

# Star<sup>®</sup> INSTRUCTION MANUAL for S-710 / S-710N

This instruction manual contains valuable information to your work and safety. Please read the manual carefully before operation and retain it for future reference.

## "PRECAUTION"

- ✘ All operations including maintenance should be carried out ONLY by knowledgeable personnel.
- ✘ Never point the **Star** Spray Gun towards human or animals.
- ✘ Be aware of the conditions of your surroundings, and maintain grounding to the spray equipment and the object being sprayed at all time.
- ✘ Do not exceed the maximum working pressure of the equipment.
- ✘ Fluid and solvents can be highly flammable and erosive. Handle the materials with extreme care, and keep them away from fire and electrical hazards.
- ✘ Toxic vapors produced by spraying can cause serious damage to health. Always wear protective equipment and use the **Star** Spray Gun in well-ventilated areas.
- ✘ Halogenated hydrocarbon solvents may cause chemical explosions. Use paint materials which are chemically compatible with aluminum, copper and zinc parts.
- ✘ Always release air and fluid pressure before cleaning/disassembling/servicing. A ball-valve installation is recommended for emergency stop and prevention of unintentional operation accidents.
- ✘ Make sure all parts, screws and nuts are intact before putting the **Star** Spray Gun into operation.



## "SPECIFICATIONS"

- ♣ S-710 & S-710N Conventional High Performance spray guns produce beautiful finishing results with ultra fine atomization suitable for any small-medium applications. (SIDE-GRAVITY/SUCTION/PRESSURE SETUPS)
- ♣ SV-710 & SV-710N H.V.L.P. spray guns operate at low pressure of 29 psi (2 bar) with air cap pressure of 10 psi (0.7 bar). They produce high quality finishing results, but less overspray and pollution. Transfer efficiency above 65% meets VOC Regulations and significantly saves material consumption up to 20~30%.
- ♣ All model sare suitable for use with all kinds of paint materials including waterborne.

MODEL	Capacity (L)	Capacity (Gal)	Capacity (oz)	Capacity (ml)	Capacity (oz)	Cup Capacity
<b>High Performance General Series</b>						
S-710(N)-1G	1.0		60	130	170	0.75~1.5
S-710(N)-2G/2S	1.3	33~38	77	G: 170 S: 160	G: 185 S: 180	
S-710(N)-3G/3S	1.5		86	G: 200 S: 180	G: 205 S: 195	
S-710(N)-4G/4S	1.8		102	G: 230 S: 205	G: 215 S: 210	
<b>High Performance Hi-Class Series</b>						
S-710(N)-21G/21S	1.3	33~38	94	G: 215 S: 190	G: 205 S: 185	0.75~1.5
S-710(N)-31G/31S	1.5		105	G: 230 S: 215	G: 220 S: 210	
S-710(N)-41G/41S	1.8		125	G: 240 S: 230	G: 230 S: 225	
<b>High Performance Professional Series</b>						
S-710(N)-212G/212S	1.3	35~40	202	G: 230 S: 220	G: 245 S: 235	1.5~2.2
S-710(N)-312G/312S	1.5		210	G: 245 S: 235	G: 260 S: 250	
S-710(N)-412G/412S	1.8		225	G: 255 S: 245	G: 270 S: 260	
<b>Pressure Fed Series</b>						
S-710(N)-00P	0.8	35~40	177	213	201	1.5~2.2
S-710(N)-01P	1.0		185	296	244	
<b>H.V.L.P. Low Pollution Series</b>						
SV-710(N)-313G/313S	1.5	29	118	G: 186 S: 164	G: 196 S: 182	0.75~1.5

G: 0.3/0.45 ℓ (AL/PL)  
S: 0.7 ℓ AL

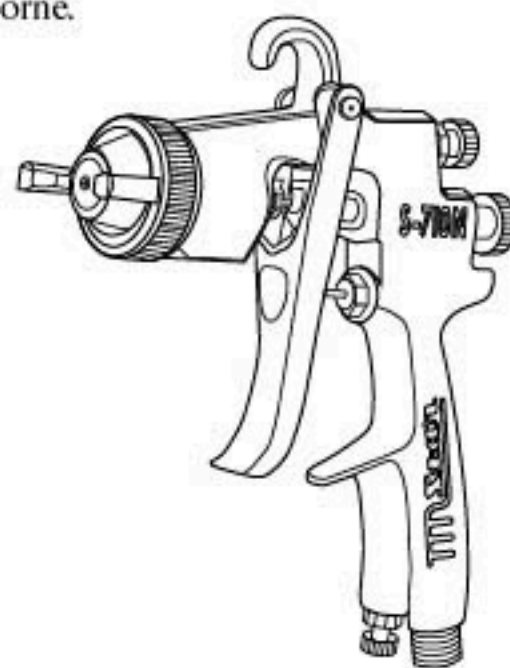
\*Maximum working pressure is 7 bar (100 psi)

\*Temperature range is 4 ° ~ 50°C

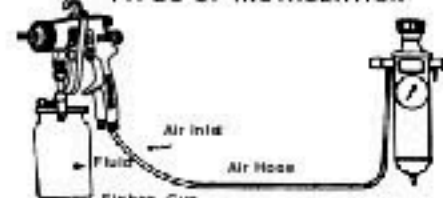
\*Noise level is 78.8 dB(A) measured at 1m behind the tip of the gun and 1.6m above the ground

\*Atomizing pressure is regulated at the gun inlet when the trigger is pulled and the air flows

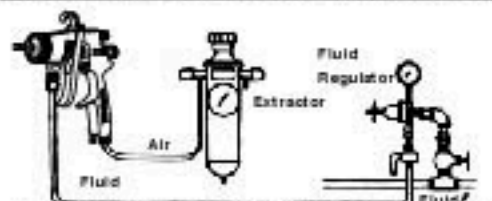
△ ALL ABOVE RECORDS ARE FOR REFERENCE ONLY



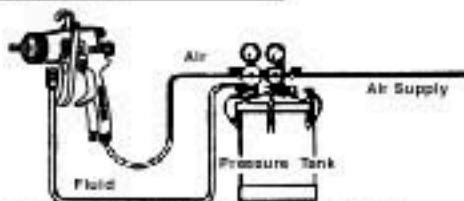
TYPES OF INSTALLATION



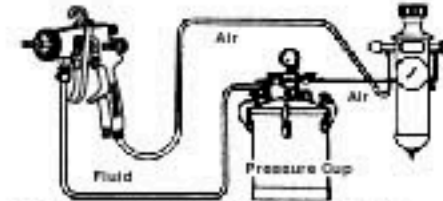
SIPHON FEED CUP HOOKUP



PRESSURE FEED CIRCULATING HOOKUP



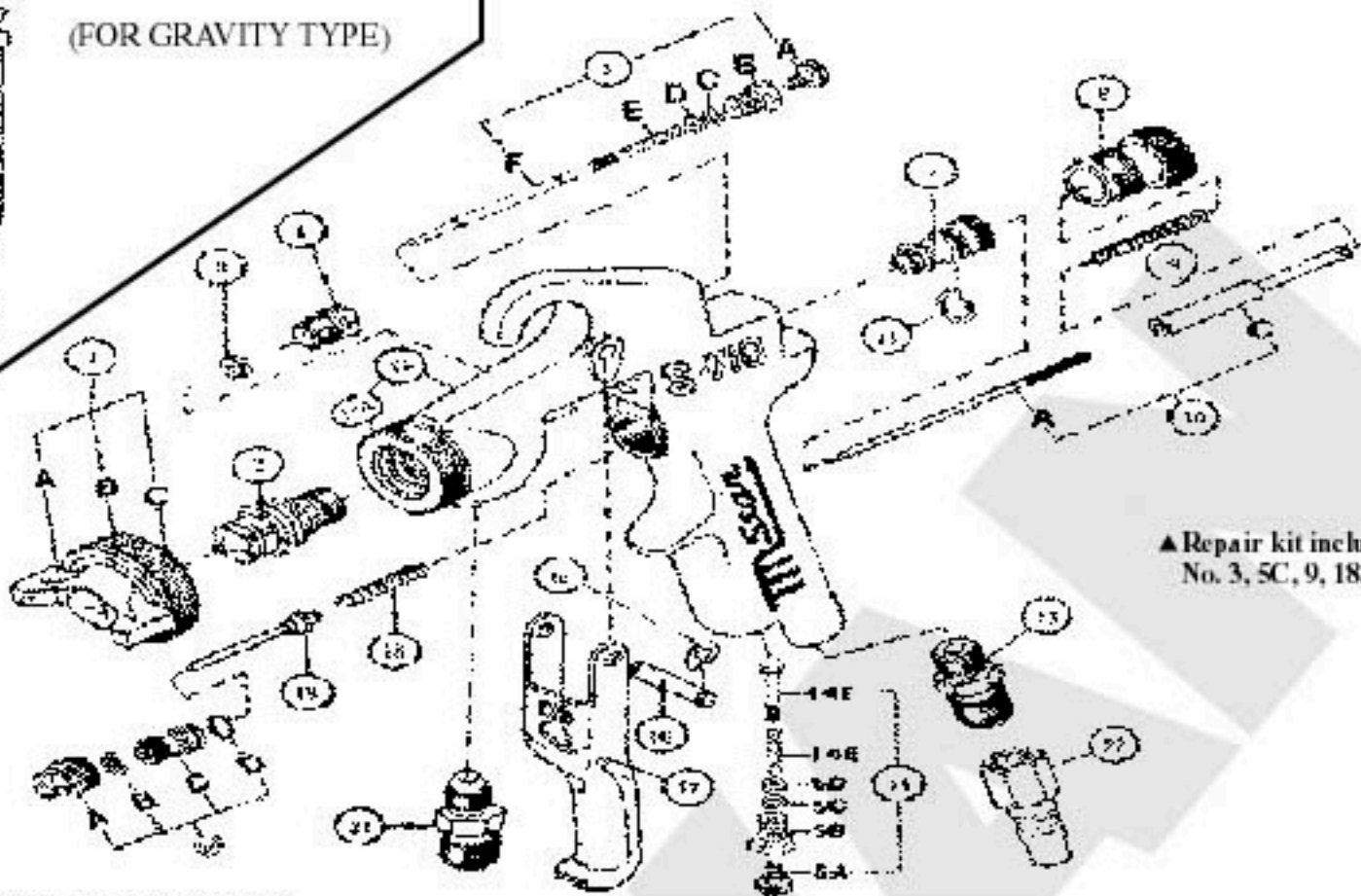
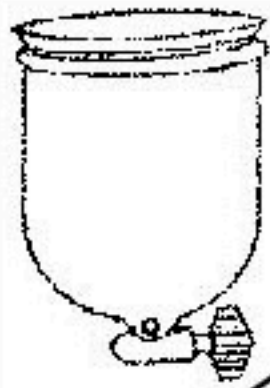
PRESSURE FEED TANK HOOKUP



PRESSURE FEED TANK HOOKUP

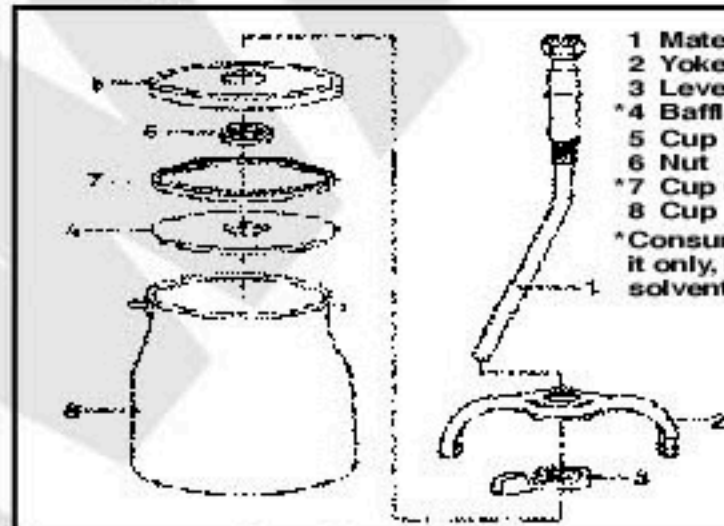
# "PARTS LIST"

(FOR GRAVITY TYPE)



▲ Repair kit includes:  
No. 3, 5C, 9, 18, 19, 20B, 20D

▲ If necessary, please change the whole set of Maintenance Assembly (Air Cap, Nozzle, Needle). Individual part changes are not recommended.



- 1 Material Tube Assembly
  - 2 Yoke Assembly
  - 3 Lever
  - \*4 Baffle (S-335)
  - 5 Cup Top Assembly
  - 6 Nut
  - \*7 Cup Gasket
  - 8 Cup
- \* Consumable parts; clean it only, NEVER soak it in solvent for a long time.

No.	Description	Qty
1	Air Cap Set	1
2	Fluid Nozzle	1
3	Needle Valve Packing	1
4	Needle Valve Packing Seat	1
5	Spreader Adjusting Valve Set	1
5A	Spreader Adjusting Knob	2
5B	Housing	2
5C	Ring	2
5D	Brass Washer	2
5E	Spring	1
5F	Stem	1
7	Needle Valve Guide	1
8	Fluid Adjusting Screw	1
9	Needle Valve Spring	1
10	Fluid Needle Set #1/#2/#3	1
11	O Ring	1
12	Gun Body	1
13	Air Hose Joint	1

No.	Description	Qty	No.	Description	Qty
14	Air Adjusting Valve Set	1	20	Air Valve Seat Set	1
14E	Spring	1	20A	Air Valve Packing Seat	1
14F	Stem	1	20B	Air Valve Packing	1
15	Trigger Stopper	1	20C	Valve Body	1
16	Trigger Bearing Stud	1	20D	O Ring	1
17	Trigger	1	21	Fluid Joint	1
18	Air Valve Spring	1	22	Quick Coupler (Male)	1
19	Air Valve	1			

## ■ AIR FILTRATION SYSTEMS



S806

- Filter-regulator-in-1
- Removes dust, water and oil
- 99.9% absorption rate, 5μ m filter size
- Cleaner air, longer tool life



S-081A



S-081B



S-081C



2QT-B



2QT-S



10L-tank

## ■ ACCESSORIES



S-031



S-092



REPAIR KIT



CAP SET



SAP HOSE



S-091A



S-091B



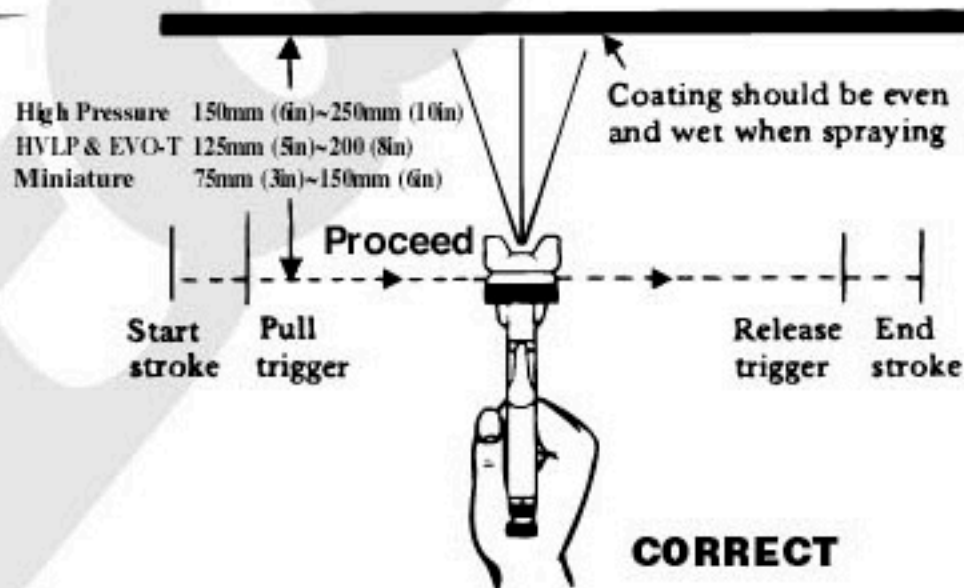
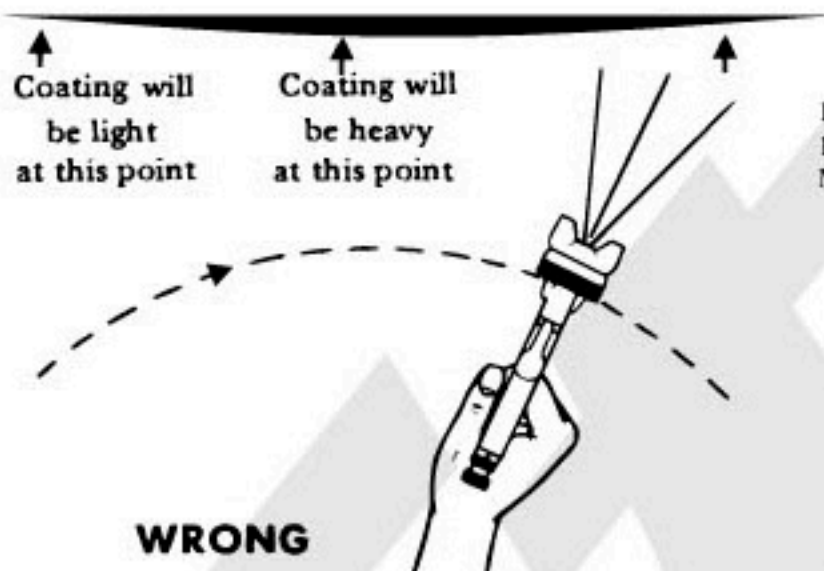
# "OPERATION"

710/770

Every **Scari** Spray Gun has passed our QC and tuned for optimum performance before it arrives to your hand. However, the painting is likely to be varied by a combination of factors in your work environment (e.g. sufficient and stable air supply, the kind of paint materials and its viscosity, the target object being sprayed and the spraying distance, etc.)

Depending on those conditions, the required atomizing air pressure, the material flow amount, and the round/flat spray pattern control must be set accordingly to obtain the desired result.

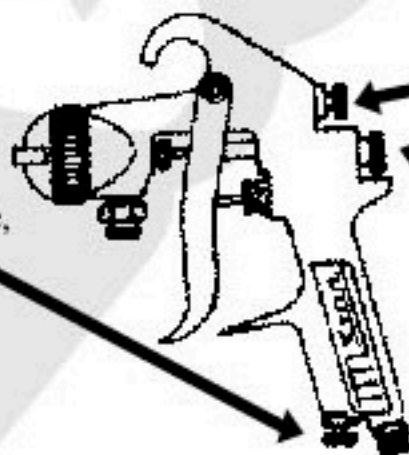
1. It is recommended to use an air filtration system. (**Scari** S-806/L-906) Clean air improves both your work result and the life of your spray equipment.
2. The gun trigger has a 2-step mechanism. The first triggering point opens the air valve, and only air should flow through. When the trigger is furthered squeezed, the paint material is pulled out from the nozzle due to gravity.
3. Use thinner to flush out the paint passageway thoroughly. This prevents clogging from dust and prior work.
4. Pull the trigger and adjust the dynamic inlet pressure: Conventional High Pressure guns at **2.3 ~ 3.0 bar (33 ~ 43 psi)**  
HVLP Low Pressure guns at **2.0 bar (29 psi)** / EVO-T Low Pressure guns at **1.1 ~ 1.7 bar (16 ~ 25 psi)**  
There are several ways to do it: (**NOTE: The air adjusting valve set must be fully open for maximum efficiency.**)
  - i) Adjust the pressure using a micrometer (**Scari** S-081C) directly connected to the air nipple.
  - ii) Without a micrometer, roughly set the required pressure from the source and compensate the pressure drop about 9 psi higher per 10 meter.
5. Depending on painting requirement and the material used, keep the spraying distance within the range of 6 to 10 inches. Test spraying first with the fluid control knob and pattern adjusting knob fully open. If the spraying is too fine, reduce the atomizing air pressure or allow more paint to flow through. If the spraying is too coarse, increase the atomizing air pressure or narrow the paint flow. Adjust the pattern width if necessary.
6. The proper handling of the spray gun is a critical step for a good finishing result. The gun should be held perpendicular to the surface being sprayed. Continue the motion in the horizontal direction. The stroke should start before the trigger is pulled, and then the trigger should be released before the stroke ends. This gives a more accurate control of the spray gun, as well as the material. Overlap the previous layer of paint by repeating the same stroke to obtain a uniform finish.



High Pressure 150mm (6in)~250mm (10in)  
HVLP & EVO-T 125mm (5in)~200 (8in)  
Miniature 75mm (3in)~150mm (6in)

## ☆ AIR ADJ. VAVLE

Increase/decrease the air flow into the spray gun. To fine-tune the air pressure, please use an micrometer (**Scari** S-081C) at gun air inlet.

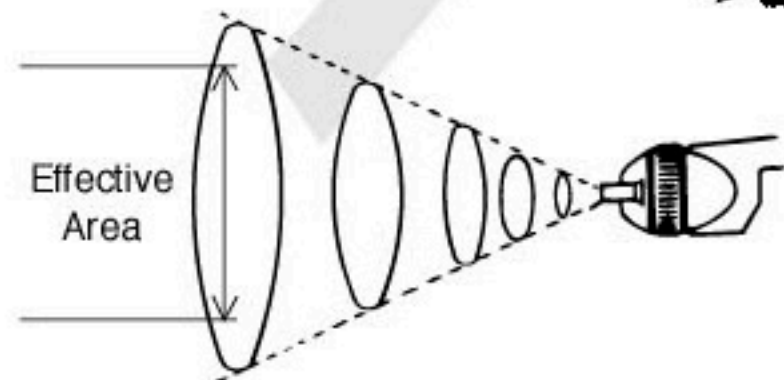


## ☆ PATTERN ADJ. KNOB

Turn right for round / Turn left for fan  
Capable of doing shapes from round to ellipse.

## ☆ FLUID CONTROL KNOB





Turn right to decrease / Turn left to increase  
A lager pattern width requires more materal to pass through to obtain a uniform coverage on the increaed area.



In normal operation, the wings on the nozzle are positioned horizontally as illustrated here. This produces a vertical fan shaped pattern. The pattern is uniquely designed for overlap efficiency (only 1/5 at top and bottom), and therefore saves substantial amount of paint. (**Switching the wings vertically is NOT recommended.**)

## "CLEANING & MAINTENANCE"

Good cleaning and maintenance is very important. Without it, the performance of your spray gun may degrade over time. Once again, this section is for professionals only. Any improper actions or misplaced parts may lead to damage of the equipment, and even danger to the user.

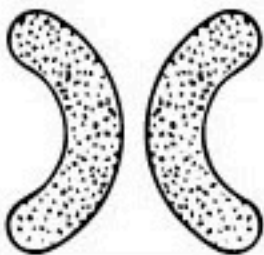
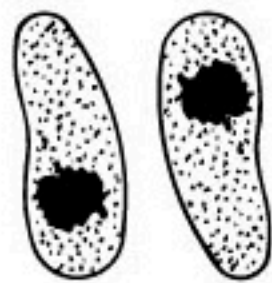


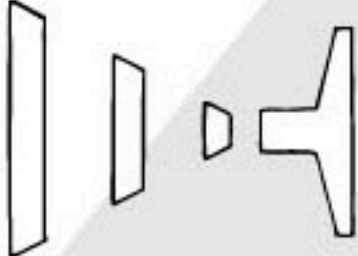
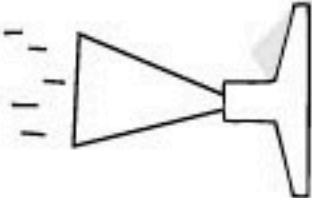
1. After each use, flush out the gun thoroughly by pouring thinner to the gravity / siphon cup. Repeat until the spraying becomes clear. This removes any paint residue on the tip of the nozzle and inside the paint passageway.  
**step 1**
2. Turn off the air and paint supply, and disconnect the gun. Release the air pressure inside the gun by pulling the trigger one last time.
3. Immerse only the front portion of the gun as the solvent just covers the fluid nipple. When immersing the entire gun in the solvent for a long period of time, the lubricant on the leather packing and on all the movable parts will dissolve, which causes harder operation, faster wear, and sometimes functional defects. Also, the dirty solvent may clog the drilled holes and the narrow air passageway of the spray gun.  
**step 2-4**
4. Use a bristle brush included with the package to gently clean the air cap and nozzle. **(DO NOT USE A METAL BRUSH !!!)**
5. Probing the clogged holes of the air cap and nozzle with an unsuitable instrument is prohibited. Even the slightest damages may compromise the finishing result. If probing is necessary, use a tool that is softer than brass.  
**step 6**
6. Wipe the spray gun with solvent dampened rag, and re-attached the air supply to blow out any fluid inside the gun.
7. Lubricate the **Scori** Spray Gun by using light machine oil on: 1) Air Valve Packing, 2) Needle Packing Set, and 3) Trigger Pivot Point. Coat the fluid needle spring (#11) and the fluid adjusting knob (#12) with Vaseline. **(NEVER USE LUBRICANTS WITH SILICONE CONTENTS !!!)**
8. Make the necessary adjustments with the Fluid Adjusting Knob so that the 2-step triggering mechanism is smooth.

For pressure-fed **Scori** Spray Gun using a pressure tank, first turn off the air supply and release the pressure in the tank. Use a cloth to cover the fluid nozzle. Squeeze the trigger to let air forcing fluid out of the hose and into the tank. Use enough solvent to rinse the hose and blow it clean with air. Continue the cleaning by following Step 2 - 9 .



9. Do not use undue force in mating parts. Inappropriate use or modification of the **Scori** Spray Gun may cause serious damages. If the problem is too complicated, it is recommended to leave the repairs to authorized service shops in your area.
10. Use only **Scori** Certified Original Spare Kit for highest quality and equipment lifetime.

# "TROUBLESHOOTING"

Pattern	Cause	Correction
	<ul style="list-style-type: none"> <li>▼ Uneven air pressure from side holes due to clogging</li> </ul>	<ul style="list-style-type: none"> <li>▲ Use thinner to dissolve obstruction; flush the gun clean afterward (DO NOT TRY TO POKE THE HOLES !!!)</li> </ul>
	<ul style="list-style-type: none"> <li>▼ Dried material clogging around the tip of the fluid nozzle, reducing air flow dynamics and atomization</li> <li>▼ Loose or defective fluid nozzle</li> </ul>	<ul style="list-style-type: none"> <li>▲ Clean the nozzle tip by using a rag wetted with thinner</li> <li>▲ Tighten up or replace the fluid nozzle</li> </ul>
	<ul style="list-style-type: none"> <li>▼ Atomizing pressure is too high</li> <li>▼ Fluid output is too high</li> <li>▼ Paint viscosity is too low</li> </ul>	<ul style="list-style-type: none"> <li>▲ Reduce air inlet pressure</li> <li>▲ Reduce the material flow by turning the fluid adjusting knob; adjust spray width accordingly</li> <li>▲ If appropriate, increase viscosity by adding more paint</li> </ul>
	<ul style="list-style-type: none"> <li>▼ Atomizing pressure is too low</li> <li>▼ Fluid output is too low</li> <li>▼ Paint viscosity is too high</li> </ul>	<ul style="list-style-type: none"> <li>▲ Increase air inlet pressure</li> <li>▲ Increase the material flow by turning the fluid adjusting knob; adjust spray width accordingly</li> <li>▲ If appropriate, reduce viscosity by adding more thinner</li> </ul>
 <p>Fluttering</p>	<ul style="list-style-type: none"> <li>▼ Material in the cup running out</li> <li>▼ Air enters the fluid passageway due to ineffective needle packing</li> <li>▼ Loose nozzle or clogging between the nozzle and the seat</li> <li>▼ Loose or defective swivel of the cup or the material hose</li> </ul>	<ul style="list-style-type: none"> <li>▲ Refill paint</li> <li>▲ Unscrew and lubricate the needle packing seat</li> <li>▲ Clean the fluid nozzle and seat</li> <li>▲ Tighten or replace the swivel nut</li> </ul>
 <p>Spitting</p>	<ul style="list-style-type: none"> <li>▼ Fluid nozzle not seated properly</li> <li>▼ Paint built up inside the air cap</li> <li>▼ 1st stage of triggering mechanism decreases</li> </ul>	<ul style="list-style-type: none"> <li>▲ Clean or replace the fluid nozzle and needle</li> <li>▲ Dissolve any residue and blow clean the air cap</li> <li>▲ Replace the fluid nozzle and needle set</li> </ul>



<b>Problem</b>	<b>Parts to be checked</b>	<b>Cause</b>	<b>Correction</b>
Air leaks ?	Air valve spring	▼ Wear	▲ Replace parts
	Air valve	▼ Dirt or damage	▲ Clean or replace parts
	Air valve seat set	▼ Dirt or damage	▲ Clean or replace parts
		▼ Damage or deteriorated O-ring	▲ Replace parts
Paint leaks ?	Fluid nozzle to fluid	▼ Dirt, damage or wear on seat	▲ Clean or replace parts
	Fluid needle set	▼ Loose fluid adjusting knob	▲ Turn the knob to its close position; adjust accordingly
		▼ Wear on fluid needle spring	▲ Replace parts
	Fluid nozzle	▼ Loose fluid nozzle	▲ Tighten with the supplied tool
		▼ Dirt or damage on seat	▲ Clean or replace parts
	Fluid needle set	▼ Paint built up on the needle	▲ Take out the needle with care; wash off any residue
	Needle packing set, needle packing seat	▼ Tight needle packing set causing the needle not return to its normal position	▲ Adjust the packing seat until the triggering becomes smooth again
		▼ Loose needle packing seat	▲ Tighten the packing seat
		▼ Wear on needle packing set	▲ Replace parts
	Paint does not flow	Fluid adjusting knob	▼ Insufficient opening
Fluid nozzle		▼ Clogged fluid nozzle tip	▲ Clean with a wet rag
Paint filter inside the cup		▼ Clogged filter	▲ Clean or replace parts

## **"GENERAL APPLICATION GUIDELINES"**

<b>Nozzle Size</b>	<b>Ideal For</b>
1.0 mm	Inks, Glaze, Spot Repair, Stenciling
1.2 - 1.3 mm	Basecoat, Clearcoat, Topcoat, Fine Metallics, Single-Stage, Waterborne
1.4 mm	Basecoat, Clearcoat, Topcoat, Primer, Single-Stage, Waterborne
1.5 - 1.6 mm	Basecoat, Filler, Primer, Medium Viscosity
1.8 mm	Enamels, Filler, Primer
2.0 mm up	Acrylic Lacquer, Enamels, Filler, Liquid Metal, Polyester