Cleaning Waterborne Spray Guns

When making the transition to waterborne coatings you will notice there are areas where you will need to make changes either in products, processes and procedures, or habits. Gun cleaning is one of those critical areas that you must pay close attention.

In general, a waterborne coating is not as easy to clean out of a paint gun as a solvent borne product. The very nature of the waterborne coating causes it to stick very well to aluminum substrates. Most of the guns that we all use for refinishing on a daily basis are all made of aluminum. Therefore, gun cleaning is an area where you must pay closer attention. Failure to do so can result in a rapid destruction of your equipment from the inside out.

The concern:
While paint gun companies may coat the fluid passages of their guns with a corrosion resistant coating, the problem occurs when we clean our guns either manually or in a gun cleaner, by dissolving the remaining waterborne product to get it out of the gun, the air passages are then exposed to the cleaning solvents. These air passages are not coated therefore complete removal of the water and cleaners is critical.

As you clean your spray equipment the various acids, additives, pigments, and resins in the basecoats will elevate the PH level of the solution. The PH level is defined as: the measure of acidity or alkalinity of an aqueous solution. With 7.2 being neutral, 0-7 levels are considered acidic, the lower the acidic value the higher the degree of acidity. PH values from 7-14 represent alkalinity. The higher the PH value above 7, the greater the degree of alkalinity. The level where corrosion could occur is 11-11.5. Most spray equipment companies caution exposure to high PH levels (above 11.0). What remains inside the gun can cause severe damage if not removed immediately. These waterborne cleaners are Alkaline (on the PH scale) by nature. Solvents that are soluble in water will have a PH range of 7-9. Some of the waterborne cleaners currently on the market have a PH value as high as 12.0.

Picture this, you have a flashlight at home and you leave the batteries (alkaline) in for an extended period of time. What results is a corrosive white appearing reaction in the light. That same type reaction is taking place inside your paint guns if you are not cleaning them thoroughly. This can actually happen in only a few weeks.

This is where the old processes and habits enter the equation. You cannot use the same processes and products to clean a gun when using waterborne materials.

Conclusion:
It is imperative that after you clean the gun, no matter what cleaning material you use, you must get **all** the moisture out of the entire gun. Not just the outside but every part of the inside including the air passages. One method recommended by the gun manufacturers is after cleaning dip the entire gun body in a can filled with alcohol or acetone. (Alcohol is the best choice as Acetone can leave a residue) Both these solvents are moisture scavengers and will get all the moisture out of even the smallest area when dipped. Once dipped, immediately take the gun out of the can, use a blow gun to blow dry the inside of the gun while wiping the outside with a clean dry cloth. This one simple procedure, while different from solvent borne cleaning processes, will keep your gun from self destructing. It is also a good habit to completely disassemble your gun at the end of each day and thoroughly clean and dry it.