



No Drip Atomizing Nozzles

An **INTELLIGENT**
COMPRESSED AIR®
Product

No Drip Atomizing Spray Nozzles

Eliminate drips to conserve valuable liquids and improve product finishes!

What Are No Drip Atomizing Nozzles?

EXAIR's patented[†] no drip atomizing spray nozzles work in the same way our standard atomizing nozzles do, but have the added benefit of positively stopping liquid flow when compressed air is shut off. All models use stainless steel construction for durability and corrosion resistance.

EXAIR's no drip atomizing nozzles are available in 3 basic families:

Internal Mix:

Internal mix nozzles mix the liquid and water inside the air cap and produce the finest atomization. Internal mix nozzles can be used on liquids with a viscosity up to 300 cP. Both air and liquid sides are pressure fed. **No Drip Internal Mix Atomizing Nozzles are for pressure fed applications not requiring independent air and liquid control.**

External Mix:

External mix nozzles have the highest flow rates and allow the air and liquid flows to be adjusted independently. These nozzles are best where precise liquid flow is needed. External mix nozzles can be used on liquids with a viscosity above 300 cP. Both air and liquid sides are pressure fed. **No Drip External Mix Atomizing Nozzles are for pressure fed applications with independent air and liquid control.**

Siphon Fed:

Siphon fed nozzles require no liquid pressure and can be used with gravity fed liquids or lift liquids from a siphon height as much as 36 inches (91cm). Siphon fed nozzles can be used on liquids with a viscosity up to 200 cP. **No Drip Siphon Fed Atomizing Nozzles are siphon or gravity fed for non-pressurized applications.**

[†] Patent #9156045



Why No Drip Atomizing Nozzles?

When spraying any type of liquid, post spray liquid flow can cause big problems. Unwanted drips can ruin product finishes on painted or coated surfaces. In addition, excess liquid flow wastes precious resources such as expensive coatings, chemicals or water. EXAIR's no drip atomizing nozzles are ideal where no post-spray drip is permissible. When the compressed air supply is shut off, the no drip nozzle positively seals off the flow of liquid eliminating the possibility of drips. They can be used in any situation that our standard atomizing nozzles can be used, including Siphon Fed applications. Unlike some manufacturers, there's no need to run a separate air line to control the no drip mechanism. The same compressed air used to combine and atomize liquid in a variety of patterns is used to open a valve allowing liquid to flow. That makes these ideal for use with EXAIR's money and energy saving EFC (see page 7).

EXAIR's no drip nozzles do not change flow rates from standard atomizing nozzles. Operations that require up to 180 cycles per minute can be achieved. Minimum operating air pressure of 30 PSIG (2.1 BAR) required.



See page 4 for complete details.



Mounting Brackets are available - Model 901318 for 1/4 NPT and Model 901556 for 1/2 NPT atomizing nozzles.

Applications

- Painting
- Coating
- Rinsing
- Cooling
- Quenching
- Wetting (moistening)
- Humidification
- Dust Control

Advantages

- No post spray drip
- Adjustable
- Easily used with an EFC
- Minimizes air and liquid consumption
- All stainless steel construction
- Fine atomization
- Interchangeable liquid and air caps
- Compact



No Drip Internal Mix Atomizing Nozzles are for pressure fed applications not requiring independent air and liquid control.



NO DRIP INTERNAL MIX ATOMIZING NOZZLES

Model	Description
No Drip Internal Mix Narrow Angle Round Pattern Atomizing Nozzles	
AN2010SS	No Drip Internal Mix Narrow Angle Round Pattern Atomizing Nozzles, 3.3 GPH/12.5 LPH Max, 1/4 NPT
AN2020SS	No Drip Internal Mix Narrow Angle Round Pattern Atomizing Nozzles, 9.9 GPH/37.5 LPH Max, 1/4 NPT
AN2030SS	No Drip Internal Mix Narrow Angle Round Pattern Atomizing Nozzles, 23.0 GPH/87.1 LPH Max, 1/4 NPT
AN2040SS	No Drip Internal Mix Narrow Angle Round Pattern Atomizing Nozzles, 66.0 GPH/250 LPH Max, 1/4 NPT
AN6010SS	No Drip Internal Mix Narrow Angle Round Pattern Atomizing Nozzles, 75.6 GPH/286 LPH Max, 1/2 NPT
AN6020SS	No Drip Internal Mix Narrow Angle Round Pattern Atomizing Nozzles, 231.0 GPH/874 LPH Max, 1/2 NPT
No Drip Internal Mix Wide Angle Round Pattern Atomizing Nozzles	
AW2010SS	No Drip Internal Mix Wide Angle Round Pattern Atomizing Nozzles, 3.5 GPH/13.2 LPH Max, 1/4 NPT
AW2020SS	No Drip Internal Mix Wide Angle Round Pattern Atomizing Nozzles, 8.5 GPH/32.2 LPH Max, 1/4 NPT
AW2030SS	No Drip Internal Mix Wide Angle Round Pattern Atomizing Nozzles, 15.0 GPH/56.8 LPH Max, 1/4 NPT
AW2040SS	No Drip Internal Mix Wide Angle Round Pattern Atomizing Nozzles, 24.0 GPH/91 LPH Max, 1/4 NPT
AW6010SS	No Drip Internal Mix Wide Angle Round Pattern Atomizing Nozzles, 66.0 GPH/250 LPH Max, 1/2 NPT
AW6020SS	No Drip Internal Mix Wide Angle Round Pattern Atomizing Nozzles, 115.0 GPH/435 LPH Max, 1/2 NPT
AW6030SS	No Drip Internal Mix Wide Angle Round Pattern Atomizing Nozzles, 264.0 GPH/999 LPH Max, 1/2 NPT
No Drip Internal Mix Flat Fan Pattern Atomizing Nozzles	
AF2010SS	No Drip Internal Mix Flat Fan Pattern Atomizing Nozzles, 3.2 GPH/12.1 LPH Max, 1/4 NPT
AF2020SS	No Drip Internal Mix Flat Fan Pattern Atomizing Nozzles, 4.7 GPH/17.8 LPH Max, 1/4 NPT
AF2030SS	No Drip Internal Mix Flat Fan Pattern Atomizing Nozzles, 11.0 GPH/41.6 LPH Max, 1/4 NPT
AF2040SS	No Drip Internal Mix Flat Fan Pattern Atomizing Nozzles, 18.3 GPH/69.3 LPH Max, 1/4 NPT
AF2050SS	No Drip Internal Mix Flat Fan Pattern Atomizing Nozzles, 42.0 GPH/159 LPH Max, 1/4 NPT
AF6010SS	No Drip Internal Mix Flat Fan Pattern Atomizing Nozzles, 46.2 GPH/175 LPH Max, 1/2 NPT
AF6020SS	No Drip Internal Mix Flat Fan Pattern Atomizing Nozzles, 231.0 GPH/874 LPH Max, 1/2 NPT
No Drip Internal Mix Deflected Flat Fan Pattern Atomizing Nozzles	
AD2010SS	No Drip Internal Mix Deflected Flat Fan Pattern Atomizing Nozzles, 6.9 GPH/26 LPH Max, 1/4 NPT
No Drip Internal Mix 360° Hollow Circular Pattern Atomizing Nozzles	
AT2010SS	No Drip Internal Mix 360° Hollow Circular Pattern Atomizing Nozzles, 14.7 GPH/55.7 LPH Max, 1/4 NPT
AT6010SS	No Drip Internal Mix 360° Hollow Circular Pattern Atomizing Nozzles, 150 GPH/568 LPH Max, 1/2 NPT

No Drip External Mix Atomizing Nozzles are for pressure fed applications with independent air and liquid control.



No Drip Siphon Fed Atomizing Nozzles are siphon or gravity fed for non-pressurized applications.



NO DRIP EXTERNAL MIX ATOMIZING NOZZLES

NO DRIP SIPHON FED ATOMIZING NOZZLES

Model	Description
No Drip External Mix Round Pattern Atomizing Nozzles	
ER2010SS	No Drip External Mix Round Pattern Atomizing Nozzles, 3.8 GPH/14.4 LPH Max, 1/4 NPT
ER2020SS	No Drip External Mix Round Pattern Atomizing Nozzles, 7.5 GPH/28.4 LPH Max, 1/4 NPT
ER2030SS	No Drip External Mix Round Pattern Atomizing Nozzles, 14.0 GPH/53.0 LPH Max, 1/4 NPT
ER2040SS	No Drip External Mix Round Pattern Atomizing Nozzles, 31.0 GPH/117 LPH Max, 1/4 NPT
ER2050SS	No Drip External Mix Round Pattern Atomizing Nozzles, 60.0 GPH/227 LPH Max, 1/4 NPT
No Drip External Mix Narrow Angle Flat Fan Pattern Atomizing Nozzles	
EF2010SS	No Drip External Mix Narrow Angle Flat Fan Pattern Atomizing Nozzles, 3.8 GPH/14.4 LPH Max, 1/4 NPT
EF2020SS	No Drip External Mix Narrow Angle Flat Fan Pattern Atomizing Nozzles, 7.5 GPH/28.4 LPH Max, 1/4 NPT
EF2030SS	No Drip External Mix Narrow Angle Flat Fan Pattern Atomizing Nozzles, 14.0 GPH/53.0 LPH Max, 1/4 NPT
EF2040SS	No Drip External Mix Narrow Angle Flat Fan Pattern Atomizing Nozzles, 31.0 GPH/117 LPH Max, 1/4 NPT
EF6010SS	No Drip External Mix Narrow Angle Flat Fan Pattern Atomizing Nozzles, 303.0 GPH/1,147 LPH Max, 1/2 NPT
No Drip External Mix Wide Angle Flat Fan Pattern Atomizing Nozzles	
EB2010SS	No Drip External Mix Wide Angle Flat Fan Pattern Atomizing Nozzles, 3.8 GPH/14.4 LPH Max, 1/4 NPT
EB2020SS	No Drip External Mix Wide Angle Flat Fan Pattern Atomizing Nozzles, 7.5 GPH/28.4 LPH Max, 1/4 NPT
EB2030SS	No Drip External Mix Wide Angle Flat Fan Pattern Atomizing Nozzles, 14.0 GPH/53.0 LPH Max, 1/4 NPT
EB2040SS	No Drip External Mix Wide Angle Flat Fan Pattern Atomizing Nozzles, 31.0 GPH/117 LPH Max, 1/4 NPT
No Drip Siphon Fed Round Pattern Atomizing Nozzles	
SR2010SS	No Drip Siphon Fed Round Pattern Atomizing Nozzles, 0.8 GPH/3.0 LPH Max, 1/4 NPT
SR2020SS	No Drip Siphon Fed Round Pattern Atomizing Nozzles, 1.9 GPH/7.2 LPH Max, 1/4 NPT
SR2030SS	No Drip Siphon Fed Round Pattern Atomizing Nozzles, 5.8 GPH/22.0 LPH Max, 1/4 NPT
SR2040SS	No Drip Siphon Fed Round Pattern Atomizing Nozzles, 15.0 GPH/56.8 LPH Max, 1/4 NPT
SR6010SS	No Drip Siphon Fed Round Pattern Atomizing Nozzles, 68.3 GPH/259 LPH Max, 1/2 NPT
No Drip Siphon Fed Flat Fan Pattern Atomizing Nozzles	
SF2010SS	No Drip Siphon Fed Flat Fan Pattern Atomizing Nozzles, 0.4 GPH/1.5 LPH Max, 1/4 NPT
SF2020SS	No Drip Siphon Fed Flat Fan Pattern Atomizing Nozzles, 1.2 GPH/4.5 LPH Max, 1/4 NPT
SF2030SS	No Drip Siphon Fed Flat Fan Pattern Atomizing Nozzles, 1.9 GPH/7.2 LPH Max, 1/4 NPT



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.
 $1 \mu\text{m} = 1 \text{ micron} = 0.00004"$. 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