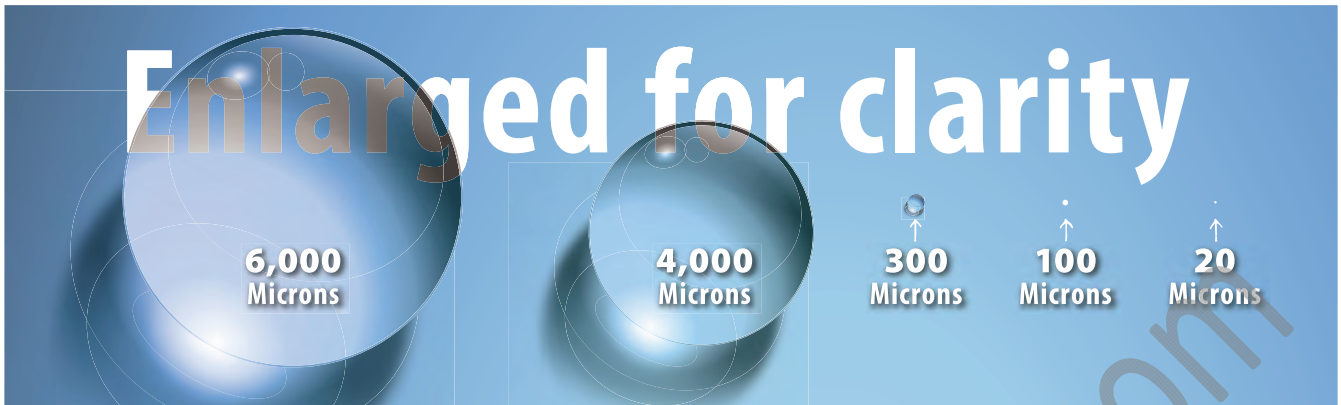


No Drip Atomizing Nozzles



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

External Mix Round Pattern - 1/4 NPT



Model: ER1010SS
Material: Type 303 Stainless Steel



Model: ER1020SS
Material: Type 303 Stainless Steel



Model: ER1030SS
Material: Type 303 Stainless Steel



Model: ER1040SS
Material: Type 303 Stainless Steel



Model: ER1050SS
Material: Type 303 Stainless Steel

Model ER1010SS, ER1020SS, ER1030SS, ER1040SS and ER1050SS

1/4 NPT external mix round pattern nozzles are great where a high volume of liquid is needed over a specific area or general area, but not in a flat pattern. Applications include spot treatments of parts, covering irregularly shaped objects or covering a container of parts with a heavy coat. They are also an excellent choice for controlling heavy dust and particulates. Since they are external mix, airflow and liquid flow can be controlled independently.

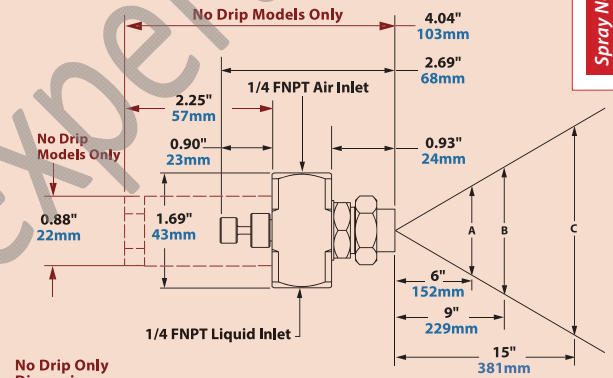
For pressure fed applications with independent air and liquid control.



(2) Model ER1020SS atomizing nozzles are used to apply a fire retardant coating to wood trim.

Dimensions and Airflow Pattern

DOWNLOAD drawings at EXAIR.com



No Drip Only Dimensions in Red See page 80 for No Drip Atomizing Nozzles

Spray Nozzles

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

| Model | 3 PSI/0.2 BAR Liquid | | | 5 PSI/0.3 BAR Liquid | | | 10 PSI/0.7 BAR Liquid | | | 20 PSI/1.4 BAR Liquid | | | 40 PSI/2.8 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 | Width | | | Max. Depth feet/m | | | |
| | | | | | | | | | | | | | | | | A | B | C | | | | |
| ER1010SS | 5 0.3 | | 0.9 25.5 | 5 0.3 | | 0.9 25.5 | 10 0.7 | | 1.3 36.8 | 20 1.4 | | 1.9 53.8 | 40 2.8 | | 3.0 85.0 | 10 | 0.7 | 3 0.2 | 3.0 7.6 | 4.3 10.9 | 6.3 16.0 | 9 2.7 |
| | 10 0.7 | 1.0 3.8 | 1.3 36.8 | 10 0.7 | 1.4 5.3 | 1.3 36.8 | 20 1.4 | 1.9 5.3 | 1.9 53.8 | 40 2.8 | 2.7 10.2 | 3.0 85.0 | 60 4.1 | 10.2 | 4.1 116 | 20 | 1.4 | 5 0.3 | 3.3 8.4 | 4.5 11.4 | 6.8 17.3 | 11 3.4 |
| | 20 1.4 | | 1.9 53.8 | 30 2.1 | | 2.4 68.0 | 40 2.8 | | 3.0 85.0 | 60 4.1 | | 4.1 116 | 90 6.2 | | 4.1 116 | 40 | 2.8 | 10 0.7 | 3.5 8.9 | 5.3 13.5 | 7.5 19.1 | 13 4.0 |
| | 40 2.8 | | 3.0 85.0 | 50 3.4 | | 3.5 99.1 | 60 4.1 | | 4.1 116 | 90 6.2 | | 5.7 161 | 60 4.1 | 14.4 | 5.7 161 | 60 | 4.1 | 40 2.8 | 4.0 10.2 | 5.5 14.0 | 8.0 20.3 | 15 4.6 |
| ER1020SS | 6 0.4 | | 0.9 25.5 | 10 0.7 | | 1.3 36.8 | 10 0.7 | | 1.3 36.8 | 20 1.4 | | 2.9 82.1 | 40 2.8 | | 3.0 85.0 | 10 | 0.7 | 3 0.2 | 3.8 9.7 | 5.0 12.7 | 7.5 19.1 | 10 3.0 |
| | 10 0.7 | 2.5 9.5 | 1.3 36.8 | 20 1.4 | 3.2 12.1 | 1.8 51.0 | 20 1.4 | 4.3 16.3 | 1.9 53.8 | 40 2.8 | 5.9 22.3 | 3.1 87.8 | 60 4.1 | 28.4 | 4.1 116 | 20 | 1.4 | 5 0.3 | 4.0 10.2 | 5.8 14.7 | 7.0 17.8 | 12 3.7 |
| | 30 2.1 | | 2.4 68.0 | 40 2.8 | | 3.1 87.8 | 40 2.8 | | 3.1 87.8 | 60 4.1 | | 4.1 116 | 80 5.5 | | 5.3 150 | 40 | 2.8 | 10 0.7 | 4.3 10.9 | 6.0 15.2 | 8.3 21.1 | 15 4.6 |
| | 50 3.4 | | 3.6 102 | 60 4.1 | | 4.1 116 | 60 4.1 | | 4.1 116 | 90 6.2 | | 5.9 167 | 90 6.2 | | 5.9 167 | 60 | 4.1 | 40 2.8 | 5.0 12.7 | 6.5 16.5 | 8.5 21.6 | 16 4.9 |
| ER1030SS | 10 0.7 | | 4.0 113 | 10 0.7 | | 4.0 113 | 15 1.0 | | 4.9 139 | 30 2.1 | | 7.7 218 | 40 2.8 | | 9.5 269 | 10 | 0.7 | 3 0.2 | 4.3 10.9 | 6.0 15.2 | 8.8 22.4 | 13 4.0 |
| | 20 1.4 | 4.4 16.7 | 6.0 170 | 20 1.4 | 5.5 20.8 | 6.0 170 | 30 2.1 | 7.6 28.8 | 7.7 218 | 40 2.8 | 11.0 41.6 | 9.5 269 | 50 3.4 | 53.0 | 11.2 317 | 40 | 2.8 | 5 0.3 | 4.5 11.4 | 6.5 16.5 | 8.5 21.6 | 23 7.0 |
| | 40 2.8 | | 9.5 269 | 40 2.8 | | 9.5 269 | 50 3.4 | | 11.2 317 | 60 4.1 | | 11.7 331 | 60 4.1 | | 11.7 331 | 60 | 4.1 | 20 1.4 | 4.5 11.4 | 6.8 17.3 | 9.0 22.9 | 29 8.8 |
| | 50 3.4 | | 11.2 317 | 60 4.1 | | 11.7 331 | 70 4.8 | | 13.4 379 | 80 5.5 | | 15.3 433 | 80 5.5 | | 15.3 433 | 60 | 4.1 | 40 2.8 | 5.3 13.5 | 7.0 17.8 | 9.3 23.6 | 30 9.1 |
| ER1040SS | 15 1.0 | | 4.9 139 | 20 1.4 | | 7.7 218 | 30 2.1 | | 7.7 218 | 40 2.8 | | 9.5 269 | 50 3.4 | | 11.2 317 | 20 | 1.4 | 3 0.2 | 5.8 14.7 | 7.5 19.1 | 10.0 25.4 | 15 4.6 |
| | 30 2.1 | 10.0 37.9 | 7.7 218 | 30 2.1 | 13.5 51.1 | 7.7 218 | 40 2.8 | 18.8 71.2 | 9.5 269 | 50 3.4 | 27.6 104 | 11.2 317 | 60 4.1 | 117 | 11.7 331 | 40 | 2.8 | 5 0.3 | 6.0 15.2 | 8.0 20.3 | 10.3 26.2 | 19 5.8 |
| | 40 2.8 | | 9.5 269 | 40 2.8 | | 9.5 269 | 60 4.1 | | 11.7 331 | 60 4.1 | | 11.7 331 | 70 4.8 | | 13.4 379 | 60 | 4.1 | 10 0.7 | 6.0 15.2 | 8.0 20.3 | 10.5 26.7 | 23 7.0 |
| | 50 3.4 | | 11.2 317 | 60 4.1 | | 11.7 331 | 80 5.5 | | 15.3 433 | 80 5.5 | | 15.3 433 | 80 5.5 | | 15.3 433 | 80 | 5.5 | 40 2.8 | 4.5 11.4 | 6.5 16.5 | 9.5 24.1 | 30 9.1 |
| ER1050SS | 40 2.8 | | 14.0 396 | 55 3.8 | | 18.0 510 | 65 4.5 | | 21.0 595 | 80 5.5 | | 25.3 716 | -- | -- | -- | 40 | 2.8 | 3 0.2 | 6.5 16.5 | 8.8 22.4 | 11.0 27.9 | 23 7.0 |
| | 50 3.4 | 18.0 68.1 | 16.8 470 | 65 4.5 | 26.0 98.0 | 21.0 595 | 70 4.8 | 41.0 155 | 22.3 631 | 90 6.2 | 60.0 227 | 27.9 790 | -- | -- | -- | 70 | 4.8 | 5 0.3 | 6.5 16.5 | 9.0 22.9 | 10.0 25.4 | 28 8.5 |
| | 60 4.1 | | 19.7 558 | 70 4.8 | | 22.3 631 | 80 5.5 | | 25.3 716 | -- | | -- | -- | -- | -- | 80 | 5.5 | 10 0.7 | 6.5 16.5 | 9.0 22.9 | 11.0 27.9 | 30 9.1 |
| | 65 4.5 | | 21.0 595 | 80 5.5 | | 25.3 716 | 90 6.2 | | 27.9 790 | -- | | -- | -- | -- | -- | 90 | 6.2 | 20 1.4 | 6.0 15.2 | 8.0 20.3 | 11.0 27.9 | 32 9.8 |

Note: When air pressure is 10x or more than liquid pressure, liquid flow may diminish.