

*Frequently Asked Questions – BT3Central Forums  
(FAQ written/compiled by Loring Chien 22-July-2004)  
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Last updated 31-Dec-2012*

These seem to be the most frequently asked questions about the Ryobi BT3xxx family of saws and the Sears variants. The questions are repeated with their answers in the same order below. Disclaimer – this information has been compiled from a number of sources. While believed to be substantially correct, please confirm independently before taking any action involving safety of individuals or equipment. This document is copyrighted ©2004-2012 by Loring Chien, the author. Permission is granted to distribute in whole only, without modification, and with attribution.

Using this FAQ:

This FAQ has been saved in Adobe Portable Document Format (PDF). If you are reading this then you are likely using the free Acrobat Reader from Adobe.

The list of questions is below. Each is linked to its answer – just click on the question.

Using Acrobat Reader's Find (The binoculars icon ) you can also find a key word in this document. This is particularly helpful to look up jargon and acronyms. Note: this is a word finder, not a search tool. It will find all specific instances of a given word; don't use phrases unless an exact phrase match is desired.

[\*Help me with the Forum Jargon and Acronyms\*](#)

[\*I'm thinking about buying a Table Saw. Why should I consider the BT3100? - Why Buy A BT3K?\*](#)

[\*Where can I get the best price on a BT3100?\*](#)

[\*Can I get a BT3x in \(name a country\)? Is a 220V version available? Will it run on 50 Hz?\*](#)

[\*I saw the BT3100 at HD, why is it not put together right? Why did the salesman steer me to a Ridgid?\*](#)

[\*What about buying a used BT3000 or BT3100 or Sears 22811? What to look out for, what its worth?\*](#)

[\*What are the Differences between BT3000, BT3100, and Sears model 22811/21829 versions of BT?\*](#)

[\*Where can I get parts and accessories for a BT3x?\*](#)

[\*Where can I get a manual?\*](#)

[\*What's in the Accessory kit? Is it worth buying?\*](#)

[\*What is the replacement blade for the BT3K? and where can I get one?\*](#)

[\*What blades are recommended for the BT3x?\*](#)

[\*What materials can I cut? Where can I get Wood/Lumber?\*](#)

[\*Are Blade Stiffeners any use?\*](#)

[\*What are ZCTPs for?\*](#)

[\*Are the factory ZCTPs any good? What materials should I use to make one?\*](#)

[\*How do you make a ZCTP for the Ryobi BT3x?\*](#)

[\*Do I need a ZCTP for each dado size?\*](#)

[\*I just cut off the end of my miter fence. Where do I send the dues?\*](#)

[\*How much space does the BT3x take?\*](#)

[\*I'm having problems with the rip fence...\*](#)

[\*What's a good aftermarket rip fence for the BT3?\*](#)

[\*I'm having problems with the SMT...\*](#)

[What Maintenance is required on a BT3 saw?](#)  
[I'm having trouble with raising the blade...](#)  
[I hear a clicking noise when I raise the blade...](#)  
[What is this shim problem I've heard so much about?](#)  
[I broke my Handwheel - Elevation/bevel crank handle. What to do?](#)  
[My blade is not square with the table/ My fence is not square with the table/ My SMT is not square with the table.](#)  
[Do I need to use the supplied blade guard and splitter/riving knife/pawls?](#)  
[I just got a BT3x, what do I do next?](#)  
[How do I make wider Crosscuts?](#)  
[My BT3x saw seems to lack power on long rips. What's wrong?](#)  
[What power and wiring do I need for my BT3x?](#)  
[Why does the BT3x have a Universal motor and what does that mean to me?](#)  
[How do I replace belts in the BT3x?](#)  
[Has anyone tried replacing their BT3x drive belts with link belts?](#)  
[Is the BT3 louder than other saws? How loud is the BT3?](#)  
[I'm having trouble with my power Switch...](#)  
[My Saw won't turn off...](#)  
[Was there a recall on the BT3000?](#)  
[How do I make the saw mobile?](#)  
[My saw leaves black streaks on the wood; what can I do about that?.](#)  
[What Table-top treatment should I use and what should I avoid?](#)  
[Is the wide table kit worthwhile/whats in it?](#)  
[How do I make Wide Rips?](#)  
[What are/How do I get/How do I connect Extension Rails?](#)  
[Is the outfeed table worthwhile?](#)  
[Is the micropositioner worthwhile? What is it?](#)  
[What is the Miter Clamp?](#)  
[Is the Vacuum/float table worthwhile?](#)  
[Is the Router kit worthwhile/can I get the individual parts in the router kit?](#)  
[Can I mount my router in the BT3x Auxiliary table? What Router will fit the table?](#)  
[What router do you recommend?](#)  
[What Dados are recommended - general info and specific models?](#)  
[How do I install a dado on the BT3x? There's no room on the arbor.](#)  
[Why do my cuts with a Stack Dado not have a flat bottom?](#)  
[What are the sizes and threads of the major hardware bolts and nuts in a BT3x?](#)  
[Has anyone moved the power switch?](#)  
[What are the dust collection options for the BT3x?](#)  
[Where do I get T-nuts to use in the rip and miter fences and rails?](#)  
[Why isn't there a miter slot on this saw? How can I get one to use miter slot accessories?](#)  
[What's the little black button on the bottom of the Miter fence for/Why does my Miter fence not stay locked in position?](#)  
[What's the orange thingy on the Miter fence for/Why are my Miter cuts off by two or three degrees?](#)  
[Where does the washer go in the SMT fence assembly?](#)  
[I stalled the saw while cutting heavy wood or with the blade jammed. Now the blade does not turn. What do I do?](#)  
[Has anyone put two saws together?](#)  
[Just why are BT3x users so curious?](#)  
[What are the accessory Part Numbers?](#)  
[What Accessories are available from Sears that fit the BT3K?](#)

*Is there an illustration of all the BT3000 Accessories?*  
*Help me with the Forum Jargon and Acronyms*

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***Why Buy A BT3K?******I'm thinking about buying a Table Saw. Why should I consider the BT3100?***

The users of the BT3000 and BT3100 saws consider them to be exceptionally high value for the money. The saw gets consistent praise (semi-ordered by importance) for:

- The sliding miter table, which gives smooth solid support for crosscuts and on other saws costing \$500 and up is an optional accessory sold for hundreds of dollars.
- The rip fence, that locks solidly at both ends due whereas most saws costing \$500 and up only lock at one end and you can push it and measure the deflection at the other end in fractions of an inch.
- A very good Freud stock blade that some claim gives glue-joint ready rips.
- Lightweight rust-proof table and lightweight motor make for a saw which can be used and moved in a relatively small shop yet the sliding adjustable tables and rail system gives a small storage footprint but makes supporting larger rips and crosscuts easy to do.
- Modular rails and tables and fences have lots of places to attach things and makes possible ingenious custom jigs, plus lots of available accessories.
- Generous cut depth and crosscut capacity for an inexpensive saw
- Ten years or more ahead with Riving knife concept (blade guard component that rises and falls with height of blade) for improved safety
- Built-in router table with inexpensive kit for mounting
- Integrated dust collection blade shroud – has much better Dust collection out of the box than a standard contractor saw.
- The above features resulting in smooth, clean, accurate cuts at a low retail price point (originally less than \$550 and reduced over time to less than \$300).
- Out of the box thinking which makes the elements come together in a sum-of-the-parts-is bigger-than-the-whole way.
- You get the resources of the [www.BT3Central.com](http://www.BT3Central.com) forum group for support. Huge user base est. to be nearly a million saws, lots of spare parts available as a result.

Things not to like about the saw:

- It's not a real heavy-duty machine – you can't throw oak 4x4's on it all day long and rip them continuously. The motor is really up to intermittent work like a hobbyist would do. A contractor, no. A serious professional custom furniture maker, yes.
- It doesn't weigh 250 pounds – it only weighs around 110 pounds.
- Plastic and aluminum parts – requiring care to last a long time
- Minor Design issues in the original saws, since corrected (shims, switches)

Things it gets a bad rap for which aren't really so bad:

- Direct drive – no, it actually has a belt drive motor
- Universal motor – well, yes its true and that's why its not heavy duty as mentioned above. But it is powerful – a 15Amp motor when properly supplied with electricity and wood can rip a full 3-9/16<sup>th</sup> inch deep.
- Noisier than other saws – well, by itself, yes, but not really when cutting wood and running a shop vac
- Won't stay aligned – most users have actually found it to be very stable in that regard
- It's a right-tilt saw, not a left-tilt saw, a matter of religion apparently for some people but basically it can do the same job, by just mirroring the setup.
- Lack of miter slots (to be able to use normal table saw techniques and jigs) – the sliding miter table is designed to replace slots but add-on accessory slots can be attached.

- No cast iron top – can't use magnetic accessories – but Machined aluminum achieves lighter weight and lower initial cost, and is rust-free and maintenance-free.

See this article for a detailed review:

<http://www.bt3central.com/articles/files/whybuybt3k.PDF>

A brief history (as told by Jim Frye): The BT3000 came out in 1992 and was replaced by the BT3100 in about 2002. Ryobi sold over 600,000 BT3000s, I am led to believe. The BT3000 hit the market at \$550 retail. Early models had a 13 amp. motor and after about two years, Ryobi upped the amps to 15 and eventually the street price fell to about \$400-450. The BT3100 sold for \$299 and was simply an improved model of the BT3000. The basic BT3xxx was also sold as several Sears Craftsman models, among them the 22811 and 21829, 22185, 27413. The 21829 is the sole variant sold currently, a mainstream Craftsman product, and is still current as of this update (mid- 2012).

[\[return to Top\]](#)

### ***Where can I get the best price on a BT3100?***

New BT3100s, as all Ryobi tools, were exclusively sold in the U.S. by Home Depot, in arrangement with Ryobi. As such, the price was nationally set, at \$299, but there were clearances, coupons, promotions, sales, credit card signup bonuses and rebates. There was a promotion to get the \$100 accessory kit free by mail (allow 6-8 weeks) with a rebate certificate, UPC label and receipt. This offer was extended several times in 2004 -2005.

As of March 2006, US distribution of the BT3100 was discontinued by Home Depot and most were cleared out over the next 6 months for a sale price of \$239-\$249. As of early 2007 there are still sporadic reports of BT3100's being found forgotten in Home Depots across the country, but they are hard to find. They are still sold in Canada. As an alternative, you might look at the Sears 21829, described farther below. These list at \$450, commonly go on sale for \$399 and with 10% off Sears' coupons can be had for around \$360 but include a portable stand and router mounting.

Some Ryobi reconditioned tools (such as the BT3100 and an occasional BT3000 still) were also sold through Cummins and Menards discount stores, but this has largely dried up.

You can also get them used on eBay, Craig's List ([www.craigslist.com](http://www.craigslist.com)) or in the newspaper classifieds. Hundred's of thousands of BT3s have been sold so they are frequently found used at good prices, and even missing parts are relatively easy to get on the used market.

[\[return to Top\]](#)

### ***Can I get a BT3x in (name a country)? Is a 220V version available? Will it run on 50 Hz?***

The BT3100 was only available in the US and Canada. And it only sold in a 120V version. There used to be a European 220V model of the BT3000 but it is no longer available, perhaps a victim of European safety design requirements. If you manage to import a US-retail model to another country, you will either have to use a transformer or find someone to rewind the motor since a universal motor does not have configurable windings as does an induction motor.

There is no problem running the BT3x on 50 Hz or 60 Hz since a universal motor does not run at a speed proportional to the line frequency. So a European or Australian 220V model can run on US 220V quite easily, just adapt the plug (probably best to cut off and replace the plug).

Recently (2008) a 220V Australian version resurfaced but cost about USD\$800.

[\[return to Top\]](#)

***I saw the BT3100 at HD, why is it not put together right? Why did the salesman steer me to a Ridgid?***

It's a very common problem. Because the saw is a combination of flexibly arranged parts rather than a massive monoblock, the busy (customer) hands at Home Depot generally tend to mess up any properly displayed model and the parts wander off. Worse, the HD personnel are usually untrained as to proper assembly and in fact put the SMT on backwards to keep people from bashing their hips on it when walking by the display model.

The Ridgid is a more conventional saw, so there are fewer questions to answer. HD personnel in general seem to be woefully informed or misinformed and frequently tell customers that: the BT3100 saw is no longer sold, the saw is being replaced, they're out of stock (when they have some in overhead racks), etc. Ridgid is in fact also a HD exclusive line and is also manufactured by Ryobi's parent company.

[\[return to Top\]](#)

***What about buying a used BT3000 or BT3100 or Sears 22811? What to look out for, what its worth?***

Although the BT3000 debuted about in 1992 at around \$600, prices have dropped steadily as the numbers sold have reached the hundreds of thousands. Regular prices on the nearly functionally identical BT3100 are now at ~~\$299~~ \$249 (as of January, 2006) and frequent sales, promotions and discounts make the average price paid even less. Given a generous return policy at Home Depot, a used saw in nearly new condition could hardly be considered a good buy even at \$225 to \$250 unless it had a lot of extras thrown in. A well-used saw in good working condition then would hardly seem to command more than \$150-200.

A saw with a burned-out motor or other key missing parts as a fixer-upper would be worth only \$0-\$100, except for the fact that there is a steady market for the modular parts of the saw as explained elsewhere. Therefore a savvy owner would sell his saw for parts in that case. It's generally not a great deal to buy a BT3x fixer-upper as the labor to do so plus the parts plus the prospect of other, hidden problems would make it safer and easier just to buy a working saw. However a free fixer-upper would make a good project.

That said, very many BT3x saws have been sold so there are a lot on the market at any given time. An un-named table saw in the classifieds may well turn out to be a BT3x. So there are a lot of bargains to be had considering this is a fine saw. If looking, be patient and learn to identify a BT3000, BT3100 and Sears 22811 and 21829 by sight – the words “Precision Woodcutting System” were used widely on the saws front and are a dead giveaway to the presence of a BT3.

Jim Frye wrote: The date of manufacture of a Ryobi BT3x saw can be determined from the manufacturer's plate. There is a four-digit date code like 9950 or 0512. The date code on the BT3100s the first four numbers. I just lent my BT3100 to my Son, so I can't check the label but I am pretty sure the S/N is X02310005. I got mine from Wayne Hill at Ryobi for evaluation and testing right when they were announced. .... The date code on the BT3Ks was the last four digits, but they were separated by a blank from the rest of the serial number. The character string on my BT3100 is all consecutive characters.

In the date code, the first two digits indicate the year and the last two digits indicate the week. Thus 9950 would be a saw built in December of 1999. And 0512 would be a saw built the 12<sup>th</sup> week of 2005. Because of the smaller motor and switch problems, it would be wise to avoid BT3000s from 1992-1993. BT3000s were made through 2002 and BT3100s were made from 2002-2006. Sears 22811 were sold approx from 1999 to 2002/3 and Sears 21829 were sold beginning 2006.

See this list by Jim Frye for 14 things to check when buying a used BT3x:

I think the major things to look for a used BT3000 are as follows, and not necessarily in order of importance. This is the order I thought of them.

1. The lead screw that runs the entire motor and arbor mount (locker bracket) passes through a threaded hole in the aluminum motor end bell casting. Improper maintenance can cause undo wear on the casting. If it strips out the fix is to replace the motor and it's casting (about \$200), or rethread the casting with a helicoil insert. This repair is less than \$30 if you do it yourself and actually makes the unit better than when it was new. If the motor is loose or sloppy on the lead screw, the threads are badly worn.
2. The brush end cap of the motor (opposite from the arbor end) is held on with two self-tapping screws. Remove them and the end cap to inspect the condition of the brushes (they're pretty cheap and easy to replace), and the amount of dust inside the motor. If there's a lot of dust inside, the saw may have been used with out a dust collection device attached and simply sucked a bunch in. See if you can blow it out. Maybe the seller has a compressed air source. Hopefully the seller has cleaned the saw up, which should be an indication of whether the saw was cared for or not.
3. Inspect the plastic roller holder casting at the rear of the rip fence for cracks or breakage. This will render the fence useless. However, the part is really inexpensive (less than \$3.00) to replace.
4. Inspect the plastic slides on the Sliding Miter Table (SMT). Look for wear or breakage (result of being dropped), not just out of adjustment. The slides are mounted on eccentric screw mounts and can be adjusted for no side play. Also, the slides are reversible, so if one side is worn, they can be rotated 180 degrees and you are back in business. An entire set costs less than \$3.00 anyway. Also check to see that the SMT track is not bent. And make sure the miter fence is included with the knob and hold down bracket and orange angle pointer. (ed. Note: a replacement SMT from someone's parted out saw will run you ~\$25-40 depending on whether it includes the miter fence.)
5. Back to the rip fence. See, I told you these were in no set order. Make sure the entire head casting is not cracked in any way. I've not seen a price to replace this casting and it might require buying a whole new fence assembly. (ed Note: A replacement rip fence from someone's parted out saw will run ~\$25)
6. When you are looking at the underside of the saw, make a close inspection of the dual drive belts. If not abused, they should last a long, long time. If they are cracked, they will need to be replaced. I paid \$11.60 apiece (ed note: replacement belts have climbed to about \$30 apiece in late 2012) for new belts this year at an appliance parts store in town (ed note: you will probably not find these locally and will have to order them from a Ryobi authorized parts dealer as they are custom). Replacing the belts is a 1 1/2 to 3 hour job if you've not done it before.
7. Check to see that the front and rear rails are not bent in any plane. These two extrusions are the basis for most of the work you do on the saw and if they are not straight, neither will your work.

8. Check the condition of the stainless steel [ed. Note: – actually brass] shims that slide between the locker bracket and the guide casting under the saw. These shims are crucial to the operation of the saw. If they are missing or don't move up and down with the saw arbor, they will have to be replaced. They are not expensive (less than \$2.50 apiece) but replacing them requires a major tear down of the saw similar to replacing the drive belts. If the saw arbor is difficult to raise and lower, it's most likely the [shims](#). (ed. Note – In a poll **about 30% of BT3000 and 22811 owners have had shim problems**, so this is very common; BT3100 and 21829 are of an improved design and generally should not have shim problems). Proper lubrication seems to be the key to maintaining the shims in a BT3000.

9. Check to see that the motor starts and runs with a steady sound and no screeching or smoking (see dust check above). It should sound like a big plunge router at full speed (the motor is really a 15 amp. derivative of a router motor). Also check the switch. Early production BT3Ks had a two-button on/off switch that was recalled by the company and replaced with the current production switch. The new switch has a rocker on/off switch under a top hinged cover. (ed. Note: you can still get the replacement switch for free from Ryobi.) You raise the cover and push the rocker to turn the saw on. Simply tapping the cover turns the saw off.

10. Make sure the arbor is not bent. Watch it while it slows down after shutting the motor off. Grab the arbor (when it's not turning and the blade's been removed) and tug and wiggle it. It should not move. If it does, the arbor bearings are worn. This is highly unlikely as the BT3K is the only table saw on the market with three bearing sets in the arbor. Mount a good blade on the arbor and turn the saw on and off. Watch the blade for wobble that might indicate a bent arbor or a bad arbor flange. Changing an arbor or the bearings is doable, but I've not heard of anyone doing it in the nearly eight years I've had the saw.

11. Check the build date on the serial number decal on the side of the saw near the electrical plug. The last four digits that set off to the right of the serial number are the build date. The format is YYWW where: YY is the year of manufacture (92-06) and WW the week (1-52) of manufacture. This will really tell how old the saw is. (ed. Note: on the BT3100 the date code is the first four numeric digits of the s/n.)

12. Check the underside of all of the table castings for cracks. The right side accessory table has a plastic locking tab that hooks under the rail to hold the table in position. This can wear with normal usage. It is reversible and cheap to replace.

13. Check the holes for the table insert. There are three of them for the steel plate and four for the plastic zero clearance throat plates. Run a throat plate screw into each hole that has been tapped and try to snug the screw down. You don't have to really torque the screw hard, just see if the holes are stripped. I have not heard of anyone stripping these holes out, but I think there is enough metal to drill and tap for the next bigger size. This saw is metric by the way [ed. Note – actually its not Metric, they are all SAE threads].

14. Well, I can't stop on 13 things to look for. That would be bad luck. Check the tabletops for dings, gouges, and dents. This won't harm the performance, but will be a fairly good indicator of how well the saw has been cared for.

Well, that's about it for looking over a used BT3000. Good Luck and remember, you can get a reconditioned BT3000 without the stand for \$319 with a one year warranty.

15 (Editor's. addition) Make sure the following std. accessories are there or an allowance is made for replacement: accessory table, SMT table and miter fence, rip fence, blade guard, arbor wrenches (two are included, you can use [regular wrenches](#) but you need one of these to lock the arbor). The following optional accessories are a plus: microadjuster (~\$20), outfeed table, Sharkguard (aftermarket blade guard), router mounting kit (~\$20), extension rails (~\$40), throat plates, and dual miter slot table (~\$20). The following

options are probably not worth much: wheel kit (requires tilting the saw like a wheelbarrow), and dust bag. Prices are approx street sales value as of 2010. People will also have added extension table and supports, various home made and commercial mobile bases, various dust collection features, they usually think the world of them but you have to evaluate what these are worth to you.

[\[return to Top\]](#)

### ***What are the Differences between BT3000, BT3100, and Sears model 22811/21829 versions of BT?***

BT3000 Changes over the years:

- Early models for about 1992 to 1993 had 13A motors and was changed to 15A in later models, look on the nameplate for Amp rating
- Early models (not sure of the years) had all-metal elevation crank handles; later models had plastic molded handles. You can tell by looking at the black handles, which are a circle with a cross bar. If the space between the circle and the crossbar is open, then it's metal. But, if the area between the circle and crossbar is webbed and has an open- and close-direction arrows then it's the later plastic handle.
- Early models had a two-pushbutton power switch with a red button for off and a green button for on, which was actually [recalled](#). Ryobi provided replacement switches and later BT3000 models had a black cover over a red rocker safety switch that prevented accidental turn on and shutoff the saw if the cover was pushed.
- Early on the BT3000 was available without the stand as well as with the stand. I think the BT3000SX designation had something to do with that (SX indicated it came with a stand?)

The Sears 22811 (also the 22185) is the BT3000 with the following differences:

- splayed leg base instead of the square base (in this regard more like the BT3100)
- Some apparently have a "made in Italy" unlabeled but Freud-made thin kerf 36-T blade (same as the BT3000) while others have a Sears Craftsman-branded 40T blade instead.
- Different, metal, not plastic, crank elevation handle (being larger, at some positions of the rip fence and elevation crank, there is possible reported interference with the elevation crank handle and the rip fence lock handle. It may depend upon how far down your rip fence locking handle goes.)
- Sears name on front
- no videotape

The BT3100 is like a BT3000 except for the following:

- splayed base
- improved vertical shim retention
- improved riving knife shim set (easy entry)
- different front panel,
- different paint scheme (blue and yellow instead of gray/black)
- gray metal-flake powder covered top instead of gray anodized top – the BT3000 top is anodized then it seems that the tops of the ribs were machined flat. The BT3100 top may not be machined flat, just relies on the casting.
- SMT base is black instead of clear (natural Aluminum) anodize
- black instead of silver rails. Slight but not significant profile shape, all known accessories still fit

- different shape on rip fence front rail clamp but same basic mechanism
- different elevation crank – plastic with yellow hub (and not the same as Sears, either)
- no instructional video tape (although lately some new owners have reported receiving DVDs)
- Notably it does share the nice 36T Freud thin kerf blade.

BT3100-1 version which the main change appears to be a new power switch

As of about December, 2005 the very nice Freud Italian-made blade on new BT3100s seems to be replaced by a nearly identical-looking Chinese-made blade but marked “Made in China” instead of “Made in Italy”..

Key components/spares/accessories available from Ryobi distributors and Sears are all interchangeable.

Don't know if there are any diffs for the Canadian Sears version.

If price were equal, I dislike the new color scheme and crank but the improved shims would clinch the BT3100 for me.

In the states, the BT3100 is generally cheaper, too, than the Sears saw and sometimes you can get the \$100 accessory kit for free. At this point in time (Feb 2005) the Sears 22811 version has pretty much disappeared from the Sears stores so any you find might be worthy of striking a bargain with the store manager to sweeten the deal. By and large the Sears retailers seem to be ignorant of the existence of the BT3000/3100. Accessories and parts still are listed in the Sears website using the 22811 (for accessories search) and 228110 as the model number for repair parts search.

There appears to be a new (March 2005) Canadian Sears saw based on the BT3K. It's a model 27413 (don't see hardly any of these) and it differs from the BT3100:

- Flat, not ribbed top
- No-name 36-T blade
- Silver rails
- Wider Auxiliary table has two miter slots and locks front and rear, router mounts directly to table, not adapter plate, with Craftsman router hole pattern, only. Note: many people think the miter slots in the Auxiliary table are replacements for the Miter Slot Table accessory but it appears to this author that they cannot be aligned to the blade so they are useful for router work only.
- Power switch mounted on rail, not body, has yellow safety lock
- Two orange tabs on the back of the miter fence for angle readout
- Red accent rip fence lock handle, crank knob, and miter fence knob
- High contrast black on white SMT angle markings
- Yellow mark-on circle before blade for noting kerf locations
- Metal elevation and bevel crank
- Front of saw silver and black says 10” Table Saw/Scie a Table de 10 po with a Craftsman logo. Splayed leg stand says “Craftsman”

There now (August 2005) appears to be a new Sears US BT3-derived model in the catalog designated 21829. (Still a current model as of mid-2012). Quite a large number have been sold over quite a few years time. Differences from the BT3100:

- Flat, not ribbed top, still aluminum
- 36-T Sears-labeled blade (a Chinese-made blade, not the Freud-made blade)

- Silver rails that are 47 or 48” long, not 42” like the other saws in the BT3 series, however the rails are less beefy, being of thinner wall thickness, but still a dimensional match on the outside.
- SMT has additional pivot holes to allow the miter fence to operate with wider workpieces when making 90° crosscuts
- Wider Auxiliary table has two miter slots and locks front and rear, router mounts directly to table, not adapter plate, with Craftsman/Ryobi router hole pattern, only (?) Note: many people think the miter slots in the Auxiliary table are replacements for the Miter Slot Table accessory but they cannot be aligned to the blade so they are useful for router work only.
- Looks like a miter gage is included as well
- Yellow mark-on circle before blade for noting kerf locations, yellow throat plate
- Different (metal? But looks more like Plastic?) elevation and bevel crank
- Red painted cabinet with black accents.
- Fold-up, rollaway stand (this gets a lot of positive comments, one of the really good improvements/features)
- New accessory hangers
- Comes with router mounting kit – but no adapter plate, the router mounts directly to bosses on the auxiliary table, so it may be harder to mount non-Craftsman/Ryobi routers.
- Front panel says “Craftsman Professional”
- Priced around \$449, often on sale for \$399-425. Sometimes less.
- Presumably, since it post-dates the BT3100, it has the improved shim system.

Late 2009 – Sears Craftsman **27565** = Canadian Version of 21829 “Hi...I have been investigating whether the Sears 21829 or Ryobi BT3100 exists in Canada, and could not find either. Then I saw a flyer in Toronto for the Sears Craftsman **27565**, normally \$699 and on sale for \$499 CDN. As luck would have it, my son works at Sears so I was able to apply his 10% discount and got a Sears card to bring the price down below \$400 CDN. At this price, I am very happy with the purchase. I compared manuals with mine and the 21829 and the wording is identical except for references to model number and strangely enough, the Canadian version has a 2 year warranty while the 21829 has a 1 year...so bonus !”

All the various versions of the BT3 (BT3000, BT3100, BT3100-1, Sears 22811, Sears 21829, Sears 22185, Sears 27413) discussed above share the main motor housing, universal motor, belts, sliding rail, rip fence design, Auxiliary table and SMT. Most all accessories and parts will interchange (except those attaching to the base) – especially the ones attaching to the rail, although there are some differences in appearance which are cosmetic. SMT, rip fence, and auxiliary table should all interchange. Some motor elevation parts beginning with the BT3100 are improved and can be interchanged as a set (see the section on shims).

Regarding motor interchangeability, Jim Frye wrote:

I believe the BT3100 motor is different from those used in the BT3000. The BT3000 had three different motors, depending on manufacturing period. The early BT3000s had a 13 amp. motor. In response to some press issues, they upped the power to 15 amps, after the first couple of years of production. Later, the plant where the motors were made (Singer, as in sewing machines) was closed and a slightly different 15 amp. motor was sourced for the remainder of the BT3000 production. I have never been able to get a list of what serial numbers had which motor from Ryobi, but if I had a question, I would contact Ryobi to see if they can help. I have not checked, but I would think the owner's manual that came with the saw would state which part number is right for that saw. You might also contact a Ryobi Service Center to see if they can tell you the correct part number.

Although, that last one might be a shot in the dark, depending on the knowledge level and the willingness of the employees there. I have several BT3000 manuals and I'll see if they list different part numbers for the motors. OK, I am getting really feeble. The manuals don't list part numbers (except for bearings), so I can't list them. I have the original manual from 09/92 that came with my 13 amp. saw. I have manual from 04/96 that represented the 15 amp. BT3000s. I have a manual from 10/96 that Wayne Hill sent me that was for the non-Singer 15 amp. saw. I would still contact Ryobi, a service center, to get the proper part number for your particular saw. My ruse would be I bought the saw used and need to verify if it has the correct motor in it. By the way, I have never had a power problem with my 13 amp. saw. I have it plugged into a 20 amp. circuit with 12 ga. wiring and a 12 ga. power cord.

[\[return to Top\]](#)

#### ***What BT3x Accessories are worthwhile?***

This is somewhat subjective – some think an accessory is great while other deride it as junk. The most popular accessories (in order) seem to be:

- [Miter slot table](#)
- [Miter clamp](#)
- [Router mounting kit](#)
- [Micropositioner](#)
- [Wide table kit](#)
- Long miter/rip fence (41" piece of extrusion same as BT3x rip fence and miter fence plus mounting hardware to get extended fences)
- [ZCTPs](#)

That said, I have seen shop-built replacements for every one of these in the forum except the wide table kit rails.

See a [fully decked out BT3000 with every factory accessory.](#)

[\[return to Top\]](#)

#### ***Where can I get parts and accessories for a BT3x? Where can I get a manual?***

From Ryobi's web site:

\* Replacement parts for Ryobi products can be ordered direct through your nearest Master Parts Distributor. If you are located East of the Mississippi, please contact Dixie Sales toll free at 1-877-794-7225. If you are located West of the Mississippi, please contact Billious toll free at 1-877-245-5468. If you are a Canadian resident, replacement parts can be ordered direct from Barrett Diversified at 1-800-561-0004.

\* Accessories can also be ordered through your local Home Depots special services desk. Home Depot is not always receptive and you may have to be persistent and talk to several individuals at the special services desk before you will find someone that knows how to place the order!

If all else fails, contact [www.ryobitools.com](http://www.ryobitools.com) for support or call 1-800-525-2579 for power tool information.

It helps to know the Ryobi number or at least the item number from the parts diagram in your manual (or the sears link below). Get the [Manual](#) here in electronic form. See the [list of accessories and part numbers](#) later in this document. If you order through Home Depot's special services desk, sometimes you have to be real persistent and talk to the right person – there have

been many reports of being blown off by underlings who don't know or can't be bothered. Insist that you know other people who have done it and keep asking to speak to the manager if you need to.

Also try [www.sears.com](http://www.sears.com) and search for "22811" (the Sears model no. for the BT3000) for [accessories](#). For repair parts, here's the direct [link](#) to the sears saw parts list and diagrams (or go to the Sears parts website [www3.sears.com](http://www3.sears.com) and search for parts for the 315.228110 -the BT3000 equivalent) or 315.218290 –the BT3100 equivalent); since the saws are nearly identical except as noted before, most parts should fit and Sears will be around. Check both models since, curiously, parts for one are sometimes *much* cheaper than parts for the other despite being identical (two cases in point – seemingly identical blade wrenches in the 22811 parts breakdown are half the cost of the ones for the 21829 parts breakdown. Same for the belts, \$19 for the 21829 but \$9.50 for the ones for the 22811 which should be identical.) July 2012- a check at parts.sears.com found under 315.228110 belts were \$16.02, 315.218290 belts were \$21.75, under Ryobi BT3000 \$19.90, and under Ryobi BT3100, \$16.02. [ed note: currently – Dec 2012- belt prices have soared and run close to \$30 each - \$37.23 at Sears for 22811 saw PART NUMBER: 662329001 (also listed for BT3100, BT3000) \$29.83 for belt listed for 21829 saw PART NUMBER: 424010003 and of course you need 2.]

[www.ordertree.com](http://www.ordertree.com)

It's been reported that [M&D Mower](#) carries the BT3x00 parts and is very reliable.

Email Sales@M-and-D.com

Toll Free 866-914-1252 Voice/Fax

Or (440)914-1252 Voice/Fax

Mon-Fri 9am-5pm, Sat 10am-2pm

Cleveland, OH USA

Another recommended source for Ryobi repair parts (Feb 2008) Gardner Inc. Phone 1-800-848-8946 for customer service.

As of Dec 2012, one poster reported shopping around and said "All I can say is to use the <http://www.ryobitoolsoutlet.com/> link, best prices and I ordered on Dec. 19th delivery was this morning Dec. 21st." Also note that shopping for prices is a good idea: "Before we end this thread however, let me see if I have all the players identified correctly; Ryobi Parts website is actually Gardner Inc., and Ryobitoolsoutlet is really Motown... which is also Gardner Inc. So can we just say that Ryobi Parts, Gardner Inc., Ryobitoolsoutlet, and Motown, are all one in the same? ...even though each name has a different website and different prices? Not that it makes whole lot of difference, but it does seem a bit odd."

Another good source and probably the most inexpensive is [www.eBay.com](http://www.eBay.com) or the [www.BT3Central.com/forum](http://www.BT3Central.com/forum) forum. Since the saw is so modular and relatively light, people are frequently selling off subassembly parts for the saw to make money or rid themselves of unused parts or even once complete saws. There's a thriving market on eBay; search for "(BT3000, BT3100, 22811)". At BT3Central go to the classifieds section.

[\[return to Top\]](#)

***What's in the Accessory kit? Is it worth buying?***

- A miter slot table
- A miter clamp

- A router mounting and fence kit
- A pair of plastic ZCTPs, uncut (these are zero clearance throat plates, discussed later in the FAQ)
- A metal Dado throat plate
- A dust collection bag
- A pair of casters

Some people like some of the first four items. It's a very subjective thing. The last 3 are so-so – most people don't like them. At special order prices for the individual pieces the kit is about half off when sold for \$99. If free with the saw or cheap on eBay then it might be worthwhile.

You may or may not appreciate the [miter slot table](#) (see discussion later in the FAQ). Some really like the [miter clamp](#). The [casters](#) are hard to use. The bag is much poorer than using a shop vac, but it will catch dust spewing out the dust port. The [router kit](#) (see router discussion later in the FAQ) has a mickey-mouse fence attachment but the plate for mounting the router can save you work. The support rings for different sized router bits are hard to make yourself. The ZCTP's receive mixed reviews (see later [discussion](#) in the FAQ). There are do-it yourself options for many if not most of these.

[\[return to Top\]](#)

#### ***What is the replacement blade for the BT3K? and where can I get one?***

The BT3 36-tooth (36T) stock blade has been made by Freud of Italy and is a very highly regarded general-purpose blade. When new, it makes clean crosscuts and very good to excellent rips, but while its not quite up to the standards of \$90 premium blades, its way better than most saw-makers' included blades. It has a thin kerf (3/32" or approximately 0.100") which is thinner than what is considered a standard 1/8" thick blade used on most other saws. As of December, 2005, it appears that Ryobi is shipping a nearly identical Chinese-made 36T blade instead of the made-in Italy blade (check for "Made in Italy" or "Made in China" printed on the blade). The jury is out as to whether the replacement blade is up to the Freud standard in quality. (Many of the Craftsman versions come with 40T Craftsman-labeled blades of unspecified origin.)

The direct Freud part number replacement is a Freud TK1036 but no one sells them anymore. At one time you could order one as a replacement from Ryobi but it's a little expensive that way. Consider having your blade re-sharpened (cost around \$0.25 to \$0.33 per tooth or about \$9-12 total) at a tool and blade sharpening service near you, for like-new performance.

If you are thinking about changing blades, here are some helpful hints on removing and replacing the blade:

- Turn off the power (disconnect the short plug)
- Remove the red throat plate.
- Gently raise the elevation of the blade to the maximum but don't force it.
- Use the forked end of the smaller wrench to lock the arbor from rotating (the slot to the right of the opening, you'll have to rotate the blade by hand to line up the slots).
- The arbor nut is "left-handed"; it turns the opposite direction of normal nuts to get it off. (standing on the side of the saw with the nut facing you, you need to push the wrench to your right or Clock-Wise to loosen the nut)
- Hold onto the nut while unthreading it from the arbor with at least three fingers, or it will drop into the blade shroud and you will have to fish it out!
- When replacing the nut, make sure the blade is on the unthreaded part of the arbor.
- Replace the arbor washer.

- Tighten the nut Counter-Clock-Wise by hand until; it stops, and then snug it down maybe 1/8 turn more with the wrench. *Do not overtighten*, the rotation of the arbor makes this self-tightening. Overtightening can warp or damage the blade.

[\[return to Top\]](#)

### ***What blades are recommended for the BT3x?***

Standard 10" saw blades with 5/8" arbor holes are readily sold in a variety of styles. Seven-inch or 8" and even 9" blades are available and will work with reduced depth of cut-mostly 10" blades are used though for maximum choice and versatility.

Thin kerf (TK) means 3/32" or about 0.10" cut width versus standard kerf which is 1/8" or 0.125" cut width. The factory blade is thin kerf. Theoretically the saw power required is less to cut a smaller kerf and you save a microscopic amount of wood (but it adds up if you make 20 or more cross cuts). People use both without any problems on the BTs.

In general, users have had good luck with Freud blades that come in several lines. The Diablos are designed for the contractor while the TK/Avanti line is designed for the woodworker. I would not say one is better than the other but there are slight differences. Then you have the Industrial Line (LU series) that is a better blade. They have bigger teeth (allowing for more sharpenings), better plates and better grinding. They are designed for the professional or serious woodworker. Then you have the F410 which is the highest level but is only available as a 10" x 40 general purpose, but this blade is as close to perfection as you can get if you want to only own one blade. Unfortunately the Freud line model numbering is mystifying to most people.

Others swear by the \$100 Forrest Woodworker II. It's a 40-tooth general-purpose blade with a high reputation for the quality of its cuts. It comes in both standard and thin kerf models. Recently, it's been seen for sale at prices varying between \$65 and 100.

A 40T blade will give you similar all-around performance like the stock blade. Some sell 50T combo blades for this general purpose. This class of blade usually has one big and several small gullets repeated around the circumference.

The variables in blade specs include

1. Diameter (10" for the BT3)
2. Arbor hole (5/8" for the BT3)
3. Number of teeth (24 to 80 for 10" blades)
4. Kerf (usually 1/8" - 0.125" full kerf or 3/32" - .100" thin kerf for 10" blades)
5. Grind – FTG, ATB, TCG etc (look these up in the glossary/acronym section)
6. Hook angle –5° to 20°
7. Intangibles such as vibration dampening features, flatness, concentricity, tolerances, initial sharpness and carbide hardness and carbide thickness (which affects how many times it can be re-sharpened) and overall quality.

There are lots of tradeoffs between cost, durability and speed and quality of cut.

For specialty blades, you can get ripping, crosscut, and laminate blades that are specially designed to perfect one type of cut – these are usually determined by Numbers 3, 5, and 6 above. A ripping blade will cut faster when ripping and generally has 24 teeth and big, deep gullets and an aggressive hook angle for fast material removal. Long, deep rips tend to be hardest on the saw

motor so buying an relatively inexpensive (\$20-25) 24-tooth ripping blade is a good idea if you have a lot of rips to do.

A crosscut blade will generally have 60 to 80 teeth and give a smoother crosscut but poorer rips.

A laminate blade will have 80 teeth, have ATB tooth configuration, and be specially formulated to cut laminates (plywood, formica, melamine) with less splintering, chipping and tearout.

Dustmite a.k.a.Knotscott contributed:

I've had good results with several blades. It's important to define "good results" though, as it varies with the task and objective.

None of the excellent quality 40T general purpose or 50T combo blades I've used will eclipse the results I've gotten from comparable quality dedicated purpose blades like an 80T crosscut or 24T ripper when performing their intended task. What they will do is offer really good results on a wide variety of cuts in a wide variety of materials. The dedicated blades have a very narrow operating range in comparison...a good 80T crosscut blade won't rip thick material well and will be prone to burn but gives a very clean cut, while a 24T ripper will tearout pretty badly on most crosscuts but cuts easily through 2" hardwoods in comparison.

My favorite blades are the Ridge Carbide TS2000 TK, WWII TK, Freud LU88R010, and Infinity 010-150 combo for general purpose tasks....all are TK's. The LU88 is the cleanest cutting of those, and while it rips surprising well, it does better in slightly thinner wood than the WWII, Infinity, and TS2000. I've also had good results from some thicker kerf GP blades...Tenryu Gold Medal and DeWalt DW7657...the cut quality is indistinguishable from the comparable TK blades, but the feedrate is faster with the TK's and easier on the motor. I've had satisfactory results from several others too....Leitz, DW, Freud, Ridgid, etc. The one's I try to avoid are what I call the "bludgeon blade" category...Skil, Vermont American, the entry level Oldhams, etc.

The cleanest cutting blade I've ever used is a Freud F810 80T Hi-ATB blade (now called the LU80R010). Unbelievable finish...very narrow range of operating use.

I've had aggressive, efficient cuts in thick materials from the DW7124TK and the Leitz 24T TK FTG. Rougher cuts than the other blades though.

Bottom line advice – plan on spending about \$50-100 on a quality general purpose blade as your main blade. Spend another \$25 on a 24 tooth ripper if you do a lot of ripping. Buy other blades for your BT3 as you feel the need. If you have a miter saw get a 60-80 tooth crosscut or miter blade for it. Keep them sharp by using re-sharpening services.

[\[return to Top\]](#)

### ***What materials can I cut? Where can I get wood/lumber?***

Basically, any of the woodworking saw blades will readily cut wood, aluminum and plastic. They should absolutely not be used to cut steel. It is advisable to use good dust collection for aluminum and plastics. You want to avoid aluminum cuttings inside your saw motor area. Plastics cut very easily but the cuttings will fly up in the air like a snowstorm. You must also be careful to feed quickly as too slow a feed will result in melted plastic all over your blade and workpiece.

The quick guide to lumber is that HD and Lowes and their ilk have stocks of softwood pine for general-purpose construction. Pressure-treated (PT) is pine that has been saturated with chemicals to inhibit rot and insects, that is used for exposed outdoor construction and not furniture. They

also have a short half of one side of one aisle with oak, and poplar which are hardwoods, and sometimes a cedar section. Oak is a nice and common hardwood. Poplar is about half the price of oak and is much less desirable for the standpoint of color and stainability, so fine furniture is seldom made of poplar, but if you're going to paint it, you're OK to use this. Cedar is used mostly for outdoor projects as its naturally resistant to water and insects. The oak, poplar hardwoods are usually clear (of knots) and planed 4 sides and fully dimensioned in limited sizes. While those are desirable, that makes it the most expensive way to buy wood and the prices reflect that. Often they are straight and flat but you have to beware of crooked pieces. They also carry a range of plywood grades and other sheet materials (masonite, OSB, MDF, pegboard, Plexiglas acrylic, etc.).

More experienced woodworkers buy hardwood from either woodworking specialty stores (like Rockler or Woodcraft) or hardwood lumber stores (look in the yellow pages under lumber and look for the key word "hardwoods" in the listing) or direct from sawmills.

Rockler and Woodcraft have limited quantities and selection but maybe 20 or 30 types of wood. Its also usually planed 2 sides. The prices are debatable, sometimes they have monthly sales but usually it's on the high side. Being planed, it's easy to see what you are buying.

Hardwood lumber stores vary. They often have large quantities of many types of wood, mostly rough cut which means you have to plane it and joint it yourself. Not all species are available in all sizes (width thickness or length) but you do get to pick it yourself. Cheapest price and biggest selection but you have to do a lot more work. It's also hard to tell what the finished, planed pieces will look like, when its rough cut. Sometimes they do have a section with most popular woods planed 4S and dimensioned but this wood will carry a premium price.

Sawmills generally sell in larger quantities, but some deal with direct customers and are sometimes very friendly.

One piece of advice frequently given is to find a cabinet shop, be friendly, and ask where they get their lumber. Sometimes you can ask for their scraps and cutoffs.

[\[return to Top\]](#)

### ***Are Blade Stiffeners any use?***

Normally BT3K's run very smoothly out of the box, being well machined, turning at a relatively high speed, and having short throw dual rubber belts.

Universally, the BT3Ker's report no improvement using the blade stiffeners or blade stabilizers touted by Forrest and others. Basically they are a flat disk or pair of disks about 4-5" in diameter designed to be clamped to the side of the blade using the arbor nut. The claim is that they reduce vibration and /or make a smoother cut.

However, blade stiffeners always limit the depth of cut and the use of ZCTP. Thus we cannot recommend them at all.

It's not clear if the BT3 construction is so good that blade stiffeners provide no benefit, or whether such devices are all shams.

[\[return to Top\]](#)

***What are ZCTPs for?***

These are Zero Clearance Throat Plates. They replace the red metal throat plate that surrounds your blade. They are made of any cuttable material like wood, or various plastics such as ABS, UHMW (ultra high molecular weight) or Lexan® polycarbonate. The blade is used to cut through the plate and thus make a zero clearance opening in that there is virtually zero space between the blade and the plate. Actually since the blade tips that cut are wider than the blade by a few thousandths, there is some clearance at the body, but none around the tips.

They serve the following purposes:

- Support the wood right up to the cut to reduce tearout on the bottom of the cut where the blade exits
- Eliminate the hazard of small cutoffs falling into the saw and being ejected at very high speeds when they jam between the blade and the saw or plate, OR equally bad, stalling the motor and breaking the belts. Or jamming your dust collector.
- Create a plenum within the saw for sawdust extraction when using duct collectors or vacuums.

Note, you cannot make a bevel cut when using a ZCTP – you will have to revert to the original metal plate with the wider slot to allow the blade to tilt.

[\[return to Top\]](#)

***Are the factory ZCTPs any good? What materials should I use to make one?***

The plastic ones supplied in the accessory kit are sort of a mixed blessing. They make it easy to have a ZCTP but they have two problems: They are slightly flexible (bend if you push down on them) and they sit maybe .016” (1/64<sup>th</sup> inch) too low. You can shim them up (people have used layers of address labels affixed to the back of the plate) and some people have put a solid filler like plaster in the back of the webbing to increase stiffness. Many on the forum have used alternative materials –wood and plastics - to make [ZCTP](#) blanks (see below).

[\[return to Top\]](#)

***How do you make a ZCTP for the Ryobi BT3x?***

Fortunately, unlike other saws, the Ryobi plate is rectangular, making it easier to cut blanks. People have used materials like lexan, flooring laminates, plywood, or UHMW. Something about ¼ to 3/8” thick will be stiff enough, Sometimes they use a thicker blank to be stiffer. That requires milling the edges (and maybe making a relief for the blade so it doesn't get trapped when you install the uncut blank before cutting the blade opening. Make a few extras while you're at it, you'll need them for Dado setups of different sizes, and blades of thin and thick kerf.

When making the kerf-cut in the plate, raise the spinning blade slowly through the plate. **IMPORTANT:** Make sure that the blade is not touching the plate when you turn on the saw or the blade will seize, and you will experience the grief of breaking your drive belts (people with thicker throat plates, like greater than ¼”, note)! If possible have a sacrificial piece of wood backing held down on top of the ZCTP when cutting it (hold down with a hold-down stick, not your hand!)

Other suggestions: If the throat plate is thick and you risk having the 10” blade seize, use a 7-1/2 inch blade to start the cut. To make the slot for the riving knife/splitter, it has been suggested to use a jig saw.

Remember to revert to the original metal plate with the wider opening when making bevel cuts.

[\[return to Top\]](#)

***Should I make a ZCTP for my dado or use the Ryobi one?***

The stock metal dado throat plate is OK in a pinch, but it seems that the opening is compromised to accept the widest blade at the largest depth setting, so when used for normal cuts the gap seems dangerously huge. Its better if you can to have a close series of fitting dado plates (see below) and save the factory one for that deep, wide dado cut.

[\[return to Top\]](#)

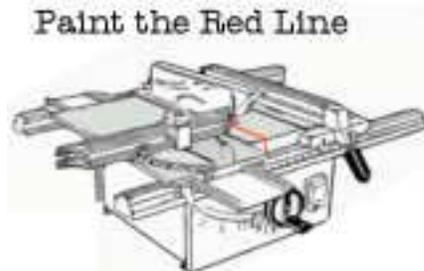
***Do I need a ZCTP for each dado size?***

While that would be nice it seems a little impractical to have one for each width and depth cut. You will probably want to have a few sizes to avoid a gaping hole and make others as the need arises. Usually tearout and cutoffs falling into the saw are reasons for using close-fitting throat plates, neither is a serious problem with dados. But if you use one size of dado a lot then it would make sense to have a dedicated ZCTP for that size.

[\[return to Top\]](#)

***I just cut off the end of my miter fence. Where do I send the dues?***

This has been done so often that we joke about joining the club. This happens because the flexibility of the saw allows the end of the SMT and the miter fence to be positioned such that the end of the miter fence gets pushed into the blade at some settings. One thing widely done to help avoid this is to paint a red line in the groove in the table top directly in front of the blade. Anything hanging over this line is apt to be cut off! This ritual is called "Painting the Red Line".



If you do cut into the plastic tips then its only cosmetic damage, a part of the dues for joining the club. If you cut into the Aluminum miter fence, as some have done, its also cosmetic and since carbide is so much harder than aluminum, no damage is done to the blade.

If you have the dual miter slot table accessory installed, it pushes the SMT far enough to the left that you cannot cut off the regular miter fence tips.

[\[return to Top\]](#)

***How much space does the BT3x take?***

The BT3K has a smaller footprint than the contractor saws because the motor is inside the saw cabinet and not hanging out the back. This is one of the design points of the new DeWalt contractor saw that sells for more than double the BT3K. The BT3K is ideal for wood workers with limited workspaces and limited budgets.

The actual space required varies depending upon whether you leave the 42" long rails attached (faster to get back to using) or strip the rails completely off for storage (slower to set up and may require recalibration).

Width, left/right end of rails is: 41-3/8 inches  
 Front to back w/o SMT is: 31-1/4 inches (includes handle on rip fence)  
 Front to back w/SMT is: 36 inches  
 Table height is approx 38-1/2 inches

SMT Table Dim: 10-1/4 x 22-1/4  
 SMT Slide Asm: 6-1/4" x 35-1/2"  
 SMT Fence Length: 18-1/4"

Accessory Table Surface: 8-1/4" x 22-1/4"  
 Main Table Surface: 8" x 22-3/8"  
 Accessory Table overall dimensions: 8-1/4" x 23"

Saw Body: 19-5/8" wide x 22-1/4" deep  
 Height of the saw table above the base – 13-7/8"  
 Footprint including rails (but no tables mounted): 41-1/4" W x 26" D; allow an addition approx 2-3 inches for the elevation crank handle in the front  
 Footprint including SMT and aux table: 41-1/4" W x 35-1/2" D

BT3000 (rectangular) stand 30"W x 19-1/2" D x 23" H

The height of the table mounted on the factory stand is a tallish, almost 38 inches, one of, if not the tallest table saws around. Most people find it OK to use, others have lowered it when building a custom base.

Weight is approx. 75 lbs. for the saw alone, the stand brings it to about 115 lbs.

[\[return to Top\]](#)

***I'm having problems with the rip fence...***

***What's a good aftermarket fence for the BT3?***

The Ryobi BT3x has a unique fence. Its three-point, two-stage locking system that makes it one of the best designs compared to expensive saws with heavy rigid fences that only lock down at the front and still allow the back to wiggle a fraction of an inch. Many consider the rip fence one of the finest features of the saw.

Compared to a classic Beisemeyer fence on a Delta contractor saw, the BT3 fence is thinner and lighter but unlike the 'Beise, it utilizes both the front and rear rails for locking. The entry Beisemeyer will run you \$150 and up depending upon the rail length you buy for it, there are fancier models that really work no better for more money. The BT3 rip fence also has T-slots for mounting various accessories and jigs.

If you are looking for an aftermarket fence, there are no good solutions. Jointech makes one and Incra makes one but it costs as much as or more than the saw. Other Beisemeyer and Beisemeyer clones will not readily fit the saw and are also relatively expensive. The question should be, why do you want another fence? Based on the previous paragraph, the BT3 has a pretty good fence, when it's working correctly. The rip fence exemplifies the saw philosophy of thinking outside the box and making a system work better for less money than classical saw components. It is lightweight, multi-point locking, using the unique rear rail and has all sorts of attachment points

on the fence for custom accessories. Read the following sections to make sure you understand and have your BT3 fence working properly before you seek alternatives.

The BT fence normally rides on the front and rear rails. Two points on the front mechanism grab the front rail when the lock handle is partially depressed. This lines the rip fence up repeatedly square to the rail and parallel to the blade. As you depress the lock handle further a linkage in the rip fence pulls up on a hook in the rear mechanism that grabs a lip on the rear rail totally locking the fence in place front and back. If you grab the rear it does not wiggle at all. You should take the fence off the saw, operate the locking handle and become familiar with how this mechanism works. Easy does it, as with all BT adjustments and settings. Don't over-tighten the handle by bearing down on it – this will bend internal parts (like Clamper-A). Use the minimum force that holds everything securely.

The fence needs to be aligned correctly. This involves making the rip fence nominally parallel to the blade. Basically you push the handle down to lock the front rail but not the rear, and loosen the two allen screws on the top of the fence allowing the fence to “wag”. Adjust parallel to the fence and retighten the allen screws. Instructions in the manual tell how to do this in detail. One thing many members do is to make the rear of the fence skew away from the blade by a few thousandths of an inch – to ensure that the back teeth do not mark or burn the wood as the wood passes by. You can set this distance by placing one or two dollar bills (each bill is about .004” thick) between the fence and blade at the rear when aligning.

Things that can go wrong, more or less in order of probability of occurring:

- The front mechanism (T-block) rides up on the rail rather than clamping to it. This is often due to someone waxing the rail thinking it will slide better but it just makes it difficult for the clamp mechanism to grab the rail. If waxed, clean the rail with mineral spirits or paint thinner until the wax is gone. Some have suggested roughing up the rail ever so slightly with fine sandpaper so it's not so smooth.
- The rip fence is not perpendicular to the table surface – most commonly, one side of the front mechanism has ridden up, see the above paragraph on not waxing the rails and cleaning the rails of any stray wax or oils.
- The rear part of the fence is moving. The hook device is not grabbing the lip of the rear rail. There's an adjustment screw that sets how tightly the rear lock engages. Dust can interfere with operation. Maybe the rear rail is not installed properly. Sometimes the pin that hinges the rear clamp is broken or lost. Replacement pins can be bought from Ryobi. There are a number of possible things that could be causing your problem, try the easy stuff first.
  - Check and ensure that the front and rear rails are set correctly and locked.
  - Make sure the rear clamper moves freely.
  - Make sure the dowel pin and rear roller are in place.
  - Make sure the front block "slides" are adjusted so that they do not prevent the forward movement of the front block upon the lowering of the locking handle.
  - Make sure "clamper-A" is not bent. See following discussions.
  - Make sure the "roller holder" is not broken where the roll pin passes through.
- The rip fence is hitting the table top and won't slide over. Installing the rear rail upside down usually causes this.
- The fence won't move. Clean the saw dust from the front and rear rails. Make sure the roller riding on the back rail is turning, it may need cleaning or lubrication.

- If the fence won't adjust square to the blade (not enough wag), you may need to enlarge the holes in the top of the rip fence extrusion, where the allen screws set in, just a tiny bit. Use a drill bit 1/64<sup>th</sup> bigger than the existing holes, to enlarge them.
- If the rip fence is still not vertically perpendicular to the table: And you already checked and the front rail handle assembly is sitting flat on the front rail (not rising up on one side or the other due to wax on the rails). Then you may need to deburr the holes the two allen screws set in, so that they sit flat. This is not real common at all, but due to bad machining at the factory. Some BT3100s have burrs in the casting of the T-block. You will have to remove the two allen-head screws holding the extruded fence to the T-block and check the bosses for the two screws, These may have burrs or not be finished well. Users have filed these bosses flat and square so that the extrusion will sit squarely to the T-block when you reassemble it. While its off, check the inside of the extrusion and make sure there are no burrs on the inside of the two holes as well.

This excellent discussion from Lonnie on his fence problem (lifting and tilting)

**FIXED: Rip fence no longer lifts and tilts**

It's fixed! Thanks to two forum members, J.D. "eccentrictinkerer" and to Ray Girling, the rip fence on my BT3000 no longer lifts when I lock it down. It's had the problem for years. With their permission, I've combined their words, photos, and diagrams into one post so that the thread can be found in future searches by forum members who need to fix a fence that lifts. There may be other reasons that a fence lifts when locked down, and there may be other fixes. This is the one that worked for me. If the problem returns, I'll update the post.

**THE PROBLEM:**

My rip fence lifted when I locked it in position. The fence would start to lock when the Locking Handle was at about 2:00 o'clock when viewed from the left side of the saw. It fully locked when the Locking Handle was at 4:00 o'clock. As the Locking Handle approached the 3:00 o'clock position, "Clamper-A (#23)" pushed downward against the plastic "Plate (#27)" which caused the fence and the Front Block (#28) to lift about 1/16". Usually, one side of the Front Block would then be pushed down to touch the rail and the other side would rotate up. As a result, the face of the rip fence would no longer be perpendicular to the table.

NOTE: Some forum members tell me that their handle rotates below horizontal (3:00 o'clock) but their fences don't lift.

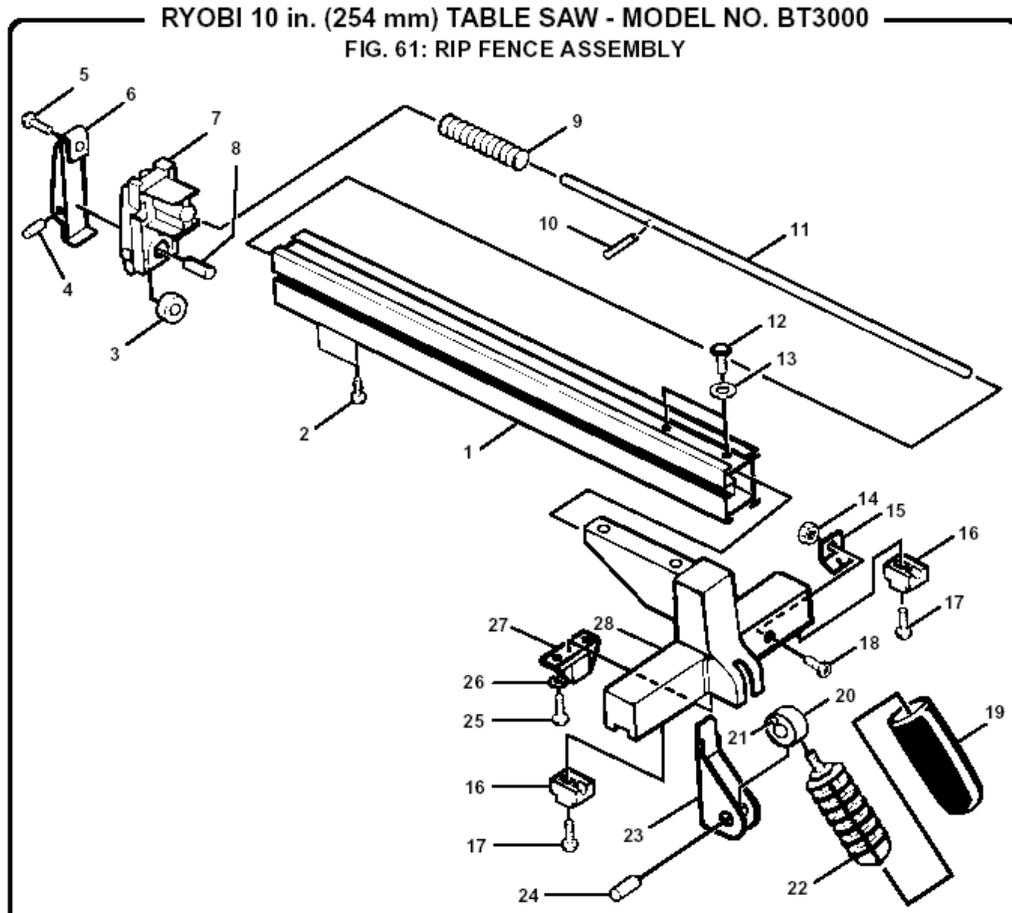


Diagram from Ray Girling [www.raygirling.co.uk](http://www.raygirling.co.uk)

#### THE CAUSE:

“eccentricinker” diagnosed the problem. The tip of “Clamper-A” was bent. Probably from moving the Locking Handle down way too far at some time. Also the top 2/3 of the plastic Plate was indented by “Clamper-A”

#### THE WRONG FIX:

I tried compensating for the bent “Clamper-A” by adjusting the Screw (#5) inward in “Clamper-B” (#6) on the outfeed end of the fence. I also replaced the plastic Plate with a new one. It helped a little, but made the fence extremely hard to remove.

Some forum members have stated that the lifting problem can be caused by wax on the front rail. I can't see how this will cause the problem. FYI, there is no wax on my front rail.

#### THE REAL FIX:

- 1) Remove plastic Plate (#27).
- 2) Unscrew the Locking Handle. Just grab and unscrew. Don't try to use a wrench on the hex-head at its base. (It's plastic and will round over) The handle prevents the Pin (#24) from being removed.
- 3) Drift out the Pin (#24) that holds “Clamper-A” and the Eccentric Roller (#20) in the Front Block.
- 4) Remove “Clamper-A” from the Front Block and remove the Eccentric Roller from “Clamper-

A". Note which side of the Eccentric Roller holds the Rubber Plug (#21) so that you can reassemble everything correctly.

5) Bend the tip of "Clamper-A" straight if it is bent. Here is "eccentrictinkerer's" description of how he straightens the tip:

*"I researched the site and found a drawing and explanation that helped me fix the problem. (It may have been in Loring's FAQ.)*

*It's easy to straighten the 'clamper'. Clamp the tip in a vise and tap it a few times with a hammer. I've straightened 5 of these and none have bent back. I go easy on the fence handle. You don't need much force to lock a fence if everything is set up correctly. BTW, if the end is bent, the adjustment screw can never correct the problem."*

This is a bent "Clamper-A"



This is the same "Clamper-A" when straightened.



*Photos by J.D. "eccentrictinkerer"*

6) While it's apart, you may try to repair the "Rubber Plug" (#21) that holds the Locking Handle up when not in use. I didn't repair it, so I don't know if it is possible.

7) Reassemble the parts into the Front Block. Put a drop of blue Loctite on the threads of the Locking Handle. Replace the plastic Plate with a new one if available.

8) Adjust the Screw (#5) in Clamper-B" (#6) to engage the rear rail correctly. When you lower the Locking Handle, the plastic Plate on the Front Block should press against the front rail, lock the Front Block to the front rail, and bring the fence parallel to the blade. Then "Clamper-B" will lock the rear of the fence to the rear rail as you finish moving the Locking Handle.

Make sure that "Clamper-B" mates with the rear rail correctly. Here is Ray Girling's diagram and description ...

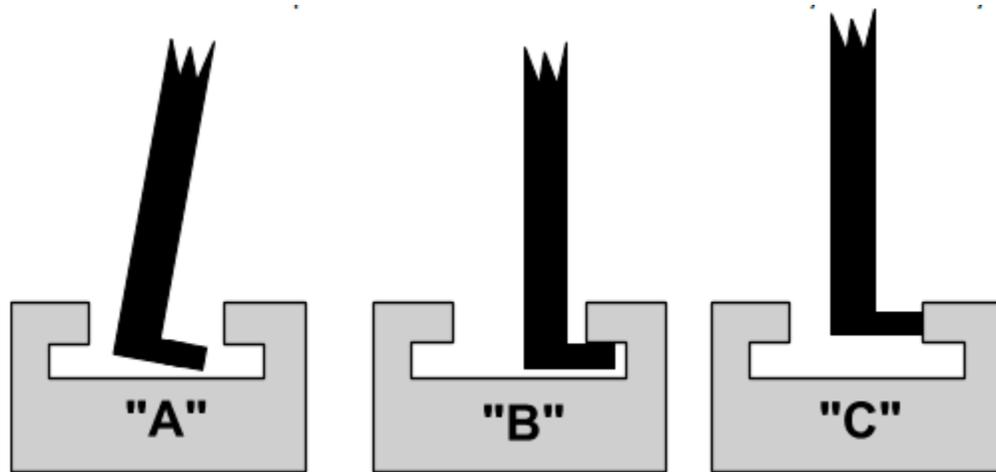


Diagram from Ray Girling [www.raygirling.com/](http://www.raygirling.com/)

*"Diagram "A" shows the correct method of fitting the fence to the rear rail, and the "angle of attack" means that the clamber usually needs its adjusting screw to be slacked right off first.*

*Hold the fence at an angle of around 35 - 40 degrees to the table (operating handle uppermost) and make sure that the clamber slides in and under the inner lip of the rear rail, then lower the front of the fence down onto the front rail, making sure that the clamber remains as at "A." When the clamber works correctly, it operates as in diagram "B."*

Diagram "C" shows an incorrectly fitting clamber.

Put a drop of blue Loctite on the threads of the Screw when it is adjusted correctly.

You should not have to realign the fence after making the repairs.

My Locking Handle now locks the fence in position shortly before it reaches the horizontal position (3:00 o'clock) and the fence doesn't lift. The process took about 30 minutes. Thanks to forum members for showing me how to fix the problem. I'm happy.

[\[return to Top\]](#)

### ***I'm having problems with the SMT...***

This is one of the premier features on the BT3x. Similar attachments to cabinet saws cost hundreds of dollars just by themselves. If you use the "latch front" then "latch back" sequence it should be very repeatable in alignment no matter how many times or where on the rail you move it.

Hint: Take the SMT off when not in use and turn around backwards, then place it back on the rails. The slide lock has a position so that the back (now front) of the SMT lines up with the front of the saw main table. When stored this way it will be less of a hip basher and possibly take less room. Also keep it latched and locked to the rails when stored on the table saw, otherwise they frequently fall off and get damaged. It only takes about 15 seconds to turn this around and your saw should not require any realignment when the SMT is restored to the normal working position.

Things that can go wrong with the SMT:

- You dropped the SMT and broke the latches. You can order replacement latches. Actually the latches reverse, so if you broke one you can reverse it and break it again, I mean, you can keep using it.
- The cuts aren't square. Try using this sequence when tuning up your saw and then when making cuts. Latch the front two latches simultaneously and then latch the rear two simultaneously. Always use the same sequence.
- Cuts still aren't square. (1) If you are using the miter clamp, it has a compound motion to push down and push into the miter fence. If you tighten it too much it can actually push the miter fence out of its locked zero position! Lock the miter fence down firmly and take it easy tightening the miter clamp.
- Cuts still aren't square. (2) Is the little black post on the bottom of the miter fence installed correctly? This is the miter angle pivot point. It should be positioned in the snug-fitting hole on the left or right edge of the top of the miter table about 3-4 inches from the front edge.
- Cuts still aren't square (3) Well, you are using the back edge of the little orange thingy on the back of the miter fence to set the angle, aren't you?
- Cuts aren't Square (4) Make sure the Miter fence is attached properly. A number of people evidently look at the random setup at HD as being correct. The correct sequence, bottom up, is: Bolt (head seated in the groove in the bottom of the SMT), SMT, Fence, Washer, Knob. In particular make sure the washer is not between the bolt and the SMT or between the SMT and miter fence. The groove in the underside of the SMT should keep the hex head on the bolt from rotating.
- Cuts aren't square (5) if you are using the flip-up zero stop it needs to be calibrated to the 90° square position. The stop is mounted on a special eccentric screw that will move the stop forwards and backwards a small amount as the screw is rotated. Read the instruction manual on how to set it.
- Cuts aren't square (6) because the miter fence won't stay put, because the bolt is slipping when you tighten it (and you didn't put a washer under the hex head!) Sometimes due to wear, the hex head of the bolt has worn out the groove cast underneath the table and the hex head spins. In this case, replace the bolt with a 5/16-18 T-bolt from Rockler or the hardware store. You may need to grind the long edges of the "T" some to make it fit the groove but it won't rotate anymore.
- If the cuts still aren't square, maybe you need to align your saw. Tune-up instructions can be found in the manual. Alternate tune-up instructions can be found in the <http://www.bt3central.com/index.php?page=articles> section.
- If the SMT has wobble side-to-side, or excessive burning then you probably also need to do a tune-up, as above. This tune-up will align the SMT so it travels parallel to the blade. Be careful, the tune-up may require adjusting the eccentric screws in the SMT. These are brittle and also unique screws. Be careful and don't force them and break them!

There's an alternate method of alignment from forum member Lonnie:

*Here is the link to my "No-Measure" Alignment Method on the Ryobi Tools forum:*  
<http://www.ryobitools.com/cgi-bin/htdocs/powertools/dcforum/DCForumID24/3372.html>

*Here is a similar link to this forum:*  
[http://www.bt3central.com/forum/topic.asp?ARCHIVE=true&TOPIC\\_ID=4460](http://www.bt3central.com/forum/topic.asp?ARCHIVE=true&TOPIC_ID=4460)

*Here is the link to the pictures on ImageStation:*  
<http://www.imagestation.com/album/?id=4289164857>

*And here is a link to a slightly different alignment jig and alignment method.  
[http://benchmark.20m.com/tools/BT3100/Alignment/bt3100\\_alignmentindex.html](http://benchmark.20m.com/tools/BT3100/Alignment/bt3100_alignmentindex.html)*

*Use the No-Measure jig to get the base of the SMT parallel to the blade. Follow the info on cutting a piece of wood to get the miter table and fence square to the blade.*

*One end of the SMT may or may-not rub against the saw table. It should travel parallel to the blade, not parallel to the table.*

[\[return to Top\]](#)

### ***What Maintenance is required on a BT3 saw?***

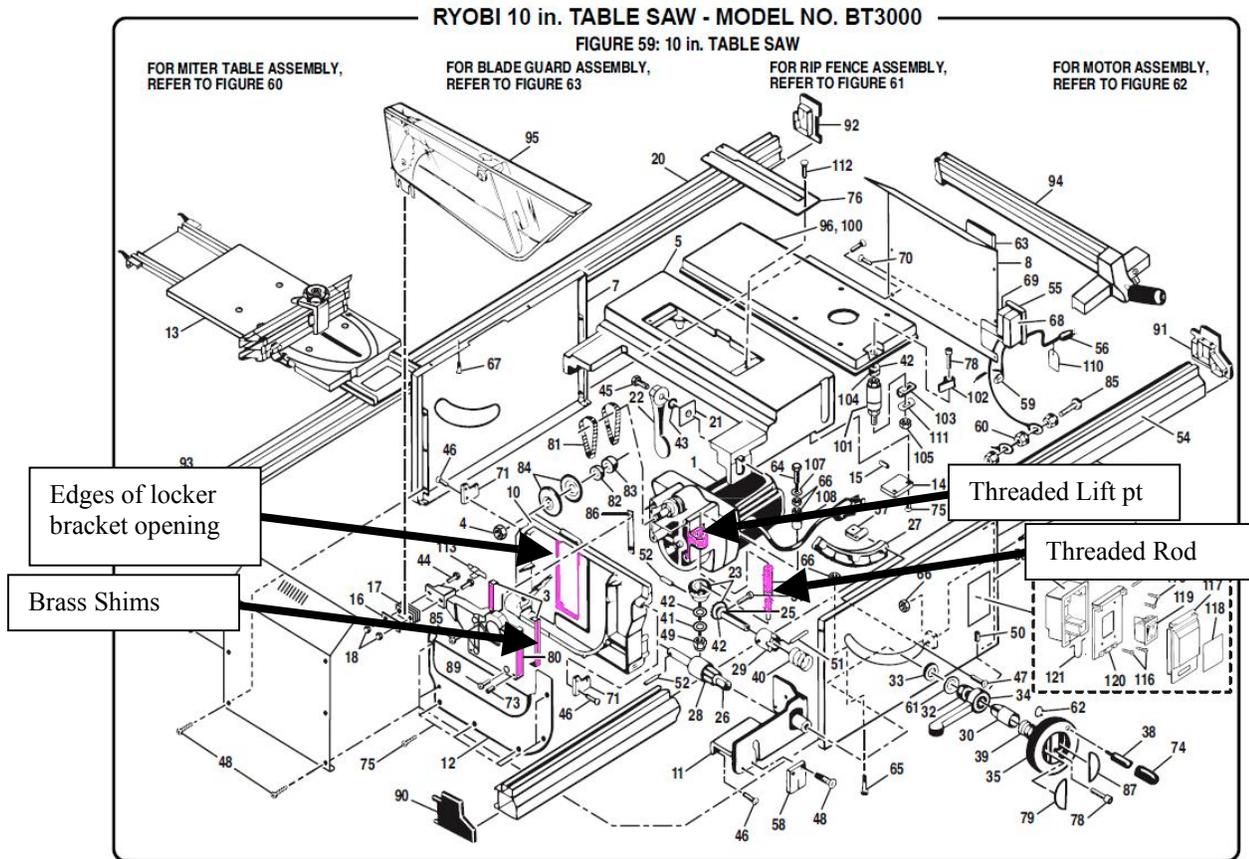
Fairly low maintenance is required of the BT3 saws. The probably number one requirement, especially of the BT3000 models is to clean and lubricate the elevation mechanisms. One weakness of the BT3000 and probably Sears 22811 (improved for the BT3100 and Sears 21829) is that the locker bracket (motor housing) rides on ways that have thin metal shim bearings. These must be kept lubricated. Another weakness is that the elevation mechanism has the aluminum motor locker bracket threads riding on a steel threaded rod. If the interface is not kept lubricated the softer aluminum threads can wear out and be stripped. Failure to lube the above parts can lead to [saw blade elevation problems](#). Both the guide shims and the elevation rod should be lubricated with a dry lubricant that will not attract and hold dust. The favorite lubricants in order are:

- Johnson's Paste wax (also Butchers, Minwax etc that are 100 percent wax) – it is easy to apply and also useful for polishing the table top and protecting other tools and wood items in your house and shop.
- Candles or wax paper bearing wax can be rubbed on the parts
- Various sprays and lubricants sold as dry lubricants such as graphite powder, sprays containing TFE, INOX (Lanolin), White Lightning

Things recommended not to use:

- Grease – traps dirt and dust
- Oil – traps dirt and dust, may dry out
- Silicone lube – can migrate to the wood and give finishing problems
- Waxes with silicone – likewise can migrate to the wood and give finishing problems
- WD-40 – its not really a lubricant so much as a solvent and water displacer. When it seems to work, its usually because it dissolves dried grease and redistributes it before evaporating.

Wipe the wax on the sliding or threaded areas, let it set for a while. Then wipe off the excess. Work the parts up and down or back and forth, working the lube under the parts that are exposed when its to one end of the limit of travel and then the other. Lubricate the following locations (shown is BT3000; all BT3 are basically the same):



Other maintenance:

- [Clean and polish table top with Paste Wax.](#)
- Keep the interior free from dust with frequent cleaning and/or better yet, [active dust collection.](#)
- Keep the motor free from dust
- Keep the elevation crown gear and the lift rod clear from dust
- Keep the tops and saw body dust free with vacuum or blown air
- Make sure the mechanism at the back of the rip fence where it locks to the rail is kept clean and the parts and roller move freely.
- Clean the blade of pitch (especially when cutting a lot of pine) and other residue; soaking in a cleaner such as Simple Green is recommended along with using a brass brush or toothbrush. Many cleaners are too weak to remove pitch and others will possibly damage the carbide brazing and or remove all blade markings.
- Have the blade sharpened when it gets dull. Cutting plywood and other glue-bearing laminates are especially hard on cutting edges. Reduced cutting rate, increased feeding force, and increased tear-out are signs of dull blades,

Don't wax the rails (rip fence will have a hard time locking) or miter face fences (work will slide along the fence when you don't want it to).

[\[return to Top\]](#)

*I'm having trouble with raising the blade...*

***I'm hearing a clicking noise when I raise the blade  
What is this shim problem I've heard so much about?***

Don't force it! The BT3 elevation is usually a smooth-running mechanism, if you have to force it, stop and think – it needs cleaning or it is jammed; if you continue you will break the handwheel. In order from least to worst possible problem:

The clicking noise is normal. This is the spring as it rotates on the keeper pin (behind the adjustment handle). You can bend in the ends of the wire with needle nose pliers so it will not catch on the edge of the spring if it bothers you.

It's very frequently the case that in reattaching the riving knife/splitter assembly, the two bolts have enough play that the riving knife leans backwards. When the blade is lowered, at some point the back of the riving knife touches the edge of the opening and drags, making it hard to lower the blade. Usually no damage done except to pride.

Your saw needs cleaning and lubrication; internally the dust has gotten to the point where the gears and elevation mechanism are jammed. Also lubricate the elevation screw shaft at the point where it engages the motor assembly and at the pinion gears. A good [dry lube](#) is generally recommended to prevent it from attracting and holding sawdust. Dust collection, the more aggressive the better, will help keep dust out the mechanisms in the future.

Occasionally you will have the dreaded **shim** problem (a BT3000/Sears 22811 quirk, this has been fixed in BT3100s). The shims are thin (brass-colored) metal plates that ride between the motor holder and the saw frame when traveling vertically. They are normally held in place with the motor housing and ride on machined ways but can be deformed and fall out when the lubrication is not adequate. If you find some small metal plate below your saw body then the shim(s) have likely fallen out and will need to be replaced as they are the anti-wear mechanism. Vertical movement will become difficult. The shims are inexpensive but the labor can be a few hours. Keep your saw lubricated in this area with a dry lubricant. Johnson's paste wax is good for this. A February, 2005 survey on BT3Central indicated that 70% of BT3000 owners never had the problem but that 30% had some problem with shims. Replacement BT3000 shims: bent shims are part #969600-001 and the rear flat shims part #969599-001.

One member made his own replacement shims:

*I made the guide shims from the photos in the article that go towards the front on the guide holder. (#3 on the diagram) Took me 30 minutes, I used some 0.008 metal. Fits perfect there is no more slop in the guide plate I also adjusted one set screw on the guide. I used my adjustable hand held sheet metal bender for the right angle bend and to make the overlap tabs. The blade sits at a perfect 90 Deg, now. The blade will now lower and rise without any play or other problems. The candle wax works wonders too. If anyone is looking for some of this thin metal. . Lowes for \$2.00. It's located in the specialty screw drawers market hobby, The package is marked 0.008 on the top. Two shims can be from this small sheet, 3 or 4 shims can be made for the straight flat shims. It's the same material and thickness of the original shims.*

The BT3100 does not have the shim problem because the shims, though used, have a mechanical retainer. You can convert the BT3000 to the BT3100 shim system. The conversion is simple if you will have the saw apart to replace the belts and the cost is negligible

Parts List:

#969600001 Flat shim [BT3000/BT3100}\$\$.90 ea, 2 needed

#0181010314 Spring shim {BT3100} \$.86 ea, 2 needed  
#0181010110 Guide holder {BT3100} \$15.07 ea, 1 needed  
#662329001 Drive belt {BT3000/BT3100} \$13.49 ea, 2 needed

The parts are available from:  
www.ordertree.com  
[www.billious.com](http://www.billious.com)  
M&D Mower

Sometimes the threaded elevation rod engages a threaded hole in the motor assembly and the thread is worn/stripped. You will need to enlarge the hole and thread a new helicoil (a stainless steel threaded insert) into the hole to repair the thread. See these [elevation rebuild instructions](#) by JohnG.

[posted by "Knuckles" Brian] I went the HeliCoil route. Thanks to Ed's instructions in the Article section, it wasn't too difficult. It's not something I'd want to do every day. I searched about a dozen auto parts, hardware, and machine shops in this area, and I had no luck finding the 9/16"-12 Helicoil (or clone) kit. I ended up ordering one from a website called Cartools.com. It cost something like \$50, shipping included. Wouldn't you know, though, after I bought it I stopped in a local discount tool place that I hadn't noticed previously; they had a clone (Permacoil) kit for \$15.

The next problem was finding a 19/32" drill bit to drill out the lug that the threaded rod goes through. [ed. Note – some helicoil kits include this drill bit]... Probably the most tedious (and potentially disastrous) step of the repair was drilling out the hole prior to tapping it. I figured that I only had one shot to drill the hole on the same axis, and I wouldn't know how well I did until "the reckoning" of trying to put it together. I used a 1/2" drill bit to help get the bit centered, and find the axis. I didn't measure the angle, but it wasn't exactly 90° to the table. I had to shim it with some laminated air and a few mosquito wings.

Once I got the hole drilled and tapped, the insert went in nice and easy, and I epoxied it in place. I made sure to keep screwing the insert tool in and out so that any epoxy that squeezed into the inside threads was "threaded" in.

I learned something during assembly that's important to the instructions. Install the threaded rod and bevel gears before tightening the screws that attach the motor housing and the guide holder. ...

So, long story longer. . . . I was successful at installing the Helicoil insert. I've noticed that there is considerably less "play" in the mechanism, even less than when it was brand new. It's firmer and requires more effort to turn the handle, but not "won't raise/lower right" firm. It still feels like the Play-Skool handle is going to snap. Even though Ryobi Tech Support knows about the issue with the "soft" threads, I'm still going to send a note expressing my opinion that they should "toughen" that part up.

Factoid: the blade raising mechanism has a 12 TPI thread – it takes 12 turns to raise the blade one inch, or .0833" per crank turn. On my saw you can crank it exactly 12 turns one way then exactly 12 turns back and it will come back to about +/- .005" of where you started.

[\[return to Top\]](#)

***I broke my Handwheel - Elevation/bevel crank handle. What to do?***

Early BT3000 crank handles (handwheels) are cast aluminum. The later BT3000 crank is heavy-duty plastic. The plastic handle has more smooth finish and rounded cross-section, and most importantly has filled in the semicircular (or half-moon) openings with decals depicting the direction to turn for up and down. The metal crank looks very similar but is an open circle with a metal bar across the middle.

The BT3100 crank handle is not only plastic, it's lighter-duty plastic than the BT3000 with a yellow hub, and the jury is split as to whether it's god-awful ugly, makes the saw look like a play-skool toy, or its just cool.

The crank handle is held onto the shaft with a 1/4-20 x 1" socket head cap screw. Its been reported on the BT3000 it's held with some sort of locking glue which is almost impossible to break loose. If the handle is broken, anyway, apparently heating the cap screw will break the bond and you can get the cap screw off the shaft.

The shaft is 7/16<sup>th</sup> (0.438") round, not a standard shaft diameter, with two flats; 0.331" across the flats. The crank handle engages the end of the shaft with a matching recess. You can get a replacement from Ryobi's parts suppliers which is not cheap and you'll still have a plastic handle. (as of summer, 2009 some people are reporting you can't get this handle from parts anymore?)

BT3000 metal or plastic, and BT3100 handwheels are all interchangeable – will fit the 7/16" square shaft.

Or get the Craftsman 22811 saw version that is cast metal but requires an adapter. You'll need item #36, a 981817-001 adapter, (\$9.09), and item #35, a 977277-002 Handwheel Assy (\$9.99) and a 1/4-20 by 1" capscrew (at your local hardware store). You'll need to specify the saw model 315.228110. Here's a [link](#) to order them. Note: as of 7/19/2009 users report item #36, the adapter, is no longer available from Sears.

It has been suggested that maybe a handle from the Sears 21829 (model 315.218290) at \$10 and available at [www3.sears.com](http://www3.sears.com) will fit the BT3000 and 3100. It appears that the 21829 handle matches a round shaft with two opposing flats (0.43" dia. and 0.33" across the flats); this is the same handle and shaft dimensions as the BT3000/BT3100 saws. So it seems that the 21829 handle can be used directly although there's been no confirmation.

Part for CRAFTSMAN, Model # 315218290  
Blade Adj Handwheel Assy  
Number: A182014001  
\$9.02 in stock(17Apr2011)

Some have bought handles from other industrial suppliers but some modifications are needed because the standard shaft diameter for table saws and tools is 3/8<sup>th</sup> or 1/2 inches.

Jim Frye beefed up his BT3100 handle to make it stronger and stiffer. Basically it involves laying the handle face down and level, then filling the backside with #7-1/2 lead shot (alternately small split-shot fishing weights, BB's etc.) and epoxy to stiffen and give it more heft.

[\[return to Top\]](#)

***My blade is not square with the table/ My fence is not square with the table/ My SMT is not square with the table.***

The BT3x has an unusual design from most table saws. These design features are the aluminum table and universal motor and sliding miter fence which impart light weight and low cost. Missing are the miter slots and the trunion of most big table saws. The trunion in those saws allows the blade to be aligned with the table and the miter slots. On the BT3x, since there are no built-in miter slots and the SMT and the rip fence can both be aligned with the blade, the relative alignment of the blade, fence and SMT to the table are inconsequential. Thus the fence, blade and SMT may NOT line up with the grooves in the table top. This is normal when it happens but often very disconcerting to users of other table saws using the BT3x. Using the adjustments of the SMT, rip fence, and the miter slot accessory allows for square cuts. The cost, size and weight of the trunion system are eliminated giving the saw some of its advantages.

[\[return to Top\]](#)

***Do I need to use the supplied blade guard and splitter/ripping knife/pawls?***

This is a very touchy topic. The official manufacturer's position as dictated by their lawyers says that you should use all the safety devices supplied with the saw.

However, it is generally a reality that inconvenient and difficult to use safety items will soon be discarded if no one standing behind you is pushing for their use.

The good points about the supplied safety items:

The blade guard does guard the blade. The pawls do prevent kickback. The ripping knife/splitter is really an excellent feature because it rises and falls with the blade elevation and therefore sits directly behind the blade as you can get for maximum effectiveness. It keeps the saw kerf from closing around the blade and hurling the workpiece back at you at 100 mph.

The bad points about the supplied safety items:

The pawls are nasty sharp. They scratch your expensive wood. They dig holes in your ZCTPs. Sometimes they won't let you lower the blade without holding them up. The blade guard is hard to remove – involving the raising of the blade, removal of the throat plate and reaching inside for some difficult to get at bolts. But you have to remove the blade-guard assembly for non-through cuts – dadoing and grooving – and then you lose the ripping knife.

Some use of safety devices is better than none, it could be argued. I am not suggesting any of these but this is what others have done many times over:

- Pawls have been taped over with duct tape, dipped in rubber coatings, filed down, or simply removed. The pawls are widely regarded as the least effective and most annoying part of the BT3x's safety system (guard, knife, and pawl).
- The ripping knife has been cut off one inch below its present top (after removing the blade guard). This cut-down knife now mounts directly behind the blade in the usual way and provides full splitting function (that prevents kickback from twisting and jammed items) and permits non-through grooving cuts without having to remove the splitter knife. There's no guard, which is a disadvantage. The top of the cut-down knife will be just a fraction of an inch below the top of the blade when installed correctly.

Now there's another solution, the Shark-guard, which one forum member has provided and is used by many members of the forum now. This has a cut-down knife with the advantages mentioned before, plus a new guard that clamps onto the knife top and is easily removed or installed from the top (no need to remove the throat plate) when you need to. There's also a top dust port for maximizing dust collection. As of Nov 2010 – the current version 10 shark guard even has optional pawls, if you wish to use them. Go to

<http://www.leestyron.com/sharkryobi.php>.

You can buy one with all the bells and whistles for around \$90, but Lee also has the full plans for making your own provided at his site should you want to make your own. The Shark Guard has gone through many improvement revisions (current model version 10, fall 2010 is \$126 incl. shipping) and is now available for other major table saws as well.

[\[return to Top\]](#)

### ***I just got a BT3x, what do I do next?***

If it's a new BT3100, before removing it from the box, try and see if the screws retaining the red throat plate can be removed with a screwdriver. For a while, many of them were so tight from the factory the saw ends up getting returned. Do this before you unpack everything.

Read the manual! Obey safety rules.

One thing widely done to help avoid cutting the miter fence is to paint a red line in the groove in the table top directly in front of the blade. Anything hanging over this line is apt to be cut off! This ritual is called "Painting the Red Line".

Don't force anything. The saw is usually quite easy to use and having to force something usually indicates a problem that needs to be cleared up. It's not "delicate" but it is a precision woodcutting system, er, I mean tool.

Use only Johnson's paste wax (or equivalent that specifically has no silicones in it) on the table top but do not wax the rails.

Avoid the Five Things a newbie often breaks on a BT3:

- The ends of the miter fence, or the miter fence itself get cut if the SMT or miter fence is set too far to the right
- The zero stop on the SMT, its real brittle metal and slamming the miter fence into it will do it.
- The latches on the SMT when they drop it, or unlatched, it falls off as they move the saw around
- The eccentric screws (they're real brittle) that set the SMT alignment – know how they work before you adjust them
- The belts. If you freeze the blade when starting, the belts will go to protect the motor. This occurs in making ZCTPs, and if the wood closes up around the blade, and if you try to feed too fast.

[\[return to Top\]](#)

### ***How do I make wider Crosscuts?***

There are several ways this is commonly done.

One is to reverse the SMT on your saw and use the miter fence to pull your wood through the saw rather than push it.

Another way is to move the Miter fence back, closer to the front of the SMT. This can be done by either drilling a new pivot hole near the front of the SMT and sliding the miter fence locking bolt to the very front of the slot – you should be able to adjust a small bit for square but you'll lose bigger angles cuts. The Sears 21829 saw, based on the original BT3000, has incorporated this and includes zero-stop fittings for zeroing this second miter fence position.

The third way (w/o drilling on your table) is to make a new miter fence of wood using a similar bolt hold down in the very front of the slot. Make some additional part that clamps over the front edge of the SMT to prevent racking but allowing small adjustment for square.

It has also been suggested a way to get a couple more inches, either for the stock SMT or one modified as just discussed, would be to lower the blade below the table top. Then place the material on the table clamped to the SMT, then raise the spinning blade into the wood and then advance the SMT.

[\[return to Top\]](#)

### ***My BT3x saw seems to lack power on long rips. What's wrong?***

When a saw is underpowered, the motor speed slows greatly and audibly labors during rip cuts. Frequently the wood may be burned by the slow feed rate or have saw marks along the edge. If kept laboring this way the belts may break, or worse, the motor may burn out from overheating. Many Forum members indicate that they have successfully cut long, deep rips in hardwood, so the BT3x is not intrinsically underpowered.

Power can be lost or misused under certain circumstances. If you are having trouble the following may help:

- Make sure your saw is not starved for electrical power (see question on [power wiring](#) for the saw) – no extension cords, (or if you must, very short, heavy duty-12 gage- extension cords less than 10 feet long), dedicated 15-20 Amp circuit with no other loads.
- Make sure that nothing is binding or hanging – Rip fence must be aligned, properly, in particular, also the splitter/riving knife, sometimes the wood catches on the plastic piece at the end of the fence or on the outfeed table or even the throat plate.
- Make sure your blade is clean and not fouled with sticky resin as often happens after cutting pine. Try soaking the blade in Simple Green (a commercially available cleaner) and scrubbing to clean it. A good 24-tooth ripping blade will rip faster and more efficiently than most 36, 40, 60 or 80-tooth blades because it has deep, wide gullets to carry away the material, instead of balling it up in small gullets.

[\[return to Top\]](#)

### ***What power and wiring do I need for my BT3x?***

The saw only uses 120V, it may be AC 50 Hz or 60 Hz. It is rated at 15 amps. It is recommended that the BT3x have a dedicated grounded line with a circuit breaker of 15 or 20 amps (not larger!) and branch wiring of 14 or 12 gauge. Do not share the line with other operating shop vacs, tools or lighting, if at all possible.

Avoid extension cords. If used, keep as short as possible and use ones with #12 gage wiring.

[\[return to Top\]](#)

***Why does the BT3x have a Universal motor and what does that mean to me?***

The motor used on most contractor saws is an induction motor. The BT3x uses a universal motor. The universal motor has several advantages – it is smaller and lighter and cheaper for the same power. This fits the general philosophy for the saw. Most handheld tools use a universal motor – routers, for example. The motor fits entirely within the saw housing (instead of hanging out the back) and allows one of the largest depth-of-cut in a 10” table saw.

The possible drawbacks to the universal motor are that it cannot have dual windings (hence it cannot be dual-wired for 110/220V), and it uses brushes that wear. Hence it is less suited for continuous duty and better suited for intermittent duty as a hobbyist would exhibit. Unless you are working in a production cabinet shop, the duty cycle limitations of the saw should not be a problem. If you are continuously ripping 8’ long 4x4s, you probably need to give it a rest, maybe about 50% of the time or more. One weakness of the BT3 is that there is no thermal cutout protection for the motor. ***This is very important – if the saw is laboring or slowing and getting very hot, you need to stop and let the saw cool off. If you see smoke its too late. Make sure when doing strenuous cutting that the saw is properly supplied with electricity – use short, heavy gauge (12 ga.) wiring (if an extension cord must be used) and have a dedicated 20A circuit preferably. Have a clean, sharp blade with a thin kerf and proper tooth configuration for ripping to limit strain on the motor.***

The BT3 universal motor idles more noisily. See question on [motor noise](#).

[\[return to Top\]](#)

***How do I replace belts in the BT3x?***

The BT3 has a very short "throw" between motor and arbor and uses two special wide, cogged, multi-v belts that provide excellent power transmission and impeccable smoothness. The BT3 passes the nickel test right out of the box, kinda impressive for a lightweight "benchtop" saw. BT3 belts rarely need to be replaced. They serve as a protection in case the blade is stalled or jammed, to protect the motor. Belts, Ryobi P/N 662329001 package of two (~\$30), are available through the parts dealers listed under the question about parts and accessories. They are not easy to install. Belt installation can be helped immensely by putting them in boiling water before installation – it makes them more pliable and stretchy. You will need some non-sharp tools to help walk the belt onto the pulleys. If you do need to replace them, see below:

See the [replacement procedure](#) in the articles section of [www.bt3central.com](http://www.bt3central.com) (now reproduced just below)

This text is from a post on the Ryobi Power Tool Forum by Ed Ellickson titled "belt replacement" dated 9/13/98.

When I broke my belts installing a zero-clearance throat plate, the search engine was down. The tech place where I bought the replacement belts didn't provide much help or direction. For those who have the problem later on, here is the procedure I figured out, which is quite fast:

1. Unplug the saw.
2. Remove the six screws holding the angled cover onto the left side of the saw and remove the cover.
3. Remove the seven screws holding the dust cover [e.g. blade shroud] on, then remove the cover.
4. Remove the saw blade, guard, arbor spacers and nut.

5. Remove 4 screws holding the slides together.
6. Remove the 2 screws holding the arbor bearing in place. Pull straight out on the bearing assembly, exposing the two shafts and belt area.
7. Fabricate a "spoon" tool. I used a foot-long piece of regular electrical conduit and made a 1" cut lengthwise through the middle of the tubing, then cut off one of the halves, creating a hollow tube / spoon lever or prybar.
8. Start the first belt with about 1/3 of its edge halfway onto the upper shaft (left side), and hold it with your left hand. Stick the spoon tool through the free end of the belt (hollow side toward the shaft) and using a right-handed circular motion, pry the bottom of the belt onto and around the lower shaft, while turning the upper pulley clockwise with the left hand. Once the belt is started on both shafts, prying with the tool in a circular motion on the lower shaft will stretch and work the belt back onto the shaft. Then, turn the upper shaft with a wrench or other tool.
9. Repeat this process 3 or 4 times until the lower belt is seated. Remember, while you are turning the upper shaft with a wrench, as long as you hear a "snapping" sound, the belt is still moving back onto the upper shaft.
10. When the first belt is all the way to the rear of both shafts, repeat the process with the second belt. When done, the second belt will be exactly flush with the outer edge of both shafts.
11. If you haven't done so already, clean off all sawdust, etc from everything.
12. Using a dab or two (small) of wheel bearing grease or Vaseline, align the two flat shims onto the motor. (You should be able to tell the correct orientation by the wear marks on the shims). The two shims with the 90-degree bend mount onto the arbor bearing housing; again their proper orientation can be determined by friction marks.
13. Working carefully, just start the two screws holding the arbor bearing onto it's back plate. Then start the four screws holding the entire arbor bearing assembly. When all are started properly, tighten the two bearing screws alternatively, then tighten the other four screws last.
14. If still needed and you are careful, mount the blade and the zero-clearance throat plate. After checking that the blade rotates freely, not binding on the throat plate or saw body, plug in the saw, turn it on, and by gradually raising the blade, cut the slot in the throat plate while you can see what's going on. (Wear glasses, because plastic bits will fly everywhere!)
15. When done, re-install the dust catcher and the end panel and you are done!  
Total time 20-30 minutes, depending upon speed and dexterity.

One hint I have seen is to thread the arbor nut back on the arbor with the blade removed. You can then use a 3/4" socket and a ratchet to turn the arbor shaft which will make it much easier to walk the belts on than turning the assemblies by hand alone.

[\[return to Top\]](#)

#### ***Has anyone tried replacing their BT3x drive belts with link belts?***

The "link belts" were invented to help reduce vibration and improve power transmission on machines using the older type of conventional v-belt, especially those with long shaft-to-shaft

distances, since they produce so much vibration by design. But my BT3 easily passes the nickel test: I can cut wood on my saw, and afterwards the nickel will still be standing. There's no reason to try and make it smoother. The link belts *are* easier to install, but they simply won't fit in any case since the BT3x belts are custom.

The BT3 Belts are reinforced polyurethane and made by Bando. The ID on the belts says "Bando 106H NJ". "106" implies the belt length of 10.6 inches; "H" is polyurethane. However, according to the Bando catalog, this may not be a complete number as it needs to spell out the number of ribs.

[\[return to Top\]](#)

### ***Is the BT3 louder than other saws? How loud is the BT3?***

Granted the BT3 with its universal motor does run louder than a similarly powered saw with an induction motor. It's been described as a high-pitched whine. Probably it has to do with the motor RPM and brushes used. But that's when its simply idling. In practice, the actual noise of the blade cutting wood is usually much louder than the noise of the motor and bearings, thus, the BT3 is really no more noisy than other saws in actual use. Either way, ear protection is recommended. Finally, when used with a shop vac for dust collection, the shop vac is also louder than the saw. The point is that it's not really a big negative unless you are looking for an excuse not to get one.

[\[return to Top\]](#)

### ***I'm having trouble with my Power Switch...***

#### ***My Saw won't turn off...***

#### ***Was there a recall on the BT3000?***

There have been three power switches supplied on the BT3x saws.

There was a federal [CPSC recall](#) on early BT3000 models with the first switch style about the first few years of production. The old switch can be identified by its having a green "ON" button and a separate red "OFF" button and no safety cover. The power switch was a bad design. You should contact Ryobi customer service (contact Wayne Hill of Ryobi at toll free 1.800.944.9577 for a new Switch, he may want your saw's serial number). They will send you a new switch if you have one of the old saws, just for calling, even though your saw is more than 10 years old!

The second switch design was used on most of the BT3000s, the Craftsman 22811N and the early BT3100 saws. This is the switch with a red hinged cover and a rocker switch below the cover. This was a very safe design – you had to lift the cover to access the rocker switch to turn the saw on, and you pushed anywhere on the switch cover and it turned off. The cover had a loop so the switch could be locked out. There were few if any complaints about problems with this switch.

The most recent design on what is being called the BT3100-1 is a switch you lift the lever to start and push to turn off. There is a yellow insert you can remove which effectively locks the switch by disabling the lifting part so it can't be started. There have been numerous reports of BT3100-1 switches that won't turn off (the switch handle goes to the off position but the contacts are stuck on). If you have this problem this is a safety hazard. As a temporary solution you can move the wiring to the second set of unused contacts on the switch. Then you should contact Ryobi customer service (contact Wayne Hill at toll free 1.800.944.9577 of Ryobi for a new Switch, he will want your saw's serial number). Wayne says a new switch was made available about mid-2005 (so they'll replace the switch for free if you have a unit with earlier than May 2005 date

codes) and has a stronger spring and improved contact plating to resolve the problems. He says the solution was worked out with the CPSC monitoring the situation. If the problem is not worked out to your satisfaction (e.g. a new switch from Ryobi at no charge) I suggest reporting it to <https://www.cpsc.gov/incident.html>. Here's the scoop on the BT3100-1 from Ryobi:

The BT3100-1 utilized a switch with a removable yellow key. This model experienced problems with saws in the 2005-2006 date code range. The switch contacts were inadequately plated and the release spring had insufficient "power" to break the connection when the contacts arc welded due to increased heat from the inadequate plating. The switch can be replaced at no charge by calling 800-944-9577 or emailing [wayne.hill@ttigroupna.com](mailto:wayne.hill@ttigroupna.com) and leaving me a message with your Model number, serial number, Fed Ex address and a phone number.

The BT3100 was different in that it had a rocker switch behind a black swinging door that could be padlocked. No problems have ever been reported for a BT3100 switch. Craftsman model 21829 uses a similar switch which could experience the same problem. Ryobi models BTS15 and BTS20 also used a smaller ver of this switch and are also prone to contact arc welding. These models are also under extended warranty for the switch.

Wayne Hill  
Director Product Safety  
Techtronic Industries North America, Inc.  
Anderson, South Carolina  
800-944-9577  
[wayne.hill@ttigroupna.com](mailto:wayne.hill@ttigroupna.com)

Incidentally, on all the BT3 variants, the power switch controls the outlet on the side of the saw. If you use the outlet to run a vac as well as the saw you may be overloading the switch which is only rated for the saw load, not the saw plus vac. Some person has reported that the second and third switch type has an unused pole- that is, a second set of contacts, that can be used if the switch fails or to run auxiliary equipment.

[\[return to Top\]](#)

### ***How do I make the saw mobile?***

The castors supplied with the accessory kit are one way but generally regarded as a bad thing. This is because you have to raise one end to "wheelbarrow" the saw – its heavy and strains the rails (maybe). The amount you have to tilt to get the saw on the wheels and off the legs to roll is seemingly excessive.

There are commercial "mobile bases" or mobile tool bases sold. Ridgid Herculift (required drilling holes in the tool stand), HTC2000 (Amazon - \$45) with adjustable steel rail base, Harbor Freight – cheap but you have to supply wood rails and others including Delta, Sears, Woodcraft sell mobile bases.

Users have made many various forms of rolling tool stands/bases/extended wide table arrangements, many of which are pictured on the <http://www.bt3central.com/index.php?page=articles> site.

The Sears Craftsman 21829 model is the last remaining version of the BT3 available new and incorporates a compact fold up wheel system that adds to the cost but many owners have expressed a liking for. Once folded, the saw can be wheeled and when stopped it stands on end taking the least space for storage, a significant advantage for some.

[\[return to Top\]](#)

***My saw leaves black streaks on the wood; what can I do about that?***

***What Table-top treatment should I use and what should I avoid?***

The surface is anodized aluminum (BT3000) or powder-coated aluminum (BT3100) which will not rust. The anodized aluminum top can oxidize and sometimes leave black streaks on wood. To protect the top, the wood, and to make smoother feeding, periodically use Johnson's paste wax (which can be found in most hardware store's floor care section) to coat the top, let dry, then polish off. *Absolutely avoid all automotive waxes and spray-on furniture wax* that usually have silicone in them. The silicone will migrate and will end up on your wood causing finishing problems. Also, do not wax the rails and the miter fence faces.

[\[return to Top\]](#)

***Is the wide table kit worthwhile/what's in it?***

***How do I make Wide Rips?***

***What are/How do I get/How do I connect Extension Rails?***

The wide table kit is useful for making wide rips of 4' x 8' sheets of material. The BT3x stock configuration can conveniently make rips up to about 24" or so. More if you want to go to the trouble of reconfiguring the rails. The wide table kit extends the rails by up to 42". Basically the wide table kit is a set of back and front extension rails identical to the ones on the stock saw. Most people extend them to the right. Some people use extension rails cut in half (18-21") allowing 48" rips and not taking up so much shop space. The other half rails can then be resold to a similar-minded party.

The Wide Table kit #4730300 consists of silver extension rails that match the BT3000, plus some hardware - 8 T-nuts, 8 bolts, and 4 steel links - to fasten the rails end-to-end using the slots on the bottom and inside, and brackets to support a 22" x ~44" table. The part # for the BT3100 black-railed wide table kit is 4730301.

Sears 22811 could use the BT3000 WTK. The Sears parts site also has Front Rail 969117-001 for \$69 and Rear Rail 969924-001 for \$46. The 21829 has 48" rails (instead of the 42" of the BT3x) in Silver but the profile is more like the BT3100 black rails. There is not a 21829 WTK, but the rails can be had from Sears parts site, Front Rail 018211803 for \$41 and Rear Rail 0182011804 for \$37.

Since half-rails and rails from parted-out BT3xs appear regularly, note it is possible to work around the lack of hardware parts – and make one even better. Check out Rod Kirby's method using two aluminum angle irons approx. 1.5 x 1.5" x 6" long by 1/8" thick: Use the T-nuts and the bolts (four per angle iron) to fasten the angle irons flush to the bottom and inside of the front and rear rails. This should line up the original rail and the extension rail flush top and front as well, so the SMT, auxiliary table, the rip fence and micro-positioner can all be slid or mounted anywhere along the new length of the rails. Komatoast sells a improved kit on eBay and other people have made hardwood inserts that fit in the ends of the front and rear rails to align them.

The wide table kit does NOT include legs or table top. Nor does it include a scale. A set of matching legs is available, discussed further below. You can make a table top, discussed further below. If you don't want to make your own extension table top. The [Vacuum/float table](#) will fit this need exactly, with a couple of extra features thrown in.

When the BT3100 came out there were no wide table kits specifically for that saw so many continued to buy BT3000 rail kits. There is now a number for a wide table kit for the BT3100 that has black rails. But the many early adopters just bought individual replacement part front and rear rails as they became available before the kits. The main difference between black and silver rails is cosmetic and a very slight profile difference. The lip of the BT3100 front rail where the rule is extends further out (by 3/8") and drops a bit lower (1/4"). The only other difference, and it's really not worth noting most of the time, is that the 2 outside corners of the top small slot on the front rail are slightly rounded over on the BT3100 rails. The BT3000 rails have a profile that is more square. Those two little corners sticking up when connecting the BT3000 rails to the others will occasionally hang up a fence. A couple passes with a file will help quite a bit. The differences in the extended front when connecting the different profiles do not affect the fence movement.

So basically the profile difference does not stop any parts from being interchanged between saws or interfere with operation when mixed (e.g. accessories being slid down the rails). There are people using black/silver rails, silver/black rails. Even all silver rails on BT3100 when enterprising owners get a hold of two BT3000 kits and swap rails so they match cosmetically.

The Sears 22811 had rails virtually identical to the BT3000 rails in color, profile and length. The Sears 21829 has silver rails just like the BT3100 black rails – and identical in external profile but the walls are much thinner (1/16<sup>th</sup> vs 1/8<sup>th</sup> inch) and hence less strong although apparently good enough to do the job. Also 48" long vs. 42" for the original BT3100 and BT3000.

Sears 21829 rails used with BT3000/BT3100/ Sears 22811 rails may cause line-up problems using internal connectors since the internal dimensions are different but connectors using the outside T-slots should line up OK.

Virtually all BT3000/3100/22811/21829 rails have the top, inside and bottom T-slots of the same size and identical positioning. The rail surfaces for the clamps on the SMT, rip fence, auxiliary table, microadjuster etc. are all located in the same locations so that these rail-mounted items of any vintage will work on all the saws and rails.

Depending upon the length of your extension, you may need support legs and an extension table top. Neither is included with the wide table kit. There's a Ryobi Leg Set #4730305, but at \$30-50-something, it is easy to make your own legs from a few 1x2's or 2x4's.

A top may be required as well to support panels on wide cuts and keep the rails properly spaced along the length. You will need to provide a top made level to the saw top and the proper width (22"), mounted to the extension rails. A table top of 22" deep by 44" long by .75" thick is recommended in the WTK manuals. The length can easily be modified to suit (as can the length of the extension rails), but the 22" is sort of fixed by the space between the rails –some people have been able to squeeze in a bit more. The thickness is governed by how you attach the top to the rails, the kit gives you some brackets with adjustable height to do so there's also some leeway in thickness. Again, the jigs section has some samples, generally made from MDF, plywood, or old doors and counters. Here's the link to [Rod Kirby's extension table top](#). And another link to [Rob Ballard's extension table top](#).

[\[return to Top\]](#)

### ***Is the outfeed table worthwhile?***

The Folding Outfeed Table is an official Ryobi accessory for the BT3000, P/N 4730310.

Consists of a laminated table, pair of hinges that attach to the rear rail, and a single folding leg. I got mine for \$85 about three-four years ago when Lowes was clearing out Ryobi stuff. I'd say I'm very happy with mine. Follows the saw (on a mobile base) anywhere and requires little or no height adjustment to match the table height. Folds flat against the rear of the saw when not in use. Goes up or down in seconds. Leg height adjustable for leveling. Had to modify the factory hinge position a little so it did not interfere with the SMT. It is heavy – if your saw is mobile it adds a lot of weight to the back side of the saw - you don't want to be using the Ryobi casters to wheel around a saw equipped with the Folding Outfeed Table.

I'm not sure where you can get them now. I don't think I ever saw them at HD, but you could have ordered one through them a while back. They still show up all over now and then – surplus, Cummins, eBay, Home Depot old stock, special order. Quick Fold Table Ryobi #4730310

Of course it's possible to make an outfeed table on your own. Many people connect them to the rear rail of the BT3x saws and other make them freestanding. For all saws its important to match the height of the saw and make especially sure the front doesn't catch on the wood leaving the saw. For the BT3x saws you must make sure that it will not interfere with the travel of the SMT.

[\[return to Top\]](#)

#### ***Is the micropositioner worthwhile? What is it?***

“The micro positioner is one of the best "options" you can get for the saw and is the definition of simple. I got mine for \$10.00 from Cummins (I think the Sears/Ryobi price was \$29). There is also a nice one in the jigs & fixtures section that Rod Kirby made. I use mine all the time to "sneak-up" on the exact measurement I need.”

As it comes from the factory, the device body is set up to mount on the rail outboard of the fence. It slides easily but when used will lock to the rail with a thumbscrew. There is a knob on the right side and a threaded rod going through the device that terminates in a hook on the left side. This hook goes under the right-hand edge of the black rip fence “T”. When the rip fence is unlocked turning the knob will easily and smoothly push the fence right or left 1/16<sup>th</sup> inch per turn. As the knob is marked with four distinct lines you can easily adjust it by better than 1/64<sup>th</sup> inch increments (or .016” per mark or ¼ turn as I think of it).

The knob being on the right and the hook on the left limits how far to the right of the blade you can set the fence. You can remove the snap ring on the end and reverse things so that it will mount inboard of the fence to solve this problem. It takes about 30 seconds to do. The height of the whole device is such that it is lower than the table top so it does not interfere with material feed.

Hint: the thumbscrew is sharp and will put serious dents in your rail if tightened. I suggest tightening it very gently; the rip fence will move with very little force when unlocked.

They are still available sometimes from Sears (labeled Craftsman) and sometimes from Cummins or on eBay.

Rapid Set Micro-Positioning Device Ryobi #4060305.

[\[return to Top\]](#)

#### ***Is the Vacuum/float table worthwhile?***

This is a rare Ryobi-designed accessory (p/n 4730320). It mounts as the table top with the extension rails. It is a thin box with a perforated top. It has a vacuum hose port and an internal plenum gating arrangement so that a shop vacuum can be attached. If you attach the exhaust, the top will provide a nearly frictionless surface for large panel cuts. If the vacuum is attached, then the top will hold down items for sanding and routing while collecting dust as well. The internal gating allows adjusting the area of the top that is “active” so as not to lose pressure/vacuum through large unused areas of the top.

It has not been really popular, some say it is best to use a vacuum with a separate motor cooling fan like the old Ryobi vacuum (no longer available) or the Fein turbos since it will be sucking on a closed end with little air flow. Other complaints have been that the top is flimsy, but others have said it works as advertised and they like it. You need a wide table kit to use this (comes with hardware to attach between the rails). Every once in a while they turn up.

[\[return to Top\]](#)

### ***What is the Miter Clamp?***

This accessory clamps items being crosscut on the SMT, to the SMT. It is adjustable to clamp thin to thick items, and mounts to the top of the miter fence. It has a special compound action which is unique to miter clamps – the knob that closes the clamp not only pushes the workpiece against the SMT surface but it also applies an inward force to push the workpiece against the face of the miter fence to ensure its flush to the fence. It is easily removed if necessary.

This is nice and works well but it does have one drawback – if the fence is only moderately tightened to the MST and the clamp is overly tightened, then the possibility exists that the fence can literally be pulled of its position by a couple of degrees. ***So be careful about over-tightening the miter clamp.***

The easiest way to get one is to get the accessory kit. When bought alone it was around twenty-something dollars.

[\[return to Top\]](#)

### ***Is the Router kit worthwhile/can I get the individual parts in the router kit?***

The router mounting kit gets mixed reactions. There are those that like it and those that poo-hoo it. Once available as a stand-alone item the kit cost about \$60 street price. Now it is generally received as part of the \$100 accessory kit that was often given free as a Ryobi promo during the BT3100 greatest sales period.

Certainly as a free item it is worth at least having. In the Kit: A ¼” aluminum plate, parts to clamp the auxiliary table to the rear fence so its locked at both ends, several red plastic insert filler disks, and a set of split fence parts – plus nuts and bolts and guard and dust port to build a router fence on the BT3 rip fence. You mount your router to the plate using holes in your router’s base, then hang the plate beneath the auxiliary table using four supplied screws from the top into threaded holes in the plate.

Alternatives: It’s also fairly easy to make most of the critical parts yourself and mount a router without the aid of the kit. Some people have mounted a router in the center of the table they’ve built on the wide table kits, either with or without parts from this kit.

Pros: this router table takes up less room than any other router table and may also be the cheapest thing you can get. It's definitely serviceable. Even if you get a nicer router table this can still serve as a backup or second table (for example when you have two setups). If you have the micro-adjuster for the saw rip fence, then you have a micro-adjustable router fence, too.

Cons: The fence has been accused of being junk; you could say the parts are a little cheesy. The auxiliary table needs to be pulled away from the main saw table some to allow the router motor clearance. There are always issues with setup and breakdown of machines used for two purposes (maybe buy a spare rip fence?). Big panel-raising bits won't fit through the hole in the auxiliary table. The table space is a little small. The router mounting plate only accepts Ryobi/Ryobi-made Sears routers that use the Ryobi hole pattern, most other popular routers require some mods to be made to the plate to mount them, but it can be done.

So if you're looking to a cheap, space-saving way to start with routers, use the BT3 auxiliary table. If or when you become a serious router user, get a dedicated table. The BT3 also makes a great spare or second router table for those with lots of routing going on.

Individual pieces from the router kit can be ordered as separate items from the [Ryobi parts sources](#). People have ordered the little red rings of different sizes to fill the hole in the center when using smaller bits, they seem to be inexpensive and they are hard to make.

The Ryobi part numbers for the little red rings are:

Throat Plate 1/2inch (1) 975424-002

Throat Plate 1 inch (1) 975424-003

Throat Plate 1 1/8 inch (1) 975424-006

Throat Plate 1- 1/2 inch (1) 975424-004

Throat Plate 2 inch (1) 975424-005

But they are like \$2.34 each at the Sears parts site.

### ***Can I mount my router in the BT3x Auxiliary table?***

#### ***What Router will fit the table?***

The hole pattern in the plate in old BT3 router mounting kits fit only Ryobi routers. These have the large center hole flanked by four smaller holes. It's said that new Ryobi router mounting plates come predrilled with "universal patterns" which may have 10-12 holes. If you do not have a Ryobi router and have an old plate it is a simple matter to use the removable scuffplate from your router as a template to mark and drill the appropriate holes in your mounting plate.

Aluminum drills easily with a sharp twist bit and slow to moderate drill speeds but you should use a center punch to start the hole to prevent bit wander. Using a smaller bit then enlarging the hole also keeps the hole centered. If your bit is sharp the aluminum will peel off in thin strips and make a clean hole. A dull bit will cause chips to come off rather than strips. Most routers mount with 3 or 4 holes and flat head screws (usually you can use the ones used to mount the plastic scuffplate you removed). Countersink the plate from the top for the flat head screws. You can also make a mounting plate from plastic or plywood. [Patterns for the plate](#) are available at BT3central.com. Note that big bits, like Horizontal panel-raising bits, are bigger than the hole in the BT3 auxiliary table. This can cause some problems, but generally, you should only use those bits with variable speed routers rated over 2 HP anyway.

The newest Sears clone, the 21829, has a different auxiliary table. It comes with most of the router fence accessories. The router table has two miter slots for use with the router (but not recommended to use with the saw because there is no guarantee or adjustment of parallelness with the blade). The biggest issue is that the mounting plate utilized on the BT3x and the Sears

22811 has been changed so that there is no plate; the router mounts directly to the table using bosses cast into the table. That means that there are no bosses at the points for other router mounting holes. However, some users report there is enough metal into which to drill, countersink for flat head screws, and hang a router, if you use a router other than the Sears/Ryobi models that utilize the given hole patterns. Another suggestion would be to use a 1/4" thick plate that mounts to the existing bosses and then mount the router to the plate.

### ***What router do you recommend?***

Generally the Ryobi and Craftsman and Skil routers are considered beginner's routers and do not have the features and quality of the more expensive routers below, but they are cheaper. Note the average number of routers owned by BT3Central survey respondents was 2.5 routers so it's not uncommon to buy second and even third routers as you become more experienced.

The question often arises which router and these seem to be the top-quality forum favorites (in alphabetic order) with multiple interchangeable fixed and plunge bases, electronic variable speed and 1/2 and 1/4" collets, and around 2 to 2.25 HP and priced around \$180 to 250:

- Bosch 1617EVSPK 2.25 HP
- Dewalt DW618PKV
- Makita RF1101
- Porter Cable 893 and 895VSPK

The Ryobi RE1803BK with 3 bases seems to be a popular value-priced alternative router with features like those above for prices in the \$90-120 range at Home Depot. Rod Kirby highly recommends the Triton router. The Porter Cable 690 series was the standard once but even with its current improvements, its basic design dates back 20 years or more, so, unless you get a great deal, get one of the newer models above.

The following are forum favorite top quality plunge-only models and may have higher power and weight (making them less suitable for hand-held work when desired) than the above mentioned:

- Hitachi M12V – 3 HP very big and powerful
- DeWalt DW621 and 625 (2 and 3 HP, respectively)
- Porter Cable 8529 2 HP

For router bits, individually the Whiteside bits are the very best and you will pay for them. For value and service and free shipping, [MLCS](#) is very good/highly recommended for individual bits, and multi-bit assortments. On the BT3 website, people are divided by whether you should buy bits one at a time or in kits... the argument for is that the multi-bit kits run 2-5 bucks per bit and are the same quality as the single bits and therefore even using half of them is economical as well as having a choice and no wait. Those against say it's better to buy as you use.

If you buy bits and have a router that can take them, its highly recommended to buy 1/2" shank bits whenever practical for their added strength and stability.

[\[return to Top\]](#)

### ***What Dados are recommended - general info and specific models?***

The general consensus for the BT3, is that Stack type dados (Two outside blades plus a number of inside chippers to fill out the width) are generally better than the wobble-type dados (a single or double blade tilted at a small but adjustable angle to cut a swath). A good stack dado has a perfectly flat bottom whereas the wobble dado blades may leave a bottom a few thousandths

deeper in the middle. The wobble dados are also very difficult, but not impossible to mount on the BT3 because of the wide hub and the blade shroud.

The stack dados also work nicely in that they have a number of 1/8" and 1/16<sup>th</sup> plates, you add plates in the stack to get standard widths you want in 1/16<sup>th</sup> increments. Fine adjustments can be made with additional shims.

The most popular sizes for stacked dados are 6" and 8". Arguments for the 6" are lower cost, and hardly anyone cuts a 1-1/2 to 2-1/2 inch deep dado that the 8" will do over a 6". It's also argued that a 8" dado, being heavier and cutting at a bigger radius, will require more running power and stress the saw more, but these arguments are questionable.

Generally the 6" size is considered the best size for the BT3x. It handles most practical depth cuts and it is also the size recommended by Ryobi. The 8" dados work but have very little clearance, cost more and may limit maximum dado size.

The exact problem with 8" dados is this: With the clearance problems you must leave the smaller 1/4" spacer on the arbor next to the motor (with a 6" dado, you can remove the last 1/4" spacer and place the dado all the way to the right on the arbor). All is fine up to about 1/2 inch or 5/8" stack of dado blades. Once you try to put more than about 5/8" (like 3/4" or 13/16") then this can push the leftmost outer blade onto the threaded part of the arbor. Then that blade will be off-center by about .015" (the difference in the thread O.D. to the arbor O.D.) and the cut will have a non-flat bottom on that end. You may also have to leave off the outer blade washer (not recommended) as the nut will be on the very end of the threads. With a 6" dado, you can remove both the arbor spacers and put the full 13/16" stack on and still have the outer blade washer for maximum safety and all the blades on the flat, non-threaded part of the arbor for excellent bottom flatness.

The rule of thumb for the spacers is, if any of the dado blades are over the threads, take off spacers, if the nut won't tighten against the blade stack and washers because it runs out of threads, then add spacers. After assembling a dado stack, **always spin the stack at least one turn by hand to make sure that no blade hits anything when it turns.**

The SD206 by Freud is a quality 6" dado blade set used by a lot of BT3'ers and can be had for about \$75. Some have been happy with the Avenger 6" stack (Summer 2006 - No longer in production – in 2008, Avenger seems to have been resurrected as Oshlun) for around \$50 but there are a lot of reports of not stacking up to the exact expected width. If you buy another brand make sure it can handle the BT3's higher than normal 5000 RPMs; flying carbide bits at 100 mph are not fun to dodge.

The 6" dado from Vermont American is inexpensive (around \$30), works OK, but it is just HSS and not carbide tipped so its life will not be so great.

Avoid the tempting inexpensive 8" \$20-30 dado model(s) from Harbor Freight and other importers– they are not rated for high enough speed, are of questionable quality, and the 8" has the fit problems noted above.

[\[return to Top\]](#)

***How do I install a dado on the BT3x? There's no room on the arbor.***

The BT3 has two blade washers, one on either side of the blade, with flats to prevent them from spinning. There are two more spacers between the right washer and the motor. One is 1/2" and the

other ¼" wide. These can be removed by just sliding them off the arbor when the blade and nut are off. They need to be removed for wide dado stacks. You should remove as many as needed to assure that the leftmost blade of the stack is not on the threaded part of the arbor (a common cause of uneven dado bottoms) and you have the nut fully engaged on the arbor. But don't remove too many or the dado blade may strike the motor housing. If you use an 8" dado then you will have to leave at least the ¼" spacer on, this leaves less room for the widest stack. Once the stack is assembled, spin it by hand to make sure there is clearance and it does not strike the housing. When you replace the regular blade on the arbor make sure you replace the spacers. Don't forget the arbor nut is a special left-handed nut. Also note that the arbor nut should be snugged firmly but do not overtighten. The rotation of the blade tends to tighten the nut. Sometimes when the arbor gets crowded, people leave off the outside washer (the one with the flats) and just put the nut against the outside blade; some people don't think it's a good idea, but it's done.

[\[return to Top\]](#)

***Why do my cuts with a Stack Dado not have a flat bottom?***

If using a quality dado, this is caused by not removing enough spacers from the BT3 Arbor (see above question). As a result the leftmost dado blade is riding on the threads of the arbor and sits a wee bit low (and off center). So as it spins it will cut a deeper slot than the rest of the dado. A cheap dado may also cause this problem if a plate's arbor hole is too large or non-concentric with the blade by a few thousandths of an inch.

[\[return to Top\]](#)

***What are the sizes and threads of the major hardware bolts and nuts in a BT3x?***

The screws that hold down the throat plate in either set of holes is a 10-24 thread. The SMT miter fence hold down bolt is a 5/16-18.

The wrench for the arbor nut is ¾" and the wrench for the riving knife mounting nuts is ½". Any normal combination or box-end wrench will do to get the arbor and riving knife nuts off, however you almost need one or the other of the supplied thin wrenches that will lock the arbor using the forked end opposite the hex end.

If you lost your wrenches, you will find it highly desirable to have an arbor lock wrench; either of the supplied wrenches will do this with the forked end. To work for the Arbor lock function, the wrench needs to be ¾" but the wrench cannot be wide than about 1.28" and not thicker than 0.170", and must be flat, not bent. It's been suggested that you can grind down a cheap ¾" wrench or buy a tappet wrench (which are thin versions of wrenches). But in general, tappet wrenches are still about 0.2" or more thick (too thick) and you will also have to grind down the sides since the wrench heads will be too wide. Sears has the replacement wrenches for only about \$5-10, probably the best bet.

All the machine screws, bolts and nuts listed in the parts section of the manual show that they are SAE, based on fractional inch and National-Fine or National-Coarse threads commonly used in the U.S., i.e. not metric.

With the exception of the eccentric head screws used for aligning certain parts (notably the SMT and zero stop) you should be able to find all bolts and nuts for this saw at your local hardware store. Even the 5/8" left handed arbor nut is standard for table saw and circular saw arbors; replacements are commonly available at hardware stores or tool repair sites.

The manual and parts list for the BT3000 can be found here. Most of the screws and nuts should be identical on the BT3100 and the Sears 22811 and 21829 for the same function.

<http://www.bt3central.com/index.php?page=articles/files/manual.pdf>

[\[return to Top\]](#)

#### ***Has anyone moved the power switch?***

Several people have said they prefer the power switch on the left instead of the right for reasons that seem to deal with accessibility and safety when standing to the left of the blade.

There have been instances where the switch has been removed and it or an alternate mounted in a junction box on the left of the saw. No reason it can't be done if you are handy with electrical and mechanical stuff. If you change the switch it might be safest if you replace the switch with a magnetic switch designed for machinery so that if power is lost the switch will revert to the power-off state and not start when power is re-applied to the saw.

[\[return to Top\]](#)

#### ***What are the dust collection options for the BT3x?***

The BT3x is unusual for its dust shroud around the blade. This directs at least part of the dust stream to the port in the rear. The bag supplied in the accessory kit is generally considered nearly worthless although some salvage the elbow fitting. Most people attach a shop vac to the port using 2.25" hose. The 2.25" hose from ShopVac, Ridgid and other manufacturers fits the dust port quite nicely. This does a fair job of collecting dust. Although it compromises the wiring rule that says you must only have the saw on the circuit, many people use a Sears autoswitch (\$15-20 Sears item #00924031000, Mfr. model #24031) that plugs into the wall outlet. The shop vac and the saw plug into special outlets on the switch. When the saw is on, the vac will turn on automatically and switch off a short delay after the saw turns off. The iVac automated switch sold at Woodcraft <http://www.woodcraft.com/Catalog/ProductPage.aspx?prodid=28298> (\$40-45) solves the power issue by plugging into two outlets on separate circuits, running and sensing the saw from one and powering the slave (Vac) outlet from the other circuit.

Other people use Dust collectors with significantly more air flow to their shops and plumb those to the BT3x dust port, an under-unit port, and a port on top of a modified/custom blade guard to catch the dust. One member, Lee Styron sells an improved "[Shark Guard](#)" guard with a top dust port.

There's some disagreement as to whether ZCTPs add to or hinder dust collection. Some have added holes to the ZCTP (dubbed the swiss cheese throat plate) to aid in under table suction picking up dust carried above the table by the blade gullets and others have resorted to top dust ports. Others have added additional shrouds and covers to make the under-the-saw dust suction higher by limiting airflow except around the blade area. Watch the motor cooling in this case!

[\[return to Top\]](#)

#### ***Where do I get T-nuts to use in the rip and miter fences and rails?***

One of our forum regulars has had machined very nice T-nuts to fit virtually every slot in the BT3x.

<http://t-nuts.com/index.php> is the web site. If you enter through the link from [www.bt3central.com/forum](http://www.bt3central.com/forum) you can get a discount. There are nuts for four sizes of BT3 T-slots found including the bottom rails, backside of front/rear rails, the left and right sides of the Rip

fence and the front and back of the miter fence. Individual nuts and bolts are sold as well as kits of assorted sizes.

Ryobi sold a User Kit (assortment of the most popular fasteners for your BT3100) Ryobi #4050300. This may still be available special order but it is generally considered a much poorer deal than the T-nuts mentioned above. It ran about \$8 and the only thing inside most people wanted was the 4 or 6 T-nuts it contained.

Other solutions abound including standard or modified (by grinding) toilet bowl bolts, metal rectangles drilled and tapped, and other do-it-yourself concoctions.

[\[return to Top\]](#)

***Why isn't there a miter slot on this saw? How can I get one to use miter slot accessories?***

The Sliding Miter Table (SMT) provides the basic function of a miter slot used to crosscut wood. Many agree it does a better job than a miter slot and miter gage, chief attributes being the enlarged angle scale, and the locked-on sliding table. However there appears to be a sizable group that likes to use conventional and upscale miter gauges like those from Incra.

There are also widely available or DIY jigs, like tenon jigs and crosscut sleds designed for miter slots. Most accessories and jigs can be reworked to work with a SMT. If you must have a miter slot, then Ryobi sells a miter slot table (MST, Ryobi Part number 4060310) (also included in the accessory kit) which mounts on the left side of the saw table (which moves the SMT further left from its usual left spot). It has two slots. Some enterprising people have also mounted one on the right or made extension table tops that they routed for slots or mounted additional miter slot tracks into. They show up on eBay frequently for around \$20-30.

[\[return to Top\]](#)

***What's the little black button on the bottom of the Miter fence for/Why does my Miter fence not stay locked in position?***

You must have the little black pivot post on the bottom of the miter fence properly engaged in either hole A or B (on the left or right edge of the SMT, respectively). If you don't do this then your miter fence will wander around and not cut right angles. This will also make the angle scales work properly.

You must use one or the other pivot points, you must put the little black pivot on the bottom of the miter fence into either A or B. I recommend the using the pivot hole on the right (I guess that's B). Do NOT engage the button into the long slot in the middle of the SMT.

The beauty of the SMT Fence is that it is locked into position at two points - the pivot and the center under the knob. This makes it a solid reference for cross cuts.

Incidentally there's a little pop-up tab on the left side of the SMT called the Zero Stop. When flipped up it will stop your miter fence at a preset zero angle setting. It is possible to adjust this using the concentric screw in the center of the stop. Be careful, the zero stop is made of a brittle material. Slamming the miter fence into it has broken more than one zero stop.

[\[return to Top\]](#)

***What's the orange thingy on the Miter fence for/Why are my Miter cuts off by two or three degrees?***

Don't use the back edge of the miter fence to line up with the angle markings on the SMT. You must have and use the little orange thingy on the back of the miter fence.

Slide it along the rear of the miter fence until it lines up with the angle scale opposite the chosen pivot hole. The back of the orange thing indicates the angle. Remember to read the angle from straight overhead and to check your angles until you have confidence that they are right.

[\[return to Top\]](#)

***Where does the washer go in the SMT fence assembly?***

It goes under the knob. If you put it under the table or under the fence you will have a lot of problems keeping the fence in position.

[\[return to Top\]](#)

***I stalled the saw while cutting heavy wood or with the blade jammed. Now the blade does not turn. What do I do?***

If the blade does not turn, probably one of two things has happened. Either you have fried the motor or you have burned out the belts. Usually the belts give way when the blade is jammed. The motor may burn up in extended use doing long, deep rips, especially if not getting sufficient voltage due to long extension cords, overloaded branch circuits.

If you can hear the motor running, but the blade does not turn or it turns very slowly, then you have broken the belts. If the belts are shot, then a new set (there are two special Ryobi-only V-belts used) will cost maybe \$20 and will take 2-3 hours to replace. You can console yourself while doing this that the belts protected the \$180 motor. See the question on how to replace belts.

The BT3's universal motor has wear-parts unlike an induction motor. The brushes are carbon contacts that contact the rotating armature to provide power to that part of the motor. It's not uncommon that these may arc from time to time – you can see it in a darkened room. A very used motor can wear out the brushes – it will operate intermittently or erratically and even damage the motor when these are worn too far. Turaj indicates how to check the brushes:

On each side of the motor there is a plug (a bit smaller than a Quarter). With a small screwdriver (or a coin) unscrew them until they pop out (there is a spring pushing the brush). Take them out, remove the saw dust (both brush and the motor) and check the brush. There should be a mark showing the minimum required (about 1/4"?). If all OK, just push them back in and screw the plugs back.

Big Tim adds

Be sure to put the brushes back in the same holder they came out of and in the same orientation, if you don't, they'll most likely arc like crazy until they wear in again.

If the motor is burned out you will usually smell it and maybe see smoke (but sometimes belts going out will also emit a puff of smoke). A replacement motor from Ryobi costs maybe \$180, which is well over half the cost of the saw, new. It's a custom motor. Alternatives to the Ryobi-supplied replacement include

- Finding a motor repair shop that will rebuild it for around \$100 (try the Yellow pages under "Electric Motors-Repair"; call and ask if they can rebuild a 15-Amp universal motor)

- Finding someone selling one on the forum or eBay – make sure it’s the 15 Amp version and not the old 13 Amp version – even if you originally had the 13 Amp version (might as well upgrade for the same effort).
- Selling the remaining parts of the saw on eBay and buying a new saw. This is surprisingly the best answer for many since the parts of a BT3x bring more than the purchase price of the saw even if the motor is missing. “Parting out” a BT3x works because the parts are for the most part very modular, light, easy to ship and the saw itself is so popular, with many members making jigs and sometimes breaking parts of their own. Sometimes users moving to a new saw will simply part out the saw and get more money than selling the whole since resale prices are so low as pointed out elsewhere.

[\[return to Top\]](#)

### ***Has anyone put two saws together?***

Curiously, several forum members have actually done this independently. The first owner to do so dubbed his saw-pair the “Frankensaw”. The saws being so inexpensive and modular makes this quite affordable and easy to do.

Basically two BT3x saws standing side by side can be connected at the end of the rails the very same way that the [extension rails](#) are connected. Doing so gives a nearly 7-foot wide saw with huge flat worksurface, huge 6’ rip capacity, ability to mount the 2 SMT or 2 Aux tables anywhere along both rails and space to mount two routers. You also get two saw motors so one can be dedicated to a crosscut blade and the other to a dado or rip blade. It is possible to build the Frankensaw using the provided stands, or better, build a dedicated wide stand with a flat torsion box base.

[\[return to Top\]](#)

### ***Just why are BT3x users so curious?***

Why do you want to know?

[\[return to Top\]](#)

### ***Some Ryobi part numbers:***

These Numbers are for the BT3000 accessories and repair parts, mostly – Not sure if all of them are still available but many still are available from Ryobi’s parts suppliers. Also try plugging the Ryobi part numbers into the [sears parts website](#) as many of them are available.

Wide Table kit #4730300 (silver for BT3000) and #4730301 (black for BT3100) (This is the rails and mounting hardware only)

Leg Set #4730305 (this is the legs for the wide table kit)

Long Miter/ Rip Fence #4060300

Quick Fold Table #4730310

Table Clamp Set #4080330

Stop Block Kit #4060330

Accessory Table #4080300

Rapid Set Micro-Positioning Device #4060305

User Kit (assortment of the most popular fasteners for your BT3100) #4050300

BT3000 Stand #4010300

Casters #4010330

Miter Slot Table #4060310

Dust Bag #4070300  
 Dado Throat Plate #4070330  
 Miter Clamp Kit #4710300  
 Air Flotation/Vacuum Clamp System #4730320  
 Router/Jig Mounting Kit #4950300 and 4950301  
 Router Mounting kit Throat plates/inserts (red):  
     Throat Plate (1 in.) #975424-003  
     Throat Plate (1-1/2 in.) #975424-004  
     Throat Plate (2 in.) #975424-005  
     Throat Plate (1/2 in.) #975424-002  
     Throat Plate (1-1/8 in.) #975424-006  
 Belts, package of two #662329001 (~\$30)\*  
 bent shims (BT3000 only) 969599-001\*  
 rear flat shims (BT3000 only) 969600-001\*  
 Motor, #969214010 (~\$180)  
 Brush (ea, Carbon for BT3000SXI 15A motors) #4540007 \$2.79 ea (you will need two) at M&D  
 mower  
 Blade Adjustment Handle parts  
     Blade Adjustment handle 969131-003 (item 35) (Obs.)  
     Spring 969222-001 (item 39)  
     Cam 969129-001 (item 30)  
     Handwheel adapter 981817-001 (item 36) \$9.07 (Sears 22811) (Obs.)  
     Handwheel assy 977277-002 (item 35) \$9.99 (Sears 22811) (Obs.)  
     Cap screw 1/4-20 x 1" (holds on handwheel) (get at any Hardware store)  
     Model # 315218290: Blade Adj Handwheel Assy Number: A182014001 \$9.02 in stock  
 SMT repair parts  
     Pivot (for bottom of miter fence) #661811001 (\$2)  
     Miter indicator #969191001 (\$2)  
     Saw gauge (miter fence ends) 969190-001 (\$2)  
     Quickstop 969500-001 (\$2)\*  
     Eccentric screw 8-32 #969501-002 (\$2)\*  
     Miter locking clamp 969915-002 (\$3)\*  
 Rip fence rear Repair parts  
     Rip fence 969144-001 (\$18.08)  
     Roller 969155-001 (\$2)  
     Roll Pin (for clamper) 941401-309 (\$2)  
     Clamper-B 969254-001 (\$2)  
     Roller Holder 969254-002 (\$2)  
     Dowel Pin (for wheel) 969114-001 (\$2)  
     Compression Spring 969253-001 (\$2)  
     Rod 969156-001 (\$6)  
     10-24 x 1" plain head screw – get at any hardware store  
 Wrench, flat:  
     969244-003 Large wrench (Arbor - 3/4"+ arbor lock) \$3.76 at Sears  
     969244-004 small wrench (riving knife- 1/2"+ arbor lock) \$5.02 at Sears

\*Frequently broken items – consider ordering spares when placing orders for other parts

***Listing (as of 20-Feb-2005) of accessories sold by Sears for the 22811 saw which will fit the BT3K (for a current list go to [www.sears.com](http://www.sears.com) and search for "22811":***

Craftsman Router Mounting Kit for Table Saw #22811  
 Sears item #00922210000  
 Mfr. model #22210  
 \$59.99

Craftsman Zero Clearance Throat Plate for 22811  
 Sears item #00922212000  
 Mfr. model #22212  
 \$14.99

Craftsman Micro-Positioning Device  
 Sears item #00922214000  
 Mfr. model #22214  
 \$29.99

Craftsman Miter Slot Table for Table Saw  
 Sears item #00922211000  
 Mfr. model #22211  
 \$36.74

Craftsman Air Flotation Table  
 Sears item #00922218000  
 Mfr. model #22218  
 \$169.99

[\[return to Top\]](#)

**BT3000 System Photograph:**

**30 DAY NO-RISK SATISFACTION GUARANTEE**

**2 YEAR WARRANTY**

**QUICK FOLD TABLE**  
Fits anywhere on back rail for extra outfeed support.

**10" CARBIDE-TIPPED THIN KERF BLADES**  
24-tooth rip to 60-tooth crosscut fine finish.

**AIR FLOATATION/VACUUM CLAMP SYSTEM**  
Glides large stock for easy cutting, secures work without mechanical clamps for sanding. Uses standard shop vac/blower hook-up(not included).

**MITER CLAMPING KIT**  
Secures stock against both miter table and miter fence.

**WIDE TABLE KIT**  
Provides up to 72" of rip capacity.

**LONG MITER/RIP FENCE**  
Facilitates control of large stock in either crosscut or rip mode.

**WIDE TABLE LEG SET**  
Supports Wide Table Kit or Air Flotation table.

**SPECIAL THROAT PLATES**  
Accommodates dado blades, adjusts for zero blade clearance to eliminate tearing.

**ROUTER/JIG SAW MOUNTING KIT**  
Lets you mount an inverted router or jig saw beneath the BT3000SX's standard accessory table. Includes a circle cutting jig.

**RAPIDSET®**  
Micro-positioning Device enables micro-adjustment of the rip fence in precise increments.

**DUST BAG**  
Collects sawdust directed through the built-in exhaust port system which makes clean-up easier.

**4" OVERSIZED CASTERS**  
Makes the BT3000SX portable, easy to move around your shop or jobsite.

not shown – Miter Slot table

[\[return to Top\]](#)

***Help me with the Forum Jargon and Acronyms***

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Using Acrobat Reader's Find (The binoculars icon ) tool you can also find a key word in this document. This is particularly helpful to look up jargon and acronyms because they are not alphabetized; they have been categorized by context. Use the option *match case* when looking for acronyms is helpful.

Some are universal e-mail/chat/post for figures of speech, others are unique to woodworkingdom/BT3-dom/etc.

***Tools, tool-related***

TS table saw

CS cabinet saw, or circular saw

BS bandsaw

Riser – an accessory for bandsaws, extends the vertical column to allow larger resaw capacity

DC dust collector

MS miter saw

CMS compound miter saw

SCMS sliding compound miter saw

TP thickness planer

JP jointer-planer

DP drill press

Swing – for drill presses, this is twice the distance of the column to bit center, a 12" drill press has a swing of 12 inches and can drill anywhere in a 12" diameter workpiece. A drill press with a swing of 12" has a six-inch clearance to the column.

RDP radial drill press

BJ biscuit joiner (often mistakenly called a jointer)

OSS oscillating spindle sander

ROS random orbital sander

RAS Radial Arm saw

RT router table

SS scroll saw

VS variable speed

EVS electronic variable speed

HP horsepower

RPM revolutions per minute

SPM strokes per minute (Jig saw, Scroll saw)

OPM orbits per minute (ROS)

FPM feet per minute (Belt sander, BS)

CFM, SCFM (standard) cubic feet per minute (compressors, Dust collectors, vacuums, blowers, etc.)

TEFC totally enclosed fan-cooled (a type of induction motor suited for dusty environments)

HVLP High volume low pressure (sprayer)

LVLPL Low volume low pressure (Sprayer)

HVAC – Heating, ventilation and Air conditioning

Dado – a groove, or the type of blades used to cut dado grooves

Raker – flat bottom sparse teeth for internal blades in dado cutting sets

ATB alternate top bevel – a saw blade tooth construction  
 FTG – flat top grind – a saw blade tooth configuration  
 TCG - triple chip grind - a saw blade tooth configuration  
 LI Lithium Ion, chemistry for rechargeable battery  
 NiMH Nickel-metal hydride, chemistry for rechargeable battery  
 NiCd or NiCad Nickel Cadmium, chemistry for rechargeable battery  
 CW clockwise  
 CCW counter-clockwise  
 TPI Teeth per inch, applicable to bandsaw, scrollsaw, jigsaw and handsaw blades, OR threads per inch applicable to threaded rods and machine screw threads and fabric weave density

***People, groups, organizations***

WW - Woodworker (or woodworking)  
 LOML – Love of my life (i.e. SO, wife or partner)  
 SWMBO – She who must be obeyed (i.e. wife)  
 SO – Significant other (i.e. wife, partner, or GF)  
 GF - girlfriend  
 MIL - mother-in-law  
 FIL - father-in-law  
 BIL - brother-in-law  
 SIL – Sister-in-law  
 NEC – National Electric Code  
 Norm – Norm Abrams, host of New Yankee Workshop  
 NYW – New Yankee Workshop, woodworking TV show on PBS (Public Broadcasting System)  
 OP – Original Poster (referring to the person who started a Discussion group thread)  
 OWWM – [www.owwm.com](http://www.owwm.com), old woodworking machines website, info about older power tools.  
 IT – information technology (dept. and people taking care of computers )

***Ryobi BT3000/BT3100 saw & its parts***

BT3K - BT3000  
 BT3.1K - BT3100  
 BT3, BT3x – BT3x00 i.e. either BT3000 or BT3100 or the Sears variants  
 BT benchtop, also sometimes short for BT3 or BT3x  
 RF - rip fence  
 SMT - sliding miter table  
 MST, DMST – (dual) miter slot table  
 TP – throat plate  
 TK – thin kerf, referring to the blade with its 3/32” or 0.096-0.100” wide cut. Full kerf or standard woodworking blades are 1/8” or .125” kerf.  
 RK – Riving Knife, the vertical component of the blade guard assembly  
 ZCI - zero clearance insert (same as ZCTP)  
 ZCTP - zero clearance throat plate  
 SCTP - Swiss cheese Throat plate – a ZCTP with a number of holes to allow top dust to be sucked down into the blade guard area cleaned by the rear vacuum port.  
 WTK – Wide Table Kit (basically the extension rails and mounting hardware)  
 AT - Auxiliary table  
 MP – Micropositioner trademarked “Rapid Set”  
 FOT – folding outfeed table  
 Parting out – this term refers to the practice of selling off the parts of a BT3x for more money than can be had by selling the whole saw, used.

***Retail and on-line Stores, Merchants, auction sites***

HF - [Harbor Freight](#), a national retail and mail/internet seller of low cost import tools

HD - [Home Depot](#), a large national chain of hardware stores (AKA Orange Box)

[Lowes](#) – national chain of hardware stores (AKA Blue Box), competing with Home Depot.

BORG - Big Orange Retail Giant, also a play on Star Trek and assimilation (= Home Depot)

Wally World – [Walmart](#)

[MLCS](#) – a mail order/internet supplier of router bits and other woodworking tools

[PSI](#) – Penn State Industries, mail order/internet supplier of dust collection, lathe/turning and other WW supplies

[Rockler](#) – a woodworking supply store chain

[Woodcraft](#) - a woodworking supply store chain

[Cummins](#) – a national chain of discount tool stores featuring reconditioned merchandise, much sold from travelling truck trailers.

[Menards](#) – an upper-midwest U.S. chain hardware store.

[eBay](#) – the internet Auction site

CL – [Craig's List](#) – Internet-based classified ads, by cities. 25% owned by eBay, no fees for posting or buying.

B&M – Brick and Mortar, referring to physical store presence as opposed to on-line stores.

***Tool manufacturers/brands/Families***

BD - [Black and Decker](#) tools, also owner of DeWalt, Porter-Cable, [Delta](#), deVilbiss and Oldham

Bosch – [Robert Bosch Tool Corp](#) owner of Bosch, Skil, Rotozip, Dremel, VA

CH – [Campbell Hausfeld](#) – manufactures air compressors and air tools

Craftsman – a trademark of [Sears](#) for their line of hand and power tools, virtually all manufactured by OEMs for Sears.

Delta – a division of Delta PEC

Beisemeyer – owned by Delta/Delta PEC

DW - [DeWalt](#), a division of Black and Decker

PC - [Porter Cable](#), a division of Black and Decker

LV – [Lee Valley](#), a Canadian distributor of Veritas fine hand tools.

LN – Lie Nielsen – a manufacturer of high dollar hand planes

MLCS – [distributor of router bits](#) and related woodworking items

TTI – TechTronic Industries Co. Ltd. Hong Kong (Ryobi, Homelite, Dirt Devil, OWT, and soon, Milwaukee)

OWT - One World Technologies, subsidiary of TTI, manufacturer of Ridgid bench and stationary woodworking tools

Pentair – former owner of Delta/Porter-Cable

[Ridgid](#) – power tool maker, formerly owned by Emerson, now owned by OWT, a Techtronics Ind. Company, probably made in Ryobi factories.

[Ryobi](#) – Ryobi Tools is owned by Techtronics Industries Co., Ltd.; Ryobi lawn and garden equipment, sporting goods are separate companies now.

[Skil](#) – a division of Robert Bosch Tool Co.

SS – Shopsmith – an old line manufacturer of all-in-one tools using a basic stand and motor with attachments to turn it into a drillpress, table saw, lathe, etc.

VA - [Vermont American](#), a division of Robert Bosch Tool Co.

WMH – [WMH tool group](#), owner of [Jet](#), Performax, Wilton, Powermatic tools

Crapsman – derogatory reference to [Sears Craftsman](#), whose tools are made by many different manufacturers under contract to Sears.

[Grizzly](#) – Manufacturer of hand, bench, and stationary power tools, less highly promoted than the big name brands. Sold only through Grizzly mail/internet but affiliated with Amazon.

Shopfox – manufacturer of tools, Grizzly's retail brand name

Sunhill – importer of Chinese-made free-standing power tools.

Steel City – recently started manufacturer of large power tools, spun off by Delta execs.

Sawstop – a manufacturer of table saws incorporating a patented electrically activated blade brake

Central Machinery, Chicago Electric – house brand imported stationary and handheld electric power tools of Harbor Freight

Chicago Pneumatic - house brand imported air tools of Harbor Freight

OEM – original equipment manufacturer, loosely refers to the company that designs and manufactures an item later branded and sold by another company.

### ***materials***

MDF - Medium density Fiberboard, and engineered wood fiber material very flat and stable.

MDO – Medium density Overlay, basically plywood with paper fiber-based outer layer impregnated with acrylic resins. Also called Signboard.

KD – Kiln Dried

AD – Air dried

PT Pressure-treated usually pine impregnated with chemicals to inhibit rot and insects – see ACQ and CCA below

ACQ - Ammonium Copper Quaternary – new PT (pressure treated) process, non-toxic

CCA – Copper Chromate Arsenic – Chemicals used in older PT pine, somewhat toxic and now outlawed.

BB – Baltic Birch, a plywood with many fine layers, void free, imported from Russia or the Baltic states, comes in 5'x5' sheets.

OSB - oriented strand board

Plywood – laminated wood with odd number of layers of alternating 90° orientation. Sold in 4'x8' sheets or in cut down pieces (4'x4', 2'x4') in thicknesses 1/4, 3/8, 1/2 and 3/4" (all slightly undersized by 1/64<sup>th</sup> to 1/16<sup>th</sup> inch of stated thickness) and in various grades including interior, exterior and marine glues and with various veneer layers (ranging from exotic woods to cheap pine veneers) on the outside.

AC plywood – plywood with one (good) A-graded surface and the other (rough) C-graded.

S2S - surfaced on 2 sides (lumber planed smooth on two faces)

S3S - surfaced 3 sides (lumber planed two faces and jointed one edge)

S4S - surfaced four sides (lumber with both sides finished, square and parallel)

FAS - first and seconds - The best and most expensive grade of hardwood lumber. Boards 5 1/2" and wider, 8' and longer. The FAS grade includes a range of boards which yield from 83 1/3% (10/12ths) to 100% clear wood in cuttings at least 3" wide by 7' long or 4" wide by 5' long.

QS – quartersawn, Lumber sawn with the direction of the rings perpendicular to the wide face ((((((( of a board, giving the appearance of tight grain. Usually considered preferable to RS or FS and carries a price premium

S&B - select and better – like FAS but starting 4" and wider and 6' and longer.

#1 Common – like S&B but only 66.6% clear, shorter and narrower boards

#2 Common – like #1 common but with more knots and checks and piths.

RS – rift sawn, lumber with the rings running approximately 45° to the wide face of the board.

FS – flat sawn or plain sawn lumber, rings are more or less parallel to the wide side of a board showing broad rays and arcs (or “cathedral grain”) on the surface. FS sawn boards may be more prone to cupping than QS.

JPW - Johnson's Paste wax

SF - square foot (144 sq. inches)

LF - Linear foot (one foot long)

BF - Board-foot - volume measure of hardwoods (144 cu inches, usually at original rough-cut dimensions)

Lexan – trade name for polycarbonate plastic; polycarbonate plastic is extremely break resistant compared to acrylic plastics.

Plexiglas – trade name for acrylic plastic

TFE, PTFE – teflon, a very slick plastic material or plastic coating

CI – cast iron

PU – polyurethane (generic name for “Gorilla” glue), also polyurethane is a flexible thermoplastic material used for electrical wire insulation, containers, etc.

PVA – polyvinyl acetate (primary ingredient of woodworking glues)

CA – cyanoacrylate (super glue)

BLO – Boiled Linseed Oil

GG – Gorilla Glue (e.g. PU or polyurethane glue)

UHMW - ultra high molecular weight (plastic), a dense slippery polyethylene plastic often used for sliding surfaces

PE - polyethylene, a thermoplastic, commonly used for plastic milk jugs

PVC - polyvinyl chloride, a widely-used thermoplastic, plastic plumbing pipe is typically made from this

HCS – high carbon steel – alloy containing .4 to .75% carbon + iron used for inexpensive cutting tools.

HSS – high speed steel, a hardened steel used for cutting tools, harder than HCS, carbon steel but much less hard than tungsten carbide.

TC, Tungsten Carbide – a metal alloy that is expensive, brittle but very hard and durable, used often as inserts or tips for cutting tools like blades and router bits. (commonly just called carbide when referring to cutting tools).

Carbide – when used in conjunction with cutting tools and bits, implies tungsten carbide.

TiN – titanium nitride, a gold colored metallic coating applied to drill bits and router bits to reduce friction and heating

SS - stainless steel

4/4, 5/4, 6/4, 8/4 - thickness of hardwoods, based on rough cut size in 1/4” increments, 4/4 would be 1” thick, unfinished, 8/4 would be 2 inches thick.

C2, C3, C4, C5 – hardness grades of Tungsten carbide, C3 and C4 are most often used for cutting tools for woodworking. Higher numbers are harder but more brittle, so the tradeoff is higher C-values stay sharp longer but are easier to chip and break.

Masonite – a brown pressboard material made using wood fibers pressed into a board using steam and heat. Usually with a smooth and rough side. Sold in sheets up to 4’ x 8’.

Pegboard – Masonite 1/4” or 1/8” thick with 1/4” holes drilled on a 1” x 1” grid across the whole sheet, designed to take standard pegboard holders for hanging items on a wall.

LVL - Laminated Veneer Lumber similar to plywood but the plies run perpendicular to the face and the ply grain is all aligned along the length of the board.

### ***fasteners***

SH - socket head (e.g. hex socket, or Allen head, or Torx socket)

HH - hex head (e.g. for use with a wrench)

FH - flat head (with a beveled underside, requires a beveled countersunk hole)

PH - pan head (a rounded head-type screw), or Phillips head

RH - round head (fasteners) or Right-hand referring to thread direction or motion

LH - left hand (referring to reverse from normal thread direction)

### ***joinery and cuts***

CS - countersink/countersunk, a beveled larger hole concentric with a smaller hole to receive flat head fasteners and make the head flush with the material surface.  
 Counterbore – a larger hole concentric over a smaller, deeper hole to hide screw heads and other fasteners below the material surface. Sometimes filled with a tight-fitting plug after installation of the fastener.  
 M&T mortise and tenon joinery technique  
 Dado – a rectangular groove cut into a face of a board  
 Rabbet – An L-shaped channel cut along the edge or end of a workpiece  
 Rebate – European (UK English) or Aussie speak for rabbet  
 Kerf – the cut or cut width left by a power saw blade.  
 Resaw – cutting a thick board into thinner boards or veneers, usually done with a bandsaw  
 Crosscut – cut across the grain of a board  
 Ripcut – cut along the grain direction (usually the length) of a board  
 Mortise – A square or rectangular hole  
 Tenon – A projection extending from the end or edge of a board usually specially cut to fit a mortise.  
 Cheek – The part of a tenon parallel to the face of the board  
 Shoulder – The part of a board around a tenon, perpendicular to the face of the board

### ***Classified ads/For Sale/Shipping***

CL – [Craig's List](#) on-line classified advertisements  
[eBay](#) – on-line auction site  
 FS – for sale  
 MO – Money Order  
 OBO – or best offer  
 NIB – new in Box  
 NWT – new with Tags  
 WTB – Wanted to Buy  
 FOB – “Free on Board”; Seller will hand over to a shipping carrier of your choice to be shipped at your expense  
 USPS – [United States Postal Service](#), e.g. the US Post Office  
 UPS – [United Parcel Service](#); e.g. the guys in the brown trucks  
 Fedex – [Federal Express](#)

### ***General figures of speech/electronic messages/e-mail***

DAMHIKT - Don't ask me how I know that!  
 ROFL – Rolling on floor, laughing  
 ROFLMAO - ROFL my ass off (an extreme case of ROFL)  
 WAG, SWAG (Scientific) wild ass guess  
 POS - piece of Sh\*t  
 RTFM - Read the F\*\*\*ing manual  
 PC – politically correct  
 PITA - Pain In The A\$\$  
 IMHO – in my honest opinion, or humble opinion  
 BTW – by the way  
 DIY – do-it-yourself  
 PS – postscript  
 AFAIK – as far as I know  
 IIRC – if I recall (remember) correctly  
 HTH – hope that helps/helped

FS – for sale

SYL – see you later

TTFN – ta-ta for now, e.g. SYL

-

AKA - Also known as

BIF - Basis in fact

BTDT – been there, done that

BTW - By the way

DNO – dead nuts on (e.g. accurate with no measurable error)

FAQ - Frequently Asked Questions

FWIW - For what it's worth

FYA - For your amusement

FYI - For your information

GMTA - Great minds think alike, e.g. he had the same idea as you did

GR&D - Grinning, running, & ducking

HHOK - Ha ha, only kidding

HHOS - Ha ha, only serious

IAC - In any case

IMO - In my opinion

IMHO - In my humble opinion

IMNSHO - In my not-so-humble opinion

IMAO - In my arrogant opinion

IOW - In other words

LOL - Laughing out loud

MOTD - Message of the day

NBIF - No basis in fact

OTOH - On the other hand

OT - Off topic, particularly referring to forum discussion threads going other directions

PC - Politically Correct OR Personal Computer

PI or PIC - Politically Incorrect

PM - private mail (message) usually through the on-line forum services rather than e-mail, protects the privacy of users who will get the message w/o giving out their e-mail address.

POV - Point of view

RL - Real life

RSN - Real soon now

TIA - Thanks in advance

TIC - Tongue in cheek

WTG - Way to go

YMMV - Your mileage may vary

unPC - Same thing as PI

[\[return to Top\]](#)

As I used to say in my technical review meetings, NNA.

Some one would always ask and I'd say: NO NEW ACRONYMS

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