

No Drip Atomizing Nozzles



Droplet Size

One of the primary reasons atomizing spray nozzles are used is because of their fine droplet size. Benefits of fine droplet size include even coating and liquid conservation. For reference, a large raindrop is around 6,000 microns (0.236") in diameter. Standard liquid nozzles produce droplet sizes ranging from 4,000 microns (0.157") down to 300 microns (0.012") in diameter. EXAIR's Atomizing Nozzles produce minuscule droplet sizes in the range of 100 microns (0.004") to 20 microns (0.0008")!

Droplet size can be adjusted by varying either the air or liquid pressure. An increase in air pressure or decrease in liquid pressure will generally produce a smaller droplet size. Below is a chart showing various models of atomizing air nozzles and their droplet sizes at selected pressures.

Droplet Size			
Model	Liquid Pressure	Air Pressure	Droplet Size μm^*
AN1020SS	20 PSI	40 PSI	71
	40 PSI	65 PSI	83
ER1020SS	5 PSI	40 PSI	39
	20 PSI	40 PSI	57
SR1020SS	4" Siphon Height	20 PSI	25
	4" Siphon Height	40 PSI	22

* Volume Median Diameter $D_V(50.0)$ of liquid droplets.

1 μm = 1 micron = 0.00004". All tests performed with water.

Spray Angle

The Spray Angle is the trigonometric angle created by the width of the spray pattern and the distance at which it is measured. This angle can vary greatly within a given family of atomizing nozzles depending on flow rates and pressures, but will generally fall into the ranges below:

Spray Angle		
Family	Minimum Angle	Maximum Angle
Internal Mix Narrow Angle Round Pattern - AN1010SS, AN2010SS, etc.	20	45
Internal Mix Wide Angle Round Pattern - AW1010SS, AW2010SS, etc.	50	90
Internal Mix Flat Fan Pattern - AF1010SS, AF2010SS, etc.	50	120
External Mix Round Pattern - ER1010SS, ER2010SS, etc.	25	60
External Mix Narrow Angle Flat Fan Pattern - EF1010SS, EF2010SS, etc.	35	70
External Mix Wide Angle Flat Fan Pattern - EB1010SS, EB2010SS, etc.	50	105
Siphon Fed Round Pattern - SR1010SS, SR2010SS, etc.	20	50
Siphon Fed Flat Fan Pattern - SF1010SS, SF2010SS, etc.	50	100

Atomizing Nozzles

Internal Mix Deflected Flat Fan Pattern - 1/4 NPT



Model: AD1010SS

Material: Type 303 Stainless Steel



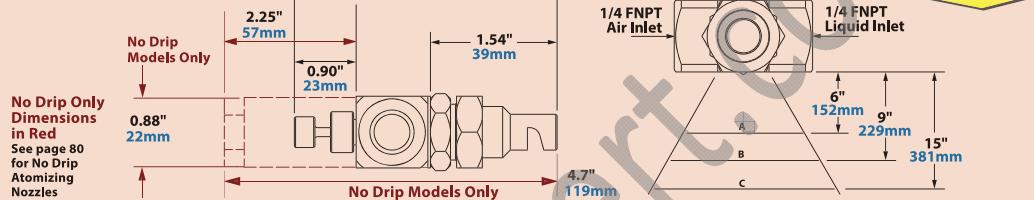
A Model AD1010SS is used to apply a protective coating to wood panels.

Model AD1010SS

1/4 NPT internal mix deflected flat fan nozzles are designed for applications where space is at a premium. The flat fan pattern sprays at a right angle to the nozzle's orientation, allowing spray to be placed precisely where it's needed in close quarters. These nozzles are ideal for coating the inside of enclosures and ductwork.

For pressure fed applications not requiring independent air and liquid control.

Dimensions and Airflow Pattern



For more information about droplet size and spray angle, see page 83.

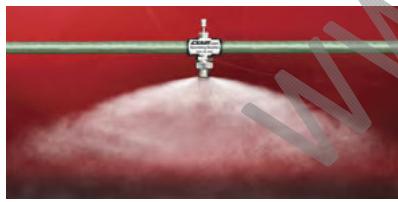
Model	10 PSI/0.7 BAR Liquid				20 PSI/1.4 BAR Liquid				30 PSI/2.1 BAR Liquid				40 PSI/2.8 BAR Liquid				60 PSI/4.1 BAR Liquid				Spray Dimensions									
	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Pressure	Width	Max. Depth	in/cm								
AD1010SS	6	0.4	3.0	11.5	1.4	41	14	1.0	4.0	15.1	2.3	66	22	1.5	4.6	17.6	3.2	90	26	1.8	5.7	21.4	3.5	98	38	2.6	6.9	26.0	4.7	133
	8	0.6	2.7	10.1	1.8	50	18	1.2	3.3	12.4	2.9	82	26	1.8	4.1	15.4	3.7	105	32	2.2	4.9	18.6	4.3	121	54	3.7	5.3	20.1	6.6	188
	10	0.7	2.2	8.3	2.1	59	20	1.4	2.9	11.0	3.2	91	30	2.1	3.4	12.9	4.3	122	38	2.6	4.2	15.7	5.1	144	62	4.3	4.6	17.3	7.8	221
	12	0.8	1.8	6.9	2.4	69	22	1.5	2.3	8.9	3.6	101	34	2.3	2.8	10.4	5.0	140	46	3.2	2.7	10.3	6.3	180	70	4.8	3.1	11.9	9.1	258

Internal Mix 360° Hollow Circular Pattern - 1/4 NPT



Model: AT1010SS

Material: Type 303 Stainless Steel



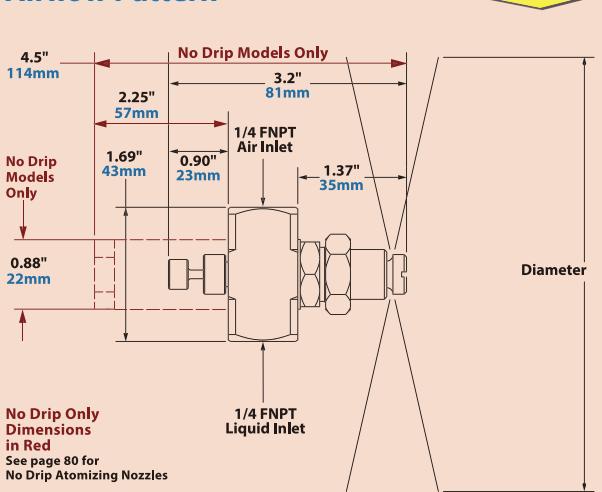
This 360° circular pattern nozzle can be used to coat inside diameters or cover a broad area of over 4' (1219mm).

Model AT1010SS

1/4 NPT internal mix 360° nozzles are designed for applications where the spray pattern must be oriented away from the nozzle in all directions. 360° nozzles are ideal where a smooth, even coating is needed on the ID of pipe or similar ductwork. They also work great for operations where a mist over a broad area is needed, such as dust suppression, humidification and cooling.

For pressure fed applications not requiring independent air and liquid control.

Dimensions and Airflow Pattern



For more information about droplet size and spray angle, see page 83.

Model	10 PSI/0.7 BAR Liquid				20 PSI/1.4 BAR Liquid				30 PSI/2.1 BAR Liquid				40 PSI/2.8 BAR Liquid				60 PSI/4.1 BAR Liquid				Spray Dimensions									
	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Air Pressure PSI/BAR	GPH/LPH	SCFM/SLPM	Pressure	Diameter	Air PSI/ BAR	Liquid PSI/ BAR	In cm							
AT1010SS	20	1.4	4.5	16.8	4.3	121	34	2.3	7.3	27.5	6.4	182	50	3.4	8.1	30.6	8.9	251	60	4.1	11.5	43.5	10.0	283	85	5.9	14.7	55.7	13.3	376
	24	1.7	2.6	9.7	5.3	150	38	2.6	5.2	19.6	7.3	206	56	3.9	5.4	20.3	10.0	285	70	4.8	7.1	26.8	11.8	335	90	6.2	12.7	47.9	14.1	398
	26	1.8	2.0	7.5	5.7	162	42	2.9	3.6	13.5	8.2	231	60	4.1	4.2	15.7	10.7	303	80	5.5	4.1	15.4	13.5	383	95	6.6	10.6	40.2	14.9	423
	28	1.9	1.6	5.9	6.2	176	48	3.3	2.1	7.8	9.3	264	70	4.8	2.0	7.4	12.6	356	90	6.2	2.0	7.7	15.5	439	100	6.9	8.9	33.7	15.8	449



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