

This article originally appeared in an Active Interest Media Company magazine or special interest publication.

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PREMIUM MID-SIZE PLUNGE ROUTERS

Versatile, precise and powerful, these routers are perfect for a single-router shop.

When you're shopping for the one router you'll use all the time, go straight for the mid-sized plunge router. It's powerful enough for most of the large profile bits, yet it's manageable in size, highly adjustable and maneuverable when it's out of your router table. For the most part, these routers are designed to excel in router tables and hand-held operations.

by David Thiel

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While there are many quality plunge routers with big 2½- and 3-horsepower motors, their bulkiness has made them more the choice for exclusive use in router tables. For finesse, free-hand use (or as a router table router) the 1½ to 2 hp plunge routers fit the bill with a light touch and versatility.

The four premium routers we've tested here go a step further by offering extreme precision with their micro-adjustment mechanisms. Most garden-variety plunge routers have a turret depth stop with an adjustable rod to set the depth of your cut. These premium routers add a fine adjustment feature to this system, which increases the ease of adjustability exponentially.

There are other mid-sized plunge routers available, but we excluded plunge routers that would accept only ¼"-shank bits. While these tools are useful, we think



that if you're going to buy a machine with this much flexibility and power, it should accept bits with a 1/2" shank.

Additionally, we didn't test the Craftsman's mid-size premium plunge router because it's being redesigned and will be significantly different from what's in stores now. We'll bring you information on this new router in a future issue.

Seven Important Features

Premium plunge routers have a lot of features, and what's important is how all these work together to make a router that is a pleasure to use or just a pain. The most important features are the motor performance, the ease of adjusting the tool, the ease of the plunging action, the feel of the tool in use, the switch, and the tool's ability to accept accessories such as template guides and vacuum hoses. Another feature is the self-releasing collet.

Rather than have the bit drop out after applying the "break-loose" pressure, these collets have a secondary stopping point that requires minimal pressure to release the bit, making it easier to remove the bit without danger of damaging it.

Many of these features are subjective, but the opinions in this article are from woodworkers who have decades of experience with routers and still use them on a daily basis. The motor performance and the plunging action were able to be more objectively tracked.

How We Tested Each Tool

For performance, we mounted a new 1/2"-diameter straight bit (carbide-tipped Viper bits from Oldham) in each router and mounted each in a router table. We cut multiple 1/4" x 1/2" rabbets in red oak and monitored the rpm and amperage draw before the cuts (these results are listed as



Dust collection is critical when using a hand-held router. The DeWalt has a unique collection system that pulls dust from within the base and then up through the plunge column. The Porter-Cable router also pulls dust through the base, but the vacuum port is on the base itself.

"no load" in the chart) and during the cuts (listed as "load").

The boards were fed by hand at a typical speed for this procedure. Because we weren't able to control the feed rate perfectly, the information in the chart on the following page is of a wider range than we would have preferred, but we've reported the averages from several cuts.

As to how easy it was to plunge each tool, we rigged up some simple free weights in a sling under the router to allow us to determine the weight necessary to initiate the plunge action, and the weight necessary to completely compress the plunge spring. By adding this information to our personal opinions of the plunging action for each router, we then ranked each tool.

Accessories

Dust collection and the ability to accept template guides were two of the major accessories that we took into consideration.



The micro-adjust depth setting on the Porter-Cable adjusts to 1/128" and allows the router to be adjusted up and down when the plunge lock is engaged. The Bosch uses a similar "locking" adjustment, while the DeWalt and Makita use a set-and-repeat adjustment system, which is not as sophisticated.

The DeWalt and Porter-Cable routers had built-in dust collection features, pulling dust through the base of the router. The Bosch router comes equipped with a dust hood that connects to the base and the Makita essentially offers no on-board dust collection.

Another useful accessory are template guides. The DeWalt, Makita and Porter-Cable routers all accept a standard 1 3/16"-diameter Porter-Cable guide. With the DeWalt and Porter-Cable you need to screw in a provided insert to use the template guides. On the Makita, the template guides attach right to the base. The Bosch router requires a proprietary guide set from Bosch.

Conclusion: DeWalt

We recommend the DeWalt DW621 as the best premium mid-sized plunge router. In close second is the Bosch 1613AEVS, which has the superior micro-adjust mechanism and is the best tool for use in a router table.

We were less impressed with the Makita RP1101. While the motor performed well and plunged smoothly, it fell short in features and carries the heftiest price tag in the test. Also disappointing was the Porter-Cable 7529, which had a flawed micro-adjust mechanism, and it suffered from poor motor performance.

BIT SPEED

One of the features of all these routers is variable speed. Adjusting the revolutions per minute allows different diameter router bits to perform their best. In general, the larger the bit diameter, the slower the speed. This makes the motor labor less and increases the life of the router and the bit.

Diameter	Speed (rpm)
1/16" - 1/2"	22K +
1/2" - 1 1/8"	14K - 18K
1 1/8" - 2 1/2"	12K - 14K
2 1/2" and up	8K - 12K

BOSCH 1613AEVS: AN OLDER DESIGN, BUT STILL PRECISE, QUIET AND POWERFUL

Without question, we voted this router the winner in the “precision” category. The Bosch’s micro-adjust system engages quickly and provides finesse in .004” increments. Of the routers tested, only this tool and the Porter-Cable were easy to work with in a router table, with the Bosch having the superior height-adjustment system. The motor performance also was good, with a small drop in rpm under load and the least noise in the test. The eight-position turret offers multiple adjustable depth settings. A couple drawbacks include a return spring that was tighter than we prefer, which made it harder to start and complete the plunge motion. Plus, there is no way to lock the plunging mechanism open other

than holding the plunging lever back with your thumb. The router accepts only Bosch template guides, and the included dust collection insert doesn’t work as well as the DeWalt and Porter-Cable systems. Overall, the Bosch router was a close second in our test. Despite the age of this machine, this router continues to perform and even excel over its younger counterparts by many measures. Priced at \$200, it’s our preference in the category if you plan to use it in a router table.

For more information, contact Bosch at 877-267-2499 or www.boschtools.com.



DEWALT DW621: SIMPLE AND STOUT WITH GREAT DUST COLLECTION

The European-style DW621 turned a lot of heads when it was introduced six years ago, and its features continue to make it our preference for hand-held plunge operations. The dust-collection system keeps things clean without getting in the way of your work. The DW621 feels the most compact of any of the routers tested, but the motor still performs well (it was, however, the loudest in the test). The DeWalt is the only router tested that doesn’t use a lever to release and lock the plunge mechanism. You simply turn the left handle to engage the smooth operating and responsive plunging mechanism. This mechanism also allows the plunge action to stay unlocked for easier setup. One area where

the router did not excel was its micro-adjust mechanism. The micro-adjust requires you to set the bit flat to the work surface, then dial in the cutting depth on the depth stop. This system works, but it pales in efficiency compared to the Bosch and Porter-Cable systems. Also, engaging the trigger on the handle requires some practice. We also felt that base was a little small and provided less support than we would prefer. Overall, the DW621 is a strong, versatile router with some excellent features and only a little room for improvement. A winner.

For more information, contact DeWalt at 800-433-9258 or www.dewalt.com.



MAKITA RP1101: SUPERB MOTOR, BUT LACKING ELSEWHERE

The RP1101 essentially is Makita’s fixed-base router motor in a plunge base. The router provided good performance under load and had a good, responsive plunge spring, but the tool fell short elsewhere. The top-mounted switch provided decent switch access during router table operations, but during hand-held use it’s necessary to release one hand while reaching for the switch, a less-than-ideal arrangement. It’s the only router in the test that required two wrenches to change the bit, making bit changes more cumbersome. The micro-adjust system is similar to the DeWalt’s, requiring set-and-adjust fiddling. While simple and accurate, it’s unrefined compared to the Bosch and Porter-Cable. The round base provides stable support, but with a 1 1/8”-

diameter opening, the router is significantly limited in the size bits that can be used with the stock base. While the opening size does allow use of the standard template guide, we think that offering an adapter plate (as the competition does) is the better option. The router makes no provision for dust collection of any kind. The quality motor does offer external brushes for extended motor life, and this is the strongest feature on this router. While the RP1101 is a gutsy router, it’s priced higher than the competition and seems overpriced for the features you get.

For more information, contact Makita at 800-462-5482 or www.makita.com.



PORTER-CABLE 7529: A GOOD IDEA WITH TWO MAJOR SHORTCOMINGS

This router should have been a strong contender, but it fell short in a couple important areas. While offering a good micro-adjust mechanism once engaged, it has the most complicated and time-consuming method to engage and disengage the mechanism. Once engaged, the micro-adjust was smooth and precise. The second disappointment was the motor's performance. The motor bogged down more easily than the other tools in our test. The 7529 does offer through-the-base dust collection, but it is far less convenient than DeWalt's. The plunge spring was tight, making the router less responsive in plunging action. We were pleased with the dual switches on the 7529, which allow you to

turn on the machine using either the switch on the top or on the handle. This makes the router easier to use in a router table. The collet lock made bit changing on this model easy, and the wide-diameter base opening allowed room for huge bits. While an adequate router, its shortcomings in the motor and micro-adjustment setup make it hard to recommend it compared to the competition. When you take into consideration the \$20 price difference between it and the Bosch and DeWalt routers, the Porter-Cable slips even further.

For more information, contact Porter-Cable at 800-487-8665 or www.porter-cable.com. **PW**



Premium Mid-sized Plunge Routers

	BOSCH 1613AEVS	DEWALT DW621	MAKITA RP1101	PORTER-CABLE 7529
Street Price	\$ 200	\$ 200	\$ 240	\$ 220
Motor				
Amps stated	12	10	11	12
Amps no load/load	5.1/9.3	5.5/9.2	3.5/10.8	4.4/8.1
RPM stated	11-22K	8-24K	8-24K	10-23K
RPM no load/load	21.6K/19.1K	27.1K/22.1K	23.8K/21.1K	21.5K/16.3K
Base				
Diameter	6 ¹¹ / ₁₆ "	6 ¹ / ₂ "	5 ³ / ₄ "	6 ¹ / ₂ "
Opening size	2 ¹ / ₁₆ "	2 ⁹ / ₁₆ "	1 ¹ / ₈ "	3 ¹ / ₂ "
Shape	D	Double-D	Round	D
Template guide	Bosch	PC, w/insert	PC	PC, w/insert
Edge guide centers	4"	3 ¹ / ₄ "	2 ³ / ₈ "	4 ¹ / ₂ "
Dust collection	w/adapt.	thru-base	NA	thru-base
Collet				
Self-releasing?	Yes	Yes	No	Yes
Spindle lock?	Yes	Yes	No	Yes
Bit changing ease (1-5)	4.2	4.2	2.8	4
Plunge Performance				
Micro-adjust quality (1-5)	4.8	3.9	2.6	1.4
Plunge control method	Lever	Handle/twist	Lever	Lever
Weight to start plunge (lbs.)	9#	6#	4#	4#
Weight to complete plunge (lbs.)	29#	17#	17#	30#
Plunge smoothness (1-5)	3.6	4	4.2	4
Plunge lock ease (1-5)	3.6	4.6	3.6	4
Max plunge depth	2 ¹ / ₄ "	2 ¹ / ₈ "	2 ¹⁹ / ₃₂ "	2 ¹ / ₂ "
Depth-stop method	8-pos. turret	3-pos. turret	3-pos. turret	3-pos. turret
Router Table Performance				
Height-adjust method	Precision knob	Turret stop	Turret stop	Precision knob
Height-adjust smoothness	Tight	Good	Tight	Good
Switch location	Handle	Handle	Top	Top or Handle
Overall				
Switch type	Trigger	Trigger	Toggle	Thumb trigger, toggle
Ease of switch (1-5)	4.6	4.8	2.8	3.5
db*	84db	104db	88db	91db
Weight	9.7 lbs	10 lbs	9.3 lbs	9.3 lbs
Ergonomics (1-5)	3.6	4.2	3.4	3.6
Cord length, material	9', P	8', R	9', R	10', R
Warranty	1 yr	1 yr	1 yr	1 yr

Key: On the 1-5 scale, 1=unacceptable, 5=excellent. P = plastic; R = rubber; * Decibels measured at 24" away from the router.