STEAMMAX™ NOZZLES

HIGH-EFFICIENCY STEAM ATOMIZING NOZZLES FOR OPTIMIZED GAS COOLING

Spraying Systems Co.®
Experts in Spray Technology

COLD WATER SUPERHEATED STEAM FINE SPRAY

In a lot of industrial and chemical processes it is not feasible or not cost effective to use compressed air as atomizing medium; instead superheated steam can be used or is required for atomization. With our new design of the SteamMax™ B series nozzle design, we have eliminated the need for compressed air, and it is now possible to inject large capacities of cool water and use superheated steam to create effectively a fine spray without any negative effects of condensation inside an inner mixing nozzle.

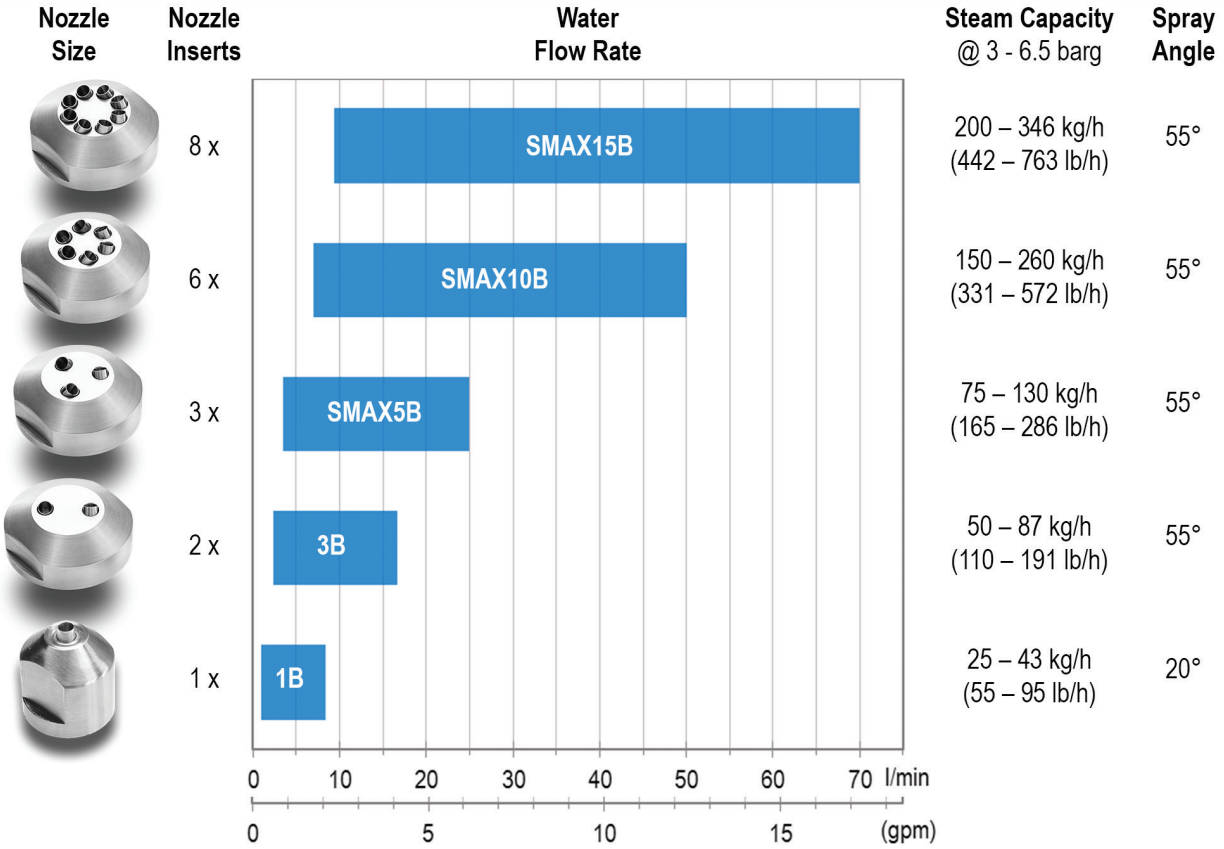
ADVANTAGES

- No need for compressed air
- No condensation inside spray nozzle
- Cold water injection
- Low steam capacity
- Fine spray
- Compact dimensions, smaller than our FloMax® nozzles
- Mounting connection, same as our FloMax® nozzles

TECHNICAL DATA

- Water Capacity: 1 – 70 l/min (0.25 – 17.2 gpm)
- Steam Pressure: 3 -10 bar (40 – 145 psi)
- Spray Pattern: (Twisted) full cone
- Wide Spray Angle: 20°, 55°
- Small Droplet Size: 5 – 250 µm
- Maximum Free Passage: 1.5 mm (0.0381 inch)

CAPACITY



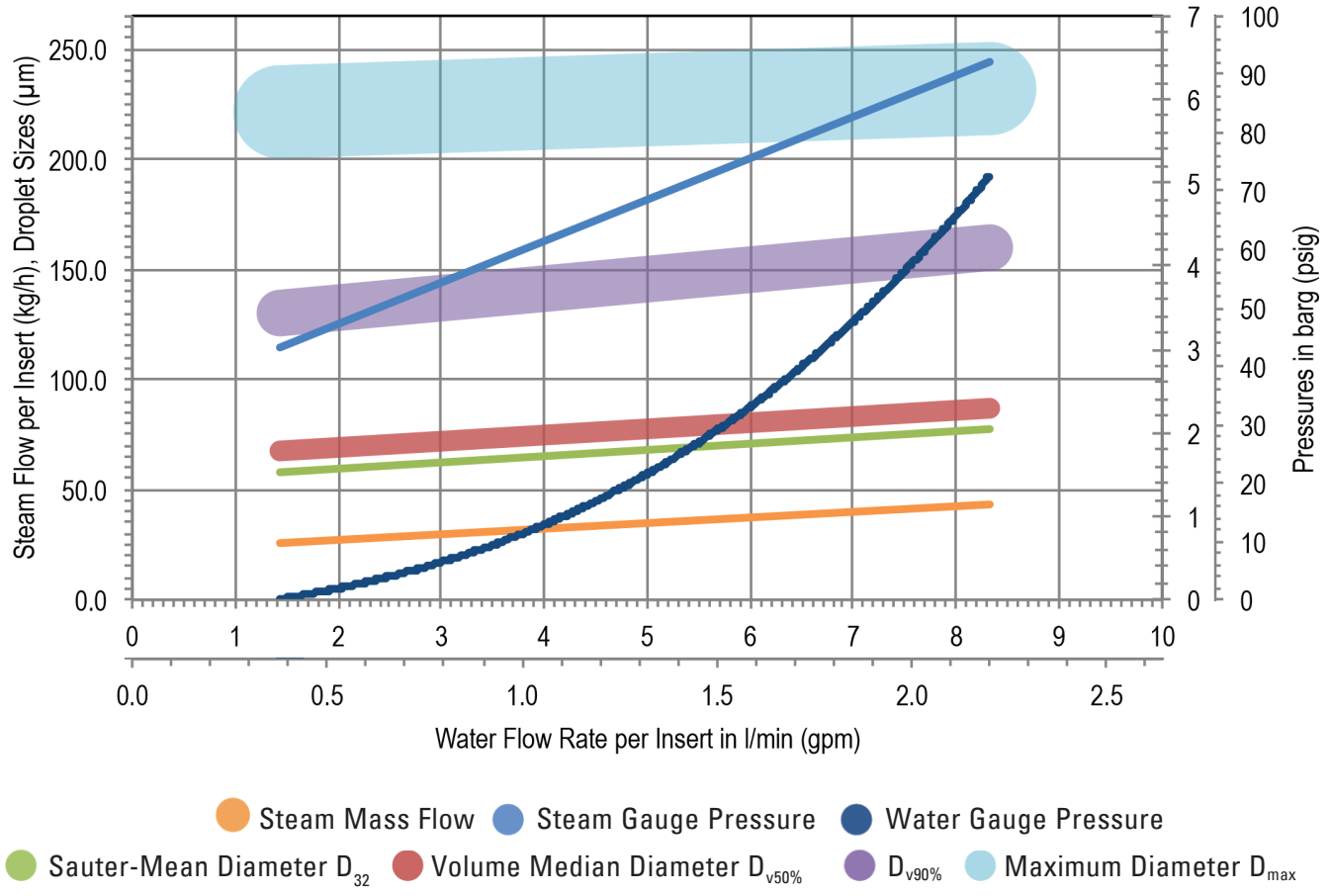
OPERATING PARAMETERS

The water gauge pressure ranges from 0 to 6 barg (about 0 - 90 psi). Any liquid water temperature above > 10 °C (50 °F) will atomize. The operating gauge pressure ranges from 3 - 10 barg (about 40 - 145 psig) and the respective absolute pressure ranges from 4.013 - 11.013 bara (40 - 145 psig) for the superheated steam. The respective steam temperature for a given absolute operating pressure should be larger than the saturation temperature, see table below.

Steam Pressure in bara (psia)	Saturation Temperature in °C (°F)
4.0 (58.2)	144 (291)
5.0 (72.7)	152 (306)
6.0 (87.2)	159 (318)
7.0 (101.7)	165 (329)
8.0 (116.2)	170 (339)
9.0 (130.7)	175 (348)
10.0 (145.2)	180 (356)
11.0 (159.7)	184 (363)

DROP SIZE

Drop size remains almost constant over a wide capacity range. Contact your local sales engineer for further performance and droplet size data.

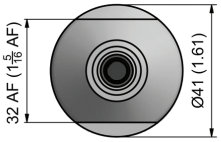


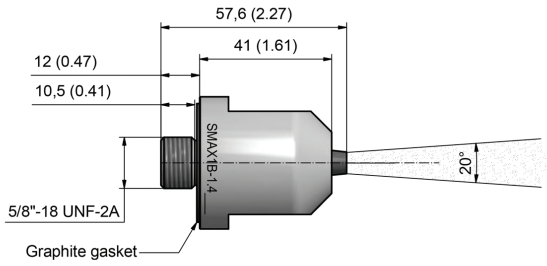
Data is based on spraying water under laboratory conditions using the Phase Doppler Interferometry (PDI). All values are to be computed utilizing the procedures for determing spray characteristics as outlined by ASTM (Standard E799).

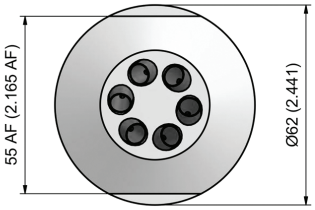
STEAMMAX™ NOZZLES

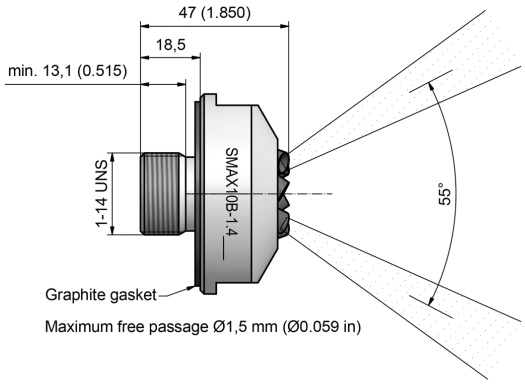
DIMENSIONS

Dimensions in mm (in)







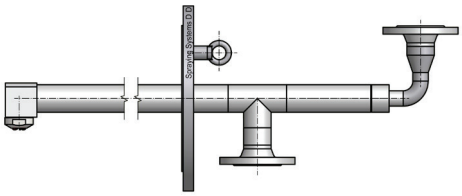


MATERIAL

- Standard:
  Stainless Steel 1.4571
  (AISI 316SS).
- For high temperatures above
  550 °C (1,022 °F):
  1.4841 (AISI 310SS).

OPTIONAL

Lances & Dosing Systems



ADVANTAGES OF USING STEAMMAX™ B NOZZLES

Innovative products for the perfect spray designed, manufactured and tested in Germany.
The SteamMax™ B nozzle series is the advancement of the SteamMax™ A nozzle series.

- Compact one piece design.
- Maintenance is fast and easy.
  SteamMax™ B nozzles consist only of one piece and a gasket. No special tools are required.
- Almost constant spray characteristics over a wide capacity range.
  We offer a complete series from 1 to 8 inserts, depending on the customer capacity demands.

APPLICATIONS

- Gas cooling at power plants or steel production plants (e.g. before an E-filter)
- Gas cooling at industrial or petro chemical process plants at distant locations, where no compressed air in large amounts but superheated steam is available.
- Steam preparation (e.g. in tobacco process plants)
- Desuperheating

ORDERING INFORMATION

SteamMax Nozzles Type	Water capacity in gpm	Code for B Series	–	Material Code for Stainless Steel
Example: SMAX	10	B	–	1.4571

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