

TRIGGER HAPPY

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 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 examples 2-8 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 up a piece of brown paper—approx. 20" (1/2 m) square—onto the spray booth wall at shoulder height.
3. Having set the gun at the recommended inlet or atomizing air pressure, hold it at the correct target distance and spray at the paper **WITHOUT MOVING THE GUN**.

Normal Pattern – Ready to Spray

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

Banana Pattern

- Air cap horn hole dirty or damaged
- Test spray pattern, rotate 180° and test again to isolate horn hole location
- Clean air cap thoroughly
- Replace air cap if necessary

Single Split Pattern

- Too much air for fluid quantity used
- Reduce air pressure at regulator
- Increase fluid flow by changing fluid tip size or opening needle control knob

Double Split Pattern

- Too much air for fluid quantity used
- Reduce air pressure at regulator
- Increase fluid flow by changing fluid tip size or opening needle control knob

Intermittent Spray Fan or Fluttering

- Air in the fluid passageways
- Insufficient paint in cup
- Fluid tip loose
- Fluid needle packing or packing screw loose
- Cup vent hole clogged

Heavy Top or Bottom Pattern

- Fluid tip or air cap dirty or damaged
- Test spray pattern, rotate 180° and test again to isolate cause
- Clean both items thoroughly
- Replace fluid tip or air cap if necessary

Center Heavy Ellipse

- Bad air or paint setting
- Viscosity too high – thin with solvents
- Fluid flow too high – reduce
- Air pressure too low – increase

Ball End Heavy Pattern

- Too much air flow
- Change fluid tip for smaller size
- Reduce flow using fluid needle control
- Reduce fan size using fan control

STATIC PATTERN TEST

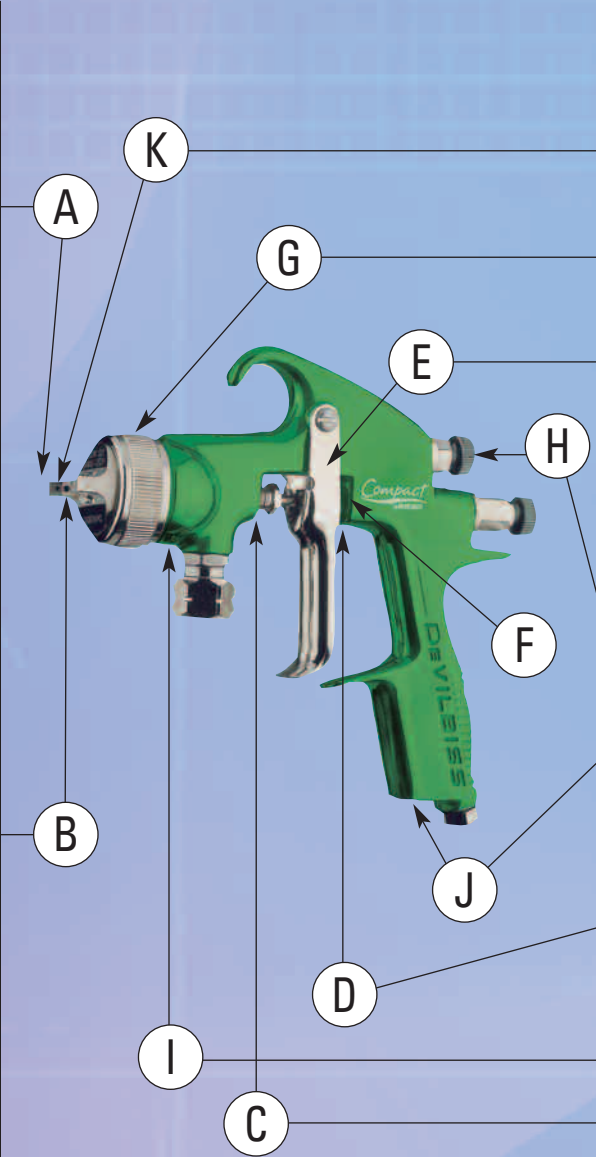
Having examined the vertical spray pattern for uniformity of shape and size, now turn the air cap through 90° and static spray a horizontal pattern making sure you trigger for long enough to load the shape with material. Then watch to see the formation of the run-outs of material across the full width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



THE THREE “C”s OF SPRAY GUN TROUBLESHOOTING—CONDITION, CAUSE, CORRECTION

The information below provides you with a simple and effective method of tracing problems with your gun if it proves troublesome. Look down the left hand “CONDITITION” column until you identify the problem and you will find the possible “CAUSE” and “CORRECTION” that needs to be taken.

CONDITION	CAUSE	CORRECTION
A Will not spray	No air pressure at gun Fluid needle adjusting screw not open enough Fluid too heavy for suction feed	Check air supply and air lines Change to proper suction feed air cap Increase fluid pressure at tank Open fluid needle adjusting screw Thin material or change to pressure feed
A Gun spits paint when triggering on and off	Incorrect needle fitted to gun Excessive needle wear Excessive fluid tip wear	Check tip/needle selection chart and fit correct item Replace with new needle Replace with new fluid tip
A Small air leak from air cap when gun is not triggered	Air valve contaminated and not correctly sealing	Remove valve and thoroughly clean valves shaft and seating
A Gun spits paint when triggering on due to paint build-up inside air cap between spraying operations	Fluid tip not fitted correctly in gun head Fluid tip/needle leakage	Tighten to correct torque Check for damage or blockage
B Slow fluid leak from fluid tip and needle seat	Fluid tip internal seat scored, damaged or worn Fluid needle external profile damaged or worn Contamination on needle or tip mating surfaces preventing good seal Incorrect fluid tip for fluid needle fitted to gun Sluggish needle Tight packing	Replace Replace Thoroughly clean Check tip/needle selection chart and fit correct item Remove needle and clean or lubricate packing Adjust
B Major fluid leak or fluid jetting from fluid tip	Contamination on needle or tip mating tip and needle seat Incorrect fluid tip for fluid needle fitted to gun Fluid needle stuck or “binding up”	Remove tip and needle and thoroughly clean surfaces preventing good seal Check tip/needle selection chart and fit correct item Remove and clean fluid needle shaft Lubricate needle packing Loosen needle packing
B Paint build-up on fluid tip	Fluid tip not fitted correctly in gun head Fluid tip/needle packing worn or loose	Tighten to correct torque Check for damage or blockage



CONDITION	CAUSE	CORRECTION
F Air leak from fluid needle exit point in top of handle	Seal damaged or missing	Replace
K Paint build-up on air cap	Damaged air cap holes Gradual build-up of bounce-back on gun head	Replace with new air cap Thoroughly clean
G Air cap retaining ring will not rotate	Contamination on retaining threads Deformed or damaged retaining ring	Soak gun head in solvent to soften paint Cut retaining ring off of gun (probably replace retaining ring and baffle as well)
E Stiff trigger action	Air valve stem bent Contamination on air valve stem Contamination on trigger bearing screw Contamination on fluid needle shaft Fluid needle packing too tight	Replace damaged component Remove and clean Remove and clean Remove and clean Loosen packing nut
H Unable to turn fan control knob on top rear of gun	Internal o-ring swollen or broken	Replace o-rings
H Unable to get round spray	Paint contamination on threads Fluid tip or air baffle incorrectly fitted Air baffle chimney damaged	Remove and thoroughly clean Remove, check components for damage and refit correctly Replace air baffle
J Unable to turn air control valve on handle of gun	Internal o-ring swollen or broken Paint contamination on threads	Replace o-ring Remove and thoroughly clean
D Air valve sluggish or slow to turn on/off when trigger is pulled/released	Air valve stem bent Contamination on air valve stem	Replace damaged component Remove and clean
D Air leak from around air valve stem	Air valve seal damaged or missing	Replace
D Air valve will not operate (air valve stem will not fully slide into valve body) when trigger is pulled	Air valve stem bent Contamination on air valve stem	Remove air valve and replace damaged air valve stem Remove air valve and thoroughly clean
I Air leak from baffle seal	Baffle seal swollen or damaged	Replace
C Slow fluid leak from needle packing	Fluid needle packing worn or loose	Tighten or replace as necessary