

ROUND-HEAD Stick Nailers

Pneumatic framing nailers have a big effect on the speed and quality of the work. Tasks that take forever with a hammer can be done in a fraction of the time with a framing gun. I run a framing crew on the Kitsap Peninsula, west of Seattle, Wash. Around here, everyone uses stick guns that take 20- to 22-degree plastic-collated full round-head nails.

For this article, my crew tested 11 round-head stick nailers from Bostitch, DeWalt, Duo-Fast, Hitachi, Makita, Max, Porter-Cable, Senco, and Spotnails. There were usually three or four of us on site, and we framed every day. I kept the guns in the back of my

by Tim Uhler

The top choices have a toolless depth-of-drive adjustment and don't jam or recoil when you fire them

truck for a couple of months, and carpenters were free to use any gun they wanted. The information in this article is based on our collective experience with the tools. We all used every gun.

One thing we could not evaluate was durability. All the guns appear to be well made, but the only way to know for sure would be to use them till they started wearing out. There was no way to do that with 11 guns — by the time we finished, many would be out of date.



Power and Ergonomics

The first things I notice when I try a new gun are how much power it has, the amount of recoil, and whether it's easy to lift and handle.

Power. A framing gun should drive fasteners all the way home, but the proliferation of engineered lumber has made it harder for guns to do this. We regularly use LVLs for ridges, hips, and valleys. Some of our older guns have trouble driving nails in engineered material, and that forces us to do something we hate — finish the job with a hammer. But none of the guns we tested had any trouble driving .131-inch fasteners, the size we normally use for framing. Several take fasteners up to .148 inch in diameter, and a few go up to .162 inch, which is a full 16d nail. The major difference in driving large versus small fasteners is that you can't go quite as fast with bigger nails. We also felt more recoil when firing larger nails.

Recoil. None of the guns recoiled excessively, but some

dampened the blow less than others. For example, three of the guns take 16d nails — the Bostitch, Makita, and Hitachi NR90AC2. They all have the power to sink those nails, but we could feel how hard the Bostitch gun was “hitting.” The vibration of the nail strike traveled up my arm, and it didn't feel good. That didn't happen with smaller fasteners, but you should be prepared for it if you use a lot of 16d nails.

DeWalt's D51845 was exceptionally light, so we expected some recoil. There was none, but the crew agreed that it didn't cushion the blow as well as other guns.

Weight and balance. Tools are easier to handle and cause less fatigue when they're light and well balanced. I generally prefer light guns, but none of these was so heavy that it would scare me away from buying it. DeWalt's was the lightest, and Hitachi's NR90AC2 was the heaviest. But the Hitachi was so well balanced that it felt lighter than it was. Most of the tools felt reasonably well balanced, with the Max topping the list in this category.



Figure 1. It takes an Allen key to adjust the depth of drive on this Duo-Fast gun. It works but is less convenient than a toolless mechanism.

Depth of Drive

We work in an active seismic zone, so the houses we build have plywood or OSB shear walls. Buildings must pass shear nailing inspections, and if too many fasteners are over-driven, the project will fail. That's why it's important to have a gun with a reliable, easy-to-use depth adjustment mechanism. Depth of drive is adjusted by changing the length of the contact element. In the past, this always required the use of tools (see Figure 1), but now most guns can be adjusted without them. We much prefer toolless mechanisms: They make it easier to switch between nailing framing and shear, with no need to hunt for wrenches.

Mechanisms. Bostitch and DeWalt use a push-button release to change depth of drive (Figure 2). The Max, Porter-Cable, Senco 702XP, and both Hitachi guns rely on nose-mounted thumbwheels (Figure 3, next page). Makita uses a thumbwheel, too, but it's mounted next to the trigger. All of those mechanisms will do the job. The thumbwheel type has more throw but is also more likely to stick. The push-button type doesn't stick but is limited to a set number of indexed positions.

The Spotnails gun does not come with an adjustable depth of drive, but it can be equipped with an optional flush drive attachment. The Duo-Fast and Senco 602 still require the use of tools.

Magazines

The guns we tested will hold two strips of nails. Some tools hold slightly more, but it's more trouble than it's worth to break a strip of nails to top off the load.

Top vs. rear loading. Some magazines load from the top,



Figure 2. A push-button release allows you to extend and retract the contact element on this Bostitch gun.

others from the rear. Both types are easy to load, but the top-loading magazines are easier to unload. We change nail sizes a lot, so we strongly prefer top-loading tools. To load, you pull back the pusher and drop in the fasteners. To unload, you pull back the pusher, tip the gun upside down, and the nails fall out. It's harder to get nails out of a rear-loading model. It's no big deal, but it is aggravating when you're in a hurry.

We had trouble with some of the rear-loading magazines. The Hitachi NR90AC2 worked fine with large nails but tended to jam when we loaded 8d fasteners. The problem occurred because the back strip sometimes lapped onto the strip ahead of it. We liked this gun for framing, but the jams were so aggravating that we stopped using it on sheathing. The magazine on Senco's 702XP also tended to jam but nowhere near as often as the NR90AC2. We had trouble with the pusher on the Makita gun. It rains a lot around here, and when the tool got wet, the pusher sometimes stuck when we pulled it back to reload.

Firing Modes

Most nail guns can be operated in sequential or contact trip modes. With contact trip, you hold down the trigger and fire nails by pressing the contact element into the work. Contact trip allows you to bump-fire, which is the fastest way to drive nails. Sequential trip is safer, because it limits you to firing single shots: The trigger has to be released after each shot is fired. All the carpenters I know hate sequential trip, and the guys on my crew never use it.

With some guns, you have to remove and replace the trigger to change firing modes. This is true of the guns from Bostitch, DeWalt, Max, Senco, and Spotnails. It's not difficult to swap triggers, but if you're like most carpenters, you'll install the one for contact trip and never take it off. Some manufacturers make it easier to go back and forth between modes. Makita, Porter-Cable, and Hitachi equipped their guns with mechanisms that allow you to change modes by activating a switch. Max's gun has an additional safety feature, an anti-double-fire mechanism. You can still bump-fire, but if you depress the nose before firing, the gun won't drive a second nail until you release the trigger and squeeze it again.

Additional Features

Most of these guns share the same basic features, but some models have a little extra. For example, the Max is equipped with a swivel fitting that plugs into the hose. I like it because it prevents the hose from kinking (Figure 4). The Makita, Max, and Hitachi NR90AC2 have built-in air filters, which extend the life of the tool by keeping dust and dirt from getting inside (Figure 5).

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Figure 3. The thumb-wheel-activated depth control on this Porter-Cable nailer is typical of what you'll find on most newer framing guns.



Figure 4. A useful "extra," the swivel fitting on the Max nailer helps prevent hose kinks.



Figure 5. A built-in filter protects the innards of the gun by preventing the entry of dirt and grit.

Bostitch N88RH

The Bostitch gun is light and well balanced and has a comfortable rubber grip. It's extremely powerful and consistently fires without jamming. The nosepiece works well for toe-nailing, and the push-button depth-of-drive mechanism is easy to use. This tool is available with an optional metal tip for fastening metal framing hardware. I've used the tip, and it works very well. The only negative thing I can say about this tool is that it doesn't dampen the blow of striking 16d nails.



Size: 14¹/₄"Hx19"L
Weight: 7.9 lb.
Nail length: 2-3¹/₂"
Nail diameter: .113-.162"

Depth of drive: push-button
Capacity: 60 nails
Magazine: top-loading
Street price: \$239

DeWalt D51845

The D51845 was the lightest tool we tested. It's not as tall as other guns, so it's easier to maneuver in tight spots. The nosepiece works well for toe-nailing, and the push-button depth-of-drive mechanism is reliable and easy to use. It's equipped with a trigger lock and one of my favorite features of all, a plastic rafter hook that can be pivoted out of the way. Although the gun doesn't recoil, it does not cushion the blow of firing as well as other tools.



Size: 12³/₄"Hx20³/₄"L
Weight: 7.6 lb.
Nail length: 2-3¹/₂"
Nail diameter: .113-.148"

Depth of drive: push-button
Capacity: 65 nails
Magazine: top-loading
Street price: \$289

Duo-Fast NSP-350F1 Mainframe

The NSP-350F1 is one of the heavier guns we tested, but it was well balanced, so the weight was no big deal. My favorite thing about this tool was that it had almost no recoil. It cushioned the blow so well that it felt like firing a finish nailer. This is a good gun for framing, but I wouldn't want to use it to nail off shear, because adjusting the depth-of-drive mechanism requires the use of an Allen wrench. An earlier version of this gun took .162-inch nails, but this one only takes up to .131-inch nails.



Size: 13⁵/₁₆"Hx22"L
Weight: 8.6 lb.
Nail length: 2-3¹/₂"
Nail diameter: .113-.131"

Depth of drive: requires tools
Capacity: 70 nails
Magazine: top-loading
Street price: \$285

Hitachi NR83A2

The NR83A2 is an improved version of the ever popular NR83A. The new model includes added features such as toolless depth of drive and a dial for switching between firing modes. This gun is very well balanced and is one of the lighter tools we tested. The recoil feels dampened, so you can use it to nail off sheathing without wearing out your arm. This gun rarely jams, and when it does, it only takes a minute to clear. The nosepiece allows for accurate toe-nailing, and the tool has plenty of power for driving .131-inch nails. We were able to shoot it a little faster than other guns without leaving nails proud.



Size: 13³/₈"Hx21³/₁₆"L

Weight: 7.9 lb.

Nail length: 2-3¹/₄"

Nail diameter: .113-.131"

Depth of drive: thumbwheel

Capacity: 64-70 nails

Magazine: top-loading

Street price: \$329

Hitachi NR90AC2

The NR90AC2 is well balanced and a pleasure to use for framing. It won't dry-fire, and it's equipped with an air filter to keep dirt and grit from getting inside. It takes full 16d nails and has the power to drive them in engineered lumber. The nosepiece allows for accurate toe-nailing, and the toolless depth of drive works well. That said, we had mixed feelings about this gun. It was one of our favorites until we loaded it with 8d nails, which frequently jammed in the magazine.



Size: 13⁷/₈"Hx19¹³/₁₆"L

Weight: 8.9 lb.

Nail length: 2³/₈-3¹/₂"

Nail diameter: .113-.162"

Depth of drive: thumbwheel

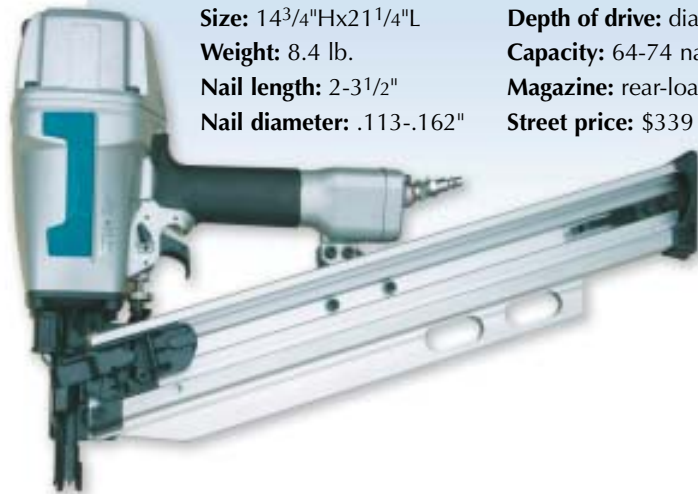
Capacity: 64-70 nails

Magazine: rear-loading

Street price: \$399

Makita AN922

The AN922 is a powerful gun with an aggressive nosepiece that's good for toe-nailing. It's not one of the lighter guns, but it's well balanced and comfortable to handle. Numbered detents on the depth-of-drive mechanism make it easy to reproduce previous depth settings. We used this gun to fasten shear, and it shot nails very consistently. The AN922 has a built-in air filter and will shoot up to .162-inch nails. Our only gripes were with the nose assembly, which can block your view from the right, and the pusher, which sometimes stuck when we pulled it back to reload.



Size: 14³/₄"Hx21¹/₄"L

Weight: 8.4 lb.

Nail length: 2-3¹/₂"

Nail diameter: .113-.162"

Depth of drive: dial under trigger

Capacity: 64-74 nails

Magazine: rear-loading

Street price: \$339

Max SN890-RH

The SN890-RH is comfortable to use because it's well balanced and absorbs the recoil of firing. It has an anti-double-fire mechanism, a built-in self-cleaning air filter, and a swivel air fitting to prevent hose kinks. The dial-activated depth control takes some time to set, but the gun drives nails to a consistent depth in sheathing. This gun rarely jammed, and when it did, the flap on the nose made it easy to clear. The top-loading magazine was easy to use and did not get clogged. The SN890-RH was one of our favorite guns. It would be perfect if it had a rafter hook.



Size: 14¹/₂"Hx20"L
Weight: 8.2 lb.
Nail length: 2-3¹/₂"
Nail diameter: .113-.148"

Depth of drive: thumbwheel
Capacity: 64 nails
Magazine: top-loading
Street price: \$333

Porter-Cable FR350A

The FR350A is relatively light and well balanced. There is no noticeable recoil, and it does a good job of absorbing the shock of firing. It has the power to drive fasteners into LVL material. The adjustable depth-of-drive mechanism is controlled by a dial that's built in to the trigger. The nosepiece did a good job toe-nailing, and the gun is equipped with an adjustable air exhaust and a nail lockout that prevents dry-firing.



Size: 14¹/₄"Hx21"L
Weight: 8.2 lb.
Nail length: 2-3¹/₂"

Nail diameter: .113-.148"
Depth of drive: thumbwheel
Capacity: 64 nails
Magazine: rear-loading
Street price: \$259

Senco FramePro 602

The FramePro 602 is a solid gun with plenty of power. It will shoot up to a .148-inch nail and is equipped with a very aggressive nosepiece that works well for toe-nailing. It has dry-fire lockout, an adjustable exhaust, and a rear-loading magazine. The magazine worked well, though we prefer top loaders. One feature missing on this tool is toolless depth of drive. The depth of drive can be adjusted, but you need a wrench to do it.



Size: 13¹/₄"Hx20¹/₈"L
Weight: 8.1 lb.
Nail length: 2-3¹/₂"

Nail diameter: .113-.148"
Depth of drive: requires tools
Capacity: 60 nails
Magazine: rear-loading
Street price: \$249

Senco FramePro 702XP

The 702XP is slightly heavier than average but well balanced and comfortable to use. It has an aggressive nosepiece that's good for toe-nailing — so aggressive that one of my guys cut his thumb on it. Depth of drive is controlled by a knurled knob with indexed stops. The 702XP has a rear-loading magazine and will shoot up to a .148-inch fastener. It's one of two guns that were equipped with a rafter hook.



Size: 13 1/4"Hx20"L
Weight: 8.4 lb.
Nail length: 2-3 1/2"

Nail diameter: .113-.148"
Depth of drive: thumbwheel
Capacity: 60 nails
Magazine: rear-loading
Street price: \$289

Spotnails Striker YPR90

The YPR90 is an unusual-looking gun that's a little light on features. It doesn't have a built-in depth-of-drive mechanism, but you can add an optional flush nailing attachment. It shipped with a sequential trigger, which we quickly swapped out for the included bump-fire trigger. The gun is equipped with a 360-degree swiveling exhaust cap and a top-loading magazine. There was nothing special about this gun, but it worked well and we used it a lot.



Size: 13"Hx20"L
Weight: 8.5 lb.
Nail length: 2-3 1/2"
Nail diameter: .113-.148"

Depth of drive: optional flush drive attachment
Capacity: 70 nails
Magazine: top-loading
Street price: \$249

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Every gun except the Bostitch, Spotnails, and Hitachi NR83A2 has an anti-dry-firing mechanism to prevent it from being fired when the magazine is empty. Besides being bad for the gun, firing on empty may cause you to accidentally underfasten something.

Many of these guns come with nonmarring plastic tips. A tip can be installed over the end of the contact element to keep the barbs from damaging your work. My crew does very little trim, so that feature wasn't important to us.

Rafter hook. A rafter hook may sound like a minor feature, but if you ask me, every nailer should have one. A

hook makes it safer and easier to nail rafters, roll joists, and work off a ladder because you can hang up the gun when you're not using it. You're safer because it frees a hand, and the tool is less likely to fall and hit someone or break (Figure 6, next page). DeWalt's gun has a large plastic hook on the end of the grip. The hook rotates so you can fold it out of the way. Senco's 702XP has a metal hook that folds out from the side of the magazine. Neither of these guns was the overall favorite, but we liked the hooks so much that we always used either the DeWalt or the Senco 702XP when we worked up high.

Our Favorites

Hitachi's NR83A and Max's SN890-RH were clear favorites. I'd be happy to own either one. The NR83A2 is nearly identical to the older NR83A, a gun that has proven to be durable and is very popular in our area. The new model is well balanced and absorbs recoil, so it's comfortable to handle. It has plenty of power, and we appreciated the recently added toolless depth-of-drive mechanism.

Max's SN890-RH exudes quality. Because it's well balanced, it feels lighter than it is. It dampens recoil, so it's comfortable to use, and has added features that we liked, such as the built-in air filter and swivel fitting. It rarely jammed and consistently set nails to the proper depth in sheathing.

If we had to choose a second pair of guns, we'd pick Makita's AN922 and DeWalt's D51845. The AN922 operates smoothly and reliably sets 8d nails to the proper depth. It did a good job toe-nailing and had plenty of power. We liked it in spite of its rear-loading magazine. DeWalt's gun is extremely light and has some very good features. Depth of drive is easy to set, and the magazine pops off to clear jammed fasteners. We wished the gun absorbed the shock of firing better but were willing to overlook that problem because we loved its rafter hook.



Figure 6. DeWalt's D51845 and Senco's 702XP were the only guns tested that have built-in rafter hooks — a must-have feature, according to the author (below). Guns without hooks tend to fall or get held in uncomfortable positions (left).



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Manufacturers

Bostitch (Stanley Fastening Systems)
East Greenwich, R.I.
800/556-6696
www.bostitch.com

DeWalt Industrial Tool
Baltimore, Md.
800/433-9258
www.dewalt.com

Duo-Fast Corp.
Elgin, Ill.
888/386-3278
www.duofast.com

Hitachi Power Tools
Norcross, Ga.
800/829-4752
www.hitachi.com/powertools

Makita USA
La Mirada, Calif.
800/462-5482
www.makitatools.com

Max USA Corp.
Mineola, N.Y.
800/223-4293
www.maxusacorp.com

Porter-Cable
Jackson, Tenn.
800/487-8665
www.portercable.com

Senco Products Inc.
Cincinnati, Ohio
800/543-4596
www.senco.com

Spotnails
Rolling Meadows, Ill.
800/873-2239
www.spotnails.com