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Bill Krier
Editor
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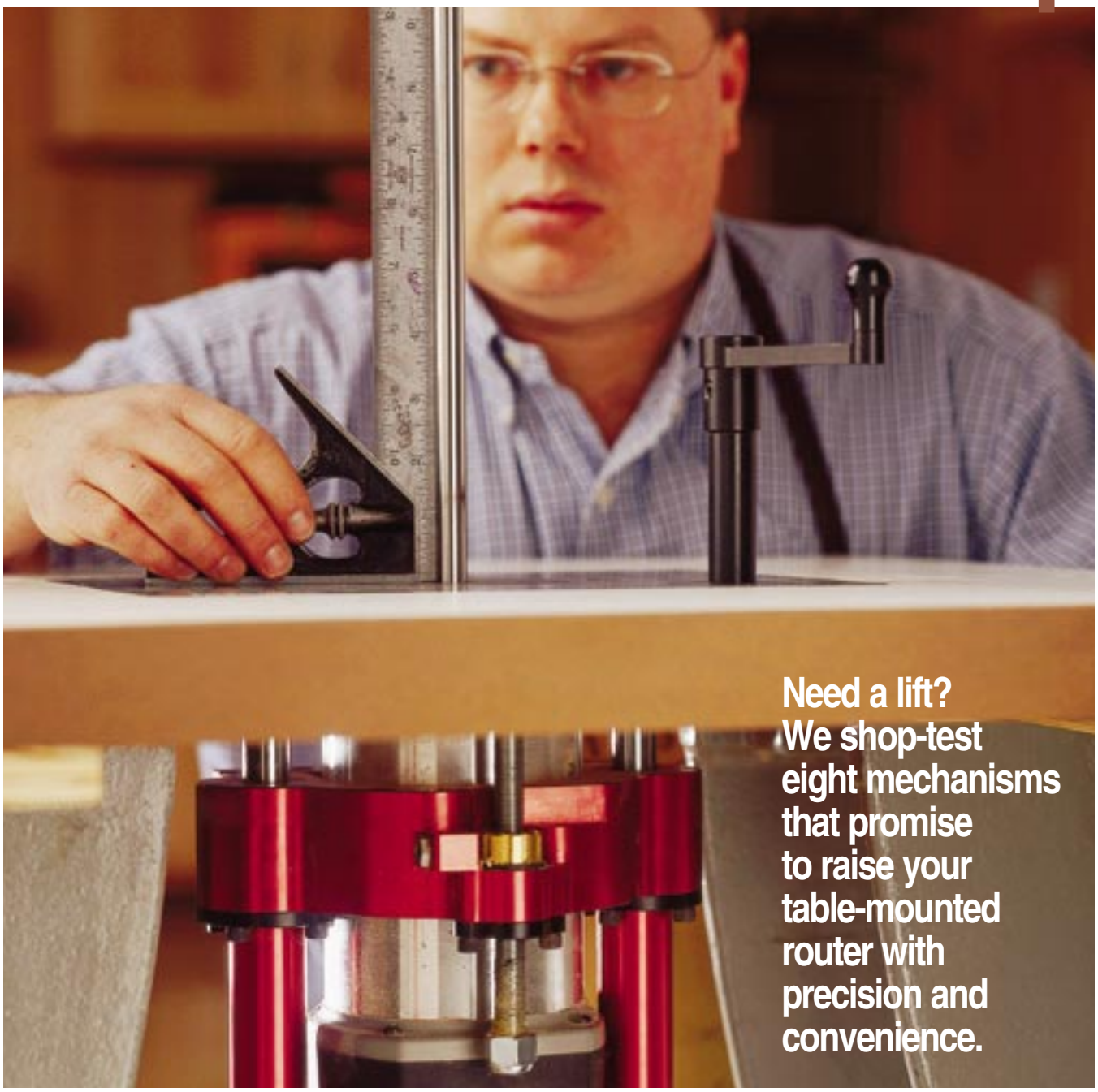
Router-Lift Roundup



Need a lift? We shop-test eight mechanisms that promise to raise your table-mounted router with precision and convenience.

Readers' top 5

We asked woodworkers on our Web site, www.woodonline.com, what they want to know most about router lifts. Here's what they told us:

1. Will it fit my router?
2. Will it fit in my router table?
3. How quickly and accurately can I set the bit's height?
4. How easy is it to change bits?
5. Can I still use my router for hand-held tasks?

When Canadian machinist Darrin Smith introduced the JessEm Rout-R-Lift to the woodworking world in 1999, he brought the router table one step closer to the spindle shaper that inspired it. By dropping a crank into a hole in the lift's insert plate, woodworkers could now change the cutting height of a router bit without fumbling around underneath the table. Since then, other manufacturers have come up with their own through-the-tabletop router lifts. But such convenience doesn't come cheap—you'll pay $90–$360 for a router lift.

Are they worth it? That depends on your situation. If you're starting from scratch, you could easily spend $800 on a commercially made router table, midsize router, and a lift. That's more than you might spend on a shaper with similar power and capabilities. But if you already have a table, router, and bits, adding a lift could be as simple as mounting your router to an insert plate and dropping it in.

Gauging success: How we tested the lifts

Any good router keeps the bit perpendicular to its base, but do these lifts maintain that perpendicularity throughout their full elevation range? Using a precision-ground race shaft in the mounted router's collet, as shown on *page 1*, we found that they do.

To test the accuracy of the height-adjustment mechanism, we raised and lowered the router to specific heights by counting turns of the crank, then measuring the actual cutting depth. Next, we routed 100' of ½"-deep dado in plywood, and measured the difference in depth from the start to the end of the cut. After this messy test, we examined each lift for dust-related difficulties. Finally, we used each lift in our daily shop duties for more than a month to give us a good feel for how easy it is to change bits, remove and remount the router to the table, and use the fine-adjustment scales.

Answers to your questions about router lifts

1. Will it fit my router? The model-by-model summaries, beginning on *page 4*, give more specifics, but here's the scoop in a nutshell: Virtually any popular fixed-base or plunge router will mount to Rout-R-Lift or XACTA-Lift. And Router Raizer works with most plunge routers.

The rest of the lifts are fairly finicky about their partners. Three of the fixed-base-only lifts are designed for a Porter- Cable 7518, but will also accept midsize routers from Bosch, Makita, and Porter-Cable, using optional adapters like that shown in *Photo A*. PlungeLift currently mounts to only five plunge routers, with more promised in the future.

2. Will it fit in my router table? That depends on the size of your existing insert plate, so check the Insert Plate Sizes chart, *page 3*. If your current insert is smaller, you can enlarge the hole to fit. Half of the lifts provide insert-plate levelers; the rest, you'll have to shim yourself.

On the other hand, if you have a cast-iron or steel tabletop, machining an opening to accept the insert plate isn't an option. Your only choice in such cases is Router Raizer, which works with any router table you can drill a hole through.

Adapter collars make midsize routers fit the ProLift Ni28, Mast-R-Lift, and Precision Router Lift (PRL), shown *above*. The ProLift Al13 fits these routers out of the box.

INSERT PLATE SIZES		
BENCH DOG	ProLift Al13	8¼" x 11¾"
	ProLift Ni28	8¼" x 11¾"
JESSEM	Mast-R-Lift	9¼" x 11¾"
	Rout-R-Lift	11¾" x 14¾"
JET	XACTA-Lift	11¾" x 14¾"
ROUTER TECHNOLOGIES	Router Raizer	(no plate)
WOODPECKER	Precision Router Lift	9¼" x 11¾"
	PlungeLift	9¼" x 11¾"

TURNS REQUIRED TO CHANGE ELEVATION 1"		
BENCH DOG	ProLift Al13	8
	ProLift Ni28	8
JESSEM	Mast-R-Lift	16
	Rout-R-Lift	20
JET	XACTA-Lift	20
ROUTER TECHNOLOGIES	Router Raizer	16
WOODPECKER	Precision Router Lift	32
	PlungeLift	32

3. How quickly and accurately can I set the bit's height? That depends on how many crank turns it takes to raise the bit. (See the chart *above*.) The more turns required, the easier it is to make fine adjustments; the fewer turns, the less time it takes to make large changes.

Except for Router Raizer and both Woodpecker lifts, all of the lifts have an anti-backlash mechanism. (See Dealing with Backlash on *page 4*.) With this, you can adjust for wear between the leadscrew and the carriage—a big plus if you'll use the lift a lot.

Once set, all of the lifts held their ground well, varying less than 1/64" after routing 100' of dado. The Bench Dog lifts have a thumbscrew lock on the carriage for holding the height, but we didn't find them any more or less accurate in this test than the models without a lock.

Speaking of locks, you'll have to deal with the router's own plunge lock if you use Router Raizer or PlungeLift. If your plunge router locks on release, such as on Porter-Cable plunge routers, you'll have to reach under the table to hold the lock open while you adjust the lift from above, negating one of the lifts' key benefits.

All of the insert-based lifts have a fine-adjustment scale, but only the Bench Dogs and the Precision Router Lift scales can be "zeroed" to your bit height to measure only the change in height.

4. How easy is it to change bits? After removing the reducer ring, if used, the fixed-base-only models allow you to raise the collet above the table, as shown in *Photo B*, for easy bit changes. Changing bits on the rest of the models is about the same as changing bits in the same table-mounted router without a lift.

5. Can I still use my router for handheld tasks? Sure, but some lifts make the switch easier than others. Reverting to handheld use with Router Raizer is as simple as dismounting the router from your table—the device stays on the router and functions even handheld. PlungeLift requires reinstalling the plunge router's depth-stop rod.

On the fixed-base-only lifts, turning a few screws loosens the motor clamp enough to remove it and remount it in the router's original base. However, with XACTA-Lift and Rout-R-Lift, plan on dedicating a router to the table. Why? Because to revert to handheld, you must first remove the carriage plate from the carriage, then the router from the carriage, and finally the universal mounting plate from the router. It's cumbersome.

Cranking the BenchDog ProLift Ni28 to full height makes bit changing easy from above the table.

Dealing with Backlash

Backlash is the amount the leadscrew turns before the lift starts to move when changing directions, and it's a fact of life in leadscrew-driven machines like these lifts. (Your tablesaw's height- and bevel-adjustment cranks also have some backlash.) Let's say you need to raise the bit .010", but you accidentally raise it .012". If there's .001" of backlash in the system, turning the crank back down to .010" will only lower the bit to .011". (The first .001" is lost to backlash.) To compensate, turn the crank down to a few thousandths below the .010" mark, then back up to .010".

How we measured backlash: After calibrating the height of a gauge pin (in the router collet) to "0" on the fine-adjustment scale (Step 1), we raised the router at least one-half turn of the crank (Step 2). We then turned the crank back to "0" (Step 3), where the dial indicator shows the amount of backlash.

A lift-by-lift look at the tested models

Bench Dog ProLift Al13
800/786-8902,
www.benchdog.com
Out of the box, fits: Bosch 1617/1618, DeWalt DW610, Porter-Cable 690. *With adapter ($16), fits:* Makita RF1100/1101.

Instead of a hex-shanked crank to turn the leadscrew, the all-aluminum ProLift Al13 uses a 9/16" deep-well socket (provided), so you don't have to keep track of a special tool to use the lift. The fine-adjustment scale fits over the socket, as shown in *Photo C*.

To accommodate slight variations in router-motor diameters that could cause the carriage to bind on its guide posts, you calibrate the posts to fit your router. And the carriage has cooling fins to dissipate motor heat.

We like almost everything about this lift except bit changing. The leadscrew moves the router fast, but to raise the collet through the tabletop, you must first remove the reducer ring, which is secured to the insert with three socket-head Allen screws. And, because the insert plate is designed to fit Bench Dog's router table (with its integral plate-leveling mechanism), this plate has no levelers.

Bench Dog ProLift Ni28
Out of the box, fits: Porter-Cable 7518. *With adapter ($20), fits:* Bosch 1617/1618, DeWalt DW610, Porter-Cable 690, Makita RF1100/1101.

The beefy ProLift Ni28 is the cast-iron version of the Al13, with a one-piece carriage casting and a nickel-plated insert plate that should last a lifetime. This thing is so massive, it comes with an aluminum-channel stiffener to keep your tabletop from sagging under its 34-pound weight (not including router).

O-rings inside the Bench Dog fine-adjustment scale hold the socket shaft firmly, yet allow you to zero the scale to the index mark on the insert plate.

The heavyweight reducer rings stay put without being fastened to the insert plate in most cases. But on the unit we tested, they stood as much as .007" proud of the plate, catching on stock as we worked. Bench Dog's Norston Fontaine suspects that our plate's rabbet may not have been machined deep enough, adding, "We've sold hundreds of these units without a single complaint. If there's a problem, call us and we'll make it right."

JessEm Mast-R-Lift
800/436-6799,
www.jessem.com
Out of the box, fits: Porter-Cable 7518. *With adapter ($20), fits:* Bosch 1617/1618, DeWalt DW610, Porter-Cable 690, Makita RF1100/1101.

Our first impression when we pulled the Mast-R-Lift out of the box was, "Wow, that's pretty." Its beauty isn't just skin deep, though, as this lift's performance backed up that impression in spades.

Although similar to the ProLift Al13, Mast-R-Lift improves on that model in a couple of ways. First, removing a reducer ring to change bits requires only a simple flick of the wrist using a spanner wrench that comes with the lift.

Secondly, Mast-R-Lift's insert plate has a leveling system for flushing the plate to your tabletop. However, the levelers adjust from the bottom, so we spent a fair amount of trial-and-error time installing and adjusting it. Mast-R-Lift's 3"-tall crank easily clears most router-table fences.

JessEm Rout-R-Lift
Out of the box, fits: Bosch 1450, 1604, 1611, 1613, 1617; Craftsman 3- and 4-hole bases; DeWalt DW610, DW615, DW621, DW624, DW625; Elu 2721, 3337-9; Freud FT2000; Hitachi M12V, TR12; Makita 1100/1101 series, 3600, 3621, 3612B; all Milwaukee; Porter-Cable 100,

518, 520, 536, 690 series, 7518/19, 7538/39; Ryobi 180, 500/501, RE-600.

Rout-R-Lift fits more routers than any other in the test, and its mounting plate comes predrilled for all of the routers listed. Unfortunately, it doesn't hold a candle to Mast-R-Lift (although they both share the same under-the-insert-plate leveling system).

You can't raise the collet high enough to change bits from above, but a finger hole helps when removing the lift to change bits. And, the insert plate is about twice the size of the other lifts' plates—something to consider if you have a miter slot in your existing router table.

Jet XACTA-Lift
800/274-6848,
www.jettools.com
Out of the box, fits: Same models as JessEm Rout-R-Lift.

This lift is virtually identical to the JessEm Rout-R-Lift with a couple of notable exceptions. First, it comes with a nice aluminum fence, shown in *Photo D*; and the insert plate lacks levelers.

Router Technologies Router Raizer
866/266-1293,
www.routertech-nologies.com
RZ100 kit fits: Craftsman 27505, 27506, 27510, 27511; DeWalt DW625; Elu 3337, 3338, 3339; Freud FT2000, FT2000E; Hitachi M12V, TR12; Makita 3612BR, 3612B, 3612C; Porter-Cable 693, 6931 base, 7529, 7538, 7539; Ryobi RE600. *RZ200 kit fits:* Bosch 1617/18, 1619; Fein RT1800; Makita RP1100/01 and RF1100/01 plunge base.

Fitting most plunge routers on the market today, Router Raizer is the only tested lift priced under $100. With no insert plate, it works in almost any router table.

XACTA-Lift's fence features movable medium-density fiberboard (MDF) faces, a bit guard, and dust-collection port.

Installing Router Raizer can take a couple of hours, and in some cases requires dissasembly, removal, and/or drilling of the router's parts. Before you buy, we recommend you visit the manufacturer's Web site to preview the process for your router to make sure you're comfortable with the task.

With no fine-adjustment scale, you'll have to use your ruler to set the cutting height, then tweak it by trial and error. But the 16 turns-per-inch leadscrew strikes a nice compromise between adjustment speed and fine-tuning.

Woodpecker PlungeLift
800/752-0725,
www.woodpeck.com
Five separate lifts, fitting: DeWalt DW625, Freud FT2000, Hitachi M12V, Makita 3612C, Porter-Cable 7539. *Coming soon:* Bosch 1613, 1615, 1619, DeWalt DW621.

Each PlungeLift fits only one model of router, so it mounts to that router quickly and easily. However, once you've invested in the lift, you probably won't want to change routers. PlungeLift's carriage replaces the router's depth-stop rod, so returning to handheld mode requires reinstalling the rod.

As for the insert plate, we like the eight set-screw levelers that adjust from the top of the plate. And, a pair of spring-loaded ball bearings in adjacent edges of the plate provide a comfortably snug fit in its table opening.

Woodpecker Precision Router Lift (PRL)
Out of the box, fits: Porter-Cable 7518. With adapter ($30), fits: Bosch 1617/1618, Porter-Cable 690, Makita RF1100/1101.

PRL's insert plate has the same attributes we liked in its brother, the PlungeLift. And, like the other fixed-base-only lifts, you can raise the router collet above the table for changing bits. But we downgraded both Woodpecker

PRL's crank handle extends past the bit opening's center line and bumps the fence.

The lift within: Milwaukee's new fixed-base router

If you don't already have a router to table-mount, consider Milwaukee's 5615-20 ($155), shown *below*. Its built-in leadscrew depth adjuster can be accessed through the base and turned with an ordinary speed wrench and socket, making it a good candidate for table-mounting. Currently, this router is a single-speed machine, but Milwaukee's Chris Berg says a variable-speed version is due out "later this year."

lifts' ratings for bit-changing ease because of the 32-turns-per-inch required to raise the collet through the insert plate.

When routing with the bit partially captured in the fence, as shown in *Photo E*, we found that the crank handle hits the fence. You can purchase an optional 8"-high crank rod for $15.

Which lifts rise to the top of the pack?

Because most lifts fit specific models, you may simply have to choose a lift that fits your router. Undoubtedly, the cast- iron Bench Dog ProLift Ni28 is as tough and accurate a lift as you'll find, bringing near-shaper qualities to the router table. But for $100 less, we'd opt for JessEm's Mast-R-Lift. We think it's worth the savings unless you're in a professional cabinet shop.

If you're on a budget and already own a plunge router, go with Router Raizer (if it fits your router). You'll still be able to use your router for handheld tasks with a minumum of hassle.

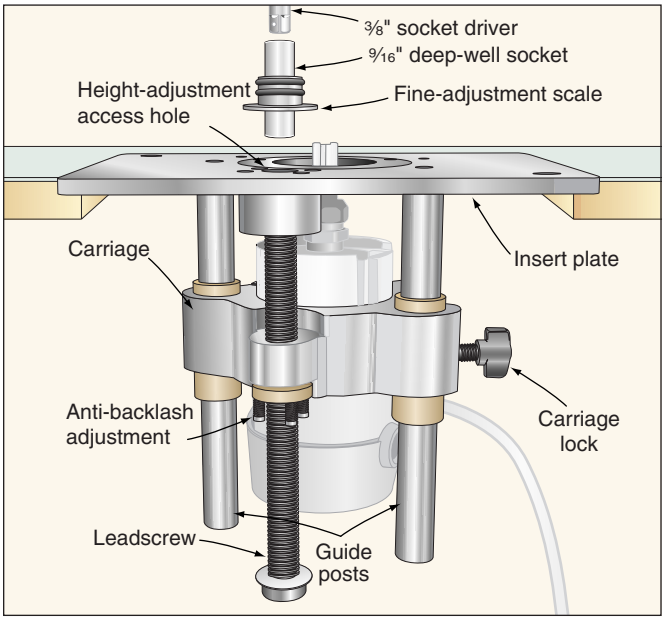
Produced by Marlen Kemmet
Written by Dave Campbell with Gary Smith
Illustrations: Tim Cahill
Graphic Design: Jamie Downing
Photographs: Baldwin Photography

Ups and Downs of the Tested Lifts

Although we tested eight router lifts, we found that they operated in the four ways shown here.

FIXED-BASED-ROUTER-ONLY LIFTS

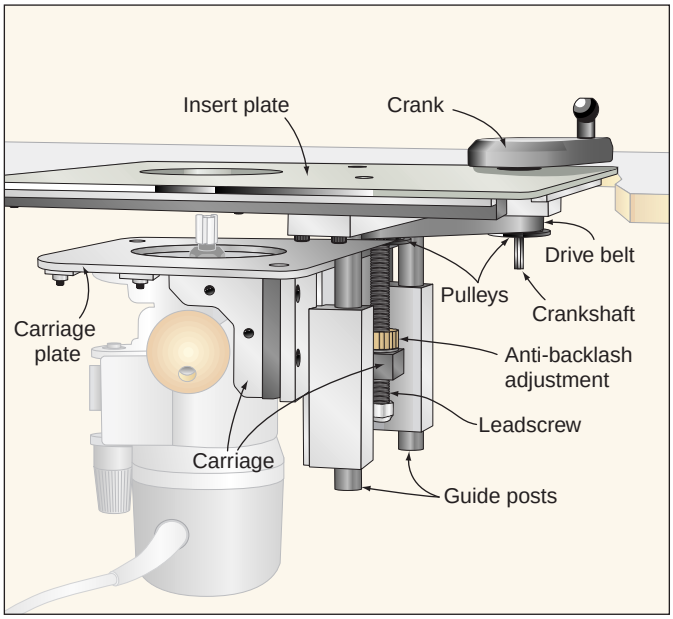
Bench Dog ProLift AI13 (shown) and ProLift Ni28, JessEm Mast-R-Lift, and Woodpecker Precision Router Lift



The four fixed-base-only lifts operate in essentially the same way: Remove the router's base and mount the motor to the carriage. Both Bench Dog units use direct drive (as shown here). Mast-R-Lift uses a belt and pulleys to link the crankshaft to the leadscrew; Precision Router Lift uses a chain and sprockets.

UNIVERSAL LIFTS

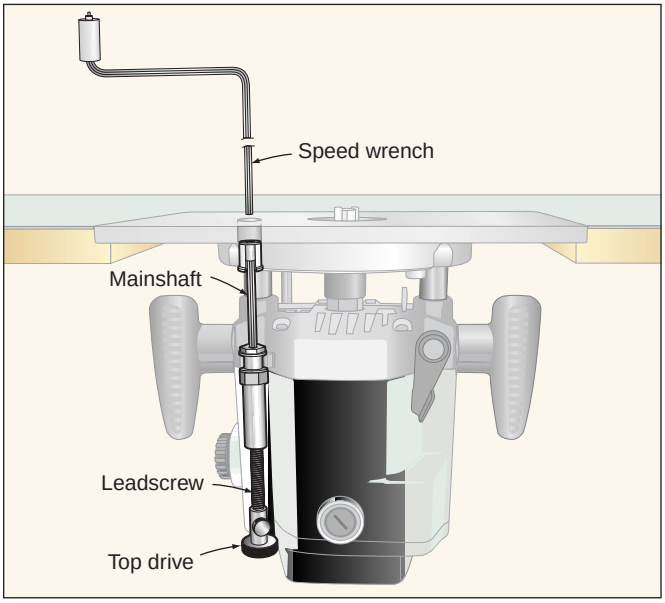
JessEm Rout-R-Lift and Jet XACTA-Lift



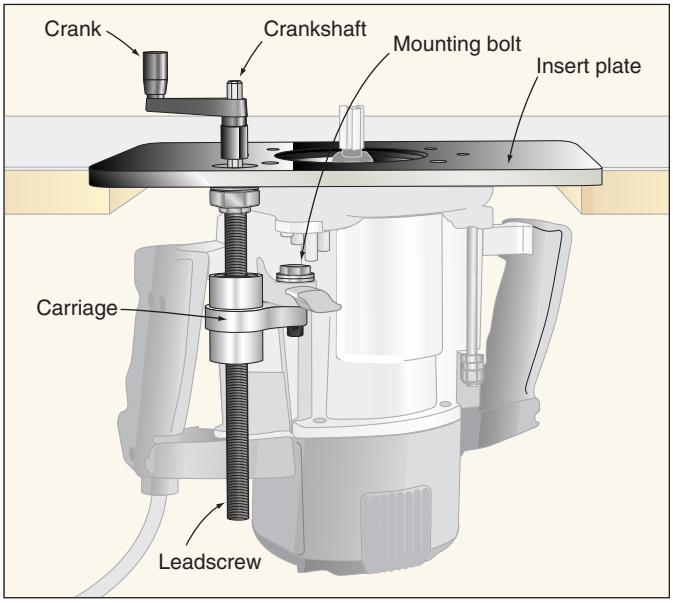
Universal lifts—the nearly identical JessEm Rout-R-Lift and Jet XACTA-Lift—accept virtually any router, fixed- or plunge-base, because the router mounts, base and all, to the carriage plate. This additional thickness can limit the cutting depth, depending on the router.

PLUNGE-ROUTER-ONLY LIFTS

Router Technologies Router Raizer



Woodpecker PlungeLift



The plunge-router-only models—Router Raizer (*left*) and PlungeLift (*right*)—rely on your router's built-in posts to guide the router through its up-and-down travel, making them only as accurate as the router you use them with. (The fixed-base-only and universal designs virtually eliminate the router from the accuracy equation because the elevation action happens outside the router.)

RAISING YOUR EXPECTATIONS OF 8 ROUTER LIFTS

MANUFACTURER/BRAND	MODEL	INSERT PLATE: MATERIAL (1)	INSERT PLATE: PRIMARY THICKNESS (INCHES)	INSERT PLATE: MAXIMUM BIT OPENING (INCHES)	INSERT PLATE: REDUCER-RING DIAMETERS (INCHES)	CARRIAGE: MATERIAL (1)	CARRIAGE: TOTAL ROUTER TRAVEL (INCHES) (2)	CARRIAGE: SCALE INCREMENTS (INCHES)	PERFORMANCE RATINGS (3): INSERT LEVELING EASE	PERFORMANCE RATINGS (3): PERPENDICULARITY TO INSERT (4)	PERFORMANCE RATINGS (3): SCALE/CRANK ACCURACY (5)	PERFORMANCE RATINGS (3): SCALE READABILITY	PERFORMANCE RATINGS (3): BIT CHANGING EASE	PERFORMANCE RATINGS (3): BACKLASH (6)	PERFORMANCE RATINGS (3): EASE OF RETURN TO HANDHELD MODE	ACCESSORIES (7): STANDARD	ACCESSORIES (7): OPTIONAL	WARRANTY (YEARS)	COUNTRY OF ASSEMBLY (8)	WEIGHT (POUNDS)	SELLING PRICE (9)
BENCH DOG	ProLift Al13	AL	1/2	3 5/8	2, 2 5/8	AL	6 5/8	0.0025	F	E	E	E	G	E*	G	S	A, G, P, Z	2	U	12	$280
	ProLIft Ni28	CI	1/2	3 3/4	2, 2 5/8	CI	6	0.0025	F	E	E	E	E	E*	G	S	A, G, P, Z	2	U	34	370
JESSEM	Mast-R-Lift	AL	21/32	3 5/8	1 1/2	AL	3 1/2	0.0020	G	E	E*	E	E	E*	G	S	A, R	2	C	14	270
	Rout-R-Lift	AL	3/16	3 5/8	1 1/2	AL	2 9/16	0.0050	G	E	E*	G	G	E*	F	S	R	2	C	13	200
JET	XACTA-Lift	AL	1/4	3 5/8	1 1/2	AL	2 9/16	0.0050	G	E	E*	G	G	E*	F	F, S	R	2	C	14	280
ROUTER TECHNOLOGIES	Router Raizer	N/A				S	2 3/4*	N/A	N/A	*	G*	N/A	G	G	E		C	2	U	0.5	90
WOODPECKER	PlungeLift	AL	3/8	3 5/8	1, 1 3/16, 2 1/2	AL	3*	0.0010	E	*	G	F	F	G	G	S	C, Z	LIFE	U	4.5	150
	Precision Router Lift	AL	3/8	3 5/8	1, 1 3/16, 2 1/2	AL	4 3/16	0.0010	E	E	G	E	G	E	G	S	A, C, Z	LIFE	U	14	250

NOTES:

For specifications on other types of tools, click on "Tool Comparisons" at www.woodmall.com.

1. (AL) Aluminum
   (CI) Cast Iron
   (S) Steel
2. (*) May vary depending on router used.
3. E Excellent G Good F Fair
4. (*) Accuracy dependent on plunge router used.
5. (*) Scale cannot be zeroed.
6. (*) Backlash adjustment provided.
7. (A) Adapter collar for mid-size fixed-base routers
   (C) Extended-height crank
   (F) Router-table fence
   (G) Freehand routing guard with dust-collection port
   (P) Porter-Cable guide-bushing adapter
   (R) Reducer-ring set
   (S) Starting pin for freehand routing
   (Z) Zero-clearance insert
8. (C) Canada
   (U) United States
9. Prices current at time of article's production, and do not include shipping, where applicable.

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