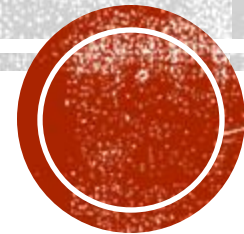


# SPRAY FINISHING 101

Long Island Woodworkers Club 10/2/24

Presented by Corey Tighe



# WHAT EXACTLY IS SPRAY FINISHING???

- It's taking a finish in the form of a liquid and atomizing it to be applied to a substrate of a project
- It's the use of either pressurized gas (rattle can), compressed air via a air compressor, or a turbine to take a finish in a can and apply it with air to your project



# THE PROS AND CONS

## ■ PROS

- Speed and efficiency
- Uniformity
- Creativity & control
- Wide availability of finishes

## ■ CONS

- Wasted material
- Overspray
- Expense



# AEROSOL CAN

AKA

# RATTLE CAN

- The most basic example of spray finishing
- Can be found at your local big box store or hardware store
- Comprises of a can pressurized with a gas and a finish with a ball inside to mix the finish prior to spraying
- You can find cans in: shellac, lacquer, polyurethane, stains, toners, varnish, paint
- Simply shake (rattle) the can to mix finish before applying. Then stay about a foot away from the surface to apply. Do even strokes and lightly apply.
- Once done turn can upside down and depress tip to clean out the spray tip of any finish

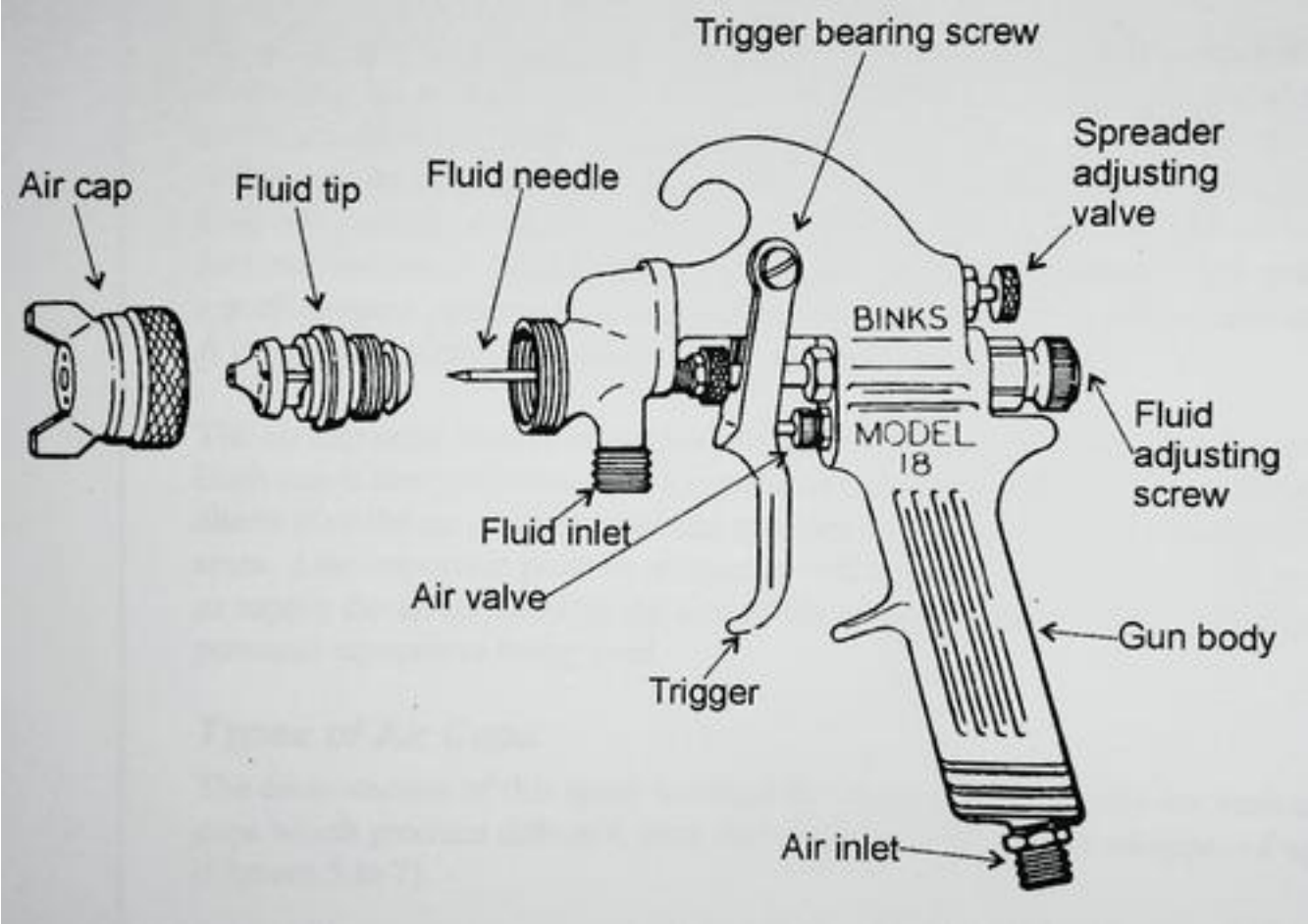


# AIR COMPRESSOR & SPRAY GUN

- You need to have a minimum of a 60 gallon compressor to use a spray gun efficiently. Can be done with a smaller compressor for real small projects.
- Must need a filter between the air hose and the spray gun to prevent water and oil contamination
- Variations of spray guns
  - Gravity feed
  - Siphon feed
  - Pressure feed
- Spray guns are either traditional (high pressure), or HVLP (high volume low pressure)



# ANATOMY OF A SPRAY GUN



# TURBINE SPRAY SYSTEM

- Uses stages of fans to create a constant dry air to spray a finish
- Most start at 2 stage and go up to 6 stage turbines
- 2 stage turbine would work for very thin viscosity finishes. No good on paints.
- Minimum of a 3 stage (with lots of thinning) for spraying paint. Recommended at least a 4 or 5 stage to reduce thinning
- Can take system anywhere and its all works together
- Don't have to worry about water or oils contaminating your finish like a compressor and spray gun setup
- Fuji Spray & Apollo best brands



# AIRLESS SPRAYERS

- Typical Wagner or Graco spray gun systems found at your big box store
- Uses the material pressure with the correct spray tip and a pump to spray the finish of choice with atomizing
- Need to prime sprayer which waste finish
- Can spray most types of finishes but geared towards paints





# AIR BRUSHING

- Used for small parts or touch ups
- Self contained with air brush and compressor motor
- Must thin out typical spray finishes



# SPRAY SAFETY

- Must wear a 3M respirator with a carbon filter for vapors/overspray
- Must have proper ventilation or there can be an explosion
- Do not spray near an open flame or near your oil burner/gas hot water heater!!!!
- Best to spray outdoors on a tarp in the driveway or grass if possible
- Can use traditional box fans or drum fans with water based finishes to move air
- If spraying indoors with solvent based finishes best to use an explosion proof fan



# MAINTENANCE OF SPRAY GUNS

- Use the appropriate solvent to clean your spray gun
- After every use make sure cup and gun are cleaned out
- Depress the trigger once spray gun is unplugged to back flush the gun
- Empty out cup into finishes original can
- Fill cup with solvent and spray it thru the gun until finish is no longer in there
- Take apart air cap, fluid nozzle, and needle to clean
- Let parts dry before reassembly
- Best to get a spray gun cleaning kit with all the necessary tools to clean with



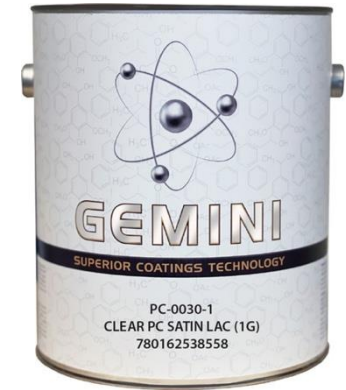
# SPRAYING ACCESSORIES

- Spray Twirly
- Pin boards
- Painters pyramids
- Drying racks
- Filter material for spray booth
- Drop cloth



# FINISHES TO SPRAY

- Shellac
- Clear & pigmented lacquer
- Polyurethane
- Conversion varnish
- Dye stains
- European finishes



# TONING / SHADING A FINISH

- What is toning??
  - Adding a color to a clear finish to darken areas that are lighter in color or change a finished product after its done
  - Can be used to blend in sapwood in a project
- Shellac is best used with a universal tinting colorants or a transtint dye
- Use a small sized needle 1.0mm – 1.2mm needle for application
- General Finishes clear finishes are compatible with their stains as a toner
- Make sure to strain finish before putting in cup



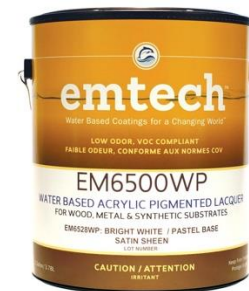
# SPRAYING PAINT

- Can use a good quality waterbased paint and thin with water to spray
  - Benjamin Moore Advance
  - Sherwin Williams Gallery Series
- Must use a good quality primer like Zinsser Smart Prime
- If needed add Floetrol for better flow of paint
- Fill any voids in your work prior to priming
  - Primer will show spots you missed filling
- Use a large sized needle 1.8mm – 2.0mm



# PIGMENTED LACQUER/POLYURETHANE

- Instead of spraying paint pigmented lacquer is better
  - Dries much faster and harder
- Can be matched to all big brand paint company colors
- Still requires a primer/surfacer to be spray 1<sup>st</sup>
- Gemini Evo Elipse, General Finishes Enduro, Target Coatings





# SPRAYING STAINS

- Spraying a dye stain will result in a more even color
- Great on larger surfaces or complicated projects
- Make sure to mix stains well to get the color right
- Wipe stain off once sprayed unless it's a no-wipe stain
- Use a medium sized needle for wiping stains 1.3mm– 1.8mm
- Use a small sized needle for dye stains 0.8mm – 1.4mm



# TROUBLESHOOTING

- **Blushing**
  - When a finish is sprayed in high humidity and turns the finish white
  - Moisture is trapped into the surface
  - Solve by spraying some solvent on the surface
  - Let dry and sand surface and try again
- **Dry spray**
  - A rough finish when overspray is on surface
  - Solve by sanding it smooth and respraying or taping off area
  - Or wet sand surface after several days of drying



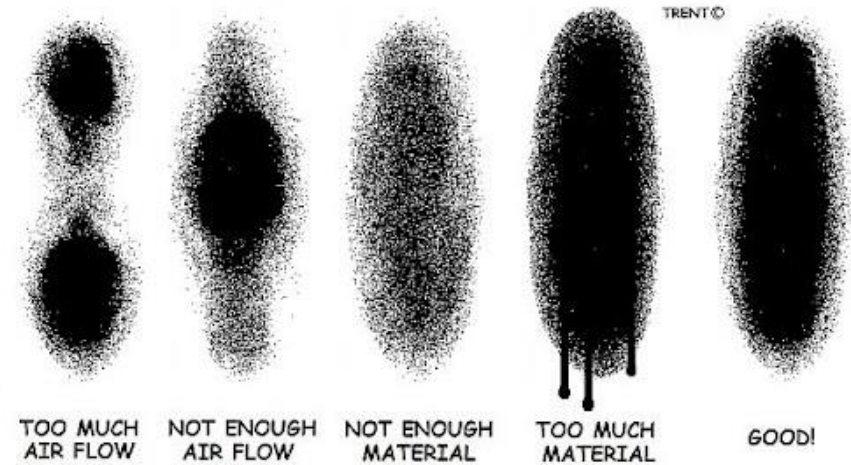
# TROUBLESHOOTING

- Orange peel
  - Surface feels like an orange
  - Check atomizing of finish because finish is too thick or pressure is too low
  - Solve by increasing pressure or thinning slightly the finish
- Fish eye
  - Looks like orange peel but in random spots
  - Caused by contamination of surface from oils
  - If seen wipe off finish immediately then wipe with a solvent
  - If appears again seal surface with a dewaxed shellac (sealcoat)



# TROUBLESHOOTING

- Pattern spraying uneven
  - One of air cap holes is clogged
  - Solved by cleaning out air cap
- Pattern is heavy in the center
  - Finish is too thick or pressure too low
  - Solved by thinning finish or increasing pressure
- Finish leaking at nozzle
  - Needle is sticking from packing nut too tight
  - Solved by loosening packing nut and lubricating needle



# RESOURCES

- **Books**
  - Spray Finishing Made Simple by Jeff Jewitt
  - Great Wood Finishes by Jeff Jewitt
  - Understanding Wood Finishing by Bob Flexner
- General Finishes videos & website
- Youtube
- Abbot Paint & Varnish in Deer Park
- Colorspec Coatings in Holbrook
- United Finishes in NJ (online sales for General Finishes)
- Target Coatings in NJ (online sales)

