

TECHNICAL DATA DOCUMENT

High-Pressure
Nozzles303 SS • Ruby Orifice Insert
Parts 1.85N – 10.58N

KEY SPECIFICATIONS

Type	Anti-drip atomizing
Body	303 stainless steel
Orifice	Ruby insert
Orifice Range	0.065 – 0.3 mm
Output	1.85 – 10.58 lbs/hr
Op. Pressure	1000 psi
Cracking	300 psi
Thread	10/24 UNC male
Alt. Thread	12/24 UNC (special)
Seals	NBR / Viton
Filter	5-micron (included)
Packaging	10 nozzles per pak

Specifications

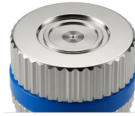
01 • Specifications

FanMist nozzles are 303 stainless-steel, anti-drip atomizing nozzles with a ruby orifice insert. Threaded into the 10/24 UNC ports of each stainless-steel mist ring, they break 1000 psi water into an ultra-fine mist that the fan's high-velocity air plume carries up and evaporates above the workspace — drip-free.

Key Functions Summary

- Atomizes 1000 psi water into ultra-fine, micron-sized particles
- Opens at 300 psi and closes below it — no drip at startup or shutdown
- Ruby orifice's smooth bore resists scaling and plugging
- Built-in 5-micron filter protects every orifice
- Six color-banded sizes, from 1.85 to 10.58 lbs/hr per nozzle
- Installs finger-tight — the O-ring seals without tools

Core Nozzle Assembly



Nozzle Cap

Synthetic ruby orifice insert with NBR O-ring. The color band on the cap identifies the orifice size.



Spring Assembly

Impeller insert in a 300 psi spring with NBR seat — controls precise opening and closing.



Anti-Drip Body

Bottom housing with NBR O-ring and male 10/24 UNC thread (12/24 UNC male by special order). Holds the 5-micron filter in its threaded end.

Nozzle Range — 10/24 UNC

**1.85N**

1.85 lbs/hr

**2.64N**

2.64 lbs/hr

**3.97N**

3.97 lbs/hr

**5.29N**

5.29 lbs/hr

**7.94N**

7.94 lbs/hr

**10.58N**

10.58 lbs/hr

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Construction & Function

02 • Construction

Every FanMist nozzle has three parts — the cap, the spring assembly and the anti-drip body — that thread together finger-tight. When the pump brings the supply line up to pressure, water passes through the 5-micron filter in the threaded end, lifts the spring assembly off its seat at 300 psi (the cracking point), and is forced through the ruby orifice as an ultra-fine mist.

The 300 psi cracking point is the nozzle's most critical feature. Below it, the spring holds the nozzle closed, so there is no weak, dripping discharge while pressure builds at startup. Above it, the nozzle opens fully for clean atomization from the first burst. At shutdown, the Electric Drain Valve opens, pressure falls below 300 psi, and every nozzle closes mechanically at the same moment.

A drilled all-metal orifice carries fine etchings from machining. These act as nucleation points where dissolved minerals crystallize and gradually distort the spray. The ruby insert's laser-bored inner surface is smooth enough (Teflon-like) that minerals have little to hold on to, so it resists scaling and plugging and keeps the spray pattern consistent.

Fig. 1 — FanMist Nozzle Components (7.94N shown)



- 1 Assembled nozzle
- 2 Nozzle cap (top and underside)
- 3 Spring assembly, 300 psi cracking
- 4 Anti-drip body, 10/24 UNC male
- 5 5-micron filter (Part #51000)
- 6 Nozzle O-ring (Part #52000) (NBR / Viton)

Fail-Safe Closing

If power is lost, the EDV opens (de-energized) and the system depressurizes. Each nozzle's spring closes it below 300 psi, so the mist ring stops discharging rather than dripping.

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Nozzle Sizing

03 • Sizing

Six orifice sizes, each identified by the color band on the nozzle cap. All sizes share the same body, spring and 10/24 UNC thread, so any size fits any mist-ring port.

Nozzle Sizing — Specifications

Part #	Color Band	Orifice Size	Flow Rate	Output
 1.85N	Orange	0.065 mm / 0.0025"	0.0037 gpm	1.85 lbs/hr
 2.64N	Black	0.085 mm / 0.0033"	0.0053 gpm	2.64 lbs/hr
 3.97N	White	0.1 mm / 0.0039"	0.008 gpm	3.97 lbs/hr
 5.29N	Red	0.15 mm / 0.006"	0.011 gpm	5.29 lbs/hr
 7.94N	Blue	0.2 mm / 0.008"	0.016 gpm	7.94 lbs/hr
 10.58N	Clear	0.3 mm / 0.012"	0.021 gpm	10.58 lbs/hr

Output (lbs/hr) is actual tested capacity with the 5-micron filter installed, at 1000 psi.

Converting Flow to Output

$$\text{lbs/hr} = \text{gpm} \times 8.34 \text{ lb/gal} \times 60 \text{ min/hr}$$

Example — 7.94N: $0.016 \text{ gpm} \times 8.34 \times 60 \approx 8.0 \text{ lbs/hr}$ (rated 7.94 lbs/hr tested). To find a system's total water demand, add up nozzles $\times$ gpm per nozzle and confirm it is within the Pump Station's rated gpm.

Ordering & Packaging

- Order in multiples of 10 only
- Stocked in 10/24 UNC thread
- 12/24 UNC available on 100+ quantities (3-week lead time)
- 10/24 to 12/24 conversion: adapter #92520
- One 5-micron white filter included per nozzle



Fig. 2 — Individually sealed in a protective blister pack — 10 nozzles per pak (7.94N shown).

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Mist-Ring Output

04 • Output

Mist-ring output is the nozzle rating multiplied by the number of ports. Choose the nozzle size that delivers the required lbs/hr while keeping the fan's Loading Ratio above 75 CFM per 1 lb/hr.

Mist-Ring Output by Nozzle Size (lbs/hr)

Mist Ring	Ports	1.85N	2.64N	3.97N	5.29N	7.94N	10.58N
							
12" Ring	4	7.4	10.6	15.9	21.2	31.8	42.3
15" Ring	6	11.1	15.8	23.8	31.7	47.6	63.5
18" Ring	8	14.8	21.1	31.8	42.3	63.5	84.6
24" Ring	12	22.2	31.7	47.6	63.5	95.3	127.0
27" Ring	14	25.9	37.0	55.6	74.1	111.2	148.1

Values = ports × rated nozzle output at 1000 psi. Mist rings are sized to match each fan diameter.

Loading Ratio (Evaporation Rate)

How quickly atomized water evaporates depends on how much fan air carries each pound of water. The Loading Ratio is the fan's airflow divided by its mist-ring output:

$$ER = \text{Fan CFM} \div \text{Mist-Ring Output (lbs/hr)}$$

Optimal evaporation: ER greater than 75 CFM per 1 lb/hr

36" Fan @ 10,000 CFM • 27" Ring (14)

24" Fan @ 5,300 CFM • 18" Ring (8)

Nozzle	lbs/hr	ER	Status	Nozzle	lbs/hr	ER	Status
1.85N	25.9	386.1 : 1	Optimal	1.85N	14.8	358.1 : 1	Optimal
2.64N	37.0	270.6 : 1	Optimal	2.64N	21.1	250.9 : 1	Optimal
3.97N	55.6	179.9 : 1	Optimal	3.97N	31.8	166.9 : 1	Optimal
5.29N	74.1	135.0 : 1	Optimal	5.29N	42.3	125.2 : 1	Optimal
7.94N	111.2	90.0 : 1	Optimal	7.94N	63.5	83.4 : 1	Optimal
10.58N	148.1	67.5 : 1	Below 75	10.58N	84.6	62.6 : 1	Below 75

For an optimal ratio, keep ring output at or below about 133 lbs/hr on a 36" fan (10,000 ÷ 75) and about 71 lbs/hr on a 24" fan (5,300 ÷ 75).

Note: ER calculated from unrounded output.