

# INSTRUCTION MANUAL

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## HVLP Compliant Spray gun LPH-50

Low 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 2G X. Suitable for use in Zones 1 and 2.

Any static electricity discharges 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  $\Delta$  marked items which are especially important.

- $\Delta$  **WARNING** Indicates a potentially hazardous situation which, if not avoided, may result in serious injury or loss of life.
- $\Delta$  **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.

### Important specifications

Max. Pressure	0.69MPa / 6.8 Bar / 98PSI
Noise level	57dB(A)
Spray condition	Recommended
Measuring point	1m (downward from gun, 1.6 m height)
Max. Temperature	5°C ~ 40°C
Air - Fluid	5°C ~ 43°C

### Main specifications

Model	Type of bed	Nozzle orifice φ mm (in)	Recommended condition				Air & fluid connection	Mass g (lb)
			*1 Among air pressure MPa (bar, PSI)	**2 Fluid output ml/min	Air consumption l/min (cfm)	**2 Pattern width mm (in)		
LPH-50-042G	Gravy	0.4 (0.016)	0.07 (0.710)	50 (1.8)	40 (1.6)	G1/4 (M)	200 (0.44)	
		0.5 (0.024)	25	60 (2.4)	60 (2.4)			
-102G		1.0 (0.039)	55	100 (3.9)		G1/4 (FWD)		

\*1 Among air pressure means air pressure at gun inlet when trigger is pulled and air flow.

\*\*2 Tested with 150cc Ford cup #4 automotive repair paint.

## 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 discoloration on gun body (aluminum) by chemical reaction.
  - unsaturable solvents: methyl chloride, dichloromethane, 1,2-dichloroethane, carbon tetrachloride, trichloroethylene, 1,1,1-trichloroethane
 (Be sure that air, fluids and solvents are compatible with gun parts. We are ready to supply a material list used in the product.)
- Securely ground spray gun by using air hose with built-in ground wire.**  
Ground wire: 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.**  
If not, remaining pressure can cause bodily injury due to improper operation or scattering cleaning liquid.
- Be sure to release air and fluid pressures before cleaning, disassembling or servicing.**  
In order to release pressure, first stop supply of compressed air, fluid and thinner to spray gun. Then remove trigger forward you.
- 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

- 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.
- If operators pull the trigger many times during operation, it may cause carpal tunnel syndrome.**  
Be sure to take a rest if you feel tired.

#### 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

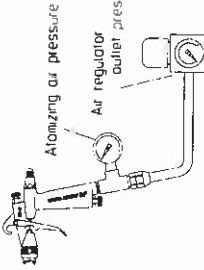
### CAUTION

- 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.
- Firmly fix hose or container to spray gun. ... If not, disconnection of hose and drop of container can cause bodily injury.

- Job01. Connect an air hose to air nipple tightly.
- Job02. Connect an applicable cup, PCG-6P-M (Option), to fluid nipple lightly.
- Job03. Flush the gun fluid passage with a compatible solvent.
- Job04. Pour paint into container, test spray and adjust fluid output as well as pattern width.

## How to operate

Recommend paint viscosity differs according to paint property and painting conditions. 12 to 20 sec./Ford cup#4 is recommended.  
Keep fluid output as small as possible to the extent that the job will not be hindered. It will tend to better blending with the atmosphere.  
Set the spray distance from the gun to the work piece as near as possible within the range of 50-150mm(2-5.9 in). As the gun is operated at low air pressure, high transfer efficiency will not be obtained if the spray distance is too far.



Pulling the trigger of the gun with the pattern adj. Set and fully opened adjust the air regulator in the spray booth to obtain 0.5-0.9 bar (7-13 PSI) at the gun jet as issued on specifications table ahead.  
In this way the gun will atomize within 0.7 bar (10 PSI) inside air cap.

### NOTE

Using air hose 12m(39.4ft) long, the inner diameter must be a minimum 8 mm (0.315 in) so the gun can have the correct air volume to atomize at 0.7 bar (10 PSI) inside air cap.

## Maintenance and inspection



### WARNING

- First release air and pressure fully according to item No. 3 of "Important 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, fluid nozzle and fluid needle.

### Step-by-step procedure

- 1 Pour remaining paint to another container. Clean fluid passages and air cap set.  
Spray a 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 assembly, fully clean fluid passages.  
(1) Disassemble fluid nozzle.  
(2) Assemble fluid needle set.  
You do not need to remove fluid set, guide set from gun body. Remove fluid set, knob and fluid needle spring, and then pull out fluid needle set from back of fluid set, guide 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 1/6 turn (90-degree) by spanner.  
When you tighten it too much, first fully loosen it and then tighten it again carefully.  
5 If you try to fit air valve spring and air valve to gun body set without fluid needle set, air valve will not be fitted correctly and top packing inside fluid set, guide set will be damaged.  
6 Turn pattern adj. knob or air set. knob counterclockwise to fully open. And then tighten pattern adj. set or air set.

### Where to inspect

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

## 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.

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

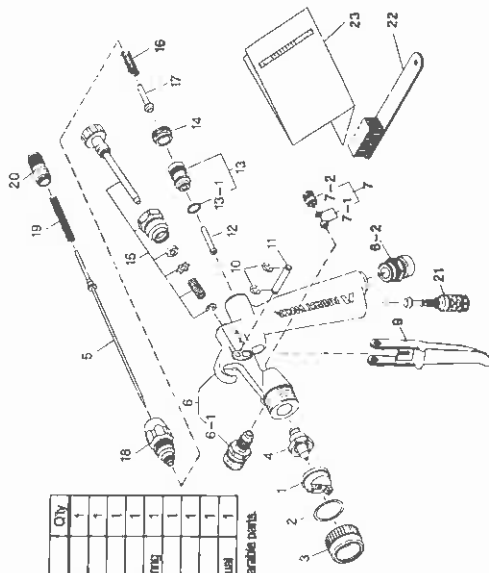
### Fluid nozzle-fluid needle set combination

Fluid nozzle	Fluid needle set
Orifice (mm/in)	Mark
φ 0.4(0.016)	04
φ 0.5(0.024)	05
φ 1.0(0.016)	10

## Parts list

No	Description	Qty
1	Air cap	1
2	Pattern adj. set	1
3	Plating	1
4	Cover	1
5	Fluid nozzle	1
6	Fluid needle set	1
7	Gun body set	1
8-1	Fluid guide	1
8-2	Fluid guide	1
9	Fluid packing set	1
10	Needle packing set(I)	1
11	Needle packing set(II)	1
12	Trigger	2
13	E trigger	2
14	Trigger shaft	1
15	Air valve seat set	1
16-1	O ring	1
16-2	O ring	1
17	Air valve seat screw	1

◆ Marked parts are wearable parts.



## Troubleshooting

Spray Pattern	Problem	Remedies
Plating	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 out 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 paint 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. Do not use metal objects to clean horn holes.
Inched	1 Paint buildup or damage on fluid nozzle circumference and air cap cover. 2 Fluid nozzle is not properly fitted.	1 Remove obstructions. Replace if damaged. 2 Remove fluid nozzle and clean fluid section.
Spl	1 Paint viscosity too low. 2 Fluid output too high.	1 Add paint to increase viscosity. 2 Tighten fluid set, knob to reduce fluid output. 3 Turn pattern adj. valve set clockwise.
Heavy Center	1 Fluid velocity is too high. 2 Fluid output is too low.	1 Add thinner to reduce viscosity. 2 Turn fluid set valve knob counter-clockwise to increase fluid output.
Spl	1 Fluid nozzle and fluid needle set are not seated properly. 2 The discharge level 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.

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)	Air valve set	Air valve									
		Air valve seat set									
		O ring									
Fluid nozzle	Fluid nozzle	Fluid nozzle ~ fluid needle set									
		Fluid nozzle ~ gun body									
		Fluid needle ~ packing set									
Fluid needle	Packing seat	Needle packing set ~ needle set									
		Fluid set, knob									
		Tip hole of nozzle									
Paint does not flow	Tip of gun	Paint filter									