

HVLP Compliant Spray gun Low Volume Low Pressure LPH-400-LV

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.

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. Pressure	0.69 MPa / 6.9 bar / 99 PSI
Nozzle level	69.4 dB (A)
Spray condition	Recommended
Measuring point	1 m backward from gun, 1.6 m height
Min. Temperature	5°C ~ 40°C
Air-Fluid	5°C ~ +3°C

Main specifications

Model	Type of feed	Nozzle orifice φ (mm) (in)	Air cap set Mark	※2 Alarmng air pressure MPa (bar / PSI)	Recommended condition				Air & fluid connection	Noise g (db)
					Fluid output ml/min	Air pressure inside air cap MPa (bar / PSI)	Air consumption liter (gall)	Pattern width mm (in)		
LPH-400-12/LV	Gravity	1.2 (0.047)	LV4	0.1 (1.016)	80	0.07 (0.710)	260 (10.2)	260 (10.2)	M18 x 1.5 (Fluid)	380 (0.94)
		119				260 (11.0)	260 (11.0)			
		130				260 (11.4)	260 (11.4)			
		140				285 (11.6)	285 (11.6)			
		160 (0.63)		150		300 (11.8)	300 (11.8)			
		1.8 (0.070)		1.8 (0.070)		300 (12.0)	300 (12.0)			

※1 1.6mm (0.071") nozzle is available

※2 Alarmng air pressure means air pressure at gun inlet when trigger is pulled and air flows.

Max. Pressure	0.69 MPa / 6.9 bar / 99 PSI
Noise level	69.4 dB (A)
Spray condition	Recommended
Measuring point	1 m backward from gun, 1.6 m height
Min. Temperature	5°C ~ 40°C
Atmosphere	5°C ~ +3°C
Air-Fluid	5°C ~ +3°C

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, trichloroethylene, 1,1,1-trichloroethane
- Be sure that all fluids and solvents are compatible with gun parts. We are ready to supply a material list used in the product) Ground wire: Less than 1 MΩ. 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. Then remove trigger toward 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 80 dB(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 fit hose or container to spray gun. ... If not, disconnection of hose and drop of container can cause bodily injury.

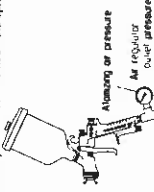
- Job1. Connect an air hose to air nipple lightly.
- Job2. Connect an applicable cup, POG-6P-M (Option), to fluid nipple lightly.
- Job3. Flush the gun fluid passage with a compatible solvent.
- Job4. Pour paint into container, fast spray and adjust fluid output as well as pattern width.

How to operate

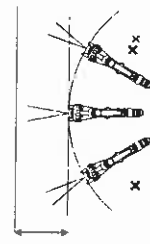
Recommended paint viscosity differs according to paint property and painting conditions. 12 to 25 sec./Fluid output is recommended.

Keep fluid output as small as possible to the extent that the job will not be hindered. It will lead to better finishing with fine atomization.

Set the spray distance from the gun to the work piece as near as possible within the range of 100-200mm(3.9-7.9 in). As this gun is operated at low air pressure, high transfer efficiency will not be obtained if the spray distance is too far.



The gun should be held so that it is perpendicular to the surface of the work piece at all times. Then, the gun should move in a straight and horizontal line. Moving the gun causes uneven painting.



Pulling the trigger of the gun with the pattern set. Set and fully opened adjust the air regulator in the spray booth to obtain 1.0-1.3 bar (14-18 PSF) at the gun inlet as issued on specifications table ahead in this way the gun will atomize within 0.7 bar (10 PSF) 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 PSF) inside air cap.

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, fluid nozzle and fluid needle.

Step-by-step procedure

1. Four remaining paint to another container. Clean fluid passages and air cap set. Spray a small amount of thinner to clean fluid passages.	Important	1. Incomplete cleaning can fall 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. Soaking whole spray gun in solvent may cause spray gun malfunctions. 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. Before disassembly, fully clean fluid passages.	Important	3. During disassembly, do not scratch seal section.
(1)Disassemble fluid nozzle. Use ring spanner, hex wrench or optional exclusive spanner (code 03339001) to remove fluid nozzle.		(1)Remove fluid nozzle after removing fluid needle set or valve housing (fluid needle point), in order to protect seal section.
(2)Disassemble 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 spring, and then pull out fluid needle set from back of fluid set guide set.		(2) Be careful when handling tip of fluid needle set since it is sharp. Disassemble fluid set guide set as fully as possible.
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 16 turn (90-degree) by spanner. When you remove needle packing set, do not leave plastic piece of needle packing set in the gun body.		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 trigger and confirming movement of fluid needle set. When you tighten it too much, first fully loosen it and then tighten it again carefully.
5. In order to assemble air valve, first assemble air valve & air valve spring & fluid set, guide set together. Next, insert fluid needle set into fluid set guide set, then fit it to gun body set and screw fluid set guide set.		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 set, knob or air set knob counterclockwise to fully open. And then tighten pattern set, set or air set.		6. If pattern set, knob or air set knob is not fully opened, tip of it can contact and damage fluid nozzle and cause leakage of fluid.

Where to inspect

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 seal 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

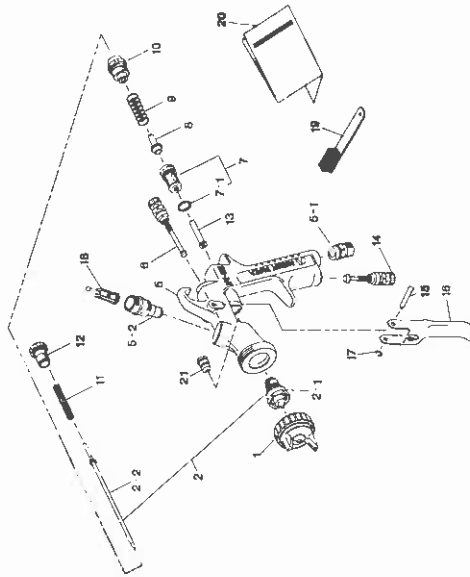
When ordering parts, specify gun's model, part name with ref. No. and marked No. of air cap set, fluid nozzle and fluid needle. When replacing fluid nozzle or fluid needle by pressure feed application, please order nozzle needle set.

Fluid nozzle		Fluid needle set	
Orifice	Mark	Mark	
φ1.2 (0.047)	40X/V12	40012	
φ1.4 (0.055)	40X/V14		20015
φ1.5 (0.059)	40X/V15		
φ1.8 (0.070)	40X/V18		20020

Parts List

No.	Description	Qty
1	Air cap set	1
2	Fluid nozzle-fluid needle set	1
2-1	Fluid nozzle	1
2-2	Fluid needle set	1
3	Trigger stud	1
4	Needle packing set	1
5	Body set	1
5-1	Air nipple	1
5-2	Fluid nozzle	1
6	Pattern set	1
7	Air valve seal set	1
8	O ring	1
9	Air valve spring	1
10	Fluid set guide	1
11	Fluid needle spring	1

Marked parts are replaceable parts.



Troubleshooting

Spray Pattern	Problems	Remedies
Fluctuating	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 along 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.
Coarsest	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. 2. Remove fluid nozzle and clean seal section.
Included	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 set knob to reduce fluid output. Or turn pattern set, valve set clockwise.
Spit	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.
Heavy Center	1. Paint viscosity is too high. 2. Fluid output is too low.	1. Add thinner to reduce viscosity. 2. Turn fluid set valve knob counterclockwise to increase fluid output.
Spit	1. Fluid nozzle and fluid needle set are not seated properly. 2. The linkage 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.

Problem	When it occurred	Parts to be checked	Cause			
			R1	R2	R3	R4
Air leaks (from top of air cap)	Air valve set	Air valve	• Dirt or damage on seat			
		Air valve seal set	• Dirt or damage on seat • Wear on air valve spring			
Paint leaks	Fluid nozzle	O ring	• Damage or deformed			
		Fluid nozzle-fluid needle set	• Dirt, damage, wear on seat • Loose fluid needle set knob • Wear on needle spring			
		Fluid nozzle-gun body	• Insufficient tightening • Dirt or damage on seat			
Paint does not flow	Fluid nozzle	Fluid needle-packing set	• Needle does not return due to packing set too tight • Needle does not return due to paint buildup on fluid needle			
		Needle packing set - needle set	• Wear			
Paint does not flow	Tip of gun	Packing set	• Insufficient tightening			
		Fluid set knob	• Insufficient opening			
		Tip hole of nozzle	• Clogged			
Paint does not flow	Paint filter	Paint filter	• Clogged			
		Remedy	R1	R2	R3	R4



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