

Spray painting Principles Involved

To understand the art of spraying and to become an efficient operator, it is essential that the principles involved should be grasped. The success of the process depends upon the stream of paint or other type of finish being properly atomized, or, in other words, broken up into a fine mist. This state can only be obtained by two conditions working in harmony with each other; the flow of air from the pistol and; the viscosity of the material which is being applied. If the force of the air is insufficient to break up the paint into fine particles, then, instead of an even film of paint being deposited upon the surface, blobs will be spurted out, and this will happen also if the paint is too thick or a very high solids. These would require a larger orifice or tip size. Practice runs should help determine the correct balance of air and viscosity to produce satisfactory results. Different materials will require their own individual adjustments, but these will soon be determined with practice.

Common Faults in Spray Painting

Unsatisfactory results in spray application may be due to a variety of causes, such as faulty technique on the part of the operative, or again, spraying at an incorrect pressure. In some instances they may arise from failure to keep the gun clean and in good condition; the following are those which most commonly occur:

Distorted Spray.-This may be due to a dirty or damaged air cap or from the tip not centering properly; to remedy, remove and clean the cap, paying special attention to the air ports. Should one of these be blocked with dried paint, the shape of the air stream and atomized paint will be irregular. If any parts are damaged, see that they are replaced.

Split Spray.-This may result from too much atomizing pressure or from misalignment of tip and nozzle, or from an obstructed port.

Air Leakage from the Front of the Gun .-This is probably due to the air valve not seating properly and, provided no actual damage has been sustained by the gun, can be remedied by cleaning.

Fluid Leakage from Front of the Gun .-In this case the needle may not be seating correctly in the fluid tip, due to dirt or other impurities in the tip. Alternatively, the needle may be bent or of an incorrect size for the tip.

Fluttering Spray .-This is probably caused by an air leakage through the needle-packing gland; the trouble can be rectified by means of a new packing washer.

Pebbling .-This fault, in which the material is deposited on the surface too dry, as a kind of dust, is usually the result of spraying at too high an air pressure which causes the solvents in the finish to evaporate from the atomized particles before the latter reach the surface.

Orange-peeling.--This may be due to the material itself not possessing sufficient flow or to the use of unsuitable thinners. Again, it may be caused by the use of too low an air pressure in relation to the viscosity of the material with the result that atomization is imperfect.

Runs and Sags .-These occur when too much paint is projected on to the surface in any one area, due to incorrect handling of the gun, as when there is too much overlapping in succeeding strokes.