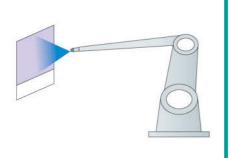


LUMINA AUTOMATIC SPRAY GUN

APPLICATION EXAMPLES

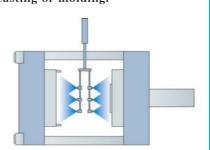
COATING

Robotic Painting



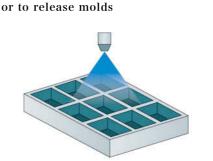
MOLDING

Spraying release agents into die casting or molding.



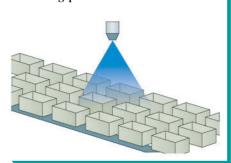
COOLING

Spraying water to cool, or to release molds



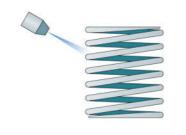
FOOD PROCESSING

Spraying cooking oils onto a baking pan



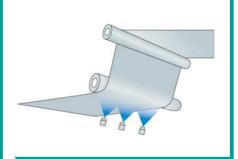
MARKING

Spraying ink to distinguish models or indicate defective products



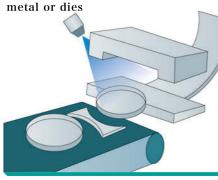
SURFACE TREATMENT

Spraying waterproof or antistatic agents onto paper



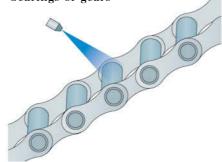
METAL STAMPING

Applying lubricants to sheet



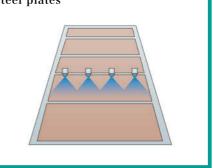
OIL SUPPLY

Spraying lubricants onto chains, bearings or gears



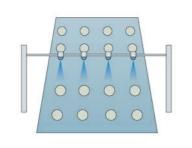
RUST PREVENTION

Spraying rust-preventive oils onto steel plates



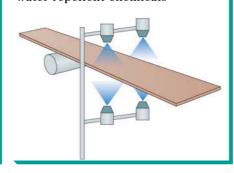
FOOD HUMIDIFICATION

Spraying water to dampen bread or cookie surfaces



CHEMICAL SPRAYING

Coating lumber with water-repellent chemicals



ODOR REMOVAL

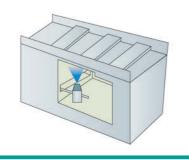
Spraying deodorizing agents in pig pens, dump yards





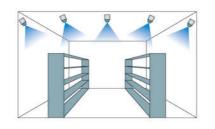
FLUX

Spraying flux onto a printed circuit board prior to soldering

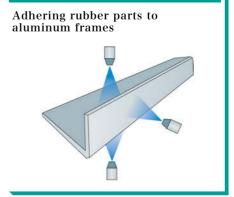


FACTORY HUMIDIFICATION

Spraying water in printing factories or for mushroom cultivation



ADHESIVE

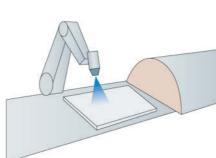


MIXING



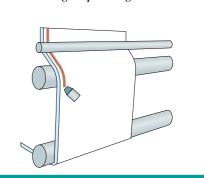
SEMICONDUCTOR FABRICATION

Spraying resists onto silicon wafers



LINE MARKING

Line marking in printing machines



OTHER USES

AUTOMOBILE

- · Coating rust-preventive oils onto disk brakes
- · Coating to prevent degradation and improve sliding of rubber products
- · Coating solid lubricants onto pistons or camshafts
- · Spraying anti-spatter when welding

FOOD

- · Spraying brandy onto cakes
- · Spraying alcohol for disinfection
- Spraying salt solution onto fried eggs
- · Humidification to prevent drying of bread dough
- · Humidification to prevent rice grains sticking to conveyors in frozen food manufacturing
- · Humidification to encourage fermentation
- · Defrosting frozen foods by spraying water onto them
- · Applying glue to label food containers
- · Spraying glue remover to make it easier to remove noodle cup lids

AND MORE

- · Fluoropolymer coating for chemical or wear resistance
- · Spraying saltwater to test a material's rust endurance
- · Painting exterior boards of houses
- · Humidification for paper, wood, cardboxes and tissues
- · Spraying antistatic agents onto plastic products

COMPACT AND EASY-TO-OPERATE, LUMINA STANDARD MODELS

Number of Air Inlets

Lumina automatic spray guns include the ST-5 series, with common air inlet for atomizing and piston-actuating air, and the ST-6 and ST-10 series with separate air lines.

The automatic spray gun works by feeding high-pressure air of approximately 0.3 MPa to open a valve. The ST-5 has a single air inlet, so it always produces a fine mist of strong atomizing air. It is well suited to humidification.

The ST-6 and ST-10 series have 2 air inlets, so by setting the air pressure low(≤0.1 MPa) liquid can be applied gently without overspraying. Yet fine spraying, like that of the ST-5, is also possible. These series can be used for many different purposes, such as the application of oils, paints, and adhesives without overspraying.

Fan Pattern or Round Pattern

There are 2 basic types of spray patterns: fan and round. To spray paint or other substance over a wide area, fan is better. Round pattern is best for small areas or markings.

ST series Material List

	Model	Liquid Nozzle Needle	Air Cap	Body	Other Parts
Standard	ST	•	×	×	×
Made partly of stainless steel	STA/UA	•	•	•	×
Made of stainless steel in all areas	STS	•	•	•	•

- ●303 Stainless steel ×Chrome-plated brass
- * All packings in the fluid passageways are corrosive resistant in the ST series.

Fan Pattern



A wide fan-shaped pattern. To switch to round pattern, close the pattern adjuster.

Round Pattern



Pattern that spreads in the shape of a 15° cone



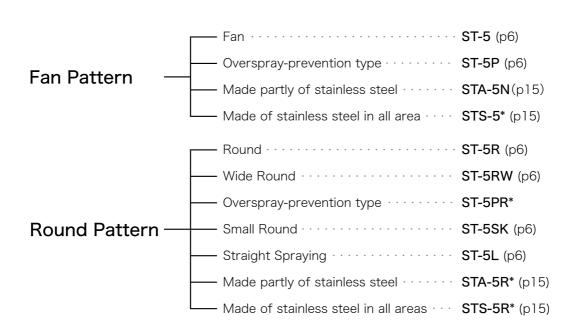
High-pressure spray type

Common air inlet for atomizing and piston-actuating air

1 air inlet

Recommended air pressure 0.2-0.5 MPa

(At air pressure below 0.2 MPa the piston is not actuated and no liquid comes out.)



^{*} These products are not described. Please contact us directly for details.



ST-6 series

Oversprayprevention type Separate air lines for atomizing and piston-actuating air

2 air inlets

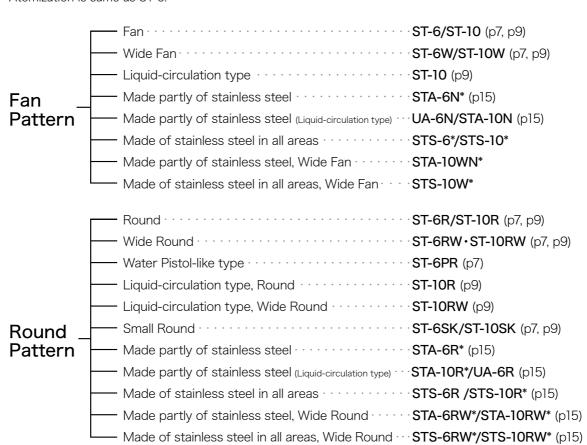
Recommended piston-actuating air pressure 0.2–0.5 MPa Recommended atomizing air pressure 0.01–0.2MPa

Since atomizing air and piston-actuating air are separate, low pressure can be used for gently spraying, without overspraying.

ST-10 series

Liquidseries circulation type Superior to ST-6. Supports liquid circulation, with fine pitch liquid adjuster.

Atomization is same as ST-6.



Spray Data ST-6-1.3X

Atomizing Air Pressure (MPa)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)
0.03	200	70	22
0.05	230	46	33
0.07	250	30	40
0.1	270	22	64

Data conditions for above: using water, flow rate 50 mL/min, 1-meter gravity fed, 300-mm distance (for particle size, 200-mm distance).

Atomizing Air Press	ure and Particle Size
0.03MPa	0.3MPa
Large-droplet mist	Fine mists to produce beautiful finishes

^{*} These products are not described. Please contact us directly for details.



High-pressure spray type

For use only at air pressure over 0.2 MPa. Fine, strong mist makes it suitable for humidification and cooling.



Series

Data below collected at 1-meter gravity fed, liquid adjuster full-throttle, 300-mm distance (for particle size, 200-mm distance), 0.3 MPa air pressure, using water

ST-5 and cooling. Fan and Round

Flat fan-pattern. Used for humidification

To switch to round pattern, close the pattern adjuster.

Fan

Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
ST-5	φ0.5φ1.0φ1.3φ2.0	0- 65 0-210 0-350 0-480	250 360 420 420	11 15 16 17	63 70 87 104	280

ST-5R Round



Round pattern. Suitable for small areas or markings.

Round



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
	ϕ 0.5	0- 60	φ 85	15	38	
ST-5R	φ1.0	0-250	φ110	27	50	250
31-3K	φ1.3	0-380	φ120	33	60	250
	φ2.0	0-600	φ120	35	82	

ST-5SK **Small Round** Used for spraying tiny dots or narrow lines. Small Round Model Nozzle Pattern Particle Air Mass Size Rate Width Size Consumption (mm) (mL/min) (mm) (SMD μ m) (L/min) $*\phi 2-10$ φ0.5 0- 58 19 18 ST-5SK φ1.0 0–260 *φ2–10 21 * at a distance of 5 to 20 mm. Flow rate: 1.5 mL/min

ST-5RW

Wide Round



Wider round pattern. A spiral stream enables effective application on concave surfaces. It reduces dirt and clogging of caps.

Wide Round



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
	$\phi 0.5$	0- 84	φ100	13	72	
ST-5RW	φ1.0	0-280	φ130	20	86	250
31-364	φ1.3	0-460	φ140	25	98	250
	φ2.0	0–580	φ150	61	102	

ST-5P

Overspray-prevention type, Fan

Atomizing air is held at low pressure inside the body to prevent overspraying. Particles are larger. Suitable for preventing overspraying and when a single air hose is preferred*.

Fan and Round



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
	φ0.5	0- 50	270	16	20	
CT ED	φ1.0	0-180	360	110	16	000
ST-5P	φ1.3	0-260	450	92	17	280
	φ2.0	0-420	450	118	16	

Straight spraying



Used for straight spraying at distances such as that for die lubrication in die casting.



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
ST-5L	φ1.3	0–185	φ60	26	70	280
31-5L	φ2.0	0–280	φ70	23	90	200

^{*}Recommended air pressure: 0.2-0.25MPa.



Atomizing air pressure can be set freely from 0.01 MPa upwards. All-purpose type, from misting with controlled overspray to fine spraying.

No nipple type To order a product with nipples, add an "X" to the end of the product numbe

Series

Data below collected at 1-meter gravity fed, liquid adjuster full-throttle, 300-mm distance (for particle size, 200-mm distance), 0.1 MPa air pressure, using water

ST-6



Basic standard model of the ST series. Used for many purposes such as lubrication or coating.

Fan

To switch to round pattern, close the pattern adjuster.

Fan and Round



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
	φ0.5	0- 62	260	28	46	
ST-6	φ1.0	0-200	360	39	54	285
31-0	φ1.3	0-390	420	43	65	200
	ø2.0	0-570	460	47	76	

ST-6R Round



Round pattern. Suitable for small areas or markings.

Round



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
	ϕ 0.5	0- 64	φ 75	32	30	
ST-6R	φ1.0	0-230	φ 90	41	35	255
31-0K	φ1.3	0-360	φ 95	44	40	255
	φ2.0	0-600	φ100	49	58	

ST-6SK

Small Round

Used for spraying tiny dots or narrow lines.

Small Round

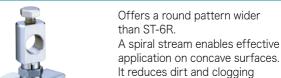


Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)		Mass (g)
ST-6SK	φ0.5	0- 50	*ø2-10	29	14	255
51-65K	φ1.0	0-162	* <i>ϕ</i> 2–10	32	36	200

* at a distance of 5 to 20 mm. Flow rate 1.5 mL/min

ST-6RW

Wide Round



of caps.

Wide Round



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
	φ0.5	0- 64	φ100	19	52	
ST-6RW	φ1.0	0-260	φ120	34	66	255
31-01.00	φ1.3	0-400	φ140	34	72	200
	φ2.0	0–600	φ150	34	76	

ST-6W

Wide Fan

Offers a fan pattern wider than ST-6. 3 air inlets.

*Data collected at 0.1MPa atomizing air, and 0.25 MPa pattern air.

Wide Fan

Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
	φ0.5	0- 60	360	14	90	
ST-6W	φ1.0	0–200	380	14	96	300
	φ1.3	0-380	400	17	126	

ST-6PR

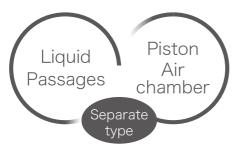
Water pistol-like spray



Oil can be applied to points with a water pistol-like spray, without misting. The liquid needs to be pressure-fed.

*Not available without nipples and joints.

Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
ST-6PR	φ0.5	210	— Data collec	— ted at 0.2 N	6 MPa liquid pr	280



Liquid passages and piston air chamber are separated from each other.

Multiple packing structure prevents liquid from penetrating the piston chamber.

New liquid volume adjuster pitch 0.5 mm for precise control and rigid lock.

With liquid circulation for liquids that include solids and liquids that are easily separated. Features a special fine-pointed needle to improve liquid flow.

With corrosive- and chemical-resistant perfluoro O-rings (special fluorine-containing rubber).

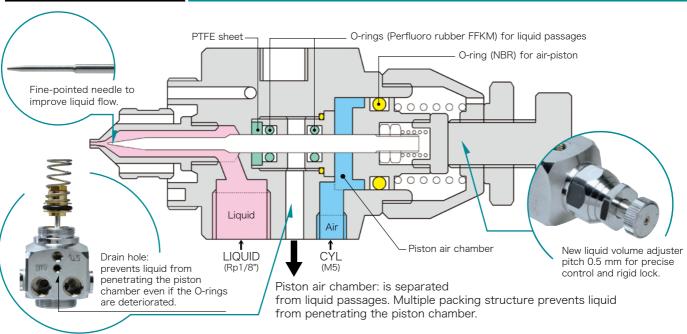
A solenoid valve on each of the 2 air lines prevents overspraying of the large particles produced at the beginning and end of spraying.

Tube fittings not included.

Atomization is same as ST-6.



Cross-Section Drawing



ST-10 Fan



Standard model of the ST-10. Used for many purposes such as coating or painting. To switch to round pattern, close the pattern adjuster.

*Particle size data collected at 30 mL/min.

Spray Pattern

Fan and Round



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
ST-10-0.5X	ϕ 0.5	0- 50	240	26	48	
ST-10-1.0X	φ1.0	0-180	280	19	56	365
ST-10-1.3X	φ1.3	0-280	380	19	69	303
ST-10-2.0X	φ2.0	0-480	400	21	91	

ST-10R Round



Round pattern. Suitable for small areas or markings. *Particle size data collected at 30 mL/min.

Spray Pattern

Round

Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
ST-10R-0.5X	ϕ 0.5	0- 50	φ 80	16	29	
ST-10R-1.0X	φ1.0	0-200	φ100	16	38	220
ST_10P_1 3Y	413	0-300	4130	16	12	330

 $\phi 140$

ST-10SK

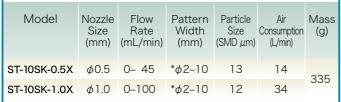
Small Round

Used for spraying tiny dots or narrow lines. *Particle size data collected

Spray Pattern

Small Round

at 10 mL/min.



* at a distance of 5 to 20 mm. Flow rate 1.5 mL/min

ST-10RW

ST-10R-2.0X

Wide Round

62

16



φ2.0 0-550

Offers a round pattern wider than ST-10R. A spiral stream enables effective application on concave surfaces. It reduces dirt and clogging of caps.

Spray Pattern

Wide Round



Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
ST-10RW-0.5X	ϕ 0.5	0- 86	φ100	16	54	
ST-10RW-1.0X	φ1.0	0-240	φ130	16	70	330
ST-10RW-1.3X	φ1.3	0-450	φ160	17	82	330
ST-10RW-2.0X	φ2.0	0-650	φ170	17	88	

ST-10W

Wide Fan



Offers a fan pattern wider than ST-10.
3 air inlets.

*Particle size data collected at 0.1 MPa atomlzing air, and 0.25 MPa pattern air. Flow rate: 30 mL/min.

Spray Pattern

Wide Fan

Model	Nozzle Size (mm)	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g)
ST-10W-0.5X	φ0.5	0- 60	300	13	93	
ST-10W-1.0X	φ1.0	0-200	340	12	105	355
ST-10W-1.3X	φ1.3	0–320	400	12	147	

G2 Liquid Adjuster (option)



Designed so that even when fully opened the adjuster cannot fall off. The application of torque prevents the setting from deviating.

Please see p16 for details.

Micrometer Liquid Adjuster (option)



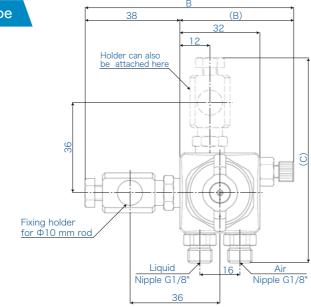
With a combination of 50 circular graduations per rotation, and horizontal graduations, liquid volume can be grasped at a glance. This enables highly precise adjustment.

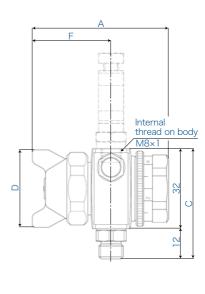


- All packings in the fluid passageways are corrosive resistant in the ST series.
- Standard fixing holder is for ϕ 10 mm rod. ϕ 12 mm holder is also available.
- The dimension of A varies depending on the positions of the liquid adjuster.

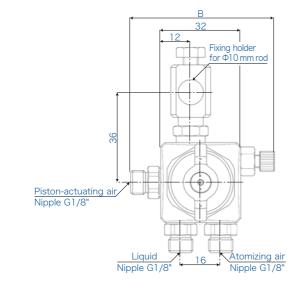
Nipple type

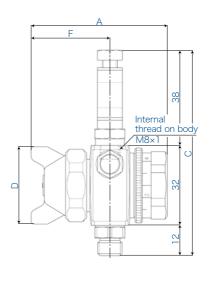
ST-5





ST-6





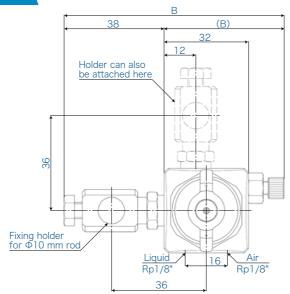
(mm)

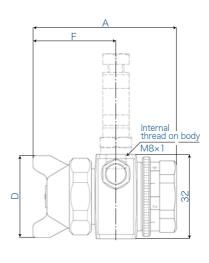
(Dimensions) Nipple type								
Model	А	B(B)	C(C)	D	F			
ST-5	55–60	85 (47)	44(82)	φ31	32			
ST-5R	50-55	73 (35)	44(82)	φ26	27			
ST-5RW	50-55	73 (35)	44(82)	φ26	27			
ST-5SK	50-55	73 (35)	44(82)	φ25	27			
ST-5L	87–92	73 (35)	44(82)	φ26	27			
ST-5P	55–60	85 (47)	44(82)	φ31	32			
ST-6	55–60	59	82	φ31	32			
ST-6W	55–60	68	82	φ31	32			
ST-6R	50-55	47	82	φ26	27			
ST-6RW	50-55	47	82	φ26	27			
ST-6SK	50-55	47	82	φ25	27			
ST-6PR	50–55	61	97	φ26	27			

No nipple type					(mm)
Model	А	B(B)	C(C)	D	F
ST/STA/STS-5X	55-60	85(47)	32(70)	φ31	32
ST/STA/STS-5RX	50-55	73(35)	32(70)	φ26	27
ST/STA/STS-5RWX	50-55	73(35)	32(70)	φ26	27
ST/STA/STS-5SKX	50-55	73(35)	32(70)	φ25	27
ST/STA/STS-6X	55–60	47	70	φ31	32
ST/STA/STS-6WX	55–60	32	70	φ31	32
ST/STA/STS-6RX	50-55	35	70	φ26	27
ST/STA/STS-6RWX	50-55	35	70	φ26	27
ST/STA/STS-6SKX	50-55	35	70	φ25	27
ST/STA/STS-10X	82–87	50	70	φ31	37
ST/STA/STS-10WX	82–87	35	70	φ31	37
ST/STA/STS-10RX	78–83	38	70	φ26	33
ST/STA/STS-10RWX	78–83	38	70	φ26	33
ST/STA/STS-10SKX	78–83	38	70	φ25	33

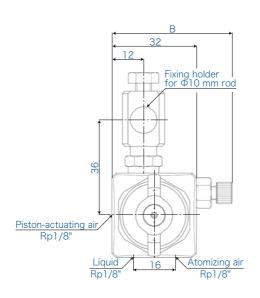
No nipple type

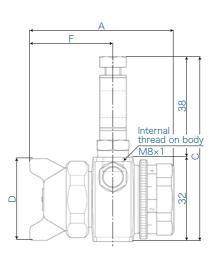
ST-5X STA-5X STS-5X



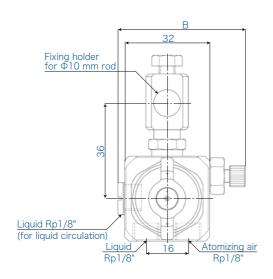


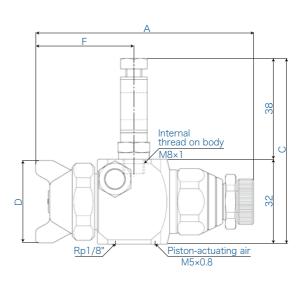
ST-6X STA-6X STS-6X





ST-10X STA-10X STS-10X





(mm)

ST-6-C8/ST-10-C8

Long nozzles for internal coating

Enables application in previously impossible places, such as intricate, narrow parts and the inner surface of tubular items.



Features

The inner surfaces can be painted by inserting a nozzle inside the rotating tubular item ($\geq \phi 13$).

Angles are 90°, 45° (downward) and 0° (forward). The fan pattern is in a vertical plane parallel to the tube, enabling efficient, uniform coating. Round pattern is also available.

It is possible and easy to replace just the spray head.

This is an external mix type. Air and liquid are fed separately up to the nozzle tip, through a long, dual-structured tube.

Liquid circulation system makes it suitable for liquids that are easily separated.

Applications

Paints, Silicone oils, Lubricants, Rust-preventive oils, Primers, etc.

Other features

A solenoid valve on each of the 2 air lines prevents overspraying of the large particles produced at the beginning and end of spraying.

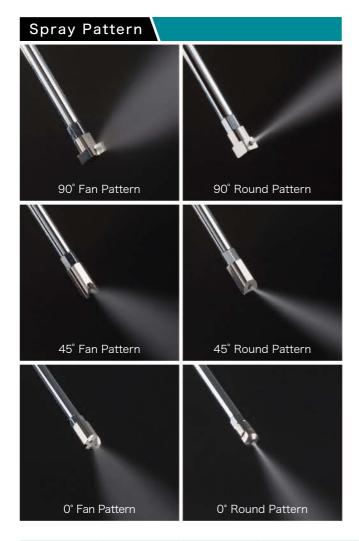
Standard lengths are 100 mm and 150mm. Other lengths are available.

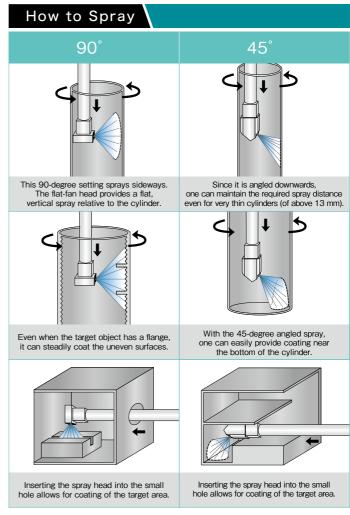
No nipples included.

Round Rattern



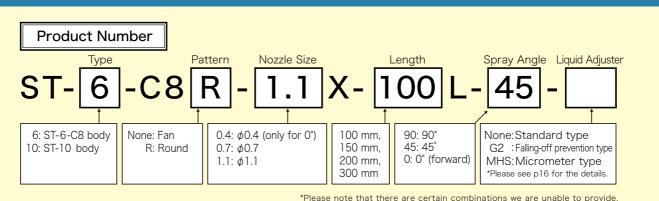
Fan Pattern





Spray Pattern	Nozzle Size (mm)	Spray Angle	Flow Rate (mL/min)	Pattern Width (mm)	Particle Size (SMD μm)	Air Consumption (L/min)	Mass (g) (100 mm)
Fan	φ0.7	90°	0–50	50	15	23	
Fan	φ0.7	45°	0–50	50	22	18	
Fan	φ1.1	90°	0-100	50	20	25	000
Fan	φ1.1	45°	0–86	50	21	21	290
Round	φ1.1	90°	0–108	20	20	27	
Round	<i>φ</i> 1.1	45°	0-84	20	20	17	

Data conditions for above: 0.1 MPa atomizing air, 1-meter gravity fed, 50-mm distance (for particle size, 200-mm distance), liquid adjuster full-throttle (for particle size, 3mL/min), using water.

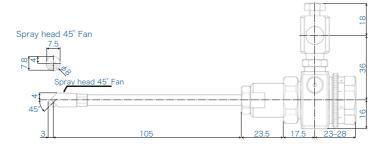


*Please note that there are certain combinations we are unable to provide.

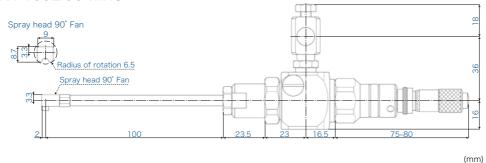
ST-6-C8/ST-10-C8

Dimensions

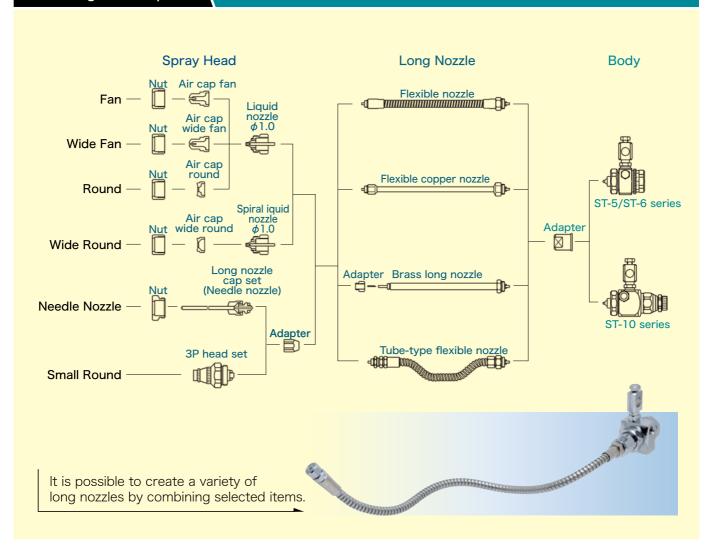




ST-10-C8-0.7X-100L-90-MHS



Other long nozzle options



Made of stainless steel

The material for standard products (chrome-plated brass) is changed to 303 stainless steel. This enables use for applications such as food and drug manufacture.

The STA series are partly made of stainless steel (in parts subject to contact with liquids).

The STS series uses stainless steel in all areas.

Dimensions and spray data are the same as for the standard type. (Refer to pp6-9.) There are many stainless steel models other than those below. Please contact us for the details.

No nipples included. For detailed products numbers, refer to p16.









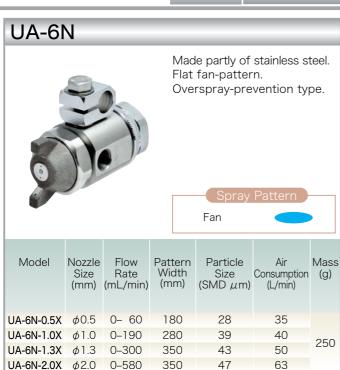




Liquidcirculation type

Made partly of stainless steel

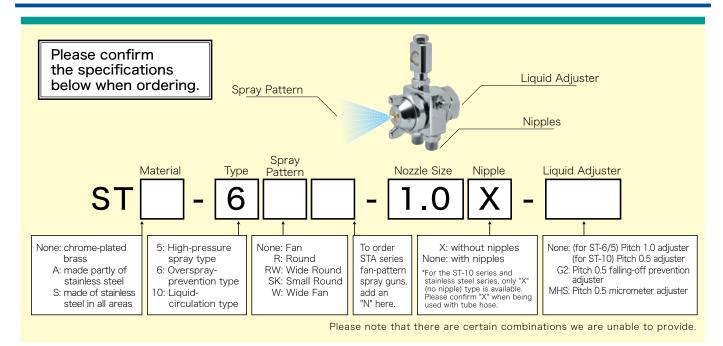
303 stainless steel used in parts subject to contact with liquids.
Compact and light. Supports liquid circulation.





Data conditions for above: 0.1 MPa atomizing air, 1-meter gravity fed, 300-mm distance (for particle size, 200-mm distance), liquid adjuster full-throttle, using water.

ST/STA/STS PRODUCT NUMBER



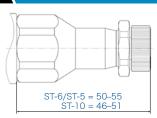
G2 Liquid Adjuster

Designed so that even when fully opened the adjuster cannot fall off. The application of torque prevents the setting from deviating.

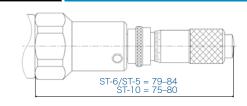
Micrometer Liquid Adjuster

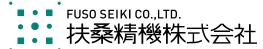
With a combination of 50 circular graduations per rotation, and horizontal graduations, liquid volume can be grasped at a glance. This enables highly precise adjustment.











6-12-17, Hon-komagome, Bunkyo-ku, Tokyo, 113-0021, JAPAN Phone +81-3-3947-1334 https://www.fusoseiki.co.jp/en/