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.

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

<table>
<thead>
<tr>
<th>Max. Pressure</th>
<th>0.00MPa/Pa</th>
<th>0.015bar</th>
<th>0.01bar</th>
<th>0.009bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise level</td>
<td>WA-100 - 78 74A &amp;</td>
<td>WA-100R - 62 68A &amp;</td>
<td>WA-200 - 81 96A &amp;</td>
<td>LPA-100 - 78 96A &amp;</td>
</tr>
<tr>
<td>Measuring point</td>
<td>1m backwards from gun, 1.6 m height</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Main specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type of feed</th>
<th>Nozzle orifice φ mm (in)</th>
<th>Air cap set mark</th>
<th>Air pressure [MPa (bar/PSI)]</th>
<th>Air pressure inside air cap [MPa (bar/PSI)]</th>
<th>Fluid output [ml/min]</th>
<th>Air consumption [l/min (lpm)]</th>
<th>Pattern width [mm]</th>
<th>Air &amp; fluid connection</th>
<th>Mass [g (lbs)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA-100-06TP</td>
<td>Pressure</td>
<td>0.8 (0.031)</td>
<td>E2</td>
<td>-</td>
<td>150</td>
<td>-</td>
<td>270 (90.5)</td>
<td>200 (7.0)</td>
<td>2-1/4 (Air)</td>
<td>400 (1.10)</td>
</tr>
<tr>
<td>WA-100-061P</td>
<td>-10P</td>
<td>1.0 (0.039)</td>
<td>E1</td>
<td>-</td>
<td>100</td>
<td>300</td>
<td>90 (3.12)</td>
<td>140 (5.5)</td>
<td>1/4 (Fluid)</td>
<td>410 (0.92)</td>
</tr>
<tr>
<td>WA-100-06TP</td>
<td>-10P</td>
<td>1.3 (0.051)</td>
<td>H2</td>
<td>-</td>
<td>200</td>
<td>280 (9.7)</td>
<td>230 (8.1)</td>
<td>-</td>
<td>-</td>
<td>500 (1.10)</td>
</tr>
<tr>
<td>WA-100-06TP</td>
<td>-30P</td>
<td>0.5 (0.020)</td>
<td>H2 (Round)</td>
<td>-</td>
<td>30</td>
<td>40 (1.4)</td>
<td>35 (1.2)</td>
<td>-</td>
<td>-</td>
<td>500 (1.10)</td>
</tr>
<tr>
<td>WA-200-12TP</td>
<td>Pressure</td>
<td>1.2 (0.047)</td>
<td>G2</td>
<td>-</td>
<td>500</td>
<td>500 (18.7)</td>
<td>400 (15.7)</td>
<td>400 (15.7)</td>
<td>3/8 (Fluid)</td>
<td>500 (1.10)</td>
</tr>
<tr>
<td>WA-200-12TP</td>
<td>-15P</td>
<td>1.5 (0.059)</td>
<td>K2</td>
<td>-</td>
<td>270</td>
<td>330 (11.7)</td>
<td>340 (13.4)</td>
<td>330 (12.4)</td>
<td>WA900</td>
<td>460 (1.01)</td>
</tr>
<tr>
<td>WA-200-12TP</td>
<td>-20P</td>
<td>2.0 (0.079)</td>
<td>R2</td>
<td>-</td>
<td>400</td>
<td>360 (12.7)</td>
<td>300 (11.9)</td>
<td>300 (11.9)</td>
<td>LPA100</td>
<td>500 (1.10)</td>
</tr>
<tr>
<td>WA-200-12TP</td>
<td>-25P</td>
<td>2.5 (0.098)</td>
<td>WH</td>
<td>-</td>
<td>500</td>
<td>430 (15.2)</td>
<td>200 (7.9)</td>
<td>200 (7.9)</td>
<td>WA900</td>
<td>460 (1.01)</td>
</tr>
<tr>
<td>LPA-200-10TP</td>
<td>Pressure</td>
<td>1.0 (0.039)</td>
<td>E1</td>
<td>0.27 (2.73)</td>
<td>150</td>
<td>500</td>
<td>500 (17.7)</td>
<td>300 (11.8)</td>
<td>LPA200</td>
<td>500 (1.10)</td>
</tr>
<tr>
<td>LPA-200-12TP</td>
<td>-12P</td>
<td>1.2 (0.047)</td>
<td>G2</td>
<td>0.27 (2.73)</td>
<td>500</td>
<td>500</td>
<td>500 (17.7)</td>
<td>300 (11.8)</td>
<td>-</td>
<td>500 (1.10)</td>
</tr>
</tbody>
</table>

*1: Atomizing air pressure means air pressure at gun outlet 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 cap from atomizing and operating from gun body.
2. Replace air nipple for atomizing(CAP marked side) with and also replace air nipple for operating(LYI marked side) with nut union for U.D 8mm air tube attached.
3. Be sure to connect half unions gun body tightly.

NOTE: Using air hose 12m (39.4’) 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

1. Spark and open flares 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 (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 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

1. Never point gun toward 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.

## 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 decibels, 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 area of other equipment (robots, reciprocators, etc.) after machines are turned off.
   - If not, contact with them can cause injury.

## 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 \( \Phi 4 \) 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 and drop of container can cause bodily injury.

### Connecting example of air hose and fluid hose

*Job 1.* Fix the gun to fitting stay and mount at spraying direction and fix it.
*Job 2.* Connect atomizing air hose to atomizing air side (Cap marked side) and operating air hose to operating air side (Cyl marked side).
*Job 3.* Connect fluid hose to fluid inlet side.
*Job 4.* Pour paint into container, test spray and adjust fluid outlet as well as pattern width.
*Job 5.* Pour paint into fluid container, test spray and adjust fluid output, air volume and pattern width.

### Dimension diagram (mm)

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA-100</td>
<td>27</td>
<td>44.5</td>
<td>55.5</td>
<td>47.5</td>
<td>36</td>
<td>86</td>
</tr>
<tr>
<td>WA-100R</td>
<td>27</td>
<td>37.5</td>
<td>57.5</td>
<td>40</td>
<td>35</td>
<td>85</td>
</tr>
<tr>
<td>WA-200</td>
<td>50</td>
<td>47</td>
<td>58.5</td>
<td>48.5</td>
<td>36</td>
<td>86</td>
</tr>
<tr>
<td>LPA-100</td>
<td>27</td>
<td>47</td>
<td>58.5</td>
<td>48.5</td>
<td>36</td>
<td>86</td>
</tr>
<tr>
<td>LPA-200</td>
<td>50</td>
<td>47</td>
<td>58.5</td>
<td>48.5</td>
<td>36</td>
<td>86</td>
</tr>
</tbody>
</table>
How to operate

1. Adjust operating air pressure from 3 to 4 bar (43 to 57 PSI)
   NOTE: Valve orifice inside three-way solenoid valve should be minimum 6-4mm (0.157 in) and
   also operating air hose length should be within 10m (32.8 ft) with the inner diameter
   more than -6mm 0.236 in to avoid delayed operation and any kind of failure.
2. 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.
3. Recommended paint viscosity differs according to coating property and painting conditions:
   15 to 23 sec/Ford Cup #4 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 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**

<table>
<thead>
<tr>
<th>Important</th>
<th>1. In cleaning can fail pattern shape and uniform particles. Especially clean fully and promptly two-component paint on use. 2. Do not immerse the whole gun in thinner. If done, it can damage parts. When cleaning, never scratch each hole of air gap set and fluid nozzle, and fluid needle set. 3. During disassembly, do not scratch seat section. 4. Pull fluid nozzle after removing fluid needle set or while keeping fluid needle pulled, in order to protect seat section. 5. If fluid needle set is not fully opened, tip of it can contact and damage lip of gun body set and cause seizure of thread.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pour remaining paint to another container. Clean fluid passages and air cap set. Spray small amount of thinner to clean fluid passages.</td>
<td>2. Clean each section with brush soaked with thinner and wipe out with waste cloth. 3. Before disassembly, fully clean fluid passages. (1) Unscrew fluid nozzle. Use ring spanner, box wrench or optional exclusive spanner (code No. 09586000) to unscrew fluid nozzle. (2) Unscrew 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. Fluid needle spring and piston spring. (3) Unscrew piston set. Screw rear section of fluid needle set into piston and pull out piston set. 4. To adjust fluid needle packing set, while keeping fluid needle set inserted, tighten fluid needle packing set by hand and then tighten further by spanner. 5. Turn piston adjust knob counterclockwise to fully open. And then tighten pattern adjust guide into gun body.</td>
</tr>
</tbody>
</table>

**Where to inspect**

| Parts replacement standard |
| --- | --- |
| 1. Check hose passage of air cap and fluid nozzle. | Replace it 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 recheck them and confirm that there is no leakage. |

**Parts list**

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

<p>| Fluid nozzle-Fluid needle set combination |</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>Fluid Nozzle</th>
<th>Fluid needle set mark</th>
<th>Model</th>
<th>Fluid Nozzle</th>
<th>Fluid needle set mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA-100R</td>
<td>ø 0.5 (0.020)</td>
<td>WA-100/05</td>
<td>WA-200</td>
<td>ø 1.0 (0.039)</td>
<td>W200/10</td>
</tr>
<tr>
<td>-100</td>
<td>ø 0.6 (0.024)</td>
<td>W100/06</td>
<td></td>
<td>ø 1.2 (0.047)</td>
<td>W200/12</td>
</tr>
<tr>
<td>LPA-100</td>
<td>ø 1.5 (0.059)</td>
<td>L100/15</td>
<td></td>
<td>ø 1.5 (0.059)</td>
<td>W200/13</td>
</tr>
<tr>
<td>-200</td>
<td>ø 1.9 (0.075)</td>
<td>L200/12</td>
<td></td>
<td>ø 2.0 (0.079)</td>
<td>W200/20</td>
</tr>
<tr>
<td>WA-200</td>
<td>ø 0.8 (0.031)</td>
<td>W200/06</td>
<td></td>
<td>ø 2.6 (0.102)</td>
<td>W200/30</td>
</tr>
</tbody>
</table>

4. Set the spray distance from the gun to the work pieces as given in the table below:

<table>
<thead>
<tr>
<th>Spray distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>
Troubleshooting

<table>
<thead>
<tr>
<th>Spray Pattern</th>
<th>Problems</th>
<th>Remedies</th>
</tr>
</thead>
</table>
| 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  
               2. Air pressure and from horn holes | 1. Remove obstructions from horn holes with attached brush. But do not use metal objects to clean horn holes.  
               2. Replace damaged air cap  
               3. Replace fluid nozzle and clean seat section |
| Bullnose      | 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. Replace fluid nozzle and clean seat section |
| Split         | 1. Paint viscosity too low  
               2. Fluid output is too low | 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 set counterclockwise to increase fluid output |

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

ANEST IWATA Corporation
3176, Shinyosida-cho, Kohoku-ku, Yokohama, 223-0501, Japan