BUYING A Compressor

Getting enough air to your tools is more than a function of horsepower and amps

by Mark Clement

At the end of the day, a compressor's value is won or lost on how much air it gets to your tools, whether you're sinking brads in trim or racing across an OSB subfloor. A lot of builders buy compressors based on engine power — horsepower (on a gas unit) or amp draw (on an electric). While that affects a compressor's output, cfm (cubic feet per minute), tank size, and pressure are more important in matching your compressor to your work. Other important factors to look at when shopping are pump speed, oil-lube vs. oil-free, and portability.

Because sizing a compressor depends on what you do — and how fast you do it — I've organized manufacturers' sizing recommendations into four groups: small jobs and trim work, framing and heavy remodeling, roofing, and high-volume tools and shop use. Beyond that, other important features to consider are: maintenance, fittings, tank pressure, and noise.

Small Jobs and Trim

If this is the work you do and you're in the market for a new compressor, you're

Figure 1. The sleek new design of the DeWalt D55155 makes carrying your compressor much easier.

Figure 2. Side-stack models like these from Hitachi and Bostitch perform better than pancake designs. Their smaller size means that they won't be able to keep up with a framing crew, but their compact size, low center of gravity, and small amperage draw make them well suited for remodeling.

in luck. Compressors for this work are getting sleeker, easier to start, and easier to move. This is also the category where you have a choice between oil-lubricated models and oil-free models.

A four-gallon, four-cfm, hand-carry unit will generally have enough power for a one-person show or a small crew to use on jobs like decks, fences, framing, siding, trim, and even some roofing. This size unit is usually a side-stack tank as opposed to a pancake compressor. According to manufacturers, pancakes are the easiest compressors to overwork. You're overworking your compressor if it runs more than 50% of the time you're nailing. If you need a compressor only for the punch list and trim, a pancake is lighter than a side-stack unit and recovers air quickly enough to keep you moving.

Carrying my side-stack compressor onto the job site was one of the worst parts of my job as a remodeling contractor — 70 pounds of pure discomfort. But DeWalt's D55155 hand-carry compressor is shaped like a suitcase and carries similarly (see Figure 1). It's sleek, flat, and the weight is close to your body, unlike my old side-stack. DeWalt even put a cord wrap on it, making descending stairs a whole new experience in safety. Other manufacturers, like Stanley-Bostitch and Hitachi, have called in the industrial designers to make their units more compact to help protect them from job-site damage (Figure 2).

Framing and Heavy Remodeling

If you've got a four-person crew or better, you'd better be wheeling your compressor up to your job site, because you'll probably overwork anything smaller than a wheelbarrow unit. You'll need anywhere from an 8-gallon, 5.5-horsepower or electric unit up to a 17-gallon, 8-horsepower unit. Compressors like those will consistently run three or four nailers over several hundred feet of hose. They'll also be able to keep up with your crew without a hiccup if you do your own roofing. The big choice

here is between gas and electric, and it's usually a no-brainer: If you don't have consistent access to power, you need gasoline power.

If you do have dependable access to power, an electric model has lots of advantages. You can keep it inside, it's quiet, and it requires less maintenance than a gas-powered unit. The only downside is that, typically, an electric wheelbarrow compressor delivers a little less air than a gas-powered unit (gas delivers about 12 cfm; electric, 8-10). The reason is that the pump can only get so much juice from a 15-amp circuit.

Durability is also a big deal when compressors do this much work for large crews, and the latest generation of compressors from companies such as Campbell Hausfeld, DeWalt, Thomas, Gardner Denver, and Stanley-Bostitch addresses this. Some manufacturers have hidden and protected the gauges to keep them intact and working longer. And some have beefed up the cages that house belts and other moving parts.

Roofing

Roofers use a serious amount of air, sometimes nailing at speeds faster than a nail per second. A 12-cfm unit, usually gas powered, will run three nailers suitably (Figure 3). If you have larger roofing projects or more roofers than that, the answer to getting enough air to your crew through hundreds of feet of hose is multiple smaller compressors. Or you might try an extra big unit: A single 8-horse, 15- or 18-cfm compressor is expensive but provides air to lots of tools. Another option is one huge compressor like a 60-gallon model from Emglo or Gardner Denver. The 60-gallon is likely to run on 240 volts. (There are 30-gallon units that run on 110 volts, but the motor on such units may have trouble recovering from serious extended output.) Some production roofers trailer these monsters to the site and snake hoses up to the roof. The upside to that strategy is that you don't have multiple compressors to move around the site and maintain.

Figure 3. You need big air to run some crews, like roofers. That means big engine, big pump, and big tank.

PHOTOGRAPH COURTESY OF DEVILBISS

Figure 4. On an oil-lube model (above), the piston dips into a shallow oil bath. Setting up one of these on a steep pitch, like a roof, spells disaster. Super-slick oil-free models, like the one at right, require no oil but may not last as long.

High-Volume Tools and Shop Use

Manufacturers suggest a 30- or 60-gallon unit for running high-volume tools like impact drivers, drills, and sanders. Those tools use a ton of air and need big reserves to keep them operating. Look to companies like Delta, Grizzly, and Ingersoll-Rand for those big boys.

Maintenance

It seems like tools that require an oil change on site get the most neglect. After all, you can always change the oil tomorrow, right? Gas-powered oil-lube models require oil changes in both the engine and the pump, as well as cleaning or replacing the air filter (Figure 4). Manufacturers suggest a 30-weight, nondetergent oil for the pump and advise you to follow

the instructions you get with your engine. On oil-free models, you only need to clean the air filter. We all know what not changing the oil will do to your motor; if you don't keep your air filter in good order, the damage is less abrupt.

When the air filter clogs, the oil blows by it (called blow-by) into the compressor pump and ultimately out the end of your nailer. That's bad for a couple of reasons. First, the oil blow-by will start to corrode the rings in the compressor pump, and you'll have to replace them. Second — and a good signal that you need to clean the filter — is that you'll dispense oil along with a nail. That might not be a big deal when you're framing, but if your nailer spits oil onto your oak crown molding with every shot, you've got two problems.

Emptying the tanks helps, too. A byproduct of compressed air is water. If you don't drain the tanks, water builds up. Since they haven't invented the water nailer yet, it's best to drain this water out of the tank to prevent rusting (Figure 5). If you work in a super-humid environment, manufacturers suggest emptying the tanks twice a day.

A cool feature on some of Stanley-Bostitch's compressors makes this a breeze. The manufacturer has put a cord between the tank valves. Step on the cord, and it opens the tank's valves and drains the tank. You can get rid of the water and get back to work without even bending over.

Fittings and hoses. You can make your compressor's work easier by buying high-quality fittings and using 3/8-inch i.d. hose. While 1/4-inch hose is easier to move around the site, any time you constrict air flow, you're making the machine work harder than it has to. Tightening leaky fittings in your system can't hurt, either. Small fittings starve your nailers by constricting the air supply. The result is too many proud nails, especially in the hard stuff like LVLs and parallams.

Figure 5. Draining water from your compressor daily will go a long way toward making tools and compressor last longer. Rusty tanks can force particles into pneumatic tools, damaging O-rings and soft aluminum parts, and a badly rusted tank could explode under pressure.

Air Delivery

If you're debating the merits of oil-lube vs. oil-free compressors for smaller jobs, manufacturers say that oil-lube models last longer — if properly maintained. Oil-free models require a little maintenance (cleaning the air filter), but their internal parts (super-slick Teflon-coated aluminum) and seals wear faster. Once they're worn out, you're probably better off getting a new machine. While the life cycle may be shorter for an oil-free model, there's an upside: no oil to worry about. These units are nice for the guy who sets up his compressor on a steep roof and then wonders why the engine seized. When you tilt an oil-lube unit at too acute an angle, the piston (which dips into an oil reservoir to get its oil every rotation) comes up dry. Dry piston: fried motor. You can run an oil-free unit on an angle. And if you forget (or neglect) to change the oil for a year, there's no need to buy a new compressor because your remaining oil has turned to sludge. Also, oil-free units tend to start more easily, according to manufacturers, especially when it's cold.

More air. Some builders use in-line storage tanks like those from Emglo and Gardner Denver to keep more reserve air in the system. This keeps the pump from running as frequently, though when it does run, it runs longer to refill the larger system. While some manufacturers say that's a good way to maintain an ample air supply, others say that it overworks a pump. They go on to say that if you need a storage tank, your compressor is too small — or you need a second compressor. Some builders use old compressors for their storage tanks.

DeVilbiss, the sister company to Porter-Cable and Delta and manufacturer of Craftsman compressors as well

Figure 6. Porter-Cable's SiteBoss, some DeVilbiss, and some Craftsman compressors have high-pressure technology on board. Beefy fittings and internal components enable them to run at a higher pressure than standard units and hold more air than other units of the same size.

as the DeVilbiss line, says its high-pressure technology gives you more usable air in less space than that of standard compressors (Figure 6). The company says that using high-pressure regulators, couplers, and internal components, as well as beefed-up tank walls, allows it to get 150 psi into the tank as opposed to the industry standard of 125 psi.

A tank that can hold 150 psi enables the compressor to kick on at a higher pressure, too. While most compressors kick on and refill the tank at 90 or 100 psi, high-pressure tanks kick on at 125. DeVilbiss says that this helps eliminate proud or laddered nails as the tank empties, and helps drive nails more consistently in engineered lumber.

Noise. For builders who work inside or in tight quarters with electric compressors, noise can be an issue. Who wants to listen to a compressor pump all day? The difference between loud and quiet boils down to pump speed. A four-pole motor runs at 1,750 rpm and recovers air at about half the pace of a two-pole motor, which runs louder but twice as fast, at 3,400 rpm.

Mark Clement *is senior editor of Hanley-Wood's* Tools of the Trade *and* El Nuevo Constructor *magazines.*

Sources of Supply

Campbell Hausfeld
Harrison, Ohio
866/247-6937
www.chpower.com

Craftsman Tools/Sears
800/377-7414
www.sears.com/craftsman

DeVilbiss Air Power
Jackson, Tenn.
800/888-2468
www.devilbiss.com

DeWalt Industrial Tools
Hampstead, Md.
800/433-9258
www.dewalt.com

Emglo Compressors
Johnstown, Pa.
888/883-6456
www.emglo.com

Gardner Denver
Quincy, Ill.
800/682-9868
www.gardnerdenver.com

Grizzly Industrial
Bellingham, Wash.
800/523-4777
www.grizzly.com

Hitachi Power Tools
Norcross, Ga.
800/830-7593
www.hitachi.com/powertools

Ingersoll-Rand
Woodcliff Lake, N.J.
800/847-4041
www.ingersoll-rand.com

Interchange Brands
Omaha, Neb.
800/458-6635

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

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

Prime Air
Dallas, Texas
800/676-7777
www.primeairtools.com/mansworld

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

Stanley-Bostitch
East Greenwich, R.I.
800/556-6696
www.stanleyworks.com

Thomas Pumps & Compressors
Sheboygan, Wisc.
800/558-7721
www.thomaspumps.com/renegade