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BAY STATE SPRAY EQUIPMENT

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What causes runs and sags on my paint finish?

There are many things that can cause a run or sag. In some cases it may be a combination of things. Let's examine them one by one.

Cold spray environment - When the spray booth ambient temperature drops below 70 degrees, the solvent will not flash off into the atmosphere as quickly as expected. This will also depend on the solvent. An acetone based coating will not have the problems that a xylene based coating will have. The solution is obvious. Try to keep the spray environment above 70 degrees. One additional note, an environment that varies in temperature will also vary in flash-off times. That will result in inconsistent quality.

Flowing too much material - Too much fluid pressure either requires the operator to move very rapidly or a heavy film build will result. The optimal flow rate is one that achieves the required finish quality and allows the operator to maintain technique that follows the line speed.

Gun distance from the part - A gun that is too close to the part will: 1) Apply too much material and 2) Not allow time for a partial flash-off that would happen with correct distance. See below for the proper distances that should be used with different spraying methods:

Proper distances:

HVLP	6-8"
Air Spray	8-10"
A/A Airless	10-12"
Airless	12-14"

Gun speed too slow - Typical gun speed should be approximately 3 feet per second. This in many cases is combined with fluid pressure that is too high.

Material over-thinned - Be sure to follow manufacturers recommendations. This information is typically found on the coating manufacturers Tech Data Sheet (not MSDS). One possible reason for too much thinner is the coating is below the recommended temperature (approximately 70 degrees). In most cases warming the coating will lower the viscosity.

Improper pattern overlap - The proper pattern overlap for air atomized equipment is 50%. The easiest way to achieve that is point the gun at the bottom of the previous pass. Overlap for airless and a/a airless should be approximately 40%.

Under-atomizing the coating - Usually this results from fluid pressure that is too high. Either lower fluid pressure (preferred) or increase air pressure.

Failure to trigger - The trigger should be released after the pattern passes the edge of the part. Changing directions on the part results in a heavy build where the direction is changed. Not releasing the trigger results in excess coating being used and well as increased filter usage.

Uneven coating applied - This can be caused by poor technique.

1. Gun not perpendicular to part
2. Gun not moving parallel to part
3. Arcing the gun

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Summary - As you can see, several of the conditions can exist at the same time. Check each possibility to make sure your finishing system has the highest possibility of efficiency and quality.

The causes and solutions are summarized below.

Cause	Solution
Cold weather	Add heat to environment - 70 degrees
Flowing too much material	Decrease fluid pressure
Gun distance too close to the part	Increase gun distance
Too slow gun speed	Increase gun speed
Material thinned too much	Add non-thinned material
Improper pattern overlap	Utilize 50% overlap technique
Under-atomizing material	Increase atomization pressure
Failure to release trigger at end of stroke	Use proper triggering technique
Uneven coating applied	Use proper triggering technique

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