

INSTRUCTION MANUAL

Multi-spray gun (Automatic type) MSA-200

Our products are produced as per international standards ISO9001

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 multi-spray 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 multi-spray gun is to be diverted to the grounded the conductive fluid 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 Δ 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	Fluid : 9.8MPa / 98 bar / 1440 PSI Air : 0.7MPa / 7 bar / 100 PSI
Noise level	69 dB (A)
Spray condition	Used Nozzle tip : NT2004CMU Atomizing air pressure : 0.15MPa / 1.5bar / 21.4PSI ※ Fluid pressure : 9.8MPa / 98bar / 1440PSI Tested with water
Measuring point	1m backwards from gun, 1.6 m height

※: Atomizing air pressure means air pressure at gun inlet when trigger is pulled and air flows.

Max. Temperature	
Atmosphere	5°C~40°C
Air Fluid	5°C~43°C

Main specifications

Model	Pressure MPa (bar / PSI)				Fluid output ml/min	Filter Size (mesh)	Air & fluid connection	Mass g (lbs)
	Max. operating fluid	Operating fluid	Operating atomizing air	Piston operating air				
MSA-200	9.8 (98/1440)	4.9 (49/720)	0.15 (1.5/21.4)	0.44 (4.4/63)	Refer to 4. Selection of nozzle tip according to kind of paint	#200	G 1/4(fluid) Φ8/tubu (atomizing air) Φ6/tubu (piston air)	680 (1.43)

※: Fluid output ; See 4. Selection of nozzle tip according to kind of paint.

1. Safety precaution

WARNING

Fire and explosion

- 1. 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.
- 2. Be sure to stop pump, reduce air pressure (operating air, atomizing air) and fluid pressure down to 0 pressure before you fit or remove nozzle tip.**
Emission of paint or solvent during operation can cause great danger.
- 3. Securely ground multi-spray gun by using fluid hose with built-in ground wire or using grounded stay.**
Use fluid hose with built-in ground wire or use grounded gun stay.
Ground resistance : Less than 1 MΩ . Check the earth stability periodically.
Securely ground pump, multi-spray gun, workpiece and containers containing paint or solvent.
If not, insufficient grounding can cause fire and explosion due to static electric sparking.
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 multi-spray gun toward people or animal.**
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 multi-spray gun resulting in great danger.
- 3. Be sure to release air pressure and fluid 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 fluid and thinner to multi-spray gun.



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. Wear earplugs if necessary.**
Noise level can exceed 85 dB(A), depending on operating conditions and painting site.
- 4. Be sure to stop pump, reduce air pressure (operating air, atomizing air) and fluid pressure down to 0 pressure before you fit or remove nozzle tip.**
Emission of paint or solvent during operation can cause great danger.
- 5. Never try to stop leaks by hand, when paint leaks.**
In that case, stop pump immediately and reduce paint pressure down to 0 pressure.
High pressure paint emitted through small hole can pierce an iron plate and can cause severe injury since paint 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.



Burst of fluid hose

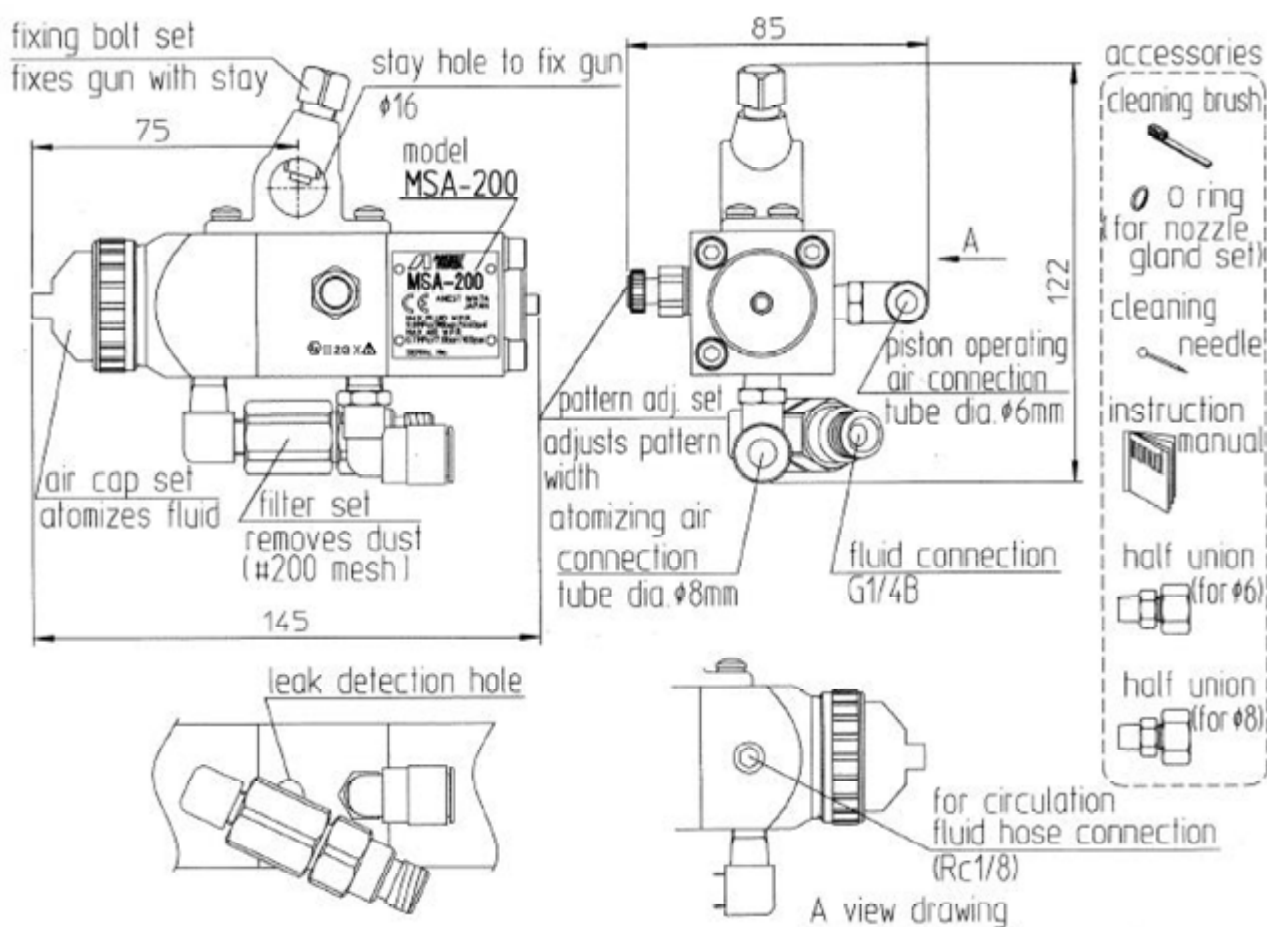
- 1. Never use cracked, damaged, bent or crushed fluid hose.**
High pressure paint emitted at small hole can pierce an iron plate and cause great danger.
- 2. Never bend fluid hose with a radius of less than permitted bend radius.**
Contact the shop who sold the hose to you, or us, about permitted bend 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

- Never alter this multi-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.
- Securely connect fluid hose.**
If hose is disconnected during operation, hazardous hose movement and paint ejection will cause severe bodily injury.
- If something goes wrong, immediately stop operation and find the cause. Do not use again until you have solved the problem.**

2.Name of components and 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.

3.Painting job

3-1 Fit the gun, connect hoses and clean inside of gun.

⚠ WARNING	Securely connect fluid hose. When paint leaks, never try to stop it by hand. In that case, stop pump immediately and reduce paint pressure down to 0 pressure.
⚠ CAUTION	Be sure to use fluid hose with built-in ground wire in order to connect to the ground.

Hint !	Adjust spray distance to nearest level possible as long as the finish is satisfactory. based on standard spray distance as about 25cm (It differs according to conditions)
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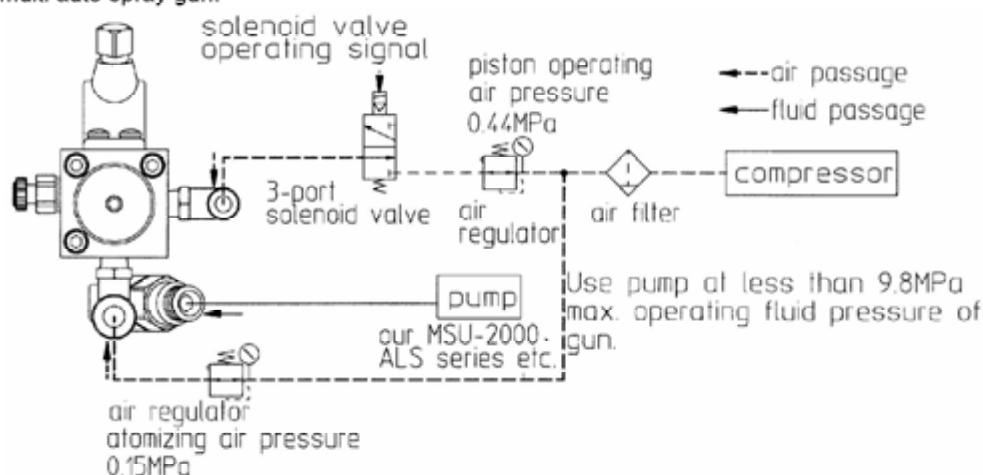
Job 1. Fit multi-auto spray gun to stay (round bar) and securely fix in spray direction.

Job 2. Securely connect fluid hose. Fully insert tubes for piston operating air and atomizing air into the innermost of elbow union.

3-2 Operating circuit (reference)

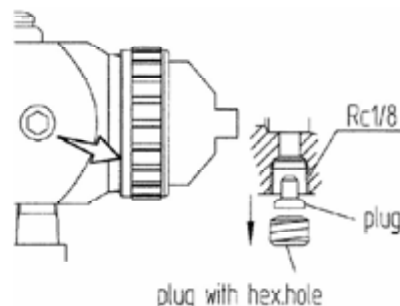
Important	Use clean air to operate multi auto spray gun which is filtered through air dryer or air filter. If operating air is dirty or contains lots of moisture, it can taint piston or fail operation due to deposited moisture. Use air tube of inner dia. $\phi 4$ and less than 10m length to operate air between 3-port solenoid valve and multi auto spray gun. Larger inner dia. or longer air tube can fail gun operation by delaying gun operation (start spray or end spray).
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•Refer to the below example about operating circuit. And separately prepare for other products than multi auto spray gun.



Install compressor and solenoid valve where there is no organic solvent and inflammable gas.

Important	<p>Connect fluid hose when using it in the circulating system.</p> <ul style="list-style-type: none"> -Remove plug with hex. hole by hex. bar of 5mm flat wrench. -Screw M2.5 into plug and pull it from gun body. -Fit fluid hose joint and connect fluid hose, both of which user can purchase on the market. <p>Use of only plug with hex. hole can fail color change due to remaining paint. Use both plugs.</p>
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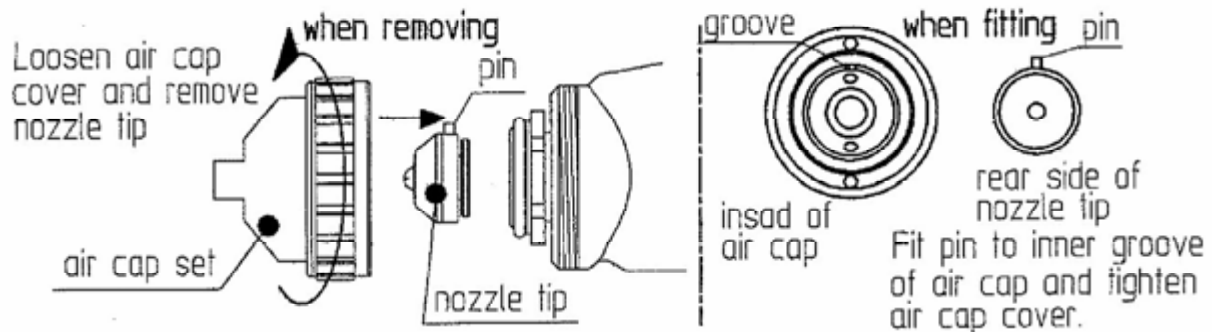


3-3 Fitting or removing nozzle tip (each tip is optional except attached NT-2004CMU).

※ Refer to 4 on page 14 and prepare nozzle tip separately.

⚠ WARNING

Be sure to stop pump, reduce air pressure (operating air, atomizing air) and fluid pressure down to 0 pressure before you fit or remove nozzle tip.



3-4 Painting job

⚠ WARNING

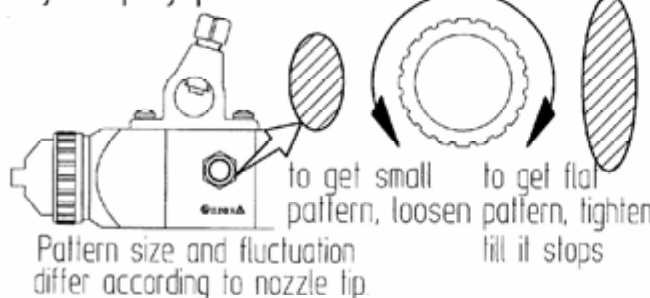
During painting, be sure to wear protective cover such as glasses, mask or gloves to avoid serious injury caused by paint or solvent which might enter your eyes or you might inhale.

HINT!

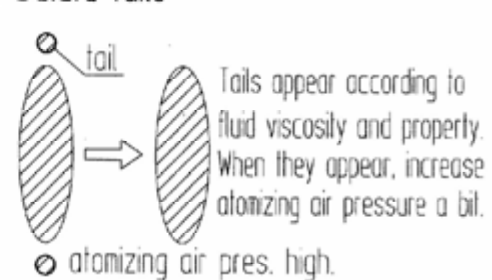
- As fluid pressure and air pressure increase, paint mist becomes finer and finishing becomes better. But on the other hand, high pressure can be dangerous, precipitate corrosion of equipment and nozzle tip, increase spray mist and decrease transfer efficiency. Adjust pressure to the lowest level possible (fluid pressure 4.9MPa, atomizing air pressure 0.15MPa) as long as the finish is satisfactory.
- Adjust spray distance to nearest level possible as long as the finish is satisfactory in order to reduce spray mist and increase transfer efficiency.

3-5 Adjust spray pattern and delete tails

Adjust spray pattern

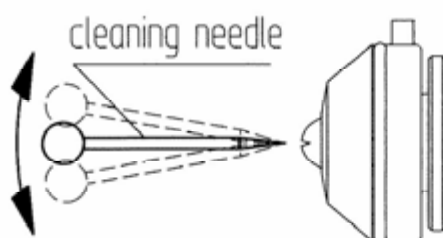


Delete tails



3-6 Solve clogging of nozzle tip

When using attached cleaning needle



When blowing with air, do so after removing nozzle tip from air cap



3-7 Cleaning and maintenance

Fully clean after job is finished in order to get longer lifetime and good performance at next job.

⚠ WARNING	During cleaning, 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, reduce air pressure (operating air, atomizing air) and fluid pressure down to 0 pressure before disassembling multi-spray gun.
⚠ CAUTION	Never use commercial or other parts instead of ANEST IWATA original spare parts.

Important	<ul style="list-style-type: none"> • Do not immerse the whole multi auto gun in thinner. • Do not clean gun while aiming gun tip upwards.
	<ul style="list-style-type: none"> • Clean air cap set with attached brush, not by metallic brush. <p>If not, distorted or damaged air holes can fail pattern shape or spray particles.</p>

Process	Where to clean	How to clean	Remarks
1	nozzle tip	Remove from gun and clean it.	refer to 3-3
2	fluid passage of gun body	Clean fluid passage with cleaning liquid which is compatible with paint being used.	
2	filter set	① Remove filter joint[24-3]. ② Remove filter set[24-2] and clean it.	refer to 16.6

4. Selection of nozzle tip according to kind of paint.

HINT!	<p><Numbering system></p> <p>NT-20 04</p> <p>Pattern width 20 cm at 25cm spray distance. Fluid output 0.4ml/sec/cm of width at fluid pressure 4.9MPa (49bar / 720PSI) atomizing air pressure 0.15MPa (1.5bar / 21.4PSI)</p>
	Use nozzle tip with large figures of last 2 digits when you spray paints of high viscosity or easily clogged.

※ Refer to the below chart and select proper nozzle tip.

model	fluid output l/min	pattern width cm	model	fluid output l/min	pattern width cm
NT-1502CMU	0.18	13 ~ 18	NT-3003CMU	0.54	28 ~ 33
NT-1503CMU	0.27	13 ~ 18	NT-3004CMU	0.72	28 ~ 33
NT-2002CMU	0.24	18 ~ 23	NT-3005CMU	0.90	28 ~ 33
NT-2003CMU	0.36	18 ~ 23	NT-3006CMU	1.08	28 ~ 33
NT-2004CMU	0.48	18 ~ 23	NT-3503CMU	0.63	33 ~ 38
NT-2005CMU	.60	18 ~ 23	NT-3504CMU	0.84	33 ~ 38
NT-2503CMU	.45	23 ~ 28	NT-3505CMU	1.05	33 ~ 38
NT-2504CMU	.75	23 ~ 28	NT-3506CMU	1.26	33 ~ 38
NT-2505CMU	.60	23 ~ 28			

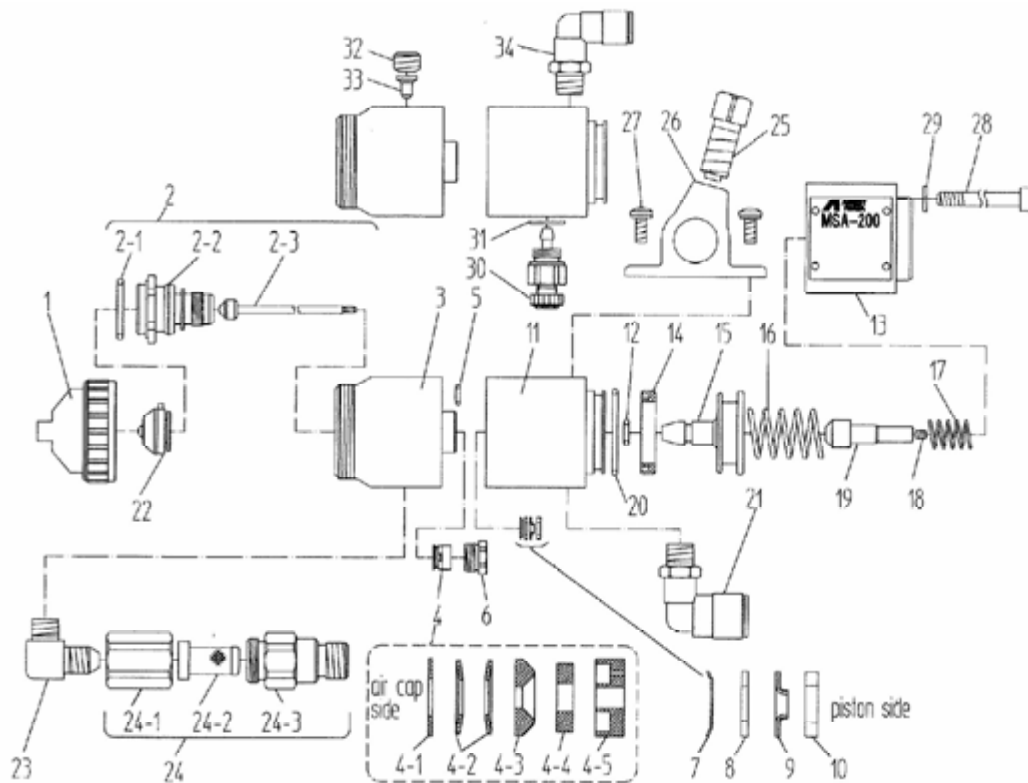
5.Problems and remedies

Important

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

problem	where it happened	where to check	part no.	cause, check, confirm	tighten	adjust	clean	replace	
air leaks	each elbow union connection	each elbow union connection	21 34	weak tightening	<input type="radio"/>				
	air cap set	body module set, piston	11 15	damage on seat dust on seat damage, wear			<input type="radio"/>	<input type="radio"/>	☆ ☆ ☆
		air valve spring	16	weak spring				<input type="radio"/>	☆
fluid leaks	filter set	filter set connection	23 24-1 24-2	weak tightening damage on seat dust on seat	<input type="radio"/>			<input type="radio"/>	
	tip of nozzle tip, holes of air cap set,	nozzle gland set ~ head module set ~ fluid needle set	2-2	weak tightening	<input type="radio"/>			<input type="radio"/>	☆
			2-3,3	damage on seat				<input type="radio"/>	☆
			4	damage on seat			<input type="radio"/>	<input type="radio"/>	☆
		fluid needle spring nozzle tip~nozzle gland set air cap set	17	weak spring				<input type="radio"/>	
			22	damage on seat				<input type="radio"/>	
	body leak detection hole	needle packing set ~ needle set ~ needle packing seat	2-2	dust on seat			<input type="radio"/>	<input type="radio"/>	
			1	weak tightening	<input type="radio"/>				
small or no fluid output	fluid supply route	fluid pressure, filter set, fluid hose	2-4	low setting pressure clogged		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	tip of gun	nozzle tip	22	clogged			<input type="radio"/>		
	safety lock	knob	15	unlock		<input type="radio"/>			
	paint	fluid viscosity		high viscosity		<input type="radio"/>			
large buildup on air cap set	air cap set	air cap holes	1	clogged, deformed or damaged paint buildup			<input type="radio"/>	<input type="radio"/>	
		air cap set ~ nozzle tip	1, 22	deformed or damaged passage				<input type="radio"/>	
		nozzle tip	22	clogged wear, damage			<input type="radio"/>	<input type="radio"/>	
incomplete pattern	same as above								
	Atomizing air route	atomizing air pressure		too low (tails arise) too high (heavy on both ends of spray pattern)		<input type="radio"/> <input type="radio"/>			

6. Part list



○ marked parts are consumable parts.

No.	Part name	Q'ty	Remarks
1	air cap set	1	
2	nozzle-needle set	1	
2-1	o ring	1	
2-2	nozzle gland set	1	
2-3	fluid needle set	1	
3	head module set	1	
4	needle packing set	1	
4-1	washer	1	
4-2	spring washer	2	
4-3	packing holder	1	
4-4	sub packing	1	
4-5	fluid needle packing	1	
5	o ring	2	SM-5
6	needle packing seat	1	
7	snap ring	1	
8	washer	1	
9	air valve packing	1	
10	needle spring holder	1	
11	body module set	1	
12	o ring	1	P-6
13	cylinder module set	1	
14	Y packing	1	
15	piston	1	

No.	Part name	Q'ty	Remarks
16	needle spring	1	
17	stopper set	1	
18	screw	1	female
19	needle spring holder	1	
20	o ring	1	
21	elbow union	1	for ϕ 8
22	nozzle tip	1	NT-2004CMU
23	elbow	1	
24	filter set	1	
24-1	filter case	1	
24-2	filter	1	#200 mesh
24-3	filter joint	1	
25	fixing bolt set	1	
26	clip	1	
27	screw for washer	4	M4
28	bolt	3	M5
29	spring washer	3	for M5
30	pattern adj. set	1	
31	packing	1	
32	plug with hex.hole	1	
33	plug	1	
34	elbow union	1	for ϕ 6



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