

HYBRID SAWS



Online EXTRAS

For a video of the editors' likes and dislikes on the hybrid table saws we tested for this story, go to:

popularwoodworking.com/nov07



COMPROMISE OR CURE-ALL?

BY TROY SEXTON

The table saw is one of the most important machines in a shop. Should we make room for a new category, or stay with the ‘old reliables?’

Hybrid table saws burst onto the woodworking scene almost as fast as hybrid cars rocked Detroit. They’ve plucked a few characteristics from the contractor saw, as well as some features of the cabinet saw to establish their own identity, and price point, in the middle of the pack. So, will these saws have the same Detroit-type impact on woodworking?

The big step the hybrids have taken above the contractor’s saw is placing the motor in the cabinet. No more belts running exposed behind the saw that allow cutoffs or fingers into their path – or wearing prematurely (I’ve replaced a number of belts on my contractor saws).

With the base enclosed, dust collection is greatly improved, at a reasonable cost. You

attach a dust-collection hose to the 4"-dust port instead of rigging a bag or box under the traditional contractor saw.

If the hybrid is a step above the contractor saw, it has to be a step down from the cabinet saws. That step is in power. Hybrid power is 1³/₄hp to 2hp while the larger cabinet saws have a minimum of 3hp. But, with the smaller motors comes the ability to power the saws on 110-volt electric, another major difference. If your shop doesn’t have 220v electric you can move up to a hybrid saw with few worries.

And in This Corner

Popular Woodworking arranged to send me six different saws to get the scoop on them from

inside a practicing cabinet shop. If you're in the market for a hybrid table saw, you can decide if they're the best of both worlds, or if you're compromising and settling for a lesser tool.

Included in the test were the Craftsman 22124, Delta 36-717, General International 50-220C M1, Grizzly G0478, Jet Proshop (708482K) and the Steel City Tool Works 35601. Each of the 10" table saws came with a 30" Biesemeyer or Biesemeyer-style fence and all were listed with a 1³/₄hp motor except the Grizzly saw, which has a 2hp motor.

I'm not going into detail on the setup of the saws or many other common items in table saw reviews. All saws have some quirks. Assembly differs due to a number of reasons. Each of the tables needed some work to level the wings to the tabletop, something most woodworkers have come to expect. However, Steel City added set screws near each bolt location that made leveling the wings a snap. Steel City also packaged the hardware to match the assembly steps.

Another area commonly discussed is the trunnions and how they attach to the saw. Because adjusting table-mounted trunnions has been an issue in the past, manufacturers are focusing on getting correct alignment before saws are shipped. This wasn't an issue during setup, but after a few years, an adjustment may become important. The Steel City and Craftsman saws have the trunnions attached to the cabinet while the rest of the group has the trunnions fixed to the underside of the tabletop.

Power is King

When evaluating table saws I look first and foremost at the power of the saw. That's not to



A two-for-one deal. The "two-step pulley system" on the Jet and General saws helps to increase blade speed and reduce overall vibration of the machines.



Set up to work fine. Set screws added to the wings of the Steel City saw made for accurate adjustment of the wings. A level tabletop was an easy task out of the crate.

say I read the motor for the horsepower listings. Horsepower is not always an indication of the saw's abilities. There are ways to influence the internal workings of saws to allow them to perform better. Increase a pulley size or tweak a belt and you can effect a change.

To me, the best method for testing power is to make cuts at the saw. I selected ³/₄" and 1³/₄" red oak to test each saw's ability. Depending on feed rate and the sharpness of the saw blade, it's possible to bog down lower-power saws as you cut. I kept my feed rate consistent, and each saw was outfitted with a new Freud thin-kerf, 50-tooth combination blade (LU83R010). (All the saws except Grizzly came with a blade.)

None of the saws had difficulty ripping or crosscutting the ³/₄" material, but I began to separate the men from the boys when I ripped thicker stock. The Jet and Grizzly saws showed no signs of slowing as the stock was cut, while



Plenty of stops are a positive. The Delta miter gauge rated number one. By pressing the spring-loaded lever you can adjust to any one of 11 positive stops, or locate the pointer to the desired angle setting and tighten the handle for a firm hold. This gauge was snug to the table-saw slot exhibiting no sloppiness.

the Steel City saw exhibited a minute decline in blade speed. The General and Craftsman saws ran in the middle of the pack with the Delta saw a bit below the average.

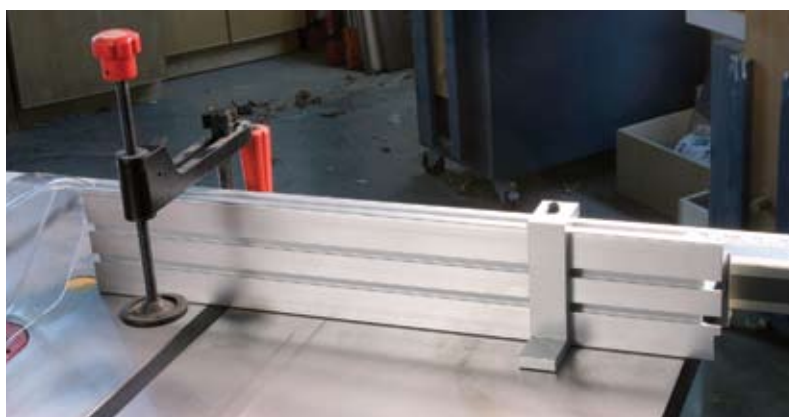
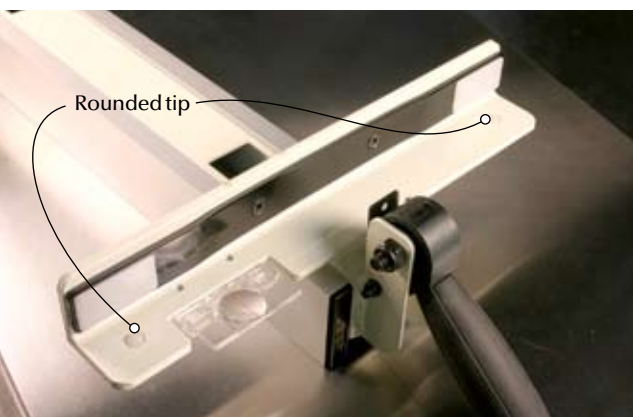
See How They Run

I gave each saw an hour-long constant-run test. The saws used three kinds of belt systems. The Delta, Steel City and Craftsman use a single belt that's flat and ribbed (called a poly-V-belt). The single belt on the Grizzly is short because the motor and arbor pulley are closely positioned. During my test, this machine became hotter than others, which could mean replacing a belt sooner rather than later.

The General and Jet saws use a two-belt system that General calls a "two-step pulley



Best fence, period. The Jet fence was outstanding. It slid like a bobsled at the Olympics. The aluminum fence faces have a T-slot for adding jigs or fixtures. When locked, the fence held tight to the table.



The source of slide. The reason the Jet fence slides so well is the adjustment screws have a rounded tip. That tip makes minimal contact with the front rail to provide a smooth glide.

Too many frills? The Craftsman miter gauge is loaded with extra features. I like the aluminum crosscut fence with the extra T-slots, but the other features (such as the hold-down clamp) are not something I look for in my miter gauge.

system.” This provides additional power by increasing blade speed through gearing and allowing the saws quieter and smoother operation by cutting vibration. All the saws passed the test of balancing a nickel and penny on the table in start-up mode, with only the Delta saw dropping the penny as the motor was shut off.

Fence Systems Come Next

After power, I looked at the fence systems. Each saw has a similar fence, but there are differences. The Craftsman and Delta saws have a true Biesemeyer fence. There are adjustments to align the fence with the blade as the fence rides on $\frac{3}{4}$ " x $1\frac{1}{2}$ " glide pads resting on the front rail and table surface.

The Steel City saw had its “Deluxe” T-square fence system. It’s very close to the Biesemeyer in design, but the fence faces are UHMW plastic instead of the laminate on the Biesemeyer. This fence also has the right/left adjustment to align the fence parallel with the blade.

The General fence is a close cousin to the Biesemeyer as well. General added a small post to the end of the fence that rides along a rear rail. This setup provides smooth operation due to the fence riding just above the table’s surface. Attention is needed when installing the rear rail because there’s no adjustment to this post.

The best fence system I tested is on the Jet. With a post riding the rear rail, it looks like the others. However, the most striking characteristic is the way it glides almost effortlessly along the rails. I found that the Jet doesn’t have pads, it has adjustment screws with rounded tips that have a smaller contact area with the front rail.

These screws allow for tilting the fence to perpendicular to the table surface and with the standard right/left adjustment, you can perfectly calibrate the fence to the blade and table. In addition, the fence faces on the Jet are

aluminum with t-track slots in the top edge. I like the idea of having a built-in way to attach jigs to the fence. Finally, when locked in position the fence had great holding ability.

The Grizzly also has four-way adjustment for the Shop Fox Aluma-Classic fence, and the post/rear rail concept. When locked, the holding power rivaled the Jet. The fence faces are aluminum as well with T-track located in the faces. This fence missed the top rating by a nose.

Dust Collection: Improved, But ...

Hybrid saws offer improved dust collection, but improving on the sorry dust collection on contractor saws is an easy hurdle. These machines all have 4" dust ports. The Delta, Steel City, Jet and Craftsman saws have a rear discharge while the General and Grizzly saws have the discharge port on the left.

The General has a full shroud around the blade, with a small hose leading from the blade directly to the dust port, which suggests increased air flow from the blade. But small cut-offs get caught in the shroud and it takes time to remove them. The plastic shroud loosens with three wing nuts, which I found awkward.

The Grizzly has a metal plate just beyond the arbor for improved dust collection. However, the plate makes changing the blade difficult (as does the General shroud) because there is a reduced area into which to fit your hand.

Overall dust collection was as good as in cabinet saws with one exception. The bottom of the saw cabinet on the Jet had open areas around each leg. Of course, those areas can be effectively closed, but is that something you should have to do to your saw?

Little Things Add Up

All the saws have useful features while some have features that are frustrating and weak.

Each has some of both and no one saw is lopsided in either direction. The cumulative information is detailed beginning on page 43.

One feature that I found frustrating was some of the insert plates. A few saws require you to have a screwdriver to gain access to the arbor. Another problem with some plates is thickness. The General and Grizzly insert plates are $\frac{1}{8}$ " thick without reinforcement below the surface. I found these plates could bend when sawing narrow stock.

General had the best access door; it was large and located on the left side of the base. There’s no question you’ll be able to retrieve dropped



Where are the hinges? The access door on the Jet is not a door – it’s called a “dust hood.” It’s held in place with small lock knobs and is something I’d change if this saw was in my shop.

arbor nuts without problem. The Grizzly had a similar cover, but the opening was small, and the Jet required removing four lock knobs to gain access. Others had a hinged access door that covers the motor as the blade tilts.

The Steel City, Delta and Craftsman saws lock both the blade tilt and height adjustment handwheels with inner lock knobs. The others lock the height with that same design, but the blade-tilt adjustment locks with a small lever above the front-mounted height wheel. I found the location difficult to work and too far away from the tilt adjustment handwheel.

Changing of the Guard

A look at the blade guards on these saws shows two distinct designs with three different assemblies. In the first design a tab on the blade guard/splitter assembly fits into a retaining plate positioned inside the opening in the top. This type, found on the Jet and General saws, is easily removed when necessary.

The second design has the blade guard/splitter assembly fitted to the retaining plate, and attached to a pivot shaft and mounting bracket that extends behind the cabinet. Removing a guard of this design requires multiple steps.

With this second design, there are two means of attachment. The Steel City and Craftsman



An all-access pass. The access door on the General was tops. A look inside shows the extra hose attached to the blade shroud that leads to the dust port. That hose robs dust-collector strength from inside the cabinet base, making overall dust collection less effective.



Put the lock where the wheel is. Steel City, along with Craftsman and Delta, has the inner hand wheel locks for both the blade height and tilt adjustments. They're easy to use and conveniently positioned.



Aggravating lock lever. The General, Jet and Grizzly saws use a lever located front and center to lock blade-tilt handwheel. The location makes these levers inconvenient to use.

saws have knobs that spin to connect or disconnect the splitter. The Grizzly and the Delta saws require a wrench to disassemble the guards. The Delta guard can be flipped out of the way.

I've always been less than impressed with the blade guard/splitter assemblies on most table saws. In fact, with upcoming changes to regulations regarding table-saw safety and the arrival of riving knives, many of these guard systems could change within the next year.

Too Close to Call One Winner

In my opinion there are two saws that stand out from the pack. Not far in front, but ahead just the same. It's a toss-up, so little features you prefer may influence your choice.

The Jet would be the hands-down winner if the dust collection were improved and the access door was hinged. The power was great and the fence was first-class. Maneuverability of the fence was excellent as was the rigidity when locked to the table.

The Steel City Tool Works saw would gain top honors if the power were increased to keep the blade speed up as thick stock was cut. All other features on this saw came in at or near the top – there wasn't any negative item to weaken its position.



Double jeopardy. Two aggravations are shown on the Grizzly saw. First, the insert plate is very thin at 1/8" and there's no reinforcement on the bottom of the plate. Second, table insert screws require an extra tool close at hand. This saw uses the screw to hold the plate down and flush.

Picking a "Best Value" would point toward the Grizzly hybrid saw. This saw was near the top in power, had a very good fence system, but took a hit with a few non-user-friendly features. It's a good working saw if you can look past those issues. **PW**

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A just-missed design. Looking into the insert area of the General saw, you can see the blade shroud. You can also see the small offcut caught in the shroud. A zero-clearance insert would keep that offcut out, but neither of the inserts shipped with the saw can.

HOW THE SAWS COMPARE

Craftsman 22124

This saw stands up well in the shop as far as power. It placed in the middle of those tested. The saw, with all the trimmings that are included, looks like a major contender. But the extras were more frill than substance. The miter gauge is tricked out with features I find less than useful, but the extruded-aluminum crosscut fence is a nice addition. The Biesemeyer fence is a stalwart in the industry, but the included rear outfeed table (not shown) was difficult to assemble and use.

800-549-4505 or sears.com



- **Likes:**
 - Biesemeyer fence
 - 22" of table to left of blade
 - Miter gauge crosscut fence
 - Cabinet-mounted trunnions
- **Gripes:**
 - Many poor-performing frills
 - Arbor shaft shortest in group
- **Price:** \$1,100

Delta 36-717

Although it's the lowest-rated performer in the power rankings, the Delta is still a nice, dependable saw. It has a great fence in the Biesemeyer design, and has the best miter gauge of the saws tested. The miter gauge demonstrated no play or slop (side-to-side movement) while in the saw's slot and the angle adjustments of the gauge's fence held tight when set. The only real problem is the motor. It has the least power and the most vibration. Increase the power of the saw and the ranking would move up considerably.

800-223-7278 or deltaportercable.com



- **Likes:**
 - The best miter gauge
 - Biesemeyer fence
 - Good adjustment wheel locks
- **Gripes:**
 - Poor power
 - High vibration
- **Price:** \$1,189

General International 50-220C M1

This solidly performing hybrid table saw has decent power that ranks in the middle of the group. I particularly like the large latching access door located on the side of the cabinet, and it's the only saw that includes a digital display for blade tilting – that's a nice extra feature. The heat generated during the hour-long run test was on the high side of average. The blade shroud makes blade changes difficult and it doesn't improve dust collection. If this is your saw, change the insert plate.

514-326-1161 or general.ca



- **Likes:**
 - The only saw with digital readout
 - Large and accessible access door
 - The idea of the blade shroud
- **Gripes:**
 - Insert plate too thin
 - Miter gauge sloppy and small
 - Blade-tilt handwheel lock
- **Price:** \$869

HOW THE SAWS COMPARE / CONT'D

Grizzly G0478

The 2hp motor rates high with good power, but it isn't enough to offset a number of smaller issues. The ShopFox Aluma-Classic fence has a strong hold when clamped, has four-way adjustment to the tabletop and blade and the aluminum fence faces have a T-track in the face. The insert plate is a big concern due to potential flexing while ripping small stock. In addition, the cabinet access door was too small, making retrieval or repair difficult. I also had trouble with the angle adjustment locking mechanism. It has the lowest price of the saws tested.

800-523-0777 or grizzly.com



- **Likes:**
 - Motor power above average
 - Fence with four-way adjustment
 - Good dust collection
 - Very nice enclosed base
- **Gripes:**
 - Thin insert plate
 - Small access door
 - Guard difficult to remove
- **Price:** \$725

Jet Proshop

The Jet saw ties for best hybrid. It has the most power in cutting all materials. The fence system is the best by far. The ease of sliding the fence along the rails makes this saw a standout. The fence faces are aluminum with T-slots located in the top edge for attaching jigs. Because the enclosed base is so small, you need to keep dust collection hooked up at all times. That, plus a non-user-friendly access panel pushed this saw into a tie for best.

800-274-6848 or jettools.com



- **Likes:**
 - Motor power above average
 - Fence with four-way adjustment
 - T-slots on top of fence rails
- **Gripes:**
 - Poor dust collection
 - Inconvenient access door
- **Price:** \$750

Steel City Tool Works 35601

The Steel City saw ties for best hybrid. It is a solid performer with features that rank in the top three in most categories. The drop in blade speed while cutting 1³/₄" red oak raises concerns about the power of the saw. This alone drops the saw from sole possession of the top rating. If having a reliable table saw is appealing to you, this is the one. There are no frills, but also no areas of frustration. The largest cutting surface left of the blade translates into the easiest panel and miter-gauge cutting of the group. **PW**

615-225-9001 or steelcitytoolworks.com



- **Likes:**
 - Cabinet-mounted trunnions
 - 22" cutting area left of blade
 - Labeled hardware package
 - Good adjustment wheel locks
- **Gripes:**
 - Reduced blade speed in thick stock
- **Price:** \$950

Prices correct at time of publication.