ANEST IWATA

Use and Maintenance Instruction Manual

TOF-50

TOF-50R

Round Pattern

SPRAY GUN for RELEASE AGENT

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Ex CE

TECHNICAL DATA TOF-50

TOF-50	Ø mm	No.	bar	mℓ/min	Nℓ/min	mm
TOF-50						
TOF-50-022P	0.2	E2	1.0	20	50	120
TOF-50-032P	0.3			50		140
TOF-50-042P	0.4			130		150
TOF-50-062P	0.6			180		
TOF-50-082P	0.8			220		
TOF-50-102P	1.0			280		180
TOF-50-122P	1.2			350		
TOF-50-142P	1.4	E4	1.5	500	65	230
CONNECTION HOSE: • Outside ø 6 mm • Inside ø 4 mm						
Pattern width: tested with water _ Spray distance 150 mm						

TECHNICAL DATA TOF-50 R

TOF-50 R	Ø mm	No.	bar	mℓ/min	Nℓ/min	mm
TOF-50R - ROUND PATTERN						
TOF-50R-022P	0.2	1	0.5	20	20	40
TOF-50R-032P	0.3		1.0	50	30	
TOF-50R-042P	0.4			130		70
TOF-50R-062P	0.6		1.5	180	40	
TOF-50R-082P	0.8		2.0	220	50	
TOF-50R-102P	1.0		2.5	280	55	
TOF-50R-122P	1.2		3.5	350	75	80
TOF-50R-142P	1.4	2		500		
CONNECTION HOSE: • Outside ø 6 mm • Inside ø 4 mm						
Pattern width: tested with water _ Spray distance 150 mm						

Manual Spray Gun for Release Agents

Before use, adjustment or maintenance, it is important to read this instruction manual very carefully. This manual must be stored in a safe place for any future reference.

This ANEST IWATA spray guns kit complies to ATEX regulations 2014/34/EU. CE Ex II 2G X
protection level: II 2G X Suitable for using Zones 1 and 2.
X marking: Any static electricity discharge from the spray gun is to be diverted to the ground via the conductive air hose as stipulated.

ALWAYS observe WARNINGS and CAUTIONS in this instruction manual.

Symbol	WARNING	Hazard level	Consequence
⚠	**WARNING**	Potentially hazardous situation	Death or serious injury
	CAUTION	Potentially hazardous situation	Minor to moderate injury
	IMPORTANT	Potentially hazardous situation	Property damage

1. TECHNICAL SPECIFICATIONS

Max. working air pressure:	6.8 bar (98 PSI)
Max. working fluid pressure:	2.0 bar (29 PSI)
Weight g (lbs):	260 (0,57)
Noise level (LAeqT)*:	60 dB(A)
Max. Temperature range:	Atmosphere 5 ~ 40 °C / Air-Fluid 5 ~ 43 °C
* Measuring point: 1m backwards from gun, 1.6m height.	

2. SAFETY WARNING

FIRE AND EXPLOSION

1. **Never use the following HALOGENATED HYDROCARBON SOLVENTS:** which can cause cracks or dissolution of gun body (aluminium) due to chemical reaction. UNSUITABLE SOLVENTS: methyl chloride, dichloromethane, 1.2-dichloroethane, carbon tetrachloride, trichloroethylene, 1.1.1-trichloroethane
2. **Sparks and open flames are strictly prohibited.** Fluids can be highly flammable and can cause fire. Do not expose to open flames, electrical goods, cigarettes etc.
3. **Securely ground spray gun using conductive air hose.** (Less than1MΩ) Always ensure that the spray gun is earthed correctly.

PROTECTION OF HUMAN BODY

1. **Use in a well-ventilated site, using a spray booth.** Poor ventilation can cause organic solvent poisoning and fire.
2. **Always wear protective gear (safety glasses, mask, gloves) to avoid inflammation of eyes and skin.** In case of any physical discomfort, immediately seek medical advice.
3. **Wear earplugs if necessary.** Noise level can exceed 85 dB(A), depending on operating conditions and painting site.
4. **Pulling the trigger many times during operation, may cause carpal tunnel syndrome.** Always rest, in case of tiredness.

IMPROPER USE

1. **Never point gun towards people or animals.**
2. **Never exceed maximum working pressure or maximum operating Temperature**
3. **Always release air and fluid pressure before cleaning, disassembling or servicing.** Otherwise, remaining pressure can cause bodily injury due to improper operation or scattering of cleaning liquid.
4. **Tip of fluid needle set has a sharp point.** Do not touch the tip during maintenance to avoid accidents.
5. **Never use this gun to spray foods or chemicals.** Otherwise, foreign substance, could cause corrosion of fluid passages which could adversely affect health.
6. **Never alter this spray gun,** to avoid insufficient performance and damage.
7. **Do not trigger strongly more than needed,** to avoid failure and injury.
8. **If something goes wrong, immediately stop operation and find the cause. Do not use again, until you have solved the problem.**
9. **Do not enter working areas, where robots, reciprocators, etc. are used, until they have been turned off.** Otherwise, they could cause injury.

3. HOW TO CONNECT

CAUTION

- **Use clean air filtered through air dryer and air filter.**
- **When using this gun for the first time after purchase, spray cleaner to clean fluid passages and remove rust preventive oil.**
- **Firmly fix hose to spray gun, to avoid that the disconnection of it, can cause bodily injury.**

1. Firmly connect an air hose to air hose joint (15) (AIR).
2. Firmly connect fluid hose to fluid hose joint (15) (FLUID).
3. Supply compressed air to the gun.
4. Supply release agent to the gun, test spray, adjust fluid output and pattern width.

4. HOW TO OPERATE

_ Atomizing air pressure varies according to viscosity and release agent property. Adjust air pressure within a range of 1.0 ~ 2.0 bar. (Use higher air pressure to spray fine mist and lower air pressure to spray coarse mist).

_ When using the pressure feed tank or pump, set the pressure to 2.0 bar or less. There are two methods to adjust fluid output:

(1) Adjust compressed air pressure to the pressure feed tank or pump.

(2) Open and close fluid adjustment knob of gun. (Hex. wrench 3 mm) Fluid output becomes zero when fluid adjustment knob of gun is turned fully clockwise. Fluid output gradually starts increasing when fluid adjustment knob is turned counterclockwise from zero point and fluid output stops increasing when fluid adjustment knob is turned 4 turns and more counterclockwise.

_ The pattern becomes round, when the pattern adj. set (14) is completely closed. The pattern becomes oval, tourning the pattern adj. set (14) counterclock-wise. When adjustment is set, tighten the Hex. nut M6.

_ Set the spray distance from the gun to the work piece, as near as possible within the range of 50-150 mm.

5. MAINTENANCE AND INSPECTION

CAUTION

Before carrying out maintenance and inspection ALWAYS observe warning indications.

- **Never use spare parts that are not Anest Iwata originals.**
- **Never damage fluid nozzle tip, fluid needle or air cap holes.**
- **Never immerse the spray gun completely in liquids such as thinner.**

5.1 MANUAL CLEANING PROCEDURE

The fluid passages of the gun, must be cleaned thoroughly after each use. Incomplete cleaning can cause defective pattern shape.

- **Never soak air cap set in cleaning liquid for an extended period, even when cleaning.**
- **Never use metal brush to clean the gun.**

1. **Drain remaining release agent from spray gun, into a suitable container. Spray a small amount of cleaning liquid to clean fluid passages and air cap set.** Incomplete cleaning can cause failure of pattern shape and uniform particles.

2. **Clean each section with brush soaked with cleaning liquid and wipe out with waste cloth. Do not immerse the whole gun in cleaning liquid.** Otherwise, it can damage the gun. When cleaning, never scratch any holes of air cap set, fluid nozzle or needle set.

3. **Before disassembly, fully clean fluid passages.** During disassembly, do not scratch seat section.

4. **To adjust fluid needle packing** first remove, fluid needle set (5-1), piston set (9) and fluid adjustment set (12), from the gun body and turn needle packing set (6) carefully from backward using flathead screwdriver.

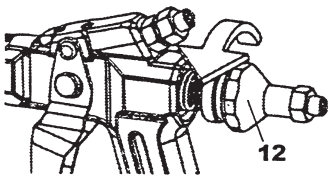
- If you tighten fluid needle packing set too much, fluid needle set will no move smoothly, resulting in release agent leakage from tip of fluid nozzle.

- If you tighten it too much, repeat again operation carefully.

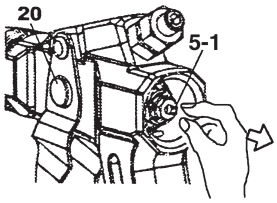
5. **To assemble fluid needle set,** first fit piston set and needle driver, then insert fluid needle set through piston set and needle driver hole from rear. Tip of fluid needle set has a sharp point, do not touch the tip during operation to avoid accidents. Be careful to not damage the tip of fluid needle by bad handling.

6. Turns pattern adj.set and fluid adj. set counterclockwise to fully open, then tighten them to the body. If pattern adj.set and fluid adj. set are not fully opened, tip of them can contact and damage body or nozzle.

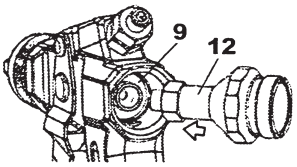
5.3 DISASSEMBLE & ASSEMBLE SEQUENCE



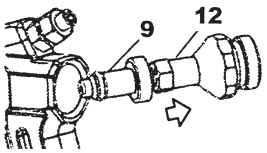
1. Remove fluid adjustment set (12).
CAUTION:
The spring inside may fly out quickly and causing injury.



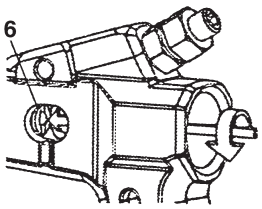
2. Remove needle driver (20) after taking out fluid needle set (5-1).



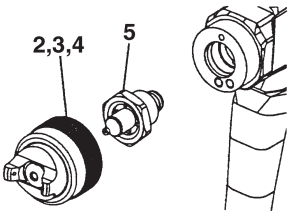
3. Screw fluid adjustment set (12) into the piston (9).



4. Remove piston (9) and fluid adjustment set (12) together.



5. Unscrew needle packing set (6) by flathead screwdriver. (Ask to authorized service center for purchasing of optional tool.)



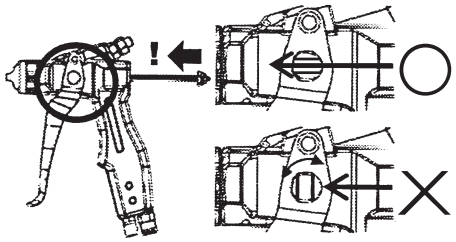
6. Remove fluid nozzle (5) air cap (2), air cap packing (3), and cover ring (4).

7. Reverse the procedure to assemble

5.2 INSPECTION & REPLACEMENT STANDARD

WHERE TO INSPECT	REPLACEMENT PART
a. Each hole passage of air cap (2) and fluid nozzle (5).	Replace if it is crushed or deformed.
b. Packing and O ring	Replace if it is deformed or worn out.
c. Leakage from seat section between fluid nozzle (5) and fluid needle set (5-1).	Replace them if there is any leakage even after cleaning.

CAUTION!



6. TROUBLESHOOTING

GUN DOES NOT SPRAY

- Fluid adj. set (12) closed.	Check and adjust.
- Tip hole of nozzle obstructed.	Check and clean.
- Needle packing too thighten.	Check and adjust.

INTERMITTENT SPRAY PATTERN

- Air escapes from fluid nozzle (5) and tapered seat of gun body	Check , clean & replace if necessary.
- Air escapes from fluid passages because O'ring is worn out.	Replace O'ring.
- Air escapes from fluid hose joint.	Tighten.

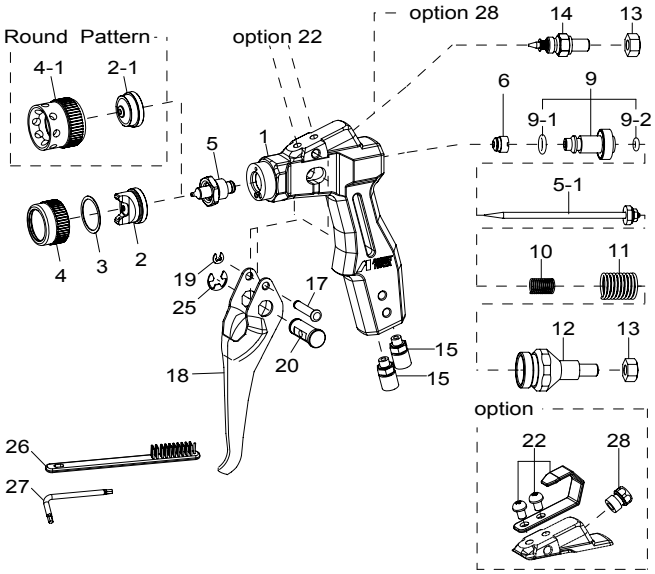
DEFECTIVE SPRAY PATTERN

- Dirty nozzle (5) or air cap (2).	Clean carefully.
- Fluid nozzle (5) or air cap (2) has been damaged.	Replace If damaged.
- Fluid nozzle (5) is loose or not properly fitted.	Tighten or remove and clean its seated section.
- Release agent viscosity too high or too low.	Dilute release agent or increase viscosity.
- Release agent output too high or too low.	Adjust fluid adj. set (12) to reduce or increase.

LEAKING

- Fluid nozzle (5), needle set (5-1), dirty, damaged, worn on seat.	Clean or replace if necessary
- Fluid nozzle (5) and gun body are loose.	Tighten.
- Fluid needle (5-1) set is loose.	Tighten.
- Fluid neeedle spring (10) is worn.	Replace.
- Needle packing set (6) dirty or too tighten.	Clean or adjust.
- Needle packing set (6) worn or too loose.	Replace or retighten.
- Piston set (9) is dirty.	Clean or replace O'ring if necessary.
- Piston O'ring is worn.	Replace.

7. SPARE PARTS LIST



REF.	DESCRIPTION	
1	BODY	
2	AIR CAP SET	
2-1	AIR CAP SET (ROUND PATTERN)	
3	PACKING	
4	COVER RING	
4-1	PROTECTION COVER	
5	FLUID NOZZLE SET	●
5-1	FLUID NEEDLE SET	●
6	NEEDLE PACKING SET	●
9	PISTON ASSY	
9-1	O RING	●
9-2	O RING	●
10	FLUID NEEDLE SPRING	
11	PISTON SPRING	
12	FLUID ADJ. ASSY	
13	HEXAGON NUT	
14	PATTERN ADJ. SET	
15	HOSE NIPPLE	
17	TRIGGER STUD	
18	TRIGGER	
19	E STOPPER	
20	PUSHING BAR	
25	E STOPPER	
27	HEXAGON WRENCH	
28	BRUSH	
22 Opt.	HOOK SET	
28 Opt.	PLUG	

● **Marked parts are wearable parts.**

NOTE: When ordering parts, specify gun model, part name with ref. No. and marked No. of air cap set, fluid nozzle and fluid needle.