

INSTRUCTION MANUAL

和文取扱法・裏面に必ず書き

- Automatic Spray Guns **WA-101/WA-200**
- Round Pattern Automatic Spray gun **WA-101R**
- Low Pressure Automatic Spray gun **LPA-101 / LPA-200** High Volume Low Pressure

Important

This manual contains **IMPORTANT WARNINGS** and **INSTRUCTIONS**. Equipment in this manual is exclusively for painting purposes. Do not use for other purposes.

The operator shall be fully conversant with the requirements stated in this instruction manual including important warnings, cautions and operation and correct handling. Read and understand the instruction manual, before use and retain for reference.

CE II 2G X

This Anest-Iwata spray gun kit complies to ATEX regulations 94/9/EC.

Protection level: II 2 G X. Suitable for use in Zones 1 and 2. X marking: Any static electricity discharge from the spray gun is to be diverted to the grounded the conductive air hose as stipulated.

Be sure to observe warnings and cautions in this instruction manual. If not, it can cause part 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 the prevention, electricity and safety as well as your own company regulations.

Max. Pressure Noise level Spray condition Measuring point	0.69 MPa / 7.0 bar (PSI) WA-101: 78, 74B(A) WA-101R: 62, 64B(A) LPA-101: 78, 74B(A) LPA-200: 76, 64B(A)	Recommended In backwards from gun, 1.6 m height	Max. Temperature	
			Atmosphere Air - Fluid	5°C ~ 40°C 5°C ~ 43°C

Main specifications

Model	Type of lead	Nozzle orifice φ mm (in)	Air cap seal mark	Recommended condition						
				※1 Atomizing air pressure MPa (bar / PSI)	Air pressure inside air cap MPa (bar / PSI)	Fluid output ml/min	Air consumption l/min (cm)	Pattern width mm (in)	Air & fluid connection	Mass g (lbs)
WA-101-082P -102P -10P -12P		0.8 (0.031) 1.0 (0.039) 1.3 (0.051) 1.3 (0.051)	E2P E1 H2 H2	- - - -	- - - -	150 200 300 250	270 (9.9) 91 (3.2) 140 (5.5) 260 (9.2)	190 (7.5) 220 (8.7) 140 (5.5) 230 (9.1)	2-1/4 (4/1) 1/4 (Fluid) WA-101 WA-101R	440 (0.97)
WA-101R-05P -152P -202P -252P LPA-101-10P LPA-200-122P	Pressure	※2 1.2 (0.047) ※3 1.5 (0.059) 2.0 (0.079) 2.5 (0.098) 1.0 (0.039) 1.2 (0.047)	※2 (Fixed) K2 R2 W1 E1 G2	0.29 (2.943) - - - - -	- - - - -	500 270 400 500 150 500	630 (18.7) 330 (11.7) 340 (13.4) 320 (12.2) 430 (15.2) 500 (17.7)	400 (15.7) 340 (13.4) 320 (12.2) 300 (13.0) 200 (7.9) 300 (11.8)	LPA-101 WA-101R 3/8 (Fluid) WA-200 LPA-200	440 (0.97) 470 (1.04) 440 (0.97) 470 (1.04)

※1: Atomizing air pressure means air pressure at gun inlet when piston is pulled and air flows.
※2: The WA-101R air cap set is the purely round spray pattern with material flow control.
※3: 0.8mm (0.031"), 1.0mm (0.039) nozzle are available.

How to install unions for atomizing air and operating air.

- Remove air nipple for atomizing and opening from gun body.
 - Replace air nipple for atomizing (CAP marked side) with and also replace air nipple for operating (CYL marked side) with half union for O.D 8mm air tube attached.
 - Be sure to connect half unions gun body tightly.
- NOTE: Using air hose 12m (39.4ft) long, the inner diameter must be a minimum 8mm (0.315) so the gun can have the correct air volume to atomize at 0.7 bar (10PSI) inside air cap.

Safety precautions

⚠ WARNING

Fire and explosion

- Spark 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.
- Never use the following HALOGENATED HYDROCARBON SOLVENTS which can cause cracks or dissolution on gun body (aluminum) by chemical reaction.
-unsuitable solvents: methyl chloride, dichloromethane, 1,2-dichloroethane, carbon tetrachloride.
(Be sure that all fluids and solvents are compatible with gun parts. We are ready to supply a material list used in the product.)



- 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

- Never point gun toward people or animal. If done, it can cause inflammation of eyes and skin or bodily injury.
- Never exceed maximum operating pressure and maximum operating temperature.



- Be sure to release air and fluid pressures before cleaning, disassembling or servicing.
If not, remaining pressure can cause bodily injury due to improper operation or scattering cleaning liquid.
In order to release pressure, first stop supply of compressed air, fluid and thinner to automatic spray gun.
Next, supply operating air exhaust fluid by operating fluid needle, which results in automatic supply stop of all compressed air.

- Tip of fluid needle set has a sharp point.
Do not touch the tip of needle valve at the maintenance for the protection of the human body.

Protection of human body

- Use in a well-ventilated site by using spray booth.
If not, poor ventilation can cause organic solvent poisoning and catch fire.
- 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.
- Wear earplugs if necessary.
Noise level can exceed 80dB(A), depending on operating conditions and painting site.



Other precautions

- Never alter this spray gun.
If done, it can cause insufficient performance and failure.
- Enter working areas of other equipment (robots, reciprocators, etc.) after machines are turned off. If not, contact with them can cause injury.
- 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.
- If something goes wrong, immediately stop operation and find the cause. Do not use again until you have solved the problem.

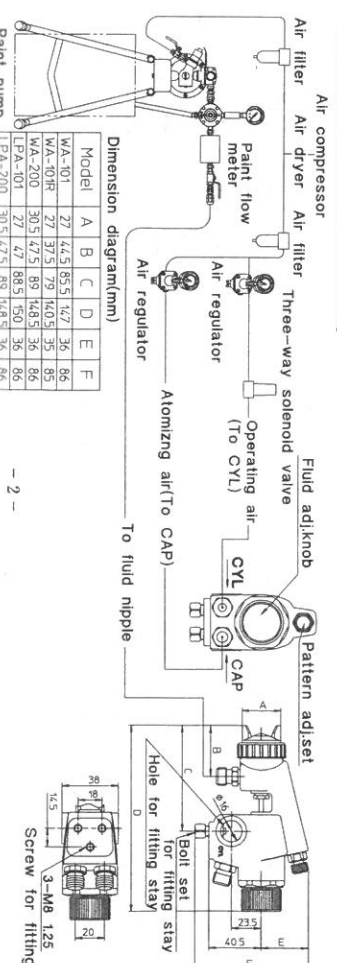
How to connect

⚠ CAUTION

-Use clean air filtered through air dryer and air filter. ... If not, dirty air can cause painting failure.
-If you use this gun for the first time after purchasing, clean fluid passages spraying thinner and remove rust preventive oil.
-If not, remaining preventive oil can cause painting failure such as fish eyes.
-Use three-way solenoid valve of more than φ 4 inner dia, cross-sectional area and air hose of over φ 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 and drop of container can cause bodily injury.

- Job1: Fit the gun to fitting stay, aim at spraying direction and fix it.
Job2: Connect atomizing air hose to atomizing air side (Cap marked side) and operating air hose to operating air side (CYL marked side).
Job3: Connect fluid hose to fluid inlet side.
Job4: Supply thinner to automatic gun. Spray and clean fluid passage with thinner.
Job5: Supply paint to automatic gun and test spray and adjust air volume, fluid output and pattern width as necessary.

[Connecting example of air hose and fluid hose]



How to operate

- Adjust operating air pressure from 3 to 4 bar (43 to 57 PSI).
NOTE: Valve orifice inside three-way solenoid valve should be minimum $\phi 4\text{mm}$ (0.157 in) and also operating air hose length should be within 10m (32.8ft) with the inner diameter more than $\phi 8\text{mm}$ (0.25in) to avoid delayed operation and any kind of failure.
- Although atomizing air pressure varies according to spray conditions, pulling the piston of the gun with the pattern adj. set fully opened, adjust it normally 3 to 4 bar(43 to 57 PSI) with WA-101 / WA-101R / WA-200. And adjust atomizing air pressure 2.7 bar (38 PSI) with LP-A-101 and 2.0 bar (28 PSI) with LP-A-200 H.V.L.P. gun. In this way the H.V.L.P. gun will atomize within 0.7 bar(10 PSI) inside air cap.
- Recommended paint viscosity differs according to paint property and painting conditions.
15 to 23 sec/Ford cup#44 is recommended.

Maintenance and inspection

WARNING

- First release air and 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 at the maintenance for protection of the human body.
- Be careful not to damage the tip of fluid nozzle or must 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 may cause defective pattern.
- Never damage holes of air cap a fluid nozzle and fluid needle.

Step-by-step procedure

1. Pur remaining paint to another container. Clean fluid passages and air cap set.
Spray small amount of thinner to clean fluid passages.
2. Clean each section with brush soaked with thinner and wipe out with waste cloth.
3. Before disassembly, fully clean fluid passages.
(1)Disassemble fluid nozzle.
Use mg spanner, box wrench or optional exclusive spanner (code No.035369000) to disassemble fluid nozzle.
(2)Disassemble fluid needle.
Remove fluid set and pull out fluid needle set from gun body.
Pay attention so that spring does not suddenly fly out since fluid set is strongly pushed by fluid needle spring and piston spring.
(3)Disassemble piston set.
Screw rear section of fluid needle set into piston and pull out piston set.
4. When you want to adjust fluid needle packing set, first tighten it by hand while fluid needle set remains inserted. Then tighten it further about 1/8 turn (6.8-degree) by spanner.
When you remove needle packing set, do not leave plastic piece of needle packing set in the gun body.
5. Turn pattern adj. knob counterclockwise to fully open. And then tighten pattern adj. guide into gun body.
6. Apply Vaseline or oil to thread section of fluid adj. set and insert it into gun body set while keeping it fully opened.



Where to inspect

1. Each hole passage of air cap and fluid nozzle
2. Packing and O ring
3. Leakage from seat section between fluid nozzle and fluid needle set

1. In cleaning can fall pattern shape and uniform particles. Especially clean fully and promptly. No-component paint after use.
2. Soaking whole spray gun in solvent may cause spray gun malfunction. Also soaking air cap set itself for extended period.
When cleaning, never scratch each hole of air cap set and fluid nozzle, and fluid needle set.
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)Pull fluid needle set after loosening fluid needle packing set to protect fluid needle packing set.
4. If you tighten fluid needle packing set too much, fluid needle set will not move smoothly, resulting in paint leakage from tip of fluid nozzle. Try to adjust it carefully while pulling piston and confirming movement of fluid needle set.
When you tighten it too much, first fully loosen it and then tighten it again carefully.
5. If fluid adj. set is not fully opened, tip of it can contact and damage tip of gun body set and cause seizure of thread.
6. If fluid adj. set is not fully opened, tip seat section of it can contact and damage fluid nozzle and cause seizure of thread.

Parts replacement standard

1. Replace if it is cracked or deformed.
2. Replace if it is deformed or worn out.
3. Replace them if leakage does not stop after fully cleaning fluid nozzle and fluid needle set. If you replace fluid nozzle or fluid needle set only, fully match them and confirm that there is no leakage.

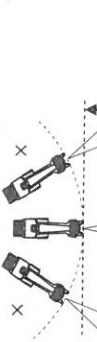
Fluid nozzle-fluid needle set combination

Model	Fluid Nozzle		Fluid needle set	
	Office ϕ mm (in)	Mark	Office ϕ mm (in)	Mark
WA-101R	$\phi 0.90$ (0.020)	WA10105	WA-200	WA12
	$\phi 0.8$ (0.031)	WA10108		
	$\phi 1.0$ (0.039)	WA10110	WA-101	WA15
LP-A-101	$\phi 1.5$ (0.059)	L10015		
	$\phi 1.8$ (0.071)	L20112	WA-200	WA20
WA-200	$\phi 0.8$ (0.031)	WZ0008		

When ordering parts, specify gun's model, part name with no. No. and marked No. of air cap set, fluid nozzle and fluid needle set.

When replacing fluid nozzle or fluid needle for pressure beam application, please order fluid nozzle-needle set.

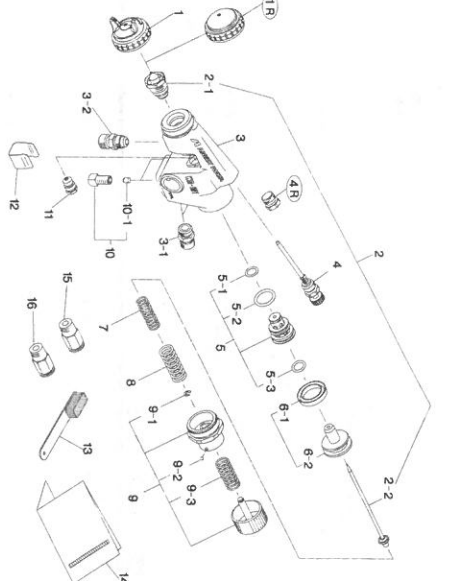
4. Set the spray distance from the gun to the work piece as near as possible within the range of 150~200 mm (5.9 to 7.9 in) with WA-101 / 101R, 200~250 mm (7.9 to 9.8 in) with WA-200, and 100~200 mm (3.9 to 7.9 in) with LP-A-101 / LP-A-200. As LP-A-101 H.V.L.P. gun is operated at low air pressure, high transfer efficiency will not be obtained if the spray distance is too far.



Parts list

No.	Description	Qty.			
		WA-101R	WA-200	101	200
1	Air cap set	1	1	1	1
2	Air cap set (Round)	1	1	1	1
3	Fluid nozzle-fluid needle set	1	1	1	1
4	Body set	1	1	1	1
5	Air nipple	2	2	2	2
6	Fluid nozzle	1	1	1	1
7	Fluid valve set	1	1	1	1
8	Plug screw	1	1	1	1
9	Air valve set	1	1	1	1
10	O ring	1	1	1	1
11	Piston	1	1	1	1
12	Needle spring	1	1	1	1
13	Piston Spring	1	1	1	1
14	Fluid adj. set	1	1	1	1
15	Ball	1	1	1	1
16	Ball set	1	1	1	1
17	Cover	1	1	1	1
18	Brush	1	1	1	1
19	Instruction manual	1	1	1	1
20	Half union for $\phi 6$	1	1	1	1
21	Half union for $\phi 8$	1	1	1	1

◆ Marked parts are wearable parts.



Troubleshooting

Spray Pattern	Problems	Remedies
Filting	1. Air enters between fluid nozzle and tapered seat of gun body. 2. Air is drawn from fluid needle packing set. 3. Air enters at fluid container filling nut or fluid hose joint.	1. Remove fluid nozzle to clean seat. If it is damaged, replace nozzle. 2. Tighten fluid needle packing. 3. Fully tighten joint section.
Cheserit	1. Paint buildup on air cap partially drops from hoses. Air pressure from both horns differs.	1. Remove obstructions from horn hoses with attached brush. But do not use metal objects to clean horn hoses. 2. Remove fluid nozzle and clean seat section.
Inclined	1. Paint buildup or damage on fluid nozzle circumference and air cap center. 2. Fluid nozzle is not properly fitted.	1. Add paint to increase viscosity. 2. Tighten fluid adj. knob to reduce fluid output. Or turn pattern adj. valve set clockwise.
Spilt	1. Paint viscosity too low. 2. Fluid output too high.	1. Add thinner to reduce viscosity. 2. Turn fluid adj. valve knob counter-clockwise to increase fluid output.
Heavy Center	1. Fluid nozzle and fluid needle set are not sealed properly. 2. The first-stage travel of trigger (when only air discharges) decreases. 3. Paint buildup inside air cap set.	1. Clean or replace fluid nozzle and fluid needle set. 2. Replace fluid nozzle and fluid needle set. 3. Clean air cap set.
Spit		R1: tighten R2: adjust R3: clean R4: replace parts

Problem	Where it occurred	Parts to be checked	Cause				Remedy				
			R1	R2	R3	R4	R1	R2	R3	R4	
Air leaks (from tip of air cap)	Piston	Air valve seal set	◆ Dirt or damage, wear on seat surface	○	○	○	○	○	○	○	○
		O ring	◆ Wear on needle spring	○	○	○	○	○	○	○	○
			◆ Wear on air valve spring	○	○	○	○	○	○	○	○
			◆ Damage or deteriorated	○	○	○	○	○	○	○	○
			◆ Dirt or damage, wear on seat surface	○	○	○	○	○	○	○	○
			◆ Loose fluid needle adj. knob	○	○	○	○	○	○	○	○
			◆ Wear on needle spring	○	○	○	○	○	○	○	○
			◆ Insufficient tightening	○	○	○	○	○	○	○	○
			◆ Dirt or damage, wear on seat surface	○	○	○	○	○	○	○	○
			◆ Needle does not return due to packing set too tight	○	○	○	○	○	○	○	○
			◆ Needle does not return due to packing set too tight	○	○	○	○	○	○	○	○
			◆ Wear	○	○	○	○	○	○	○	○
			◆ Insufficient tightening	○	○	○	○	○	○	○	○
			◆ Insufficient tightening	○	○	○	○	○	○	○	○
			◆ Tip hole of nozzle	○	○	○	○	○	○	○	○
			◆ Clogged	○	○	○	○	○	○	○	○
			◆ Paint does not flow	○	○	○	○	○	○	○	○

ANEST IWATA Corporation

3176, Shimoyoshida-cho, Kohoku-ku, Yokohama, 223-8501, Japan

Code No. 03504627

No. 1207-9