
UNUSUAL POWER



A collection of specialized
power tools that
can earn their keep



by Sanford Wilk

I am both a builder and an architect and I see a lot of different jobs. Some I work on, some I only consult on. In my travels I talk to a lot of builders and go to a lot of supply houses, builder's shows, and conferences. I see a lot of tools. The eight tools mentioned in this article are not ordinary. Some can be found in rental stores; others you have to go out and buy. But all of these tools have influenced the way I do my work. And I like to think they all earn their keep. Of course, you can do without all of them, but I like to be able to justify my toolaholic tendencies.

33° Drill Extension

Inevitably, a good chunk of an electrician's or plumber's rough-in is spent moving a step ladder around a room drilling through joists and top plates. With the Milwaukee 48-06-2860 33° angle drill extension (see Figure 1), hard to reach holes are accessible from the floor. By providing this tool to my subs, they often knock off a portion of their bid. I also provide a helper at times to drill holes where the subs specify. This saves even more.

The Milwaukee 33° drill is an accessory kit that attaches to any

1/2-inch drill. I use it on a single-speed Milwaukee 1250-1 D-handle drill. The extension arm is a 30-inch hollow metal tube that has a drive shaft running up the center. The drive shaft feeds into an additional 4-inch extension that holds the chuck at a 33° angle. The combined tool weighs in at 6 1/2 pounds. Using it is a little like holding a taper's banjo. It has a side handle that can be positioned anywhere along the 30-inch shaft. I find it most comfortable positioned at about 15 inches from the drill motor. The conversion of a drill takes about 10 minutes.

I use hole saws and twist, spade, and ship's auger bits in the drill

with equal total control. The extension provides a lot of leverage so a jammed bit can't easily twist your wrists off. It is also convenient to use for drilling bottom plates and subfloors while standing up.

Once you have a tool like this, it isn't hard to find other uses for it. One change order involved drilling for an extra outlet feed after a building had been insulated. Here, the tool proved to be useful for avoiding the fiberglass and minimally disturbing the insulation. In a restoration job we were able to drill over an ornate ceiling medallion to power a chandelier.

The Milwaukee 33° drill kit



Figure 1. Milwaukee's 33° angle drill extension simplifies repetitive drilling and hard to reach electrical and plumbing work.

(13135 West Lisbon Road, Brookfield, WI 53005; 414/781-3600) lists for about \$220 without a drill, but it sells for about \$135 from mail order supply houses.

Gas-Powered Rotary Hammer

About five years ago, I was offered a job located at the crest of a small granite peak. The view was spectacular, the clients seemed reasonable, and the budget was healthy. But I turned it down because I was leery of the foundation work involved. The foundation had to be secured

with one-inch-diameter pins that, in many places, would have to be set over a foot deep. On a site without power, this seemed overwhelming. I didn't know then about the Hilti GP 22 gasoline-powered 1 1/2-inch hammer drill (see Figure 2, next page).

The GP 22 has a variable-speed trigger ranging from 0 to 400 rpm at 3,150 blows per minute. The low rpm is good for drilling large diameter holes in hard materials like granite. The drill is powered by a tiny Kawasaki two-stroke engine which makes it ideal for remote sites. The whole tool weighs only 16 pounds with a full (1/2 liter) tank of gasoline, and runs for almost a full hour before it



Figure 2. The Hilti GP 22 gasoline-powered hammer drill is powered by a tiny Kawasaki two-stroke engine. This makes it ideal for remote sites.



Figure 3. The Hitachi WH-10 D cordless impact wrench makes it easy to cinch down the nuts on anchor bolts and eliminates yet another cord from a crowded framing site.



Figure 4. The Freud EB-100 edge bander applies hot-melt, adhesive-backed veneer strips to the edges of plywood panels.

needs a refill. Like other two-stroke engines, you have to mix the oil and gas, and Hilti provides a plastic mixing container for this. The engine has an electronic ignition (no points) and no matter what I've done to abuse the tool, it always starts on one or two pulls.

Besides being gas driven, the GP 22 has some unusual features. The engine drives a small electric compressor in addition to powering the drill motor. The air is used to push a striker for the "hammer" part. Since the hammer is pushed by air, it is also free floating—there is no metal-to-metal contact—and consequently there is much less vibration than other hammer drills I have used of this size. In addition, this keeps the bits from mushrooming quickly.

The tool has a keyless chuck that saves a lot of time. The chuck is similar to a quick-connect on an air hose: bits are exchanged by pulling back on a sleeve. The ends of the drill bits are configured to lock in place and spin with the chuck. They don't slip and there is almost no play, so the bits don't wobble when drilling. Chisels and bushing tools with a nonconfigured shank can also be used. (A nonconfigured shank won't lock into the chuck and therefore won't rotate.)

Like most hammer drills, you can set it to drill without the hammer. Thus the tool works well with concrete fasteners such as Tapcons were you have to alternate between drilling a hole and driving a screw.

The Hilti GP 22 (Hilti, P.O. Box 21148, Tulsa, OK 74121; 918/252-6000) lists for \$1,325, including a metal box.

Cordless Impact Wrench

For cinching down the nuts on anchor bolts and driving lag bolts into the band joists for decks, impact wrenches have proven their usefulness on the job site. A cordless impact wrench takes the convenience a step further by eliminating yet another cord from a crowded framing site. The Hitachi WH-10D 1/2-inch cordless impact wrench (see Figure 3) has enough torque (72.3 foot-pounds) to compete with its corded relatives. And its tough construction and easy control set it apart from some other cordless impact wrenches.

The Hitachi impact wrench weighs 5 1/2 pounds. This heft, which is more than other 9.6-volt cordless tools, is due primarily to a metal nosepiece. Since most of the abuse the tool will take is on the front end, this seems appropriate. The trigger is a rocker-arm switch which gives good one-finger control. Pulling the top of the trigger drives forward; pulling the bottom drives in reverse.

Off the framing site, I put the Hitachi impact wrench into the hands of an HVAC contractor. He used the optional "duct socket" and reported that the tool made short work of assembling metal heating ducts. I also lent this cordless impact wrench to some steel erectors who also liked the 1,200-rpm motor. Using it, they could tighten 1 1/2 x 1/2-inch bolt in less than three seconds on a full charge. The battery held enough

charge to tighten down over 120 bolts before needing to be recharged. The wrench maintained an even speed for 110 of those bolts, and slowed down only a little for the next 10 until the battery was dead. This is a refreshing change over other cordless tools that slow down quickly but must be fully drained before recharging. The charging time is about an hour.

An adaptor is available to allow the tool to tighten screws. But the application is foolish because when the screw is finally torqued down, the tool begins to impact and strips the screw head. Tightening down fasteners like screws is better served by cordless drills and screw-guns.

The Hitachi WH-10D (Hitachi Power Tools USA, Ltd., 4487-E Park Drive, Norcross, GA 30093; 404/925-1774 or 7490 Lampson Ave., Garden Grove, CA 92641; 714/891-5330) lists for \$298 including a charger and a molded plastic case. An extra battery lists for about \$70. Like other impact wrenches, this one requires hardened sockets designed to withstand the impacting, so normal socket sets won't do. Optional attachments for the wrench include an extension bar, universal swivel joints, and right-angle adapters for getting into tight corners..

Freud Edge Bander

Freud seems to be good at taking expensive woodworking machines and making them affordable. This company was one of the first to take a \$700 biscuit joiner and put it on the market at \$150. And now they've outdone themselves by taking a \$10,000 production-sized edge bander and making it accessible to builders and small cabinet shops. So now you can put the household iron back in the laundry room.

The Freud EB-100 (see Figure 4) uses 250-foot rolls of plastic and hardwood veneer banding that have a hot-melt adhesive backing. It will accept banding up to 2 1/4-inches. A roll is placed on the support and fed past a small heat plate and over a roller. The heated end of the banding is aligned on the corner of a piece of plywood over the roller. By pushing the ply along the table fence, the roller presses the banding on and the steel fence smooths and cools the adhesive. The table is 8 inches wide by 27 inches long and it has a melamine surface so the excess glue will clean off easily.

The temperature of the heat plate can be adjusted from 200° to 1,100° F. This adjustment controls how fast the adhesive will melt and consequently how fast you can push a piece of wood across the table. Don't assume that faster is better. To get a smooth edge, I found that a mid range of about 700° was sufficient.

When a side is done, the banding is cut by pressing down on a knob. This severs the banding about 2 inches back from the roller. With a little practice, this length can be eyeballed so the remaining tail is even shorter. This tail can then be removed when the sides are trimmed with a laminate cutter.

The Freud EB100 Edge Bander (218 Feld Avenue, High Point, NC 27264; 800/334-4107) costs about \$350. Freud



Figure 5. The Quik Drive self-feeding screwgun, holding a coil of 167 screws, can pay for itself by speeding up many fastening jobs.



Figure 6. The Hobart's Handler mig welder (top) and the Hypertherm Max 20 plasma cutter (above) make a good team for cutting and tacking rebar and steel studs. Both operate on 120-volts.

also offers 250-foot rolls of $13/16$ -inch banding priced from \$33 per roll (for polyester) to \$58 per roll (for walnut).

Self-Feeding Screwgun

I have always admired a professional rocker who has developed the Houdini-like ability of stirring his pouch with his screwgun tip, and miraculously fishing out a screw that is perfectly situated on the bit, ready for use. But even these guys might appreciate the reprieve from the heavy pouches and the speed a self-feeding screwgun affords.

The Quik Drive 3301 self-feeding screwgun (see Figure 5) has a number of improvements over other self-feeding screwguns (see JLC, *Toolbox*, 4/89). Many of the problems with other tools are caused by fragile screw coils. When such screws are misaligned, the driving mechanism will jam or the screw will not set. Quik-Drive has solved these problems with a nylon plastic collating strip. If the coil gets unwound or twisted around, it can be easily rerolled into its original shape without losing a screw. The only drawback to this strip is that if you have to change the screw size in midcoil, you must cut off the strip with a utility knife.

The Quik Drive self-feeding screw mechanism is made in West Germany; it's simply designed and durable. You can buy the mechanism alone or set up on a Sioux close quarter screw gun (model #8025A) or a Black and Decker (model 2054). I used the Sioux. This combination weighs a little over 7 pounds when fully loaded, and it has a nice balance.

With my helper holding the other end of a $5/8$ -inch sheet of drywall, I am able to fully secure the sheet in less than $1\frac{1}{2}$ minutes with a Quik-Drive 3301. It took me awhile to get used to it (you can't hesitate or the bit will chatter on the end of the screw), but now I can hang a sheet with no misfires. On a recent job, we hung 20 sheets on the ceiling in four hours (two hours less than my estimate). My back appreciated that I didn't have to perform a balance act with the sheet, a screw, and the gun before a sheet was secured.

Quik Drive makes a 20-inch extension that can be bolted on between the screwgun and the self-feeding mechanism. With this, you can reach up to an 8-foot ceiling from the floor. If a helper with an extended Quik Drive followed two people holding a sheet of drywall on scaffolding, the job would go much faster still. The extension also makes screwing down subfloors much easier. (My back appreciated this, too.) While the Quik Drive isn't as fast as an air nailer, I think the reduced risk of callbacks is worth the extra time. I've heard that some local codes are now requiring gluing and screwing subfloors.

The Quik Drive model 3301 will drive screws 1- to 2 inches long. Another driver, model 3303, will drive $2\frac{1}{2}$ and 3-inch screws, as well. The 3303 model is aimed at the deck building market, and the manufacturer offers zinc-plated and a ceramic-coated "Rustpert" screw in the 2-, $2\frac{1}{2}$ -, and 3-inch sizes. In the 1- to 2-inch size they offer standard black-drywall and zinc-plated screws with a Phillips head or a square head.

The Quik Drive 3301 (Quik Drive, Hwy. 11 N., Box 200, Port Sydney, Ontario P0B 1I0; 800/465-0845) with a Sioux driver costs \$475. The drive mechanism alone costs \$295. A box of $1\frac{1}{4}$ -inch black-drywall screws go for \$60. There are 18 coils in a box and 167 screws to a coil. (We hung about six full

4x8-foot sheets per coil). The extension costs \$89.

Steel Workers

I'm a builder and an architect, not a welder. But the Hobart's Handler has made it possible to do a decent job of welding. The machine simply plugs into a standard outlet and welds! The Handler unit needs only 120 volts, and even though the manufacturer lists the amperage at 24, I often use it on a 20-amp circuit without tripping the breaker. Moreover, the Handler weighs only 69 pounds and is only about as big as a tool box (see Figure 6), so it's easily transported and stored.

Mig welders have been around for years. They typically use a "shielding gas" that prevents gases from the air from mixing with and weakening the molten steel of the weld. The Hobart eliminates the need for a shielding gas by using a flux-core wire. The wire is used in lieu of welding rod, and the flux at its center melts to provide a protective coating until the weld sets. The wire feeds through the center of a 10-foot cable down to the tip of the "gun." A trigger controls the feed.

The voltage of the arc is variable and is controlled by a continuous dial marked 1 to 5. The voltage is varied depending upon the thickness and type of material you're welding.

I mostly use the Handler to weld rebar together. It's quicker than ties, and much stronger. I've also tried equipment and scaffolding repairs. One contractor I know tack welds steel studs into their tracks. And the Hobart is good for customizing joist hangers, a need that sometimes arises on rehab jobs with full 2-inch framing members. But make sure your inspector will approve this sort of handiwork.

A note of caution to all carpenters that would be welders: If I had spent an additional \$60 on a leather welding jacket, I would have avoided several "bee-sting" size burns (and I would have saved a nice sweater). The fumes given off from the burning flux, impurities in the metal, and residues on the surface, are toxic. Try to weld in a well-ventilated area, or use a mask, such as a 3-M 9920 or 9925.

The Hobart Handler (Hobart, 600 W. Main St., Troy, OH 45373; 800/424-1544) sells for about \$800, and if you're not already equipped to weld, expect to spend about \$150 more for helmet, gloves, and leather.

You may wonder how I cut the steel I weld. I use a Hypertherm Max 20 (see Figure 6). Lincoln and Dayton, two other big names in welding, make similar units. A plasma cutter heats compressed air to an extremely high temperature. The hot air is forced through a tiny orifice in the cutting head to create a 1-inch-long laser-like stream (the plasma) called the "pilot arc." I have been told the center of the arc can be as hot as 50,000° F. This intense heat blows right through hardened plate steel, paint, plated finishes, and rust. And its about as easy to control as a carpenter's pencil. This control is good for cutting complex shapes, and, more importantly, it's relatively safe.

The Hypertherm Max 20 is very portable. It weighs only 42 pounds without the required compressor (any $1\frac{1}{2}$ hp compressor will do). Hypertherm offers the Max 20 complete with a compressor, as well. The whole package weighs 155 pounds. The Max 20 operates on 120 volts, but the arc voltage is variable. For light duty work I have run it on a 15-amp circuit. But



Figure 7. The Porter-Cable 7334 is the first electric-powered random orbit sander. This sander, shown here with an optional pliant pad for contoured surfaces, accepts standard 5-inch-diameter sanding discs.

for cutting 1/4-inch steel plate you need a 30-amp circuit.

I use the Hypertherm most often for cutting wire lath and rebar. This tool also simplifies intricate flashing details and cutting an accurate circle in a metal roof for a stove pipe. When working on a roof, I leave the compressor on the ground and run the air to the cutter up on the roof. Other uses I've found include "blowing-out" the holes in steel flitch plates and cutting some frozen nuts off the broken hitch of a cement mixer.

The list price of the Hypertherm Max 20 (Hypertherm, Box A-10, Etna Road, Hanover, NH 03755; 800/643-0030) is \$995 (without air supply). With the compressor, the list is \$1,795. Considering the price of hiring a welder, it could pay for itself in short order.

Electric Random Orbit Sander

Random orbit sanders are rare on residential construction sites, but these tools are no strangers to auto body shops. Air-powered orbital sanders are well known for getting a swirl-free finished surface on painted steel and fiberglass. But other than air nailers, few pneumatic tools have made it to the job site. Porter-Cable now makes an *electric* random-orbit sander, and I doubt these tools will remain unusual on job sites for long.

This *Porter-Cable 7334* (see Figure 7) looks like an electric grinder. It has a handle that sticks out perpendicular to the body right over the wheel. A counterweight mechanism located behind the sanding pad starts the sander when it's pressed against the work surface. The standard issue 5-inch-diameter sanding pad is fairly stiff so it will evenly

remove stock. An optional pad, which is more pliant to conform to contoured surfaces, is also available. The tool weighs in at 5 1/2 pounds, which is much more than other electric finish sanders. This added weight and the design means you don't have to work so hard.

I only use the Porter Cable adhesive backed "Stikit" paper. Only standard grits—80, 100, 120, and 150—are available from Porter-Cable. Other grits and types of sticky back paper are available from most auto supply shops or Wood Craft Supply (P.O. Box 1686, Parkersburg, WV 26102-1686; 800/225-1153). And, Fein Power Tools (3019 W. Carson, Pittsburgh, PA 15114; 800/441-9878) sells a velcro backing pad that holds velcro-backed paper. They sell grits from 60 to 320. This paper has the advantage of not picking up dust easily, so it might last a little longer in a dusty shop.

With an 80-grit disc I could take off stock almost as aggressively as with a belt sander. I found this useful for touching up solid-sawn timbers that were going to be finished. I wanted to get rid of the mill marks so I needed a rough grit. But I didn't want to have to take out discernible sander marks.

With finer grits, I was able to get a swirl-free surface for finish work. With a 120-grit paper I could sand out hardwood veneers without leaving the tiny, maddening circles I would get with a pad sander.

The Porter-Cable (P.O. Box 2468, Jackson, TN 38302; 800/321-9443) lists for \$205, but I've seen it for \$149 in some mail-order catalogs. The self-adhesive sandpaper discs sell for about \$25 per 100. Porter-Cable will also be introducing a 5-inch and 6-inch variable-speed sander that was not available as of this writing. ■

Sanford Wilk is an architect and builder in Springfield, Mass.