

WRA 101-S9/S9N AUTOMATIC SPRAY GUN



Before use, adjustment or maintenance, it is important to read this instruction manual very carefully. This manual must be stored in a safe place for any future reference that may be necessary.



This **ANEST IWATA** spray guns kit complies to ATEX regulations 94/9/EC.
Protection level: II 2 G X Suitable for using Zones 1 and 2.



X marking: Any static electricity discharge from the spray gun is to be diverted to the ground via the conductive air hose as stipulated.

IMPORTANT

This automatic spray gun should be operated only by an adequately trained operator for safe use and maintenance of the equipment. Any misuse or handling other than those indicated in this Instruction Manual is not covered by guarantee.



ANEST IWATA disclaims all responsibility for any accident or damage caused by failure observing the operational and safety procedures in this manual. In the interest of user friendliness, this manual contains information in a brief and concise form.

For any additional information you may require regarding the automatic spray gun operations, or if any missing parts or any damage during transportation is found, or details of training courses, please contact your nearest **ANEST IWATA Company** (see last cover page).

Be sure to observe warnings and cautions in this instruction manual.

If not, it can cause paint ejection and serious bodily injury by drawing organic solvent.

Be sure to observe following  marked items which are especially important.

 WARNING	Indicates a potentially hazardous situation which, if not avoided, may result in serious injury or loss of life.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.
IMPORTANT	Indicates notes which we ask you to observe. The safety precautions in this instruction manual are the minimum necessary conditions. Follow national and local regulations regarding fire prevention, electricity and safety as well as your own company regulations.

IMPORTANT SPECIFICATIONS

Max. Operating air pressure:	6.8 bar (98 PSI)	Max. Temperature:	
Noise Level (LAeqT):	78.7 dB (A)*	Atmosphere	5 ~ 40 °C
Air connection:	3-Rc 1/4"	Air and fluid	5 ~ 43 °C
Fluid connection:	2-Rc 1/4"		

* Measuring point: 1m backwards from gun, 1,6 m height

TECHNICAL SPECIFICATIONS

Model	Nozzle orifice mm(in)	Air Cap Set Mark	Air pressure at gun inlet bar (PSI)		Fluid output g/m	Air consumption NI/min	Pattern width mm(in)	Weight g (lbs)
			Atomizing air	Fan air				
WRA-101S9/S9N Pressure feed								
WRA-101-S9-04P	0.4 (0.016)	E2	1.1 (16)	1.5 (21)	20	140 (4.9)	35 (1.4)	290 (0.64)
WRA-101-S9-06P	0.6 (0.024)						70 (2.8)	310 (0.68)
WRA-101-S9-10P	1.0 (0.039)						100 (3.9)	310 (0.68)
WRA-101-S9N-04P	0.4 (0.016)						35 (1.4)	290 (0.64)
WRA-101-S9N-06P	0.6 (0.024)						70 (2.8)	310 (0.68)
WRA-101-S9N-10P	1.0 (0.039)						100 (3.9)	310 (0.68)

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SAFETY WARNINGS



FIRE OR EXPLOSION HAZARD

1. Sparks and open flames are strictly prohibited.
Paints can be highly flammable and can cause fire.
Avoid any ignition sources such as smoking, open flames, electrical goods, etc.

2. Never use the following HALOGENATED HYDROCARBON SOLVENTS which can cause cracks or dissolution on gun body (aluminium) by chemical reaction.
- UNSUITABLE SOLVENTS: methyl chloride, dichloromethane, 1,2-dichloroethane, carbon tetrachloride, trichloroethylene, 1,1,1-trichloroethane.
- Be sure that all fluids and solvents are compatible with gun parts.
We can supply a list of materials used to manufacture the product.

3. Securely ground spray gun. Use air hose with built-in ground wire or use grounded gun stay.
Ground resistance : Less than 1MΩ. Check the earth stability periodically.
If not, insufficient grounding can cause fire and explosion due to static electric sparking.



IMPROPER USE OF EQUIPMENT

- 1. Never point gun towards people or animals.**
If done, it can cause inflammation of eyes and skin or bodily injury.
- 2. Never exceed maximum operating pressure and maximum operating temperature.**
- 3. Be sure to release air and fluid pressure before cleaning, disassembling or servicing.**
If not, remaining pressure can cause bodily injury due to improper operation or scattering of cleaning liquid. In order to release pressure, first stop supply of compressed air, fluid and thinner to automatic spray gun. Next, supply only piston operating air and exhaust fluid by operating fluid needle, which results in automatic supply stop of all compressed air.
- 4. Tip of fluid needle set has a sharp point.**
Do not touch the tip of fluid needle during maintenance for the protection of the human body.



PROTECTION OF HUMAN BODY

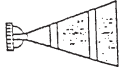
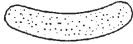



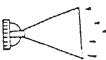
- 1. Use in a well-ventilated site by using spray booth.**
If not, poor ventilation can cause organic solvent poisoning and catch fire.
- 2. Always wear protective gear: safety glasses, mask, gloves.**
If not, cleaning liquid, etc., can cause inflammation of eyes and skin.
If you feel something wrong with eyes or skin, immediately see a doctor.
- 3. Wear earplugs if necessary.**
Noise level can exceed 85 dB(A), depending on operating conditions and painting site.



OTHER PRECAUTIONS

- 1. Never alter this spray gun.**
If done, it can cause insufficient performance and failure.
- 2. Enter working areas of other equipment (robots, reciprocators, etc.) after machines have been turned off.**
If not, contact with them can cause injury.
- 3. Never spray foods or chemicals through this gun.**
If done, it can cause accident by corrosion of fluid passages or adversely affect health by mixed foreign matter.
- 4. If something goes wrong, immediately stop operation and find the cause. Do not use again until you have solved the problem.**

TROUBLESHOOTING

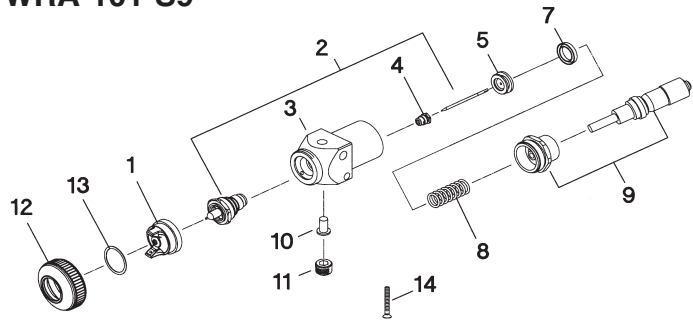
Spray Pattern	Problems	Remedies
 Fluttering	1. Air enters between fluid nozzle and tapered seat of gun body. 2. Air enters at fluid hose joint	1. Remove fluid nozzle to clean seat. If it is damaged, replace nozzle. 2. Fully tighten joint section.
 Crescent	1. Paint buildup on air cap partially clogs horn holes. Air pressure from both horns differs.	1. Remove obstructions from horn holes. But do not use metal objects to clean horn holes.
 Inclined	1. Paint buildup or damage on fluid nozzle circumference and air cap center. 2. Fluid nozzle is not properly fitted.	1. Remove obstructions. Replace if damaged. 2. Remove fluid nozzle, clean seated section.
 Split	1. Paint viscosity too low. 2. Fluid output too high.	1. Add paint to increase viscosity. 2. Tighten fluid adj. knob to reduce fluid output or reduce air pressure for Fan.
 Heavy Center	1. Paint viscosity is too high. 2. Fluid output is too low.	1. Add thinner to reduce viscosity. 2. Turn fluid adj. knob counter-clockwise to increase fluid output or increase air pressure for Fan.
 Spit	1. Fluid nozzle and fluid needle set are not seated properly. 2. Paint buildup inside air cap set.	1. Clean or replace fluid nozzle and fluid needle set. 2. Clean air cap set.

PROBLEMS AND REMEDIES

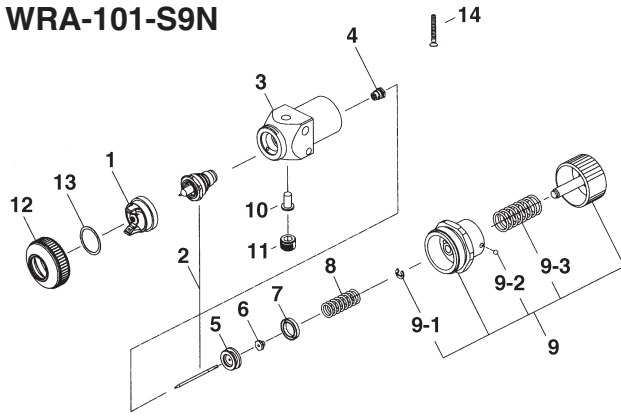
Problem	Where it occurred	Parts to be checked	Cause	Remedy			
				Retighten	Adjust	Clean	Replace
Paint leaks	Fluid nozzle	Fluid nozzle fluid needle	* Dirt or damage, wear on seat surface			x	x
			* Wear on needle spring				x
	Fluid needle packing	Fluid needle packing- packing seat	* Needle does not return due to paint buildup on fluid needle.		x	x	
* Wear						x	
* Insufficient tightening			x				
Paint does not flow	Tip of gun	Fluid adj. knob.	* Insufficient opening		x		
		Tip hole of nozzle	* Clogged			x	
		Paint filter	* Clogged			x	x

SPARE PARTS LIST

WRA-101-S9



WRA-101-S9N



DESCRIPTION	REF.
Air cap set	1
Fluid nozzle + fluid needle set	2
Gun body set	3 ●
Fluid needle packing set	4
Piston	5 ●
Nut (WRA101 S9N)	6
Piston packing	7
Piston spring	8 ●
Fluid adj. set with micrometer (WRA101 S9)	9
Fluid adj. set (WRA101 S9N)	9
Stop ring (WRA101 S9N)	9-1
Ball (WRA101 S9N)	9-2
Fluid adj. spring (WRA101 S9N)	9-3
Plug	10
Plug with hexagon hole	11
Cover set	12
Packing	13
Screw	14

● **Marked parts are wearable parts.**

- When ordering parts, specify gun's model, part name with ref. No. and marked No. of air cap set, fluid nozzle and fluid needle set.
- When replacing fluid nozzle and/or fluid needle, please order nozzle needle set.

Model	Fluid nozzle		Fluid needle set
	Orifice Ø mm (in)	Mark	
WRA-101S9-04P	0.4 (0.016)	L50/04	1
WRA-101S9-06P	0.6 (0.024)	L50/06	2
WRA-101S9-10P	1.0 (0.039)	L50/10	3
WRA-101S9N-04P	0.4 (0.016)	L50/04	1
WRA-101S9N-06P	0.6 (0.024)	L50/06	2
WRA-101S9N-10P	1.0 (0.039)	L50/10	3

HOW TO CONNECT



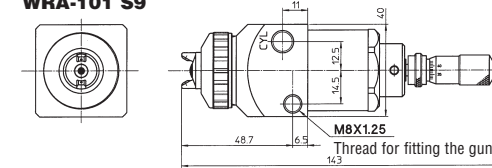
CAUTION

- Use clean air filtered through air dryer and air filter. If not, dirty air can cause painting failure.
- When you use this gun for the first time after purchasing, clean fluid passages spraying thinner to remove rust preventive oil.
If not, remaining preventive oil can cause painting failure such as fish eyes.
- Use two-way or three-way solenoid valve of more than $\phi 4$ inner dia. cross-sectional area and air hose of over $\phi 6$ inner dia. and less than 10m length. If not, small dia. of solenoid valve and longer air hose between three-way solenoid valve and gun can cause delay in operation.
- Firmly fix hose to spray gun. If not, disconnection of hose can cause bodily injury.

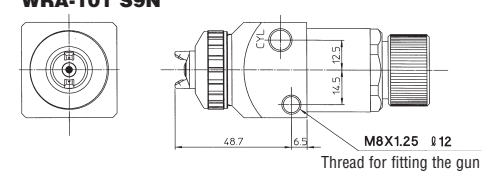
1. Fit the gun to fitting stay, aim at spraying direction and fix it.
2. Connect atomizing air hose to atomizing air inlet (CAP marked side) and operating air hose to operating air inlet (CYL marked side) tightly.
3. Connect fluid hose to fluid inlet (FLU marked side) tightly.
4. Flush the gun fluid passages with a compatible solvent.
5. Supply paint, test spray and adjust fluid output, air volume and pattern width.

FITTING EXAMPLE

WRA-101 S9

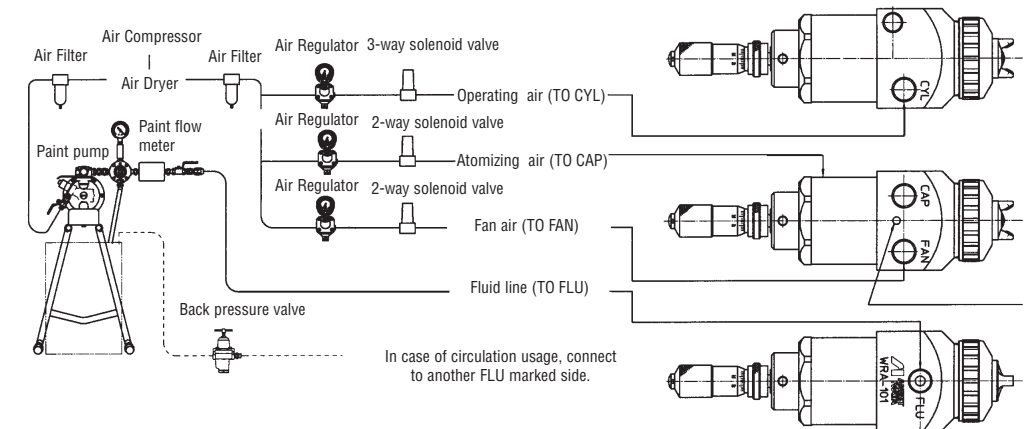


WRA-101 S9N

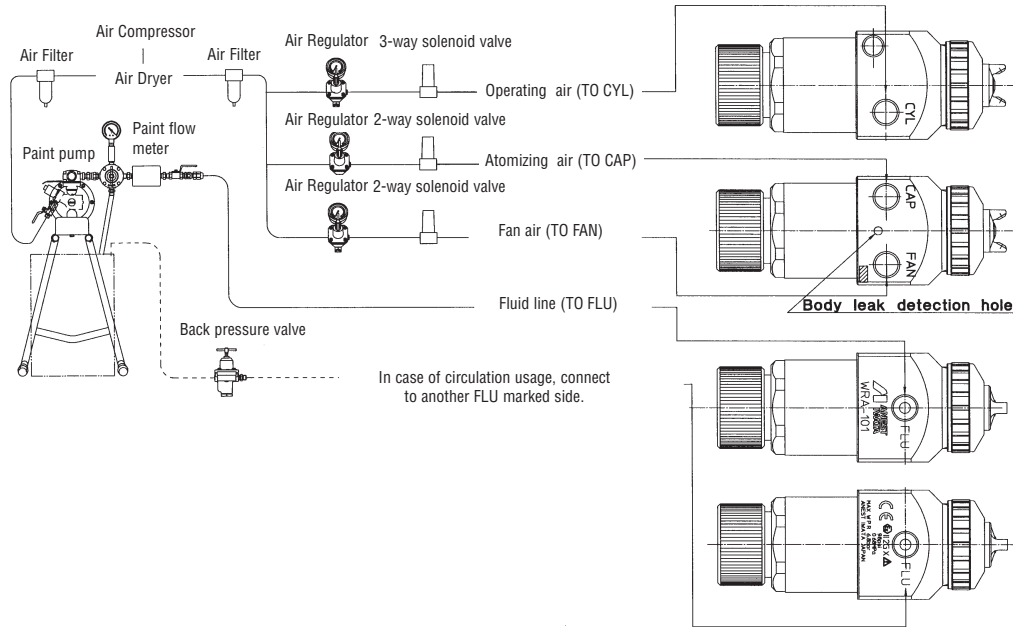


CONNECTING EXAMPLE

WRA-101 S9



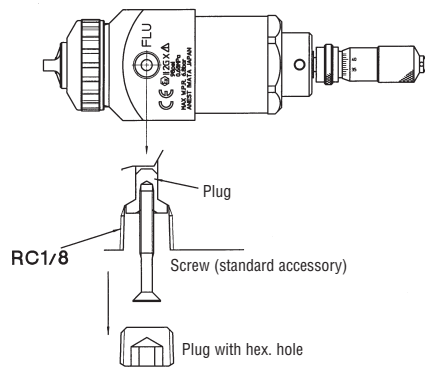
WRA-101 S9N



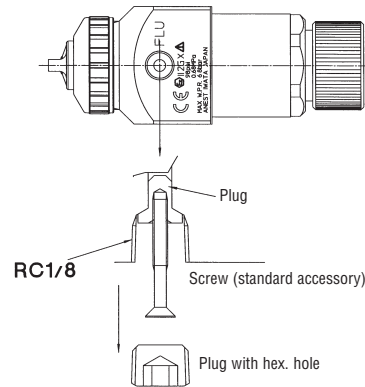
In case of circulation usage, connect to another FLU marked side.

CIRCULATION FITTING EXAMLPE

WRA-101 S9



WRA-101 S9N



HOW TO CHANGE UNIONS FOR CIRCULATION USAGE

IMPORTANT

1. Remove hexagon nut from gun body with 5 mm allen wrench.
2. Pull plug out from gun body, with attached screw as standard accessory.
3. Connect fitting joint tightly to another FLU marked side.
4. Connect fluid hose to the joint.

HOW TO OPERATE

Adjust operating air pressure from 3 to 4 bar (43 to 57 PSI).

Air pressure for atomizing or fan, varies according to spray conditions, adjust as specified on above specifications table.

NOTE: Valve orifice inside two-way or three-way solenoid valve should be minimum 4mm (0.157 in) and also operating air hose length should be within 10m (32.8ft) with the inner diameter more than 6mm (0.236in) to avoid delayed operation and any kind of failure.

NOTE: Using air hose 12 m (39.4 ft) long, the inner diameter should be minimum 8mm (0.315 in) in order to have the correct air volume to atomize.

Recommended paint viscosity differs according to paint property and painting conditions.

Set the spray distance from the gun to the work piece as near as possible within the range of 100-150 mm (3.9-5.9 in).

MAINTENANCE AND INSPECTION

WARNING



- First release air and fluid pressure fully according to item No. 3 of "Improper use of equipment" of WARNING on page 2.
- Tip of fluid needle set has a sharp point. Do not touch the tip of needle valve during maintenance for protection of the human body.
- Be careful not to damage the tip of the fluid nozzle or not put your hand on it.
- Only an experienced person who is fully conversant with the equipment can do maintenance and inspection.

CAUTION



- Never use commercial or other parts instead of ANEST IWATA original spare parts.
- Never immerse the whole gun into liquid such as thinner.
- Never soak air cap set in solvent for extended period even if cleaning. It can cause defective pattern.
- Never damage holes of air cap, fluid nozzle or fluid needle.

Step-by-step procedure	Important
1. Clean fluid passages and air cap set. Spray a small amount of thinner to clean fluid passages.	1. Incomplete cleaning can fail pattern shape and uniform particles. Especially clean fully and promptly after use with two-component paint.
2. Clean each section with brush soaked with thinner and wipe out with waste cloth.	2. Do not immerse the whole gun in thinner. If done, it can damage parts. When cleaning, never scratch any holes of air cap set, fluid nozzle, or fluid needle set.
3. Before disassembly, fully clean fluid passages. (1) Disassemble fluid nozzle. Use ring spanner, box wrench or optional exclusive spanner to disassemble fluid nozzle.	3. During disassembly, do not scratch seat section. (1) Remove fluid nozzle after removing fluid needle set or while keeping fluid needle pulled, in order to protect seat section.
(2) Disassemble fluid needle set. Remove fluid adj. set and pull out fluid needle set from gun body. Pay attention so that spring does not suddenly fly out since fluid adj. set is strongly pushed by fluid needle spring and piston spring.	(2) Pull fluid needle set after loosening fluid needle packing set to protect fluid needle packing set.
Where to inspect	Parts replacement standard
1. Each hole passage of air cap and fluid nozzle.	Replace if it is crushed or deformed.
2. Packings and O rings.	Replace if it is deformed or worn out.
3. Leakage from seat section between fluid nozzle and fluid needle set.	Replace them if leakage does not stop after fully cleaning fluid nozzle and fluid needle set. If you replace fluid nozzle or fluid needle only, fully match them and confirm that there is no leakage.