

# FIRE WHEN READY

Hoseless nailers continue to improve, bringing us closer to compressor-free jobsites. Here's a look at the latest unplugged framers and finish nailers.

**A**s a builder in the Washington, D.C., area, I spend a lot of time with a nailer in my hand and, of course, a lot of time dragging an air hose around the jobsite. It was an eye-opening experience for me to try out the current generation of hoseless (a.k.a. cordless) nail guns, both framing and finish; it's an impressive array of capable tools, whether they are powered by gas fuel cartridges or by rechargeable batteries. After a few months of testing, I came to the conclusion that we are inching

closer to a time when air compressors will be a thing of the past. I'm convinced that we are already at that point with finish nailers and, hopefully, are on the threshold of a great leap forward with framing guns, too.

Overall, I tested a dozen tools. Framing nailers (all of which are gas-powered) include the Hitachi NR90GR (round-head), Hitachi NR90GC (clipped-head), Max GS683RH (round-head), Max GS683CH (clipped-head), Paslode 900420 (clipped-head),



By Steve Veroneau  
Photos by Dot for Dot

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FRAMING NAILERS >	Hitachi NR90GC	Hitachi NR90GR	Max GS683CH	Max GS683RH
				
<b>WORKING WEIGHT</b>	7.7 pounds	7.9 pounds	7.8 pounds	7.8 pounds
<b>NAIL RANGE</b>	2-3 1/2 inches .113-.131 inch	2-3 1/2 inches .113-.131 inch	2-3 1/4 inches .113-.131 inch	2-3 1/4 inches .113-.131 inch
<b>NAIL TYPE</b>	31-degree clipped	20-degree full-round	34-degree clipped	21-degree full-round
<b>SHOTS PER CANISTER</b>	1,200	1,200	1,100	1,100
<b>SHOTS PER BATT. CHARGE</b>	4,000	4,000	4,500	4,500
<b>STREET PRICE</b>	\$399	\$399	\$365	\$395
<b>COMMENTS</b>	The Hitachi nailers are the best of the bunch, with the longest nail capacity of up to 3 1/2 inches. The full rubber-coated handle provides a superior grip, and the tool had the best balance and feel. The sturdy, foldaway rafter hook is nice. The manual makes no mention of filter cleaning being required regular maintenance. Internal cleaning is only mentioned on the company's Web site, though a reference will soon be added to the owner's manual. A tool-free depth-of-drive adjustment would be a nice addition.		The Max nailers are solid performers. They are essentially the same tools as the Powers models. They feature the best tool-free depth-of-drive adjustment and have easy filter access for routine maintenance. The belt hook is reversible, and the head has protective rubber surrounding the bottom. The hard plastic hand grips were not as comfortable to use. The Max tools are the only ones that come with non-marring tip covers. The owner's manual is a bit sparse with no reference to altitude restrictions or the comprehensive cleaning cycle detailed on the Web site.	
SPECS ARE PROVIDED BY EACH MANUFACTURER AND ARE NOT VERIFIED BY TOOLS OF THE TRADE.	<b>Hitachi Power Tools</b> 800-829-4752 <a href="http://www.hitachipowertools.com">www.hitachipowertools.com</a> Circle #203 and #204		<b>Max USA</b> 800-223-4293 <a href="http://www.maxusacorp.com">www.maxusacorp.com</a> Circle #205 and #206	

Powers W3-21FRH (round-head), and the Powers W3-34CDH (clipped-head).

The finish nailers include the battery-powered DeWalt DC618KA (16-gauge angled nail) and Senco CF41 (15-gauge angled nail) and the gas-powered Paslode 900600 (16-gauge angled nail), along with the gas-powered Paslode 901000 brad nailer (18-gauge straight brad) and the battery-powered Senco CF25 brad nailer (18-gauge straight brad).

### HOW THEY WORK

The gas-powered nailers (all the framers and the two Paslode finish nailers) work much like any other internal combustion engine, relying on a controlled explosion

to move a piston. When the nose is pressed onto the work, fuel is carefully metered out into the combustion chamber and mixed with air by an internal fan. When the trigger is pulled, a spark plug connected to the tool's battery ignites the mixture and the resulting rapid expansion of gas forces the piston and thus the driver blade downward. These separate steps are why bump-firing is not an option with gas-powered nailers. After the nail is shot, the fan continues to run as it removes exhaust gases from the combustion chamber. This cycle can be repeated a few times per second, but if the chamber gets too hot from rapid usage, combustion strength is affected and nails may be

under-driven. When this happens, the nailer must be allowed to cool down before its next use. This is the basis of why gas-powered nailers are not considered true production tools and provides the challenge for their next generations.

Ongoing fuel expenses are another consideration with these tools; gas canisters cost between \$5.50 and \$8.50, depending on the brand, and are good for 1,100 to 1,200 shots. The nailers' small rechargeable batteries (6 volts to 7.2 volts) are good for 4,000 to 5,500 shots per charge, depending on the model.

The DeWalt and Senco battery-powered finish nailers operate with a fly-wheel and clutch system, and their larger batteries (14.4 volts to 18 volts) do all

Paslode 900420	Powers W3-21FRH	Powers W3-34CDH	FINISH NAILERS >	DeWalt DC618KA
				
7.6 pounds	7.8 pounds	7.8 pounds	<b>WORKING WEIGHT</b>	8.5 pounds
2-3 1/4 inches .113-.131 inch	2-3 1/4 inches .113-.131 inch	2-3 1/4 inches .113-.131 inch	<b>NAIL RANGE</b>	1 1/4-2 1/2 inches 16 gauge
30-degree clipped	21-degree full-round	34-degree clipped	<b>NAIL CAPACITY/TYPE</b>	120/20-degree
1,200	1,200	1,200	<b>SHOTS PER CANISTER</b>	N/A (battery-powered)
4,000	5,700	5,700	<b>SHOTS PER BATT. CHARGE</b>	800
\$379	\$499	\$499	<b>STREET PRICE</b>	\$369
This is a proven, capable tool. It features a good rubber-topped handle and a unique three-position rafter/belt hook. The tool-free filter access is handy, but the depth-of-drive action was hard to work. The manual is the most informative and the cleaning instructions were clear.	The Powers nailers are essentially the same as the Max tools with the exception of Max's non-marring tip covers. They feature the best tool-free depth-of-drive adjustment and have easy filter access for routine maintenance. The belt hook is reversible, and the head has protective rubber surrounding the bottom. The hard plastic hand grips were not as comfortable to use. Powers doesn't include comprehensive cleaning cycle instructions in its manual or on its Web site.		<b>COMMENTS</b>	This trim favorite is full of useful features, such as a selective-fire switch, six-position numbered depth-of-drive dial, manual lock-out switch, and two LED headlights. It was a real performer, especially in bump-fire mode, but its larger battery made it the heaviest and a bit cumbersome.
<b>Paslode</b> 800-682-3428 www.paslode.com Circle #207	<b>Powers Fasteners</b> 914-235-6300 www.powers.com Circle #208 and #209			<b>DeWalt</b> 800-433-9258 www.dewalt.com Circle #210

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of the nailing work. A motor spins a flywheel as the trigger is pressed and when its speed is sufficient a solenoid briefly engages a mechanical linkage between the flywheel and the driver. This is why bump-firing works with battery-powered driving—the flywheel is just kept in motion.

### NEW CONSIDERATIONS

Temperature, humidity, and altitude—conditions that won't faze pneumatic nailers—can affect the performance of hoseless tools. With regard to temperature, the performance of hoseless tools is reduced when the temperature is below freezing or much above 100 degrees F. These extreme temperatures affect both

battery life and fuel cell performance. While thermal problems might be a nuisance you are already used to with batteries, they can prove more serious with fuel canisters. The gas compresses in the extreme cold, rendering it insufficient to power the tool; more dangerously, in the extreme heat the cylinder can expand and possibly rupture. The latter point is of real concern when storing fuel canisters; a closed vehicle or job box in the back of a truck can quickly reach temperatures that exceed the 120 degrees F maximum temperature that these fuel canisters are rated to withstand.

Moisture is another consideration with the gas-powered tools, as wet conditions can affect their operation. You

should not use these tools in the rain, and even use in extreme humidity is cautioned against.

High altitude also can affect the gas nailers. As with extreme heat or cold, altitudes above 5,000 feet affect the delivery of gas to the tool, so using these framing tools at high elevations is not recommended. The Paslode gas-powered finish tools, however, have an optional fuel metering valve that makes them effective for use between 4,000 and 9,000 feet.

### > FRAMING NAILERS

I used all seven of the framers over several months building a deck, punching out a newly framed house, building a

(CONTINUED) FINISH NAILERS >	Paslode 900600	Paslode 901000	Senco CF25	Senco CF41
				
<b>WORKING WEIGHT</b>	4.9 pounds	4.9 pounds	6.3 pounds	7.7 pounds
<b>NAIL RANGE</b>	1 1/4–2 1/2 inches 16 gauge	5/8–2 inches 18 gauge	5/8–2 1/8 inches 18 gauge	1 1/4–2 1/2 inches 15 gauge
<b>NAIL CAPACITY/TYPE</b>	100/20-degree	100/Straight	110/Straight	110/34-degree
<b>SHOTS PER CANISTER</b>	1,200	1,200	N/A (battery-powered)	N/A (battery-powered)
<b>SHOTS PER BATT. CHARGE</b>	4,000	4,000	1,000	600
<b>STREET PRICE</b>	\$359	\$259	\$379	\$399
<b>COMMENTS</b>	These Paslode nailers handle a lot more like pneumatics and have the best balance and feel by far. Both have integral snap-off noses for jam clearing and unique rubber-tipped triggers, and are respectable performers. They lost points because of the extra cost and cleaning maintenance necessitated by their gas-fueled power. The lack of bump-firing ability is also an important consideration when using these as primary nailers.		Senco had the preferred brad nailer and the lone 15-gauge nailer of our test. Both feature an innovative all-in-one selective-fire button and depth-of-drive dial. Like other battery nailers, they felt heavy in use. The 15-gauge tool has tool-free jam clearing, but the 18-gauge requires a hex wrench. The 18-gauge nailer shot slightly longer brads than the other brad nailer in the test.	
SPECS ARE PROVIDED BY EACH MANUFACTURER AND ARE NOT VERIFIED BY TOOLS OF THE TRADE.	<b>Paslode</b> 800-682-3428 www.paslode.com Circle #211 and #212		<b>Senco</b> 800-543-4596 www.senco.com Circle #213 and 214	

fence, and in other general framing tasks. Unlike a pneumatic nailer, which can be bump-fired until your compressor can't keep up, the gas tools all rely on full sequential-firing; for each shot, you have to press the nose onto the workpiece and then pull the trigger. All of the framers feature compact (one-stick) magazines with dry-fire lockout to prevent driver damage and have battery-monitoring indicator lights.

The gas-powered framers available now are greatly improved over the first generation tool put out 20 years ago by category pioneer Paslode. I found that all these nailers worked well; as a punch-list tool, any one of these would be a great investment. This would allow you to send one person from your crew to do punch list or repairs

without tying up the compressor that is keeping your full crew productive at another site.

Keep in mind, however, that these tools lack some of the power of pneumatics, and I found that none of them performed well in engineered lumber.

### BALANCE & ERGONOMICS

There is little difference in the working weights of the framers, which range from 7.6 pounds to 7.9 pounds—a little lighter than most pneumatic framers. The Hitachi models had the lightest feel, followed closely by the Paslode.

When I grab a tool, feel is of paramount importance to me. The Hitachi tools had the best feel; their soft-grip handle was comfortable and is a little smaller than on the other tools, which

The Max (shown) and Powers framers feature the best tool-free depth-of-drive adjustment.



for me made for a much better feel on the trigger. The Max and Powers tools are a little larger to grasp than the Hitachis or Paslode, and their plastic handles are harder and therefore were not as comfortable.

(Incidentally, the Max and Powers nailers are manufactured by the same company, have virtually the same

# TOOL TEST

## HOSELESS NAILERS

features, and performed exactly the same in all test categories.)

### EASE OF USE

When I try a new tool, I want to figure out if it is easy to use and how convenient its features are. In essence, what would make me start picking up one tool instead of another? For instance, with these nailers, how easy are they to load, adjust, and maintain?

Installing the batteries and the fuel canisters was the first thing I looked at. I preferred the tools with the battery on the rear (all but the Paslode) because I found them easier to install and visually check; I'm not as likely to forget to snap them back in prior to use after I release the battery when the tool will sit idle for a spell. (This battery-saving procedure is important to follow because leaving the batteries in some of the gas-powered tools as long as overnight can fatally discharge—i.e., permanently ruin—the battery.)

As for the fuel canisters, all of the tools were evenly matched. They all engage in the same way, and the replacement process took about 10 seconds.

For nail loading, I preferred the metal nail-follower mechanisms on the Hitachi, Max, and Powers tools. In the past, I have had problems with my Paslode's follower and the plastic button that holds it open breaking, and

although I didn't have the same problem with the test tool, I believe the component could be improved.

All of the nailers have depth-of-drive adjustment. My favorites were the Max and Powers models because of their easy dial adjustment. Paslode's tool-free stop was difficult to work, and the Hitachi design required a hex wrench.

### MAINTENANCE

Air-free does not mean carefree. Heat buildup slows down gas-powered tools, so keeping the air filter clean is important. The manuals for the Max, Paslode (both framing and finish), and Powers prescribe blowing it out every two days; their filters feature tool-free access. Hitachi doesn't mention this as a maintenance item, but it might be wise to do so anyway.

For optimum performance with these tools, regular comprehensive internal cleanings are also necessary as often as every nine fuel canisters or 10,000 nails. The Paslode models (both framing and finish) come with detailed instructions and a pictorial reference guide. Hitachi and Max make you seek out instructions on their Web sites, curiously not even mentioning this procedure in their owner's manuals. Powers does not offer information about this procedure.



The rubber grips on the Hitachi (left) and Paslode (right) framers were the most comfortable.

### > FINISH AND BRAD NAILERS

I'm not sure that I will ever use a compressor-driven trim gun again due to the big leap forward of the DeWalt 18-volt nailer and Senco 14.4-volt finish nailers. I found that these battery-powered tools worked just as well as the gas-powered Paslodes, and from a cost standpoint, it is hard to justify paying for fuel to get equal performance.

While I didn't nail extensively into dense hardwoods, all five tools in the finish group had the power to get the job done when I did. In fact, I didn't find one application where any of these tools couldn't do the job.

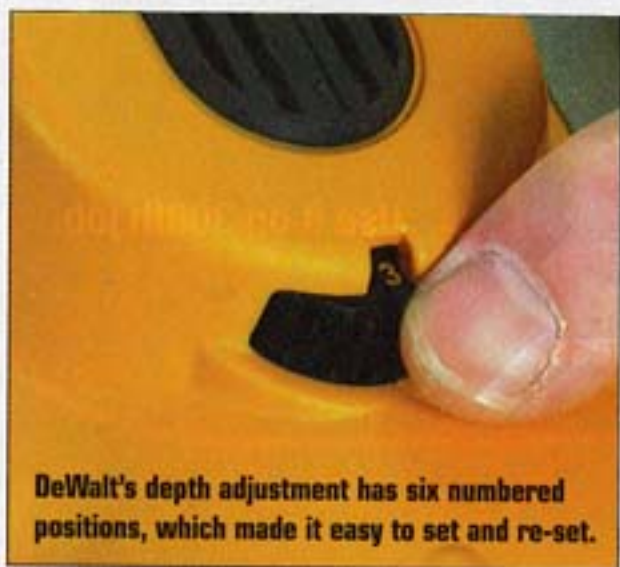
### BALANCE & ERGONOMICS

Unlike the framers, the hoseless trim nailers are heavier than their pneumatic equivalents, and there is a wider weight range in this category. The gas-powered Paslode trim nailers have the advantage here, weighing in at 4.9 pounds each, versus the battery-powered Senco 18-gauge and 15-gauge nailers, which weigh 6.3 and 7.7 pounds, respectively, and the DeWalt 16-gauge nailer, which is a hefty 8.5 pounds. Being much heavier and physically larger is a side effect of the battery size and larger drive mechanisms.

Though all the tools feature a rubber-topped handle, the lighter Paslode tools were much easier to hold and maneuver, and they feature a rubber-tipped trigger that was easy to grip. The Senco and



The Paslode (left) and Hitachi (right) framers' rafter hooks store away when not in use. Paslode's also can be used in belt-hook position.



DeWalt's depth adjustment has six numbered positions, which made it easy to set and re-set.

DeWalt tools resemble a dumbbell in both appearance and feel.

### EASE OF USE

All of these tools have a tool-free depth-of-drive adjustment. The DeWalt has a depth adjustment wheel with six numbered settings on the side of the tool, the Paslodes have an adjustment knob by the nose, and the Sencos have a dial located above the handle and trigger.

The battery-powered DeWalt and Senco nailers can switch between two firing modes, a handy trick that gas-driven nailers can't do. Switching to bump-fire brings the performance of these tools ever closer to that of their pneumatic relatives. The DeWalt was a standout performer in this mode during a rapid-fire test. With Paslode, the gas drive couldn't recover quickly enough and with Senco, the battery didn't seem

to have enough power; perhaps it was the difference between a 14.4-volt and an 18-volt tool.

Quick-release nose latches, found on all the finish nailer models except the Senco 18-gauge, made short work of jammed nails; the Senco 18-gauge requires a tool. All of the nailers have belt hooks, but I found the larger Senco and DeWalt tools too heavy on the toolbelt.

The DeWalt model has two additional perks: LED lights on each side that turn on when the trigger is pulled to light up the work surface and a manual lockout switch to prevent accidental nail firing. I appreciated both of these features.

### WINNERS

The winners in the framing category are the Hitachi NR90GR and NR90GC; both tools performed exceptionally well regardless of application. Their soft-grip handle was easy on the hand and helped absorb the impact of firing the tool. Though these were the best all around, a tool-free depth adjustment would make them even better.

In second place are the Max and Powers tools. Since they are virtually the same tools, I'm not really able to choose one over the other based on performance. I suppose the selling price would influence my decision.

The Paslode framer is a capable tool, but I didn't like its plastic follower mechanism.

My favorite angled finish nailer is the DeWalt. Its features and ability make it a standout despite it being the heaviest of the trim tools. The Senco 15-gauge angled nailer is my second choice.

My choice between the two 18-gauge brad nailers is the Senco.

The design and weight of the battery-powered tools make them obviously more cumbersome to carry around compared to the

gas-powered Paslodes, but, as I see it, the ability to bump-fire and the lack of a fuel cell outweighs any weight disadvantage. While I trust Paslode to get any job done and appreciate the compact size and weight, I just can't get past the continuous extra fuel cell costs.

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## TOO NEW TO TEST



Arriving a bit too late for this test was the new DeWalt DC628KA 15-gauge finish nailer. Identical in features to the 16-gauge DeWalt we tested, this tool provides for the thicker nail size and steeper magazine angle that some carpenters prefer and shoots 1 1/4- to 2 1/2-inch nails. Basic testing in my shop revealed great power and speed capabilities. Shooting through 1 1/8-inch hard maple was no challenge at all, so I turned the board on its side and buried dozens of 2-inch nails just as fast as I could bump-fire. This feat impressed me enough that I believe the DeWalt nailer could serve as a substitute for my trusty pneumatic gun, but at nearly 9 pounds, I'd better start working out first. The only problem was that it tended to over-drive nails, even at its highest depth-of-drive setting. —Michael Springer

**DeWalt**  
800-433-9258  
www.dewalt.com  
Circle #215

Senco's unique dial/button sets depth adjustment and firing mode.

