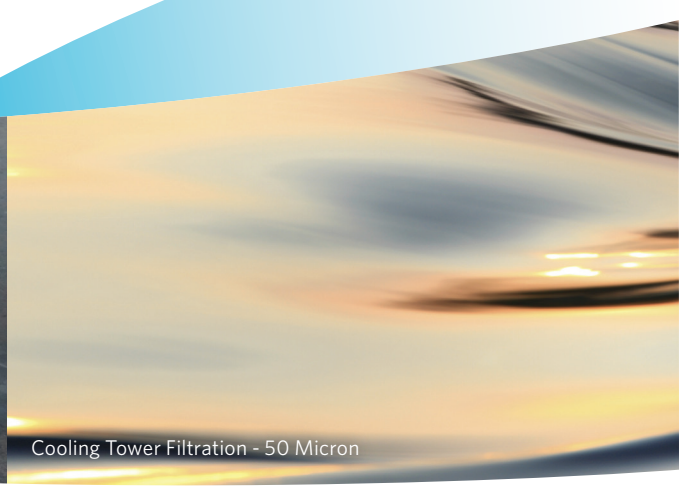


Cooling Tower Filtration - 50 Micron

VAF™ FILTRATION SYSTEMS
COOLING TOWER BASIN AGITATION SYSTEM
TURBULATOR EDUCTOR NOZZLES

GENERAL INFORMATON

When used in conjunction with cooling tower filter skids (that include a pump), turbulator agitation nozzles will:

- keep solids in suspension for removal
- significantly reduce tower blow down cycles, water waste, equipment maintenance, and chemical use

APPROXIMATING NOZZLE LAYOUT

The orientation of the nozzles is not an exact science. There are too many variables, such as flow rate and pressure, to determine the exact number of nozzles and their placement. The goal is the adequate agitation and coverage of the cooling tower basin. Proper installation and orientation of the nozzles result in effective basin agitatation at nozzle pressures between 0.5 and 4 bar (10 to 50 psi).

LATERAL AND MANIFOLD PLACEMENT

- Laterals near basin walls or obstructions should be located 0.6 m (2 ft) from the wall/obstruction.
- Place lateral against basin wall in very small basins where only one lateral is required.
- For effective agitation, laterals should be elevated off the basin floor so that the nozzles are above the basin floor at least 50 mm (2 in) and nozzles are submerged at least 50 mm (2 in).
- Manifolds and laterals should be anchored in place to prevent movement or flotation.

Specifications

Materials

- Turbulator Nozzle: Polypropylene
- Clamp Base: Fiberglass reinforced polypropylene
- Clamp Cap: Fiberglass reinforced polypropylene
- Swivel Ball: Polypropylene
- Clamp Spring: Hardened 304 SS
- Clamp O-Ring: EPDM

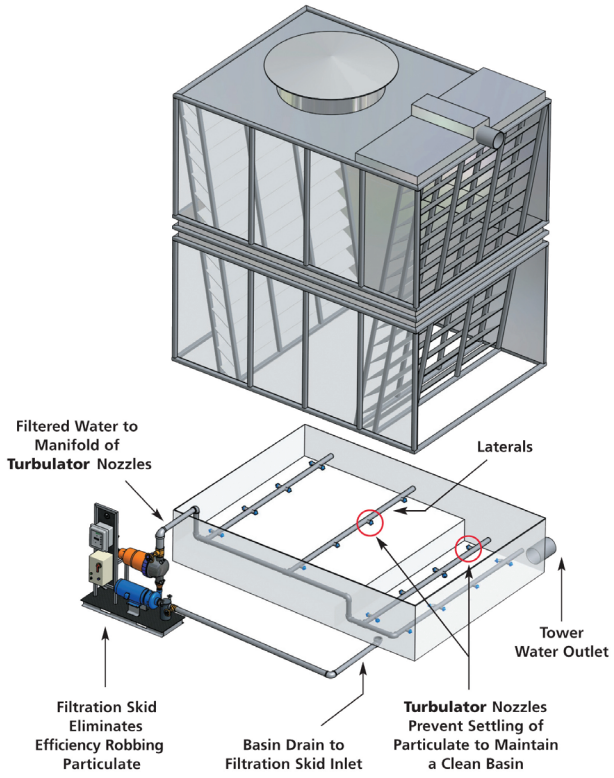
Nozzle Placement and Orientation

- Nozzles should be evenly distributed along the lateral. Multiple laterals should be evenly spaced. Optimum spacing of the nozzles is 75% of the “effective flow path” of the nozzle selected.
- When possible, some of the nozzles should be directed towards the wall obstruction and corners to prevent settling.
- Nozzles should be oriented so debris is swept towards the pump intake point in the basin.

Please contact Evoqua to determine the best economical design and effective coverage for your cooling tower.

AVAILABLE NOZZLE MODELS

MODEL	DESCRIPTION	PRODUCT IMAGE
TN-25-150	Turbulator Nozzle Assembly: 1/4" MPT includes spring clamp for 1.5" PVC pipe	
TN-25-200	Turbulator Nozzle Assembly: 1/4" MPT includes spring clamp for 2" PVC pipe	
TN-25-BJ-FPT	Turbulator Nozzle Assembly: 1/4" MPT includes FPT ball joint for nozzle & 3/8" MPT connection	
TN-25-THRED	Turbulator Nozzle Only: 1/4" MPT	
TN-38-200	Turbulator Nozzle Assembly: 3/8" MPT includes spring clamp for 2" PVC pipe	
TN-38-BJ-FPT	Turbulator Nozzle Assembly: 3/8" MPT includes FPT ball joint for nozzle and 3/8" MPT connection	
TN-38-THRED	Turbulator Nozzle Only: 3/8" MPT	



NOZZLE PERFORMANCE DATA

INLET CONNECTION (MALE NPT)	PERFORMANCE	INLET PRESSURE															
		bar								psi							
		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	10	15	20	25	30	35	40	50
		m^3/hr								gpm							
1/4	INLET FLOW RATE	0.8	1.0	1.1	1.2	1.4	1.5	1.6	1.8	3.5	4.3	5.0	5.5	6.1	6.6	7.0	7.8
3/8		2.0	2.5	2.8	3.2	3.6	3.9	4.1	4.5	9.0	11.0	12.5	14.0	16.0	17.0	18.0	20.0
1/4	CIRCULATION RATE	3.7	4.4	5.2	5.7	6.4	7.0	7.5	8.4	16.2	19.4	22.8	25.1	28.1	30.6	33.0	36.8
3/8		10.2	12.5	14.2	15.9	18.2	19.3	20.4	22.7	45.0	55.0	62.5	70.0	80.0	85.0	90.0	100.0
		m								ft							
1/4	EFFECTIVE FLOW PATH	0.7	1.1	2.1	2.6	3.0	3.7	4.3	5.2	3.0	5.0	7.0	8.5	10.0	12.0	14.0	17.0
3/8		0.9	1.4	2.4	3.0	3.7	4.3	4.9	6.7	4.0	6.0	8.0	10.0	12.0	14.0	16.0	22.0

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