Spraytech®
Systems (India) Pvt. Ltd.
The Flow Technologists

Steel Mill Spray Nozzles
Spray Header, Lance & Engineering Systems

FULL CONE DB SERIES NOZZLE

Application : Continuous Casting Machine for Secondary Cooling

Spray Characteristics

- Produces a full cone pattern
- Sprayed volume is evenly distributed across spray pattern
- Available with a range of spray angle

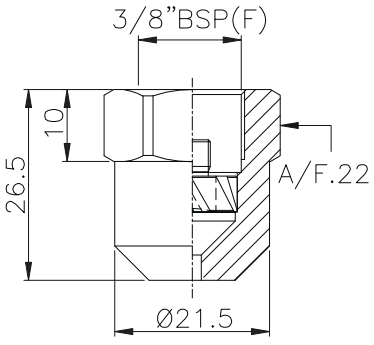
Materials and Construction

- Standard materials are Brass and Stainless Steel
- Male and female thread available
- 3/8" or 1/4" BSP / NPT threaded connections available
- Specially designed internal core ensures a good resitance to clogging
- Standard spray angle 45°, 65°, 80°, 90°, and other spray angle on request.

Stainless steel

Flow Rate (l/min) @ Different Pressure Value (Bar)									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	DB 2045	45°	1.20	1.69	2.00	2.39	2.67	2.93	3.16
2	DB 2545	45°	1.99	2.11	2.50	2.98	3.34	3.65	3.95
3	DB 3045	45°	1.80	2.50	3.00	3.60	4.00	4.40	4.75
4	DB 3545	45°	2.10	2.95	3.50	4.20	4.70	5.10	5.55
5	DB 4045	45°	2.40	3.40	4.00	4.80	5.30	5.85	6.30
6	DB 4745	45°	2.80	4.00	4.70	5.60	6.30	6.90	7.40
7	DB 5045	45°	3.00	4.20	5.00	6.00	6.70	7.30	7.90
8	DB 6045	45°	3.60	5.10	6.00	7.20	8.00	8.80	9.50
9	DB 7045	45°	4.50	5.90	7.00	8.35	9.35	10.25	11.05
10	DB 8045	45°	4.80	6.80	8.00	9.60	10.70	11.70	12.65

Brass



Flow Rate (l/min) @ Different Pressure Value (Bar)									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	DB 1565	65°	0.90	1.25	1.50	1.80	2.00	2.20	2.35
2	DB 2065	65°	1.20	1.70	2.00	2.40	2.70	2.90	3.15
3	DB 2565	65°	1.49	2.11	2.50	2.98	3.34	3.65	3.95
4	DB 3065	65°	1.80	2.50	3.00	3.60	4.00	4.40	4.75
5	DB 3565	65°	2.10	2.95	3.50	4.20	4.70	5.10	5.55
6	DB 4065	65°	2.40	3.40	4.00	4.80	5.30	5.85	6.30
7	DB 5065	65°	3.00	4.20	5.00	6.00	6.70	7.30	7.90
8	DB 6065	65°	3.60	5.10	6.00	7.20	8.00	8.80	9.50
9	DB 7065	65°	4.20	5.90	7.00	8.35	9.35	10.25	11.05
10	DB 7565	65°	4.50	6.35	7.50	8.95	10.00	10.95	11.85
11	DB 8065	65°	4.80	6.80	8.00	9.60	10.70	11.70	12.65
12	DB 9065	65°	5.40	7.60	9.00	10.75	12.00	13.15	14.25
13	DB 10065	65°	6.00	8.45	10.00	11.95	13.40	14.60	15.80
14	DB 12065	65°	7.20	10.10	12.00	14.30	46.00	17.60	18.95
15	DB 13065	65°	7.77	10.99	13.00	15.54	17.37	19.03	20.55
16	DB 15065	65°	8.96	12.68	15.00	17.93	20.04	2.96	23.72
17	DB 16065	65°	9.55	13.50	16.00	19.10	21.40	23.40	25.30

These part numbers are easy to use and identify, example:

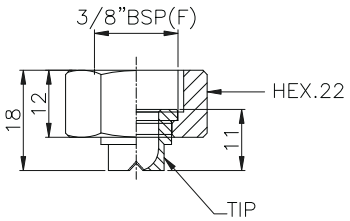
Brass or Stainless steel 3/8" Female - DB 2045 / DB2065 = 2.00 litre/min @ 2.8 bar with a 45° & 65° angle

Flow Rate (l/min) @ Different Pressure Value (Bar)									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	DB 1580	80°	0.90	1.25	1.50	1.80	2.00	2.20	2.35
2	DB 2080	80°	1.20	1.70	2.00	2.40	2.65	2.90	3.15
3	DB 3080	80°	1.80	2.50	3.00	3.60	4.00	4.40	4.75
4	DB 3580	80°	1.80	2.50	3.50	3.60	4.00	4.40	4.75
5	DB 4080	80°	2.40	3.40	4.00	4.80	5.30	5.85	6.30
6	DB 5080	80°	3.00	4.20	5.00	6.00	6.70	7.30	7.90
7	DB 6080	80°	3.60	5.10	6.00	7.20	8.00	8.80	9.50

Flow Rate (l/min) @ Different Pressure Value (Bar)									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	DB 1590	90°	0.90	1.25	1.50	1.80	2.00	2.20	2.35
2	DB 2090	90°	1.20	1.70	2.00	2.40	2.65	2.90	3.15
3	DB 3090	90°	1.80	2.50	3.00	3.60	4.00	4.40	4.75
4	DB 3590	90°	1.80	2.50	3.50	3.60	4.00	4.40	4.75
5	DB 4090	90°	2.40	3.40	4.00	4.80	5.30	5.85	6.30
6	DB 5090	90°	3.00	4.20	5.00	6.00	6.70	7.30	7.90
7	DB 6090	90°	3.60	5.10	6.00	7.20	8.00	8.80	9.50

These part numbers are easy to use and identify, example:
Brass or Stainless steel 3/8" Female - DB 2080 / DB 2090 = 2.00 litre/min @ 2.8 bar with a 80° & 90° angle

Flat Tip in Billet Caster



Flat nozzle tips are usually mounted onto a pipe using a welded 3/8" nipple or a clamp and secured in place with a retaining nut. The precision machined orifices can be protected against the risk of clogging by using a filter which fits neatly into the nipples and clamps, specifically designed for this purpose.

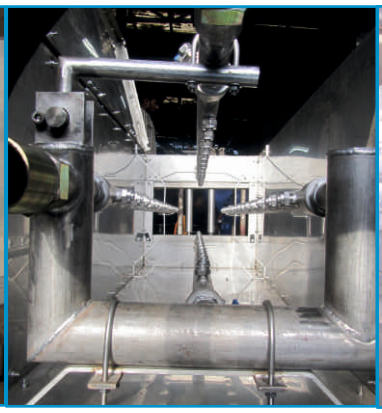
Flow Rate (l/min) @ Different Pressure Value (Bar)									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	CC 2065	65°	1.20	1.70	2.00	2.40	2.70	2.90	3.15
2	CC 2565	65°	1.49	2.11	2.50	2.98	3.34	3.65	3.95
3	CC 3065	65°	1.80	2.50	3.00	3.60	4.00	4.40	4.75
4	CC 3565	65°	2.10	2.95	3.50	4.20	4.70	5.10	5.55
5	CC 4065	65°	2.40	3.40	4.00	4.80	5.30	5.85	6.30
6	CC 5065	65°	3.00	4.20	5.00	6.00	6.70	7.30	7.90
7	CC 5765	65°	3.28	4.64	5.70	6.57	7.34	8.05	8.69
8	CC 6065	65°	3.60	5.10	6.00	7.20	8.00	8.80	9.50
9	CC 8065	65°	4.80	6.80	8.00	9.60	70.70	11.70	12.65

These part numbers are easy to use and identify, example:
Brass or Stainless steel 3/8" Female - CC 2065 = 2.00 litre/min @ 2.8 bar with a 65° angle

Type of Nozzles		Spray pattern	Spray angle	V water [l/min] min/max				Turn down ration (1 bar/7 bar water)	Material		End Connection	Applications	Features
					at p [bar]				Brass nickle	SS 304 / 316			
					1.0	2.0	7.0						
	Full cone circular pattern	▲ ●	45° 60° 90° 120°	min.	0.76	1.0	1.65	1:2.2 up to 1:2.5	✓	✓	1/8 BSPT/NPT 1/4 BSPT/NPT 3/4 BSPT/NPT	Billet, Bloom (Rounds): as well as Slabcaster for narrow side or footroller area	■ Stable spray angle
				max.	7.58	10.0	16.51						
	Full cone circular pattern	▲ ●	45° 60° 90° 120°	min.	0.76	1.0	1.65	1:2.2 up to 1:2.5	✓	✓	Retaining nut 3/8 BSPT/NPT	Billet, Bloom (Rounds): as well as Slabcaster for narrow side or footroller area	■ Stable spray angle
				max.	7.58	10.0	16.51						
	Full cone square pattern	▲ ■	60° 75° 85° 115°	min.	0.95	1.25	2.06	1:2.2	✓	✓	1/4 BSPT/NPT 3/8 BSPT/NPT 1/8 BSPT/NPT 1/4 BSPT/NPT	Thin slab, Slab (footroller area)	■ Stable spray angle
				max.	7.58	10.0	16.51						
	Oval Full cone	▲ ⬬	90°	min.	3.37	4.45	7.34	1:2.2	✓	✓	1/4 BSPT/NPT 1/4 BSPT/NPT 1/8 BSPT/NPT	Thin slab, Slab (e.g. footroller area)	■ Stable spray angle
				max.	5.1	6.85	11.31						
	Vanless Full cone circular	▲ ⬬	60° 90° 120°	min.	0.71	1.0	1.87	1:2.6	✓	✓	1/4 BSPT/NPT 3/8 BSPT/NPT	Billet, Bloom (Rounds):	■ Vanless full cone nonclogging type
				max.	11.31	16.0	29.9						

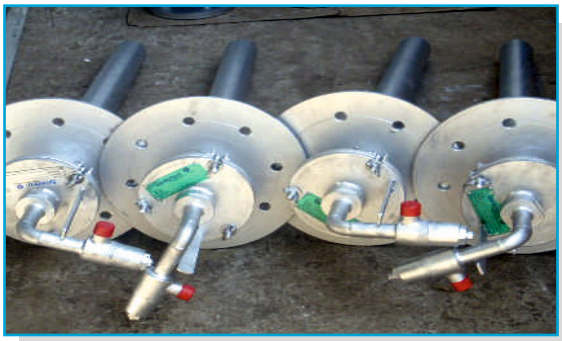
We are manufacturing "**SPRAY HEADERS**" as per **Indian, British, German, & Us Standard** for various applications. Spray headers that accommodate different types of nozzles and ensure perfect overlapping spray patterns or non-overlapping spray patterns for applications where uniform coverage is critical.

We design, Engineer & Manufacture complete **Roll Coolant Systems** including Headers, Spray Pipes also laminar spray headers for hot strip mill, Spray pipes for mould & Caster segment of integrated steel plants, Lance with & With out spill back type systems for sponge iron plants.



Spray Headers Fabrication

Spray Lance Fabrication



Max Flow Spray Nozzle

Application example :

Gas Cooling in medium sized and large Gas Cooling Towers, e.g. in the Cement, Lime, Glass and Iron & Steel Industry

Technical data :

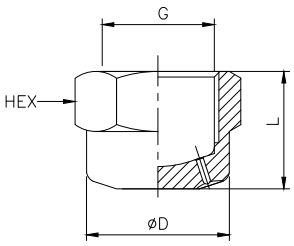
Spray Angle: 90°, 60°, 45°
Turn down ratio: ≥ 10 : 1
Typical operating pressure: 35 bar (g)

Spillback Spray Nozzle

Atomize liquids as a fine hollow cone Irrespective of the atomized flow rate, the medium is always carried to the nozzles at the same high pressure.

Regulation is performed by opening a control valve in the Reverse Flow Nozzle line which takes a partial flow rate from the atomization and carries it back to the tank. The maximum atomized flow rate is achieved with the control valve closed. Even, fine liquid atomization is achieved across the entire control range.

Fog Spray Nozzle



Nozzle Conn. (G)	D	L	Hex
3/4"	31.5	25.4	32
1"	40.5	29.4	41
1-1/4"	45.5	31	46

M.O.C. : SS304, SS316, Brass, PVC, etc.

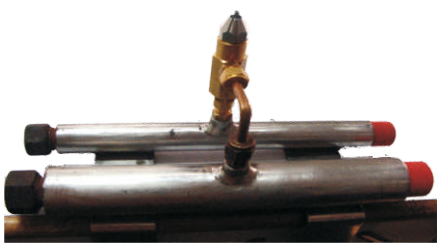
Design Features : This non clogging nozzle gives fine atomization with the aid of several flat spraying into one another.

Applications : Fire Protection, Dust Control, Aerating, Chemical Processing.

Nozzle Inlet Conn. NPT/BSP T/ BSPP	Hose Size	Nozzle Type		Capacity					
		Spray Angle	Conn. Female	1 bar	2 bar	3 bar	5 bar	7 bar	10 bar
3/4"	1"	70°/ 90°	✓	11	16	19.5	25.5	30	36
3/4"	1"	70°/ 90°	✓	21.5	30	36.5	47	56	67
3/4"	1"	70°/ 90°	✓	28	40	49	63	75	89.5
3/4"	1"	70°/ 90°	✓	42.5	60	73.5	95	112	134
1"	1-1/4"	70°/ 90°	✓	57	80	98	126.5	150	179
1"	1-1/4"	70°/ 90°	✓	79	112	137	177	209	250.5
1-1/4"	1-1/2"	70°/ 90°	✓	113	160	196	253	299.5	358
1-1/4"	2"	70°/ 90°	✓	159.5	225	275.5	356	421	503

Dry Fog Spray Nozzle

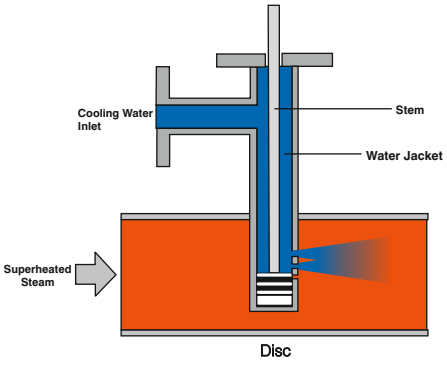
Nozzle For Humidification -
Nozzle Flow Charts at Nominal Settings



Water Flow Litres / hour	Water Pressure Bar	Air Pressure Bar	Air Rate Litres / sec (cfm)	Droplet Size Range micron
Nozzle size 03 5H	**0.4-8 lts/hr**			
3	1.0	4.0	0.8 (1.7)	1 to 5
Nozzle size 05 2H	**1-20 lts/hr**			
8	1.0	5.0	1.84 (3.9)	3 to 8
Nozzle size 08 6H	**2-26 lts/hr**			
20	1.0	5.0	5.19 (11.0)	5 to 20
Nozzle Size 12 5H	**4-55 lts/hr**			
40	1.0	5.0	7.08 (15.0)	25 to 65
Nozzle size ST52	**1-20 lts/hr**			
8	1.0	5.0	1.84 (3.9)	3 to 10
Nozzle size ST47	**2-30 lts/hr**			
18	1.0	5.0	5.19 (11.0)	5 to 20
Nozzle size ST33	**8-55 lts/hr**			
40	1.0	5.0	7.08 (15.0)	25 to 65

Desuperheating, sometimes called attemperation or steam conditioning, is the reduction of gas temperature. Its most common application is the reduction of temperature in a steam line through the direct contact and vaporation of water. Desuperheaters use uniquely effective methods to inject the water and maximize the surface contact area between the steam and water to increase the rate of water evaporation. Most of our Desuperheaters inject water through several small holes into the path of the high velocity steam where the water is atomized into small water droplets and quickly evaporated into the steam.

The simple spray type Desuperheater is used in applications where the steam load remains relatively constant. Cooling water is injected into the superheated steam through a nozzle. The steam temperature is reduced by evaporative cooling. The maximum turndown ratio of the spray type Desuperheaters is 2:1. **Air atomizing type Spray Nozzles & Hollow Cone type Spray Nozzles** are a good option for Spray type Desuperheaters.

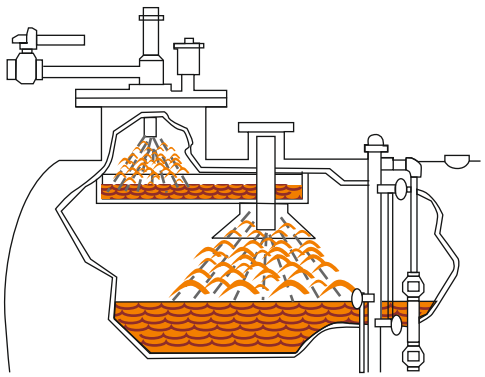


Deaerator

Deaeration is a process by which dissolved gases are removed from water. Since proper deaeration of boiler feed water is essential to minimise oxygen corrosion and carbon dioxide attack, almost every boiler plant uses deaerating systems. Nowadays modern deaerating systems can be designed to obtain a residual oxygen content as low as 0.005 ml/liter.

Spray type Deaerators are simple, cost effective and virtually maintenance free systems that can operate under variable loads without significant impact on heating or deaerating performances. For the above reasons, this kind of Deaerator is widely used for industrial applications. Spray Deaerators do not require corrosion resistant materials because all the water in contact with the shell is sufficiently deaerated and non-corrosive at the operating conditions.

Full Cone and Spiral Full Cone series of Spraytech Nozzles can be used for this purpose.



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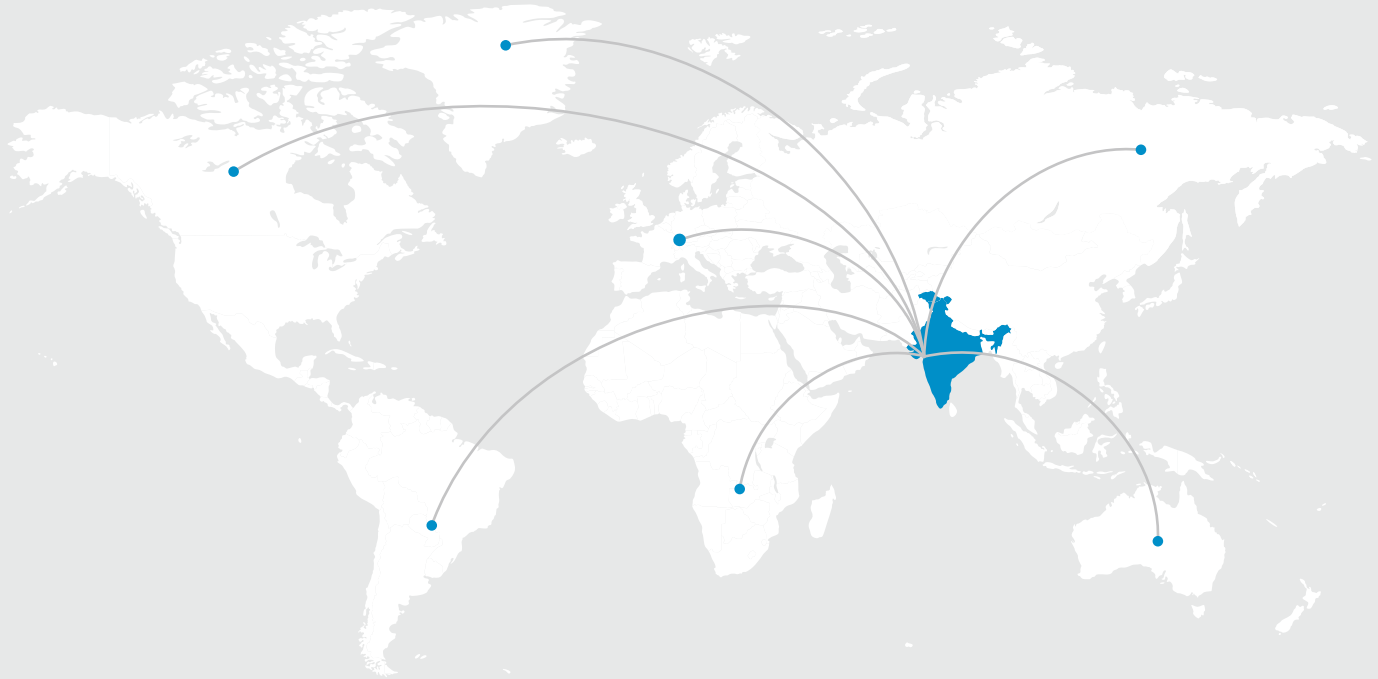

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