

# INSTRUCTION MANUAL

- Automatic Spray Guns **WA-100/WA-200**
- Round Pattern Automatic Spray gun **WA-100R**
- Low Pressure Automatic Spray Gun **LPA-100 / 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 paint ejection and serious bodily injury by drawing organic solvent. Be sure to observe following  $\triangle$  marked items which are especially important.

<b>WARNING</b>	Indicates a potentially hazardous situation which, if not avoided, may result in serious injury or loss of life.
<b>CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.
<b>Important</b>	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. Pressure	0.69MPa/ 7.0 bar/ 98PSI
Noise level	WA-100 :78 7dB A WA-100R :62 8dB A WA-200 :81 2dB A LPA-100 :78 7dB A LPA-200 :76 9dB A
Spray condition	Recommended
Measuring point	1m backwards from gun, 1.6 m height

Max. Temperature	
Atmosphere	5°C~ 40°C
Air • Fluid	5°C~ 43°C

## Main specifications

Model	Type of feed	Nozzle orifice $\phi$ mm (in)	Air cap set mark	Recommended condition					Air & fluid connection	Mass g (lbs)	
				※1 Atomizing air pressure MPa (bar /PSI)	Air pressure inside air cap MPa (bar /PSI)	Fluid output ml/min	Air consumption l/min (cfm)	Pattern width mm(in)			
WA-100-082P	Pressure	0.8 (0.031)	E2P	0.3 (3.0/43)	-	150	270 (9.5)	190 (7.5)	2-1/4 (Air)	460 (1.01)	
-102P		1.0 (0.039)	E1		-	200	90 (3.2)	220 (8.7)			
-101P		1.3 (0.051)	H2		-	100	260 (9.2)	140 (5.5)			
-132P		0.5 (0.020)	※2 (Round)		-	250	330 (11.7)	230 (9.1)			
WA-100R-05P		0.5 (0.020)	※2 (Round)		0.3 (3.0/43)	-	20	40 (1.4)	35 (1.4)	1/4 (Fluid) WA100 WA100R LPA100	440 (0.097)
WA-200-122P		※3 1.2 (0.047)	G2P		-	500	530 (18.7)	400 (15.7)			
-152P		1.5 (0.059)	K2		-	270	330 (11.7)	340 (13.4)			
-202P		2.0 (0.079)	R2		-	400	360 (12.7)	320 (12.6)			
-251P		2.5 (0.098)	W1		-	500	360 (12.7)	330 (13.0)			
LPA-100-101PV		1.0 (0.039)	E1		0.27 (2.7/39)	0.07	150	430 (15.2)	200 (7.9)	3/8 (Fluid) WA200 LPA200	460 (1.01)
LPA-200-122PV		1.2 (0.047)	G2		0.2 (2.0/39)	(0.7/10)	500	500 (17.7)	300 (11.8)		

※1. Atomizing air pressure means air pressure at gun inlet when trigger is pulled and air flows.

※2. The WA-100R 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.

1. Remove air nipple for atomizing and operating from gun body.
2. 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.
3. 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)



#### 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

- 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.**



#### 3. 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 spray gun.  
Then remove fluid adj. knob and pull fluid needle set toward you.

#### 4. 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 85dB(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.

#### 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.

## ■ 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.

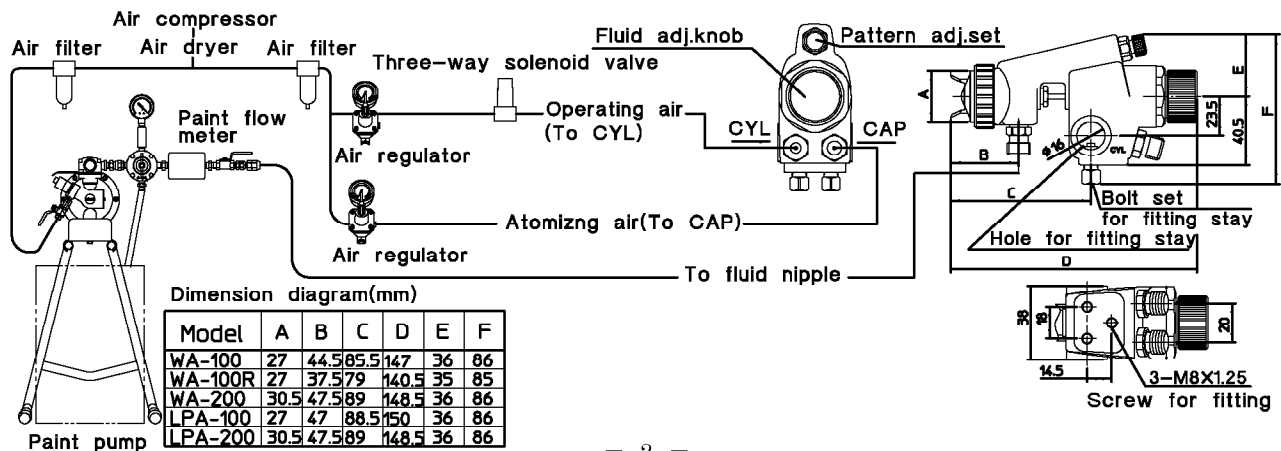
Job2. Connect atomizing air hose to atomizing air side (Cap marked side) and operating air hose to operating air side (CYL marked side).

Job3. Connect fluid hose to fluid inlet side.

Job4. Pour paint into container, test spray and adjust fluid output as well as pattern width

Job5. Pour paint into fluid container, test spray and adjust fluid output, air volume and pattern width.

#### [Connecting example of air hose and fluid hose]



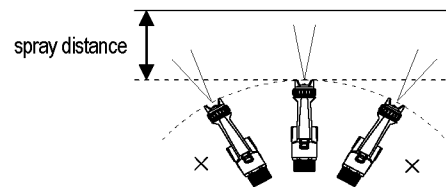
## How to operate

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

NOTE: Valve orifice inside three-way solenoid valve should be minimum  $\phi$  4mm (0.157 in) and also operating air hose length should be within 10m (32.8ft) with the inner diameter more than  $\phi$  6mm (0.236in) 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-100 / WA-100R / WA-200. And adjust atomizing air pressure 2.7 bar (38 PSI) with LPA-100 and 2.0 bar (28 PSI) with LPA-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#4. is recommendable.

- 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-100 / 100R, 200~250 mm (7.9 to 9.8 in) with WA-200, and 100~200 mm (3.9 to 7.9 in) with LPA-100 / LPA-200. As LPA-100 / 200 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.



## 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 damage holes of air cap a fluid nozzle and fluid needle.

Step-by-step procedure	Important
1. Pour remaining paint to another container. Clean fluid passages and air cap set. Spray small amount of thinner to clean fluid passages.	1. In cleaning can fail pattern shape and uniform particles. Especially clean fully and promptly two-component paint after use.
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 each hole of air cap set and fluid nozzle, and fluid needle set.
3. Before disassembly, fully clean fluid passages. (1) Disassemble fluid nozzle. Use ring spanner, box wrench or optional exclusive spanner (code No.035386000) to disassemble fluid nozzle. (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. (3) Disassemble piston set Screw rear section of fluid needle set into piston and pull out piston 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. (3) Be careful not to damage piston packing when pulling out piston set.
4. To adjust fluid needle packing set, while keeping fluid needle set inserted, tighten fluid needle packing seat by hand and then tighten further by spanner.	4. Too much tightening of fluid needle packing set can cause bad movement of fluid needle set and fluid leakage from the tip of fluid needle set. Adjust packing set while pulling piston and watching movement of fluid needle set since too much tightening will slow down movement of fluid needle and result in leakage from tip of nozzle. If tightened too much, turn counterclockwise to the sufficient position without struck needle and fluid leakage.
5. Turn pattern adj. knob counterclockwise to fully open. And then tighten pattern adj. guide into gun body.	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. Apply Vaseline or oil to thread section of fluid adj. set and insert it into gun body set while keeping it fully opened.	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.

Where to inspect	Parts replacement standard
1. Each hole passage of air cap and fluid nozzle	Replace if it is crushed or deformed.
2. Packing and O ring	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 set only, fully match them and confirm that there is no leakage.

## Parts list

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 or/and fluid needle for pressure feed application, please order fluid nozzle-needle set.

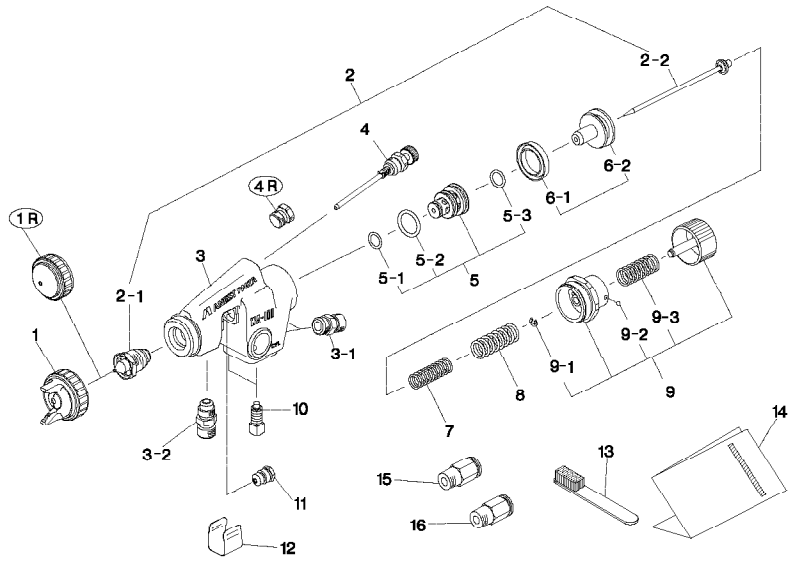
Fluid nozzle-fluid needle set combination

Model	Fluid Nozzle		Fluid needle set mark	Model	Fluid Nozzle		Fluid needle set mark
	Orifice $\phi$ mm (in)	Mark			Orifice $\phi$ mm (in)	Mark	
WA-100R	$\phi$ 0.5 (0.020)	WA100/05	WA05	WA-200	$\phi$ 1.0 (0.039)	W200/10	WA12
-100	$\phi$ 0.8 (0.031)	W100/08	WA12	WA-200	$\phi$ 1.2 (0.047)	W200/12	WA15
	$\phi$ 1.0 (0.039)	W100/10			WA-100	$\phi$ 1.3 (0.015)	
LPA-100	$\phi$ 1.5 (0.059)	L100/15		WA20	WA-200	$\phi$ 1.5 (0.059)	W200/08
-200	$\phi$ 1.8 (0.071)	L200/12				$\phi$ 2.0 (0.079)	W200/20
WA-200	$\phi$ 0.8 (0.031)	W200/08				$\phi$ 2.5 (0.098)	W200/25

Parts list

No.	Description	Q'ty				
		WA-100	WA-100R	WA-200	LPA-100	LPA-200
1	Air cap set	1	-	1	1	1
2	Air cap set (Round)	-	1	-	1	-
3	Fluid nozzle-fluid needle set	1	-	1	1	1
3-1	Air nipple	-	-	2	-	-
3-2	Fluid nipple	1	-	-	1	-
4	Air adj. valve set	1	-	1	1	1
4R	Plug screw	-	1	-	-	-
5	Air valve seat	-	-	1	-	-
5-1		-	-	1	-	-
5-2	O ring	-	-	1	-	-
5-3		-	-	1	-	-
6-1	Piston packing	-	-	1	-	-
6-2	Piston	-	-	1	-	-
7	Needle spring	-	-	1	-	-
8	Piston Spring	-	-	1	-	-
9	Fluid adj. set	-	-	1	-	-
9-1	Stop ring	-	-	1	-	-
9-2	Ball	-	-	1	-	-
9-3	Fluid adj. spring	-	-	1	-	-
10	Bolt set	-	-	2	-	-
11	Fluid needle packing set	-	-	1	-	-
12	Cover	-	-	1	-	-
14	Instruction manual	-	-	1	-	-
15	Half union for $\phi 6$	-	-	1	-	-
16	Half union for $\phi 8$	-	-	1	-	-

◆Marked parts are wearable parts.



■ Troubleshooting

Spray Pattern	Problems	Remedies
Fluttering	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 fitting 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.
Crescent	1. Paint buildup on air cap partially clogs horn holes. Air pressure from both horns differs.	1. Remove obstructions from horn holes with attached brush. 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 and clean seat 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 turn pattern adj. valve set clockwise.
Heavy Center	1. Paint viscosity is too high. 2. Fluid output is too low.	1. Add thinner to reduce viscosity. 2. Turn fluid adj. valve knob counter-clockwise to increase fluid output.
Spit	1. Fluid nozzle and fluid needle set are not seated 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 clean needle set. 3. Clean air cap set.

R1 retighten R2 adjust R3 : clean R4 : replace parts

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



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