

Why Buy A BT3000?

By Jim Frye

At least once a week (sometimes once a day), someone on a wood working tool forum somewhere, asks about what table saw to buy for the hobbyist or for the home shop. In almost every instance, that person gets one of two types of answers. They either are told to buy a certain brand or type of saw, or they are told to stay away from a certain type or brand of saw. Almost never are they given factual reasons for the advice, just opinions. Almost always, someone chimes in with "Buy your last table saw first"; even if the person has stated an upper limit of their budget. You also see quite a bit of "advice" to stay away from anything less than \$700 or more. Quite often the person seeking knowledge has asked specifically about the BT3000. After successfully using a BT3K for many years, I have always had more to say about the tool than forum space has allowed. This article is an attempt to provide a potential BT3K owner with some "facts" to carry into the hunt for that new table saw.

My personal opinion of the BT3K is that there is nothing a conventional table saw can do that the BT3K can't do. In many cases, it can do more. The features and functionality of the saw set it apart from other saws in the wood working industry. It is certainly not a typical bench top saw, as they are direct drive. Although, without it's stand, it would fit on a bench top quite well. It also does not fit the traditional style of the contractor saw. It seems that the popular opinion of a contractor saw is one that has the motor and arbor attached to the tabletop. If that were the only requirement, then the BT3K would be a contractor saw. I don't think anyone would buy that argument.

As you learn more about this tool, you will see how capable it is. The features of this saw add some complexity to it's use, but no more than any other table saw fitted with the same features. The unique aspect of the BT3K is that these features are standard on the saw, where as they are extra cost options on all other table saws. It should be noted that this tool is not for the "ham fisted Neanderthal". It is not a "brute force" tool, but it is a saw capable of great accuracy. This is a tool for a person who has some creativity in their bones. If you will take the time to learn how to set it up, tune it, and use it as it was designed; there is almost nothing you can't make with it. That said, let's proceed with some comparisons to the BT3K's competition: The Contractor Type table saw.

- The BT3K has a larger table than nearly any contractor or bench top 10" table saw. At 42" wide by 22" deep, the BT3K has a larger work surface than the rest, even the new Ridgid bench top saw (\$497).
- The rip fence on the BT3K is very accurate and moves easily. Wood Magazine's review of the saw stated that the fence moved like it was on air and locked up solidly. Ryobi sells a 42" extension for those who want a longer fence. I have not had to adjust mine since I first set the saw up in early 1993 and it will still rip 1/64" strips from a 6' long work piece. I see a lot of postings on wood working forums that talk about having to upgrade the original fences on lower priced contractor saws because they are not accurate.
- The BT3K has a standard sliding miter table (SMT). It's a \$270 - \$500 option on any other 10" saw on the market today. I remove and replace the SMT a lot and it is always in alignment when I replace it. Other sliding tables are not so forgiving.

- The add on sliding miter table from Delta requires the miter fence to be recalibrated every time it is removed from the table for wide rip cuts. The BT3K has an indexing stop to realign the fence when it's returned to the table.
- When the fence on Delta's sliding table is removed, it becomes six separate loose pieces. The SMT fence assembly on the BT3K is all self contained.
- The sliding bearings on the Delta table lack dust-clearing devices, while the glass filled plastic slides on the BT3K are self-cleaning. The BT3K sliders are also far less expensive to replace than the bearings on the Delta table.
- The BT3K has a larger depth of cut (3 9/16") than any other 10" table saw on the market today, including the cabinet type saws. I have resawn 3 1/2" maple in a single pass and have ripped 3 1/4" oak on this saw.
- The BT3K has a larger standard crosscut capacity (16") than any 10" table saw. To get that much capacity on a conventional table saw requires an after-market extra long miter gauge guide which leaves the miter gauge and work piece hanging out in mid air at the beginning of the cut. Delta's Unisaw and Jet's cabinet saw only have 12" in front of the blade. Author Lon Schleining states "Crosscutting with a standard table saw miter gauge can be frustrating, inaccurate, even hazardous. Adding an extended fence helps, but the miter gauge still will be limited and imprecise. Don't bother with it. Instead, take the time to make a super-accurate, super-versatile and far safer crosscut sled." There are books on table saws and books on jigs that show the conventional table saw user how to build a "sled" or a "panel jig" to increase the crosscut capacity of conventional saws up to 18" or 20". The BT3K comes standard with it's own crosscut sled and a simple (less than an hour to make) add on fence to the SMT can increase the crosscut capacity of the BT3K to over 23".
- The BT3K can rip up to 30" wide with the standard equipment. It takes add on extension tables and possibly rails to most contractor saws to get to that width of cut.
- The blade arbor on the BT3K is supported by three bearings while all contractor saws have two bearings for the arbor.
- The arbor on the BT3K is long enough to support a full stack dado set. Some of the contractor saws have shorter arbors that limit the width of dado that can be cut. The BT3K arbor can handle a wider dado stack than a Delta Unisaw.
- The BT3K comes with a 36T combination carbide saw blade manufactured by Freud. Some contractor saws don't come supplied with a blade.
- Blade changing on the BT3K is aided and made safer by a lockable arbor. The saw comes with two wrenches. One is used to lock the arbor from turning and the other is used to remove the arbor nut. Almost every other table saw on the market today requires the operator to jam a piece of wood between the blade teeth and the throat plate opening to unscrew the arbor nut. Jointech just brought out a product called Blade Lock that covers the saw blade and holds it while the nut is undone for those "standard" saws that lack the features of the BT3K.

- 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 BT3K has better dust collection than the contractor saws. This is due in part to more and larger openings in the cabinet of the contractor saw to clear the motor mount and drive belt. This makes it more difficult to capture the dust produced by a cabinet saw. The design of the BT3K's dust collection is good enough that DeWalt and Ridgid have adopted it for their new saws.
- The arbor/motor mount/tilt/elevation mechanism is more accurate than the contractor saws. The motor on a contractor saw hangs out the back of the saw on a long arm (lever). When the arbor is tilted for bevel cuts the trunions which hold the arbor/motor in relation to the table and fences, are put under a torque twist that can affect the accuracy of bevel or compound bevel cuts. The locker bracket design of the BT3K is not subject to this kind of twisting force. The design is similar to the one used on Delta's 14", 7.5 hp industrial table saw the RT-40.
- The motor on the BT3K is a 15-amp ball bearing universal type motor. It is quite similar to the motor found in a heavy-duty production plunge router. A universal motor running on 120 volts and drawing 15-amps of current is capable of producing somewhere in the range of 1.5 to 2.0 horsepower, depending on the motor's efficiency. Most contractor type saws use a 1 or 1.5 hp induction motor. The motor on the BT3K is wound to operate at 18,000 rpm and produce more torque than a router. It is then geared down through the belt drive to produce a blade rpm of 4,800. This increases the torque of the motor by a factor of 4 and gives the saw the power to cut 3" thick hardwood. The motors in contractor type saws are usually geared at 1 to 1 and spin the blade at the same rpm as the motor (3,450). Some proponents of the induction motors will argue that the contractor type saws are more powerful, but almost any contractor saw will have trouble cutting 3" thick hardwoods.
- Two short multivee belts drive the arbor on the BT3K, which provides better power transmission than a single vee belt. A single long vee belt drives the contractor saws. The design of the BT3K drive eliminates the vibration caused by the long drive belt of a contractor saw.
- Many contractor saws use machined cast iron pulleys which may not be balanced properly and contribute to vibration. The most common recommendation to lesson vibration in a contractor saw is to change to steel pulleys machined from bar stock and a linked vee belt. The BT3K drive is machined from bar stock from the factory.
- The BT3K has a standard router mount capability in the accessory table. This is an extra cost option or after market add-on on other table saws.
- The tables on the BT3K are made from cast aluminum and will not warp or rust. The tables on a contractor saw are either cast iron or stamped steel. Cast iron tables can warp if they were not cured or aged properly prior to machining and both cast iron and steel can rust.
- The BT3K has it's riving knife/blade guard mounted immediately behind the saw blade, like a cabinet saw does. This also makes it easier to mount a splitter without a guard. The contractor

saws have the riving knife/guard bolted at the rear of the cabinet farther to the motor mount arm back from the blade, where they are not as effective.

- The BT3K is backed by a two-year warranty. Some contractor type saws only carry a one-year warranty. The manufacturer has excellent telephone technical support and sponsors a web site (www.ryobi.com/toolforum) that provides users with a place to go for help with questions and problems with Ryobi tools. This forum has proven to be visited by a group of friendly, and very helpful people who go all out to help their fellow wood workers. You won't find this kind of support for most of the makes of the contractor saws.
- A BT3K owner runs the web site this article is posted on. The jigs and other articles presented here were created by other BT3K owners and are shared here to help others. There are a lot of ideas here for the BT3K owner to use and help better their own wood working skills and they are all free. I think that sort of shows what kind of people own a BT3K.

Now, let's take a look at some of the aspects of the BT3K that are considered drawbacks by it's detractors.

- A lot of the detractors of the BT3K claim you cannot use "standard" jigs that are "designed for traditional table saws" and you are forced to make your own. There are several points to be made in this area. The biggest issue of all is that there are very few "standard" miter slot accessories available for any table saw and there dozens of books and magazine articles that show the "traditional" table saw user how to make a jig for use on his/her saw. I find this situation no different than that of the BT3000. However, there are several options for the BT3K user to make use of those "standard" jigs and fixtures.
 1. Ryobi sells an add-on miter gauge slot that bolts to the existing saw cabinet to use a standard miter gauge bar and head.
 2. The jig site where this article is posted has add on miter gauge slot attachments that have been designed by BT3K users.
 3. The stock tables that are standard with the BT3K can be positioned to form slots that a standard miter gauge bar will slide in.
 4. The few standard jigs I could find available in catalogs include: After market miter gauges to increase the accuracy over the stock one supplied with the saw \$30 - \$190. Shop Fox has a right angle jig that can be used as a tenoning jig \$199. Various dedicated tenoning jigs \$80 - \$260. It seems there are not very many "standard" jigs marketed for the traditional table saw, therefore it's not much of an argument against the BT3K.
- "The universal motor is too noisy." Well, yes it is noisier than an induction motor, but it's no worse than a 15-amp router and you don't hear people complaining about them. In fact, with the motor inside the steel cabinet, it's quieter than a router. A home shop or hobbyist saw doesn't run for hours at a time also. Any table saw produces enough noise that hearing protection should be worn anyway.
- "The universal motor is under powered and won't last." If it can cut 12/4 hardwoods, how can it be underpowered? As for longevity, there are an awful lot of old routers, circular saws, and drills out there being used and abused on a daily basis.

- “The BT3K is made from aluminum and cheap plastic, not cast iron.” Aluminum is a very durable alloy. Entire automobile engines are made from aluminum and those engines run far longer than their cast iron counterparts did a couple of decades ago. The plastic parts in the BT3K are made from glass filled resin, so they are not just cheap plastic. To return to the automotive example, engine intake manifolds and other engine parts are now made with glass impregnated resins. I own a 1992 automobile that has plastic body panels and it looks better than any 8-year-old steel bodied car I've ever owned.
- “The drive belts break or melt easily and you can't put any load on the motor.” The belts will melt if you try to start the saw with the blade jammed. The manufacturer has engineered it this way to protect the motor. Replacing \$24 worth of belts is better than replacing a \$200 motor. I have run my saw under enough load to trip the 20-amp circuit breaker and have not harmed the belts. The ones on my saw are over 5 years old and have hundreds of hours of use on them.

Before we finish this comparison of these two types of saws, let's take a look at how a typical contractor saw stacks up against the BT3K in terms of price. A lot of the proponents of this type of saw suggest the Grizzly G1022 saw as a viable alternative to the BT3K. To bring this saw's features up to match those of the BT3K would require the following from the Grizzly catalog:

Grizzly G1022 saw (as of 02/05/2000)	\$ 299.00
Shipping	\$ 48.00
Freud F410 Saw Blade (no blade is included on the G1022)	\$ 54.95
Grizzly Sliding Table	\$ 269.95
Shop Fox rip fence (recommended upgrade by Grizzly users on tool forums)	\$ 275.00
Dust Exhaust Hood	\$ 11.95
Additional Shipping	\$ 10.95
Woodhaven Router Table (may require longer saw rails)	\$ 151.99
Total (plus any applicable taxes)	\$ 1,121.79

This still leaves one with a saw that has smaller cutting capacities than the standard BT3K. This example is not meant to degrade the Grizzly saw; it is used as an example to show the value in the standard issue BT3K. A wise buyer should perform his/her own comparison of what they want in a table saw and analyze the various saws on the market.

Well, that's it for the Why Buy a BT3000. If you have any questions about the saw after reading this article, all it takes is a posting on the Ryobi Tool Forum to get a multitude of helpful answers. Good Luck with your table saw purchase.