

# INSTRUCTION MANUAL

## Flow gun FG-6/FG-61/FG-62

### Important

This manual contains **IMPORTANT WARNINGS** and **INSTRUCTIONS**. Equipment in this manual is exclusively for application sealants and adhesives 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 2GX

This Anest-iwata flow 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 flow gun is to be diverted to the grounded, the conductive air hose as stipulated.

<p>Be sure to observe warnings and cautions in this instruction manual. If not, it can cause internal ejection and serious bodily injury by drawing organic solvent. Be sure to observe following <math>\Delta</math> marked items which are especially important.</p>
<p><b>⚠ WARNING</b> Indicates a potentially hazardous situation which, if not avoided, may result in serious injury or loss of life.</p>
<p><b>⚠ CAUTION</b> Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.</p>
<p><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.</p>

### Important specifications

Max. Pressure	25MPa / 250bar / 3600PSI
Max. Temperature	5°C ~ 40°C
Atmosphere	5°C ~ 43°C
Air-Fluid	5°C ~ 43°C

### Main specifications

Model	Use	Max. operating Pressure MPa (bar / PSI)	Size of Nozzle orifice	Shape of tip of fluid needle	Fluid hose connection	Max. weight (lb)
FG-6	Sealants & Adhesives (High Viscosity)	25 (250 / 3600)	φ 3.0	tapered seal	NPS 3/8	440 (997)
FG-61					G 1/4	
FG-62					G 3/8	

## 1. Safety precaution

### WARNING

#### Fire and explosion

1. **Spark and open flames are strictly prohibited.** Material (sealants, adhesives, etc.) can be highly flammable and can cause fire. Avoid any ignition sources such as smoking, open flames, electrical goods, etc.
2. **Be sure to stop pump, reduce fluid pressure down to 0 pressure and securely apply safety lock of flow gun before you fit or remove nozzle tip.** Emission of material (sealants, adhesives, etc.) or solvent during operation can cause great danger.
3. **Never connect flow gun by using fluid hose with built-in ground wire.** Ground wire : Less than 1 MΩ. Check the earth stability periodically. Securely ground pump, flow gun, workpiece and containers containing material or solvent. Be sure to use fluid hose with built-in ground wire to have continuous grounding between pump and flow gun. Use conductive container containing material (sealants, adhesives, etc.) or solvent. Insufficient grounding will cause explosion or fire by spark of electricity.
4. **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.)

#### Improper use of equipment

1. **Never point flow gun toward people or animal.** Never pull trigger of gun when human body or finger come near tip of nozzle. If done, it can cause inflammation of eyes and skin or bodily injury. If you feel any abnormality during operation, consult with a medical doctor immediately.
2. **Never exceed maximum operating pressure and maximum operating Temperature.** Usage at more than max. operating pressure can cause explosion of flow gun resulting in great danger.
3. **Be sure to release material 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 material and thinner to flow gun.
4. **Never use corrosive liquid (less than PH6 or more than PH9).**

#### 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. If you feel any abnormality during operation, consult with a medical doctor immediately.
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. **Never try to stop leaks by hand, when material leaks.** High pressure material immediately can reduce material pressure down to 0 pressure. In that case, stop pump immediately through small hole can pierce an iron plate and can cause severe injury since material can enter human body directly through eye, mouth or skin. It is very dangerous. If you feel any abnormality or receive any injury, consult with a medical doctor immediately.
4. **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.
5. **If operators feel the pulsations in the coating material flow long time during operation, it may cause carpal tunnel syndrome.** Be sure to take a rest if you feel tired. Or damping of the pulsations in the coating material flow from material pump by, for instance, the use of damping elements on the inlet connection(s) of the equipment or the use of pulsation damping hoses supplying the equipment.

#### Burst of fluid hose

1. **Never use cracked, damaged, bent or crushed fluid hose.** High pressure material emitted at small hole can pierce an iron plate and cause great danger.
2. **Never bend fluid hose with a radius of less than permitted bend radius.** Contact the shop who sold the hose to you, or us, about permitted bend radius. Never put heavy things on it in order not to damage the hose. If done, hose can explode causing great danger.

### WARNING

#### Other precautions


1. **Never alter this flow gun.** If done, it can cause insufficient performance and failure.
2. **Enter working areas of other equipment (robots, recirculators, etc.) after machines are turned off.** If not, contact with them can cause injury.
3. **Never flow 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. **Securely connect fluid hose.** If hose is disconnected during operation, hazardous hose movement and paint ejection will cause severe bodily injury.
5. **If something goes wrong, immediately stop operation and find the cause.** Do not use again until you have solved the problem.

## 2. Checking the product


- When you open the package, be sure to check that all goods are included and are in good condition.
- If there is any damage or missing components, do not use the product to avoid danger and immediately contact the distributor who sold it to you.
- Always keep caution plates (warning display) in good condition and clean. If they are damaged or missing, replace with new ones.

## 3. Operating procedure

### 3-1 Connect high pressure hose.

** WARNING**  
Securely connect high pressure hose without leak or loosening. If hose is disconnected during operation, hazardous hose movement and material ejection will cause severe bodily injury.

When material leaks, never try to stop it by hand. In that case, stop pump immediately and reduce material pressure down to 0 pressure. Material or solvent can enter human body directly through eye, mouth or skin. It is very dangerous. If you feel any abnormality or receive any injury, consult a medical doctor immediately.

** CAUTION**  
Before using a new flow gun, clean inside of the new flow gun. If not, rust preventive inside flow gun can cause materializing failure.

### 3-2 Fit or remove nozzle.

- Fit nozzle to flow gun.

** WARNING**  
Be sure to stop pump, reduce fluid pressure down to [0 MPa] and securely apply safety lock of flow gun before you fit or remove nozzle tip.

Material or solvent can enter human body directly through eye, mouth or skin. It is very dangerous. If you feel any abnormality or receive any injury, consult a medical doctor immediately.

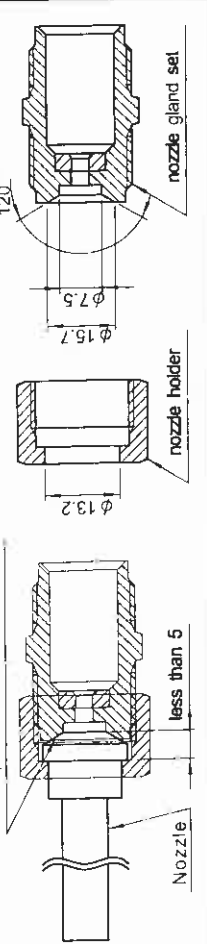
### Important

We are not responsible for any death, injury, failure or damage caused by nozzle.

**HINT!**

When you try to make a nozzle, refer to the figures below.

No damage should be made  
On tapered section



**3-2 Sealing job**

**⚠ WARNING**

During materialing, be sure to wear protective cover such as glasses, mask or gloves to avoid serious injury caused by material or solvent which might enter your eyes or you might inhale.

**⚠ CAUTION**

Before you use new flow gun for the first time, clean its inside. If not done, rust preventive inside gun can cause sealing failure.

**HINT!**

As fluid pressure increases, fluid output increases with increasing wear on parts. For longer life span of flow gun, adjust fluid pressure as low as you can, maintaining satisfactory fluid output.

**3-3 Cleaning and maintenance**

In order to get longer lifetime of flow gun and good performance at the next job, fully clean its inside with cleaning liquid which is compatible with material used, after you finish the job.

**⚠ WARNING**

During materialing, be sure to wear protective cover such as glasses, mask or gloves to avoid serious injury caused by paint or solvent which might enter your eyes or you might inhale.

Be sure to stop pump and reduce fluid pressure down to 0 pressure before disassembling flow gun.

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.

**4. Problems and remedies**

**Important**

As for ☆ marked items, ask our distributor to remedy it for you. Incorrect remedy cannot achieve satisfactory performance.

Problem	Cause	Remedies
Material does not come out.	Nozzle tip is clogged.	Inspect or replace
Material leaks or comes out weakly.	Material is not fed.	Inspect pump.
	Pump pressure is high.	Reduce pump pressure down to 15 MPa (150bar/2142PSI).
Nozzle(Material) leaks from or nozzle)	Flow resistance in pump is too high.	Use material of lower viscosity.
	Material viscosity is high.	Use collar [13] or nozzle with larger orifice
	Nozzle orifice is small.	Disassemble, inspect or replace part. ☆
	Material or dust sticks to needle packing [5-6].	
Material or dust sticks to needle seat [4].	Material or dust sticks to needle seat [4].	
	Seat between needle bar set [7-11] and nozzle gland set [3] is worn.	
	Needle bar set [5-1] is over-tightened.	Adjust by needle spring holder [5-8].
Nozzle gland set [2]	Nozzle gland set [2] is loose	Tighten
	Needle spring seat [5-7] is loose	Tighten with needle spring holder [5-8]
	Needle packing [5-6] is worn, damaged or stuck with material or dust	Tighten with needle spring holder [5-8]. Disassemble, inspect or replace part
	Needle bar set [5-1] is worn, damaged or stuck with material	Tighten with needle spring holder [5-8]. Disassemble, inspect or replace part
Nozzle holder [1]	Nozzle gland set [2] and tapered section of nozzle are damaged or stuck with material or dust.	Disassemble, inspect or replace part
	Nozzle holder [1] is loose.	Tighten
Universal joint [11]	Wear of packing in universal joint	Replace universal joint