Co., N. Y. C.

MANUFACTURERS OF

HIGH SPEED CUTTING EQUIPMENT

METAL

WOOD **STONE**

LANCASTER, PA.

Warranty

DeWalt machines are warranted to be free from defects in material and workmanship, this warranty and the liabilities hereunder being limited to replacing or repairing, without charge, such parts as may prove thus defective and be returned to us within the period of one year from the date of Delivery to Customer, except as to electrical parts. Long experience has demonstrated that electrical defects, if they exist, are disclosed in a short period of operation, and that most electrical failures are caused by abuse or neglect; for these reasons electrical parts are warranted for a period of ninety days only. No guarantee is made on electrical parts unless operated on the proper and prescribed voltage, frequency and phase, and with the starting device prescribed or its equivalent.

Defective parts will be replaced within the warranty period without charge, if returned to the factory of the undersigned with transportation charges prepaid. Liability under this warranty shall cease if the damage or defect is found to have been caused by misuse, negligence or accident, or if the parts are repaired or altered outside our factory.

DEWALT Inc.
Paul Gardner
President

IMPORTANT

Your Dealer is required to send a Warranty Registration Card to the factory which makes the above Warranty valid. Be sure your Dealer files your registration. Consult your Dealer for further information covering tools and attachments available for your DeWalt. For service or repair, consult your Dealer or write direct to the factory.

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