

Twin Stack

If you choose wisely, your go-to air compressor can be quiet, durable, and easy to operate

BY PATRICK McCOMBE

With a big pump and two air tanks, a twin-stack compressor is a mainstay of modern residential construction. Capable of powering nail guns from the tiniest pin nailers to roofing and framing nailers, twin stacks are a job site's most versatile hand-carry compressors. Unfortunately, these workhorses weigh between 60 lb. and 70 lb., so it's nice when there's some thought given to how they are carried.

Unsatisfied with my own twin stack because of its mediocre performance and abysmal ergonomics, I decided to test nine other twin-stack compressors from major manufacturers. I stuck to compressors with the conventional design of a pair of 2-gal. (approximate) tanks and a piston air pump powered by an electric motor. All but one of these compressors have oil-splash pumps, which is the traditional choice for a compressor that gets a daily workout. The exception is the oilless model from California Air Tools. Its design is similar to that of a former contractor favorite, the Thomas Air Pac, which went out of production in 2009.

How we tested

One of the most common complaints about twin stacks is that their large motors and oil-splash pumps trip break-



Photo this page: Rodney Diaz



CALIFORNIA AIR TOOLS CAT4620A \$299

At 70 db., California Air Tool's compressor is the quietest in the test. It also has forward-facing couplings and gauges, making it easy to connect hoses and to read both the tank and the regulated pressure. Because it has two air pumps and a large motor, this compressor is the second heaviest in the test. Its oilless design allowed it to start easily after a deep freeze, but I was disappointed that the cold caused the pressure switch to malfunction, which prevented the motor from shutting off when the tanks were filled.



CENTRAL PNEUMATIC 60567 \$130

Harbor Freight's Central Pneumatic compressor is the lightest in the test and, therefore, the easiest to carry. It's also the loudest and has the second-lowest cfm rating, trailed only by the Hitachi. The regulator is accurate, but adjustments lack precision, especially at higher pressures, and the gauges are small with hard-to-read numbers. The air filter and the coupling are positioned where they could easily be broken. A cross-threaded machine screw securing the motor shroud left me concerned about Central Pneumatic's quality-control department. I'd choose another model.

TWIN-STACK COMPRESSORS WHAT WORKS? WHAT DOESN'T?



Hose connections. Panel-mounted hose couplings on the California Air Tools and Makita compressors allow the connection of two tools and are easier to access than the single hose couplings found on most of the other compressors. Unfortunately, the DeWalt and Jenny compressors don't include a hose coupling, so one had to be added for testing.



Drain valves. The best drain-valve setup is a single quarter-turn ball valve that drains both tanks. The California Air Tools, Central Pneumatic, DeWalt, Makita, and Rol-Air compressors all have this. The Hitachi has a ball valve for each tank. Less reliable are the screw-type drain valves found on the Grip-Rite, the Jenny, and the Senco. Screw-type valves are tough to turn and prone to leaks.

ers because they require a large surge of electricity to get turning, especially in cold weather when pump oil is more viscous. To measure the propensity of the tested models to trip breakers, I used a clamp-on multimeter to measure their amperage draw at startup and at their maximum, a point usually reached just before the tanks are full. I did the same test at low temperature by putting them in a walk-in freezer (at -10°F) for about 18 hours.

The low-temperature test was revealing. Only three of the nine compressors would even start up after their deep freeze: the California Air Tools, the Rol-Air, and the Makita. The Rol-Air and Makita models were completely trouble free. The California Air Tools compressor started just fine, but then it wouldn't shut off until the blow-off valve released the excess pressure. I wondered if the manufacturer had received complaints like

this before, so I called marketing manager Larry Ceruka. He told me that he'd never heard of the problem and that the company sells a lot of compressors in Canada because the oilless pumps are very reliable in cold weather. The unit worked fine once it warmed up again. All of the other compressors that wouldn't start also worked fine once they thawed.

To check the accuracy of regulators and gauges, I connected a high-quality pressure gauge and compared its reading to that of the compressors' gauges. I found all the gauges to be within a pound or two of their stated pressure. To judge ergonomics, I repeatedly carried the compressors from my shop to my truck, a trip that involved a long walk, two entry doors, and a flight of slippery stairs. I found that all of the compressors are heavy and hard to carry. Because the differences in ergonomics were



DeWALT D55153 \$234

The DeWalt is a simple, smartly designed machine. All the parts and gauges are tucked between the tanks and the pump, protecting them from damage and eliminating the bruises that come from carrying a compressor with protruding parts. The high-quality regulator, pressure switch, and gauges can be replaced with off-the-shelf components available at most auto-parts stores or lumberyards, making field repairs easy. Despite its motor having the smallest horsepower rating, this compressor has a very fast recovery time. I like the single easily accessible ball valve for draining the tanks, but I wish the compressor came with a hose coupling.



Air filters. To prevent damage, a compressor's air filter should be tucked between the pump and the tanks, an arrangement found on the DeWalt, the Grip-Rite, the Jenny, and the Senco. Alternatively, it should have robust construction as on the Makita and the Rol-Air. California Air Tools' and Central Pneumatic's filters stick out enough to be damaged easily.



Gauges. The compressors from California Air Tools and Makita have 2-in. gauges mounted in an instrument panel that protects them from damage and makes it easy to check both tank and regulated pressure. Central Pneumatic's comparatively small 1½-in. regulated-pressure gauge is mounted just in front of the hose connection, where it could easily be broken.



GRIP-RITE GR254CTS \$249

The Grip-Rite is tied for second in air delivery, and it's priced reasonably. As on the nearly identical Senco, the components are tucked between the tanks and the pump, protecting them from damage. Unfortunately, the arrangement has the gauges facing away from the coupling, making them harder to read than the gauges on most of the other units. Another downside is that both tanks include screw-type drain valves, which is the style I find most uncomfortable to use and the least reliable. Also, the hard-plastic handle has square ribs that dig into your hand.



HITACHI EC12 \$301

Hitachi's five-year warranty makes this model stand out among the other compressors, which is good because the positions of the regulator and the coupling make them prone to damage. The regulator started leaking at lower pressures by the time I finished testing, although somewhat surprisingly, it worked fine at higher pressures. This compressor also had the slowest tank-fill and recovery times and the lowest cfm rating. On the positive side, it's the second lightest, and its smooth sides make for easier carrying than other models. Still, even with its five-year warranty, I'd choose another model.

so slight, I put less emphasis on weight and ergonomics when choosing my two favorites.

In addition to my testing, I also gave a critical eye to the location and quality of components. I looked for parts that could be broken off or damaged when loading the rig into a truck or carrying it through a door opening. I paid special attention to the drain valves because I find the simplicity and reliability of a ball valve to be a significant upgrade over the screw-type valve, which is tough on fingers and more prone to leaking. A leaky drain causes the pump to run more often, and one that's tough to open and close sees little

use, which can lead to a buildup of water that accelerates tank rusting. And because there are few things more annoying than a deafening compressor, I measured loudness with a decibel meter placed about 3 ft. away.

To test air delivery, I connected each compressor to a brand-new Max CN 890F coil framing nailer. I used this setup to drive 3¼-in. nails into Douglas-fir lumber and stacks of ¾-in. fir plywood. All of the compressors had enough pressure to fully set the nails. Nailing speed was dependent on the compressors' respective cfm rating. Not surprisingly, compressors with higher cfm ratings could nail

a little faster than those with lower cfm ratings, but none of the compressors were dogs. I also timed how long it took for each compressor to fill its tanks completely when starting from empty (see chart, facing page).

The verdict

The Makita is my overall favorite. It's quiet and has excellent performance, and the instrument panel makes it easy to connect hoses, adjust pressure, and see the gauges. This compressor only has one downside: At 71 lb., it's the heaviest twin stack in the lot. Of course, a heavy compressor is a drag, but far worse is a compressor that won't work

because of a broken component. The Makita's sturdy roll cage adds weight, but more importantly, it protects the compressor's vital components. With its quiet operation, intelligent design, and cold-weather reliability, the Rol-Air is also an excellent compressor. It weighs in at a more-manageable 61 lb., and at \$330, it is priced only a little higher than the Makita. My best-value pick is the Senco. It has quality components, good air delivery, and a selling price of just over \$200. □

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JENNY AM780-HC4V \$549

The Jenny and the DeWalt have nearly identical designs, but some components are different. The Jenny's pressure switch is easier to operate and looks especially sturdy. Unlike the DeWalt's single ball valve, the Jenny has two screw-type drain valves. Sturdy pressure gauges have a low-profile design that makes them less likely to snag cords and hoses. Likely because it's built in Western Pennsylvania, includes long-life synthetic oil, and has some upgraded components, the Jenny is the most expensive compressor in the test, even though it (like the DeWalt) doesn't include a hose coupling.



MAKITA MAC2400 \$300

The Makita's roll cage protects the pump, the motor, and most of the components, and it provides the structure supporting the intelligently designed forward-facing gauges, regulator, and hose couplings. The arrangement makes it easy to connect hoses one-handed and to adjust pressure. The Makita is also quiet, second only to the California Air Tools model. It has a single two-way ball valve for draining both tanks, which is my preferred arrangement. My only complaint about this compressor is its 71-lb. weight, which makes it the heaviest model in the test.

Manufacturer	Model	HP	Price	Standard cfm	Warranty	Weight (lb.)	Db. at 3 ft.	Amps at start	Max amps	Tank fill time
California Air Tools	CAT4620A	2	\$299	5.3 at 90 psi	1 year	66	70	8.8	13.2	1:15
Central Pneumatic	60567	2	\$130	3.5 at 90 psi	90 days	54	86	9.9	10.6	0:57
DeWalt	D55153	1.1	\$234	3.8 at 100 psi	1 year	60	84	10.8	14.2	0:58
Grip-Rite	GR254CTS	2	\$249	4 at 100 psi	1 year	63	83	12.8	14.3	1:04
Hitachi	EC12	2	\$301	3 at 90 psi	5 years	57	83	11.7	15.5	1:50
Jenny	AM780-HC4V	2	\$549	4 at 100 psi	1 year	61	82	11.8	14.7	1:06
Makita	MAC2400	2.5	\$300	4.2 at 90 psi	1 year	71	77	9.1	13.1	1:22
Rol-Air	VT20ST	2	\$330	4.2 at 90 psi	1 year	61	78	11.1	13.2	1:19
Senco	PC1131	2.5	\$212	4.4 at 90 psi	1 year	58	82	13.7	14.3	1:11



ROL-AIR VT20ST \$330

At only 1 db. louder than the Makita, Rol-Air's compressor is extremely quiet. The heavy-duty components are located in protected spots between the tanks and the pump. A single two-way ball valve drains both tanks, and the regulator is precise and easy to adjust. The regulated-pressure gauge is smaller than the tank-pressure gauge, but it's easy enough to read. Rol-Air's good air delivery, cold-weather reliability, and quiet operation make it my second favorite.



SENCO PC1131 \$212

Aside from its darker paint job, the Senco appears identical to the Grip-Rite. They share the same components, pump, and even the same painful plastic handle. Like its Grip-Rite brother, the Senco has two screw-style tank drains, which I find inconvenient. On the plus side, it's reasonably quiet and is tied with Grip-Rite for second-highest cfm rating in the test. Given its good air delivery, quality components, and reasonable price (second lowest in the lineup), it gets my vote for best value.