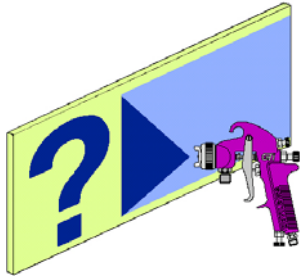


GTI SPRAY GUN SPRAY FAULTS TROUBLESHOOTING & FAULT-FINDING

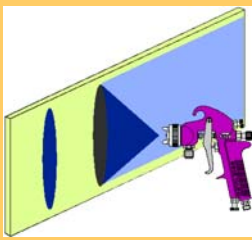
HOW DOES YOUR SPRAY GUN SHAPE UP?

No matter how experienced the sprayer, merely triggering and moving a gun in space will not reveal any of the performance characteristics vital to a top quality finish. A simple brief static spray pattern test will immediately highlight any potential problems before the gun is used on the painstakingly prepared workpiece or vehicle. Follow the procedure explained below and compare the pattern to our examples. If your result resembles the examples then look at the corrective measures before you apply paint to the workpiece.



- (1) Ensure that you have the correct Air Cap, Fluid Tip and Needle set-up on the gun to match the material being applied.
- (2) Tape a piece of brown paper (approx. 1/2metre / 20" square) onto the spray booth wall at shoulder height.
- (3) Having set the gun at the recommended inlet or atomising air pressure, hold it at the correct target distance and spray at the paper without moving the gun.

Normal Pattern – Ready to Spray



- Look for:
- Good balance and uniformity
 - Symmetrical pattern shape
 - Good working height and width
 - Uniform distribution of material (verify by horizontal spray-out)

STATIC PATTERN TEST

Having examined the vertical spray pattern for uniformity of shape and size, now turn the air cap through 90o and static spray a horizontal pattern making sure you trigger for long enough to load the shape with material. Then watch to see the formation of the run-outs of material across the full width of the spray pattern. This will highlight how well the material is distributed throughout the spray pattern. If the run-out is more obvious at the centre or at the ends then this indicates a problem.



TYPICAL GOOD PATTERN RUN-OUT

TYPICAL BAD PATTERN RUN-OUT

BASIC SPRAY FAULTS

Condition	Cause	Correction
Improper spray pattern	Gun improperly adjusted Dirty air cap Fluid nozzle obstructed Sluggish needle	Readjust gun, follow instructions carefully. Clean air cap. Clean Lubricate (see lubrication section) or loosen packing nut.
Heavy top or bottom pattern	Test spray pattern, rotate 180° and test again to isolate cause. Material build-up on air cap, particularly plugged horn holes, centre holes or jets. Material build-up on fluid nozzle or partially plugged fluid tip. Fluid nozzle or cap dirty or damaged	Soak cap or nozzle in suitable solvent and wipe clean. To clean orifice, use a broom straw or toothpick. Never use a wire or hard instruments. This damages holes and distorts spray pattern. Clean Air Cap and Fluid nozzle thoroughly Replace Fluid nozzle or Air Cap if necessary.
Heavy right or left side pattern ('Banana' Pattern)	To determine where the material build-up is, invert cap and test spray. If pattern shape stays in same position, the condition is caused by material build-up on fluid nozzle. If pattern changes with cap movement, the condition is in the air cap.	Clean air cap thoroughly Replace air cap if necessary
Heavy centre pattern	Too much material Material too thick Air pressure too low	Reduce fluid flow by turning fluid needle adjusting screw clockwise. Reduce fluid pressure or increase atomisation pressure. Thin Increase air pressure at regulator

Condition	Cause	Correction
Intermittent or 'fluttering' spray fan	Loose fluid nozzle Fluid nozzle not seated correctly in gun head Gun (with cup) tipped at excessive angle. Obstructed fluid passage or hose Loose or cracked fluid tube in cup or tank Insufficient fluid in cup or pressure tank. Too heavy fluid for suction feed. Dirty or worn packing or loose packing nut. Plugged vent on suction feed cup. Gun fluid inlet connector loose or not sealed/seated correctly Fluid hose or cup not fitted correctly to fluid inlet connector.	Tighten Remove nozzle, clean components, check cone seating on nozzle and gun for damage or contamination. Do not tip excessively or rotate fluid tube Clean Tighten or replace Fill cup or tank Thin material or change to pressure feed Lubricate or replace. Tighten Clean vent hole in cup lid. Tighten Remove, check mating surfaces and re-tighten.
Single Split spray pattern	Not enough material Too high atomisation pressure Too much air for fluid quantity used.	Increase fluid flow by changing fluid nozzle size opening needle control knob or increase fluid pressure on pressure feed container Reduce air pressure Reduce air pressure
Double Split spray pattern	Not enough material Too high atomisation pressure Too much air for fluid quantity used	Increase fluid flow by changing fluid nozzle size opening needle control knob or increase fluid pressure on pressure feed container Reduce air pressure Reduce air pressure at regulator
Ball End Heavy Pattern	Too much fluid flow Fan size too big resulting in fan instability	Change fluid nozzle for smaller size Reduce fluid flow using fluid needle control Reduce fan size using spreader valve
Excessive bounce-back	Too much atomisation air pressure Gun too far from surface Improper technique i.e. arcing, & fanning the gun	Reduce air pressure Check distance (normally 6-8") Move at moderate pace, parallel to work surface
Runs and Sags	Too much fluid flow Material too thin Gun tilted on an angle	Adjust gun or reduce fluid pressure Mix properly or apply light coats Hold gun at right angle to work and adapt to proper gun technique
Thin, sandy coarse finish drying before it flows out.	Gun too far from surface Too much air pressure Improper thinner being used	Check distance (normally 6-8") Reduce air pressure and check spray pattern Follow paint manufacturers mixing instructions
Thick, dimpled finish 'orange peel'. Too much material coarsely atomised.	Gun too close to surface Air pressure too low Improper thinner being used	Check distance (normally 6-8") Increase air pressure or reduce fluid pressure Follow paint manufacturers