

**A**s a professional finisher, I enjoy my work. But let's be honest. Not all woodworkers embrace finishing. That's because the job of brushing or wiping on a finish is time consuming and labor intensive. A faster path to a great-looking finish is to spray it. But the high price of equipment once limited the use of sprayers to commercial shops. Not anymore.

Recently, manufacturers have been rolling out quality high-volume, low-pressure (HVLP) systems with a price that puts spraying within budget for many home shops (see my review of these systems, "Spray for Less," *FWW* #242). These turbine-powered systems do a superb job. Most come in a kit with everything you need to get going, and don't require much setup.

The biggest learning curve is mastering the gun—but don't worry. I'll tell you everything you need to know to get great results. We'll start with the gun's controls and how to adjust them, then move on to proper spraying technique. With practice, you'll soon be able to get a professional-quality finish, and get it done fast. Once you've mastered your sprayer, you may enjoy finishing as much as I do.

### What to spray and where

For a home shop in the garage or basement, water-based finishes are the only safe option to spray. Solvent-based finishes like lacquer and shellac are highly combustible and require a spray booth equipped with an explosion-proof fan. Water-based finishes aren't nontoxic, just nonflammable, so wear a respirator mask and eye protection while spraying, and wear gloves when pouring finish and cleaning the gun.

You don't need a large space for spraying, but it should be clean, well lit, and have a way of removing the overspray. You can create a simple exhaust system by placing a normal box fan in a window or door to blow air out, with a furnace filter on it to catch the overspray. This will replenish your

# Get Started

Learn the basics, and get a high-quality finish fast—you may never pick up a brush again

### FLUID VOLUME



This little knob controls how much fluid you spray. Located behind the trigger, it also serves as the needle's retaining cap.

## Get to know the gun

High-quality HVLP systems are compact and more affordable than ever. It takes a little practice getting familiar with the controls, but soon you'll be spraying furniture like a pro.

### POWER SOURCE



The turbine serves as the spray gun's motor, delivering clean, dry air to the gun.

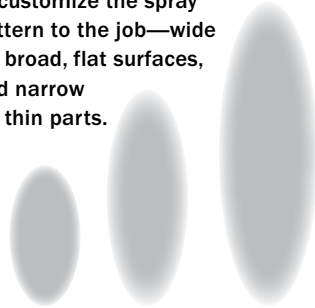
# Spraying

BY TERI MASASCHI



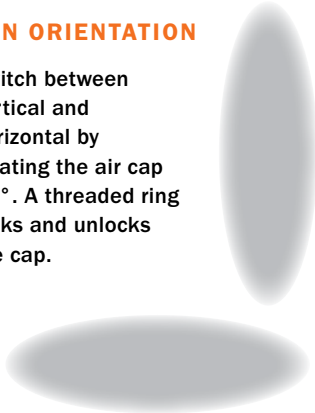
## FAN WIDTH

Twist the fan-width knob to customize the spray pattern to the job—wide for broad, flat surfaces, and narrow for thin parts.



## FAN ORIENTATION

Switch between vertical and horizontal by rotating the air cap 90°. A threaded ring locks and unlocks the cap.



## NEEDLES AND TIPS

The needle and fluid tip control the fluid. You have to match them and the air cap to the finish. The gun should come with a set for spraying lacquer-type finishes, and most manufacturers offer more sizes, allowing you to spray a variety of products.



## VISCOSITY CUP

You must determine the viscosity of the finish before setting up the gun. Dip the viscosity cup into the finish and time how long it takes for the finish to run through. Stop timing when the stream breaks into drips. Then use a viscosity chart to choose the right air cap, needle, and tip.





# Practice with the gun

Before spraying a real finish, get to know the gun and its controls. A low-risk way to do that is with a practice run using dyed water on cardboard.

## Load the gun with dyed water.

A few drops of dye in the water is all it takes. Pour it into the gun's cup through a paper filter, available from finish suppliers. Filtering your materials will keep the gun free of debris and spraying nicely.



shop with fresh air, and keep those overspray particles from landing on everything in the shop, including your freshly sprayed surface. For instructions on constructing your own spray booth, check out “Make a Simple Spray Booth” by Jeff Jewitt ([Fine-Woodworking.com/extras](http://Fine-Woodworking.com/extras)).

## Learn the controls

If you've just pulled your new sprayer out of the box and are a little intimidated by all the shiny knobs, don't worry. It's not as complicated as it seems. There are three main controls on the spray gun: fluid volume, fan width, and fan orientation.

Use the fan-width control to match the fan to the work, and adjust it in tandem with the fluid volume—the wider the fan, the more fluid you'll need. You can change the spray pattern's orientation, too.



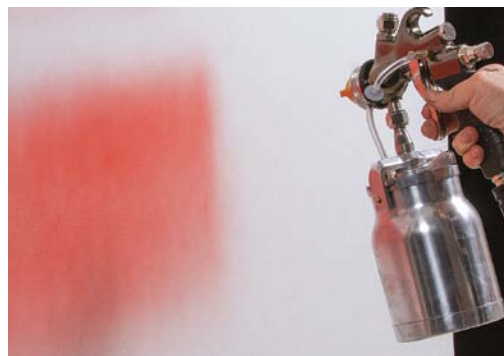
**Start spraying.** Turn the fluid knob to a low setting and gradually dial up the fluid until you get an even finish that's smooth and flat.



**Looks a little dry.** Spray that's too dry will cause dry spots and an “orange peel” texture. The remedy is to either increase the fluid or move the gun more slowly.



**Too wet.** If you're seeing drips, turn down the fluid or move the gun faster.

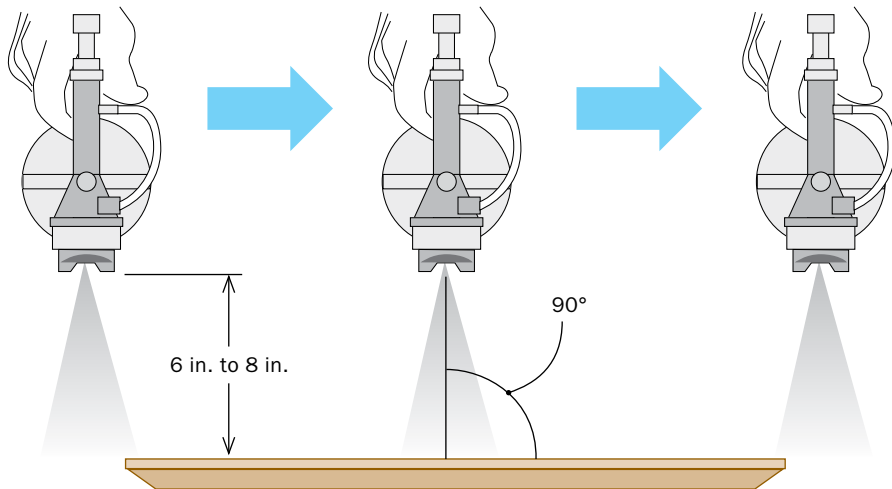


**Just right.** When you see uniform, wet coverage on the cardboard, with no dry spots or drips, you're on the right track.

# Then practice your technique

Consistently using the right technique can have a big impact on finish quality, so a little effort here to build good habits and muscle memory will improve your finish in the long run.

## START



## FINISH

For tabletops or wide upright parts, use a vertical pattern, and for tall surfaces such as bookcase sides, a horizontal pattern is best. Some systems have an air valve in line on the hose to limit the air pressure to the gun. But limiting the air causes excess wear on most turbines and most jobs require full-strength air pressure, so it's best to keep the valve open.

### Practice makes perfect

Spraying is a learned skill, so get used to the gun and its controls before jumping into a project. You can practice by spraying dyed water on cardboard, placed upright.

Load the gun with the water and connect the air hose to the gun. With the fluid turned off, set the gun to the smallest fan width. Press the trigger and slowly dial up the fluid knob until you get a wet, even spray on the cardboard without drips. Now increase the spray-pattern width to 4 in. or 5 in. wide and dial up the fluid too, keeping the two adjustments balanced to produce a fine, wet mist. The fan pattern shape should look like a straight line or an oval that's a little fatter in the middle. Next, play with the settings to get more familiar with the gun—change the fan width, and try spraying vertical and horizontal strokes, too.

Once you have a handle on how the gun works, focus on using the right tech-

nique. In terms of finish quality, technique is just as important as properly setting up the gun's controls. Hold the gun at a right angle to the surface you're spraying and about 6 in. to 8 in. away: too close and you risk forming drips on the surface, too far and the finish will be too dry and cause a rough "orange-peel" texture. The finish wetness is also a function of the rate you move the gun—faster makes it drier, and slower makes it thicker and wetter. Work at a speed that's comfortable for you and keep it consistent as you're spraying, then use the fluid knob to dial in the wetness. To get seamless beginnings and ends to your strokes, start and stop spraying several inches beyond the edges of the workpiece. To blend stroke lines together so they don't show up in the finish, overlap each stroke halfway over the previous.

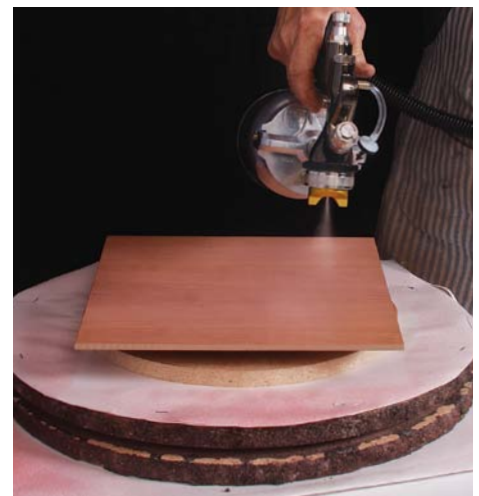
Next try the gun with a water-based coating on some scraps of wood. You'll need to readjust the gun a little when you start—the settings for the finish will be different.

### Spraying furniture

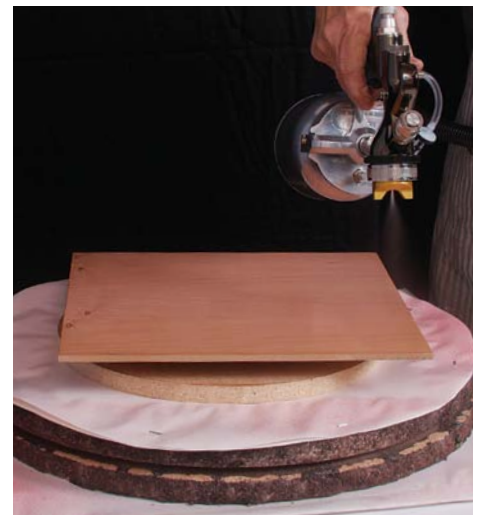
Now I'll walk you through spraying a piece of furniture, using the parts of a Shaker table—the broad horizontal top and vertical legs and aprons—as examples. When spraying a tabletop, remove it from the base if possible to avoid getting overspray



**Start your stroke early.** For the smoothest finish possible, Masaschi pulls the trigger to start spraying several inches before the gun reaches the workpiece.



**Consistency is key.** Keep the gun at a right angle and 6 in. to 8 in. from the workpiece, and move it at a constant speed.



**Don't forget the follow-through.** Just like the beginning of the stroke, keep spraying several inches beyond the edge of the piece.



# Spraying tops and narrow parts

You'll have to learn to spray horizontal and vertical surfaces, plus wide and narrow areas. A tabletop and base are perfect for teaching the technique. Remove the top from the base and spray them separately so that the overspray from one doesn't get on the other.

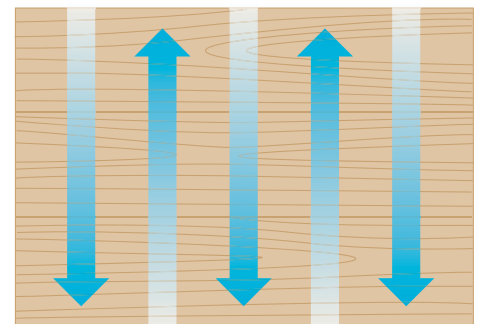
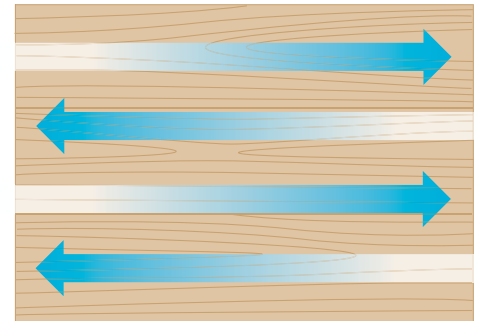


## TABLETOPS

**Spray the bottom first.** Coat the underside of the tabletop, using a cross-hatch pattern (right) for even coverage. Use a wide spray pattern and overlap each stroke halfway over the last.

## CROSS-HATCH PATTERN ENSURES UNIFORMITY

To keep stroke lines from each pass of the gun from showing up on broad surfaces, coat the surface with light, even strokes with the grain, then while the finish is still wet, turn 90° and coat the entire surface again, working across the grain.



**Once dry, flip it over and do the edges.** Masaschi dials in a narrow fan pattern for the edges to save material and limit overspray—rogue, partially dried spray particles that can land on other parts of the top, leaving a rough surface on the finish.



**Now spray the top.** Because the top is the most visible part of the table, Masaschi does it last to eliminate the chance of getting overspray on it. A smooth finish is most important here, so use the cross-hatch pattern again. Let the top dry before doing the next coat.

on the base. Lay it flat at waist height with the top side down, resting on a nail board or painter's pyramids.

Start with a coat of water-based universal sanding sealer (I use a product from Target Coatings). The sealer coat is important; it fills and seals the wood grain, preventing the later coats from soaking into the wood and leaving it dry looking, letting you build up a finish with an even sheen in fewer coats. Spray the faces with a wide fan using a cross-hatch pattern (opposite)—first with overlapping strokes across the grain, then with the grain—to create a more uniform finish. After it has dried for 45 minutes, flip the top over and use a narrow fan to spray the edges, then widen the fan and spray the top.

Let the sealer coat dry, then scuff-sand it by hand with P320-grit paper. Scuffing should produce fine, dry powder. If clumps of finish stick to the sandpaper, let the finish dry longer. Remove the sanding dust by wiping it down with a damp cloth, then spray on two coats of a water-based clear topcoat (I use water-based acrylic lacquer from Target Coatings), scuff-sanding between each coat. If the last coat doesn't come out smooth or has dry spots, let it dry, scuff it and wipe off the dust again, and spray one last coat across the whole surface.

The table base gets the same number of coats, one sealer and two or three clear topcoats. For the legs and aprons on

## NARROW PARTS



**Work one side at a time.** Spray the inner surfaces of the legs, using a medium-width spray pattern a little wider than the legs.



**Then spray the outer face in one pass.** Masachi starts at the bottom of a leg, goes up and across the apron, then down the other leg with a continuous, smooth motion. Then she returns to the apron to spray any remaining dry spots.



# Tips for casework

Getting a good finish inside a cabinet isn't always easy, but planning ahead and following a few simple guidelines can really simplify the job.



**For tall surfaces, use a horizontal fan.** Rotate the air cap to spray tall pieces like this bookcase. Make long, overlapping up-and-down strokes to cover the sides.



**Remove obstructions.** Taking the shelves out of the cabinet before you spray the interior gives you more space to maneuver the gun inside the cabinet, making the whole job easier.



**Spray the shelves flat.** Laying the shelves and other loose parts flat for finishing is much easier, and you'll end up with a better-quality finish.



**Secret weapon.** If you give it your best and still get overspray, let it dry, then rub it away with brown kraft paper. If that's not enough, try #0000 steel wool and wool-lube solution.

this small table, I used a vertical fan; on a larger job with vertical parts like a tall bookcase, it's easier to use a horizontal fan and move the gun up and down. To avoid drips on the legs, dial back the fluid a little. Spray the base one side at a time, first spraying the inner surfaces, then the outer face. Start spraying at the bottom and move up the leg, turn and spray across the apron, then down the other leg in one continuous motion. After spraying all four sides, let the finish dry and hand-scuff any bumps or drips smooth with P320-grit paper or very-fine grit non-woven abrasive pad between each coat. □

*Teri Masaschi is a professional finisher in New Mexico and teaches regularly at the Center for Furniture Craftsmanship in Rockport, Maine.*



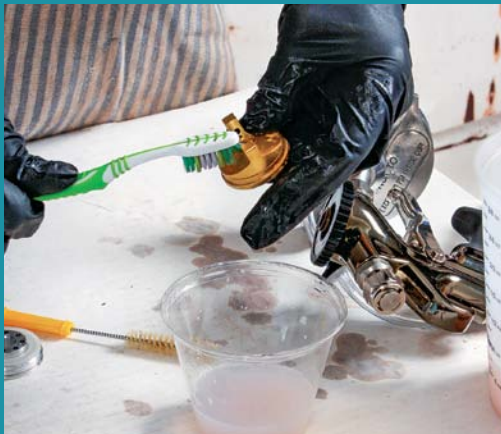
**Load the gun with cleaner.** Use a solution of one part ammonia and two parts water to clean the gun after spraying water-based finish.



**Give it a rinse.** Hook up the hose and turn on the turbine for a moment to pressurize the gun, then turn it off and spray cleaner through the gun to rinse it out.



**Break it down and wash each part.** Remove the air cap, fluid knob and needle, and fluid tip and wash them in the ammonia solution. Wash the gun body too. Wearing nitrile gloves protects your hands from harsh solvents and keeps them clean.



**Reassemble and grease the moving parts.** Put the gun back together and apply a little petroleum jelly to the needle just in front of the trigger and to the threads of the air cap.



## Keep it clean

Cleaning your gun properly after each use is the best thing you can do to ensure stress-free spraying, and will make your sprayer last a very long time. To clean the gun, use a solution of 1 part ammonia and 2 parts water, a clean cotton rag, and a small nylon-bristle brush. Load the gun with the cleaning solution and spray it through the gun. Next take apart the gun, remove the cup, then the air cap, needle, and fluid nozzle, and place them in a small container of the cleaning solution. Wash the cup and gun body by swabbing them with the ammonia cleaning solution, but never submerge the gun body in cleaner. For stubborn dried-on finish, swab the gun with lacquer thinner. Once clean, wipe them dry with a clean cloth. Scrub the air cap, needle and fluid tip, then reassemble the gun and lubricate the needle, air cap threads, and the cup rim with petroleum jelly.

To remove any water and finish residue from the gun, load it with a small amount of lacquer thinner and spray it through the gun for 1 or 2 seconds. Leave the thinner in the cup if you'll be spraying again in the next few days. If it's going to be longer than that, empty the cup, dry it out, and put it away—it will be clean and ready to use next time.

The turbine's intake filter can get clogged with dust and cause overheating, so clean or replace dirty filters. Keep the turbine upwind from the gun and off the floor while it's running—it will pick up less dust that way.

**Lacquer thinner removes the residue.** Load a little lacquer thinner into the gun, pressurize it like before, and spray it through the gun. If you'll be using the gun again within a few days, you can store it with the thinner inside. If not, empty the cup and wipe it dry with a clean cloth, before putting it away.

