

## **SOME TIPS ON DeWalt RADIAL ARM SAW RECONDITIONING**

By Roger A. Hill

For years I have read web site and written accounts from woodworkers and home craftsmen about radial arm saws. Most of these describe an inherent fear of the tool, which prompts most owners to relegate their radial arm saws to cross cutting only.

A few good books about the use and adjustment of these saws have been written over the years, but few people ever take the time to really study those before they attempt to operate their new saws. 50 years ago, real craftsmen were employed by DeWalt and other tool manufacturers and demonstrated their tool line to beginners, offering real hands on training.

The disappearance of these craftsmen marked the end of beginner training. This was a two edged sword. The bad edge was that because of inadequate training, the radial arm saws purchased by consumers were never set up properly, and were never used the way they should have been. The radial arm saw developed an undeserved reputation as unsafe, and the saw continues to be grossly under-appreciated and much maligned today. The good edge of that sword is that most of the older radial arm saws out there are in really good condition, even though they may look bad. They're just waiting for the opportunity to be restored and used.

A few years ago, the late Wally Kunkel (Mr. Sawdust) wrote a really great book: How to Master the Radial Arm Saw. He worked for American Machine and Foundry (AMF) for about 12 years from 1948 to 1960, and was one of the craftsmen who demonstrated AMF DeWalt radial arm saws to new users, and provided hands on training to beginners. In his book, Wally describes how to salvage a used DeWalt radial arm saw. He also provides a historical account of the original DeWalt company and a treatise on how to use a radial arm saw effectively and safely.

While Wally's book is very comprehensive, it occurred to me that a more basic and detailed account of the restoration process might be helpful, and since I've gone through that process at least three times, maybe I'm the one to do that.

First, a little bit about radial arm saws in general. Raymond E. DeWalt invented the radial arm saw in 1922. His company produced the original model for several years, and in the mid to late 30s, they modified the design. That new design was probably the best ever devised for this tool. It included a robust cast iron arm, a four-bearing rollerhead, a double sided aluminum one piece motor yoke casting, and best of all, a very well made motor with flat bottom to maximize the available depth of cross cut.

Because the cast iron arm was so heavy, the support column and base also had to be very heavy just to support the arm. The saw was built and sold in many different sizes over the years, ranging from the ½ h.p. MMB 8" model to the 36" Timber Cutter TC12. Wally Kunkel describes these models in his book.

On these old DeWalts, all of the arm and base castings were aged, and then precisely machined to very close tolerances. The ancillary parts, such as clamp arms, scales and the original tables were of similar high quality. DeWalt sold the entire operation to AMF in 1948, and AMF continued to produce the radial saw line to the same high standards, under the AMF DeWalt name.

Anticipating the first really big do-it-yourself post-war boom, AMF DeWalt began marketing directly to the consumer in 1948 by hiring hands-on craftsmen like Wally Kunkel to demonstrate the smaller consumer saws at home shows, local hardware stores and on the then brand new medium of television. The results were phenomenal and predictable – the saws sold like hotcakes.

An old advertisement I have shows the price of the DeWalt MMB and MBC ½ h.p. models built between 1940 and 1955 at \$ 229.00. The MBF, built between 1956 and 1959, increased to \$ 249.00. The GWF (¾ h.p.) and GWH (1 h.p.) were built between 1940 and 1950, and were followed by the GWI (1½ h.p.) from 1950-1955. In 1960 AMF changed from a round-top arm to a flat-top arm on the consumer models, and on some larger saws. The ¾ h.p. flat-top arm model was the 925H and sold for \$ 249.00. The 1½ h.p. model was the 1030K and sold for \$ 395.00. The flat-top arm was as well made, but not quite as robust, as the older round top arm. It was fully capable of supporting the weight of the motor, yoke and rollerhead assembly, and probably was structurally as strong as the round top...just not as heavy.

Around 1960 the entire line was sold to Black and Decker. The post-war DIY boom was almost over. B & D was geared to market to consumers through outlets. They also sold consumer saws through Sears and Roebuck and Montgomery Ward, which had no staffs for demonstration and training. From the acquisition until about 1965, B & D continued to produce solid cast arm saws at the Lancaster, PA plant.

Lots of consumer price competition evolved during the '60s. Sears dropped B & D and sold a cheaper saw built by Emerson Electric. Montgomery Ward sold Power Kraft. Rockwell-Delta built their high quality 10" saw with a center pivot two piece arm, but due to high manufacturing costs, this saw was not really geared to the DIY market. Toolkraft made a 10" model almost identical to the Rockwell-Delta.

The early Emerson Electric saws sold by Sears were not a bad product. The arms were cast iron, with the bearing ways machined on the outside. The rollerheads and motor yokes were also well made. Motors were good, but not even close to the DeWalt motor in quality of construction. Columns and frames were adequate, but not much more. Tables were cheaply made. The good thing about the early Sears saws is that parts are still readily available, and the saws can be adjusted. They just don't hold adjustment like the early DeWalts, nor are they anywhere near as robust.

In response to their loss of the consumer market share to Sears and Montgomery Ward, B & D made significant design changes in their consumer grade saws. One of the most

significant was cutting the top off the cast arm and moving the elevating crank to the front part of the arm. This was done to emulate the Sears design, which had the elevating crank below the table on the front of the saw. This would have been viewed by consumers as a “safety feature” because they could elevate the arm without reaching behind the saw. B & D also changed the motor, yoke and clamp design on the lower priced Model 7740 and really cheapened the overall construction.

The design changes added a lot of movable parts to the arm, and lightened it considerably. The saw base frame was made of thinner and lighter channels, and the reduction in quality showed in every part of the saw. B & D still continued to build solid arm saws, but they were sold primarily to the contractor and heavy wood machine market, and were much higher priced than the consumer saw. Some of those saws also suffered a bit from cheaper construction.

B & D also changed the motor ratings. Horsepower was rated as “developed” h.p. This is the peak horsepower a motor develops just before the circuit breaker trips from overload. A 1½ h.p. motor from a 1030K might have been capable of 3 “developed” h.p., but it would be the same 1½ h.p. 17 amp. motor. They also put 10” and 12” blades on the underpowered saws.

Finally in 1990 B & D stopped manufacturing the DeWalt radial arm saw. They kept the name DeWalt, but sold the entire radial arm operation to Lancaster Saw Company. A year or so later, Lancaster went bankrupt, and the large arm and yoke casting patterns were acquired by The Original Saw Company of Britt, Iowa. Original Saw continues to produce high quality, round-top arm radial saws in the larger sizes, identical to the old DeWalts, but they have never built up a line of robust consumer saws like the old MDFs, GWs, 925Hs or 1030Ks.

Sears now produces their radial arm saws in China (I think) and Emerson builds the RIDGID line sold by Home Depot. Delta makes a smaller 10” consumer saw with a single cast iron arm. I have looked over these modern consumer grade saws, and for the price, one would be much better served by hunting down an old DeWalt and reconditioning it. I would venture a guess that the new saws, with the possible exception of the Delta model, will not last anywhere near as long as a used DeWalt before they wear out completely, and they are not even close to being as robust.

Assuming you do hunt down an old DeWalt, how do you go about reconditioning it? Where do you get parts? Where do you get manuals? How do you become expert enough to tackle this job? That’s where I come in. I’ve gone through all the steps. Of course, all I’m talking about are old DeWalts, because no other used radial arm saw, with the exception of the Rockwell-Delta or Toolkraft two-part arm saws, is worth the effort it takes to recondition it.

Where to start? First, order Mr. Sawdust’s book on the web site at [www.mrsawdust.com](http://www.mrsawdust.com) and read it, especially the parts on reconditioning and building a new table. Then order a manual if you didn’t get one with the saw. These are available from Wolfe Machinery for

\$ 19.25 including shipping. If you can find one on ebay, buy an old, out of print book by Robert Scharff entitled Easy Ways to Expert Woodworking.

A word about parts: The older your saw, the more difficult it will be to get parts for it. I've found that most of the screws, nuts and lock washers are straight stock items and you can get them in most good hardware stores. Bearings for the motor are also stock items. You'll need the right number from the old bearing to get a perfect match. Most of the non-standard parts can be purchased from Wolfe Machinery, and DeWalt (Black & Decker) Service Centers generally have an old timer who knows or can find out about parts availability. B & D has microfiches showing the exploded views of every saw, but the part numbering is not the same as the old DeWalt numbers. B & D does stock quite a few parts. The plastic pull knobs for the locating pins are hard to get as original equipment, but Wolfe sells new black ones with brass screw centers that work fine. They just aren't as pretty as the smaller red originals.

Now to the reconditioning:

I bought a (well) used Model 925H  $\frac{3}{4}$  h.p. DeWalt from the second owner. The saw was built ca. 1959 and looked like it had spent some time outdoors. Florida humidity will rust anything that's not inside. This DeWalt had the original base cabinet, which also was severely rusted. I looked the saw over pretty well, and noted several problems before I made an offer. Biggest of these: the motor would not run or even hum, but the owner said that he knew it worked and couldn't understand why it wouldn't run. I knocked \$ 75. off my offer and took a chance for \$ 125.

Other problems: the yoke clamp wouldn't tighten enough to clamp solidly; the arm was loose (sloppy) and the table was really worn out. Also, a lot of surface rust on the paint (the old white flecked turquoise DeWalt used on MB's and the 925's....UGGGGLYYY).

Since the motor wouldn't run, I decided not to waste time on the rest of the saw until I found the reason. I started by checking the wiring and the on/off switch, which was a jury-rigged DPDT toggle switch. Everything checked out, so I opened up the capacitor box on the top of the motor. BINGO!!: the thermal circuit breaker was in pieces – probably died from old age. I ordered another from Wolfe for about \$ 25, including shipping. Got it in 2 days, reassembled and turned on the motor. Worked fine, but noisy bearings. Didn't waste any time on new bearings just yet, because I knew they are readily available. I wasn't taking any risk in going ahead with rebuilding the saw.

Get a clean area set up, with a few small boxes or jars to hold small parts. Take off the table. This model had a drop-leaf front on the table. I immediately noticed that it was the original table supplied by DeWalt, because it had all the nice aluminum threaded inserts and was a sandwich of plywood veneered on the outside with tempered hardboard, sort of like MDO, but instead of paper on the outside, the hardboard surface. These were supplied on late '50s DeWalts to about 1964. Then they changed to cheaper particle board.

On the 925s (and on all the DeWalt consumer saws after 1959) there are four bolts holding the table to the base frame. On older models and on the 1030, there are six bolts, and top brackets....no side brackets....much harder to adjust. The four bolts attach the two side brackets that support the table boards to the base frame, and they allow vertical adjustment of the table to make it parallel with the arm. Remove the four bolts (two on each side), nuts and lockwashers. If they are in good shape, and not too rusty, spray them with WD-40 and put them in a jar wetted with WD-40. You'll probably have a tough time replacing the bolts (square headed) but the nuts and lock washers are stock, carried in most hardware stores.

Flip the table over on a flat surface and remove all the bracket screws, hinge screws and the drop-leaf brace. I used a large nut and a washer with a small hole, and pulled the threaded aluminum table inserts using a 1/4"-20 screw. **SAVE THE OLD TABLE FOR A WHILE!!!** You'll need it to accurately reposition the screw inserts in the new table you'll be building. I saved everything. You'll need to clean off the inserts if they can be reused. I sprayed everything with WD-40. The drop-leaf table support bar was rusty, but I cleaned it up and repainted it. I also cleaned and painted the hinges.

Then build a new table following Mr. Sawdust's procedure. I modified it slightly as follows: I used MDF instead of hardwood plywood....the MDF is much more stable, and very reasonably priced. I used 3/16" by 3/4" **straight** steel bars instead of the 1/8" by 3/4" bars recommended by Mr. Sawdust. I used two bars in the core of the front table and one bar each in the drop leaf and the large back table. The steel hinge bracket that the drop-leaf hinges attach to serves well as a third bar for the front table. To place the epoxy in the milled slots for the bars, it works well to clamp the table top and bottom pieces together and pour the epoxy down the slots. Use a wood strip to spread the epoxy. Then unclamp the top and bottom halves and spread the insides with a slow setting good quality glue (I like Weldbond, but there are other good white glues). Insert the steel bars after spreading the white glue and put the two halves together. Place the glued up table on a **perfectly flat surface** and weight it with at least four concrete blocks. Use a sheet of MDF to spread the block load, and clamp all the edges. Let the glue and epoxy set 24 hours before you unclamp.

Why all the trouble with the table? Because the table is the **absolute key** to good saw performance. A **perfectly flat** table that's adjusted **dead parallel** with the arm will make a properly adjusted DeWalt radial arm saw with a good quality, sharp blade into a **precision cutting instrument**, like nothing else you've ever experienced.

When the glue is fully set, and not before, you can carefully mark the positions of all the inserts from the old table onto the bottom of the new table and drop-leaf. Use a drill press with the bottom stop set perfectly (use scrap MDF to set it up), and a brad point bit to bore the holes for the inserts. Then tap in the inserts with a wood mallet. You can replace the original inserts with brass inserts, available in woodworker supply stores, if you can't salvage the originals, or if the saw didn't have them.

Install the front hinge bracket, the drop leaf hinges and brace, and the side brackets. Then install the table back onto the saw frame. Before you get too far ahead, install the two rear table boards, and a new softwood fence (pine works good, but make sure the fence is planed to a single thickness throughout). Follow Mr. Sawdust's instructions and install a ¼" plywood sacrificial table top protector to the front table and drop leaf, but not the rear table inserts. Leave a 1/16" space between the sacrificial table top and the fence, for sawdust allowance. Then adjust the table perfectly parallel with the radial arm following Mr. Sawdust's instructions. This doesn't take too long if you are working on a DeWalt that has side brackets, but the older models with top brackets require a lot of work to get the table right.

Next, remove the front arm cover and pull out the rollerhead and motor. The rollerhead bearings should be o.k. Soak them with a little WD-40 and get them spinning freely. Remove the on/off switch, and all arm wiring if it needs replacement. Then clean the arm and the bearing ways in the arm with acetone. Be careful, the roller bearings sometimes create sharp burrs on the edges of the ways that will give you a nasty slice.

There is a **VERY** slim chance that an old DeWalt might have worn out roller bearing ways. The only way to salvage an arm with worn out ways is to send it to Wolfe for re-machining. This would cost more than you (or I) would want to pay, because you could pick up another old DeWalt with a good arm for a lot less, and scrap the first one.

The king bolt is often frozen in the rollerhead (the reason the yoke clamp won't work, common on DeWalts). To get at the king bolt, separate the yoke from the rollerhead. This can be done by retracting the locating pin (top of left side of rollerhead) and rotating the yoke until the yoke clamp nut unscrews from the king bolt. Then soak the king bolt overnight with WD-40.

The king bolt is restrained from rotation by an Allen or slot-head set screw located on the right side of the rollerhead. Don't confuse it with the set screws holding the rollerhead bearing shafts. Spray it with WD-40 and allow penetration before you try to loosen it, because it's not very large diameter, and you **don't** want to break it. After removing the set screw, tap out the king bolt with a wood or phenolic mallet. Notice that the king bolt has six slots milled in it. The set screw dog-point seats in one of those slots and keeps the king bolt from turning when the yoke clamp is tightened. The slot also allows the king bolt to move up and down (if it's not frozen) as the clamp is tightened and loosened.

Clean everything up real good and reassemble. Before you tighten the king bolt set screw, turn the king bolt until the yoke clamp doesn't rotate beyond about 90 degrees to the arm in it's full clamped position. Turn the king bolt in small increments until the set screw dog point seats in one of the king bolt slots, and check to see that the yoke clamp handle locks the yoke to the rollerhead without going beyond 90 degrees. Then back off the set screw just a bit, so the king bolt can slide up and down freely as the yoke clamp handle is loosened or tightened.

Next you'll check the rollerhead bearings. Put the entire motor/rollerhead assembly back in the arm by inserting the bearings into the ways. Work the saw back and forward in the ways and get the bearings rotating smoothly. If you can get a bearing to slide in the track while you're holding it from rotating with your fingers, the bearing needs adjustment. **ONLY THE RIGHT SIDE BEARINGS ARE ADJUSTABLE.** Those bearings rotate around a special bearing shaft that has cam action, and is locked in place with a set screw from the side, and a nut and lockwasher (on later models, such as the 7770 and 7790, the set screws were eliminated). The set screws are turned with an Allen wrench, and the nuts need to be loosened slightly to allow the shafts to be rotated. You'll need to adjust the bearings using trial and error. It takes a bit of time to get them right. The rollerhead should glide easily, but the bearings should not slide with finger pressure, and both the lower and upper bearing surfaces should be in contact with the ways. After you get them perfect, tighten everything and try it one more time. **THIS ADJUSTMENT IS VERY IMPORTANT.** If done right, it will hold for a very long time.

Next, check the end play in the arm. The end play can be horizontal, vertical or both. Follow Mr. Sawdust's instructions to get all the arm end play out. I can't improve on his method, nor explain it any better than he does. After you remove all end play, adjust the arm clamp so it doesn't go past vertical when the arm is clamped solid.

Now you should replace the arm wiring and the on/off switch.

**The next three adjustments are what make the saw perform. If you do a real good job, you won't believe how beautifully a radial arm saw can operate. If you do a sloppy job, you'll continue to rely on the saw for cross cuts only. Incidentally, if you don't make these adjustment your absolute priority, you wasted a whole lot of time building that new table, cleaning up the rollerhead bearings and removing the end play in the arm.**

First, the arm (and the bearing ways) need to be **EXACTLY** 90° to the fence. Make sure the fence is clamped solid. Put a good blade on the saw. The heavier the blade, the easier it is to make the saw perfect. If you want to end all blade purchases forever, just buy a Forrest Woodworker I and you've got a blade that will outlast you. It's the best and only blade you'll ever need. Get one of the stiffeners, too. They really quiet down your saw and keep the blade stiff, as they're designed to do.

Crank the arm down until the blade just touches ("whispers") on the plywood table top, just in front of the fence (remember, you haven't even started the saw up, so the fence is still uncut, solid). Slide a framing square with the short leg along the fence until the heel just touches the edge of a tooth on the saw blade. If it's an ATB carbide blade, make sure you're on a tooth with the "set" facing out on your side of the blade, away from the motor, and be careful not to chip the carbide tip.

Hold the square in place and elevate the arm so you can slide the saw behind the fence. Then draw a fine pencil line along the square blade right on the plywood skin, from the point where the heel was just touching the blade all the way out to the edge of the front table. Flip the square over, with the short leg still against the fence, and slide it along the

fence until the heel just touches the pencil line where it touched the saw blade. Draw another line along the blade of the square. If the two lines don't differ at all, your square is perfect, otherwise you need to "split" the difference at the outer edge of the table and draw a new line from the point where the square touched the saw blade to the "split". That line will be dead perpendicular (90°) to the fence, and all lines parallel with it will also be 90° to the fence.

Slide the saw back to your side of the fence and lower the arm until the blade just whispers on the plywood surface. Pull the saw out to the "split", and observe whether it follows the line **exactly** (it won't, unless you're extremely fortunate).

Now you can adjust. Loosen the arm clamp and rotate the arm slightly in the direction you need to move to get the saw to trace a line perfectly parallel with your pencil line. You'll need to flip up the arm miter stop to do this, and leave it raised. When you get the arm perfectly 90° to the fence, you can clamp it tight and loosen the two set screws that lock the adjustment screws for the miter stop. Then loosen the adjustment screws and flip the miter stop down, tight into the miter slot. Then tighten the adjustment screws until there is zero play, but don't lock the set screws yet. Loosen the arm clamp and flip up the miter stop. Move the arm away from 90°, then move it back until you can lock the miter stop into the miter slot. Observe where the blade is. Chances are you'll need to fine tune this a few times to get it perfect. It takes some time and patience, but the payoff is worth it. If you did everything right, the arm is now **exactly** 90° to the fence.

Second, you can now set the blade perpendicular to the table. Get a good accurate square and slide it against the blade with the arm clamped at 90°, the saw over the front table and the blade almost touching the table. Make sure you're on the "flat" of the blade—not on the bits. Chances are you'll find that the blade is not square to the table.

Take the front cover off the motor yoke pivot. Underneath there are three Allen head bolts...one bigger one in the middle and two smaller ones, one on each side of the middle one. The two outer bolts hold a clutch. If they are loosened, and the bevel clamp is released, you can rotate the saw about the motor pivot (sometimes you'll need to slightly loosen the middle pivot bolt to help get the saw moving). Rotate until the blade is perfectly perpendicular. Tighten the bolts a little at a time and check the blade for perpendicularity. The saw wants to "slide" back into the old setting when the bolts are tightened, so it takes a bit of work to fine tune this adjustment, but if you work at it, you'll get it right eventually.

The third adjustment is in two parts. This two part adjustment will make horizontal plane of the bevel axis of the saw parallel with the table. Crank the arm up until you can loosen the bevel clamp and bevel the saw 90° so the blade is parallel with the table, and about 2" (or a little more) above it. What you're going to do next is to align the motor cross axis (the bevel axis) parallel with the table. To do this, you'll need to get a uniform thickness board about ¾" thick and place it under the blade, perpendicular to the fence. Stand at the end (either end) of the table and look at the gap between the top of your board and the bottom of the blade. Crank the arm down so the blade is just above the board, and not



quite touching. If the blade is not perfectly parallel with the board (it won't be), you'll need to adjust the bevel axis.

This adjustment requires a little foreknowledge about how the saw goes together. The cross motor axis (bevel axis) is controlled by the big bolt on the front of the yoke, between the clutch adjusting bolts, and another bolt that is its mate, centered in the rear yoke.

What controls the rear center is a steel sleeve called a trunion bushing that closely fits the bolt, but allows it to rotate. The horizontal and vertical position of the bushing is controlled by three set screws, one supporting the bushing from the bottom, which controls the up and down position and two others spaced at 120° on either side, which control the side to side position. The set screws have Allen heads for adjustment, and lock nuts to hold them in position.

These set screws are tender, so spray them with WD-40 before you attempt to loosen any, or you may break one. Just so you don't bugger things up too badly, do not loosen any of the screws by more than half a turn at a time, and make sure that before you tighten the bottom screw, you loosen each of the upper screws an equal amount. As you tighten the bottom screw, you **raise** the sleeve, which in turn raises the rear of the blade. As the rear rises, the two upper screws preserve the side to side alignment. You should not turn the lower screw until it binds, just a little at a time. If the bottom screw begins to bind, you need to loosen the two upper screws more, but be sure you loosen them an equal amount, and a maximum of ½ turn – no more.

Keep the gap between the blade and your gage board as small as possible by lowering (or raising) the arm as necessary. When you get the blade perfectly parallel with the board, tighten the upper set screws and check the blade one more time. Adjust as necessary.

Next (and last), you need to make sure that the vertical plane of the blade is exactly parallel with the vertical plane of the bearing ways (the saw blade does not “crab” to the line of the cut). To make this adjustment, reset the saw in the normal cutting position, and tighten the yoke clamp and the bevel clamp. Place your best square with the base against the fence and the blade against the saw blade, with the tip of the blade raised so that you can look at the space between the square and the blade. If the blade is not perfectly parallel with the square, adjust the two upper set screws in opposite directions until they are parallel. **DO NOT CHANGE THE POSITION OF THE BOTTOM SET SCREW,** unless this adjustment is very large. In that case, you should perform both these adjustments over again until they're perfect.

Now, make sure all screws are tight, tighten the lock screws. Pull the saw all the way to the front of the arm, replace the blade guard, lock the rip clamp, and start the motor. Lower the arm until the blade penetrates the plywood surface about 1/16". Then, controlling the saw with your right hand on the yoke handle, slide it back to its rear position, cutting a kerf in the plywood and the fence as you go.

The adjustments are now completed. You can check them by cutting a board. If you did them correctly, the blade will pass completely through the cut smoothly, and you won't hear the last few teeth "nicking" the edges of the cut as the blade exits. Check the square of the cut end both ways, and you'll be checking that the arm is perpendicular to the fence, and the blade is perpendicular to the table. They should be perfectly square if you did the adjustments carefully.

Try the saw in bevel and miter positions also. If you can form a perfect square by cutting alternate miters on four equal length pieces, the arm is dead perpendicular to the fence. Any small gap in a miter clearly shows that the arm is not perpendicular to the fence. If you can fold a perfect square by cutting four equal width beveled pieces, the blade is exactly perpendicular to the table.

If you need to change the bearings in the motor, you can do it yourself for about \$ 12.00, or send it to a motor shop for about \$ 75.00. If you are doing it yourself, it is not necessary to remove the motor, in fact, unless you want to go through all the adjustments again, you shouldn't remove the motor.

Take off the blade and all collars. Remove the acorn nuts from the rear fan guard. The fan guard will slide off, but you may need to tap in with a rubber mallet a few times to loosen it. The fan can usually be pulled off with the fingers, but you may require a puller. The fan is keyed onto the motor shaft, so it cannot (nor should it) rotate about the motor shaft. Don't lose the key. There are retaining rings on both ends of the motor shaft that prevent end play in the shaft. The arbor end retaining ring also secures the arbor spacer. Remove both retaining rings. Remove the four motor tie rods.

There are two ways to remove the rotor. If the bearings are not frozen in the end bells, tapping the small end of the rotor shaft with a wood or rubber mallet will usually slide the small end bearing out of the rear end bell and you can pull the front end bell, rotor and rear bearing right out of the stator. If the bearing is too tight to tap out, flip the motor vertical with the rear down, place a wood block under the end of the rotor shaft, and lower the arm until the bearing slides out of the rear end bell. (Home made arbor press)

Remove the four screws securing the front bearing retainer and use soft pressure to slide the front end bell off the front bearing. The bearings will be tight on the rotor shaft if they're not completely worn out, so you'll need a gear puller to get them off. You may need to grind the puller hooks to fit between the rear (small) bearing and the brake sleeve assembly. You'll also need to use your fingers to retract the brake centering mechanism, which will open a gap between the brake sleeve assembly and the bearing just wide enough to get the puller hooks behind the bearing. The front bearing usually pulls quite easily.

Clean everything, and get your new bearings ready. I like to smear the bearing surfaces on the arbor shaft and the inside of the bearings with a little light oil (3 in 1) before I press them onto the shaft. If you do this, you may be able to press the bearings with soft hand pressure. I also smear the bearing surfaces on the inside of the bells with more light

oil. Reassembly is the reverse of disassembly. Keep everything clean, and buy new retaining rings. They're only about \$ 0.20 each. After you've assembled, rotate the arbor shaft by hand to check for tightness. Tap the ends with a wood mallet to find the easiest rotation. Then turn on the motor and listen. If you did it right, the motor will just hum quietly and spin freely.

You can go to the extreme of stripping and repainting everything – even hand brushing the old name plates. If you do, you'll have a devil of a time unless you completely disassemble the whole saw. If I were to do this, I would take all the disassembled painted castings to a local auto machine shop and have them glass beaded clean of everything. The iron castings need to be primed immediately or they will begin to rust. I would also prime the aluminum castings soon. Before you prime or paint, plug all threaded holes, and mask the bearing surfaces of the castings.

If you want original colors, they would need to be custom mixed. Auto paint will also work well, but I've no idea what the match would be for the DeWalt green. I did find a real close match in, of all places, a hobby shop. Floquil Polly Scale NYC Jade Green is the color, and it's just a shade darker, and has less blue tint than the original DeWalt color. If you paint the whole saw, only an expert could tell the difference, and they would need a color chip to be certain.

If you go through with all this, you'll end up with a saw that can't be bought on the open market for less than \$ 1,595.00 -- that's Wolfe's price for a fully reconditioned Black & Decker DeWalt 7790 Contractor's model, a good saw, but you'd need to make a new table anyway because even Wolfe can't put a table like Mr. Sawdust's on their saw without charging a **WHOLE LOT** more. The 7790 can swing a 12" blade, but works easier with a 10", and it's not nearly as robust as a 1030K or a GWI, which would be the 30 year older design equivalent, and the control levers and clamps on the old saw are a lot better made than those on the newer 7790.

If Wolfe were to sell the smaller  $\frac{3}{4}$  h.p. models, like the MBF or 925, fully reconditioned, they would charge at least \$ 1,000.00 in today's market (probably more), but I've not seen one on their web site. You'll also be able to do more than 80% of your woodworking on that saw – you won't need a table saw -- you might want one, but it won't do anything that the DeWalt won't do, and the DeWalt does it better, as long as it's kept in good adjustment.

The adjustments I've described above will last a very long time unless you are abusing the saw. Incidentally, for all those who still think table saws are better or safer, they are just as dangerous when out of adjustment, and I guarantee most are, simply because woodworkers are lazy about fine tuning their table saws. Also, it takes just as long to adjust a table saw properly as it does a DeWalt, especially a belt drive saw. Try it if you don't believe me.