

Dust Collection for



DUST COLLECTORS

The wider diameter hose and large air volume created by a dust collector make it the right choice for big machines that create a lot of large, heavier sawdust particles and chips.

Three-pronged approach

When it comes to managing dust, treat the various machines and tools in your shop differently based on how much dust they create. For stationary machines like the jointer, planer, tablesaw, and bandsaw, use a dust-collection system. But for smaller, handheld tools like the circular saw or orbital sanders, a shop vacuum will do the trick. Round up whatever's left circulating with an overhead air filter.

the Small Shop

An effective and budget-conscious trio of solutions

BY ANATOLE BURKIN

The importance of dust collection cannot be overstressed in woodworking. But honestly, it's tough to get excited about spending money on tools that, well, collect dust. No matter how fancy, these machines just don't have the cachet of sleek hand tools or powerful machines that cut and shape wood.

The good news is that a basic kit of dust-collection products won't cost a fortune. And whether you're doing woodworking in a basement or garage, building projects large or small, the essentials are the same. In my case, I'm remodeling a house—trim-

work, cabinets, and built-ins—and working out of a two-car garage. The materials I'm using range from rough lumber to sheet goods.

To make things more difficult, I live in a community with strict homeowners' association rules that prohibit turning a garage into a permanent workshop. So at the end of the day (or a few days running), I need to be able to park the motor vehicles back in the shop ... er, garage. And to keep from tracking lots of dust into the house, I've gotten into the habit of keeping the garage pretty clean with minimal effort.

In the end, no matter what size shop you're in, a three-pronged approach is the best way to attack dust before it settles on you and everything around you. Use a dust collector for bigger, stationary machines, a shop vacuum for handheld tools, and round things out with an overhead air filtration system combined with a dust mask.

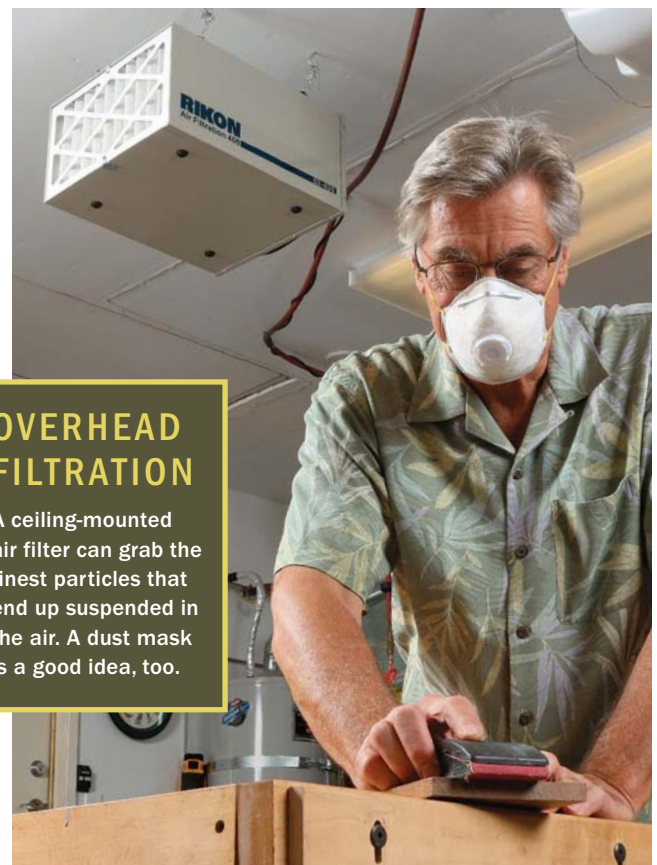
Go big for bigger machines

It's tempting to think that a good shop vacuum can solve all dust-collection issues. That might be true when working with only small benchtop tools that don't



SHOP VACS

The smaller volume of fine dust created by chopsaws, routers, and sanders can be handled by a shop vacuum.

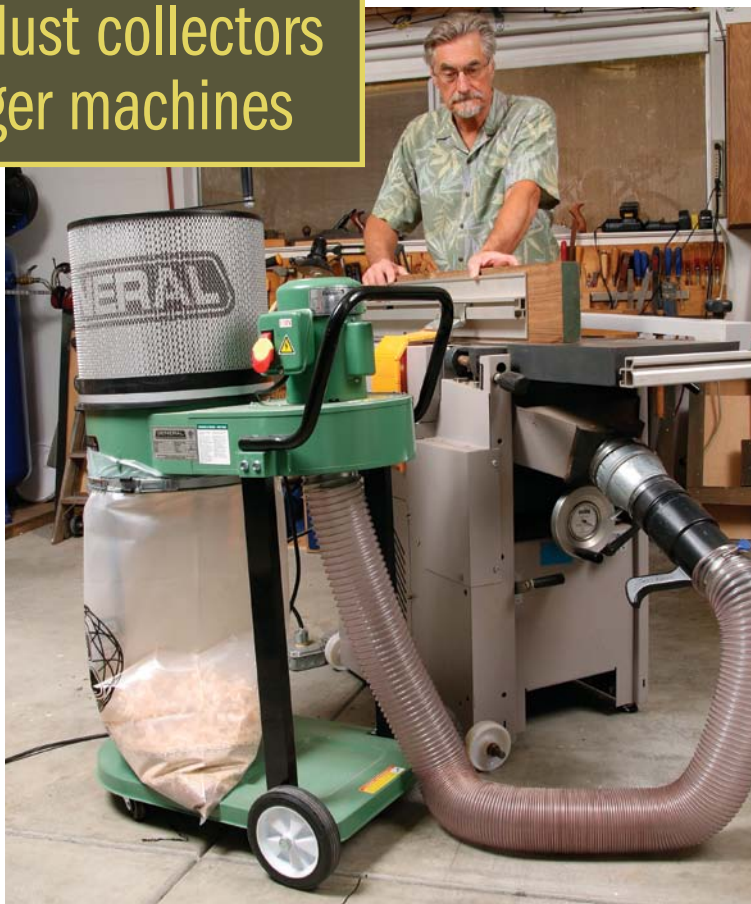


OVERHEAD FILTRATION

A ceiling-mounted air filter can grab the finest particles that end up suspended in the air. A dust mask is a good idea, too.

Small dust collectors for bigger machines

Keep your collector close to the dust. When using a small dust collector, typically a machine with about 1 hp, use a fairly short hose, about 10 ft. long. Too long a run of hose reduces the airflow, and the result is ineffective dust collection as well as possible jams.



include a jointer and planer. But if your woodworking involves milling rough lumber, a jointer and planer (or a combo machine) are absolutely essential, and so is a dust collector. Jointing and planing wood produces large, heavy sawdust particles, and to move them, a fairly large amount of air volume (about 350 cfm) as well as a 4-in.-dia. hose are required. Shop vacuums aren't suitable for a job that big.

A dust collector is also more capable of grabbing sawdust from a tablesaw and bandsaw, again because of the large volume of airflow. That said, I've had pretty good luck using a shop vacuum hooked up to a 14-in. bandsaw and a benchtop tablesaw that has a built-in dust housing under the blade. For larger machines, and especially if you plan to do a lot of resawing or dadoing, the dust collector would do a better job than a shop vacuum, whose hose can sometimes clog when taking big cuts.

For this article, I tried two 1-hp dust collectors that would fit my small space: a mobile tool (General International model No. 10-030CF M1) and a wall-mounted



When floor space is tight. Though it can weigh about 65 lb., a wall-mounted dust collector can be moved quickly (it just hangs on a bracket) and stored elsewhere if needed. Get an extra wall bracket or two and move it around the shop where it's needed.



Easy hose attachments



TIP

DON'T LET THE BAG GET TOO FULL

Empty the bag before it's completely full (shoot for about $\frac{2}{3}$ from the top of the bag) to prevent clogging and to keep the dust from spilling out during the change-out.

machine (Grizzly Industrial model No. G0785), each with pleated filters. Both were up to the task and handled every situation presented in my shop.

To keep the costs down and get the most cfm at the tool, forget about ductwork and blast gates. Just hook up the dust collector to one machine at a time.

Downsize for smaller power tools

Power sanders create very fine dust and are good candidates for a hookup to a shop vacuum.

Chopsaws, routers, and biscuit joiners also can be handled by a shop vacuum, which can generate close to 100 cfm. Finer and fewer dust particles don't require as much air volume. That said, chopsaws are pretty messy no matter what's hooked up to them because most have not been designed with highly effective dust capturing capability.

When using hand tools such as chisels and handplanes, the chips and shavings produced are relatively large and won't get airborne. A broom and dust pan can



Toolless clamps and fittings. Whether they're spring loaded or the thumbscrew type, they're immediately accessible using only your fingers. The thumbscrew type hold a bit tighter than the spring clamps, but the latter are the fastest to get on and off when switching between tools.



Quick and easy change. Rockler's Dust Right handle and tool ports speed up swapping a 4-in. hose from machine to machine. Once the ports are installed on each machine, the handle slips snugly over the open end, requiring no tools or clamps.

Shop vac for power tools



From a workhorse basic to bells and whistles. While a sturdy, no-frills model is great to have, a handy feature on higher-priced vacs is the auto-start function. When a power tool plugged into the vacuum is turned on, the vacuum starts automatically.

Narrow hose works better. The 2½-in.-dia. hose that comes with a typical shop vacuum is too large in diameter for easy hookup, plus they are stiff and bulky. Invest in a smaller-diameter hose, which allows for easier hookup and more freedom of movement.



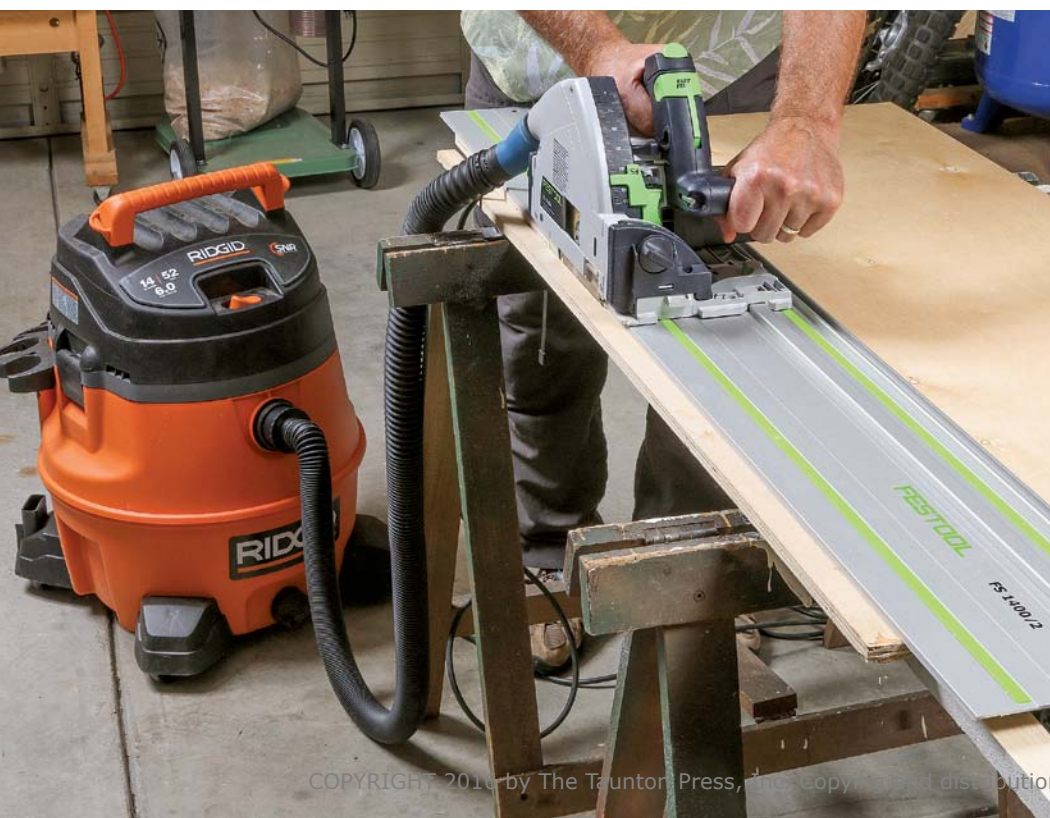
handle the job just fine, although I've become fond of a floor sweeper that attaches to a dust collector. It captures both the large chips and fine sawdust left behind from other tools.

Powered air filters finish the job

In spite of one's best attempts to control the mess, some dust always escapes and the finest particles can end up suspended

ADAPT AND CONNECT

Most shop vacuum manufacturers have dedicated adapters that make changing from one tool to another easy. Get a brand that fits your vac.



in the air. For that, I recommend a ceiling-mounted air filter. Now, some experts say that these machines circulate dust particles while they are running, a time during which your lungs may be exposed to more dust (vs. quiet air, when dust tends to settle). So to be really safe, it makes sense to wear a respirator or dust mask when dust is in the air. Or, run the air cleaner during a break when you're not in the shop.

A note about dust collectors and filters

There's a lot to learn about the types of dust collectors and filters, and for more on the topic, check out "A Revolution in Dust Collection," *FWW* #223 (*Tools & Shops* 2012).

But to cut to the chase, here are the key points:

For respirators, use one rated for fine particles (N95 rating) as the last stand against sawdust.

Use high-efficiency filters on all dust-collection devices (dust collectors and shop vacuums) that capture particles down to 1 micron or less. These small particles can enter deep into the respiratory tract past the body's natural defenses.

The cartridge-style filters you see pictured on the single-stage dust collectors in this article are a big improvement over the bags typically supplied with budget dust collectors. Cartridge filters have a large surface area, which allows the machine to breathe better (improving airflow) and include internal flapper arms, which allow the user to brush off dust inside the cartridge, keeping them operating more efficiently. □

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BASIC DUST COLLECTION KIT

1-hp dust collector
\$300-\$400

14-gal. shop vacuum
\$100

Air cleaner
\$190

Accessories
\$100

Ceiling-hung air filter



For the dust that remains. Use an air-filtration system. These machines circulate dust particles while they work, so to be really safe, wear a respirator or dust mask when dust is in the air.