



AN ISO 9001 : 2008 Certified Company

CIN No :U29219MH2006PTC163469



Decide with Confidence


D&B D-U-A-S Number : 92-883-8427

**Spraytech**<sup>®</sup>  
Systems (India) Pvt. Ltd.   
*The Flow Technologists*

Industrial Spray Nozzles, Spray Systems & Accessories

Complete Solution for Spray Applications





Spraytech Systems (India) Pvt. Ltd. was started by Shri. Bapusaheb Kharade, in early 2000 as a Spray Nozzle Manufacturer for replacement market catering to Steel Industries. Primarily company was started in a 1000 sq. feet workshop & within a decade it is elaborated to 7000 sq. feet modern factory. An another factory is started at Indapur 100 kms. away from Pune with a area of 2,00,000 sq. feet is again a big achievement for the Organisation. Recently Spraytech has started one another factory at Rabale (Navi Mumbai) with area of 13000 sq. feet. All three factories are facilitated with next generation class CNC machines, heavy material handling equipments to serve raising market demands with no compromise with world class product quality. Along with this field of engineering we are entered in forging to serve respective product demands.

"Spraytech" is a leading organization & a good name in the market for mfg. of Spray Nozzles.

We attribute our success to our motivated and skilled work force who can accomplish job orders of varying magnitudes and complexities. We are proud to have esteemed customers who have entrusted their faith in us over the years.

The aim of our organization is customer satisfaction which is achieved through following objectives: Commitment to quality, Prompt response, Technological solutions, On time delivery, After sales service.

Our challenge is to meet the widely ranging delivery demands of an equally diverse customer base coupled with constant up gradation of production equipment and techniques to keep pace with new market trends and applications.



## Test Rig - 1



- A) Testing Capacity : 200 M<sup>3</sup>/Hr  
Total Pressure Drop : 2 Bar
- B) Testing capacity : 43 M<sup>3</sup>/Hr  
Total Pressure Drop : 7 Bar

## Test Rig - 2



- A) Testing capacity : 1-350 LPM  
Total Pressure Drop : 10 Bar
- B) Testing capacity : 1-260 LPM  
Total Pressure Drop : 9 Bar

## Quality Policy

We at SPRAYTECH SYSTEMS INDIA PVT. LTD. are committed to achieve total Customer satisfaction through Design, Development, Manufacturing and Supply of consistent quality Industrial Spray Nozzles & Systems with aim of zero percentage rejection at customer's end while remaining cost effective and competitive. This shall be achieved through team work and continual improvement in all our areas of operation.

## Vision




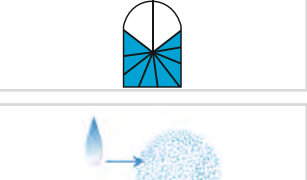
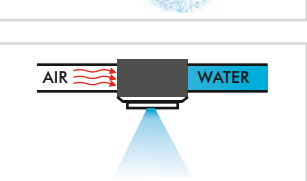

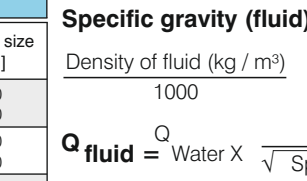
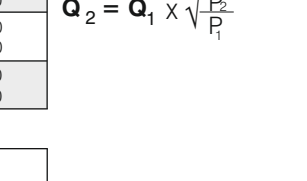
We are putting all our efforts to improve efficiency of our products with effective cost cutting. We are all committed to on time delivery, quality products, prompt after sales service and product technical support.

## Mission

We provide hygienic working environment with all necessary facilities for better working environment. We encourage to safety measures to avoid troubles to workers and processes. Our customer is our first priority and we always try to serve best to our customer.



# Spray Nozzle Selection Guide - by Application & Spray Pattern

Category of Nozzles	Applications	Spray Patterns
FLAT SPRAY	Rinsing, High Pressure Cleaning, Granulation, Coating	
FULL CONE	Surface Spraying, Coating, Washing & Cooling of flue gases, Scrubbing	
MIST SPRAY NOZZLE	LDO firing in Boiler & Dust suppression.	
HOLLOW CONE	Fugitive dust suppression, Scrubbing essentially small droplet size, Coating	
OIL BURNER SPRAY NOZZLE	LDO firing in kilns of cement, sponge, Iron plants & Dust suppression.	
TANK WASHING	Cleaning of inside surface of barrels & tanks.CIP	
FINE ATOMIZING NOZZLE	Gas cooling, conditioning or humidifying applications, for improving the chemical reaction by increased contact surface	
AIR ATOMIZING NOZZLE	Coating, Atomizing of viscous liquids, Gas cooling, conditioning or humidifying, Chemical process engineering. Pan coating. Tablet coating, FBD Granulation	

## Droplet Size Selection

Single Fluid Spray Nozzles	Liquid Pressure [barg]					
	1		2		3	
	Flowrate V [l/min]	Droplet size [μm]	Flowrate V [l/min]	Droplet size [μm]	Flowrate V [l/min]	Droplet size [μm]
Inline Entry Hollow Cone Spray Nozzle	0.10	110	0.10	130	0.17	110
	0.5	210	1.50	230	1.60	190
Tangential Entry Hollow Cone Spray Nozzle	0.10	290	1.00	330	1.60	230
	1.80	690	25	650	40	480
Full Cone Spray Nozzle	0.70	550	1.00	390	1.60	310
	18	1310	25	1090	40	760
Multi-Tip Spray Nozzle	0.90	190	1.25	185	2.00	140
	20	390	28	275	44	180
Flat Spray Nozzle	0.70	410	1.00	350	1.60	310
	18	1210	25	990	4.00	700

Air Atomizing Spray Nozzles	Air / Water [Nm³/h:l/min]					
	1		2		3	
	Flowrate V [l/min]	Droplet size [μm]	Flowrate V [l/min]	Droplet size [μm]	Flowrate V [l/min]	Droplet size [μm]
External / Internal Mix	As Per Ratio	95	As Per Ratio	95	As Per Ratio	95

### Formulas

**Specific gravity (fluid) =**

$$\frac{\text{Density of fluid (kg / m}^3\text{)}}{1000}$$

$$Q_{\text{fluid}} = Q_{\text{Water}} \times \frac{1}{\sqrt{\text{Specific gravity (fluid)}}}$$

$$Q_2 = Q_1 \times \sqrt{\frac{P_2}{P_1}}$$



# Units Conversion Data

Multiply	By	To Obtain
Feet/sec	18.29	Metres/Min
Feet or Water	0.0295	Atmospheres
Feet or Water	0.884	Inches of Mercury
Feet or Water	0.433	Psi
Gallons	3785	Cm <sup>3</sup>
Gallons	0.1337	Ft <sup>3</sup>
Gallons	0.83257	Imperial Gallons
Gallons	3.785	Litres
Gallons/min	0.06308	Litres /sec
Imperial Gallons	1.2	Gallons
Horsepower	1.014	Horsepower (metric)
Horsepower	33.000	Foot pounds/min
Horsepower	746	Watts
Inches	2.54	Centimeters
Kg/cm <sup>2</sup>	14.22	Psi
Kilo Watts	1.340	Horsepower
Litres	1000	Cm <sup>3</sup>
Litres	0.264	Gallons
Litres	0.22	Imperial Gallons
Litres	33.8	Ounces (Fluid)

Multiply	By	To Obtain
Metres	3.281	Feet
Microns (μ)	0.0394	Thousandth of an inch
Miles/hr	44.7	Centimeters/sec
Miles/hr	1.467	Feet/sec
Millimetres	0.0394	Inches
Psi	0.06895	Atmospheres
Psi	0.06895	Bar
Psi	2.307	Feet of Water
Psi	0.0703	Kg/cm <sup>2</sup>
Psi	6.895	KPA
Atmospheres	1.013	Bar
Atmospheres	33.931	Feet of water
Atmospheres	1.0332	Kg/cm <sup>3</sup>
Atmospheres	101.3Kilo	Pascals (k Pa)
Atmospheres	14.696	Psi
Bar	100	KPA
Bar	14.5	Psi
Barrels (oil)	42	Galions
Centimeters	0.3937	Inches
Centi Stokes	Sp.gravity	Centi Poise

Multiply	By	To Obtain
Cm <sup>3</sup>	0.061	in <sup>3</sup>
Cm <sup>3</sup>	0.000264	in <sup>3</sup>
Cm <sup>3</sup>	0.001	M <sup>3</sup>
Ft <sup>3</sup>	1728	Gallons
Ft <sup>3</sup>	0.02832	Litres
Ft <sup>3</sup>	7.48	Pounds (Water)
Ft <sup>3</sup>	28.32	Cm <sup>3</sup>
Ft <sup>3</sup> (water)	62.43	Gallons
In <sup>3</sup>	16.39	Litres
In <sup>3</sup>	0.00433	Minutes
In <sup>3</sup>	0.164	Degree (Fahrenheit)
M <sup>3</sup>	35.31	Degree (Celsius)
M <sup>3</sup>	61.016	Metres
M <sup>3</sup>	264.2	Gallons
M <sup>3</sup>	1000	Litres
Degree (Angle)	60	Ft <sup>3</sup>
Degree (Celsius)	(°C x 1.8) + 32	In <sup>3</sup>
Degree (Fahrenheit)	(°F - 32) x 0.56	Gallons
Feet	0.3048	Centimeters/sec
Feet/sec	30.48	Litres

Unit	bar	Pascal [Pa] = N/m <sup>2</sup>	kg/cm <sup>2</sup> = 1 at	psi	lb/sq.ft.
1 bar	1	100000	1.02	14.5	2089
	-5		-5	-5	
1 Pascal	1x10	1	1.02x10	14.5x10	0.0209
1 at					
kg/cm <sup>2</sup>	0.9807	98070	1	14.22	2048
1 Psi	0.06895	6895	0.07031	1	144
	-3		-3	-3	
1lb/sq.ft.	0.479x10	47.9	0.4882x10	6.94x10	1

Unit	l/s	l/min	m <sup>3</sup> /hr	Us-gal/min	Imp-gal/min
1 l/s	1	60	3.6	15.85	13.2
1 l/min	0.01667	1	0.06	0.2642	0.22
1 m <sup>3</sup> /hr	0.28	16.67	1	4.4	3.66
1 Us-gal/min	0.0631	3.785	0.227	1	0.8327
1 Imp-gal/min	0.076	4.546	0.273	1.201	1

Theoretical spray Width (in mm) at various height from nozzle tip												
Spray Angle	50	100	150	200	250	300	400	500	600	700	800	1000
5°	4	9	13	18	22	26	35	44	52	61	70	87
10°	9	18	26	35	44	53	70	88	105	123	140	175
15°	13	26	40	53	66	79	105	132	158	184	211	263
20°	18	35	53	71	88	106	141	176	212	247	282	353
25°	22	44	67	89	111	133	177	222	266	310	355	443
30°	27	54	80	107	134	161	214	268	322	375	429	536
35°	32	63	95	126	158	189	252	315	378	441	505	631
40°	36	73	109	146	182	218	291	364	437	510	582	728
45°	41	83	124	166	207	249	331	414	497	580	663	828
50°	47	93	140	187	233	280	373	466	560	653	746	933
55°	52	104	140	208	260	312	417	521	625	729	833	1040
60°	58	116	173	231	289	346	462	577	693	808	924	1150
65°	64	127	191	255	319	382	510	637	765	892	1020	1270
70°	70	140	210	280	350	420	560	700	840	980	1120	1400
75°	77	154	230	307	384	460	614	767	921	1070	1230	1530
80°	84	168	252	336	420	504	671	839	1010	1180	1340	1680
85°	92	183	275	367	458	550	733	916	1100	1280	1470	1830
90°	100	200	300	400	500	600	800	1000	1200	1400	1600	2000
95°	109	218	327	437	546	655	873	1090	1310	1530	1750	2180
100°	119	238	358	477	596	715	953	1190	1430	1670	1910	2380
110°	143	286	429	571	714	857	1140	1430	1710	2000	2290	2860
120°	173	346	520	693	866	1040	1390	1730	2080	2430	2771	3464
130°	215	429	643	858	1070	1290	1720	2150	2570	3002	3431	4289

## Metallurgical Industry



### Continuous Casting of steel Secondary Cooling

For higher productivity secondary cooling plays critical part where various rates of heat flux are to be removed from hot slab at various stages. Thus, spray nozzles are used for secondary cooling. For this purpose single fluid, twin fluid spray nozzles are used.

### Descaling

During the process of cooling, iron oxide scales are formed on hot steel surface where high pressure water jet are used to remove this scales. For this purpose specially designed flat spray nozzle are used which has operating pressure range from 80 to 450 bar.

### Roll Cooling

As hot slab rolls through series of rollers, heat transfers due to mutual contact; Thus to recover this heat from rolls, spray nozzles are used. This also helps to control and improves the shape of rolls.

In steel industries spray nozzles are used for so many other applications elaborated as below :

#### Coke ovens

- Coke quenching
- Gas cleaning and droplet separators
- Strip spray-off and blow-off

#### Hot rolling

- Settlement of oxide dusts in the stand
- Intermediate stand cooling
- Strip surface quenching to protect the work rolls

## Chemical Industry



### Cleaning packing columns and Demister pads

Packing columns are used in chemical and petrochemical industries, for washing of packing materials / beds spray nozzles are used. Specially non-clogging spray nozzles are used for this purpose.

### Wet gas scrubber

To absorb the chemical compounds from gas, some absorbents are sprayed into the gas scrubber. For even distribution of absorbents, spray nozzles are used.

### Cleaning of fermentation tanks and reactors

Several types of cleaning agents and solvents are used to clean fermentation tanks and reactors. Thus, here specially designed self-rotating and stationary spray nozzles are used.

## Food and Beverages Industries



### Cooling and Heating (Pasteurization)

During the packaging of hot or cold foods full cone spray nozzles are used for thermal transfer, the uniform circular spray pattern helps to maintain uniform and steady heat transfer. In pasteurizing tunnels tangential entry hollow cone spray nozzles are used for both cooling or heating of packed cans, bottles, pouches of food or beverages.

### Sanitizing, Washing Bottles and Cans

Spray nozzles and spray balls are used for sanitizing, washing and drying packaged or empty bottles / barrels. This is being used in automated packages and material handling equipments

## Pharmaceutical Industry



### Tablet coating

After making a good tablet, you must often coat it. The coating can have several functions. It can strengthen the tablet, control its release, improve its taste, colour, it makes it easier to handle and package, and protect it from moisture.

### Clean In Place (CIP)

For efficient cleaning of mixing tanks, containers, equipment, coating pans spray balls / turbo disc spray nozzles are installed inside the equipments made of pharma grade stainless steel which cleans the equipments in place.

### Granulation With RMG / HSG

Also known as wet granulation process. Material is loaded into bowl having agitator and chopper and mixed rigorously then binder material is sprayed from top and granules are formed.

Good quality granules are foundation for good quality tablet.

Various liquid blenders are used for wet granulation.

Spraying binder over bulk material could reduce wet granulation cycle time and increase productivity.

## Air Pollution Control



Emission regulations are made compulsory everywhere by government for small, large industries which creates dust, exhaust gases which are dangerous for environment.

### Dust Suppression system

Fine mist spray nozzle are used at various dumping, transfer points where large emission of dust happens to suppress flying contamination water spray nozzles are used. Application industries are power plants Cement Industry, Glass Industry, Refineries, Pulp and Paper Industries, Chemical Industries, Steel Industries, Mining Industries etc.

### Some other applications

- Wet Flue Gas Desulphurization
- Circulating Fluidized Bed
- Spray Dry Absorber
- NOX Removal
- Fire Protection Systems
- Gas Conditioning

## Automotive / Sheet Metal Industry



### Surface treatment

Surface treatment consist of several process stations like cold / hot water rising, degreasing, phosphatising, coating, galvanzing, and cleaning. Full cone, Flat spray nozzles with quick release type assembly and clip on mountings are used to set in several spray angels, assemble and dismantle easily. Surface treatment plays critical role in automotive and sheet metal industries as it is giving base for painting operations.

### Assembly and Quality Assurance

In the final stages of automotive production, many applications require the use of nozzles. These include sealing, dewaxing car bodies, vehicle washing, high-pressure cleaning and various simulation tests (e.g. corrosion tests, leak tests, aquaplaning tests).

### Some other applications we provide spray nozzles for

- Humidification with water and steam
- Desuperheating
- Oil burners
- Incinerator

For any other application please contact with our technical experts.

## Paper Industry



### Coating

Surface sizing operations are performed to provide increased surface strength, as well as to produce paper with an increased resistance to penetration by liquid solutions. Treatment can also provide better surface characteristics and improve certain physical properties of the paper sheet.

### Showers and Oscillators

spray showers with the built-in cleaning device have been successfully used in paper mills around the world for years. A simple turn of the handwheel sweeps contaminants away from the nozzle orifices and directs all debris down the flush-out valve.

### Trimming

Paper trim and edge sprays are used in various sections of paper machines. Generally, they improve the mill speed and reduce risk of web breaks. Some machines use trim nozzles after the last drying roll as well.

## Fire Suppression for Tanks



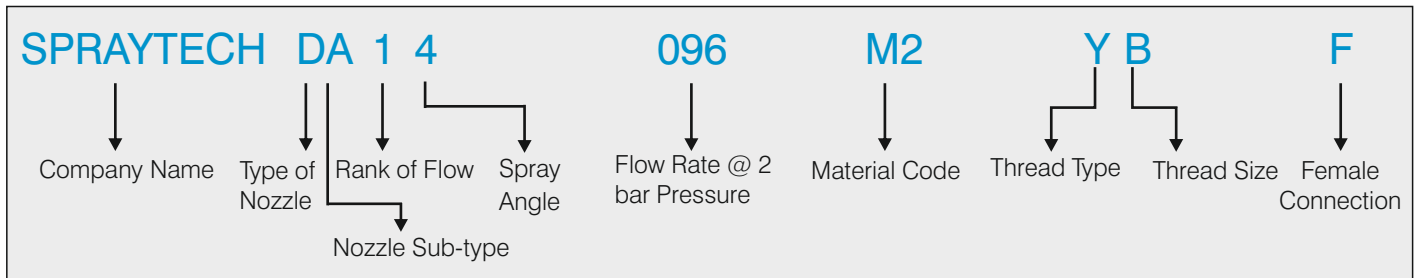
Spray irrigation of tanks aims to protect tanks and other vessels against unacceptable heating during burning. Here, heating must be understood as a condition where an increase of a tank's inner pressure and a decrease of the tank walls' resistance will lead to bursting of the tank.

Also important is the heat-influenced breakdown of the sealing elements in detachable connections. Water spray simultaneously extinguishes and cools the complete surface of the incendiary matter.



The following description will help to explain our Part Number/ Code in relation to the “SPRAYTECH” Spray Nozzle.

EXAMPLE ORDERING.



Note:- DA14.096.M2.YB(F)

'F' Only when there is female connection other wise DA14.096.M2.YB will be Male connection as standard.

Type of Nozzles

Codes	Spray Nozzles Type
A	Air Atomizing /Fine Atomizing Spray Nozzle
B	Hollow Cone Spray Nozzle
C	Flat Spray Nozzle
D	Full Cone Spray Nozzle
E	Tank Washing Spray Nozzle
F	Steel Mill Spray Nozzles
G	General Engineering & Accessories
H	Special Project

B	A	Hollow Cone Spray Nozzle
B	B	Hollow Cone Spray Nozzle - Female Connection
B	C	Hollow Cone Spray Nozzle
B	D	Hollow Cone Spray Nozzle
B	E	Hollow Cone Spray Nozzle, Flanged Connection
B	F	Hollow Cone Spray Nozzles, Moulded Plastic Nozzle
B	G	Inline Entry Hollow Cone Spray Nozzle
B	H	Hollow Cone Spray Nozzles
B	I	Hollow Cone Spray Nozzle - Spiral
B	J	Hollow Cone Spray Nozzle - Adjustable
B	K	Hollow Cone Spray Nozzle - Fine Fog

Hollow Cone Spray Nozzles

Nozzle Sub Types

Codes		
C	A	Flat Spray Nozzle
C	B	Flat Spray Nozzle
C	C	Flat Spray Nozzle
C	D	Flat Spray Nozzle
C	E	Flat Spray Nozzle - Dove Tail Type
C	F	Flat Spray Nozzle - Dove Tail Type
C	G	High Impact Flat Spray Nozzles
C	H	Flood Spray Nozzle - Flat Type
C	I	Flood Spray Nozzle - Tip Flat Type
C	J	Air Wiping Spray Nozzle
C	K	Flat Spray Nozzle for Air & Saturated Steam

Flat Spray Nozzles

E	A	Self Rotating Spray Nozzle
E	B	Self Rotating Spray Nozzle
E	C	Self Rotating Spray Nozzle - CIP Application
E	D	Barrel Tank Washing Spray Nozzle
E	E	Gyro Jet Tank Washing Spray Nozzle
E	F	Turbo Cleaning Tank Washing Spray Nozzle
E	G	Slotted Spray Ball
E	H	Static Spray Ball
E	I	Static Spray Ball - Higher Flow Rates
E	J	Fixed Tank Washing Spray Nozzle
E	K	Pop - Up nozzle

Tank Washing Spray Nozzles

C	L	Straight Jet Spray Nozzle
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Straight Jet Spray Nozzles

D	A	Full Cone Spray Nozzle
D	B	Full Cone Spray Nozzle - Female Connection
D	C	Full Cone Flanged Connection Spray Nozzle
D	D	Full Cone Spray Nozzle - Square Pattern
D	E	Full Cone Spray Nozzle - Square Pattern - Female Connection
D	F	Spiral Full Cone Spray Nozzle
D	G	Multiple Full Cone Spray Nozzle
D	H	Multiple Full Cone Spray Nozzle
D	I	Tangential Entry Vaneless Full Cone Spray Nozzle
D	J	Tangential Entry Vaneless Full Cone Spray Nozzle - Female Connection
D	K	Narrow Angle Full Cone Spray Nozzle
D	L	Narrow Angle Full Cone Spray Nozzle - Female Connection
D	M	Full Cone Spray Nozzle - Customized
D	N	Full Cone Spray Nozzle - Customized -Female Connection

Full Cone Spray Nozzles

K	S	Steam Spray Nozzle
K	S1	Steam Spray Nozzle (With NRV)

Steam Spray Nozzles

## Material Codes

Code	Material ( Metals & Alloys )
M0	M.S.
M1	SS 304 / SS303
M1L	SS 304L
M1T	SS 304 Ti
M2	SS 316
M2L	SS 316L
M2T	SS 316 Ti
M3	Brass
M3N	Nickel Plated Brass
M4A	SS 410
M4B	SS 420
M5	Cast Iron
M6	Aluminum
M7A	Hastelloy 2000
M7B	Hastelloy B
M7C	Hastelloy C 276
M7D	Hastelloy C 22
M8A	Titanium Grade 2
M8B	Titanium Grade 3
M8C	Titanium Grade 7
M9	Monel
M10	SS 310
M11	Carbon Steel
M12	Bronze
M13	Copper
M14	Nickel
M15	SS 416
M16	Alloy 20
M17	Inconel
M18	Incoloy
M19	Silicon Carbide
M20	Tungsten Carbide
M21	Ceramic
M3C	Chrome Plated Brass
M22	SS 2205 Duplex

Code	Material ( Plastics )
P1	PVC (Polyvinylchloride)
P2	PP (Polypropylene)
P2G	Polypropylene with Glass Filled (25%)
P2H	PPH (Polypropylene Homopolymer)
P3	PTFE (Polyterafluoroethylene) / Teflon®
P3C	C-PTFE (Carbon Filled PTFE)
P4	Nylon (Polyamide)
P5	Delrin® / POM (Polyacetate)
P6	PVDF (Polyvinylidene fluoride)
P7	Polyethylene
P7A	LDPE (Low density Polyethylene)
P7B	HDPE (high density Polyethylene)
P7C	UHMW (Ultra-High-Molecular-Weight Polyethylene)
P8	CPVC (Chlorinated Polyvinyl Chloride)
P9	Polyurethane
P10	PVC ( Polyvinyl Chloride )
P11	ABS

Material code O rings (as per ASTM)	
VMQ	Silicone Rubber
FKM	Fluoro Rubber (Viton®)
NBR	Nitrile Rubber
EPDM	Ethylene Propylene Diene Rubber
CR	Chlorobutadine Rubber (Neoprene)
PU	Polyurethane Rubber
ACM	Polyacrylic Rubber
IIR	Butyl Rubber
SBR	Styrene Butadine Rubber

Codes	Rank of Flow (LPM)
1	0 - 9
2	10 - 99
3	100 - 999
4	1000 - 9999

Codes	Spray Angle
1	15°
2	30°
3	45°
4	60°
5	75°
6	90°
7	105°
8	120°
9	130° & Above

Codes	Connections
F	Female
M	Male
FLG	Flanged
PIN	Pin Type
TIP	Tip Models
DTL	Dove Tail

Codes	Thread Size
A	1/8"
B	1/4"
C	3/8"
D	1/2"
E	3/4"
F	1"
G	1 1/4"
H	1 1/2"
K	2"
L	2 1/2"
M	3"
N	3 1/2"
O	4"
P	5"
Q	6"

Codes	Thread Type
X	BSPP
Y	BSPT
Z	NPT
M	METRIC

## Trademarks Registered Trademark Ownership

Trademark	Property of :
Hastelloy®	Haynes International, Inc.
Inconel®	Inco Nickel Sales, Inc.
Teflon®	E.I. Dupont de Nemours and Company
Viton®	Dupont Dow Elastomers.
Monel®	The International Nickel Company, Inc.
Stellite®	Stoody Deloro Stellite, Inc.



## Flat Spray Nozzles Series

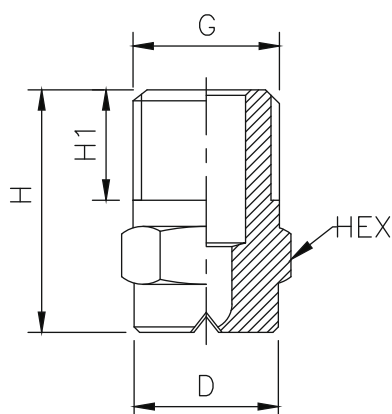


### APPLICATION

- Belt cleaning
- Coating
- Steam cleaning
- Degreasing
- High pressure cleaning
- Gravel washing
- Cooling
- Surface treatment
- Phosphating
- Rain curtains
- Foam control
- Foam spraying
- Lubrication
- Filter cleaning
- Spray cleaning
- Washing processes and many others...

# CA Series Flat Spray Nozzles

CA



Standard design with self sealing thread connection. Stable spray angle, Uniform distribution of liquid, parabolical distribution of liquid.

**Design** : One piece construction, Non clogging type.

**Application** : Rinsing, Lubricating, Industrial washing machines, Cake washing in Centrifuge, CIP, Tray washing.

'C' Series Flat Spray Nozzles are designed for high pressure / high impact washing application. These nozzles are specially designed and machined with precision which allows even spray coverage and distribution. This results in effective and uniform cleaning action over the surface being processed. Flat spray nozzles are available in all steel grades, Plastics & other alloys. Spray angle range available from 15° to 120°

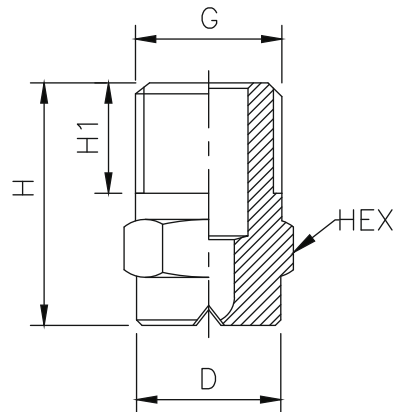
15° SPRAY ANGLE	CONNECTION END		ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
CA11.050	●	●	0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/8"	18	6.5	10.2	11
CA11.075	●	●	1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CA11.100	●	●	1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CA11.150	●	●	1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CA11.175	●	●	1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91					
CA11.200	●	●	1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47					
CA11.250	●	●	1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59					
CA11.300	●	●	2.1	1.5	2.12	<b>3.0</b>	3.67	4.74	5.61	6.71					
CA11.350	●	●	2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83					
CA11.400	●	●	2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94					
CA11.475	●	●	2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62					
CA11.650	●	●	3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53					
CA11.800	●	●	3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89					
CA21.100		●	3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36					
CA21.125		●	4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95					
CA21.160		●	4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
CA21.180		●	5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
CA21.200		●	5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
CA21.225		●	5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
CA21.250		●	6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					

# CA Series Flat Spray Nozzles

Standard design with connection suitable spray angle uniform distribution of liquid. The internal geometry of each nozzles is specifically engineered to provide maximum uniformity of the spray angle and flow rate.

## Application :

- Spray Coating
- Lubricating
- Circuit Board Rinsing
- Metal Processing
- Part Washing



## Headers



30° SPRAY ANGLE	CONNECTION END		ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0					
CA12.050	●	●	0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/8"	18	6.5	10.2	11
CA12.075	●	●	1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CA12.100	●	●	1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CA12.150	●	●	1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CA12.175	●	●	1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91					
CA12.200	●	●	1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47					
CA12.250	●	●	1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59					
CA12.300	●	●	2.1	1.5	2.12	<b>3.0</b>	3.67	4.74	5.61	6.71					
CA12.350	●	●	2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83					
CA12.400	●	●	2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94					
CA12.475	●	●	2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62					
CA12.650	●	●	3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53					
CA12.800	●	●	3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89					
CA22.100		●	3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36					
CA22.125		●	4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95					
CA22.160		●	4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
CA22.180		●	5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
CA22.200		●	5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
CA22.225		●	5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
CA22.250		●	6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					

\* Flow rate in US GPM @40 psi Pressure



# CA Series Flat Spray Nozzles

45° SPRAY ANGLE	END CONNECTION				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0					
CA13.050	●	●			0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/8"	18	6.5	10	11
CA13.075	●	●			1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CA13.100	●	●			1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CA13.150	●	●			1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CA13.175	●	●			1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91	3/8"	25	12	16	17
CA13.200	●	●			1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47	3/8" Weight (Metals) = 28 gms. Approx				
CA13.250	●	●			1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59	1/2"	27	13.2	21	22
CA13.300	●	●			2.1	1.5	2.12	<b>3.00</b>	3.67	4.74	5.61	6.71	1/2" Weight (Metals) = 42 gms. Approx				
CA13.350	●	●			2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83					
CA13.400	●	●			2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94					
CA13.475	●	●			2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62					
CA13.650	●	●			3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53					
CA13.800	●	●			3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89					
CA23.100		●	●		3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36					
CA23.125		●	●		4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95					
CA23.160		●	●		4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
CA23.180		●	●		5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
CA23.200		●	●		5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
CA23.225		●	●		5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
CA23.250		●	●		6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					
CA23.320			●	●	6.4	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55					
CA23.400			●	●	7.8	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44					
CA23.520				●	8.9	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28					
CA23.650				●	9.9	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34					
CA23.800				●	11.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89					

60° SPRAY ANGLE	END CONNECTION				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0					
CA14.050	●	●			0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/8"	18	6.5	10	11
CA14.075	●	●			1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CA14.100	●	●			1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CA14.150	●	●			1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CA14.175	●	●			1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91	3/8"	25	12	16	17
CA14.200	●	●			1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47	3/8" Weight (Metals) = 28 gms. Approx				
CA14.250	●	●			1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59	1/2"	27	13.2	21	22
CA14.300	●	●			2.1	1.50	2.12	<b>3.00</b>	3.67	4.74	5.61	6.71	1/2" Weight (Metals) = 42 gms. Approx				
CA14.350	●	●			2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83					
CA14.400	●	●			2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94					
CA14.475	●	●			2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62					
CA14.650	●	●			3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53					
CA14.800	●	●			3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89					
CA24.100		●	●		3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36					
CA24.125		●	●		4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95					
CA24.160		●	●		4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
CA24.180		●	●		5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
CA24.200		●	●		5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
CA24.225		●	●		5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
CA24.250		●	●		6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					
CA24.320			●	●	6.4	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55					
CA24.400			●	●	7.8	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44					
CA24.520				●	8.9	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28					
CA24.650				●	9.9	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34					
CA24.800				●	11.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89					

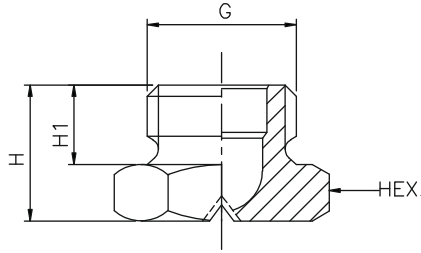
# CA Series Flat Spray Nozzles

90° SPRAY ANGLE	END CONNECTION				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
CA16.050	●	●			0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/8"	18	6.5	10	11
CA16.075	●	●			1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CA16.100	●	●			1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CA16.150	●	●			1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CA16.175	●	●			1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	25	12	16	17
CA16.200	●	●			1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	3/8" Weight (Metals) = 28 gms. Approx				
CA16.250	●	●			1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	27	13.2	21	22
CA16.300	●	●			2.1	1.5	2.12	3.00	3.67	4.74	5.61	6.71	1/2" Weight (Metals) = 42 gms. Approx				
CA16.350	●	●			2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83					
CA16.400	●	●			2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94					
CA16.475	●	●			2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62					
CA16.650	●	●			3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53					
CA16.800	●	●			3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89					
CA26.100		●	●		3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36					
CA26.125		●	●		4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
CA26.160		●	●		4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
CA26.180		●	●		5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
CA26.200		●	●		5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
CA26.225		●	●		5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
CA26.250		●	●		6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
CA26.320			●	●	6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
CA26.400			●	●	7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
CA26.520				●	8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
CA26.650				●	9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
CA26.800				●	11.0	40.00	56.57	80.00	97.98	126.49	149.67	178.89					

120° SPRAY ANGLE	END CONNECTION				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
CA18.050	●	●			0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/8"	18	6.5	10	11
CA18.075	●	●			1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CA18.100	●	●			1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CA18.150	●	●			1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CA18.175	●	●			1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	25	12	16	17
CA18.200	●	●			1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	3/8" Weight (Metals) = 28 gms. Approx				
CA18.250	●	●			1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	27	13.2	21	22
CA18.300	●	●			2.1	1.5	2.12	3.00	3.67	4.74	5.61	6.71	1/2" Weight (Metals) = 42 gms. Approx				
CA18.350	●	●			2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83					
CA18.400	●	●			2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94					
CA18.475	●	●			2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62					
CA18.650	●	●			3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53					
CA18.800	●	●			3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89					
CA28.100		●	●		3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36					
CA28.125		●	●		4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
CA28.160		●	●		4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
CA28.180		●	●		5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
CA28.200		●	●		5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
CA28.225		●	●		5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
CA28.250		●	●	●	6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
CA28.320			●	●	6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
CA28.400			●	●	7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44					

# CB Series Flat Spray Nozzles

**CB**



Uniform, Parabolic distribution of liquid. Compact design, suitable for confined installation conditions.

**Application :**

Cleaning plants, spray headers, cooling pipes. Small flow rates upon request.

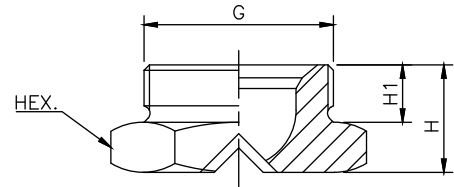
15° SPRAY ANGLE	CONNECTION END	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"		PRESSURE [BAR]										
MODEL NO.	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CB11.050	●	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/4"	13	8	17
CB11.075	●	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	1/4" Weight (Metals) = 12 gms. Approx			
CB11.100	●	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24				
CB11.150	●	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35				
CB11.175	●	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91				
CB11.200	●	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47				
CB11.250	●	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59				
CB11.300	●	2.1	1.5	2.12	3.00	3.67	4.74	5.61	6.71				
CB11.350	●	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83				
CB11.400	●	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94				
CB11.475	●	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
CB11.650	●	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
CB11.800	●	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
CB21.100	●	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CB21.125	●	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CB21.160	●	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				
CB21.180	●	5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25				
CB21.200	●	5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72				

30° SPRAY ANGLE	CONNECTION END	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"		PRESSURE [BAR]										
MODEL NO.	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CB12.050	●	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/4"	13	8	17
CB12.075	●	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	1/4" Weight (Metals) = 12 gms. Approx			
CB12.100	●	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24				
CB12.150	●	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35				
CB12.175	●	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91				
CB12.200	●	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47				
CB12.250	●	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59				
CB12.300	●	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71				
CB12.350	●	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83				
CB12.400	●	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94				
CB12.475	●	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
CB12.650	●	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
CB12.800	●	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
CB22.100	●	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CB22.125	●	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CB22.160	●	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				
CB22.180	●	5.2	9.00	12.73	18.00	22.05	28.05	33.67	40.25				
CB22.200	●	5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72				



# CB Series Flat Spray Nozzles

CB type nozzles deliver a flat spray with parabolic distribution pattern, which allows for obtaining an even distribution when several nozzles are assembled in a row on to a manifold. Their short body design makes it possible to use nozzle spray pipes in such machines or systems where the available space is very limited. CB nozzles are manufactured in two different capacity ranges, out of brass or 303 stainless steel and on request from a choice of additional metallic and plastic materials. Because of their limited length these nozzles can only be produced with a straight BSP thread and require some extra care when being assembled to get the proper flat alignment also note the different dimensions given in the table below

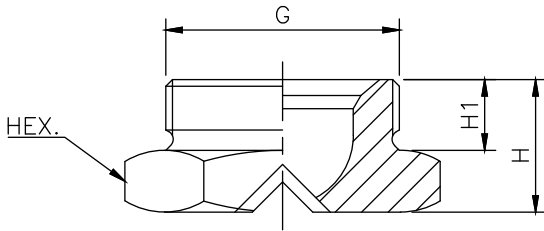


## Application :

- Cooling of Roll Stock
- Water Treatment
- Cleaning Plants

45° SPRAY ANGLE	CONNECTION END					ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/4"	1"	1 1/4"	2"		PRESSURE [BAR]							CONN.	H	H1	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
CB13.050	●					0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/4"	13	8	17
CB13.075	●					1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	1/4" Weight (Metals) = 12 gms. Approx			
CB13.100	●					1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	3/4"	15	9	32
CB13.150	●					1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	3/4" Weight (Metals) = 53 gms. Approx			
CB13.175	●					1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1"	20	12	36
CB13.200	●					1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	1" Weight (Metals) = 107 gms. Approx			
CB13.250	●					1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1 1/4"	22	14	50
CB13.300	●					2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71	1 1/4" Weight (Metals) = xxx gms. Approx			
CB13.350	●					2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	2"	32	20	70
CB13.400	●					2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94	2" Weight (Metals) = XXX gms. Approx			
CB13.475	●					2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
CB13.650	●					3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
CB13.800	●					3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
CB23.100	●					3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CB23.125	●					4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CB23.160	●					4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				
CB23.180	●					5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25				
CB23.200	●					5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72				
CB23.225	●					5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31				
CB23.250		●				6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90				
CB23.320		●				6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55				
CB23.400		●				7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44				
CB23.520		●	●			8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28				
CB23.650		●	●	●		9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34				
CB23.800		●	●	●		11.0	40.00	56.57	80.00	97.98	126.49	149.67	178.89				
CB33.100		●	●	●		11.3	50.00	70.71	100.0	122.4	158.1	187.0	223.6				
CB33.140				●		12.6	70.00	89.09	140.0	171.46	221.36	261.92	313.92				
CB33.160				●	●	14.3	80.00	113.14	160.0	195.96	252.98	299.33	357.77				
CB33.175				●		14.9	87.50	123.74	175.0	214.33	276.70	327.40	391.31				
CB33.200				●		16.0	100.0	141.42	200.0	244.95	316.23	374.17	447.21				
CB33.250				●		17.8	125.0	176.78	250.0	306.19	395.28	467.71	559.02				
CB33.325				●		20.3	162.5	229.81	325.0	398.04	513.87	608.02	726.72				
CB33.430				●		23.4	215.0	304.06	430.0	526.64	679.89	804.46	961.51				

# CB Series Flat Spray Nozzles



## Characteristic

Increased, Non-clogging features. mor jet energy, Low share of fog. Headers, Equipped with these nozzles, Shows a highly uniform total distribution of liquids, Even at different installation heights and centers.

## Application :

Cleaning plants spray headers, cooling pipes roll cooling of rolled products.

60° SPRAY ANGLE	CONNECTION END					ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/4"	1"	1 1/4"	2"		PRESSURE [BAR]										
MODEL NO.	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CB14.050	●					0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/4"	13	8	17
CB14.075	●					1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/4" Weight (Metals) = 12 gms. Approx			
CB14.100	●					1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	3/4"	15	9	32
CB14.150	●					1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	3/4" Weight (Metals) = 53 gms. Approx			
CB14.175	●					1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91	1"	20	12	36
CB14.200	●					1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47	1" Weight (Metals) = 107 gms. Approx			
CB14.250	●					1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59	1 1/4"	22	14	50
CB14.300	●					2.1	1.50	2.12	<b>3.00</b>	3.67	4.74	5.61	6.71	1 1/4" Weight (Metals) = XX gms. Approx			
CB14.350	●					2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83	2"	32	20	70
CB14.400	●					2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	2" Weight (Metals) = XXX gms. Approx			
CB14.475	●					2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62				
CB14.650	●					3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53				
CB14.800	●					3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89				
CB24.100	●					3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36				
CB24.125	●					4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95				
CB24.160	●					4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78				
CB24.180	●					5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25				
CB24.200	●					5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72				
CB24.225	●					5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31				
CB24.250	●					6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90				
CB24.320		●				6.4	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
CB24.400		●				7.8	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
CB24.520		●	●			8.9	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
CB24.650		●	●	●		9.9	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
CB24.800		●	●	●		11.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				
CB34.100		●	●	●		11.3	50.00	70.71	<b>100.0</b>	122.4	158.1	187.0	223.6				
CB34.140			●	●		12.6	70.00	89.09	<b>140.0</b>	171.46	221.36	261.92	313.92				
CB34.160				●	●	14.3	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77				
CB34.175					●	14.9	87.50	123.74	<b>175.0</b>	214.33	276.70	327.40	391.31				
CB34.200					●	16.0	100.0	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21				
CB34.250					●	17.8	125.0	176.78	<b>250.0</b>	306.19	395.28	467.71	559.02				
CB34.325					●	20.3	162.5	229.81	<b>325.0</b>	398.04	513.87	608.02	726.72				
CB34.430					●	23.4	215.0	304.06	<b>430.0</b>	526.64	679.89	804.46	961.51				

# CB Series Flat Spray Nozzles

Increased, non-clogging features, more jet energy, low share of fog. Headers, equipped with these nozzles, show a highly uniform total distribution of liquids, even at different installation heights and centers. These types of nozzles provide uniform parabolic distribution of liquid.

## Application:

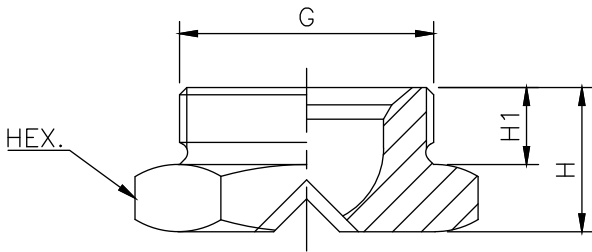
Cleaning plants, spray headers, cooling pipes, roll cooling, cooling of rolled products.

90° SPRAY ANGLE	CONNECTION END					ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/4"	1"	1 1/4"	2"		PRESSURE [BAR]										
MODEL NO.	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CB16.050	●					0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/4"	13	8	17
CB16.075	●					1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/4" Weight (Metals) = 12 gms. Approx			
CB16.100	●					1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	3/4"	15	9	32
CB16.150	●					1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	3/4" Weight (Metals) = 53 gms. Approx			
CB16.175	●					1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91	1"	20	12	36
CB16.200	●					1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47	1" Weight (Metals) = 107 gms. Approx			
CB16.250	●					1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59	1 1/4"	22	14	50
CB16.300	●					2.1	1.50	2.12	<b>3.00</b>	3.67	4.74	5.61	6.71	1 1/4" Weight (Metals) = XX gms. Approx			
CB16.350	●					2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83	2"	32	20	70
CB16.400	●					2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	2" Weight (Metals) = XXX gms. Approx			
CB16.475	●					2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62				
CB16.650	●					3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53				
CB16.800	●					3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89				
CB26.100	●					3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36				
CB26.125	●					4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95				
CB26.160	●					4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78				
CB26.180	●					5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25				
CB26.200	●					5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72				
CB26.225	●					5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31				
CB26.250	●	●				6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90				
CB26.320		●				6.4	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
CB26.400		●	●			7.8	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
CB26.520		●	●	●		8.9	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
CB26.650		●	●	●		9.9	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
CB26.800		●	●	●		11.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				
CB36.100		●	●	●		11.3	50.00	70.71	<b>100.0</b>	122.4	158.1	187.0	223.6				
CB36.140			●	●		12.6	70.00	89.09	<b>140.0</b>	171.46	221.36	261.92	313.92				
CB36.160				●	●	14.3	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77				
CB36.175					●	14.9	87.50	123.74	<b>175.0</b>	214.33	276.70	327.40	391.31				
CB36.200					●	16.0	100.0	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21				
CB36.250					●	17.8	125.0	176.78	<b>250.0</b>	306.19	395.28	467.71	559.02				
CB36.325					●	20.3	162.5	229.81	<b>325.0</b>	398.04	513.87	608.02	726.72				
CB36.430					●	23.4	215.0	304.06	<b>430.0</b>	526.64	679.89	804.46	961.51				

# CB Series Flat Spray Nozzles



CB nozzles are manufactured in two different capacity ranges out of Brass or 303 stainless steel and in request from a choice of additional metallic and plastic material. Because of their limited length these nozzles can only be produced with a straight BSP thread also note the different dimension given in the table below.



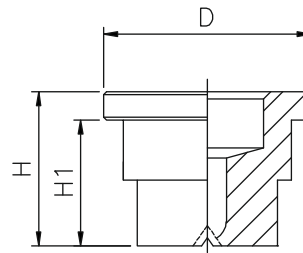
120° SPRAY ANGLE	CONNECTION END					ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/4"	1"	1 1/4"	2"		PRESSURE [BAR]										
MODEL NO.	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CB18.050	●					0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/4"	13	8	17
CB18.075	●					1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	1/4" Weight (Metals) = 12 gms. Approx			
CB18.100	●					1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	3/4"	15	9	32
CB18.150	●					1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	3/4" Weight (Metals) = 53 gms. Approx			
CB18.175	●					1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1"	20	12	36
CB18.200	●					1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	1" Weight (Metals) = 107 gms. Approx			
CB18.250	●					1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1 1/4"	22	14	50
CB18.300	●					2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71	1 1/4" Weight (Metals) = XX gms. Approx			
CB18.350	●					2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	2"	32	20	70
CB18.400	●					2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94	2" Weight (Metals) = XXX gms. Approx			
CB18.475	●					2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
CB18.650	●					3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
CB18.800	●					3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
CB28.100	●					3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CB28.125	●					4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CB28.160	●					4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				
CB28.180		●				5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25				
CB28.200		●				5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72				
CB28.225		●				5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31				
CB28.250		●				6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90				
CB28.320		●				6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55				
CB28.400		●				7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44				
CB28.520		●	●	●		8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28				
CB28.650		●	●	●		9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34				
CB28.800		●	●	●		11.0	40.00	56.57	80.00	97.98	126.49	149.67	178.89				
CB38.100		●	●	●		11.3	50.00	70.71	100.0	122.4	158.1	187.0	223.6				
CB38.140				●		12.6	70.00	89.09	140.0	171.46	221.36	261.92	313.92				
CB38.160				●	●	14.3	80.00	113.14	160.0	195.96	252.98	299.33	357.77				
CB38.175				●		14.9	87.50	123.74	175.0	214.33	276.70	327.40	391.31				
CB38.200				●		16.0	100.0	141.42	200.0	244.95	316.23	374.17	447.21				
CB38.250				●		17.8	125.0	176.78	250.0	306.19	395.28	467.71	559.02				
CB38.325				●		20.3	162.5	229.81	325.0	398.04	513.87	608.02	726.72				
CB38.430				●		23.4	215.0	304.06	430.0	526.64	679.89	804.46	961.51				



# CC Series Flat Spray Nozzles

CC

Versatile program offering a wide range of performance and stable jet angles, easy adjusting of jet by means of loosening the nut stable jet angles headers, equipped with these nozzles, show a highly uniform total distribution of liquids, even at different installation heights and centers universally suitable.



## Application :

Jet cleaning, surface treatment, filter cleaning, band cleaning, lubricating, coating.

Flat nozzle tips are usually mounted onto a pipe by means of a welded nipple or a clamp, and secured in place with a retaining nut. Seals are available for higher pressure operation. They can be therefore easily replaced and the jet can be conveniently oriented in the desired direction.

The tip models shown in this page deliver very low flow values, the precision machined tiny orifices can be protected against the risk of plugging by means of a filter fitting inside our nipples and clamps which are designed for this purpose.

15° SPRAY ANGLE	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
		PRESSURE [BAR]									
MODEL NO.		0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D
CC11.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	11	9	14.8
CC11.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 9.0 gms. Approx		
CC11.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24			
CC11.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35			
CC11.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91			
CC11.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47			
CC11.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
CC11.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
CC11.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
CC11.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
CC11.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
CC11.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
CC11.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
CC21.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CC21.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CC21.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CC21.180	5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CC21.200	5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CC21.225	5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CC21.250	6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90			

# CC Series Flat Spray Nozzles

30° SPRAY ANGLE	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
MODEL NO.		PRESSURE [BAR]									
		0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D
CC12.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	11	9	14.8
CC12.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 9.0 gms. Approx		
CC12.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24			
CC12.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35			
CC12.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91			
CC12.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47			
CC12.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
CC12.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
CC12.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
CC12.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
CC12.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
CC12.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
CC12.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
CC22.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CC22.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CC22.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CC22.180	5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CC22.200	5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CC22.225	5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CC22.250	6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90			

45° SPRAY ANGLE	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
MODEL NO.		PRESSURE [BAR]									
		0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D
CC13.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	11	9	14.8
CC13.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 9.0 gms. Approx		
CC13.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24			
CC13.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35			
CC13.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91			
CC13.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47			
CC13.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
CC13.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
CC13.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
CC13.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
CC13.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
CC13.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
CC13.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
CC23.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CC23.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CC23.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CC23.180	5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CC23.200	5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CC23.225	5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CC23.250	6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90			

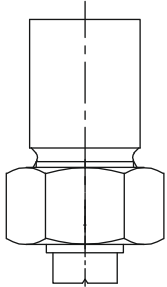
# CC Series Flat Spray Nozzles

60° SPRAY ANGLE	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
MODEL NO.		PRESSURE [BAR]									
		0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D
CC14.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	11	9	14.8
CC14.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 9.0 gms. Approx		
CC14.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24			
CC14.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35			
CC14.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91			
CC14.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47			
CC14.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
CC14.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
CC14.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
CC14.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
CC14.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
CC14.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
CC14.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
CC24.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CC24.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CC24.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CC24.180	5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CC24.200	5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CC24.225	5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CC24.250	6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90			

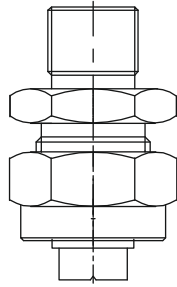
90° SPRAY ANGLE	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
MODEL NO.		PRESSURE [BAR]									
		0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D
CC16.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	11	9	14.8
CC16.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 9.0 gms. Approx		
CC16.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24			
CC16.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35			
CC16.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91			
CC16.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47			
CC16.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
CC16.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
CC16.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
CC16.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
CC16.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
CC16.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
CC16.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
CC26.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CC26.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CC26.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CC26.180	5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CC26.200	5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CC26.225	5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CC26.250	6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90			

# CC Series Flat Spray Nozzles

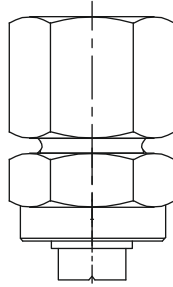
## Type of Fitting Arrangements



Weldable



Threaded (M)



Threaded (F)

## Typical application :

- Spray Coating
- Lubricating
- Metal Processing
- Spray Cooling
- Parts Washing

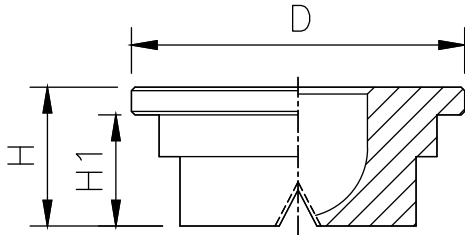


120° SPRAY ANGLE	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
		PRESSURE [BAR]							H	H1	D
		0.5	1.0	2.0	3.0	5.0	7.0	10.0	11	9	14.8
CC18.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	Weight (Metals) = 9.0 gms. Approx		
CC18.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68			
CC18.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24			
CC18.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35			
CC18.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91			
CC18.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47			
CC18.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
CC18.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
CC18.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
CC18.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
CC18.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
CC18.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
CC18.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
CC28.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CC28.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CC28.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CC28.180	5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CC28.200	5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CC28.225	5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CC28.250	6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90			



# CD Series Flat Spray Nozzles

CD



Headers, Equipped with these nozzles, Show a highly uniform total distribution of liquids even at different installation heights and centers.

## Application

Cleaning plants, Spray headers cooling pipes roll products. Connection to pipe by means of nut and nipple.

MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM			
		SPRAY ANGLE	PRESSURE [BAR]								H	H1	D
			0.5	1.0	2.0	3.0	5.0	7.0	10.0				
CD11.650	3.1	15°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	10	8	24	
CD11.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = 12 gms. Approx			
CD21.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CD21.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CD21.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78				
CD21.180	2.1		9.00	12.73	18.00	22.05	28.46	33.67	40.25				
CD21.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72				
CD21.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31				
CD21.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90				
CD21.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55				
CD21.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44				
CD21.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28				
CD21.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34				
CD21.800	11.0		40.00	56.57	80.00	97.98	126.49	149.67	178.89				
CD31.100	11.3		50.00	70.71	100.0	122.4	158.1	187.0	223.6				
CD12.650	3.1		30°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	10	8	24
CD12.800	3.5	4.00		5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = 12 gms. Approx			
CD22.100	3.9	5.00		7.07	10.00	12.25	15.81	18.71	22.36				
CD22.125	4.3	6.25		8.84	12.50	15.31	19.76	23.39	27.95				
CD22.160	4.9	8.00		11.31	16.00	19.60	25.30	29.93	35.78				
CD22.180	5.2	9.00		12.73	18.00	22.05	28.46	33.67	40.25				
CD22.200	5.5	10.00		14.14	20.00	24.49	31.62	37.42	44.72				
CD22.225	5.8	11.25		15.91	22.50	27.56	35.58	42.09	50.31				
CD22.250	6.1	12.50		17.68	25.00	30.62	39.53	46.77	55.90				
CD22.320	6.4	16.00		22.63	32.00	39.19	50.60	59.87	71.55				
CD22.400	7.8	20.00		28.28	40.00	48.99	63.25	74.83	89.44				
CD22.520	8.9	26.00		36.77	52.00	63.69	82.22	97.28	116.28				
CD22.650	9.9	32.50		45.96	65.00	79.61	102.77	121.60	145.34				
CD22.800	11.0	40.00		56.57	80.00	97.98	126.49	149.67	178.89				
CD32.100	11.3	50.00		70.71	100.0	122.4	158.1	187.0	223.6				

# CD Series Flat Spray Nozzles

										0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D
CD13.650	3.1	45°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	10	8	24	Weight (Metals) = 12 gms. Approx						
CD13.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89										
CD23.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36										
CD23.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95										
CD23.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78										
CD23.180	2.1		9.00	12.73	18.00	22.05	28.46	33.67	40.25										
CD23.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72										
CD23.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31										
CD23.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90										
CD23.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55										
CD23.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44										
CD23.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28										
CD23.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34										
CD23.800	11.0		40.00	56.57	80.00	97.98	126.49	149.67	178.89										
CD33.100	11.3	50.00	70.71	100.0	122.4	158.1	187.0	223.6											
CD14.650	3.1	60°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	10	8	24	Weight (Metals) = 11 gms. Approx						
CD14.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89										
CD24.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36										
CD24.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95										
CD24.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78										
CD24.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25										
CD24.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72										
CD24.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31										
CD24.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90										
CD24.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55										
CD24.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44										
CD24.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28										
CD24.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34										
CD24.800	11.0		40.00	56.57	80.00	97.98	126.49	149.67	178.89										
CD34.100	11.3	50.00	70.71	100.0	122.4	158.1	187.0	223.6											
CD16.650	3.1	90°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	10	8	24	Weight (Metals) = 8.5 gms. Approx						
CD16.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89										
CD26.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36										
CD26.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95										
CD26.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78										
CD26.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25										
CD26.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72										
CD26.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31										
CD26.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90										
CD26.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55										
CD26.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44										
CD26.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28										
CD26.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34										
CD26.800	11.0		40.00	56.57	80.00	97.98	126.49	149.67	178.89										
CD36.100	11.3	50.00	70.71	100.0	122.4	158.1	187.0	223.6											
CD18.650	3.1	120°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	10	8	24	Weight (Metals) = 8.5 gms. Approx						
CD18.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89										
CD28.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36										
CD28.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95										
CD28.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78										
CD28.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25										
CD28.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72										
CD28.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31										
CD28.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90										
CD28.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55										
CD28.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44										
CD28.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28										
CD28.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34										
CD28.800	11.0		40.00	56.57	80.00	97.98	126.49	149.67	178.89										
CD38.100	11.3	50.00	70.71	100.0	122.4	158.1	187.0	223.6											

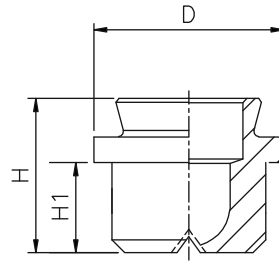
# CE Series Flat Spray Nozzles - Dove Tail Type



Very uniform, parabolic distribution of liquid. Rectangular distribution pattern on request. Headers, equipped with these nozzles, show a highly uniform total distribution installation heights and centers.

### Application :

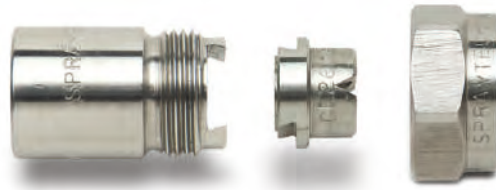
Cleaning plants, spray headers, cooling pipes, connection to pipe by means of screwed nut and nipple. The ideal nozzle position is always secured with the aid of the dove- tail fixing. The flat is pre-set at 5° to the tube axis.



15° SPRAY ANGLE		FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM		
MODEL NO.	ORIFICE SIZE (mm)	PRESSURE [BAR]								H	H1	D
		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
CE11.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	12	7	14.8	
CE11.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 8.5 gms. Approx			
CE11.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24				
CE11.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35				
CE11.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91				
CE11.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47				
CE11.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59				
CE11.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71				
CE11.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83				
CE11.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94				
CE11.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
CE11.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
CE11.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
CE21.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CE21.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CE21.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				

30° SPRAY ANGLE		FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM		
MODEL NO.	ORIFICE SIZE (mm)	PRESSURE [BAR]								H	H1	D
		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
CE12.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	12	7	14.8	
CE12.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 8.5 gms. Approx			
CE12.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24				
CE12.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35				
CE12.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91				
CE12.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47				
CE12.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59				
CE12.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71				
CE12.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83				
CE12.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94				
CE12.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
CE12.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
CE12.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
CE22.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CE22.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CE22.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				

# CE Series Flat Spray Nozzles - Dove Tail Type



45° SPRAY ANGLE	MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
			PRESSURE [BAR]							H	H1	D
			0.5	1.0	2.0	3.0	5.0	7.0	10.0	12	7	14.8
	CE13.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	Weight (Metals) = 8.5 gms. Approx		
	CE13.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68			
	CE13.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24			
	CE13.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35			
	CE13.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91			
	CE13.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47			
	CE13.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
	CE13.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
	CE13.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
	CE13.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
	CE13.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
	CE13.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
	CE13.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
	CE23.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
	CE23.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
	CE23.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			

60° SPRAY ANGLE	MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
			PRESSURE [BAR]							H	H1	D
			0.5	1.0	2.0	3.0	5.0	7.0	10.0	12	7	14.8
	CE14.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	Weight (Metals) = 8.5 gms. Approx		
	CE14.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68			
	CE14.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24			
	CE14.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35			
	CE14.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91			
	CE14.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47			
	CE14.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
	CE14.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
	CE14.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
	CE14.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
	CE14.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
	CE14.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
	CE14.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
	CE24.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
	CE24.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
	CE24.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			



# CE Series Flat Spray Nozzles - Dove Tail Type

90° Spray Angle	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM		
Model No.		PRESSURE [BAR]										
		0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D	
CE16.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	12	7	14.8	
CE16.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 8.5 gms. Approx			
CE16.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24				
CE16.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35				
CE16.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91				
CE16.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47				
CE16.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59				
CE16.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71				
CE16.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83				
CE16.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94				
CE16.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
CE16.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
CE16.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
CE26.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CE26.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CE26.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				

120° SPRAY ANGLE	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM		
MODEL NO.		PRESSURE [BAR]										
		0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D	
CE18.050	0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	12	7	14.8	
CE18.075	1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 8.5 gms. Approx			
CE18.100	1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24				
CE18.150	1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35				
CE18.175	1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91				
CE18.200	1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47				
CE18.250	1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59				
CE18.300	2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71				
CE18.350	2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83				
CE18.400	2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94				
CE18.475	2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
CE18.650	3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
CE18.800	3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
CE28.100	3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
CE28.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CE28.160	4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				

# CF Series Flat Spray Nozzles - Dove Tail Type

CF



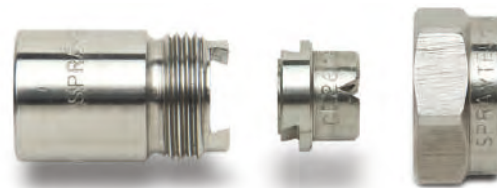
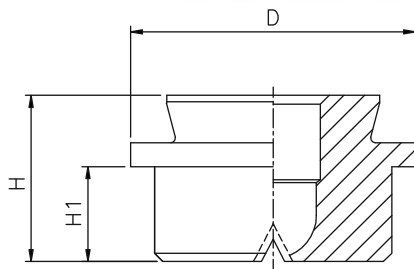
Uniform, parabolic distribution of liquid Headers, equipped with these nozzles, show a highly uniform total distribution of liquids, even at different installation heights and centers.

### Application:

Cleaning plants, spray headers, cooling pipes, roll cooling, cooling of rolled products.

### Note :

Connection to pipe by means of screwed nut and nipple.  
Nozzle position fixed by self-setting dove-tail. Flat preset at 15° to pipe axis.



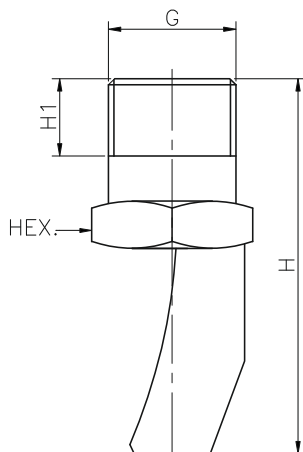
MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM		
		SPRAY ANGLE	PRESSURE [BAR]							H	H1	D
			0.5	1.0	2.0	3.0	5.0	7.0	10.0			
CF11.650	3.1	15°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	14	8	24
CF11.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = 35.0 gms. Approx		
CF21.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CF21.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CF21.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CF21.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CF21.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CF21.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CF21.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90			
CF21.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55			
CF21.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44			
CF21.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28			
CF21.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34			
CF12.650	3.1	30°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	14	8	24
CF12.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = 35.0 gms. Approx		
CF22.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CF22.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CF22.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CF22.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CF22.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CF22.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CF22.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90			
CF22.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55			
CF22.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44			
CF22.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28			
CF22.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34			

# CF Series Flat Spray Nozzles - Dove Tail Type

			0.5	1.0	2.0	3.0	5.0	7.0	10.0	H	H1	D
CF13.650	3.1	45°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	14	8	24
CF13.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = 35 gms. Approx		
CF23.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CF23.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CF23.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CF23.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CF23.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CF23.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CF23.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90			
CF23.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55			
CF23.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44			
CF23.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28			
CF23.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34			
CF14.650	3.1	60°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	14	8	24
CF14.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = 35 gms. Approx		
CF24.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CF24.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CF24.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CF24.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CF24.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CF24.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CF24.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90			
CF24.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55			
CF24.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44			
CF24.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28			
CF24.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34			
CF16.650	3.1	90°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	14	8	24
CF16.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = 35 gms. Approx		
CF26.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CF26.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CF26.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CF26.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CF26.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CF26.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CF26.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90			
CF26.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55			
CF26.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44			
CF26.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28			
CF26.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34			
CF18.650	3.1	120°	3.25	4.60	6.50	7.96	10.28	12.16	14.53	14	8	24
CF18.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = 35 gms. Approx		
CF28.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36			
CF28.125	4.3		6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CF28.160	4.9		8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CF28.180	5.2		9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CF28.200	5.5		10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CF28.225	5.8		11.25	15.91	22.50	27.56	35.58	42.09	50.31			
CF28.250	6.1		12.50	17.68	25.00	30.62	39.53	46.77	55.90			
CF28.320	6.4		16.00	22.63	32.00	39.19	50.60	59.87	71.55			
CF28.400	7.8		20.00	28.28	40.00	48.99	63.25	74.83	89.44			
CF28.520	8.9		26.00	36.77	52.00	63.69	82.22	97.28	116.28			
CF28.650	9.9		32.50	45.96	65.00	79.61	102.77	121.60	145.34			

# CG Series High Impact Flat Spray Nozzles

CG




CG Flat nozzles work on the deflection principal conveying a water vein onto a deflection surface designed to produce a narrow jet with flat spray pattern, high impact value and medium size droplets. CG style nozzles shown in this page are available with a threaded connection and, for the capacity sizes shown in the table with a quick coupling connection for assembly onto the matching quick connection nipple.


### How to compose the nozzle code :

The nozzle shown on this page can be supplied with same capacity and a different connection thread, the size is indicated by the second digit in the nozzle code.

### Application :


Cleaning, washing decreasing and phosphating processing Powerful jet narrowly defined spray pattern. Non-clogging.


15° SPRAY ANGLE $\eta$ 10°	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"		PRESSURE [BAR]										
MODEL NO. 	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CG11.350	●				2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83	1/4"	65	10	17
CG11.650	●				3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	Weight (Metals) = 55.0 gms. Approx			
CG21.100		●			3.9	5.00	7.07	<b>10.0</b>	12.25	15.81	18.71	22.36	3/8"	75	10	17
CG21.125		●			4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	Weight (Metals) = 61.0 gms. Approx			
CG21.160		●			4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78	1/2"	80	13.2	22
CG21.180			●		5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25	Weight (Metals) = 143.0 gms. Approx			
CG21.200			●		5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72	3/4"	102	14.5	27
CG21.250			●		6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90	Weight (Metals) = 136 gms. Approx			
CG21.320			●	●	6.4	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
CG21.400				●	7.8	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
CG21.520				●	8.9	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
CG21.650				●	9.9	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				

30° SPRAY ANGLE $\eta$ 20°	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"		PRESSURE [BAR]										
MODEL NO. 	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CG12.350	●				2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83	1/4"	45	10	17
CG12.650	●				3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	Weight (Metals) = XX gms. Approx			
CG22.100		●			3.9	5.00	7.07	<b>10.0</b>	12.25	15.81	18.71	22.36	3/8"	75	10	17
CG22.125		●			4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	Weight (Metals) = XX gms. Approx			
CG22.160		●			4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78	1/2"	80	13.2	22
CG22.180			●		5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25	Weight (Metals) = XX gms. Approx			
CG22.200			●		5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72	3/4"	102	14.5	27
CG22.250			●		6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90	Weight (Metals) = XX gms. Approx			
CG22.320			●	●	6.4	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
CG22.400				●	7.8	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
CG22.520				●	8.9	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
CG22.650				●	9.9	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				



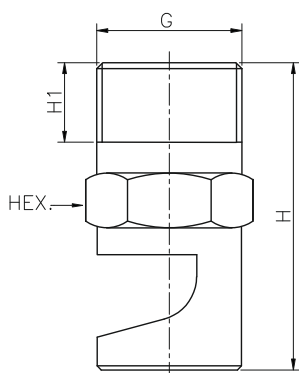
# CG Series High Impact Flat Spray Nozzles

45° SPRAY ANGLE $\eta$ 25°	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"		PRESSURE [BAR]										
MODEL NO. 	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CG13.350	●				2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/4"	42	10	17
CG13.650	●				3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = XX gms. Approx			
CG23.100		●			3.9	5.00	7.07	10.0	12.25	15.81	18.71	22.36	3/8"	50	10	17
CG23.125		●			4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95	Weight (Metals) = XX gms. Approx			
CG23.160		●			4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78	1/2"	60	13.2	22
CG23.180			●		5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25	Weight (Metals) = XX gms. Approx			
CG23.200			●		5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72	3/4"	70	14.5	27
CG23.250			●		6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90	Weight (Metals) = XX gms. Approx			
CG23.320			●	●	6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55				
CG23.400				●	7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44				
CG23.520				●	8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28				
CG23.650				●	9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34				

60° SPRAY ANGLE $\eta$ 40°	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"		PRESSURE [BAR]										
MODEL NO. 	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CG12.350	●				2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/4"	42	10	17
CG12.650	●				3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = XX gms. Approx			
CG22.100		●			3.9	5.00	7.07	10.0	12.25	15.81	18.71	22.36	3/8"	50	10	17
CG22.125		●			4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95	Weight (Metals) = XX gms. Approx			
CG22.160		●			4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78	1/2"	60	13.2	22
CG22.180			●		5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25	Weight (Metals) = XX gms. Approx			
CG22.200			●		5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72	3/4"	70	14.5	27
CG22.250			●		6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90	Weight (Metals) = XX gms. Approx			
CG22.320			●	●	6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55				
CG22.400				●	7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44				
CG22.520				●	8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28				
CG22.650				●	9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34				

# CH Series Flood Spray Nozzles - Flat Type

CH



CH series flat nozzles work on the deflection principal conveying a water vein onto a machined deflection surface and produce a jet with a wide angle flat spray pattern medium impact value and medium size droplets.

Wide angle flat with sharply defined spray pattern. It is available with a threaded connection for the sizes form 1/8" to 1". These type of nozzles assure a wide coverage and an even distribution.

Characteristic : Flat nozzle work on the impact principle, with high efficiency and low plugging risks.

Design : One Piece construction, non clogging type accurately machined to provide very high impact

Application : Gravel washing, rinsing control of foam etc.

90° SPRAY ANGLE $\eta$ 50°	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]										
	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
CH16.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	22	6.5	11
CH16.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 21 gms. Approx			
CH16.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	30	10	14
CH16.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 51 gms. Approx			
CH16.250	●	●					1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	36	10	17
CH16.300	●	●					2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 140 gms. Approx			
CH16.350	●	●					2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	50	13.2	22
CH16.400	●	●					2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 185 gms. Approx			
CH16.475	●	●					2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	56	14.5	27
CH16.650	●	●					3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 235 gms. Approx			
CH16.800	●	●					3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	72	16.8	46
CH26.100	●	●	●				3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = XX gms. Approx			
CH26.125		●	●				4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
CH26.160		●	●				4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78				
CH26.180			●				5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25				
CH26.200			●	●			5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72				
CH26.250				●			6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90				
CH26.320				●			6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55				
CH26.400				●			7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44				
CH26.520					●		8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28				
CH26.650					●		9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34				
CH26.800					●		11.0	40.00	56.57	80.00	97.98	126.49	149.67	178.89				
CH36.100					●		11.3	50.00	70.71	100.0	122.4	158.1	187.0	223.6				
CH36.160						●	14.3	80.00	113.14	160.0	195.96	252.98	299.33	357.77				
CH36.200						●	16.0	100.0	141.42	200.0	244.95	316.23	374.17	447.21				

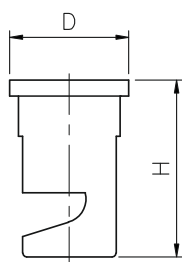
# CH Series Flood Spray Nozzles - Flat Type

140° SPRAY ANGLE $\eta$ 75°	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]									
	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	HEX
CH19.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	25	11
CH19.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = XX gms. Approx		
CH19.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	27	14
CH19.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = XX gms. Approx		
CH19.250	●	●					1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	33	17
CH19.300	●	●					2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = XX gms. Approx		
CH19.350	●	●					2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	50	22
CH19.400	●	●					2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = XX gms. Approx		
CH19.475	●	●					2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	56	27
CH19.650	●	●					3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = XX gms. Approx		
CH19.800	●	●					3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	72	46
CH29.100	●	●	●				3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = XX gms. Approx		
CH29.125		●	●				4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
CH29.160		●	●				4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
CH29.180			●				5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
CH29.200			●	●			5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
CH29.250				●			6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90			
CH29.320				●			6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55			
CH29.400				●			7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44			
CH29.520					●		8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28			
CH29.650					●		9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34			
CH29.800					●		11.0	40.00	56.57	80.00	97.98	126.49	149.67	178.89			
CH39.100					●		11.3	50.00	70.71	100.0	122.4	158.1	187.0	223.6			
CH39.160						●	14.3	80.00	113.14	160.0	195.96	252.98	299.33	357.77			
CH39.200						●	16.0	100.0	141.42	200.0	244.95	316.23	374.17	447.21			
CH39.250						●	17.8	125.00	176.00	250.0	306.19	395.28	467.71	559.02			



# CI Series Flood Spray Nozzles - Flat Tip Type

CI



Wide angle jet with sharply defined spray pattern

**Application :**

Control of foam in effluent tanks, sewage treatment plants, coal treatment plants, coal washing cooling washing and rinsing operations where high jet impact flow is required.

90° SPRAY ANGLE	MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
			SPRAY ANGLE	PRESSURE [BAR]							H	D
				0.5	1.0	2.0	3.0	5.0	7.0	10.0	22	14.8
	CI16.050	0.8	90°	0.25	0.35	0.50	0.61	0.79	0.94	1.12	Weight (Metals) = 32 gms. Approx	
	CI16.075	1.0		0.37	0.53	0.75	0.92	1.19	1.40	1.68		
	CI16.100	1.2		0.50	0.71	1.00	1.22	1.58	1.87	2.24		
	CI16.150	1.5		0.75	1.06	1.50	1.84	2.37	2.81	3.35		
	CI16.175	1.6		0.87	1.24	1.75	2.14	2.77	3.27	3.91		
	CI16.200	1.7		1.00	1.41	2.00	2.45	3.16	3.74	4.47		
	CI16.250	1.9		1.25	1.77	2.50	3.06	3.95	4.68	5.59		
	CI16.300	2.1		1.50	2.12	3.00	3.67	4.74	5.61	6.71		
	CI16.350	2.3		1.75	2.47	3.50	4.29	5.53	6.55	7.83		
	CI16.400	2.4		2.00	2.83	4.00	4.90	6.32	7.48	8.94		
	CI16.475	2.7		2.37	3.36	4.75	5.82	7.51	8.89	10.62		
	CI16.650	3.1		3.25	4.60	6.50	7.96	10.28	12.16	14.53		
	CI16.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89		
	CI26.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36		

140° SPRAY ANGLE	MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
			SPRAY ANGLE	PRESSURE [BAR]							H	D
				0.5	1.0	2.0	3.0	5.0	7.0	10.0	22	14.8
	CI19.050	0.8	140°	0.25	0.35	0.50	0.61	0.79	0.94	1.12	Weight (Metals) = 32 gms. Approx	
	CI19.075	1.0		0.37	0.53	0.75	0.92	1.19	1.40	1.68		
	CI19.100	1.2		0.50	0.71	1.00	1.22	1.58	1.87	2.24		
	CI19.150	1.5		0.75	1.06	1.50	1.84	2.37	2.81	3.35		
	CI19.175	1.6		0.87	1.24	1.75	2.14	2.77	3.27	3.91		
	CI19.200	1.7		1.00	1.41	2.00	2.45	3.16	3.74	4.47		
	CI19.250	1.9		1.25	1.77	2.50	3.06	3.95	4.68	5.59		
	CI19.300	2.1		1.50	2.12	3.00	3.67	4.74	5.61	6.71		
	CI19.350	2.3		1.75	2.47	3.50	4.29	5.53	6.55	7.83		
	CI19.400	2.4		2.00	2.83	4.00	4.90	6.32	7.48	8.94		
	CI19.475	2.7		2.37	3.36	4.75	5.82	7.51	8.89	10.62		
	CI19.650	3.1		3.25	4.60	6.50	7.96	10.28	12.16	14.53		
	CI19.800	3.5		4.00	5.66	8.00	9.80	12.65	14.97	17.89		
	CI29.100	3.9		5.00	7.07	10.00	12.25	15.81	18.71	22.36		
	CI29.125	4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95			

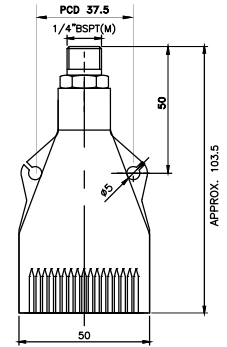
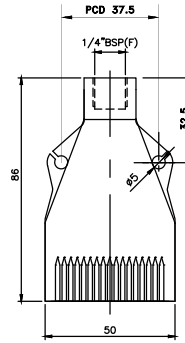
# CJ Series Flat Spray Nozzles For Air Knife Nozzles



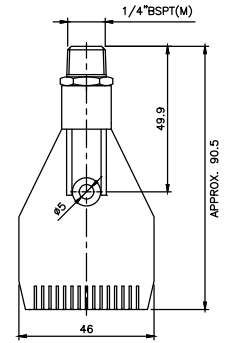
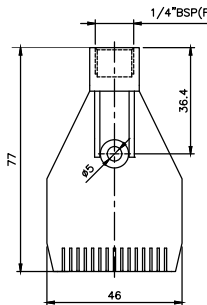
Multi channel flat air spray nozzle have been specially designed for high impact of compressed air with attenuate noise, to obtain an intensive, precise blowing power to minimize cost by reducing air consumption.



ALUMINIUM.



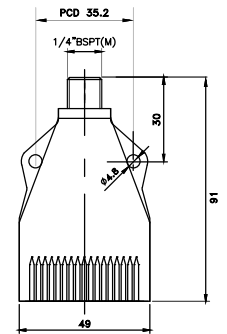
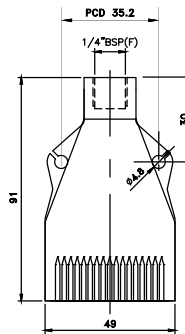
STEEL



ABS



ABS



MOC	MODEL NO.	CONNECTION END		ORIFICE SIZE (mm)	FLOW CAPACITY IN Nm <sup>3</sup> /hr AT DIFFERENT PRESSURE					G/A DIMENSION. MM				
		1/4"	1/4"		PRESSURE [BAR]					A	B	C	D	E
		(MALE) BSP	(FEMALE) BSP		1	2	3	4	5					
ABS	CJ08.P11.XBM	●		0.8	17	22	27	31	-	MALE : Weight = 18 gms. Approx				
	CJ08.P11.XBF		●	0.8	17	22	27	31	-	FEMALE : Weight = 16 gms. Approx				
	CJ10.P11.XBM	●		1.0	17	22	27	31	-					
	CJ10.P11.XBF		●	1.0	17	22	27	31	-					
ALUMINIUM	CJ08.M6.XBM	●		0.8	18	23	28	32	37	MALE : Weight = 78 gms. Approx				
	CJ08.M6.XBF		●	0.8	18	23	28	32	37	FEMALE : Weight = 70 gms. Approx				
	CJ10.M6.XBM	●		1.0	18	23	28	32	37					
	CJ10.M6.XBF		●	1.0	18	23	28	32	37					
SS 304	CJ08.M1.XBM	●		0.8	27	33	42	55	70	MALE : Weight = 127 gms. Approx				
	CJ08.M1.XBF		●	0.8	27	33	42	55	70	FEMALE : Weight = 112 gms. Approx				
	CJ10.M1.XBM	●		1.0	27	33	42	55	70					
	CJ10.M1.XBF		●	1.0	27	33	42	55	70					
SS 316	CJ08.M2.XBM	●		0.8	27	33	42	55	70	MALE : Weight = 127 gms. Approx				
	CJ08.M2.XBF		●	0.8	27	33	42	55	70	FEMALE : Weight = 112 gms. Approx				
	CJ10.M2.XBM	●		1.0	27	33	42	55	70					
	CJ10.M2.XBF		●	1.0	27	33	42	55	70					

End Connection : X – BSP, Y - BSPT, Z – NPT Available.



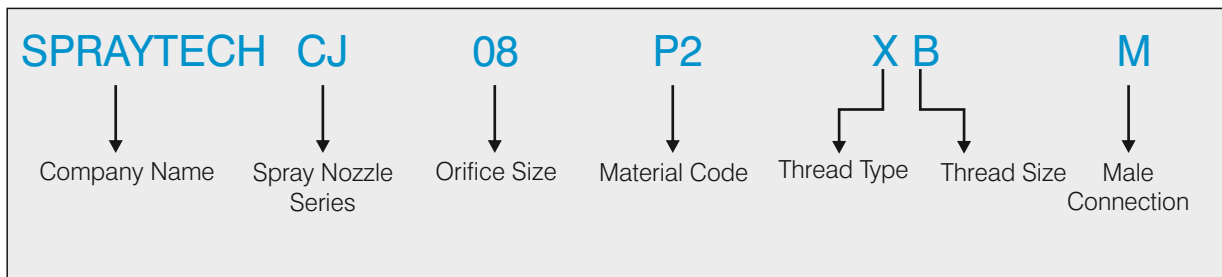
# CJ Series Flat Spray Nozzles For Air Knife Nozzles

## Air Knife Nozzles



The following description will help to explain our Part Number/ Code in relation to the “SPRAYTECH” Spray Nozzle.

### EXAMPLE ORDERING.



### SPRAY CHARACTERISTICS

Produces a flat pattern of high impact compressed air.

### FEATURES

- With its multiple orifices a volume of compressed air is converted into a high speed stream with uniform distribution and good spray pattern.
- Low noise levels which are under OSHA standard.
- Low air consumption.
- Can be mounted side by side to produce an effective air curtain.

### TYPICAL APPLICATIONS

- Cooling
- Warming
- Drying
- Cleaning, Wipping
- Moving of Parts

#### ORIFICE SIZE

- 08 = 0.8mm
- 10 = 1.0mm

#### MATERIAL

P2 = PP (Polypropylene)  
M1 = SS304 / SS303  
M6 = Aluminum

#### THREAD TYPE

- X=BSPP
- Y=BSPT
- Z=NPT

#### THREAD SIZE

- B=1/4"

# CK Series Flat Spray Nozzles For Air & Saturated Steam

**CK**

## Features :

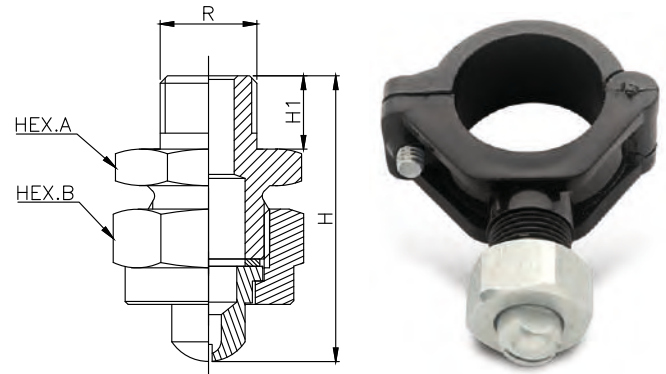
- Produce flat spray pattern in air or steam.
- Effective spray angle does not hold long since air or steam disperses very quickly.

## Standard Operating Air Pressure :

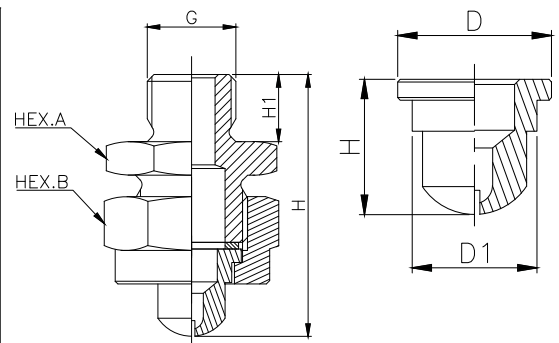
- 3 Bar

## Applications :

- **Compressed air :**  
Cleaning, dust suppression, drying air curtain, etc.
- **Steam :**  
Humidification, temperature control, moisture control, etc.



CK - series (3-piece structure)	
<b>Structure</b>	<ul style="list-style-type: none"> <li>• 3-piece structure of all metal</li> <li>• Comprises three parts : Spray tip, cap and adaptor, worn-out spray tip can be replaced separately.</li> <li>• Cap and adaptor standard flat spray nozzle for liquid.</li> </ul>
<b>Material</b>	<ul style="list-style-type: none"> <li>• B (Brass) or S.S.304 (Stainless Steel 304)</li> <li>• Optional material : S316</li> </ul>



## COMPLETE NOZZLE :

Series	End Connection Size of Complete Nozzle	Dimensions(mm)				Weight (g)	
		H	H1	Hex A	Hex B	Brass	S.S.304
CK	1/4 ,3/8 G(M)	39	10	22	22	47	44
	1/4 ,3/8 R(M)	41.5	10	22	22	78	73

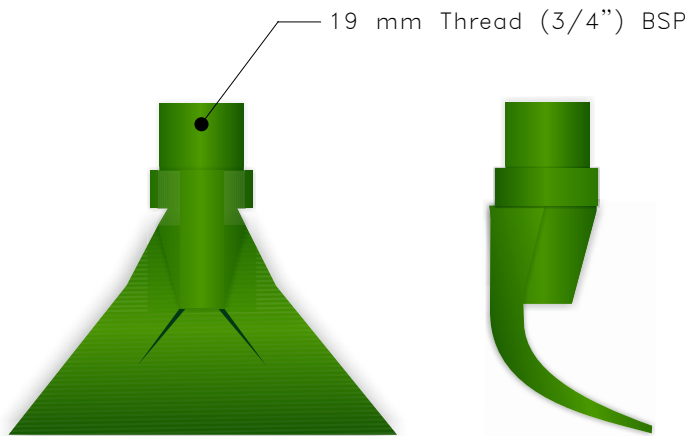
## SPRAY TIP :

Series	Spray Tip	Dimensions (mm)			Weight (g)	
		H	D	D1	Brass	S.S.304
CK	1/4	13	14.8	12	5.0	4.8
	3/8	13	14.8	12	8.2	7.8

**Note :** Appearance and dimensions may be slightly changed depending on materials and nozzle codes.

# CM Series Deluge Type Spray Nozzle ( Polyurethane )

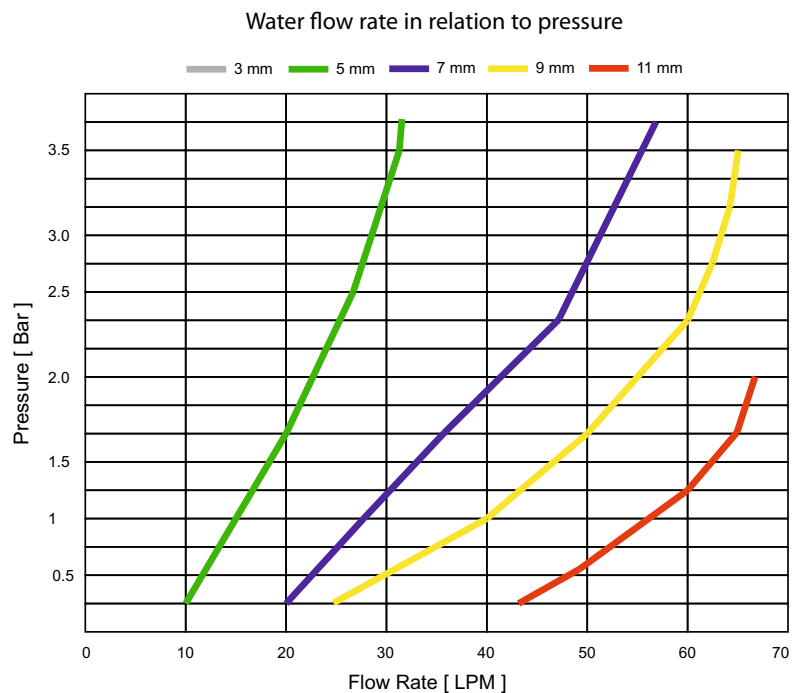
CM



- Features** :
- Uniform spray pattern
  - Coarse flat fan spray
  - Tough wear resistant
  - One piece molded construction
  - Corrosion-resistant
  - Economical

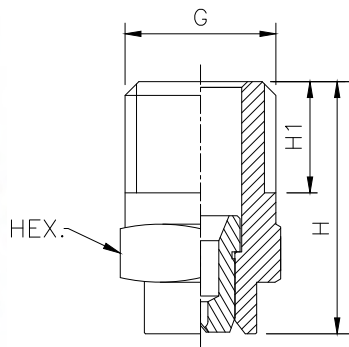
Spraytech Spray nozzles work equally effectively with high or low water pressure with an operating range from 40 to 300 kPa (6 to 40 psi). The nozzles give a sharp, defined, fanshaped water jet providing efficient cleaning. Spraytech Spray nozzles are ideal for washing, dust control and deslurrying applications. Trellex Spray nozzles made from polyurethane ensure efficient cleaning.

MODEL NO.	ORIFICE (mm)	COLOUR	END CONN
CM03.P9.XE	3.0	Grey	3/4" BSP (M)
CM05.P9.XE	5.0	Green	3/4" BSP (M)
CM07.P9.XE	7.0	Blue	3/4" BSP (M)
CM09.P9.XE	9.0	Yellow	3/4" BSP (M)
CM11.P9.XE	11.0	Red	3/4" BSP (M)



# CN Series Flat Spray Nozzle ( Insert Design )

CN



Standard design with self sealing thread connection. Stable spray angle, Uniform distribution of liquid, parabolical distribution of liquid.

**Design** : One piece construction, Non clogging type.

**Application** : Rinsing, Lubricating, Industrial washing machines, Cake washing in Centrifuge, CIP, Tray washing.

'C' Series Flat Spray Nozzles are designed for high pressure / high impact washing application. These nozzles are specially designed and machined with precision which allows even spray coverage and distribution. This results in effective and uniform cleaning action over the surface being processed. Flat spray nozzles are available in all steel grades, Plastics & other alloys. Spray angle range available from 15° to 120° .

15° SPRAY ANGLE	CONNECTION END		ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0					
CN11.050	●	●	0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/8"	18	6.5	10.2	11
CN11.075	●	●	1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CN11.100	●	●	1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CN11.150	●	●	1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CN11.175	●	●	1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91					
CN11.200	●	●	1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47					
CN11.250	●	●	1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59					
CN11.300	●	●	2.1	1.5	2.12	<b>3.0</b>	3.67	4.74	5.61	6.71					
CN11.350	●	●	2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83					
CN11.400	●	●	2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94					
CN11.475	●	●	2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62					
CN11.650	●	●	3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53					
CN11.800	●	●	3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89					
CN21.100		●	3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36					
CN21.125		●	4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95					
CN21.160		●	4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
CN21.180		●	5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
CN21.200		●	5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
CN21.225		●	5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
CN21.250		●	6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					

# CN Series Flat Spray Nozzles ( Insert Design )

30° SPRAY ANGLE	CONNECTION END		ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
CN12.050	●	●	0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/8"	18	6.5	10.2	11
CN12.075	●	●	1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CN12.100	●	●	1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CN12.150	●	●	1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CN12.175	●	●	1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91					
CN12.200	●	●	1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47					
CN12.250	●	●	1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59					
CN12.300	●	●	2.1	1.5	2.12	<b>3.0</b>	3.67	4.74	5.61	6.71					
CN12.350	●	●	2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83					
CN12.400	●	●	2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94					
CN12.475	●	●	2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62					
CN12.650	●	●	3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53					
CN12.800	●	●	3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89					
CN22.100		●	3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36					
CN22.125		●	4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95					
CN22.160		●	4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
CN22.180		●	5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
CN22.200		●	5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
CN22.225		●	5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
CN22.250		●	6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					

45° SPRAY ANGLE	END CONNECTION				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
CN13.050	●	●			0.8	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/8"	18	6.5	10.2	11
CN13.075	●	●			1.0	0.37	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CN13.100	●	●			1.2	0.50	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CN13.150	●	●			1.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CN13.175	●	●			1.6	0.87	1.24	<b>1.75</b>	2.14	2.77	3.27	3.91	3/8"	25	12	16	17
CN13.200	●	●			1.7	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47	3/8" Weight (Metals) = 28 gms. Approx				
CN13.250	●	●			1.9	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59	1/2"	27	13.2	21	22
CN13.300	●	●				1.5	2.12	<b>3.00</b>	3.67	4.74	5.61	6.71	1/2" Weight (Metals) = 42 gms. Approx				
CN13.350	●	●			2.3	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83					
CN13.400	●	●			2.4	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94					
CN13.475	●	●			2.7	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62					
CN13.650	●	●			3.1	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53					
CN13.800	●	●			3.5	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89					
CN23.100		●	●		3.9	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36					
CN23.125		●	●		4.3	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95					
CN23.160		●	●		4.9	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
CN23.180		●	●		5.2	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
CN23.200		●	●		5.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
CN23.225		●	●		5.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
CN23.250		●	●		6.1	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					
CN23.320			●	●	6.4	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55					
CN23.400			●	●	7.8	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44					
CN23.520				●	8.9	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28					
CN23.650				●	9.9	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34					
CN23.800				●	11.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89					



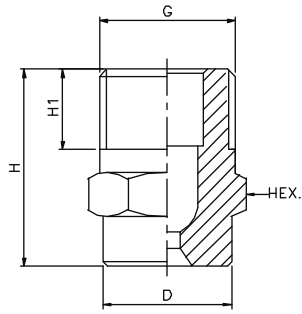
# CN Series Flat Spray Nozzles ( Insert Design )

60° SPRAY ANGLE	END CONNECTION				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	ORIFICE SIZE (mm)	0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
CN14.050	●	●			0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/8"	18	6.5	10.2	11
CN14.075	●	●			1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CN14.100	●	●			1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CN14.150	●	●			1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CN14.175	●	●			1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	25	12	16	17
CN14.200	●	●			1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	3/8" Weight (Metals) = 28 gms. Approx				
CN14.250	●	●			1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	27	13.2	21	22
CN14.300	●	●			2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71	1/2" Weight (Metals) = 42 gms. Approx				
CN14.350	●	●			2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83					
CN14.400	●	●			2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94					
CN14.475	●	●			2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62					
CN14.650	●	●			3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53					
CN14.800	●	●			3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89					
CN24.100		●	●		3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36					
CN24.125		●	●		4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
CN24.160		●	●		4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
CN24.180		●	●		5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
CN24.200		●	●		5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
CN24.225		●	●		5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
CN24.250		●	●		6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
CN24.320			●	●	6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
CN24.400			●	●	7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
CN24.520				●	8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
CN24.650				●	9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
CN24.800				●	11.0	40.00	56.57	80.00	97.98	126.49	149.67	178.89					

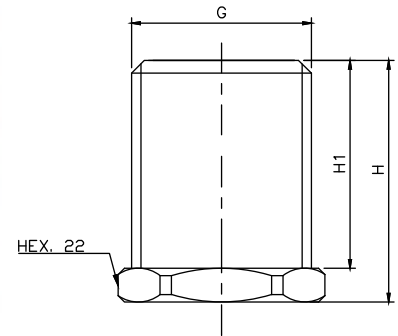
90° SPRAY ANGLE	END CONNECTION				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	ORIFICE SIZE (mm)	0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
CN16.050	●	●			0.8	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/8"	18	6.5	10.2	11
CN16.075	●	●			1.0	0.37	0.53	0.75	0.92	1.19	1.40	1.68	1/8" Weight (Metals) = 7 gms. Approx				
CN16.100	●	●			1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	22	10	13	14
CN16.150	●	●			1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	1/4" Weight (Metals) = 18 gms. Approx				
CN16.175	●	●			1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	25	12	16	17
CN16.200	●	●			1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	3/8" Weight (Metals) = 28 gms. Approx				
CN16.250	●	●			1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	27	13.2	21	22
CN16.300	●	●			2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71	1/2" Weight (Metals) = 42 gms. Approx				
CN16.350	●	●			2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83					
CN16.400	●	●			2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94					
CN16.475	●	●			2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62					
CN16.650	●	●			3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53					
CN16.800	●	●			3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89					
CN26.100		●	●		3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36					
CN26.125		●	●		4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
CN26.160		●	●		4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
CN26.180		●	●		5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
CN26.200		●	●		5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
CN26.225		●	●		5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
CN26.250		●	●		6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
CN26.320			●	●	6.4	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
CN26.400			●	●	7.8	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
CN26.520				●	8.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
CN26.650				●	9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
CN26.800				●	11.0	40.00	56.57	80.00	97.98	126.49	149.67	178.89					

# KS Series Steam Spray Nozzles

**KS**



**KS Series : 3/8" & 1/2"**



**KS1 Series : 3/4" & 1/2"**

'Spraytech' make KS series steam spray nozzles offers various capacities of mass flow rate for saturated and superheated steam which is widely used for applications such as steam purging, heating, humidification, sterilization etc.

KS series are available with inbuilt NRV design which allows the nozzle to work in immersible conditions. It opens when pressure is applied and locks itself when there is no pressure.

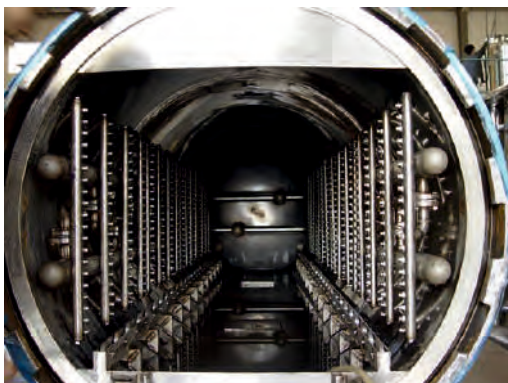
Available in two body designs, Standard (KS) and Full Threading (KS1)

**Note:** Designs are available with and without NRV features, please mention while ordering.



MODEL NO	END CONNECTION			MASS FLOW RATE OF SAT. STREAM (kg/hr)					G/A DIMENSION MM				
				Pressure [bar]									
	3/8"	1/2"	3/4"	1	2	3	4	5	CONN.	H	H1	D	HEX
KS.03	●			8.3	11.4	15.48	19.80	23.04	3/8"	25	10	16	17
KS.04	●			10.6	15.3	21.60	27.36	32.40	Weight (Metals) = XX gms. Approx				
KS.05	●	●		16.4	21.6	30.96	39.60	46.44	1/2"	32	13.2	21	22
KS.08	KS1.08	●		31.8	47.71	63.61	79.51	95.42	Weight (Metals) = XX gms. Approx				
KS.13	KS1.13		●	83.9	125.9	167.7	209.6	251.5	3/4"	42	15	32	27
	KS1.12		●	127.2	190.8	256.4	318.0	381.6	Weight (Metals) = XX gms. Approx				
	KS1.12		●	161.0	241.5	322.0	402.5	483.0					

End Connection : X – BSP, Y – BSPT, Z – NPT Available.



## Straight Jet Spray Nozzle

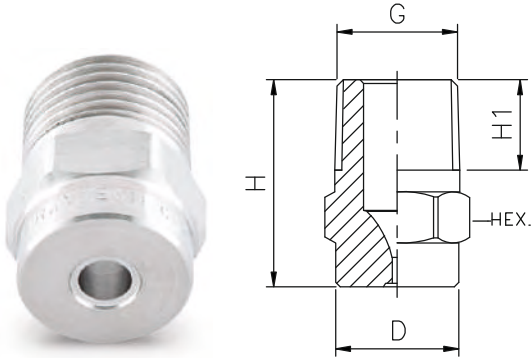


## APPLICATION

- Paper cutting
- Paper slitting
- Component Washing machines
- Vehicles washing machines
- Floor washing machine

# CL Series Straight Jet Spray Nozzle

CL



**Design for : 1/8", 1/4", 3/8" & 1/2"**



**Design for : 3/4" & 1"**

Compact stream jet with a defined jet length owing to optimum flow geometry. Flow conditions are not affected by turbulence. A concentrated jet with high impact force is achieved. This is used for powerful punctiform impact, wherever concentrated jet power is vital.

- Characteristic :** A high efficiency and economical performance is obtained.
- Design :** One Piece Construction.
- Application :** For High pressure cleaning systems, Jet Cutting and separating.
- Features :** Optimized flow maximum jet power concentrated energy.

0° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0					
CL10.100	●	●					1.1	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10.2	11
CL10.150	●	●					1.3	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 10 gms. Approx				
CL10.175	●	●					1.4	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
CL10.200	●	●					1.5	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 18 gms. Approx				
CL10.250	●	●					1.7	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	12	16	17
CL10.300	●	●					2.1	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
CL10.350	●	●	●				2.0	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
CL10.400	●	●	●				2.1	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 60 gms. Approx				
CL10.475	●	●	●				2.3	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	14.5	32	27
CL10.650		●	●				2.7	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 133 gms. Approx				
CL10.800		●	●				3.0	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	16.8	39	36
CL20.100		●	●				3.4	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 328 gms. Approx				
CL20.125		●	●				3.7	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
CL20.160		●	●				4.2	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
CL20.180		●	●				5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
CL20.200		●	●				4.7	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
CL20.225		●	●				5.0	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
CL20.250		●	●	●	●		5.3	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
CL20.320			●	●	●		6.0	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
CL20.400			●	●	●		6.7	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
CL20.520				●	●	●	7.6	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
CL20.650				●	●	●	8.5	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
CL20.720					●	●	9.0	36.00	50.91	72.00	88.18	113.8	134.7	161.00					
CL20.800					●	●	9.5	40.00	56.57	80.00	97.98	126.49	149.67	178.89					
CL30.100					●	●	10.6	50.00	70.71	100.0	122.47	158.11	187.08	223.61					
CL30.118					●	●	11.5	59.00	83.44	118.0	144.52	186.57	220.76	263.86					
CL30.130					●	●	12.1	65.00	91.92	130.0	159.22	205.55	243.21	290.69					
CL30.160					●	●	13.4	80.00	113.14	160.0	195.96	252.98	299.33	357.77					

End Connection : X – BSP, Y - BSPT, Z – NPT Available.



## Full Cone Spray Nozzles Series



## APPLICATION

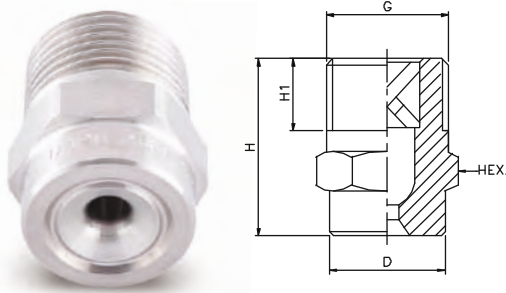
- Absorption
- Chemical process engineering
- Chlorine precipitation
- Cleaning
- Cooling
- Desuperheating
- Dust control
- Fire protection
- Foam control
- Gas treatment
- Spraying onto mats in air
- Washers
- Spraying over packings
- Surface spraying
- Water treatment and many others...



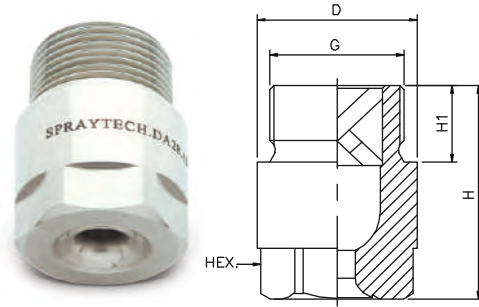
# DA Series Full Cone Spray Nozzles



(Male)



**Design for 1/8", 1/4", 3/8" & 1/2"**



**Design for 3/4" & 2"**

Full Cone Spray Nozzle form complete spray coverage in a round area. It provides an uniform spray distribution of medium to large size drops resulting from their vane design which features large flow passage and control characteristics.

**Characteristic :** Internal vane design features large flow passage and fine control.

**Design :** Removable vane, Axial flow.

**Type :** Round pattern, Threaded connection.

MODEL NO.		CONNECTION END										FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE						G/A DIMENSION. MM					
		1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	ORIFICE SIZE (mm)												PRESSURE [BAR]
SPRAY ANGLE		BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
15°	30°																						
DA11.100	DA12.100	●									1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10	11
DA11.150	DA12.150	●									1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 9 gms. Approx				
DA11.175	DA12.175	●									1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
DA11.200	DA12.200	●									1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 17 gms. Approx				
DA11.250	DA12.250	●									1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	10	16	17
DA11.300	DA12.300	●									2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
DA11.350	DA12.350	●									2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
DA11.400	DA12.400	●									2.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 66 gms. Approx				
DA11.475	DA12.475	●	●								2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	15	32	27
DA11.650	DA12.650		●								3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 155 gms. Approx				
DA11.800	DA12.800		●								3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	17	39	36
DA21.100	DA22.100		●	●							3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 367 gms. Approx				
DA21.125	DA22.125			●							4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95	1 1/4"	74	19	49	41
DA21.160	DA22.160			●	●						4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78	Weight (Metals) = 670 gms. Approx				
DA21.180	DA22.180				●						5.2	9.00	12.73	18.00	22.05	28.46	33.67	33.67	1 1/2"	85	22	59	50
DA21.200	DA22.200				●						5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72	Weight (Metals) = 1172 gms. Approx				
DA21.225	DA22.225				●						5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31	2"	106	24	68	60
DA21.250	DA22.250				●	●					6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90	Weight (Metals) = 1896 gms. Approx				
DA21.320	DA22.320					●					6.9	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DA21.400	DA22.400					●	●				7.7	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DA21.520	DA22.520						●	●			8.8	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DA21.650	DA22.650							●	●		9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DA21.720	DA22.720							●	●		10.4	36.00	50.91	72.00	88.18	113.8	134.7	161.00					
DA21.800	DA22.800								●	●	11.5	40.00	56.57	80.00	97.98	126.49	149.67	178.89					
DA31.100	DA32.100									●	12.9	50.00	70.71	100.0	122.47	158.11	187.08	223.61					
DA31.118	DA32.118									●	14.0	59.00	83.44	118.0	144.52	186.57	220.76	263.86					
DA31.130	DA32.130									●	14.7	65.00	91.92	130.0	159.22	205.55	243.21	290.69					
DA31.160	DA32.160									●	16.3	80.00	113.14	160.0	195.96	252.98	299.33	357.77					
DA31.200	DA32.200									●	18.2	100	141.42	200.0	244.95	316.23	374.17	447.21					
DA31.227	DA32.227									●	19.4	113.5	160.51	227.0	278.02	358.92	424.68	507.59					
DA31.250	DA32.250									●	20.4	125	176.78	250.0	306.19	395.19	467.71	559.02					
DA31.337	DA32.337									●	23.7	168.5	238.29	337.0	412.74	532.84	630.47	753.55					

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# DA Series Full Cone Spray Nozzles

(Male)

45° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE						G/A DIMENSION. MM					
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]						CONN.	H	H1	D	HEX	
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0						
DA13.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10	11
DA13.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 9 gms. Approx				
DA13.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
DA13.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 17 gms. Approx				
DA13.250	●	●					1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	10	16	17
DA13.300		●					2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
DA13.350		●	●				2.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
DA13.400		●	●				2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 66 gms. Approx				
DA13.475		●	●				2.6	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	15	32	27
DA13.650			●	●			3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 155 gms. Approx				
DA13.800				●			3.4	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	17	39	36
DA23.100				●			3.8	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 367 gms. Approx				
DA23.125				●	●		4.2	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DA23.160				●	●		4.8	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DA23.180					●		5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DA23.200					●		5.4	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DA23.225						●	5.7	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DA23.250						●	6.0	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DA23.320						●	6.8	16.00	22.63	32.00	39.19	50.60	59.87	71.55					

60° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE						G/A DIMENSION. MM					
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]						CONN.	H	H1	D	HEX	
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0						
DA14.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10	11
DA14.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 9 gms. Approx				
DA14.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
DA14.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 17 gms. Approx				
DA14.250	●						1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	10	16	17
DA14.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
DA14.350	●	●					2.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
DA14.400		●	●				2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 66 gms. Approx				
DA14.475		●	●				2.6	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	15	32	27
DA14.650		●	●				3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 155 gms. Approx				
DA14.800			●	●			3.4	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	17	39	36
DA24.100			●	●			3.8	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 367 gms. Approx				
DA24.125				●			4.2	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DA24.160				●	●		4.8	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DA24.180				●			5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DA24.200					●		5.4	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DA24.225					●		5.7	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DA24.250					●		6.0	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DA24.320						●	6.8	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DA24.400						●	7.3	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DA24.520						●	8.3	26.00	36.77	52.00	63.69	82.22	97.28	116.28					

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# DA Series Full Cone Spray Nozzles

DA

(Male)

90° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE						G/A DIMENSION. MM					
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]						CONN.	H	H1	D	HEX	
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/8"	18	6.5	10	11	
DA16.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10	11
DA16.150	●						1.4	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 9 gms. Approx				
DA16.175	●						1.5	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
DA16.200	●						1.6	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 17 gms. Approx				
DA16.250	●						1.8	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	10	16	17
DA16.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
DA16.350	●	●	●				2.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
DA16.400	●	●	●				2.3	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 66 gms. Approx				
DA16.475	●	●	●				2.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	15	32	27
DA16.650	●	●	●				2.9	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 155 gms. Approx				
DA16.800	●	●	●				3.3	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	17	39	36
DA26.100			●				3.6	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 367 gms. Approx				
DA26.125			●				4.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DA26.160			●	●			4.6	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DA26.180				●			5.9	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DA26.200				●			5.2	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DA26.225				●			5.5	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DA26.250				●	●		5.8	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DA26.320				●	●		6.5	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DA26.400					●		7.3	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DA26.520					●	●	8.3	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DA26.650					●		9.3	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DA26.720					●		9.8	36.00	50.91	72.00	88.18	113.8	134.7	161.0					

120° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE						G/A DIMENSION. MM					
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]						CONN.	H	H1	D	HEX	
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/8"	18	6.5	10	11	
DA18.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10	11
DA18.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 9 gms. Approx				
DA18.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
DA18.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 17 gms. Approx				
DA18.250	●						1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	10	16	17
DA18.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
DA18.350	●						2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
DA18.400	●	●	●				2.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 66 gms. Approx				
DA18.475	●	●	●				2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	15	32	27
DA18.650	●	●	●				3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 155 gms. Approx				
DA18.800	●	●	●				3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	17	39	36
DA28.100			●				3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 367 gms. Approx				
DA28.125			●				4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DA28.160			●	●			4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DA28.180				●			5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DA28.200				●			5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DA28.225				●			5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DA28.250				●	●		6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DA28.320				●	●		6.9	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DA28.400					●		7.7	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DA28.520					●	●	8.8	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DA28.650					●		9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DA28.720					●		10.4	36.00	50.91	72.00	88.18	113.8	134.7	161.0					

End Connection : X – BSP, Y - BSPT, Z – NPT Available.



# DB Series Full Cone Spray Nozzles

(Female)

45° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0					
DB13.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	26.5	6.5	13.2	14
DB13.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = xx gms. Approx				
DB13.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	34	10	15.2	16
DB13.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 38 gms. Approx				
DB13.250	●	●					1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	36.5	10	21.2	22
DB13.300		●					2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 90 gms. Approx				
DB13.350		●	●				2.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	48.5	14	26.2	27
DB13.400		●	●				2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 176 gms. Approx				
DB13.475		●	●				2.6	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	58	14	31.5	27
DB13.650			●	●			3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 230 gms. Approx				
DB13.800				●			3.4	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	76	18	39.5	36
DB23.100				●			3.8	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 470 gms. Approx				
DB23.125				●	●		4.2	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DB23.160				●	●		4.8	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DB23.180				●	●		5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DB23.200				●	●		5.4	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DB23.225					●		5.7	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DB23.250					●		6.0	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DB23.320					●		6.8	16.00	22.63	32.00	39.19	50.60	59.87	71.55					

60° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0					
DB14.100	●						1.1	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	26.5	6.5	13.2	14
DB14.150	●						1.4	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = xx gms. Approx				
DB14.175	●						1.5	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	34	10	15.2	16
DB14.200	●						1.6	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 38 gms. Approx				
DB14.250	●						1.8	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	36.5	10	21.2	22
DB14.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 90 gms. Approx				
DB14.350	●	●					2.1	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	48.5	14	26.2	27
DB14.400		●	●				2.3	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 176 gms. Approx				
DB14.475		●	●				2.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	58	14	31.5	27
DB14.650		●	●				2.9	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 230 gms. Approx				
DB14.800			●				3.25	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	76	18	39.5	36
DB24.100			●				3.6	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 470 gms. Approx				
DB24.125				●			4.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DB24.160				●			4.6	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DB24.180				●			4.9	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DB24.200					●		5.1	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DB24.225					●		5.5	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DB24.250					●		5.8	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DB24.320					●		6.5	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DB24.400					●		7.3	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DB24.520					●		8.3	26.00	36.77	52.00	63.69	82.22	97.28	116.28					

End Connection : X – BSP, Y - BSPT, Z – NPT Available.



# DB Series Full Cone Spray Nozzles

(Female)

90° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/8"	26.5	6.5	13.2	14	
DB16.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	Weight (Metals) = xx gms. Approx				
DB16.150	●						1.4	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = xx gms. Approx				
DB16.175	●						1.5	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	34	10	15.2	16
DB16.200	●						1.6	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 38 gms. Approx				
DB16.250	●						1.8	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	36.5	10	21.2	22
DB16.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 90 gms. Approx				
DB16.350	●	●	●				2.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	48.5	14	26.2	27
DB16.400	●	●	●				2.3	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 176 gms. Approx				
DB16.475	●	●	●				2.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	58	14	31.5	27
DB16.650	●	●	●				2.9	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 230 gms. Approx				
DB16.800	●	●	●				3.3	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	76	18	39.5	36
DB26.100			●				3.6	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 470 gms. Approx				
DB26.125			●				4.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DB26.160			●	●			4.6	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DB26.180				●			4.9	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DB26.200				●			5.2	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DB26.225				●			5.5	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DB26.250				●	●		5.8	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DB26.320				●	●		6.5	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DB26.400					●		7.3	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DB26.520					●	●	8.3	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DB26.650						●	9.3	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DB26.720						●	9.8	36.00	50.91	72.00	88.18	113.8	134.7	161.0					

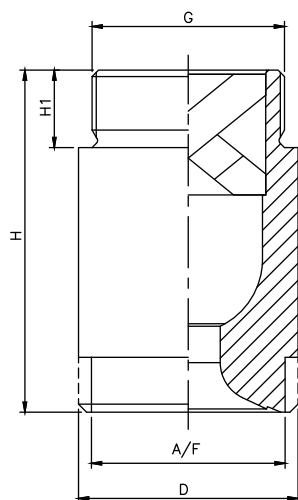
120° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/8"	26.5	6.5	13.2	14	
DB18.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	Weight (Metals) = xx gms. Approx				
DB18.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = xx gms. Approx				
DB18.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	34	10	15.2	16
DB18.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 38 gms. Approx				
DB18.250	●						1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	36.5	10	21.2	22
DB18.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 90 gms. Approx				
DB18.350	●						2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	48.5	14	26.2	27
DB18.400	●	●	●				2.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 176 gms. Approx				
DB18.475	●	●	●				2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	58	14	31.5	27
DB18.650	●	●	●				3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 230 gms. Approx				
DB18.800	●	●	●				3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	76	18	39.5	36
DB28.100			●				3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 470 gms. Approx				
DB28.125			●				4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DB28.160			●	●			4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DB28.180				●			5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DB28.200				●			5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DB28.225				●			5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DB28.250				●	●		6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DB28.320				●	●		6.9	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DB28.400					●		7.7	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DB28.520						●	8.8	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DB28.650						●	9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DB28.720						●	10.4	36.00	50.91	72.00	88.18	113.8	134.7	161.0					

End Connection : X – BSP, Y – BSPT, Z – NPT Available.

# DA Series Full Cone Spray Nozzles

DA

(Axial Flow Male)

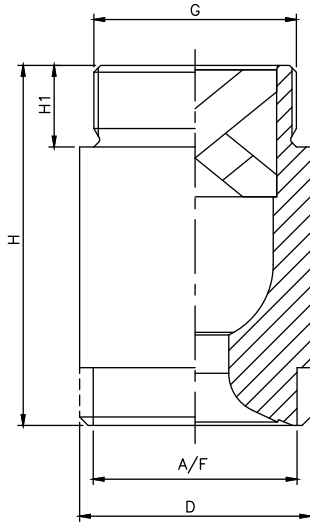


The larger spray nozzles in the D series are widely used in the industry, for a wide variety of applications. They maintain the simple design of the smaller nozzles, with the inherent resistance to clogging due to design of the X-vane, and are often manufactured out high quality alloys and special plastic materials.

Design for 1-1/4", 1-1/2", 2"

MODEL NO.	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1 1/4"	1 1/2"	2"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
60° SPRAY ANGLE	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	1 1/4"	H	H1	D	A/F
DA24.650	●			9.0	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34	1 1/4"	74	19	49	41
DA24.800	●			10.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89	Weight (Metals) = XXX gms. Approx				
DA34.100	●			11.20	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61	1 1/2"	85	22	59	50
DA34.118		●		12.2	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86	Weight (Metals) = XXX gms. Approx				
DA34.130		●		12.8	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69	2"	106	24	68	60
DA34.160		●		14.2	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77	Weight (Metals) = XXX gms. Approx				
DA34.200			●	15.8	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21					
DA34.227			●	16.9	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59					
DA34.250			●	17.7	125	176.78	<b>250.0</b>	306.19	395.19	467.71	559.02					
DA34.300			●	19.1	150	212.13	<b>300.0</b>	367.42	474.34	561.25	670.82					
DA34.337			●	20.6	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55					

MODEL NO.	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1 1/4"	1 1/2"	2"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
90° SPRAY ANGLE	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	A/F
DA26.650	●			9.7	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34	1 1/4"		19	49	41
DA26.800	●			10.7	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89	Weight (Metals) = 525.0 gms. Approx				
DA36.100	●			12.0	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61	1 1/2"	85	22	59	50
DA36.118		●		13.0	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86	Weight (Metals) = 915.0 gms. Approx				
DA36.130		●		13.7	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69	2"	106	24	68	60
DA36.160		●		15.20	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77	Weight (Metals) = 1535.0 gms. Approx				
DA36.200			●	17.0	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21					
DA36.227			●	18.1	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59					
DA36.250			●	19.0	125	176.78	<b>250.0</b>	306.19	395.19	467.71	559.02					
DA36.300			●	20.5	150	212.13	<b>300.0</b>	367.42	474.34	561.25	670.82					
DA36.337			●	22.0	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55					



- Application** : Surface spraying, Washing & Cooling of flue gasses to remove fly ash, Cooling condenser, Scrubbing, Foam breaking.
- Flow Rate** : 65 LPM to 1250 LPM
- Pressure** : 2.0 Kg/cm<sup>2</sup> or specified
- Spray Angle** : 60° to 120°
- End Connection** : 1 1/4" to 4" BSPT / NPT or BSPP
- M.O.C.** : S.S. 316, 304, Brass, PVC, PVDF, PP, Teflon<sup>®</sup>

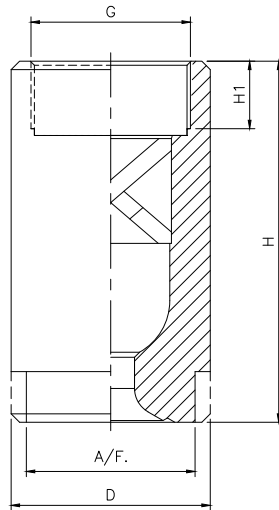
The larger spray nozzles in the DA Series are widely used in the industry, for a wide variety of applications. They maintain the simple design of the smaller nozzles, with the inherent resistance to clogging due to design of the X-vane and are often manufactured by any type of machinable material like SS304, SS316, PP/PVC etc.

MODEL NO.	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1 1/4"	1 1/2"	2"		PRESSURE [BAR]											
120° SPRAY ANGLE	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	A/F
DA28.800	●			11.4	40.00	56.57	80.00	97.98	126.49	149.67	178.89	1 1/4"	74	19	49	41
DA38.100	●			12.7	50.00	70.71	100.0	122.47	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx				
DA38.118	●	●		13.8	59.00	83.44	118.0	144.52	186.57	220.76	263.86	1 1/2"	85	22	59	50
DA38.130	●	●		14.5	65.00	91.92	130.0	159.22	205.55	243.21	290.69	Weight (Metals) = XX gms. Approx				
DA38.160		●		16.1	80.00	113.14	160.0	195.96	252.98	299.33	357.77	2"	106	24	68	60
DA38.200			●	18.0	100.0	141.42	200.0	244.95	316.23	374.17	447.21	Weight (Metals) = XX gms. Approx				
DA38.227			●	19.1	113.5	160.51	227.0	278.02	358.92	424.68	507.59					
DA38.250			●	20.1	125.0	176.78	250.0	306.19	395.19	467.71	559.02					
DA38.300			●	21.5	150	212.13	300.0	367.42	474.34	561.25	670.82					
DA38.337			●	23.3	168.5	238.29	337.0	412.74	532.84	630.47	753.55					

# DB Series Full Cone Spray Nozzles

**DB**

(Axial Flow Female)



The larger spray nozzles in the D series are widely used in the industry, for a wide variety of applications. They maintain the simple design of the smaller nozzles, with the inherent resistance to clogging due to design of the X-vane, and are often manufactured out high quality alloys and special plastic materials.

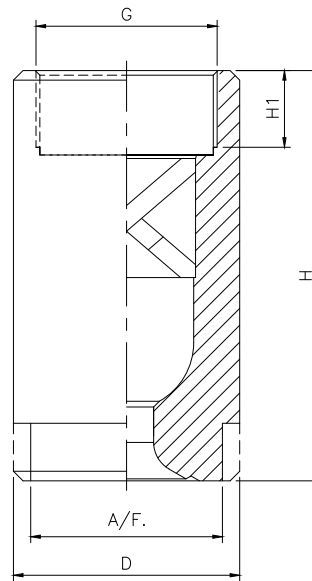
MODEL NO.	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1 1/4"	1 1/2"	2"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
60° SPRAY ANGLE	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	1 1/4"	H	H1	D	A/F
DB24.650	●			9.0	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34	1 1/4"	96	20	49	41
DB24.800	●			10.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89	Weight (Metals) = XX gms. Approx				
DB34.100	●			11.20	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61	1 1/2"	107	20	59	50
DB34.118		●		12.2	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86	Weight (Metals) = XX gms. Approx				
DB34.130		●		12.8	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69	2"	130	22	68	60
DB34.160		●		14.2	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77	Weight (Metals) = XX gms. Approx				
DB34.200			●	15.8	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21					
DB34.227			●	16.9	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59					
DB34.250			●	17.7	125	176.78	<b>250.0</b>	306.19	395.19	467.71	559.02					
DB34.300			●	19.1	150	212.13	<b>300.0</b>	367.42	474.34	561.25	670.82					
DB34.337			●	20.6	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55					

MODEL NO.	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1 1/4"	1 1/2"	2"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
90° SPRAY ANGLE	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	A/F
DB26.650	●			9.7	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34	1 1/4"	96	20	49	41
DB26.800	●			10.7	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89	Weight (Metals) = 525.0 gms. Approx				
DB36.100	●			12.0	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61	1 1/2"	107	20	59	50
DB36.118		●		13.0	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86	Weight (Metals) = 915.0 gms. Approx				
DB36.130		●		13.7	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69	2"	130	22	68	60
DB36.160		●		15.20	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77	Weight (Metals) = 1535.0 gms. Approx				
DB36.200			●	17.0	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21					
DB36.227			●	18.1	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59					
DB36.250			●	19.0	125	176.78	<b>250.0</b>	306.19	395.19	467.71	559.02					
DB36.300			●	20.5	150	212.13	<b>300.0</b>	367.42	474.34	561.25	670.82					
DB36.337			●	22.0	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55					

# DB Series Full Cone Spray Nozzles

(Female)

**DB**



The larger spray nozzles in the DA Series are widely used in the industry, for a wide variety of applications. They maintain the simple design of the smaller nozzles, with the inherent resistance to clogging due to design of the X-vane and are often manufactured by any type of machinable material like SS304, SS316, PP/PVC etc.

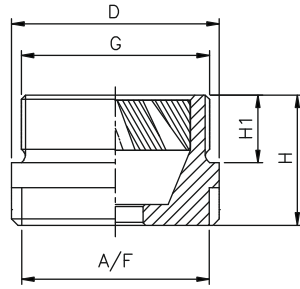
MODEL NO.	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1 1/4"	1 1/2"	2"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
120° SPRAY ANGLE	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	1 1/4"	H	H1	D	A/F
DB28.800	●			11.4	40.00	56.57	80.00	97.98	126.49	149.67	178.89	1 1/4"	96	20	49	41
DB38.100	●			12.7	50.00	70.71	100.0	122.47	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx				
DB38.118	●	●		13.8	59.00	83.44	118.0	144.52	186.57	220.76	263.86	1 1/2"	107	20	59	50
DB38.130	●	●		14.5	65.00	91.92	130.0	159.22	205.55	243.21	290.69	Weight (Metals) = XX gms. Approx				
DB38.160		●		16.1	80.00	113.14	160.0	195.96	252.98	299.33	357.77	2"	130	22	68	60
DB38.200			●	18.0	100.0	141.42	200.0	244.95	316.23	374.17	447.21	Weight (Metals) = XX gms. Approx				
DB38.227			●	19.1	113.5	160.51	227.0	278.02	358.92	424.68	507.59					
DB38.250			●	20.1	125.0	176.78	250.0	306.19	395.19	467.71	559.02					
DB38.300			●	21.5	150.0	212.13	300.0	367.42	474.34	561.25	670.82					
DB38.337			●	23.3	168.5	238.29	337.0	412.74	532.84	630.47	753.55					



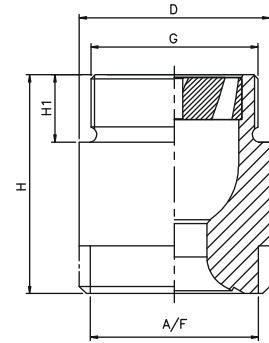
# DA Series Full Cone Spray Nozzles

(Male)

DA



Spray Angle 60°/ 90°



Spray Angle 120°

60° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	2 1/2"	3"	3 1/2"	4"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	2 1/2"	H	H1	D	A/F
DA34.400	●				25.0	200	282.84	400	489.90	632.46	748.33	894.43	2 1/2"	52	27	83	75
DA34.500	●				28.0	250	353.55	500	612.37	790.57	935.41	1118.03	Weight (Metals) = XX gms. Approx				
DA34.625		●			31.3	312.5	441.94	625	765.47	988.21	1169.27	1397.54	3"	60	30	98	85
DA34.710		●			33.3	355	502.05	710	869.57	1122.61	1328.29	1587.61	Weight (Metals) = XX gms. Approx				
DA34.800			●		35.4	400	565.69	800	979.80	1264.91	1496.66	1788.85	3 1/2"	70	32	118	105
DA44.1000			●		36.0	500	707.11	1000	1224.74	1581.14	1870.83	2236.07	Weight (Metals) = XX gms. Approx				
DA44.1250				●	42.0	625	883.88	1250	1530.93	1976.42	2338.54	2795.08	4"	90	36	128	110
													Weight (Metals) = XX gms. Approx				

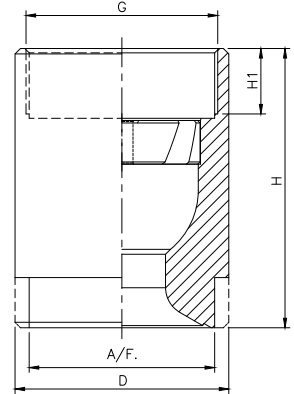
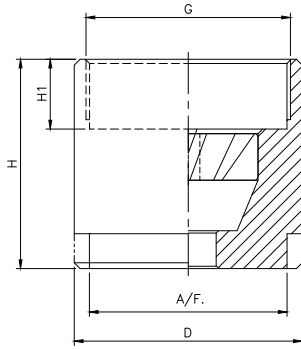
90° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	2 1/2"	3"	3 1/2"	4"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	2 1/2"	H	H1	D	A/F
DA36.400	●				25.0	200	282.84	400	489.90	632.46	748.33	894.43	2 1/2"	52	27	83	75
DA36.500	●				28.0	250	353.55	500	612.37	790.57	935.41	1118.03	Weight (Metals) = 1318 gms. Approx				
DA36.625		●			31.3	312.5	441.94	625	765.47	988.21	1169.27	1397.54	3"	60	30	98	85
DA36.710		●			33.3	355	502.05	710	869.57	1122.61	1328.29	1587.61	Weight (Metals) = 1676 gms. Approx				
DA36.800			●		35.4	400	565.69	800	979.80	1264.91	1496.66	1788.85	3 1/2"	70	32	118	105
DA46.1000			●		36.0	500	707.11	1000	1224.74	1581.14	1870.83	2236.07	Weight (Metals) = 3805 gms. Approx				
DA46.1250				●	42.0	625	883.88	1250	1530.93	1976.42	2338.54	2795.08	4"	90	36	128	110
													Weight (Metals) = XX gms. Approx				

120° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	2 1/2"	3"	3 1/2"	4"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	2 1/2"	H	H1	D	A/F
DA38.400	●				25.0	200	282.84	400	489.90	632.46	748.33	894.43	2 1/2"	124	27	83	75
DA38.500	●				28.0	250	353.55	500	612.37	790.57	935.41	1118.03	Weight (Metals) = 2989 gms. Approx				
DA38.625		●			31.3	312.5	441.94	625	765.47	988.21	1169.27	1397.54	3"	128	30	98	85
DA38.710		●			33.3	355	502.05	710	869.57	1122.61	1328.29	1587.61	Weight (Metals) = 5073 gms. Approx				
DA38.800			●		35.4	400	565.69	800	979.80	1264.91	1496.66	1788.85	3 1/2"	155	32	118	105
DA48.1000			●		36.0	500	707.11	1000	1224.74	1581.14	1870.83	2236.07	Weight (Metals) = 8380 gms. Approx				
DA48.1250				●	42.0	625	883.88	1250	1530.93	1976.42	2338.54	2795.08	4"	165	36	128	110
													Weight (Metals) = 9513 gms. Approx				

# DB Series Full Cone Spray Nozzles

(Female)

**DB**



60° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM				
	2 1/2"	3"	3 1/2"	4"		PRESSURE [BAR]								CONN.	H	H1	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0						
DB.34.400	●				25.0	200	282.84	400	489.90	632.46	748.33	894.43	2 1/2"	82	27	83	75	
DB.34.500	●				28.0	250	353.55	500	612.37	790.57	935.41	1118.03	Weight (Metals) = XX gms. Approx					
DB.34.625		●			31.3	312.5	441.94	625	765.47	988.21	1169.27	1397.54	3"	90	30	98	85	
DB.34.710		●			33.3	355	502.05	710	869.57	1122.61	1328.29	1587.61	Weight (Metals) = XX gms. Approx					
DB.34.800			●		35.4	400	565.69	800	979.80	1264.91	1496.66	1788.85	3 1/2"	105	32	118	105	
DB.44.1000			●		36.0	500	707.11	1000	1224.74	1581.14	1870.83	2236.07	Weight (Metals) = XX gms. Approx					
DB.44.1250				●	42.0	625	883.88	1250	1530.93	1976.42	2338.54	2795.08	4"	130	36	128	110	
													Weight (Metals) = XX gms. Approx					

90° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM				
	2 1/2"	3"	3 1/2"	4"		PRESSURE [BAR]								CONN.	H	H1	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0						
DB.36.400	●				25.0	200	282.84	400	489.90	632.46	748.33	894.43	2 1/2"	82	27	83	75	
DB.36.500	●				28.0	250	353.55	500	612.37	790.57	935.41	1118.03	Weight (Metals) = XX gms. Approx					
DB.36.625		●			31.3	312.5	441.94	625	765.47	988.21	1169.27	1397.54	3"	90	30	98	85	
DB.36.710		●			33.3	355	502.05	710	869.57	1122.61	1328.29	1587.61	Weight (Metals) = XX gms. Approx					
DB.36.800			●		35.4	400	565.69	800	979.80	1264.91	1496.66	1788.85	3 1/2"	105	32	118	105	
DB.46.1000			●		36.0	500	707.11	1000	1224.74	1581.14	1870.83	2236.07	Weight (Metals) = XX gms. Approx					
DB.46.1250				●	42.0	625	883.88	1250	1530.93	1976.42	2338.54	2795.08	4"	130	36	128	110	
													Weight (Metals) = XX gms. Approx					

120° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE								G/A DIMENSION. MM				
	2 1/2"	3"	3 1/2"	4"		PRESSURE [BAR]								CONN.	H	H1	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0						
DB.38.400	●				25.0	200	282.84	400	489.90	632.46	748.33	894.43	2 1/2"	124	27	83	75	
DB.38.500	●				28.0	250	353.55	500	612.37	790.57	935.41	1118.03	Weight (Metals) = 2989 gms. Approx					
DB.38.625		●			31.3	312.5	441.94	625	765.47	988.21	1169.27	1397.54	3"	128	30	98	85	
DB.38.710		●			33.3	355	502.05	710	869.57	1122.61	1328.29	1587.61	Weight (Metals) = 5073 gms. Approx					
DB.38.800			●		35.4	400	565.69	800	979.80	1264.91	1496.66	1788.85	3 1/2"	155	32	118	105	
DB.48.1000			●		36.0	500	707.11	1000	1224.74	1581.14	1870.83	2236.07	Weight (Metals) = 8380 gms. Approx					
DB.48.1250				●	42.0	625	883.88	1250	1530.93	1976.42	2338.54	2795.08	4"	165	36	128	110	
													Weight (Metals) = 9513 gms. Approx					

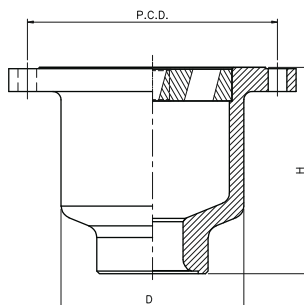
# DC Series Full Cone Flanged Connection Spray Nozzles

DC

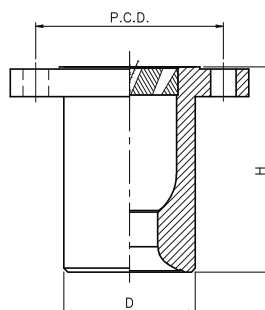
DC Type nozzles are designed to deliver large capacity value, with a carefully designed and machined inside profile, which offers uniform spray distribution and perfect performance even with very low inlet pressure values. The nozzle is made from castings or welded form steel bar.

## Typical Application :

Even surface spraying, Cooling and washing of gas, column spraying as well as improvement of chemical reaction by surface enlargement



THIS DESIGN IS IN ABOVE  
4" FLANGE END NOZZLE



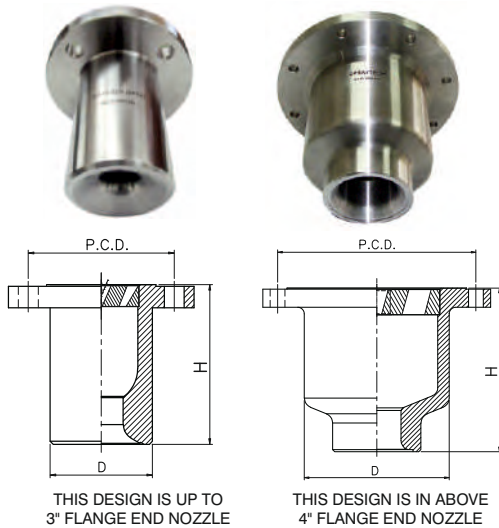
THIS DESIGN IS UP TO  
3" FLANGE END NOZZLE



MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES									
		Pressure [bar]							ANSI 16.5 Flange Ø mm	PCD	H
60° SPRAY ANGLE		0.3	0.5	0.7	1.0	2.0	3.0	5.0			
DC34.800 (A)	37.0	309	400	473	565.69	800	979.80	1264.91	(3") 190.5	152.4	140
DC44.1000 (A)	41.4	387	500	591	707.11	1000	1224.74	1581.14	(3") 190.5	152.4	140
DC44.1250 (A)	46.3	484	625	739	883.88	1250	1530.93	1976.42	(4") 228.6	190.5	160
DC44.1600 (A)	52.3	619	800	946	1131.37	1600	1959.59	2529.82	(5") 254.0	215.9	177
DC44.2000 (A)	58.5	774	1000	1183	1414.21	2000	2449.49	3162.28	(5") 254.0	215.9	177
DC44.2500 (A, B)	65.4	968	1250	1479	1767.77	2500	3061.86	3952.85	(6") 279.4	241.3	190
DC44.3125 (A, B)	73.1	1210	1562	1848	2209.71	3125	3827.33	4941.06	(6") 279.4	241.3	190
DC44.4000 (B)	82.7	1549	2000	2366	2828.43	4000	4898.98	6324.56	(8") 342.9	298.4	250
DC44.5000 (B)	92.5	1936	2500	2958	3535.53	5000	6123.72	7905.69	(8") 342.9	298.4	250
DC44.6250 (B)	103.4	2420	3125	3697	4419.42	6250	7654.66	9882.12	(10") 406.4	361.9	290
DC44.8000 (B)	117.0	3098	4000	4732	5656.85	8000	9797.96	12649.11	(10") 406.4	361.9	290

Flange size can be changed to higher size on request

# DC Series Full Cone Flanged Connection Spray Nozzles - Large Capacity



DC Type nozzles are designed to deliver large capacity value, with a carefully designed and machined inside profile, which offers uniform spray distribution and perfect performance even with very low inlet pressure values. The nozzle is made from castings or welded form steel bar.

### Typical Application :

Even surface spraying, Cooling and washing of gas, column spraying as well as improvement of chemical reaction by surface enlargement

MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES									
		Pressure [bar]							ANSI 16.5 Flange Ø mm	PCD	H
90° SPRAY ANGLE		0.3	0.5	0.7	1.0	2.0	3.0	5.0			
DC36.800 (A)	37.0	309	400	473	565.69	<b>800</b>	979.80	1264.91	(3") 190.5	152.4	140
DC46.1000 (A)	41.4	387	500	591	707.11	<b>1000</b>	1224.74	1581.14	(3") 190.5	152.4	140
DC46.1250 (A)	46.3	484	625	739	883.88	<b>1250</b>	1530.93	1976.42	(4") 228.6	190.5	160
DC46.1600 (A)	52.3	619	800	946	1131.37	<b>1600</b>	1959.59	2529.82	(5") 254.0	215.9	177
DC46.2000 (A)	58.5	774	1000	1183	1414.21	<b>2000</b>	2449.49	3162.28	(5") 254.0	215.9	177
DC46.2500 (A, B)	65.4	968	1250	1479	1767.77	<b>2500</b>	3061.86	3952.85	(6") 279.4	241.3	190
DC46.3125 (A, B)	73.1	1210	1562	1848	2209.71	<b>3125</b>	3827.33	4941.06	(6") 279.4	241.3	190
DC46.4000 (B)	82.7	1549	2000	2366	2828.43	<b>4000</b>	4898.98	6324.56	(8") 342.9	298.4	250
DC46.5000 (B)	92.5	1936	2500	2958	3535.53	<b>5000</b>	6123.72	7905.69	(8") 342.9	298.4	250
DC46.6250 (B)	103.4	2420	3125	3697	4419.42	<b>6250</b>	7654.66	9882.12	(10") 406.4	361.9	290
DC46.8000 (B)	117.0	3098	4000	4732	5656.85	<b>8000</b>	9797.96	12649.11	(10") 406.4	361.9	290
DC48.10000 (B)	127.0	3872.98	3065	5000	7071.07	<b>10000</b>	12247.45	15811.39	(10") 406.4	361.9	290

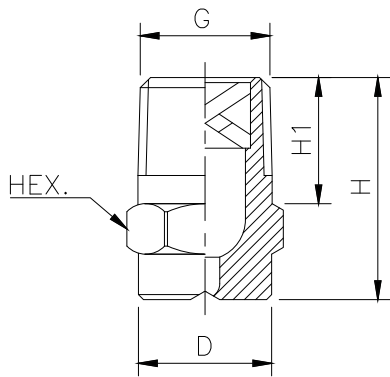
MODEL NO.	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES									
		Pressure [bar]							ANSI 16.5 Flange Ø mm	PCD	H
120° SPRAY ANGLE		0.3	0.5	0.7	1.0	2.0	3.0	5.0			
DC38.800 (A)	37.0	309	400	473	565.69	<b>800</b>	979.80	1264.91	(3") 190.5	152.4	140
DC48.1000 (A)	41.4	387	500	591	707.11	<b>1000</b>	1224.74	1581.14	(3") 190.5	152.4	140
DC48.1250 (A)	46.3	484	625	739	883.88	<b>1250</b>	1530.93	1976.42	(4") 228.6	190.5	160
DC48.1600 (A)	52.3	619	800	946	1131.37	<b>1600</b>	1959.59	2529.82	(5") 254.0	215.9	177
DC48.2000 (A)	58.5	774	1000	1183	1414.21	<b>2000</b>	2449.49	3162.28	(5") 254.0	215.9	177
DC48.2500 (A, B)	65.4	968	1250	1479	1767.77	<b>2500</b>	3061.86	3952.85	(6") 279.4	241.3	190
DC48.3125 (A, B)	73.1	1210	1562.5	1848	2209.71	<b>3125</b>	3827.33	4941.06	(6") 279.4	241.3	190
DC48.4000 (B)	82.7	1549	2000	2366	2828.43	<b>4000</b>	4898.98	6324.56	(8") 342.9	298.4	250
DC48.5000 (B)	92.5	1936	2500	2958	3535.53	<b>5000</b>	6123.72	7905.69	(8") 342.9	298.4	250
DC48.6250 (B)	103.4	2420	3125	3697	4419.42	<b>6250</b>	7654.66	9882.12	(10") 406.4	361.9	290
DC48.8000 (B)	117.0	3098	4000	4732	5656.85	<b>8000</b>	9797.96	12649.11	(10") 406.4	361.9	290
DC48.10000 (B)	127.0	3872	3065	5000	7071.07	<b>10000</b>	12247.45	15811.39	(10") 406.4	361.9	290

Flange size can be changed to higher size on request

# DD Series Full Cone Spray Nozzles - Square Pattern



Spray Angle 60°/ 90°



The square pattern full cone spray nozzle are used in continuous casting cooling areas. Secondary Cooling areas is of vital importance.

This nozzle gives uniform distribution of cooling water, fine sprays with narrow drop spectrums and quick removing of cooling water from the strand surface which are considered vital for obtaining a perfect steel quality.

### Characteristic :

Full cone spray pattern with uniform distribution throughout the approximately square cone.

### Typical Applications:

- Cooling and quenching
- Product washing
- Air and gas washers
- Scrubbers
- Liquor washers

60° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0						
DD14.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10	11
DD14.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 9 gms. Approx				
DD14.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
DD14.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 17 gms. Approx				
DD14.250	●						1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	10	16	17
DD14.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
DD14.350	●	●					2.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
DD14.400		●	●				2.4	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 66 gms. Approx				
DD14.475		●	●				2.6	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	15	32	27
DD14.650		●	●				3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 155 gms. Approx				
DA14.800			●				3.4	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	17	39	36
DD24.100			●				3.8	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 367 gms. Approx				
DD24.125				●			4.2	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DD24.160				●			4.8	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DD24.180				●			5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DD24.200					●		5.4	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DD24.225					●		5.7	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DD24.250					●		6.0	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DD24.320						●	6.8	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DD24.400						●	7.3	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DD24.520						●	8.3	26.00	36.77	52.00	63.69	82.22	97.28	116.28					

End Connection : X – BSP, Y - BSPT, Z – NPT Available.



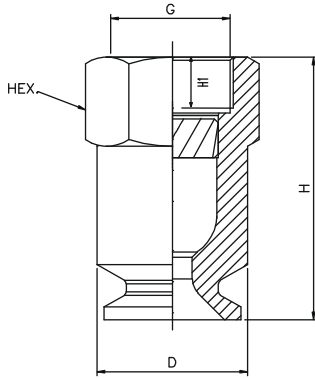
# DD Series Full Cone Spray Nozzles - Square Pattern

90° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/8"	18	6.5	10	11	
DD16.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10	11
DD16.150	●						1.4	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 9 gms. Approx				
DD16.175	●						1.5	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
DD16.200	●						1.6	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 17 gms. Approx				
DD16.250	●						1.8	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	10	16	17
DD16.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
DD16.350	●	●	●				2.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
DD16.400	●	●	●				2.3	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 66 gms. Approx				
DD16.475		●	●				2.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	15	32	27
DD16.650		●	●				2.9	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 155 gms. Approx				
DD16.800		●	●				3.3	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	17	39	36
DD26.100			●				3.6	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 367 gms. Approx				
DD26.125			●				4.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DD26.160			●	●			4.6	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DD26.180				●			5.9	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DD26.200				●			5.2	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DD26.225				●			5.5	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DD26.250				●	●		5.8	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DD26.320				●	●		6.5	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DD26.400					●		7.3	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DD26.520					●	●	8.3	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DD26.650						●	9.3	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DD26.720						●	9.8	36.00	50.91	72.00	88.18	113.8	134.7	161.0					

120° SPRAY ANGLE	CONNECTION END						ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/8"	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/8"	18	6.5	10	11	
DD18.100	●						1.2	0.50	0.71	1.00	1.22	1.58	1.87	2.24	1/8"	18	6.5	10	11
DD18.150	●						1.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 9 gms. Approx				
DD18.175	●						1.6	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/4"	22	10	13	14
DD18.200	●						1.7	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 17 gms. Approx				
DD18.250	●						1.9	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/8"	25	10	16	17
DD18.300	●						2.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 30 gms. Approx				
DD18.350	●						2.3	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1/2"	32	13.2	21	22
DD18.400	●	●	●				2.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 66 gms. Approx				
DD18.475	●	●	●				2.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62	3/4"	42	15	32	27
DD18.650		●	●				3.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 155 gms. Approx				
DD18.800		●	●				3.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89	1"	56	17	39	36
DD28.100			●				3.9	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 367 gms. Approx				
DD28.125			●				4.3	6.25	8.84	12.50	15.31	19.76	23.39	27.95					
DD28.160			●	●			4.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DD28.180				●			5.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DD28.200				●			5.5	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DD28.225				●			5.8	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DD28.250				●	●		6.1	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DD28.320				●	●		6.9	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DD28.400					●		7.7	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DD28.520						●	8.8	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DD28.650						●	9.9	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DD28.720						●	10.4	36.00	50.91	72.00	88.18	113.8	134.7	161.0					

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# DD Series Full Cone Spray Nozzles - Square Pattern



## Typical Applications:

- Cooling and quenching
- Product washing
- Air and gas washers
- Scrubbers
- Liquor washers
- Dust control
- Fire protection

Full cone spray nozzle square spray pattern with a square impact area and uniform spray of medium to large drops across their entire spray area over a wide range of spraying pressure and flow rates. This uniform spray distribution is the result of unique vane design. Well suited for installation complete coverage of rectangular areas or spray zones

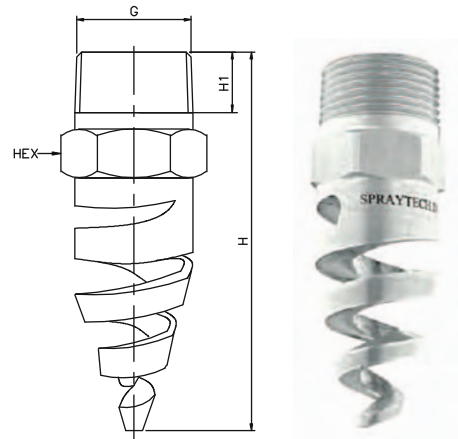
MODEL NO.	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1 1/4"	1 1/2"	2"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
90° SPRAY ANGLE	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	1 1/4"	H	H1	D	A/F
DD26.650	●			9.7	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34	1 1/4"		19	49	41
DD26.800	●			10.7	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89	Weight (Metals) = 525.0 gms. Approx				
DD36.100	●			12.0	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61	1 1/2"	85	22	59	50
DD36.118		●		13.0	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86	Weight (Metals) = 915.0 gms. Approx				
DD36.130		●		13.7	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69	2"	106	24	68	60
DD36.160		●		15.20	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77	Weight (Metals) = 1535.0 gms. Approx				
DD36.200			●	17.0	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21					
DD36.227			●	18.1	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59					
DD36.250			●	19.0	125	176.78	<b>250.0</b>	306.19	395.19	467.71	559.02					
DD36.300			●	20.5	150	212.13	<b>300.0</b>	367.42	474.34	561.25	670.82					
DD36.337			●	22.0	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55					

MODEL NO.	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1 1/4"	1 1/2"	2"		PRESSURE [BAR]							CONN.	H	H1	D	A/F
120° SPRAY ANGLE	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	1 1/4"	H	H1	D	A/F
DD28.800	●			11.4	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89	1 1/4"	74	19	49	41
DD38.100	●			12.7	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx				
DD38.118	●	●		13.8	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86	1 1/2"	85	22	59	50
DD38.130	●	●		14.5	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69	Weight (Metals) = XX gms. Approx				
DD38.160		●		16.1	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77	2"	106	24	68	60
DD38.200			●	18.0	100.0	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21	Weight (Metals) = XX gms. Approx				
DD38.227			●	19.1	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59					
DD38.250			●	20.1	125.0	176.78	<b>250.0</b>	306.19	395.19	467.71	559.02					
DD38.300			●	21.5	150	212.13	<b>300.0</b>	367.42	474.34	561.25	670.82					
DD38.337			●	23.3	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55					

# DF Series Spiral Full Cone Spray Nozzles

**DF**

- Characteristic** : The absence of any internal parts make these nozzles non-clogging.
- Design** : One piece construction, non clogging type.
- Application** : Gas Washing, Cooling Towers , Fire Fighting Systems.
- Flow Rate** : 5 LPM TO 3410 LPM
- Pressure** : 2.0 Kg/cm<sup>2</sup> or Specified
- Spray Angle** : 60° To 180°
- End Connection** : 1/4" TO 4" BSP/ BSPT / NPT
- M.O.C.** : SS. 316, 304, BRASS, PVDF, PVC, PP, Teflon®



The helix spiral full cone nozzles combine small nozzle sizes with wide flow openings.

60° SPRAY ANGLE	CONNECTION END										ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	2"	3"	4"			PRESSURE [BAR]							CONN.	H	H1	HEX	
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0					
DF14.475	●											2.4	2.37	3.36	4.75	5.82	7.51	8.89	10.62	1/4"	48	10	14
DF14.650	●											2.8	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 27.0 gms. Approx			
DF14.800	●											3.1	4.00	5.66	8.00	9.80	12.65	14.97	17.89	3/8"	58	10	17
DF24.100	●	●										3.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 53.7 gms. Approx			
DF24.125	●	●										3.9	6.25	8.84	12.50	15.31	19.76	23.39	27.95	1/2"	76	13.2	22
DF24.160	●	●										4.4	8.00	11.31	16.00	19.60	25.30	29.93	35.78	Weight (Metals) = 80.0 gms. Approx			
DF24.180	●	●										4.6	9.00	12.73	18.00	22.05	28.46	33.67	40.25	3/4"	86	14.5	27
DF24.200	●	●										4.9	10.00	14.14	20.00	24.49	31.62	37.42	44.72	Weight (Metals) = 170.0 gms. Approx			
DF24.225		●										5.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31	1"	108	16.8	36
DF24.250		●										5.5	12.50	17.68	25.00	30.62	39.53	46.77	55.90	Weight (Metals) = 323.0 gms. Approx			
DF24.320		●										6.2	16.00	22.63	32.00	39.19	50.60	59.87	71.55	1 1/2"	138	19.1	51
DF24.400		●										7.0	20.00	28.28	40.00	48.99	63.25	74.83	89.44	Weight (Metals) = 634.0 gms. Approx			
DF24.520		●										7.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28	2"	148	23.4	64
DF24.650			●									8.9	32.5	45.96	65.00	79.61	102.77	121.60	145.34	Weight (Metals) = XX gms. Approx			
DF24.800			●									9.8	40.00	56.57	80.00	97.98	126.49	149.67	178.89	3"	216	29.8	89
DF34.100			●									11.0	50.00	70.71	100.0	122.47	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx			
DF34.118			●									12.0	59.00	83.44	118.0	144.52	186.57	220.76	263.86				
DF34.130				●								12.6	65.00	91.92	130.0	159.22	205.55	243.21	290.69				
DF34.160				●								13.9	80.00	113.14	160.0	195.96	252.98	299.33	357.77				
DF34.200					●							15.6	100	141.42	200.0	244.95	316.23	374.17	447.21				
DF34.227					●							16.6	113.5	160.51	227.0	278.02	358.92	424.68	507.59				
DF34.250					●							17.4	125	176.78	250.0	306.19	395.19	467.71	559.02				
DF34.300					●							19.0	150	212.13	300	367.42	474.34	561.25	670.82				
DF34.337					●							20.2	168.5	238.29	337.0	412.74	532.84	630.47	753.55				
DF34.400						●						22.0	200	282.84	400.0	489.90	632.46	748.33	894.43				
DF34.500						●						24.6	250	353.55	500.0	612.37	790.57	935.41	1118.03				
DF34.625						●						27.5	312.5	441.94	625.0	765.47	988.21	1169.27	1397.54				
DF34.710						●						29.3	355	502.05	710.0	869.57	1122.61	1328.29	1587.61				
DF34.800							●					31.1	400	565.69	800.0	979.80	1264.91	1496.66	1788.85				
DF44.1000								●				34.8	500	707.11	1000	1224.74	1581.14	1870.83	2236.07				
DF44.1250								●				38.9	625	883.88	1250	1530.93	1976.42	2338.54	2795.08				
DF46.1600									●			44.0	800	1131	1600	1959.59	2529.82	2993.33	3577.71				
DF44.2000										●		49.2	1000	1414	2000	2449.49	3162.28	3741.66	4472.14				
DF44.2500											●	55.1	1250	1767	2500	3061.86	3952.85	4677.07	5590.17				
DF46.3125											●	61.6	1562.5	2209	3125	3827.33	4941.06	5846.34	6987.71				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# DF Series Spiral Full Cone Spray Nozzles

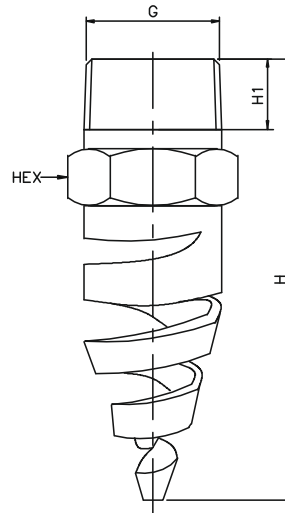
90° SPRAY ANGLE	CONNECTION END										FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	ORIFICE SIZE (mm)	PRESSURE [BAR]							CONN.	H	H1	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
DF16.475	●									2.4	2.37	3.36	4.75	5.82	7.51	8.89	10.62	1/4"	48	10	14
DF16.650	●									2.8	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = 27.0 gms. Approx			
DF16.800	●									3.1	4.00	5.66	8.00	9.80	12.65	14.97	17.89	3/8"	58	10	17
DF26.100	●	●								3.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = 53.7 gms. Approx			
DF26.125	●	●	●							3.9	6.25	8.84	12.50	15.31	19.76	23.39	27.95	1/2"	76	13.2	22
DF26.160	●	●	●	●						4.4	8.00	11.31	16.00	19.60	25.30	29.93	35.78	Weight (Metals) = 80.0 gms. Approx			
DF26.180	●	●	●	●	●					4.6	9.00	12.73	18.00	22.05	28.46	33.67	40.25	3/4"	86	14.5	27
DF26.200	●	●	●	●	●	●				4.9	10.00	14.14	20.00	24.49	31.62	37.42	44.72	Weight (Metals) = 170.0 gms. Approx			
DF26.225	●	●	●	●	●	●	●			5.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31	1"	108	16.8	36
DF26.250	●	●	●	●	●	●	●	●		5.5	12.50	17.68	25.00	30.62	39.53	46.77	55.90	Weight (Metals) = 323.0 gms. Approx			
DF26.320	●	●	●	●	●	●	●	●	●	6.2	16.00	22.63	32.00	39.19	50.60	59.87	71.55	1 1/2"	138	19.1	51
DF26.400	●	●	●	●	●	●	●	●	●	7.0	20.00	28.28	40.00	48.99	63.25	74.83	89.44	Weight (Metals) = 634.0 gms. Approx			
DF26.520	●	●	●	●	●	●	●	●	●	7.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28	2"	148	23.4	64
DF26.650			●	●	●	●	●	●	●	8.9	32.5	45.96	65.00	79.61	102.77	121.60	145.34	Weight (Metals) = XX gms. Approx			
DF26.800			●	●	●	●	●	●	●	9.8	40.00	56.57	80.00	97.98	126.49	149.67	178.89	3"	216	29.8	89
DF36.100			●	●	●	●	●	●	●	11.0	50.00	70.71	100.0	122.47	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx			
DF36.118			●	●	●	●	●	●	●	12.0	59.00	83.44	118.0	144.52	186.57	220.76	263.86				
DF36.130				●	●	●	●	●	●	12.6	65.00	91.92	130.0	159.22	205.55	243.21	290.69				
DF36.160				●	●	●	●	●	●	13.9	80.00	113.14	160.0	195.96	252.98	299.33	357.77				
DF36.200					●	●	●	●	●	15.6	100	141.42	200.0	244.95	316.23	374.17	447.21				
DF36.227					●	●	●	●	●	16.6	113.5	160.51	227.0	278.02	358.92	424.68	507.59				
DF36.250					●	●	●	●	●	17.4	125	176.78	250.0	306.19	395.19	467.71	559.02				
DF36.300					●	●	●	●	●	19.0	150	212.13	300	367.42	474.34	561.25	670.82				
DF36.337					●	●	●	●	●	20.2	168.5	238.29	337.0	412.74	532.84	630.47	753.55				
DF36.400						●	●	●	●	22.0	200	282.84	400.0	489.90	632.46	748.33	894.43				
DF36.500						●	●	●	●	24.6	250	353.55	500.0	612.37	790.57	935.41	1118.03				
DF36.625						●	●	●	●	27.5	312.5	441.94	625.0	765.47	988.21	1169.27	1397.54				
DF36.710							●	●	●	29.3	355	502.05	710.0	869.57	1122.61	1328.29	1587.61				
DF36.800							●	●	●	31.1	400	565.69	800.0	979.80	1264.91	1496.66	1788.85				
DF46.1000								●	●	34.8	500	707.11	1000	1224.74	1581.14	1870.83	2236.07				
DF46.1250								●	●	38.9	625	883.88	1250	1530.93	1976.42	2338.54	2795.08				
DF46.1600									●	44.0	800	1131	1600	1959.59	2529.82	2993.33	3577.71				
DF46.2000									●	49.2	1000	1414	2000	2449.49	3162.28	3741.66	4472.14				
DF46.2500									●	55.1	1250	1767	2500	3061.86	3952.85	4677.07	5590.17				
DF46.3125									●	61.6	1562.5	2209	3125	3827.33	4941.06	5846.34	6987.71				

120° SPRAY ANGLE	CONNECTION END										FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	ORIFICE SIZE (mm)	PRESSURE [BAR]							CONN.	H	H1	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
DF18.475	●									2.4	2.37	3.36	4.75	5.82	7.51	8.89	10.62	1/4"	48	10	14
DF18.650	●									2.8	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = XX gms. Approx			
DF18.800	●									3.1	4.00	5.66	8.00	9.80	12.65	14.97	17.89	3/8"	58	10	17
DF28.100	●	●								3.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = XX gms. Approx			
DF28.125	●	●	●							3.9	6.25	8.84	12.50	15.31	19.76	23.39	27.95	1/2"	76	13.2	22
DF28.160	●	●	●	●						4.4	8.00	11.31	16.00	19.60	25.30	29.93	35.78	Weight (Metals) = XX gms. Approx			
DF28.180	●	●	●	●	●					4.6	9.00	12.73	18.00	22.05	28.46	33.67	40.25	3/4"	86	14.5	27
DF28.200	●	●	●	●	●	●				4.9	10.00	14.14	20.00	24.49	31.62	37.42	44.72	Weight (Metals) = XX gms. Approx			
DF28.225	●	●	●	●	●	●	●			5.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31	1"	108	16.8	36
DF28.250	●	●	●	●	●	●	●	●		5.5	12.50	17.68	25.00	30.62	39.53	46.77	55.90	Weight (Metals) = XX gms. Approx			
DF28.320	●	●	●	●	●	●	●	●	●	6.2	16.00	22.63	32.00	39.19	50.60	59.87	71.55	1 1/2"	138	19.1	51
DF28.400	●	●	●	●	●	●	●	●	●	7.0	20.00	28.28	40.00	48.99	63.25	74.83	89.44	Weight (Metals) = XX gms. Approx			
DF28.520	●	●	●	●	●	●	●	●	●	7.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28	2"	148	23.4	64
DF28.650			●	●	●	●	●	●	●	8.9	32.5	45.96	65.00	79.61	102.77	121.60	145.34	Weight (Metals) = XX gms. Approx			
DF28.800			●	●	●	●	●	●	●	9.8	40.00	56.57	80.00	97.98	126.49	149.67	178.89	3"	216	29.8	89
DF38.100			●	●	●	●	●	●	●	11.0	50.00	70.71	100.0	122.47	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx			
DF38.118			●	●	●	●	●	●	●	12.0	59.00	83.44	118.0	144.52	186.57	220.76	263.86				
DF38.130				●	●	●	●	●	●	12.6	65.00	91.92	130.0	159.22	205.55	243.21	290.69				
DF38.160				●	●	●	●	●	●	13.9	80.00	113.14	160.0	195.96	252.98	299.33	357.77				
DF38.200					●	●	●	●	●	15.6	100	141.42	200.0	244.95	316.23	374.17	447.21				
DF38.227					●	●	●	●	●	16.6	113.5	160.51	227.0	278.02	358.92	424.68	507.59				
DF38.250					●	●	●	●	●	17.4	125	176.78	250.0	306.19	395.19	467.71	559.02				
DF38.300					●	●	●	●	●	19.0	150	212.13	300	367.42	474.34	561.25	670.82				
DF38.337					●	●	●	●	●	20.2	168.5	238.29	337.0	412.74	532.84	630.47	753.55				
DF38.400						●	●	●	●	22.0	200	282.84	400.0	489.90	632.46	748.33	894.43				
DF38.500						●	●	●	●	24.6	250	353.55	500.0	612.37	790.57	935.41	1118.03				
DF38.625						●	●	●	●	27.5	312.5	441.94	625.0	765.47	988.21	1169.27	1397.54				
DF38.710							●	●	●	29.3	355	502.05	710.0	869.57	1122.61	1328.29	1587.61				
DF38.800							●	●	●	31.1	400	565.69	800.0	979.80	1264.91	1496.66	1788.85				
DF48.1000								●	●	34.8	500	707.11	1000	1224.74	1581.14	1870.83	2236.07				
DF48.1250								●	●	38.9	625	883.88	1250	1530.93	1976.42	2338.54	2795.08				
DF48.1600									●	44.0	800	1131	1600	1959.59	2529.82	2993.33	3577.71				
DF48.2000									●	49.2	1000	1414	2000	2449.49	3162.28	3741.66	4472.14				
DF48.2500									●	55.1	1250	1767	2500	3061.86	3952.85	4677.07	5590.17				
DF48.3125									●	61.6	1562.5	2209	3125	3827.33	4941.06	5846.34	6987.71				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# DF Series Spiral Full Cone Spray Nozzles

- Characteristic** : Absence of any internal parts make these nozzles non-clogging.
- Design** : One piece construction, non clogging type.
- Application** : Gas Scrubbing, Washing, Cooling Towers , Fire Fighting Systems.
- Flow Rate** : 5 LPM TO 3410 LPM
- Pressure** : 2.0 Kg/cm<sup>2</sup> or Specified
- Spray Angle** : 60° To 180°
- End Connection** : 1/4" TO 4" BSP/ BSPT / NPT
- M.O.C.** : SS. 316, 304, BRASS, PVDF, PVC, PP, Teflon®



180° SPRAY ANGLE	CONNECTION END							ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	2"		PRESSURE [BAR]							CONN.	H	H1	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP	BSP	BSP	0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/4"	3/8"	1/2"	3/4"	
DF19.475	●							2.4	2.37	3.36	4.75	5.82	7.51	8.89	10.62	14"	48	10	14
DF19.650	●							2.8	3.25	4.60	6.50	7.96	10.28	12.16	14.53	Weight (Metals) = XX gms. Approx			
DF19.800	●							3.1	4.00	5.66	8.00	9.80	12.65	14.97	17.89	3/8"	58	10	17
DF29.100	●	●						3.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36	Weight (Metals) = XX gms. Approx			
DF29.125	●	●						3.9	6.25	8.84	12.50	15.31	19.76	23.39	27.95	1/2"	76	13.2	22
DF29.160	●	●						4.4	8.00	11.31	16.00	19.60	25.30	29.93	35.78	Weight (Metals) = XX gms. Approx			
DF29.180	●	●						4.6	9.00	12.73	18.00	22.05	28.46	33.67	40.25	3/4"	86	14.5	27
DF29.200	●	●						4.9	10.00	14.14	20.00	24.49	31.62	37.42	44.72	Weight (Metals) = XX gms. Approx			
DF29.225		●						5.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31	1"	108	16.8	36
DF29.250		●						5.5	12.50	17.68	25.00	30.62	39.53	46.77	55.90	Weight (Metals) = XX gms. Approx			
DF29.320		●						6.2	16.00	22.63	32.00	39.19	50.60	59.87	71.55	1 1/2"	138	19.1	51
DF29.400		●						7.0	20.00	28.28	40.00	48.99	63.25	74.83	89.44	Weight (Metals) = XX gms. Approx			
DF29.520		●						7.9	26.00	36.77	52.00	63.69	82.22	97.28	116.28	2"	148	23.4	64
DF29.650			●					8.9	32.5	45.96	65.00	79.61	102.77	121.60	145.34	Weight (Metals) = XX gms. Approx			
DF29.800			●					9.8	40.00	56.57	80.00	97.98	126.49	149.67	178.89				
DF39.100			●					11.0	50.00	70.71	100.0	122.47	158.11	187.08	223.61				
DF39.118			●					12.0	59.00	83.44	118.0	144.52	186.57	220.76	263.86				
DF39.130				●				12.6	65.00	91.92	130.0	159.22	205.55	243.21	290.69				
DF39.160				●				13.9	80.00	113.14	160.0	195.96	252.98	299.33	357.77				
DF39.200					●			15.6	100	141.42	200.0	244.95	316.23	374.17	447.21				
DF39.227					●			16.6	113.5	160.51	227.0	278.02	358.92	424.68	507.59				
DF39.250					●			17.4	125	176.78	250.0	306.19	395.19	467.71	559.02				
DF39.300					●			19.0	150	212.13	300.0	367.42	474.34	561.25	670.82				
DF39.337					●			20.2	168.5	238.29	337.0	412.74	532.84	630.47	753.55				
DF39.400						●		22.0	200	282.84	400.0	489.90	632.46	748.33	894.43				
DF39.500						●		24.6	250	353.55	500.0	612.37	790.57	935.41	1118.03				
DF39.625						●		27.5	312.5	441.94	625.0	765.47	988.21	1169.27	1397.54				
DF39.710							●	29.3	355	502.05	710.0	869.57	1122.61	1328.29	1587.61				
DF39.800								31.1	400	565.69	800.0	979.80	1264.91	1496.66	1788.85				
DF49.1000								34.8	500	707.11	1000	1224.74	1581.14	1870.83	2236.07				
DF49.1250								38.9	625	883.88	1250	1530.93	1976.42	2338.54	2795.08				

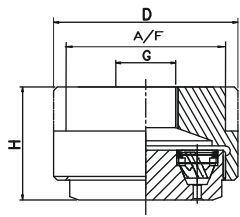
End Connection : X – BSP, Y – BSPT, Z – NPT Available.



# DG Series Multiple Full Cone Spray Nozzles



Multiple spray nozzles, consisting of seven fine atomizing hollow cone nozzles, provide a fog-like full cone pattern with relatively high flow volumes. The overlapping hollow cone nozzles produce a 130° full cone spray pattern of very fine droplets that cannot be achieved by a single orifice spray nozzle of the same flow rate size. The resulting increased droplet surface area of the atomized liquid provides greater efficiency in gas treatment and cooling application ideal for reaction towers which do not use packing.



**Spray Angle 75°**

**Characteristic :**

This type of nozzle gives fine atomization with the aid of several hollow cones spraying into one another.

**Applications :**

- Cooling Of Gaseous And Solid Material
- In Desuperheaters
- Chlorine Precipitation
- For Improving The Chemical Reaction By Means Of Enlarging the Contact Surface

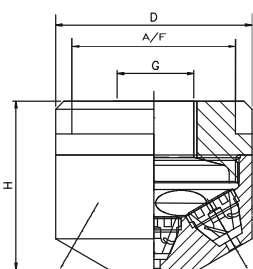
75° SPRAY ANGLE	CONNECTION END		ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM			
	1/2"	3/4"		PRESSURE [BAR]							CONN.	H	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
DG15.150	●		0.5	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	1/2"	30	50	46
DG15.200	●		0.5	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47	Weight (Metals) = 216.0 gms. Approx			
DG15.300	●		1.0	1.50	2.12	<b>3.00</b>	3.67	4.74	5.61	6.71	3/4"	46	75	65
DG15.400	●		1.5	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	Weight (Metals) = 716.0 gms. Approx			
DG15.475	●		1.5	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62				
DG15.650	●		2.0	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53				
DG15.800	●	●	2.2	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89				
DG25.100	●	●	2.5	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36				
DG25.125	●	●	2.8	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95				
DG25.160		●	3.2	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78				
DG25.200		●	3.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72				
DG25.225		●	3.8	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31				
DG25.250		●	4.0	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90				
DG25.320		●	4.5	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
DG25.400		●	5.0	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
DG25.520		●	5.7	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				

# DG Series Multiple Full Cone Spray Nozzles

DG



Multiple spray nozzles, consisting of seven fine atomizing hollow cone nozzles, provide a fog-like full cone pattern with relatively high flow volumes. The overlapping hollow cone nozzles produce a 130° full cone spray pattern of very fine droplets that cannot be achieved by a single orifice spray nozzle of the same flow rate size. The resulting increased droplet surface area of the atomized liquid provides greater efficiency in gas treatment and cooling application ideal for reaction towers which do not use packing.



Spray Angle 130°

### Characteristic :

This type of nozzle gives fine atomization with the aid of several hollow cones spraying into one another.

### Applications :

- Cooling Of Gaseous And Solid Material
- In Desuperheaters
- Chlorine Precipitation
- For Improving The Chemical Reaction By Means Of Enlarging the Contact Surface

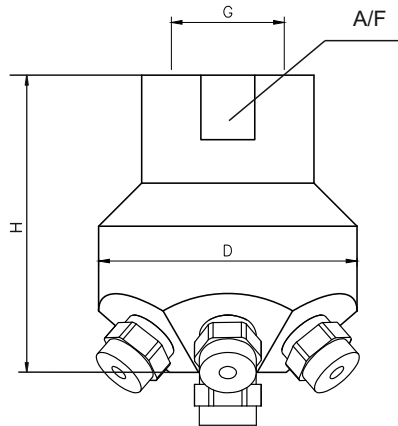
130° SPRAY ANGLE	CONNECTION END		ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM			
	1/2"	3/4"		PRESSURE [BAR]							CONN.	H	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
DG19.150	●		0.5	0.75	1.06	1.50	1.84	2.37	2.81	3.35	1/2"	38	40	30
DG19.200	●		0.5	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 216.0 gms. Approx			
DG19.300	●		1.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	3/4"	51.5	60	50
DG19.400	●		1.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 216.0 gms. Approx			
DG19.475	●		1.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62				
DG19.650	●		2.0	3.25	4.60	6.50	7.96	10.28	12.16	14.53				
DG19.800	●	●	2.0	4.00	5.66	8.00	9.80	12.65	14.97	17.89				
DG29.100	●	●	2.2	5.00	7.07	10.00	12.25	15.81	18.71	22.36				
DG29.125	●	●	2.5	6.25	8.84	12.50	15.31	19.76	23.39	27.95				
DG29.160		●	2.8	8.00	11.31	16.00	19.60	25.30	29.93	35.78				
DG29.200		●	3.2	10.00	14.14	20.00	24.49	31.62	37.42	44.72				
DG29.225		●	3.4	11.25	15.91	22.50	27.56	35.58	42.09	50.31				
DG29.250		●	3.5	12.50	17.68	25.00	30.62	39.53	46.77	55.90				
DG29.320		●	4.0	16.00	22.63	32.00	39.19	50.60	59.87	71.55				
DG29.400		●	4.5	20.00	28.28	40.00	48.99	63.25	74.83	89.44				
DG29.520		●	5.1	26.00	36.77	52.00	63.69	82.22	97.28	116.28				
DG29.650		●	5.7	32.50	45.96	65.00	79.61	102.77	121.60	145.34				

# DH Series Multiple Full Cone Spray Nozzles

**DH**

**Application :**

- Gas Scrubbing
- Gas Cooling
- Dust Control
- Tank Rinsing
- Humidifying Applications



**Multiple Full Cone Nozzles**

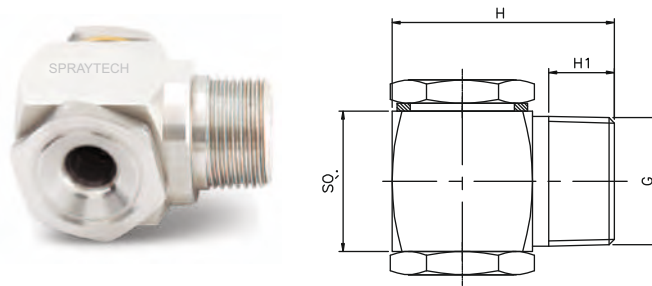
The nozzle assembly consists of a nozzle body and seven removable atomizing spray caps. Each cap has an internal core which is easily removed for cleaning or replacement. The nozzle provides large flow capacities with relatively small drops.

**Characteristic :**

With the aid of multiple fine full cone nozzles it gives large full cone with small droplets.

130° SPRAY ANGLE	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	3/4"	1"	1 1/2"		PRESSURE [BAR]							CONN.	H	D	A/F
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
DH29.125	●			2.5	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	3/4"	44	60	50
DH29.160	●			2.8	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78	Weight (Metals) = 700 gms. Approx			
DH29.200	●			3.2	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72	1"	50	60	50
DH29.225	●			3.4	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31	Weight (Metals) = XXX gms. Approx			
DH29.250	●			3.5	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90	1 1/2"	65	90	80
DH29.320	●			4.0	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55	Weight (Metals) = XXX gms. Approx			
DH29.400	●			4.5	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
DH29.520	●			5.1	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
DH29.650	●			5.7	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
DH29.800		●		6.3	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				
DH39.100		●		7.1	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61				
DH39.118		●		7.7	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86				
DH39.130		●	●	8.1	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69				
DH39.160			●	8.9	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77				
DH39.200			●	10.0	100.0	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21				
DH39.227			●	10.7	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59				

# DI Series Tangential Entry Vaneless Full Cone Spray Nozzles



ONE PIECE BODY  
VANE LESS FULL CONE (TANGENTIAL ENTRY)

## Typical Applications :

Washing and cleaning cooling of gas or solid product surface spraying Improvement of chemical reactions.

MODEL NO.	CONNECTION END					ORIFIC SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	SQ
	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
<b>60° SPRAYNOZZLE</b>																	
DI14.350	●	●				2.6	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83	1/4"	35	10	20
DI14.400	●	●				2.9	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	Weight (Metals) = 72.0 gms. Approx			
DI14.475		●				3.2	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62	3/8"	35	10	20
DI14.650		●				3.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	Weight (Metals) = 108 gms. Approx			
<b>90° SPRAYNOZZLE</b>													1/2"	45	13.2	25	
DI16.350	●					2.6	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83	Weight (Metals) = 135.0 gms. Approx			
DI16.400	●					2.9	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	3/4"	57	16	32
DI16.475		●				3.2	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62	Weight (Metals) = 630.0 gms. Approx			
DI16.650		●				3.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	1"	57	18	36
DI16.800		●				3.6	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89	Weight (Metals) = XX gms. Approx			
DI26.100		●				4.3	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36				
DI26.125		●				5.1	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95				
DI26.160		●				5.8	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78				
DI26.200			●			6.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72				
DI26.225			●			7.3	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31				
DI26.250			●			9.6	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90				
DI26.320				●		11.5	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
DI26.400					●	8.5	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
DI26.520					●	10.5	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
<b>120° SPRAYNOZZLE</b>																	
DI18.350	●					2.2	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83				
DI18.400	●					2.5	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94				
DI18.475		●				2.9	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62				
DI18.650		●				3.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53				
DI18.800		●				3.6	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89				
DI28.100		●				4.3	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36				
DI28.125		●				5.1	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95				
DI28.160		●	●			5.8	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78				
DI28.200			●			6.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72				
DI28.225			●			7.3	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31				
DI28.250			●			9.6	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90				
DI28.320				●		11.5	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
DI28.400					●	8.5	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
DI28.520					●	10.5	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
DI28.650					●	11.7	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
DI28.720					●	12.4	36.00	50.91	<b>72.00</b>	88.18	113.8	134.7	161.0				
DI28.800					●	13.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				

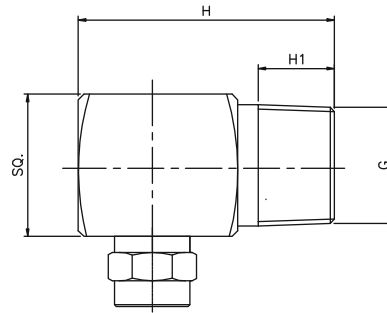
End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# DJ Series Tangential Entry Vaneless Full Cone Spray Nozzles

DJ



TWO PIECE BODY  
TANGENTIAL ENTRY FULL CONE



### Typical Applications :

Washing and cleaning cooling of gas or solid product surface spraying Improvement of chemical reactions.

MODEL NO.	CONNECTION END					ORIFIC SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	SQ
	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
<b>60° SPRAYNOZZLE</b>																	
DJ14.350	●	●				2.6	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83	1/4"	35	10	20
DJ14.400	●	●				2.9	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	Weight (Metals) = 72.0 gms. Approx			
DJ14.475		●				3.2	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62	3/8"	35	10	20
DJ14.650		●				3.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	Weight (Metals) = 108.0 gms. Approx			
<b>90° SPRAYNOZZLE</b>														1/2"	45	13.2	25
DJ16.350	●					2.6	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83	Weight (Metals) = 135.0 gms. Approx			
DJ16.400	●					2.9	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	3/4"	57	16	32
DJ16.475		●				3.2	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62	Weight (Metals) = 630.0 gms. Approx			
DJ16.650		●				3.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	1"	57	18	36
DJ16.800		●				3.6	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89	Weight (Metals) = XX gms. Approx			
DJ26.100		●				4.3	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36				
DJ26.125		●				5.1	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95				
DJ26.160		●				5.8	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78				
DJ26.200			●			6.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72				
DJ26.225			●			7.3	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31				
DJ26.250			●			9.6	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90				
DJ26.320				●		11.5	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
DJ26.400					●	8.5	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
DJ26.520					●	10.5	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
<b>120° SPRAYNOZZLE</b>																	
DJ18.350	●					2.2	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83				
DJ18.400	●					2.5	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94				
DJ18.475		●				2.9	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62				
DJ18.650		●				3.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53				
DJ18.800		●				3.6	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89				
DJ28.100		●				4.3	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36				
DJ28.125		●				5.1	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95				
DJ28.160		●	●			5.8	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78				
DJ28.200			●			6.5	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72				
DJ28.225			●			7.3	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31				
DJ28.250			●			9.6	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90				
DJ28.320				●		11.5	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
DJ28.400					●	8.5	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
DJ28.520					●	10.5	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
DJ28.650					●	11.7	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
DJ28.720					●	12.4	36.00	50.91	<b>72.00</b>	88.18	113.8	134.7	161.0				
DJ28.800					●	13.0	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				

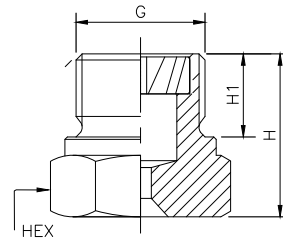
End Connection : X – BSP, Y - BSPT, Z – NPT Available.





# ABC Angular Full Cone Spray Nozzles

DM



DM Series ABC Angular Full Cone Spray Nozzle form uniform spray pattern and spray coverage. It provides solid full cone pattern with uniform spray distribution of medium to large size drops resulting from their unique vane design.

**Characteristic :** Angular drill disc vane design

**Type :** Full cone spray pattern

45° SPRAY ANGLE	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/2"	H	H1	D	HEX
DM13.400	●			2.3	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	1/2"	32	13	21	22
DM13.475	●			2.5	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62	Weight (Metals) = 71 gms. Approx				
DM13.650	●			2.9	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	3/4"	42	15	32	27
DM13.800	●			3.3	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89	Weight (Metals) = xx gms. Approx				
DM23.100	●			3.6	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36	1"	56	18	39	36
DM23.125	●	●		4.1	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	Weight (Metals) = xx gms. Approx				
DM23.160	●	●		4.6	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
DM23.180		●		5.9	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
DM23.200		●	●	5.2	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
DM23.225		●	●	5.5	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
DM23.250		●	●	5.8	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					
DM23.320		●	●	6.5	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55					
DM23.400			●	7.3	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44					
DM23.520			●	8.3	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28					
DM23.650			●	9.3	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34					
DM23.720			●	9.8	36.00	50.91	<b>72.00</b>	88.18	113.8	134.7	161.0					

60° SPRAY ANGLE	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	D	HEX
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
DM14.400	●			2.3	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94	1/2"	32	13	21	22
DM14.475	●			2.5	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62	Weight (Metals) = 71 gms. Approx				
DM14.650	●			2.9	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	3/4"	42	15	32	27
DM14.800	●			3.3	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89	Weight (Metals) = xx gms. Approx				
DM24.100	●			3.6	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36	1"	56	18	39	36
DM24.125	●	●		4.1	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	Weight (Metals) = xx gms. Approx				
DM24.160	●	●		4.6	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78					
DM24.180		●		5.9	9.00	12.73	<b>18.00</b>	22.05	28.46	33.67	40.25					
DM24.200		●	●	5.2	10.00	14.14	<b>20.00</b>	24.49	31.62	37.42	44.72					
DM24.225		●	●	5.5	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31					
DM24.250		●	●	5.8	12.50	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90					
DM24.320		●	●	6.5	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55					
DM24.400			●	7.3	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44					
DM24.520			●	8.3	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28					
DM24.650			●	9.3	32.50	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34					
DM24.720			●	9.8	36.00	50.91	<b>72.00</b>	88.18	113.8	134.7	161.0					

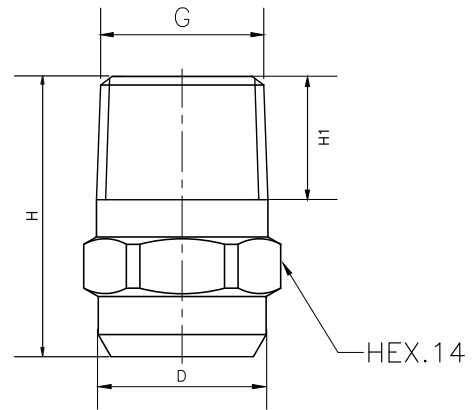
# ABC Angular Full Cone Spray Nozzles

90° SPRAY ANGLE	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/2"	3/4"	1"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
DM16.400	●			2.3	2.00	2.83	4.00	4.90	6.32	7.48	8.94	1/2"	32	13	21	22
DM16.475	●			2.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62	Weight (Metals) = 71 gms. Approx				
DM16.650	●			2.9	3.25	4.60	6.50	7.96	10.28	12.16	14.53	3/4"	42	15	32	27
DM16.800	●			3.3	4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = xx gms. Approx				
DM26.100	●			3.6	5.00	7.07	10.00	12.25	15.81	18.71	22.36	1"	56	18	39	36
DM26.125	●	●		4.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95	Weight (Metals) = xx gms. Approx				
DM26.160	●	●		4.6	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DM26.180		●		5.9	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DM26.200		●	●	5.2	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DM26.225		●	●	5.5	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DM26.250		●	●	5.8	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DM26.320		●	●	6.5	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DM26.400		●	●	7.3	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DM26.520		●	●	8.3	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DM26.650			●	9.3	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DM26.720			●	9.8	36.00	50.91	72.00	88.18	113.8	134.7	161.0					

130° SPRAY ANGLE	CONNECTION END			ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM				
	1/2"	3/4"	1"		PRESSURE [BAR]											
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	D	HEX
DM19.400	●			2.3	2.00	2.83	4.00	4.90	6.32	7.48	8.94	1/2"	32	13	21	22
DM19.475	●			2.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62	Weight (Metals) = 71 gms. Approx				
DM19.650	●			2.9	3.25	4.60	6.50	7.96	10.28	12.16	14.53	3/4"	42	15	32	27
DM19.800	●			3.3	4.00	5.66	8.00	9.80	12.65	14.97	17.89	Weight (Metals) = xx gms. Approx				
DM29.100	●			3.6	5.00	7.07	10.00	12.25	15.81	18.71	22.36	1"	56	18	39	36
DM29.125	●	●		4.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95	Weight (Metals) = xx gms. Approx				
DM29.160	●	●		4.6	8.00	11.31	16.00	19.60	25.30	29.93	35.78					
DM29.180		●	●	5.9	9.00	12.73	18.00	22.05	28.46	33.67	40.25					
DM29.200		●	●	5.2	10.00	14.14	20.00	24.49	31.62	37.42	44.72					
DM29.225		●	●	5.5	11.25	15.91	22.50	27.56	35.58	42.09	50.31					
DM29.250		●	●	5.8	12.50	17.68	25.00	30.62	39.53	46.77	55.90					
DM29.320		●	●	6.5	16.00	22.63	32.00	39.19	50.60	59.87	71.55					
DM29.400		●	●	7.3	20.00	28.28	40.00	48.99	63.25	74.83	89.44					
DM29.520		●	●	8.3	26.00	36.77	52.00	63.69	82.22	97.28	116.28					
DM29.650			●	9.3	32.50	45.96	65.00	79.61	102.77	121.60	145.34					
DM29.720			●	9.8	36.00	50.91	72.00	88.18	113.8	134.7	161.0					

# Full Cone Spray Nozzles (Mist Spray)

**DN**



DN series mist spray nozzle offers semi Full cone spray pattern.

Micro-finish of tip & vane permitting flow through the slots of the vane and extremely close manufacturing tolerances ensures accurate flow capacity control.

**Application :-**

Injection quill, Dust suppression, Humidification, Mist spray applications

**Range :-**

- Spray Angle : 45°, 60°, 90°.
- Connection : 1/4" BSP/BSPT/NPT (Male)

MODEL NO.	END CONNECTION		ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE						G/A DIMENSION. MM							
	1/4"			PRESSURE [BAR]						CONN.	H	H1	D	HEX			
	BSP	BSPT													NPT		
<b>45° SPRAY ANGLE</b>																	
DN13.030	●		1.0	0.3	0.37	0.47	0.56	0.67	0.82	1/4"	22	10	13	14			
DN13.040	●		1.1	0.4	0.49	0.63	0.75	0.89	1.10	Weight (Metals) = XX gms. Approx							
DN13.050	●		1.2	0.5	0.61	0.79	0.94	1.12	1.37								
DN13.060	●		1.4	0.6	0.73	0.95	1.12	1.34	1.64								
DN13.070	●		1.5	0.7	0.86	1.11	1.31	1.57	1.92								
DN13.080	●		1.6	0.8	0.98	1.26	1.50	1.79	2.19								
DN13.090	●		1.7	0.9	1.10	1.42	1.68	2.01	2.46								
DN13.100	●		1.8	1.0	1.22	1.58	1.87	2.24	2.74								
<b>60° SPRAY ANGLE</b>																	
DN14.030	●		1.0	0.3	0.37	0.47	0.56	0.67	0.82								
DN14.040	●		1.1	0.4	0.49	0.63	0.75	0.89	1.10								
DN14.050	●		1.2	0.5	0.61	0.79	0.94	1.12	1.37								
DN14.060	●		1.4	0.6	0.73	0.95	1.12	1.34	1.64								
DN14.070	●		1.5	0.7	0.86	1.11	1.31	1.57	1.92								
DN14.080	●		1.6	0.8	0.98	1.26	1.50	1.79	2.19								
DN14.090	●		1.7	0.9	1.10	1.42	1.68	2.01	2.46								
DN14.100	●		1.8	1.0	1.22	1.58	1.87	2.24	2.74								
<b>90° SPRAY ANGLE</b>																	
DN16.030	●		1.0	0.3	0.37	0.47	0.56	0.67	0.82								
DN16.040	●		1.1	0.4	0.49	0.63	0.75	0.89	1.10								
DN16.050	●		1.2	0.5	0.61	0.79	0.94	1.12	1.37								
DN16.060	●		1.4	0.6	0.73	0.95	1.12	1.34	1.64								
DN16.070	●		1.5	0.7	0.86	1.11	1.31	1.57	1.92								
DN16.080	●		1.6	0.8	0.98	1.26	1.50	1.79	2.19								
DN16.090	●		1.7	0.9	1.10	1.42	1.68	2.01	2.46								
DN16.100	●		1.8	1.0	1.22	1.58	1.87	2.24	2.74								





## Hollow Cone Spray Nozzles Series



HOLLOW CONE

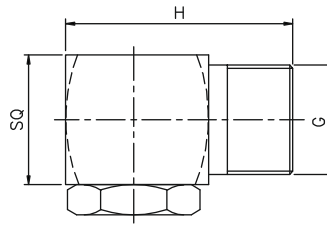
### APPLICATION

- Absorption
- Chemical process engineering
- Cooling
- Disinfection
- Desuperheating
- Dust control
- Fire protection
- Foam destruction
- Gas treatment
- Humidification of air
- Humidification of goods
- Humidification of textiles
- Oil spraying
- Protection of storage tanks
- Spraying onto filters
- Spraying over germinating boxes
- Water recooling
- and many others...



# BA Series Hollow Cone Spray Nozzles

BA



## Tangential Entry Hollow Cone Standard Angle Spray Nozzles (Non-Clogging) :

Hollow cone spray nozzles work on the tangential flow principle and are manufactured by machine tool operation from metal bar stock. This offers versatile construction of small sized nozzles. In addition nozzles can be made on request from any special material and alloys that are available as a bar stock. This flow pattern is essentially a circular ring of liquid. Hollow cone nozzles are best for application requiring good atomization of liquids at lower pressures or where quick heat transfer is needed. These nozzles also feature large and unobstructed flow passage which provide a relatively high resistance to clogging.

**There are Following types of hollow cone nozzles.**

- 1) Tangential Entry
- 2) Inline (Axial) Entry
- 3) Spiral Hollow cone.

- Characteristic** : High resistance to clogging
- Design** : Vaneless (Two Piece Construction ) Non clogging
- Application** : Cooling & Washing of gas

60° SPRAY ANGLE	END CONNECTION (G)					INLET DIA. NOM. (MM)	ORIFICE DIA. NOM. (MM)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/8"	1/4"	3/8"	1/2"	3/4"			PRESSURE [BAR]									
MODEL NO.	BSP	BSP	BSP	BSP	BSP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	SQ
BA14.050	●					1.1	1.2	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/8"	25.5	16
BA14.075	●	●				1.3	1.4	0.375	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 35 gms. Approx		
BA14.100	●	●				1.6	1.7	0.5	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	35	20
BA14.150	●	●				1.9	2.1	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 75 gms. Approx		
BA14.175	●	●				2.0	2.3	0.875	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	35	20
BA14.200	●	●				2.2	2.4	1.0	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 75 gms. Approx		
BA14.250	●	●				2.5	2.7	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	45	25
BA14.300	●	●				2.7	3.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 137 gms. Approx		
BA14.350	●	●	●			2.9	3.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	3/4"	57	32
BA14.400	●	●	●			3.1	3.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 286 gms. Approx		
BA14.475	●	●	●			3.4	3.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BA14.650	●	●	●			4.0	4.4	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BA14.800		●	●			4.4	4.9	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BA24.100			●			4.9	5.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BA24.125			●			5.5	6.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BA24.160			●	●		6.2	6.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BA24.180			●	●		6.5	7.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
BA24.200			●	●		6.9	7.7	10.0	14.14	20.00	24.49	31.62	37.42	44.72			
BA24.225				●	●	7.4	8.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
BA24.250				●	●	7.8	8.6	12.5	17.68	25.00	30.62	39.53	46.77	55.90			
BA24.320				●	●	8.8	9.8	16.0	22.63	32.00	39.19	50.60	59.87	71.55			
BA24.400				●	●	9.8	10.9	20.0	28.28	40.00	48.99	63.25	74.83	89.44			
BA24.520				●		11.2	12.4	26.0	36.77	52.00	63.69	82.22	97.28	116.0			
BA24.650				●		12.5	13.9	32.5	45.96	65.00	79.61	102.0	121.0	145.0			
BA24.800				●		13.9	15.4	40.0	56.57	80.00	97.98	126.0	149.0	178.0			

End Connection : X – BSP, Y – BSPT, Z – NPT Available.

# BA Series Hollow Cone Spray Nozzles

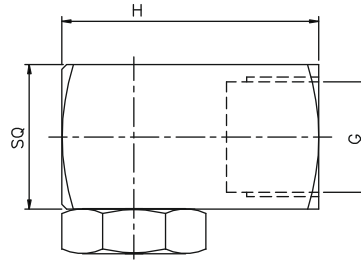
90° SPRAY ANGLE	END CONNECTION (G)					INLET DIA. NOM. (mm)	ORIFICE DIA. NOM. (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/8"	1/4"	3/8"	1/2"	3/4"			PRESSURE [BAR]									
MODEL NO.	BSP	BSP	BSP	BSP	BSP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	SQ
BA16.050	●					1.1	1.2	0.25	0.35	0.5	0.61	0.79	0.94	1.12	1/8"	25.5	16
BA16.075	●	●				1.3	1.4	0.375	0.53	0.7	0.92	1.19	1.40	1.68	Weight (Metals) = 35 gms. Approx		
BA16.100	●	●				1.6	1.7	0.5	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	35	20
BA16.150	●	●				1.9	2.1	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 75 gms. Approx		
BA16.175	●	●				2.0	2.3	0.875	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	35	20
BA16.200	●	●				2.2	2.4	1.0	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 75 gms. Approx		
BA16.250	●	●				2.5	2.7	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	45	25
BA16.300	●	●				2.7	3.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 137 gms. Approx		
BA16.350	●	●	●			2.9	3.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	3/4"	57	32
BA16.400	●	●	●			3.1	3.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 286 gms. Approx		
BA16.475	●	●	●			3.4	3.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BA16.650	●	●	●			4.0	4.4	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BA16.800		●	●			4.4	4.9	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BA26.100		●	●			4.9	5.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BA26.125		●	●			5.5	6.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BA26.160		●	●	●		6.2	6.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BA26.180		●	●	●		6.5	7.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
BA26.200		●	●	●		6.9	7.7	10.0	14.14	20.00	24.49	31.62	37.42	44.72			
BA26.225		●	●	●		7.4	8.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
BA26.250				●	●	7.8	8.6	12.5	17.68	25.00	30.62	39.53	46.77	55.90			
BA26.320				●	●	8.8	9.8	16.0	22.63	32.00	39.19	50.60	59.87	71.55			
BA26.400				●	●	9.8	10.9	20.0	28.28	40.00	48.99	63.25	74.83	89.44			
BA26.520				●	●	11.2	12.4	26.0	36.77	52.00	63.69	82.22	97.28	116			
BA26.650				●	●	12.5	13.9	32.5	45.96	65.00	79.61	102.77	121	145			
BA26.800				●	●	13.9	15.4	40.0	56.57	80.00	97.98	126.49	149	178			

120° SPRAY ANGLE	END CONNECTION (G)					INLET DIA. NOM. (mm)	ORIFICE DIA. NOM. (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/8"	1/4"	3/8"	1/2"	3/4"			PRESSURE [BAR]									
MODEL NO.	BSP	BSP	BSP	BSP	BSP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	SQ
BA18.050	●					1.1	1.2	0.25	0.35	0.5	0.61	0.79	0.94	1.12	1/8"	25.5	16
BA18.075	●	●				1.3	1.4	0.375	0.53	0.7	0.92	1.19	1.40	1.68	Weight (Metals) = 35 gms. Approx		
BA18.100	●	●				1.6	1.7	0.5	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	35	20
BA18.150	●	●				1.9	2.1	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 75 gms. Approx		
BA18.175	●	●				2.0	2.3	0.875	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	35	20
BA18.200	●	●				2.2	2.4	1.0	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 75 gms. Approx		
BA18.250	●	●				2.5	2.7	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	45	25
BA18.300	●	●				2.7	3.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 137 gms. Approx		
BA18.350	●	●	●			2.9	3.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	3/4"	57	32
BA18.400	●	●	●			3.1	3.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 286 gms. Approx		
BA18.475	●	●	●			3.4	3.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BA18.650	●	●	●			4.0	4.4	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BA18.800		●	●			4.4	4.9	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BA28.100		●	●			4.9	5.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BA28.125		●	●			5.5	6.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BA28.160		●	●	●		6.2	6.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BA28.180		●	●	●		6.5	7.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
BA28.200		●	●	●		6.9	7.7	10.0	14.14	20.00	24.49	31.62	37.42	44.72			
BA28.225				●	●	7.4	8.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
BA28.250				●	●	7.8	8.6	12.5	17.68	25.00	30.62	39.53	46.77	55.90			
BA28.320				●	●	8.8	9.8	16.0	22.63	32.00	39.19	50.60	59.87	71.55			
BA28.400				●	●	9.8	10.9	20.0	28.28	40.00	48.99	63.25	74.83	89.44			
BA28.520				●	●	11.2	12.4	26.0	36.77	52.00	63.69	82.22	97.28	116			
BA28.650				●	●	12.5	13.9	32.5	45.96	65.00	79.61	102	121	145			
BA28.800				●	●	13.9	15.4	40.0	56.57	80.00	97.98	126	149	178			

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# BB Series Hollow Cone Spray Nozzles

**BB**



## Tangential Entry Hollow Cone Standard Angle Spray Nozzles (Non-Clogging) :

Hollow cone spray nozzles work on the tangential flow principle and are manufactured by machine tool operation from metal bar stock. This offers versatile construction of small sized nozzles. In addition nozzles can be made on request from any special material and alloys that are available as a bar stock. This flow pattern is essentially a circular ring of liquid. Hollow cone nozzles are best for application requiring good atomization of liquids at lower pressures or where quick heat transfer is needed. These nozzles also feature large and unobstructed flow passage which provide a relatively high resistance to clogging.

**There are Following types of hollow cone nozzles.**

- 1) Tangential Entry
- 2) Inline (Axial) Entry
- 3) Spiral Hollow cone.

- Characteristic** : High resistance to clogging
- Design** : Vaneless (Two Piece Construction ) Non clogging
- Application** : Cooling & Washing of gas

60° SPRAY ANGLE	END CONNECTION (G)					INLET DIA. NOM. (MM)	ORIFICE DIA. NOM. (MM)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/8"	1/4"	3/8"	1/2"	3/4"			PRESSURE [BAR]									
MODEL NO.	BSP	BSP	BSP	BSP	BSP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	SQ
BB14.050	●					1.1	1.2	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/8"	25.5	16
BB14.075	●	●				1.3	1.4	0.375	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = XX gms. Approx		
BB14.100	●	●				1.6	1.7	0.5	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	35	20
BB14.150	●	●				1.9	2.1	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 62.0 gms. Approx		
BB14.175	●	●				2.0	2.3	0.875	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	35	20
BB14.200	●	●				2.2	2.4	1.0	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 77.0 gms. Approx		
BB14.250	●	●				2.5	2.7	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	45	25
BB14.300	●	●				2.7	3.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = XX gms. Approx		
BB14.350	●	●	●			2.9	3.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	3/4"	57	32
BB14.400	●	●	●			3.1	3.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 151.0 gms. Approx		
BB14.475	●	●	●			3.4	3.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BB14.650	●	●	●			4.0	4.4	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BB14.800		●	●			4.4	4.9	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BB24.100			●			4.9	5.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BB24.125			●			5.5	6.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BB24.160			●	●		6.2	6.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BB24.180			●	●		6.5	7.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
BB24.200			●	●		6.9	7.7	10.0	14.14	20.00	24.49	31.62	37.42	44.72			
BB24.225				●	●	7.4	8.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
BB24.250				●	●	7.8	8.6	12.5	17.68	25.00	30.62	39.53	46.77	55.90			
BB24.320				●	●	8.8	9.8	16.0	22.63	32.00	39.19	50.60	59.87	71.55			
BB24.400				●	●	9.8	10.9	20.0	28.28	40.00	48.99	63.25	74.83	89.44			
BB24.520				●	●	11.2	12.4	26.0	36.77	52.00	63.69	82.22	97.28	116.0			
BB24.650				●	●	12.5	13.9	32.5	45.96	65.00	79.61	102.0	121.0	145.0			
BB24.800				●	●	13.9	15.4	40.0	56.57	80.00	97.98	126.0	149.0	178.0			

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# BB Series Hollow Cone Spray Nozzles

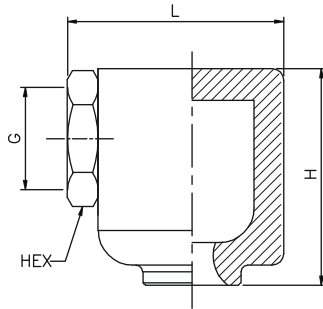
90° SPRAY ANGLE	END CONNECTION (G)					INLET DIA. NOM. (mm)	ORIFICE DIA. NOM. (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/8"	1/4"	3/8"	1/2"	3/4"			PRESSURE [BAR]									
MODEL NO.	BSP	BSP	BSP	BSP	BSP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	SQ
BB16.050	●					1.1	1.2	0.25	0.35	0.5	0.61	0.79	0.94	1.12	1/8"	25.5	16
BB16.075	●	●				1.3	1.4	0.375	0.53	0.7	0.92	1.19	1.40	1.68	Weight (Metals) = 35.0 gms. Approx		
BB16.100	●	●				1.6	1.7	0.5	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	35	20
BB16.150	●	●				1.9	2.1	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 62.0 gms. Approx		
BB16.175	●	●				2.0	2.3	0.875	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	35	20
BB16.200	●	●				2.2	2.4	1.0	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 77.0 gms. Approx		
BB16.250	●	●				2.5	2.7	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	45	25
BB16.300	●	●				2.7	3.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = 110.0 gms. Approx		
BB16.350	●	●	●			2.9	3.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	3/4"	57	32
BB16.400	●	●	●			3.1	3.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 151.0 gms. Approx		
BB16.475	●	●	●			3.4	3.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BB16.650	●	●	●			4.0	4.4	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BB16.800		●	●			4.4	4.9	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BB26.100		●	●			4.9	5.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BB26.125		●	●			5.5	6.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BB26.160		●	●	●		6.2	6.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BB26.180		●	●	●				9.00	12.73	18.00	22.05	28.46	33.67	40.25			
BB26.200		●	●	●		6.9	7.7	10.0	14.14	20.00	24.49	31.62	37.42	44.72			
BB26.225		●	●	●		7.4	8.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
BB26.250				●	●	7.8	8.6	12.5	17.68	25.00	30.62	39.53	46.77	55.90			
BB26.320				●	●	8.8	9.8	16.0	22.63	32.00	39.19	50.60	59.87	71.55			
BB26.400				●	●	9.8	10.9	20.0	28.28	40.00	48.99	63.25	74.83	89.44			
BB26.520					●	11.2	12.4	26.0	36.77	52.00	63.69	82.22	97.28	116			
BB26.650					●	12.5	13.9	32.5	45.96	65.00	79.61	102.77	121	145			
BB26.800					●	13.9	15.4	40.0	56.57	80.00	97.98	126.49	149	178			

120° SPRAY ANGLE	END CONNECTION (G)					INLET DIA. NOM. (mm)	ORIFICE DIA. NOM. (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/8"	1/4"	3/8"	1/2"	3/4"			PRESSURE [BAR]									
MODEL NO.	BSP	BSP	BSP	BSP	BSP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	SQ
BB18.050	●					1.1	1.2	0.25	0.35	0.5	0.61	0.79	0.94	1.12	1/8"	25.5	16
BB18.075	●	●				1.3	1.4	0.375	0.53	0.7	0.92	1.19	1.40	1.68	Weight (Metals) = XX gms. Approx		
BB18.100	●	●				1.6	1.7	0.5	0.71	1.00	1.22	1.58	1.87	2.24	1/4"	35	20
BB18.150	●	●				1.9	2.1	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = XX gms. Approx		
BB18.175	●	●				2.0	2.3	0.875	1.24	1.75	2.14	2.77	3.27	3.91	3/8"	35	20
BB18.200	●	●				2.2	2.4	1.0	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = XX gms. Approx		
BB18.250	●	●				2.5	2.7	1.25	1.77	2.50	3.06	3.95	4.68	5.59	1/2"	45	25
BB18.300	●	●				2.7	3.0	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = XX gms. Approx		
BB18.350	●	●	●			2.9	3.2	1.75	2.47	3.50	4.29	5.53	6.55	7.83	3/4"	57	32
BB18.400	●	●	●			3.1	3.5	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = XX gms. Approx		
BB18.475	●	●	●			3.4	3.7	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BB18.650	●	●	●			4.0	4.4	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BB18.800		●	●			4.4	4.9	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BB28.100		●	●			4.9	5.5	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BB28.125		●	●			5.5	6.1	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BB28.160			●	●		6.2	6.9	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BB28.180			●	●		6.5	7.2	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
BB28.200			●	●		6.9	7.7	10.0	14.14	20.00	24.49	31.62	37.42	44.72			
BB28.225				●		7.4	8.2	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
BB28.250				●	●	7.8	8.6	12.5	17.68	25.00	30.62	39.53	46.77	55.90			
BB28.320				●	●	8.8	9.8	16.0	22.63	32.00	39.19	50.60	59.87	71.55			
BB28.400				●	●	9.8	10.9	20.0	28.28	40.00	48.99	63.25	74.83	89.44			
BB28.520					●	11.2	12.4	26.0	36.77	52.00	63.69	82.22	97.28	116			
BB28.650					●	12.5	13.9	32.5	45.96	65.00	79.61	102	121	145			
BB28.800					●	13.9	15.4	40.0	56.57	80.00	97.98	126	149	178			

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# BC Series Hollow Cone Spray Nozzles

BC



Fine uniform hollow cone spray also at low pressures.

**Application:**

Cooling and cleaning of gas, Water re-cooling, Dust control, Chemical process engineering .

75° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1"	1 1/2"	2"	2 1/2"		PRESSURE [BAR]							CONN.	H	L	HEX
MODEL NO.	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
BC25.500	●				10.5	25.0	35.36	<b>50.00</b>	61.24	79.06	93.54	111.80	1"	60	75	46
BC25.630	●				11.8	31.5	44.55	<b>63.00</b>	77.16	99.61	117.86	140.87	Weight (Metals) = XX gms. Approx			
BC25.800	●				13.3	40.0	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89	1 1/2"	90	92	60
BC35.100	●				14.9	50.0	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx			
BC35.118		●			16.2	59.0	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86	2"	127	118	80
BC35.130		●			17.0	65.0	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69	Weight (Metals) = XX gms. Approx			
BC35.160		●			18.8	80.0	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77	2 1/2"	156	140	100
BC35.200		●			21.1	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21	Weight (Metals) = XX gms. Approx			
BC35.227		●			22.4	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59				
BC35.337			●		27.4	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55				
BC35.469			●		32.3	234.5	331.63	<b>469.0</b>	574.41	741.55	877.42	1048.72				
BC35.540				●	34.6	270	381.84	<b>540.0</b>	661.36	853.81	1010.25	1207.48				

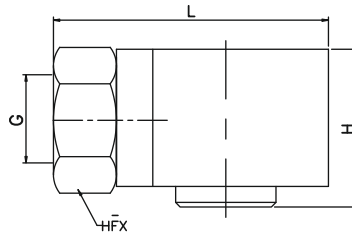
90° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1"	1 1/2"	2"	2 1/2"		PRESSURE [BAR]							CONN.	H	L	HEX
MODEL NO.	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
BC26.500	●				10.5	25.0	35.36	<b>50.0</b>	61.24	79.06	93.54	111.80	1"	60	75	46
BC26.630	●				11.8	31.5	44.55	<b>63.0</b>	77.16	99.61	117.86	140.87	Weight (Metals) = XX gms. Approx			
BC26.800	●				13.3	40.0	56.57	<b>80.0</b>	97.98	126.49	149.67	178.89	1 1/2"	90	92	60
BC36.100	●				14.9	50.0	70.71	<b>100</b>	122	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx			
BC36.118		●			16.2	59.0	83.44	<b>118</b>	144	186.57	220.76	263.86	2"	127	118	80
BC36.130		●			17.0	65.0	91.92	<b>130</b>	159	205.55	243.21	290.69	Weight (Metals) = XX gms. Approx			
BC36.160		●			18.8	80.0	113	<b>160</b>	195	252.98	299.33	357.77	2 1/2"	156	140	100
BC36.200		●			21.1	100	141	<b>200</b>	244	316.23	374.17	447.21	Weight (Metals) = XX gms. Approx			
BC36.227		●			22.4	113.5	160.51	<b>227</b>	278.02	358.92	424.68	507.59				
BC36.337			●		27.4	168.5	238.29	<b>337</b>	412.74	532.84	630.47	753.55				
BC36.469			●		32.3	234.5	331.63	<b>469</b>	574.41	741.55	877.42	1048.72				
BC36.540				●	34.6	270	381.84	<b>540</b>	661.36	853.81	1010	1207				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.



# BD Series Hollow Cone Spray Nozzles

**BD**

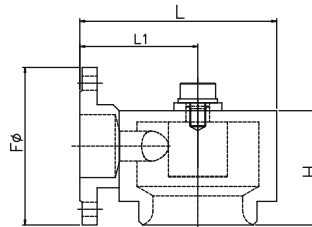


130° SPRAY ANGLE	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1"	1 1/2"	2"	2 1/2"		PRESSURE [BAR]							CONN.	H	L	HEX
MODEL NO.	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
BD29.500	●				12.6	25.0	35.36	<b>50.0</b>	61.24	79.06	93.54	111.80	1"	60	94	46
BD29.630	●				14.1	31.5	44.55	<b>63.0</b>	77.16	99.61	117.86	140.87	Weight (Metals) = XX gms. Approx			
BD29.800	●				15.9	40.0	56.57	<b>80.0</b>	97.98	126.49	149.67	178.89	1 1/2"	75	112	60
BD39.100	●				17.8	50.0	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61	Weight (Metals) = XX gms. Approx			
BD39.118		●			19.3	59.0	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86	2"	90	140	75
BD39.130		●			20.3	65.0	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69	Weight (Metals) = XX gms. Approx			
BD39.160		●			22.5	80.0	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77	2 1/2"	127	193	90
BD39.200		●			25.1	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21	Weight (Metals) = XX gms. Approx			
BD39.227		●			26.8	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59				
BD39.337			●		32.6	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55				
BD39.469			●		38.5	234.5	331.63	<b>469.0</b>	574.41	741.55	877.42	1048				
BD39.540				●	41.3	270	381.84	<b>540.0</b>	661.36	853.81	1010	1207				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

**BE**

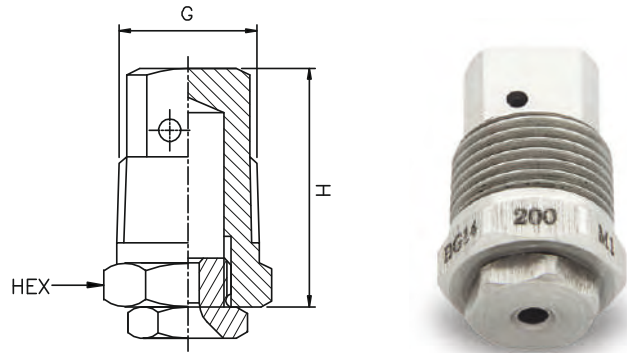
## BE Series For Hollow Cone Spray Nozzles LARGE CAPACITY Flange Connection



130° SPRAY ANGLE	FLANGED CONNECTION		ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	3"	4"		PRESSURE [BAR]							FØ	L	L1	H
MODEL NO.				0.5	1.0	2.0	3.0	5.0	7.0	10.0				
BE39.510	●		32.0	255	360.62	<b>510</b>	624.62	806.38	954.12	1140.39	<b>200</b>	250	150	156
BE39.571	●		33.8	285.5	403.76	<b>571</b>	699.33	902.83	1068.24	1276.79	Weight (Metals) = XX gms. Approx			
BE39.642	●		35.9	321	453.96	<b>642</b>	786.29	1015.09	1201.07	1435.56				
BE39.724	●		38.1	362	511.95	<b>724</b>	886.72	1144.74	1354.48	1618.91				
BE39.816	●		40.4	408	577.00	<b>816</b>	999.39	1290.21	1526.60	1824.63				
BE39.918	●		42.9	459	649.12	<b>918</b>	1124.32	1451.49	1717.42	2052.71				
BE49.1020	●		45.2	510	721.25	<b>1020</b>	1249.24	1612.76	1908.25	2280.79				
BE49.1262	●		50.3	631	892.37	<b>1262</b>	1545.63	1995.40	2360.99	2821.92				
BE49.1616		●	56.9	808	1142.68	<b>1616</b>	1979.19	2555.12	3023.26	3613.49	<b>220</b>	354	200	240
BE49.2020		●	63.6	1010	1428.36	<b>2020</b>	2473.98	3193.90	3779.07	4516.86	Weight (Metals) = XX gms. Approx			
BE49.2525		●	71.2	1262.5	1785.44	<b>2525</b>	3092.48	3992.38	4723.84	5646.07				
BE49.3181		●	79.9	1590.5	2249.31	<b>3181</b>	3895.91	5029.60	5951.11	7112.93				

# BG Series Inline Entry Hollow Cone Spray Nozzles

**BG**



Inline Entry Hollow Cone Spray pattern with uniform distribution of finely atomized droplets. Smaller droplets in spray pattern than full cone nozzles of the same capacity at similar pressures.

**Design** : One piece in-line body with removable orifice tip, two piece construction

**Application** : Gas Cooling & Cleaning, Spray drying, Desuperheating, Water Cooling, Fugitive Dust suppression.

60° SPRAY ANGLE	END CONNECTION (G)			INLET DIA. NOM. (mm)	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/4"	3/8"	1/2"			PRESSURE [BAR]									
MODEL NO.	BSP BSPT NPT	BSP BSPT NPT	BSP BSPT NPT			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	HEX
BG14.050	●			1.2	1.1	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/4"	28.5	14
BG14.075	●			1.4	1.3	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = 20.9 gms. Approx		
BG14.100	●			1.7	1.6	0.5	0.71	1.00	1.22	1.58	1.87	2.24	3/8"	30	17
BG14.150	●	●		2.1	2.0	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = 33.3 gms. Approx		
BG14.175	●	●		2.2	2.1	0.87	1.24	1.75	2.14	2.77	3.27	3.91	1/2"	37.5	22
BG14.200	●	●		2.4	2.3	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = 60.1 gms. Approx		
BG14.250	●	●		2.7	2.5	1.25	1.77	2.50	3.06	3.95	4.68	5.59			
BG14.300		●		2.9	2.8	1.50	2.12	3.00	3.67	4.74	5.61	6.71			
BG14.350		●		3.2	3.0	1.75	2.47	3.50	4.29	5.53	6.55	7.83			
BG14.400		●		3.4	3.2	2.00	2.83	4.00	4.90	6.32	7.48	8.94			
BG14.475		●		3.7	3.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BG14.650		●	●	4.3	4.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BG14.800		●	●	4.8	4.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BG24.100			●	5.4	5.1	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BG24.125			●	6.0	5.7	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BG24.160			●	6.8	6.4	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BG24.180			●	7.2	6.8	9.00	12.73	18.00	22.05	28.46	33.67	40.25			

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# BG Series Inline Entry Hollow Cone Spray Nozzles

**BG**

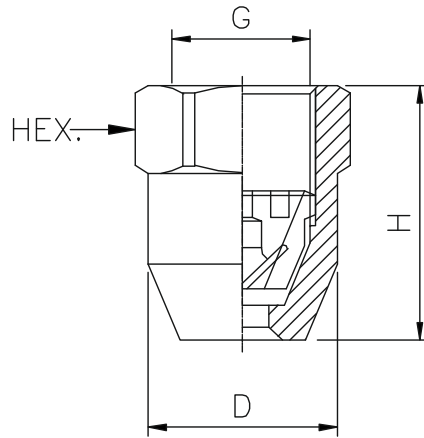
90° SPRAY ANGLE	END CONNECTION (G)					INLET DIA. NOM. (mm)	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/4"	3/8"	1/2"	3/4"	1 1/2"			PRESSURE [BAR]									
MODEL NO.	BSP	BSP	BSP	BSP	BSP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	HEX
BG16.050	●					1.2	1.1	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/4"	28.5	14
BG16.075	●					1.4	1.3	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = XX gms. Approx		
BG16.100	●					1.7	1.6	0.5	0.71	1.00	1.22	1.58	1.87	2.24	3/8"	30.5	17
BG16.150	●	●				2.1	2.0	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = XX gms. Approx		
BG16.175	●	●				2.2	2.1	0.875	1.24	1.75	2.14	2.77	3.27	3.91	1/2"	37.5	22
BG16.200	●	●				2.4	2.3	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = XX gms. Approx		
BG16.250	●	●				2.7	2.5	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/4"	44.5	27
BG16.300		●		●		2.9	2.8	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = XX gms. Approx		
BG16.350		●		●		3.2	3.0	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1 1/2"	68	48
BG16.400		●		●		3.4	3.2	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = XX gms. Approx		
BG16.475		●		●		3.7	3.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BG16.650		●	●	●		4.3	4.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BG16.800			●	●		4.8	4.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BG26.100			●	●		5.4	5.1	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BG26.125			●	●		6.0	5.7	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BG26.160			●	●		6.8	6.4	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BG26.180			●	●		7.2	6.8	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
BG26.200				●		7.6	7.2	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
BG26.225				●		8.1	7.6	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
BG26.250				●	●	8.5	8.0	12.5	17.68	25.00	30.62	39.53	46.77	55.90			
BG26.320				●	●	9.6	9.1	16.00	22.63	32.00	39.19	50.60	59.87	71.55			

120° SPRAY ANGLE	END CONNECTION (G)					INLET DIA. NOM. (mm)	ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM		
	1/4"	3/8"	1/2"	3/4"	1 1/2"			PRESSURE [BAR]									
MODEL NO.	BSP	BSP	BSP	BSP	BSP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	HEX
BG18.050	●					1.2	1.1	0.25	0.35	0.50	0.61	0.79	0.94	1.12	1/4"	28.5	14
BG18.075	●					1.4	1.3	0.37	0.53	0.75	0.92	1.19	1.40	1.68	Weight (Metals) = XX gms. Approx		
BG18.100	●					1.7	1.6	0.5	0.71	1.00	1.22	1.58	1.87	2.24	3/8"	30.5	17
BG18.150	●	●				2.1	2.0	0.75	1.06	1.50	1.84	2.37	2.81	3.35	Weight (Metals) = XX gms. Approx		
BG18.175	●	●				2.2	2.1	0.875	1.24	1.75	2.14	2.77	3.27	3.91	1/2"	37.5	22
BG18.200	●	●				2.4	2.3	1.00	1.41	2.00	2.45	3.16	3.74	4.47	Weight (Metals) = XX gms. Approx		
BG18.250	●	●				2.7	2.5	1.25	1.77	2.50	3.06	3.95	4.68	5.59	3/4"	44.5	27
BG18.300		●		●		2.9	2.8	1.50	2.12	3.00	3.67	4.74	5.61	6.71	Weight (Metals) = XX gms. Approx		
BG18.350		●		●		3.2	3.0	1.75	2.47	3.50	4.29	5.53	6.55	7.83	1 1/2"	68	48
BG18.400		●		●		3.4	3.2	2.00	2.83	4.00	4.90	6.32	7.48	8.94	Weight (Metals) = 595 gms. Approx		
BG18.475		●		●		3.7	3.5	2.37	3.36	4.75	5.82	7.51	8.89	10.62			
BG18.650		●	●	●		4.3	4.1	3.25	4.60	6.50	7.96	10.28	12.16	14.53			
BG18.800			●	●		4.8	4.5	4.00	5.66	8.00	9.80	12.65	14.97	17.89			
BG28.100			●	●		5.4	5.1	5.00	7.07	10.00	12.25	15.81	18.71	22.36			
BG28.125			●	●		6.0	5.7	6.25	8.84	12.50	15.31	19.76	23.39	27.95			
BG28.160			●	●		6.8	6.4	8.00	11.31	16.00	19.60	25.30	29.93	35.78			
BG28.180				●		7.2	6.8	9.00	12.73	18.00	22.05	28.46	33.67	40.25			
BG28.200				●		7.6	7.2	10.00	14.14	20.00	24.49	31.62	37.42	44.72			
BG28.225				●		8.1	7.6	11.25	15.91	22.50	27.56	35.58	42.09	50.31			
BG28.250				●	●	8.5	8.0	12.5	17.68	25.00	30.62	39.53	46.77	55.90			
BG28.320				●	●	9.6	9.1	16.00	22.63	32.00	39.19	50.60	59.87	71.55			
BG28.400				●		10.8	10.1	20.00	28.28	40.00	48.99	63.60	74.83	89.44			
BG28.520				●		12.3	11.5	26.00	36.77	52.00	63.69	82.22	97.28	116.28			
BG28.650				●		13.71	12.9	32.5	45.96	65.00	79.61	102.77	121.60	145.34			
BG28.800				●		15.2	14.3	40.00	56.57	80.00	97.98	126.49	149.67	178.89			

End Connection : X – BSP, Y – BSPT, Z – NPT Available.

# BH Series Hollow Cone Spray Nozzles

**BH**



Axial hollow cone spray nozzles in two piece body and swirl insert spiral grooves conduct liquid along a straight through axial flow line, producing an especially fine atomized spray.

### Application :

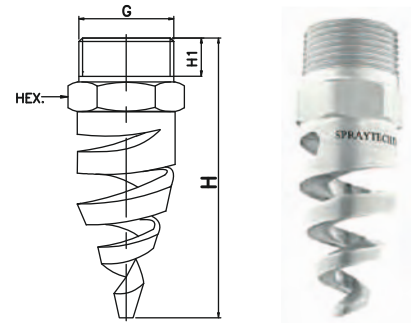
- Cooling and cleaning of air / gas
- Dust Suppression
- Spray drying
- Filter cleaning
- Desuperheating

MODEL NO.	CONNECTION END				ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	1/4"	3/8"	1/2"		PRESSURE [BAR]							CONN.	H	D	HEX
	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0				
<b>60 ° SPRAY ANGLE</b>																
BH14.050	●	●			1.0	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	1/8"	18	13.5	14
BH14.075	●	●			1.1	0.375	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68	Weight (Metals) = XX gms. Approx			
BH14.100	●	●	●		1.2	0.5	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24	1/4"	22	16.5	17
BH14.150	●	●	●		2.0	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35	Weight (Metals) = XX gms. Approx			
BH14.200	●	●	●		3.0	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47	3/8"	29	21.5	22
BH14.250		●	●		3.5	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59	Weight (Metals) = XX gms. Approx			
<b>75 ° SPRAY ANGLE</b>													1/2"	36	26.7	27
BH15.050	●	●			1.0	0.25	0.35	<b>0.50</b>	0.61	0.79	0.94	1.12	Weight (Metals) = XX gms. Approx			
BH15.075	●	●			1.1	0.375	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68				
BH15.100	●	●	●		1.2	0.5	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24				
BH15.150	●	●	●		2.0	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35				
BH15.200	●	●	●		3.0	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47				
BH15.250		●	●		3.5	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59				
<b>90 ° SPRAY ANGLE</b>																
BH16.050	●	●			1.0	0.25	0.35	<b>0.50</b>	0.61	0.791	0.94	1.12				
BH16.275	●	●			1.1	0.375	0.53	<b>0.75</b>	0.92	1.19	1.40	1.68				
BH16.100	●	●	●		1.2	0.5	0.71	<b>1.00</b>	1.22	1.58	1.87	2.24				
BH16.150	●	●	●		2.0	0.75	1.06	<b>1.50</b>	1.84	2.37	2.81	3.35				
BH16.200	●	●	●		3.0	1.00	1.41	<b>2.00</b>	2.45	3.16	3.74	4.47				
BH16.250		●	●		3.5	1.25	1.77	<b>2.50</b>	3.06	3.95	4.68	5.59				
BH16.350			●		4.00	1.75	2.47	<b>3.50</b>	4.29	5.53	6.55	7.83				
BH16.400			●		4.50	2.00	2.83	<b>4.00</b>	4.90	6.32	7.48	8.94				
BH16.475			●	●	5.00	2.37	3.36	<b>4.75</b>	5.82	7.51	8.89	10.62				
BH16.650			●	●	5.50	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53				
BH16.800			●	●	6.00	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89				
BH26.100				●	7.00	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36				
BH26.125				●	8.00	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95				
BH26.160				●	9.00	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78				

# BI Series Hollow Cone Spray Nozzles



Spiral Hollow cone Spray Nozzle have no internal parts and features large free passage for minimized clogging & fine droplets at a higher velocity. Compact Nozzle design provide higher flow rates though smaller connection sizes.



### Application :

Gas Scrubbers, Cooling Towers, Chemical processing.

60° SPRAY ANGLE	CONNECTION END					ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/4"	48	10	14
BI14.650	●					2.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	Weight (Metals) = XX gms. Approx			
BI14.800	●					2.8	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89	3/8" 58 10 17			
BI24.100	●	●				3.1	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36	Weight (Metals) = XX gms. Approx			
BI24.125	●	●				3.5	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	1/2" 76 13.2 22			
BI24.160		●				4.0	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78	Weight (Metals) = XX gms. Approx			
BI24.225		●				4.7	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31	3/4" 86 14.5 27			
BI24.250		●				5.0	12.5	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90	Weight (Metals) = XX gms. Approx			
BI24.320		●				5.6	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55				
BI24.400		●				6.3	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44				
BI24.520		●	●			7.2	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28				
BI24.650			●			8.0	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
BI24.800			●			8.9	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				
BI34.100			●	●		10.0	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61				
BI34.118				●		10.8	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86				
BI34.130				●		11.4	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69				
BI34.160				●		12.6	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77				
BI34.200					●	14.1	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21				
BI34.227					●	15.0	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59				
BI34.337					●	18.3	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55	1"	108	16.8	36

90° SPRAY ANGLE	CONNECTION END					ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]							CONN.	H	H1	HEX
MODEL NO.	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	1/4"	48	10	14
BI16.650	●					2.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	1/4" 48 10 14			
BI16.800	●					2.8	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89	Weight (Metals) = 27.0 gms. Approx			
BI26.100	●	●				3.1	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36	3/8" 58 10 17			
BI26.125	●	●				3.5	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	Weight (Metals) = 53.7 gms. Approx			
BI26.160		●				4.0	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78	1/2" 76 13.2 22			
BI26.225		●				4.7	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31	Weight (Metals) = 53.7 gms. Approx			
BI26.250		●				5.0	12.5	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90	3/4" 86 14.5 27			
BI26.320		●				5.6	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55	Weight (Metals) = 170.0 gms. Approx			
BI26.400		●				6.3	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44	1" 108 16.8 36			
BI26.520		●	●			7.2	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28	Weight (Metals) = 170.0 gms. Approx			
BI26.650			●			8.0	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
BI26.800			●			8.9	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				
BI36.100			●	●		10.0	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61				
BI36.118				●		10.8	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86				
BI36.130				●		11.4	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69				
BI36.160				●		12.6	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77				
BI36.200					●	14.1	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21				
BI36.227					●	15.0	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59				
BI36.337					●	18.3	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.



# BI Series Hollow Cone Spray Nozzles

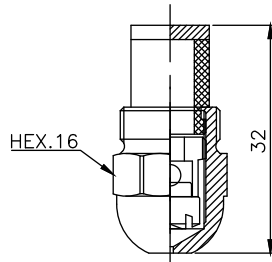
120° SPRAY ANGLE	CONNECTION END					ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE VALUES							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"		Pressure [bar]										
MODEL NO.	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
BI18.650	●					2.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	1/4"	48	10	14
BI18.800	●					2.8	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89	Weight (Metals) = XX gms. Approx			
BI28.100	●	●				3.1	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36	3/8"	58	10	17
BI28.125	●	●				3.5	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	Weight (Metals) = XX gms. Approx			
BI28.160		●				4.0	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78	1/2"	76	13.2	22
BI28.225		●				4.7	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31	Weight (Metals) = XX gms. Approx			
BI28.250		●				5.0	12.5	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90	3/4"	86	14.5	27
BI28.320		●				5.6	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55	Weight (Metals) = XX gms. Approx			
BI28.400		●				6.3	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44	1"	108	16.8	36
BI28.520		●	●			7.2	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28	Weight (Metals) = XX gms. Approx			
BI28.650			●			8.0	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
BI28.800			●			8.9	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				
BI38.100			●	●		10.0	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61				
BI38.118				●		10.8	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86				
BI38.130				●		11.4	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69				
BI38.160				●		12.6	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77				
BI38.200					●	14.1	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21				
BI38.227					●	15.0	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59				
BI38.337					●	18.3	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55				

180° SPRAY ANGLE	CONNECTION END					ORIFICE SIZE (mm)	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							G/A DIMENSION. MM			
	1/4"	3/8"	1/2"	3/4"	1"		PRESSURE [BAR]										
MODEL NO.	BSP	BSP	BSP	BSP	BSP		0.5	1.0	2.0	3.0	5.0	7.0	10.0	CONN.	H	H1	HEX
BI19.650	●					2.5	3.25	4.60	<b>6.50</b>	7.96	10.28	12.16	14.53	1/4"	48	10	14
BI19.800	●					2.8	4.00	5.66	<b>8.00</b>	9.80	12.65	14.97	17.89	Weight (Metals) = XX gms. Approx			
BI29.100	●	●				3.1	5.00	7.07	<b>10.00</b>	12.25	15.81	18.71	22.36	3/8"	58	10	17
BI29.125	●	●				3.5	6.25	8.84	<b>12.50</b>	15.31	19.76	23.39	27.95	Weight (Metals) = XX gms. Approx			
BI29.160		●				4.0	8.00	11.31	<b>16.00</b>	19.60	25.30	29.93	35.78	1/2"	76	13.2	22
BI29.225		●				4.7	11.25	15.91	<b>22.50</b>	27.56	35.58	42.09	50.31	Weight (Metals) = XX gms. Approx			
BI29.250		●				5.0	12.5	17.68	<b>25.00</b>	30.62	39.53	46.77	55.90	3/4"	86	14.5	27
BI29.320		●				5.6	16.00	22.63	<b>32.00</b>	39.19	50.60	59.87	71.55	Weight (Metals) = XX gms. Approx			
BI29.400		●				6.3	20.00	28.28	<b>40.00</b>	48.99	63.25	74.83	89.44	1"	108	16.8	36
BI29.520		●	●			7.2	26.00	36.77	<b>52.00</b>	63.69	82.22	97.28	116.28	Weight (Metals) = XX gms. Approx			
BI29.650			●			8.0	32.5	45.96	<b>65.00</b>	79.61	102.77	121.60	145.34				
BI29.800			●			8.9	40.00	56.57	<b>80.00</b>	97.98	126.49	149.67	178.89				
BI39.100			●	●		10.0	50.00	70.71	<b>100.0</b>	122.47	158.11	187.08	223.61				
BI39.118				●		10.8	59.00	83.44	<b>118.0</b>	144.52	186.57	220.76	263.86				
BI39.130				●		11.4	65.00	91.92	<b>130.0</b>	159.22	205.55	243.21	290.69				
BI39.160				●		12.6	80.00	113.14	<b>160.0</b>	195.96	252.98	299.33	357.77				
BI39.200					●	14.1	100	141.42	<b>200.0</b>	244.95	316.23	374.17	447.21				
BI39.227					●	15.0	113.5	160.51	<b>227.0</b>	278.02	358.92	424.68	507.59				
BI39.337					●	18.3	168.5	238.29	<b>337.0</b>	412.74	532.84	630.47	753.55				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

# BK Series Hollow Cone Spray Nozzles

**BK**



Oil burner nozzles are available in semi hollow cone spray pattern.

Micro-finish of tip & disc seats permitting flow only through the slots of the disc, plus extremely close manufacturing tolerances, ensure accurate capacity control. These nozzles are fitted with filter in order to provide highly efficient in depth filtration with one piece construction extra fine filter microns are supplied as standard on all small capacity nozzles.

**Application :-**

LDO firing in kilns of cement, sponge, Iron plants & Dust suppression.

**Oil Burner Spray Nozzles**

G	L1	L2	HEX
9/16	7 mm	20.5 mm	16 mm
With Filter	7 mm	32 mm	16 mm

**Range :-**

Spray Angle : 45°, 60°, 75°, 90°.

Connection : 9/16" UNEF

M. O. C. : SS303 /SS304 /SS316/ BRASS

MODEL NO.				Capacity in LPM @ 2 bar	Flow Rate (GPH) @ Various Pressure (psi)					
45° SPRAY ANGLE	60° SPRAY ANGLE	75° SPRAY ANGLE	90° SPRAY ANGLE		75	100	125	150	175	200
BK13.0.75	BK14.0.75	BK15.0.75	BK16.0.75	0.03	0.63	0.75	0.79	0.95	0.97	1.10
BK13.1.00	BK14.1.00	BK15.1.00	BK16.1.00	0.03	0.79	1.00	1.10	1.24	1.26	1.42
BK13.1.50	BK14.1.50	BK15.1.50	BK16.1.50	0.05	1.26	1.50	1.74	1.90	1.92	2.06
BK13.2.00	BK14.2.00	BK15.2.00	BK16.2.00	0.07	1.74	2.00	2.21	2.37	2.69	2.85
BK13.2.50	BK14.2.50	BK15.2.50	BK16.2.50	0.09	2.16	2.50	2.80	3.06	3.30	3.54
BK13.3.00	BK14.3.00	BK15.3.00	BK16.3.00	0.1	2.59	3.00	3.35	3.68	3.97	4.25
BK13.3.50	BK14.3.50	BK15.3.50	BK16.3.50	0.12	3.03	3.50	3.91	4.29	4.63	4.95
BK13.4.00	BK14.4.00	BK15.4.00	BK16.4.00	0.13	3.46	4.00	4.47	4.90	5.30	5.66
BK13.4.50	BK14.4.50	BK15.4.50	BK16.4.50	0.15	3.90	4.50	5.04	5.51	5.95	6.36
BK13.5.00	BK14.5.00	BK15.5.00	BK16.5.00	0.17	4.33	5.00	5.59	6.13	6.61	7.07
BK13.5.50	BK14.5.50	BK15.5.50	BK16.5.50	0.18	4.76	5.50	6.15	6.74	7.27	7.78
BK13.6.00	BK14.6.00	BK15.6.00	BK16.6.00	0.2	5.19	6.00	6.71	7.33	7.94	8.48
BK13.6.50	BK14.6.50	BK15.6.50	BK16.6.50	0.22	5.63	6.50	7.26	7.96	8.60	9.20
BK13.7.00	BK14.7.00	BK15.7.00	BK16.7.00	0.24	6.05	7.00	7.82	8.58	9.25	9.90
BK13.7.50	BK14.7.50	BK15.7.50	BK16.7.50	0.25	6.49	7.50	8.38	9.19	9.91	10.60
BK13.8.00	BK14.8.00	BK15.8.00	BK16.8.00	0.27	6.93	8.00	8.94	9.80	10.58	11.31
BK13.8.50	BK14.8.50	BK15.8.50	BK16.8.50	0.29	7.36	8.50	9.50	10.45	11.27	12.08
BK13.9.00	BK14.9.00	BK15.9.00	BK16.9.00	0.3	7.79	9.00	10.06	11.02	11.91	12.73
BK13.9.50	BK14.9.50	BK15.9.50	BK16.9.50	0.32	8.22	9.50	10.60	11.70	12.60	13.50
BK23.10.00	BK24.10.00	BK25.10.00	BK26.10.00	0.34	8.71	10.00	11.09	12.20	13.15	14.10
BK23.10.50	BK24.10.50	BK25.10.50	BK26.10.50	0.36	9.10	10.50	11.70	12.90	13.90	14.90
BK23.12.00	BK24.12.00	BK25.12.00	BK26.12.00	0.4	10.40	12.00	13.40	14.70	15.90	17.00
BK23.13.50	BK24.13.50	BK25.13.50	BK26.13.50	0.46	11.65	13.50	15.07	16.53	17.90	19.17
BK23.15.50	BK24.15.50	BK25.15.50	BK26.15.50	0.55	13.37	15.50	17.33	18.95	20.56	21.89
BK23.17.50	BK24.17.50	BK25.17.50	BK26.17.50	0.6	15.10	17.50	19.60	21.40	23.20	24.80
BK23.19.50	BK24.19.50	BK25.19.50	BK26.19.50	0.65	16.90	19.50	21.80	23.90	25.80	27.60
BK23.21.50	BK24.21.50	BK25.21.50	BK26.21.50	0.7	18.60	21.50	24.00	26.40	28.40	30.40
BK23.24.00	BK24.24.00	BK25.24.00	BK26.24.00	0.8	20.80	24.00	26.80	29.40	31.80	34.00
BK23.28.00	BK24.28.00	BK25.28.00	BK26.28.00	0.9	24.20	28.00	31.30	34.30	37.00	39.60
BK23.30.00	BK24.30.00	BK25.30.00	BK26.30.00	1.0	26.00	30.00	33.60	36.80	39.70	42.50
BK23.35.00	BK24.35.00	BK25.35.00	BK26.35.00	1.2	30.30	35.00	39.10	42.90	46.30	49.50
BK23.40.00	BK24.40.00	BK25.40.00	BK26.40.00	1.3	34.60	40.00	44.70	49.00	53.00	56.50
BK23.45.00	BK24.45.00	BK25.45.00	BK26.45.00	1.5	39.00	45.00	50.40	55.20	59.50	63.70
BK23.50.00	BK24.50.00	BK25.50.00	BK26.50.00	1.7	43.30	50.00	55.90	61.30	66.10	70.70
BK23.55.00	BK24.55.00	BK25.55.00	BK26.55.00	1.8	47.60	55.00	61.50	67.40	72.70	77.70
BK23.60.00	BK24.60.00	BK25.60.00	BK26.60.00	2.0	52.00	60.00	67.00	73.50	79.40	84.00
BK23.70.00	BK24.70.00	BK25.70.00	BK26.70.00	2.4	60.60	70.00	78.20	85.70	92.50	99.00
BK23.80.00	BK24.80.00	BK25.80.00	BK26.80.00	2.7	60.20	80.00	89.40	98.00	106.00	113.50
BK23.90.00	BK24.90.00	BK25.90.00	BK26.90.00	3.0	77.90	90.00	100.90	110.50	119.20	127.50
BK33.100.00	BK34.100.00	BK35.100.00	BK36.100.00	3.4	86.50	100.00	111.90	122.50	132.30	141.40



**Spraytech**<sup>®</sup>  
Systems (India) Pvt. Ltd.  
*The Flow Technologists*

## Cleaning-In-Place (CIP) Spray Nozzles



CLEANING-IN-PLACE (CIP)

## APPLICATION

- Beverage industry
- Bioengineering
- Chemical industry
- Cosmetic industry
- Food industry
- Pharmaceutical industry
- Tank building and many others...

# Tank Washing Spray Nozzles Selection

## Overview

In this section a brief elaboration will clear the concept of spray nozzles selection for requirement and there various factors which affects and plays vital role in extent of cleaning required.

Following some factors should well studied when selecting CIP spray nozzles.

### 1) Extent of Cleaning

The nature of substance to be cleaned from tank should be considered like, solubility, viscosity, nature of powder / pigment material.

Based on all this factors we can decide which type of impact is necessary to flush substance from all internals of equipment.

- a) Rinsing : By virtue mass removal of substance and thick layers get dissolved by water or solvent
- b) Cleaning : After rinsing cleaning could be done with high pressure to remove rest of the residue from internal.
- c) High Impact Cleaning : Those substances which could not be satisfactory cleaned by means of cleaning cycle, should be treated with high pressure of cleaning fluid.
- d) Sanitizing : Sanitize chemical is applied after cleaning to kill microorganisms and bacteria.
- e) Disinfecting : Same procedure is applied for disinfectant
- f) Sterilizing : It kills all kinds of bacteria.

## Heat energy's role

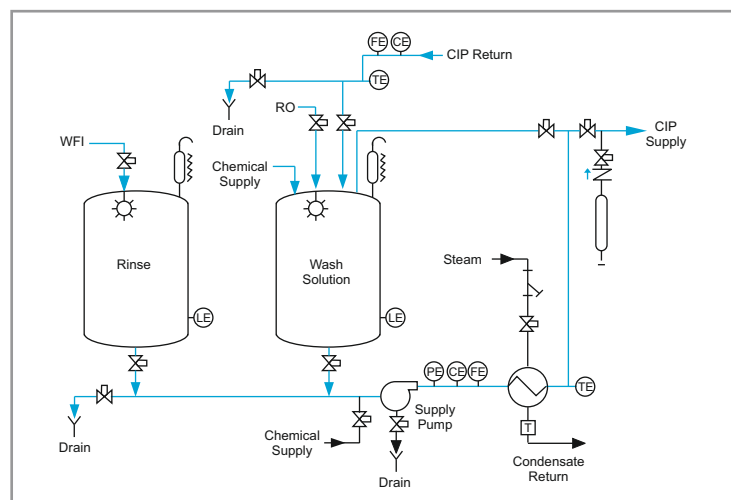
Viscosity of fluids decreases with increasing temperature so, effective cleaning can be achieved by using hot cleaning fluids or by increasing temperature of vessel tank by means of steam jackets. By virtue of this viscosity of substances to be cleaned decrease and effective cleanliness increases.

## Spray Pattern

If cleaning is done manually then stationery spray nozzles are recommended to use. Ex. Flat spray nozzle, Straight jet spray nozzle, Full cone spray nozzle. For CIP self rotating spray nozzles gives droplets spray to clean the substances. For higher tank sizes tank cleaning machine is recommended as it gives cyclic control speed of rotation which provide the high impact jet cleaning with long impact distances.

## Obstructions due to internals

If tank is having any central agitation / mixing arrangement then multiple spray nozzle should be utilized.



# Cleaning-In-Place (CIP)

Fully or semi-automated, integrated cleaning technique that allows to clean closed or open circuits without dismantling equipments

## Standard CIP sequence

Alkaline cleaning	To eliminate organic trace elements
Rinsing	To push out caustic
Acid cleaning	To eliminate mineral deposits
Rinsing	To push out acid
Disinfection	To kill / inactivate micro-organisms
Rinsing	To eliminate CIP chemicals and prepare the line for production

## Single-use system

cleaning solution is used only once and discharged to drain after use single tank

**Advantage**

- Simple, not very costly installation
- Could be applied for:
  - Small installations (decentralized CIP system)
  - Processes where cross-contamination is a concern
  - Heavy soiled equipments

**Disadvantage**

- High operational costs
- Environmental impact

## Re-use system

the same cleaning solution is used for a large number of cleaning operations (recover & reuse) multi-tanks

**Advantage**

- Lower environmental impact
- Could be applied for:
  - Large installations (centralized CIP system)

**Disadvantage**

- Installation can be complex and very costly
- Regular control of the cleaning power of cleaning solutions

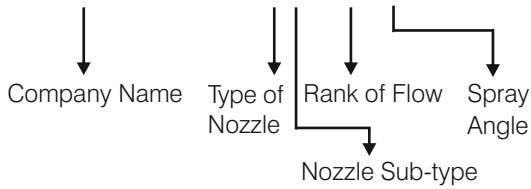


# Spraytech Product Coding System

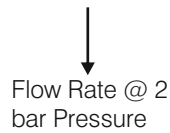
The following description will help to explain our Part Number/ Code in relation to the "SPRAYTECH" Spray Nozzle.

## EXAMPLE ORDERING.

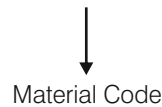
**SPRAYTECH EA 1 A**



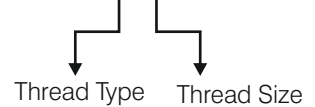
**096**



**M2**



**Y B**



Codes	Spray Nozzles Type
A	Air Atomizing /Fine Atomizing Spray Nozzle
B	Hollow Cone Spray Nozzle
C	Flat Spray Nozzle
D	Full Cone Spray Nozzle
E	Tank Washing Spray Nozzle
F	Steel Mill Spray Nozzles
G	General Engineering & Accessories
H	Special Project

Codes	Thread Size
A	1/8"
B	1/4"
C	3/8"
D	1/2"
E	3/4"
F	1"
G	1 1/4"
H	1 1/2"
K	2"
L	2 1/2"
M	3"
N	3 1/2"
O	4"

Nozzle Sub-type (see table overleaf)

Spray Angle Code	Spray Angle	Coverage Type
A	180°	
B	180°	
C	270°	
D	270°	
E	360°	

Note : special size on request























Code	Material
M0	M.S.
M1	SS303/SS304/ M1L = SS304L
M2	SS316/ M 2L = SS316L
M3	Brass
M4	SS410
M4-3	SS310
M5	Cast Iron
M6	Aluminum
M7	Hastelloy C/B /2000
M8	Titanium
M9	Monel
P1	PVC(Polyvinylchloride)
P2	PP (Polypropylene)
P3	Teflon®/ PTFE (Polyterafluoroethylene)
P4	Nylon(Polyamide)
P5	Delrin®/ POM (Polyacetate)
P6	PVDF(Polyvinylidene fluoride)
P7	Polyethylene

Note : Special material on request

Codes	Thread Type
X	BSPP
Y	BSPT
Z	NPT

Note : special Connection on request

# Self-rotating / Stationery Tank Cleaning Nozzles

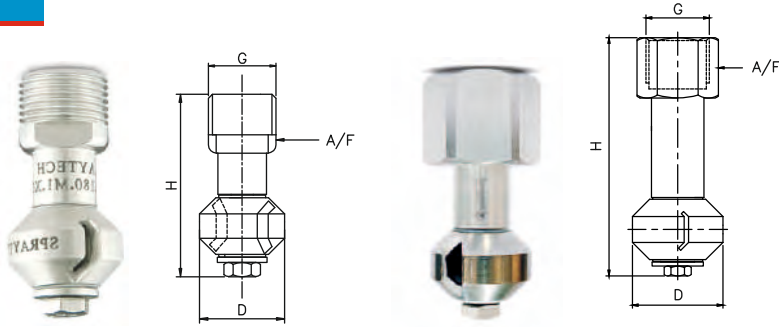
Nozzle Type	Series	Spray Angle	Flow rate LPM @ 2 bar	End Connection	ATEX Certified	Specification
	<b>EA</b>	180° ↓ 270° ↓ 360°	10-40	1/4" 3/8" 1/2" Tri-Clover End		Features: Compact design suitable for Cleaning small vessel/tanks <b>Cleaning Diameter: Upto 1.5 M</b> <b>Type: Self - rotating.</b> <b>MOC: SS304, SS316, TEFLON</b>
	<b>EB</b>	180° ↓ 270° ↓	18-38	1/2" Tri-Clover End		Features: Compact design suitable for Cleaning small vessel/tanks <b>Cleaning Diameter: Upto 1.5 M</b> <b>Type: Self - rotating.</b> <b>MOC: SS304, SS316</b>
	<b>EC</b>	270° ↑↓ 360°	32-250	1/2" 3/4" 1", 1 1/2", 2" Pin connection Tri-Clover End		Features: Jet type spray pattern, Best suitable For Glass lined reactors <b>Cleaning Diameter: Upto 2.5 M</b> <b>Type: Self - rotating.</b> <b>MOC: SS304, SS316, TEFLON</b>
	<b>ED</b>	270° ↑↓ 360°	32-160	3/4" Pin connection Tri-Clover End		Features: Flat spray tips for high impact cleaning, <b>Cleaning Diameter: Upto 2.5 M</b> <b>Type: Self - rotating.</b> <b>MOC: SS304, SS316</b>
	<b>EE</b>	180° ↑↓ 270° ↑↓ 360°	140-1100	1" 1 1/2" 2" 3" Tri-Clover End		Features: Best suitable for Large vessels, High impact cleaning with maximum reach <b>Cleaning Diameter: Upto 4 M</b> <b>Type: Self - rotating.</b> <b>MOC: SS304, SS316</b>
	<b>EF</b>	180° ↑↓ 360°	40-140	3/4" 1" Tri-Clover End		Features: Unique rotating disc design. Best suitable for FBD, FBP, FBC <b>Cleaning Diameter: Upto 2 M</b> <b>Type: Self - rotating.</b> <b>MOC: SS304, SS316</b>
	<b>EG</b>	270° ↑↓ 360°	15-200	3/8" 1/2" 3/4" 1" 1 1/4" Pin connection Tri-Clover End		Features: Double sided bearing for effortless rotation Best suitable for SS reactors, Pharmaceutical Vessels <b>Cleaning Diameter: Upto 2.5 M</b> <b>Type: Self - rotating.</b> <b>MOC: SS304, SS316</b>
	<b>EH</b>	180° ↓ 270° ↓	18-100	3/8" 1/2" Tri-Clover End Pin connection		Features: Uni body design Multiple orifice for high impact jet spray, <b>Cleaning Diameter: Upto 1.5 M</b> <b>Type: Stationary</b> <b>MOC: SS304, SS316, TEFLON</b>
	<b>EI</b>	180° ↓ 270° ↓ 360°	100-500	3/4" to 2" Pin connection Tri-Clover End		Features: Uni body design, Multiple jet spray with high flow <b>Cleaning Diameter: Upto 2.5 M</b> <b>Type: Stationary</b> <b>MOC: SS304, SS316</b>
	<b>EJ</b>	180° ↑↓ 270° ↑↓ 360°	15-100	3/8" 1/2" Tri-Clover End Pin connection		Features: Uni body compact design, Multiple jet spray for 360° cleaning <b>Cleaning Diameter: Upto 1.5 M</b> <b>Type: Stationary</b> <b>MOC: SS304, SS316, TEFLON</b>
	<b>EK</b>	 270°	20-40	Tri-Clover End		Features: Unique retractable type pop up nozzle Best suitable for isolators <b>Cleaning Diameter: Upto 1 M</b> <b>Type: Self - rotating, Retractable</b> <b>MOC: SS304, SS316</b>

\* Note: All Connections are available in BSP, BSPT, NPT.

\* ↑:Upward Spray ↓:Downward spray.

# EA Self-Rotating Spray Nozzles Stainless Steel & Plastic Versions

EA



EA series nozzles are very compact and designed for cleaning process in small bore or small size of containers. The rotary motion allows it to clean the vessels effectively. It is available in all grade of stainless steel material and also available in plastics like PTFE along with several spray angles.

Coverage Type	Spray Angle
B	180°
D	270°
E	360°

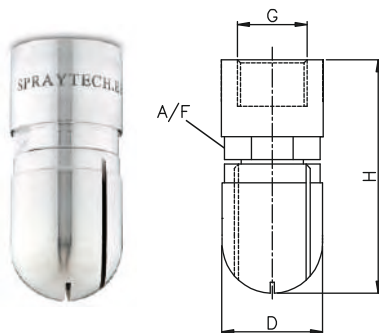
MODEL NO.	SPRAY ANGLE	CONNECTION			FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					CONNECTION	G/A DIMENSION. MM					
					PRESSURE [BAR]						MALE			FEMALE		
		1/4"	3/8"	1/2"	1.5	2	3	5	7		H	D	A/F	H	D	A/F
EA2.100	B/D/E	●			8.66	10.00	12.25	15.81	18.71	1/4"	45	16	12.8	45	16	16
EA2.120	B/D/E	●	●		10.39	12.00	14.70	18.97	22.45	Weight (Metals) = XX gms. Approx						
EA2.150	B/D/E		●		12.99	15.00	18.37	23.72	28.06	3/8"	45	22.2	12.8	51	22.2	22
EA2.180	B/D/E		●		15.59	18.00	22.05	28.46	33.67	Weight (Metals) = 30.0 gms. Approx						
EA2.220	B/D/E		●	●	19.05	22.00	26.94	34.79	41.16	1/2"	79	30	22	79	30	24
EA2.300	B/D/E			●	25.98	30.00	36.74	47.43	56.12	Weight (Metals) = XX gms. Approx						
EA2.350	B/D/E			●	30.31	35.00	42.87	55.34	65.48							
EA2.400	B/D/E			●	34.64	40.00	48.99	63.25	74.83							

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

Female Connection On Request

# EB Self-Rotating Spray Nozzles Stainless Steel Versions

EB



EB series self rotating nozzles are designed as a small dimensions and opening and perform inside cleaning which is required. Typically used for cleaning like kegs, small container where the requirement is for cleaning. Diameter of nozzle is (25mm) These nozzles are available in all grade of stainless steel.

Male Connection On Request

Coverage Type	Spray Angle
B	180°
D	270°

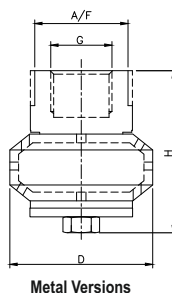
MODEL NO.	SPRAY ANGLE	CONNECTION			FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DIMENSION. MM			
					PRESSURE [BAR]								
		1/2"			1.5	2	3	5	7	CONN.	H	D	A/F
EB2.180	B/D	●			15.59	18.00	22.05	28.46	33.67	1/2"	55	24.2	21
EB2.220	B/D	●			19.05	22.00	26.94	34.79	41.16	Weight (Metals) = XX gms. Approx			
EB2.280	B/D	●			24.25	28.00	34.29	44.27	52.38	1/2"	55	24.2	21
EB2.320	B/D	●			27.71	32.00	39.19	50.60	59.87	Weight (Metals) = XX gms. Approx			
EB2.380	B/D	●			32.91	38.00	46.54	60.08	71.09				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

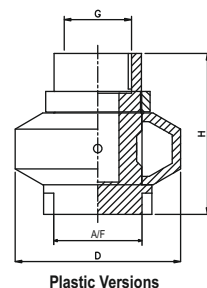
# EC Self-Rotating Spray Nozzles Stainless Steel & Plastic Versions



Specially designed self rotating nozzle, rotates because of reaction principle of spraying water jets. For rinsing small and medium sized vessels for example dairy, chemical, pharmaceutical and food industries. Material of construction- corrosion – resistance PTFE. (Range available from 1/2" to 2")



Metal Versions



Plastic Versions



## Male Connection On Request

Coverage Type	Spray Angle
	270°
	270°
	360°

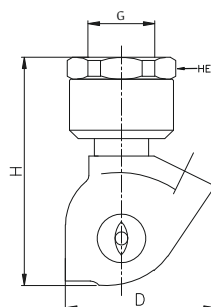
End Connection :  
X – BSP,  
Y - BSPT,  
Z – NPT Available.

MODEL NO.	SPRAY ANGLE	CONNECTION					FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					M1/M2	P3/P4		
		1/2"	3/4"	1"	1 1/2"	2"	PRESSURE [BAR]					SS304/SS316	TEFLON/NYLON		
							1.5	2	3	5	7	G/A DIMENSION. MM			
EC2.320	C/D/E	●					27.71	32.00	39.19	50.60	59.87	1/2"	60	50	28.6
EC2.400	C/D/E	●	●				34.64	40.00	48.99	63.25	74.83	Weight (Metals) = XX gms. Approx			
EC2.520	C/D/E	●	●	●			45.03	52.00	63.69	82.22	97.28	3/4"	68	58.5	32
EC2.720	C/D/E		●	●			62.35	72.00	88.18	113.84	134.70	Weight (Metals) = XX gms. Approx			
EC3.950	C/D/E		●	●			82.27	95.00	116.35	150.21	177.73	1"	76.2	78.5	42
EC3.120	C/D/E		●	●	●		103.92	120.0	146.97	189.74	224.50	Weight (Metals) = XX gms. Approx			
EC3.140	C/D/E		●	●	●		121.24	140.0	171.46	221.36	261.92	1 1/2"	92	92	55
EC3.150	C/D/E			●	●		138.56	160.0	195.96	252.98	299.33	Weight (Metals) = XX gms. Approx			
EC3.190	C/D/E				●	●	164.54	190.0	232.70	300.42	355.46	2"	111	124	66
EC3.225	C/D/E				●	●	194.54	225.0	275.57	355.76	420.94	Weight (Metals) = XX gms. Approx			
EC3.250	C/D/E				●	●	216.51	250.0	306.19	395.28	467.71				

# ED Barrel Tank Washing Spray Nozzles Stainless Steel Versions



Suited for CIP systems. No motor source is needed due to the reaction force of the cleaning liquid to rotate spray head. Low pressure for cleaning and rinsing application. For rinsing small and medium sized vessels for example dairy, chemical, pharmaceutical and food industries.



## Male Connection On Request

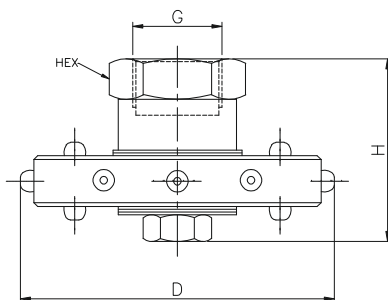
Coverage Type	Spray Angle
	270°
	270°
	360°

End Connection :  
X – BSP,  
Y - BSPT,  
Z – NPT Available.

MODEL NO.	SPRAY ANGLE	CONNECTION	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DIMENSION. MM		
			PRESSURE [BAR]					CONN.	H	D
			1.5	2	3	5	7			
		3/4"								
ED2.320	C/D/E	●	27.71	32.00	39.19	50.60	59.87	3/4"	100	70
ED2.520	C/D/E	●	45.03	52.00	63.69	82.22	97.28	Weight (Metals) = 95.0 gms. Approx		
ED2.720	C/D/E	●	62.35	72.00	88.18	113.84	134.70			
ED2.950	C/D/E	●	82.27	95.00	116.35	150.21	177.73			
ED3.120	C/D/E	●	103.92	120.0	146.97	189.74	224.50			
ED2.140	C/D/E	●	121.24	140.0	171.46	221.36	261.92			
ED3.160	C/D/E	●	138.56	160.0	195.96	252.98	299.33			

# EE Gyro Jet Tank Washing Spray Nozzles Stainless Steel Versions

EE



Self powered rotating tank cleaning nozzle used for cleaning large and medium size diameter tanks. Efficient cleaning action for medium and large size tanks. Recommended operating pressure 2 to 3 kg/cm<sup>2</sup> and also available coverage 180° (up and down), 270° (up and down) and 360°.

Coverage Type	Spray Angle
A	180°
B	180°
C	270°
D	270°
E	360°

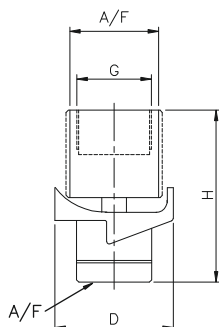
MODEL NO.	SPRAY ANGLE	CONNECTION				FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DIMENSION. MM			
		1"	1 1/2"	2"	3"	PRESSURE [BAR]					CONN.	H	D	HEX
						1.5	2	3	5	7				
EE3.140	A/B/C/D/E	●				121.24	140	171.46	221.36	261.92	1"	62.5	117	41
EE3.160	A/B/C/D/E	●				138.56	160	195.96	252.98	299.33	Weight (Metals) = 771.0 gms. Approx			
EE3.200	A/B/C/D/E	●				173.21	200	244.95	316.23	374.17	1 1/2"	97	131	71
EE3.250	A/B/C/D/E	●				216.51	250	306.19	395.28	467.71	Weight (Metals) = 1930gms. Approx			
EE3.275	A/B/C/D/E		●			238.16	275	336.80	434.81	514.48	2"	116.5	194	100
EE3.325	A/B/C/D/E		●	●		281.46	325	398.04	513.87	608.02	Weight (Metals) = 3630gms. Approx			
EE3.375	A/B/C/D/E		●	●		324.76	375	459.28	592.93	701.56	3"	XX	XX	XX
EE3.500	A/B/C/D/E		●	●		443.01	500	612.37	790.57	935.41	Weight (Metals) = XX gms. Approx			
EE4.625	A/B/C/D/E			●		541.27	625	765.47	988.21	1169.27				
EE3.800	A/B/C/D/E				●	692.82	800	979.80	1264.91	1496.66				
EE3.950	A/B/C/D/E				●	822.72	950	1163.51	1502.08	1777.29				
EE4.1100	A/B/C/D/E				●	952.63	1100	1347.22	1739.25	2057.91				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

Male Connection On Request

# EF Turbo Cleaning Spray Nozzles Stainless Steel Versions

EF



The turbo nozzles are generally used for washing of industrial storage tanks small barrels and used in the dairy, chemical, pharmaceutical, food industries and process industries. The rotating Disc dispense an instant powerful dense spray to all the interior surface of the vessels. Spray coverage 180° up and down 360°.

Coverage Type	Spray Angle
A	180°
B	180°
E	360°

MODEL NO.	SPRAY ANGLE	CONNECTION		FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DIMENSION. MM			
		3/4"	1"	PRESSURE [BAR]					CONN.	H	D	A/F
				1.5	2	3	5	7				
EF2.400	A/B/E	●		34.64	40.00	48.99	63.25	74.83	3/4"	74	51	38
EF2.520	A/B/E	●		45.03	52.00	63.69	82.22	97.28	Weight (Metals) = 460 gms. Approx			
EF2.720	A/B/E	●	●	62.35	72.00	88.18	113.84	134.70	1"	74	51	38
EF2.950	A/B/E	●	●	82.27	95.00	116.35	150.21	177.73	Weight (Metals) = 460 gms. Approx			
EF3.120	A/B/E		●	103.92	120.0	146.97	189.74	224.50				
EF3.140	A/B/E		●	121.24	140.0	171.46	221.36	261.92				

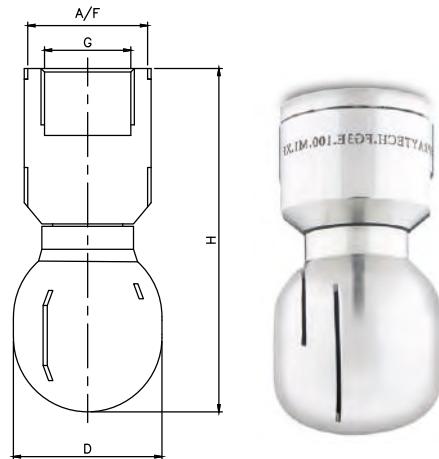
End Connection : X – BSP, Y - BSPT, Z – NPT Available.

Male Connection On Request





EG Series Slotted spray ball series are available with different connection design that it is a female thread and clip-on connection as standard. Weld-on or tri-clamp connection on request. The simple design high quality construction and having a good efficiency and applicable for general purpose application and it is available in coverage of 270° up and down and 360°.

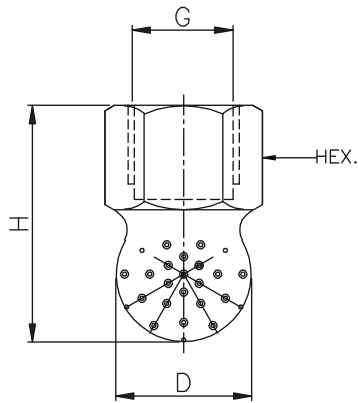


Coverage Type	Spray Angle
	270°
	270°
	360°

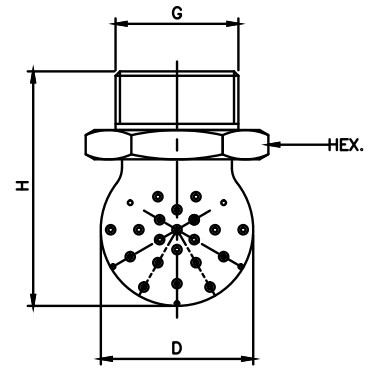
MODEL NO.	SPRAY ANGLE	CONNECTION								FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DIMENSION. MM		
										PRESSURE [BAR]							
		1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1.5	2	3	5	7	CONN.	H	D	
EG2.100	C/D/E	●							8.66	10.00	12.25	15.81	18.71	1/8"	37	17	
EG2.150	C/D/E	●	●	●					12.99	15.00	18.37	23.72	28.06	1/4"	48	21.5	
EG2.200	C/D/E	●	●	●					17.32	20.00	24.49	31.62	37.42	Weight (Metals) = XX gms. Approx			
EG2.250	C/D/E			●	●				21.65	25.00	30.62	39.53	46.77	3/8"	60	27	
EG2.300	C/D/E			●	●				25.98	30.00	36.74	47.43	56.12	Weight (Metals) = XX gms. Approx			
EG2.350	C/D/E			●	●				30.31	35.00	42.87	55.34	65.48	1/2"	77	33	
EG2.400	C/D/E			●	●	●			34.64	40.00	48.99	63.25	74.83	Weight (Metals) = XX gms. Approx			
EG2.520	C/D/E				●	●			45.03	52.00	63.69	82.22	97.28	3/4"	98	41	
EG2.600	C/D/E					●			51.96	60.00	73.48	94.87	112.25	Weight (Metals) = XX gms. Approx			
EG2.700	C/D/E					●			60.62	70.00	85.73	110.68	130.96	1"	104	47.5	
EG2.800	C/D/E					●	●		69.28	80.00	97.98	126.49	149.67	Weight (Metals) = XX gms. Approx			
EG2.900	C/D/E					●	●		77.94	90.00	110.23	142.30	168.37	1 1/4"	119	58	
EG3.100	C/D/E						●	●	86.60	100.0	122.11	158.11	187.08	Weight (Metals) = XX gms. Approx			
EG3.110	C/D/E						●	●	95.26	110.0	134.72	173.93	205.79				
EG3.120	C/D/E						●	●	103.92	120.0	149.97	189.74	224.50				
EG3.130	C/D/E						●	●	112.98	130.0	159.22	205.55	243.21				
EG3.140	C/D/E						●	●	121.24	140.0	171.46	221.36	261.92				
EG3.150	C/D/E						●	●	129.90	150.0	183.71	237.17	280.62				
EG3.160	C/D/E						●	●	138.56	160.0	195.96	252.98	299.33				
EG3.170	C/D/E						●	●	147.22	170.0	208.21	268.79	318.04				
EG3.180	C/D/E						●	●	155.88	180.0	220.45	284.60	336.75				
EG3.190	C/D/E						●	●	164.54	190.0	232.70	300.42	355.46				
EG3.200	C/D/E						●	●	173.21	200.0	244.95	316.23	374.17				

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

Male Connection On Request



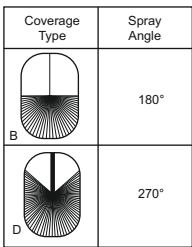
**Female Connection**



**Male Connection**

EH Series Static Spray Ball has very compact design that provides straight jets for high impact rinsing of small drums or container up to  $\varnothing$  1.5m. Also it can be used with saturated steam. Spray coverage is available in 180° & 270°

**SPRAY ANGLE**



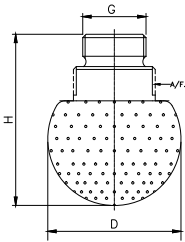
MODEL NO.	SPRAY ANGLE	CONNECTION			FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					
		1/4"	3/8"	1/2"	FLOW CAPACITY (US GPM)	PRESSURE [BAR]				
						40° psi	1.5	2	3	5
EH1.800	B/D	●			2.45	6.93	8.00	9.80	12.65	14.97
EH2.100	B/D	●			3.09	8.66	10.00	12.25	15.81	18.71
EH2.120	B/D	●			3.71	10.39	12.00	14.70	18.97	22.45
EH2.140	B/D	●			4.33	12.12	14.00	17.15	22.14	26.19
EH2.160	B/D	●			4.90	13.86	16.00	19.60	25.30	29.93
EH2.180	B/D	●	●	●	5.50	15.59	18.00	22.05	28.46	33.67
EH2.220	B/D		●	●	6.32	19.05	22.00	26.94	34.79	41.16
EH2.280	B/D		●	●	8.58	24.25	28.00	34.29	44.27	52.38
EH2.320	B/D		●	●	9.81	27.71	32.00	39.19	50.60	59.87
EH2.400	B/D		●	●	12.38	34.64	40.00	48.99	63.25	74.83
EH2.520	B/D		●	●	15.94	45.03	52.00	63.69	82.22	97.28
EH2.600	B/D			●	18.58	51.96	60.00	73.48	94.87	112.25
EH2.700	B/D			●	21.68	60.62	70.00	85.73	110.68	130.96
EH2.800	B/D			●	24.52	69.28	80.00	97.98	126.49	149.67
EH2.900	B/D			●	27.87	77.94	90.00	110.23	142.30	168.37
EH3.100	B/D			●	30.65	86.60	100.0	122.47	158.11	187.08

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

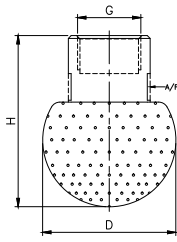
CONNECTION	1/4"			3/8"			1/2"		
DIMENSION	H	H1	D	H	H1	D	H	H1	D
MALE	32	15	16	35	16.5	17	40	26	27
	Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx		
FEMALE	32	15	16	35	21.5	22	45.3	26	27
	Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx		

# EI Series Static Spray Ball Stainless Steel & Plastic Versions

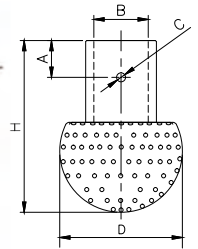
EI



Male Connection



Female Connection



Pin Type Connection

EI Series Static Spray Ball is a newly designed stationary spray ball with multiple orifices. Its unique design helps to cover complete 360 degree with impact type jet sprays. It is available in many sizes and flow rates. Impact type spray helps to remove sticky stains. Also it can be used with saturated steam.

Coverage Type	Spray Angle
	180°
	180°
	270°
	360°

**Design features**

- Jet type cleaning
- Impact type cleaning
- Can be used for steam applications
- Available in Threaded, Pin type and Tri Clover type end connection
- Available in SS304, SS316, SS316L, Hastelloy C-276, PTFE

Cleaning Diameter up to 2.0 meters

**End Connection :**

- X – BSP,
- Y – BSPT,
- Z – NPT Available.

MODEL NO.	SPRAY ANGLE	CONNECTION										FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE							
		1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	PRESSURE [BAR]								
											1.5	2	3	5	7				
EI1.650	A/B/D/E	●													5.63	6.50	7.96	10.28	28.06
EI1.800	A/B/D/E	●													6.93	8.00	9.80	12.65	14.97
EI2.100	A/B/D/E	●													8.66	10.00	12.25	15.81	18.71
EI2.125	A/B/D/E	●													10.39	12.50	14.70	18.97	22.45
EI2.140	A/B/D/E	●													12.12	14.00	17.15	22.14	26.19
EI2.160	A/B/D/E	●													13.86	16.00	19.60	25.30	29.93
EI2.180	A/B/D/E	●	●	●	●										15.59	18.00	22.05	28.46	33.67
EI2.220	A/B/D/E	●	●	●	●										19.05	22.00	26.94	34.79	41.16
EI2.280	A/B/D/E		●	●	●										24.25	28.00	34.29	44.27	52.38
EI2.320	A/B/D/E		●	●	●										27.71	32.00	39.19	50.60	59.87
EI2.400	A/B/D/E		●	●	●										34.64	40.00	48.99	63.25	74.83
EI2.520	A/B/D/E		●	●	●										45.03	52.00	63.69	82.22	97.28
EI2.600	A/B/D/E			●	●										51.96	60.00	73.48	94.87	112.25
EI2.700	A/B/D/E				●										60.62	70.00	85.73	110.68	130.96
EI2.800	A/B/D/E				●	●									69.28	80.00	97.98	126.49	149.67
EI2.900	A/B/D/E				●	●									77.94	90.00	110.23	142.30	168.37
EI3.100	A/B/D/E				●	●	●								86.60	100.0	122.47	158.11	187.08
EI3.120	A/B/D/E					●	●								103.92	120.00	149.74	189.74	224.50
EI3.140	A/B/D/E					●	●								121.24	140.00	171.46	221.36	261.92
EI3.160	A/B/D/E						●	●							138.56	160.00	195.96	252.98	299.33
EI3.190	A/B/D/E							●	●						164.54	190.00	232.70	300.42	355.46
EI3.225	A/B/D/E								●	●	●				194.86	225.00	275.57	355.76	420.94
EI3.250	A/B/D/E									●	●	●			216.51	250.00	306.19	395.28	487.71
EI3.275	A/B/D/E										●	●	●		238.46	275.00	336.19	434.81	514.48
EI3.300	A/B/D/E											●	●	●	259.81	300.00	367.42	474.34	561.25
EI3.325	A/B/D/E												●	●	281.46	325.00	398.04	513.87	608.02
EI3.350	A/B/D/E													●	303.11	350.00	428.66	553.40	654.79
EI3.375	A/B/D/E														324.76	375.00	459.28	592.93	701.56
EI3.400	A/B/D/E														346.41	400.00	489.90	632.46	748.33
EI3.425	A/B/D/E														368.06	425.00	520.52	671.98	795.10
EI3.450	A/B/D/E														389.71	450.00	551.14	711.51	841.87

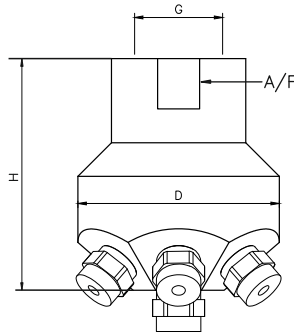
CONNECTION	1/8"			1/4"			3/8"			1/2"			3/4"			1"			1 1/4"			1 1/2"			2"		
DIMENSION	H	D	A/F	H	D	A/F	H	D	A/F	H	D	A/F	H	D	A/F	H	D	A/F	H	D	A/F	H	D	A/F	H	D	A/F
MALE	30	20	12	33.5	22	12	42	30	15	60	40	19	78	55	32	90	70	40	105	80	46	115	90	55	128	100	62
FEMALE	30	20	12	33.5	28	16	50	40	22	55	48	27	78	55	32	90	70	40	105	80	46	115	90	55	128	100	62
	Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx			Weight (Metals) = XX gms. Approx		




CONNECTION	DN 8				DN 10				DN 15				DN 20				DN 25				DN 32				DN 40				DN 50											
DIMENSION	H	D	A/F	C	A	H	D	A/F	C	A	H	D	A/F	C	A	H	D	A/F	C	A	H	D	A/F	C	A	H	D	A/F	C	A	H	D	A/F	C	A					
PIN TYPE	32.5	20	8.2	2.2	9	37.5	24	12.2	2.2	9	42	30	18.2	2.2	9	53	40	22.2	2.5	9	90	70	28.2	2.8	18	105	80	-	2.8	18	115	90	-	2.8	18	128	100	52.3	3.3	25

# EJ Fixed Tank Washing Spray Nozzles Stainless Steel & Plastic Versions



Suitable for washing of thick kind of materials. Having multiple spray tips on peripheri which can provides upto 360° of spray coverage. Rigid construction. M.O.C SS316, SS304.



Coverage Type	Spray Angle
	180°
	180°
	360°

MODEL NO.	SPRAY ANGLE	CONNECTION	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE						G/A DIMENSION. MM	
			FLOW CAPACITY (US GPM)	PRESSURE [BAR]						
				1 1/2"	40° psi	1.5	2	3	5	7
EJ3.100	A/B/E	●	30.65	86.60	100.0	122.47	158.11	187.08	121	127
EJ3.140	A/B/E	●	42.91	121.24	140.0	171.46	221.36	261.92	Weight (Metals) = 1.7kg. Approx	
EJ3.190	A/B/E	●	58.24	164.54	190.0	232.70	300.42	355.46		

End Connection : X – BSP, Y - BSPT, Z – NPT Available.

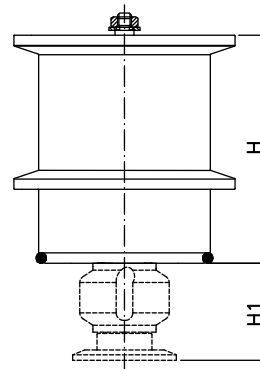
Male Connection On Request

# EK Series Self Rotating Pop-Out Nozzle




EK series Self-retractable (Pop out) nozzles are best suitable for applications where the complete flush position is required. It is generally used the areas where the nozzle can get blocked or when the environment is contaminated or explosive.

EK series Pop out nozzle retracts its spray ball when pressure is applied and shut itself to complete flush position when operation is stopped.



2" TC (DIN32676-A DN50)

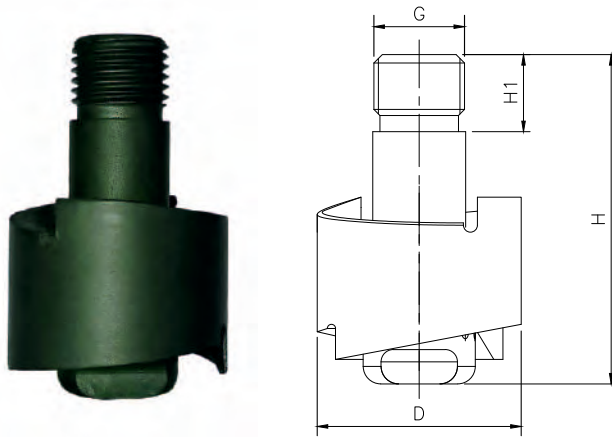
Coverage Type	Spray Angle
	270°


MODEL NO.	SPRAY ANGLE	CONNECTION	FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DAIMENTION	
			Tri-Clamp	PRESSURE [BAR]					
				1.5	2	3	5	7	H
EK2.200	D	2" TC	17.32	20.0	24.49	31.62	37.42	66	28
EK2.250	D	2" TC	21.65	25.0	30.62	39.53	46.77	Weight (Metals) = XX Approx	
EK2.300	D	2" TC	25.98	30.0	36.74	47.43	56.12		
EK2.350	D	2" TC	30.31	35.0	42.87	55.34	65.48		
EK2.400	D	2" TC	34.64	40.0	48.99	63.25	74.83		

\* Note: Connections are available in threaded and TC end.

# EN Series Free Rotating Cleaners

EN



Coverage Type	Spray Angle
	360°

Spraytech EN Series free rotating cleaners The unique ball bearing free design with only one rotating disc instantly generates high speed spherical droplets. Maximum surface coverage is attained by fast travelling sphere of droplets to cover full inside surface of the vessels. The droplets also reach inlet pipes and pipe entry points, where often contamination takes place.

**Applications :** These Tank washer are compact in design and effective in performance and are suitable for cleaning small/medium process vessels, storage tanks etc. Where it is required to give longer chemical dwell times for improved cleaning result.

ENA



ENA - PTFE / CPTFE SHAFT & TROLL BALL

MODEL NO.	SPRAY ANGLE	END CONN (G)		FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DIMENSION. MM			
		1/4"	3/4"	PRESSURE [BAR]					CONN	H	H1	D
				1.5	2	3	5	7				
ENA2E.400	E	●		34.64	40.00	48.99	63.25	74.83	1/4"	47	11	29
ENA2E.520	E	●		45.03	52.00	63.69	82.22	97.28	3/4"	65	15	39
ENA2E.800	E		●	69.28	80.00	97.98	126.49	149.67	Weight (Metals) = XX kg. Approx			
ENA3E.100	E		●	86.60	100.00	122.47	158.11	187.67				

ENB



ENB - SS16L SHAFT & PTFE TROLL BALL

MODEL NO.	SPRAY ANGLE	END CONN (G)		FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DIMENSION. MM			
		1/4"	3/4"	PRESSURE [BAR]					CONN	H	H1	D
				1.5	2	3	5	7				
ENB2E.400	E	●		34.64	40.00	48.99	63.25	74.83	1/4"	47	11	29
ENB2E.520	E	●		45.03	52.00	63.69	82.22	97.28	3/4"	65	15	39
ENB2E.800	E		●	69.28	80.00	97.98	126.49	149.67	Weight (Metals) = XX kg. Approx			
ENB3E.100	E		●	86.60	100.00	122.47	158.11	187.67				

ENC



ENC - SS16L SHAFT & SS316L TROLL BALL

MODEL NO.	SPRAY ANGLE	END CONN (G)		FLOW CAPACITY IN LPM AT DIFFERENT PRESSURE					G/A DIMENSION. MM			
		1/4"	3/4"	PRESSURE [BAR]					CONN	H	H1	D
				1.5	2	3	5	7				
ENC2E.400	E	●		34.64	40.00	48.99	63.25	74.83	1/4"	47	11	29
ENC2E.520	E	●		45.03	52.00	63.69	82.22	97.28	3/4"	65	15	39
ENC2E.800	E		●	69.28	80.00	97.98	126.49	149.67	Weight (Metals) = XX kg. Approx			
ENC3E.100	E		●	86.60	100.00	122.47	158.11	187.67				



## Air Atomizing Spray Nozzles



### APPLICATION

- Tablet Coating
- Pallet Coating
- Atomization of viscous liquids
- Agglomeration
- Granulation
- Humidification of air

# Air Atomizing Design, Features & Introduction

Air atomizing spray nozzles produces fine mist spray with the help of compressed air, liquid breaks into small droplets as air provides shearing effects on liquid droplets. Various spray patterns are available, they are categorized into Flat and Round spray patterns. The droplet size can be adjusted by flow adjustment of compressed air. Air atomizing nozzles are divided into two types Internal and External mix air atomizing nozzles. Those are available in various metals.

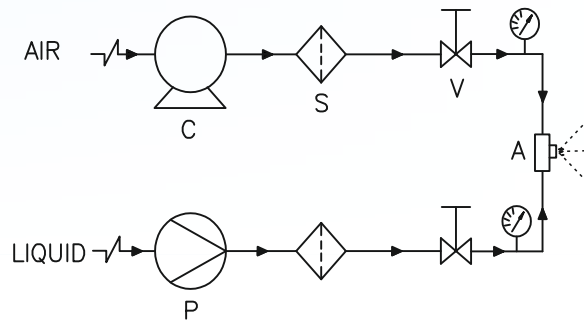
An air atomizing spray nozzle can work on three principles as below:

- 1) Pressure Principle
- 2) SIPHON Principle
- 3) Gravity Head Principle



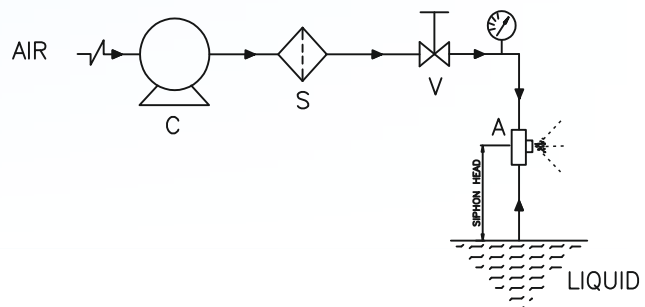
## 1) Pressure Principle

Liquid is supplied in pressurised form with the help of pump or pressurised container, separate compressed air is needed



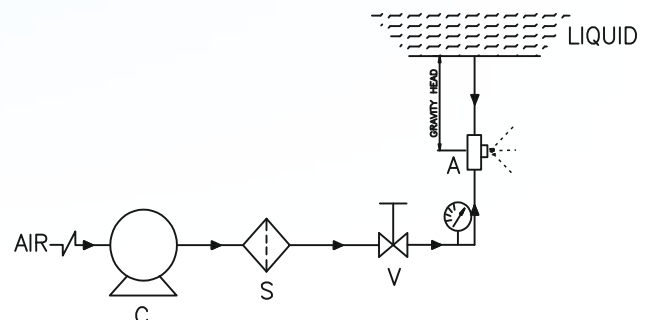
## 2) Siphon Principle

Siphon principle is utilised to lift liquid from certain height from spray nozzle, suitable where pump or pressurised container of liquid is not available.



## 3) Gravity head Principle

Gravitational head of liquid is utilised to feed liquid to the spray nozzle, suitable where pump or pressurized container of liquid is not available.



### Choice of spray Nozzles

Each spray set-ups consists of an air cap and liquid cap which provide a specific spray pattern capacity and coverage performance

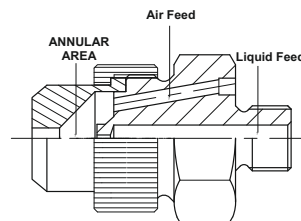
#### Inside Body Mixing

Liquid and air streams meet within nozzle and are mixed together and expelled through the same orifice. This internal mixing means the streams are not independent; a change in air flow will affect the liquid flow. This makes precise metering of the liquid more difficult than with an External Mix Set-up. Internal Mix set-up are able to produce the finest atomization of any of the XA set-ups, but they are generally not suitable for use with liquids which have a viscosity that is above 200 centipoise.

#### Out Side Body Mixing

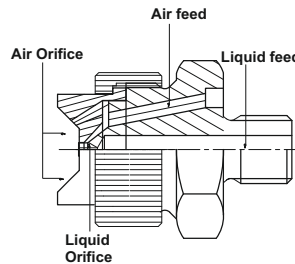
The air and liquid streams exit the nozzle independently and are combined and mixed outside of the nozzles. Because there is no connection between the air and liquid lines within the nozzles, the air and liquid flow rates can be controlled independently, allowing precise metering of the liquid. The atomization can be controlled by adjusting the air flow rate more air produces finer atomization. In most cases these set-up do not atomize as finely as Internal Mix Set-ups.

External Mix Set-up may be used with liquid having a viscosity above 200 centipoise and for abrasive suspensions. Spraytech provides Engineering guidance for spraying high viscosity liquids.



#### Internal Mix Set-Ups

Air & Liquid mix inside the nozzle



#### External Mix Set-Ups

Air & Liquid exit independently and combine outside the nozzle

### Applications

1. Tablet Coating
2. Thin Film Coating
3. Humidification
4. Paper Moisturising
5. Dust Suppression

### Optional Features

1. Manual Shut-off / Cleaning Needle
2. Automatic self Cleaning Needle
3. Auto shut-off Arrangement

### Material Code

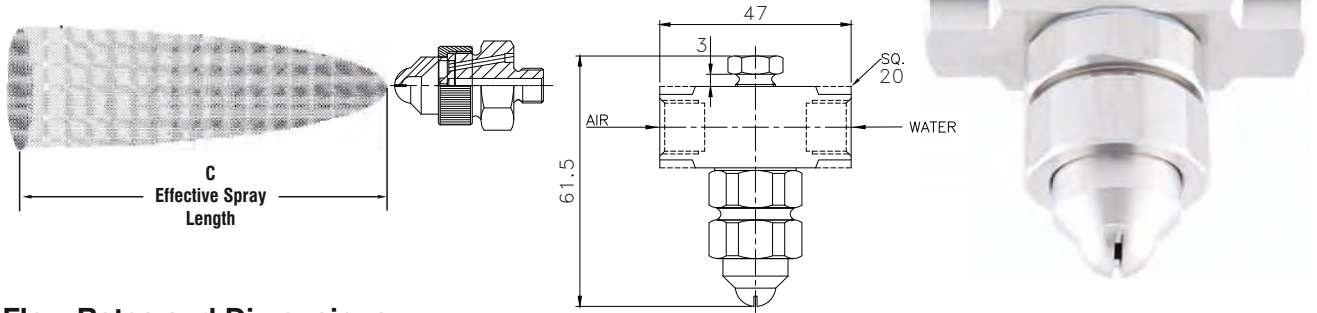
- M1 = SS303/SS304
- M2 = SS316/M2L=SS316L
- M3 = Brass (Nickel Plating on Request)
- M4 = SS410/ M4-3=SS310



# CAIA Series Flat Internal Air Atomizing Spray Nozzles

## DESIGN / SPRAY CHARACTERISTICS

- Internal mix
- Very fine atomization
- Flat fan, wide angle spray patterns (range 45° and 120°)



## Flow Rates and Dimensions

Pressure-fed, Internal Mix, Flat Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Model No.	0.7 Bar Liquid			1.5 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions	
		Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	"C" Effective Spray Length (mm)	Max. Spray Length (m)
1/8 or 1/4	CAIA 050	0.7	5.5	1.44	1.3	9.1	1.86	2.0	8.6	2.52	2.7	11.2	3.12	3.9	12.0	4.14	460 660 760 860 940	2.6 3.0 3.2 3.4 4.0
		0.9	4.7	1.62	1.5	7.7	2.16	2.2	7.5	2.82	3.0	10.1	3.36	4.6	9.7	4.86		
		1.0	4.1	1.86	1.8	6.5	2.52	2.5	6.2	3.12	3.2	9.1	3.72	5.3	7.5	5.58		
		1.1	3.5	2.04	2.1	5.4	2.82	2.8	5.2	3.42	3.5	8.1	3.96	6.0	5.3	6.24		
		1.3	3.0	2.22	2.4	4.3	3.12	3.1	4.2	3.78	4.2	5.4	4.74	6.3	4.3	6.60		
		1.4	2.5	2.40	2.7	3.3	3.42	3.2	3.7	3.90	4.6	4.2	5.10	6.7	3.3	6.96		
1.5	2.0	2.64	2.8	2.8	3.60	3.4	3.2	4.08	4.9	3.1	5.46	7.0	2.4	7.32				
1/8 or 1/4	CAIA 100	1.3	3.9	1.80	2.1	7.4	2.40	3.0	6.1	3.12	3.9	9.4	3.60	5.3	10.2	4.68	460 690 740 940 970	1.8 2.0 2.0 2.1 2.3
		1.4	3.0	1.98	2.4	5.3	2.70	3.1	5.3	3.24	4.2	7.2	4.02	5.6	8.3	5.04		
		1.5	2.3	2.10	2.5	4.4	2.82	3.2	4.5	3.42	4.6	5.3	4.38	6.0	6.6	5.34		
		1.7	1.8	2.28	2.7	3.7	3.00	3.4	3.8	3.54	4.9	3.8	4.80	6.3	5.1	5.88		
		1.8	1.3	2.46	2.8	3.1	3.12	3.5	3.2	3.72								
		2.0	1.0	2.64	3.0	2.6	3.30	3.9	1.8	4.08								
1/8 or 1/4	CAIA 150	0.9	8.2	1.20	1.4	14.4	1.62	2.1	13.5	2.16	2.7	19.1	2.52	4.6	16.1	4.14	710 810 890 970 970	2.1 2.4 2.6 2.7 3.2
		1.0	6.8	1.38	1.7	11.9	1.92	2.4	11.4	2.52	3.0	17.1	2.76	4.9	13.8	4.56		
		1.1	5.5	1.62	2.0	9.5	2.22	2.7	9.2	2.82	3.2	15.1	3.12	5.3	11.5	4.98		
		1.3	4.1	1.80	2.1	8.3	2.40	3.0	7.1	3.18	3.5	13.1	3.42	5.6	9.3	5.40		
		2.2	2.9	2.04	2.2	7.1	2.58	3.2	5.0	3.54	4.2	8.1	4.32	6.0	7.3	5.82		
		2.4	6.1	2.76	3.4	4.0	3.78	4.0	3.78	4.6	5.9	4.74	6.3	5.6	6.24			
2.5	5.1	2.94	3.5	3.3	3.96	3.5	3.3	3.96	4.9	4.0	5.16	6.7	4.3	6.72				
1/8 or 1/4	CAIA 200	1.0	9.0	1.50	2.0	10.4	2.46	2.4	11.6	2.88	3.1	15.6	3.36	4.2	17.1	4.38	170 200 220 280 330	3.0 3.7 4.0 4.2 4.8
		1.1	7.8	1.80	2.1	9.3	2.70	2.5	10.4	3.06	3.2	14.6	3.54	4.6	15.0	4.80		
		1.3	6.6	1.92	2.2	8.2	2.88	2.7	9.4	3.24	3.4	13.7	3.72	4.9	12.8	5.22		
		1.4	5.2	2.16	2.5	6.1	3.30	3.0	7.3	3.66	3.8	10.8	4.26	5.3	11.0	5.64		
		1.7	3.1	2.64	2.8	4.3	3.72	3.2	5.5	4.08	4.2	8.5	4.92	5.6	9.4	6.18		
		2.0	2.0	3.00	3.1	3.0	4.14	3.5	4.1	4.50	4.9	5.2	5.88	6.3	7.2	7.14		
2.2	1.1	3.36	3.4	2.0	4.50	3.8	2.9	4.86	6.0	2.3	7.20	7.0	6.1	8.04				
1/8 or 1/4	CAIA 250	1.1	11.2	3.24	2.1	18.0	4.47	2.7	19.6	5.58	3.5	27.0	6.72	4.6	33.0	8.22	200 330 400 460 480	3.0 3.2 3.4 3.5 4.0
		1.3	8.5	3.60	2.2	15.8	5.04	2.8	17.3	5.88	3.7	25.0	6.96	4.9	28.0	8.94		
		1.4	6.5	3.90	2.4	13.6	5.34	3.0	15.2	6.18	3.8	23.0	7.26	5.3	24.0	9.66		
		1.5	5.0	4.26	2.5	11.6	5.70	3.1	13.2	6.54	3.9	21.0	7.56	5.6	19.7	10.4		
		1.7	3.8	4.62				3.2	11.4	6.84	4.1	18.9	7.92	6.0	15.7	11.2		
1.5									4.2	17.0	8.22	6.3	12.4	12.0				
1/8 or 1/4	CAIA 300	0.9	27.0	1.98	1.8	38.0	3.30	2.4	39.0	4.02	3.2	58.0	4.56	4.6	59.0	6.36	300 410 430 480 510	3.4 3.5 3.7 3.8 4.4
		1.0	20.0	2.28	2.1	28.0	3.96	2.7	30.0	4.62	3.5	47.0	5.22	5.3	40.0	7.92		
		1.1	15.9	2.70	2.2	24.0	4.26	3.0	24.0	5.22	3.8	38.0	5.82	5.6	32.0	8.70		
		1.3	12.5	2.88	2.4	21.0	4.56	3.2	17.8	5.88	3.9	34.0	6.18	6.0	26.0	9.48		
		1.4	10.2	3.36	2.5	17.8	4.92	3.4	15.1	6.18	4.2	27.0	6.78	6.3	20.0	10.3		
		1.5	7.6	3.72	2.7	15.1	5.22	3.5	12.9	6.54	4.6	20.0	7.56	6.7	15.9	11.1		
1.5						3.7	10.6	6.84	4.9	14.8	8.40	7.0	12.7	11.9				
1/8 or 1/4	CAIA 350	1.0	17.0	1.38	2.0	24.0	2.64	2.4	28.0	3.06	3.4	38.0	4.32	3.9	65.0	4.50	150 170 220 280 350	2.4 3.0 3.4 3.6 4.0
		1.1	11.0	1.62	2.1	18.9	3.00	2.5	23.0	3.54	3.5	33.0	4.80	4.2	53.0	5.34		
		1.3	7.6	1.98	2.2	14.4	3.36	2.7	18.9	3.96	3.7	28.0	5.34	4.6	40.0	6.48		
		2.4	3.2	2.40	2.4	10.6	3.78	2.8	15.1	4.44	3.8	23.0	5.82	4.9	30.0	7.62		
		2.5			2.5	7.2	4.26	3.0	11.7	4.74	4.2	19.7	6.30	5.3	21.0	8.94		
									4.2	13.1	7.20	5.6	13.8	10.4				
									4.6	7.2	8.28	6.3	3.2	13.5				
1/8 or 1/4	CAIA 400	1.0	29.0	5.40	1.8	56.0	7.02	2.1	100	7.14	3.0	126	8.40	4.1	140	10.9	250 430 460 530 580	3.4 3.8 4.3 4.6 5.2
		1.1	18.9	6.48	2.0	40.0	7.98	2.2	79.0	7.98	3.1	110	9.06	4.2	125	11.6		
								2.4	62.0	8.82	3.2	95.0	9.78	4.6	89.0	13.5		
								2.5	48.0	9.72	3.4	78.0	11.0	4.9	58.0	15.9		
								2.7	36.0	10.6	3.5	62.0	11.6	5.3	34.0	18.3		
											3.7	48.0	12.6	5.6	16.7	20.4		
									3.8	37.0	13.5							

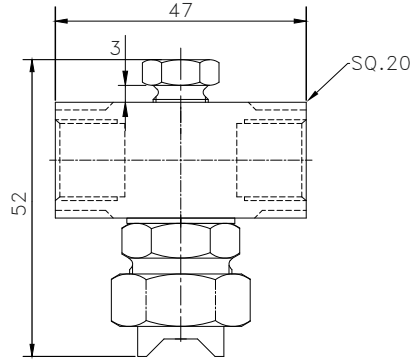
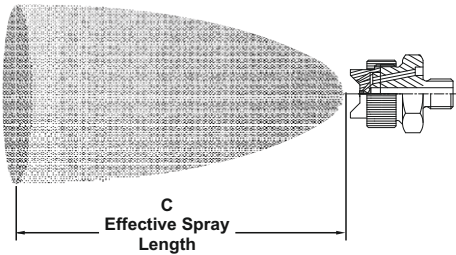
Standard Materials: Nickel-plated Brass, 303 Stainless Steel and 316 Stainless Steel.



# CAEA Series Flat External Air Atomizing Spray Nozzles

## DESIGN / SPRAY CHARACTERISTICS

- External mix: allows spraying of viscous materials
- Variable atomization
- Moderate spray angle (range 60°- 90°)
- Precise metering of the liquid flow rate



## Flow Rates and Dimensions

Siphon-fed, External Mix, Flat Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Orifice size & water flow		Water Pressure [kg/cm <sup>2</sup> ]									
		Pressure 0.2 Bar	Pressure 0.4 Bar	Pressure 0.6 Bar	Pressure 0.8 Bar	Pressure 1 Bar	Pressure 1.2 Bar	Pressure 1.4 Bar	Pressure 1.6 Bar	Pressure 1.8 Bar	Pressure 2 Bar
0.5	ML/MIN	80	100	130	150	170	190	200	210	210	210
	LPH	4.8	6	7.8	9	10.2	11.4	12	12.6	12.6	12.6
0.6	ML/MIN	160	200	240	260	300	320	340	360	380	400
	LPH	9.6	12	14.4	15.6	18	19.2	20.4	21.6	22.8	24
0.7	ML/MIN	170	220	250	300	320	340	360	400	420	440
	LPH	10.2	13.2	15	18	19.2	20.4	21.6	24	25.2	26.4
0.8	ML/MIN	260	300	360	400	440	480	510	540	580	610
	LPH	15.6	18	21.6	24	26.4	28.8	30.6	32.4	34.8	36.6
0.9	ML/MIN	280	320	380	420	470	500	540	580	600	640
	LPH	16.8	19.2	22.8	25.2	28.2	30	32.4	34.8	36	38.4
1	ML/MIN	340	420	500	560	620	680	720	740	760	780
	LPH	20.4	25.2	30	33.6	37.2	40.8	43.2	44.4	45.6	46.8
1.1	ML/MIN										
	LPH										
1.2	ML/MIN	440	540	640	760	840	900	990	1040	1080	1100
	LPH	26.4	32.4	38.4	45.6	50.4	54	59.4	62.4	64.8	66
1.3	ML/MIN	740	760	880	1000	1100	1200	1300	1380	1200	1260
	LPH	44.4	45.6	52.8	60	66	72	78	82.8	72	75.6
1.4	ML/MIN	760	880	940	1100	1200	1300	1400	1500	1560	1600
	LPH	45.6	52.89	56.4	66	72	78	84	90	93.6	96
1.5	ML/MIN	800	1000	1200	1300	1440	1580	1660	1800	1900	1980
	LPH	48	60	72	78	86.4	94.8	99.6	108	114	118.8

Standard Materials: Nickel-plated Brass, 303 Stainless Steel and 316 Stainless Steel.



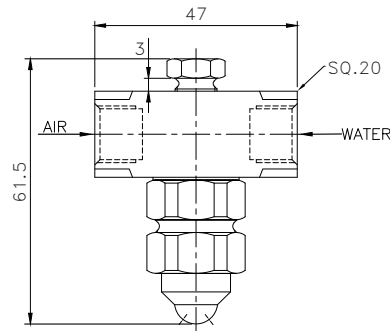
# CAEA Series Flat External Air Atomizing Spray Nozzles



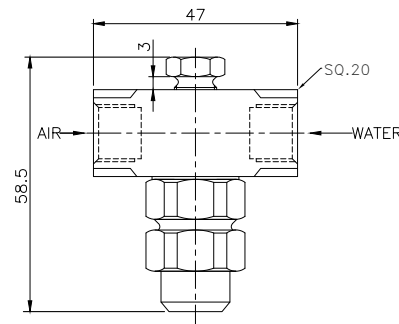
Pipe Size	Model No.	0.7 Bar Liquid			1.5 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions											
		Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	"C" Effective Spray Length(mm)	Max. Spray Length (m)										
1/8 or 1/4	CAEA 350	0.6	13	5.46	16	6.12	1.4	25	9.36	2.1	12.6	37	12.6	3.2	52	17.1	480	3.8										
		0.7		6.12															1.1	7.80	2.1	9.36	2.8	15.6	4.2	21.6	560	4.3
		1.1		7.80															1.8	11.0	2.5	14.1	3.5	18.6	5.3	25.8	660	4.6
1/8 or 1/4	CAEA 400	1.4	13	9.36	16	6.12	1.4	25	9.36	2.1	8.34	37	10.7	3.2	52	12.7	250	1.7										
		1.4		6.12															1.4	8.34	2.1	9.36	3.5	13.6	4.2	15.3	250	2.7
		1.8		6.96															1.8	8.34	2.1	10.7	4.2	16.0	4.9	18.8	280	3.0
1/8 or 1/4	CAEA 450	2.1	18	9.36	22	6.12	1.1	33	7.80	1.8	11.0	48	14.1	3.5	68	18.6	510	3.5										
		2.8		7.80															1.4	11.0	2.5	14.1	3.9	19.8	6.0	28.5	580	4.3
		3.5		9.36															2.1	12.6	2.8	15.6	4.2	21.6	6.7	31.5	610	4.9
1/8 or 1/4	CAEA 500	1.4	18	11.0	22	6.12	1.1	33	7.80	1.8	11.0	48	14.1	3.5	68	18.6	510	3.5										
		1.8		6.12															1.4	8.34	2.1	9.36	3.5	13.6	4.2	15.3	580	4.3
		2.1		6.96															1.8	8.34	2.1	10.7	4.2	16.0	4.9	18.8	610	4.9
1/8 or 1/4	CAEA 550	2.8	36	11.7	45	6.12	1.1	68	7.80	1.8	11.0	100	17.1	5.3	141	25.8	760	3.0										
		3.5		7.80															1.4	12.6	2.1	15.6	4.9	24.3	6.7	31.5	810	4.0
		1.1		9.36															2.1	14.1	3.2	17.1	5.9	27.3	7.0	33.0	790	4.3
1/8 or 1/4	CAEA 600	1.8	36	12.6	45	6.12	1.1	68	7.80	1.8	11.0	100	17.1	5.3	141	25.8	760	3.0										
		2.1		6.12															1.4	8.34	2.1	9.36	3.5	13.6	4.2	15.3	840	4.3
		2.5		6.96															1.8	8.34	2.1	10.7	4.2	16.0	4.9	18.8	880	4.9
1/8 or 1/4	CAEA 650	2.8	36	13.6	45	6.12	1.1	68	7.80	1.8	11.0	100	17.1	5.3	141	25.8	760	3.0										
		3.5		6.12															1.4	8.34	2.1	9.36	3.5	13.6	4.2	15.3	840	4.3
		1.4		6.96															1.8	8.34	2.1	10.7	4.2	16.0	4.9	18.8	880	4.9
1/8 or 1/4	CAEA 700	1.4	64	13.6	78	6.12	1.1	119	7.80	1.8	11.0	175	17.1	5.3	141	25.8	760	3.0										
		1.8		6.12															1.4	8.34	2.1	9.36	3.5	13.6	4.2	15.3	840	4.3
		2.1		6.96															1.8	8.34	2.1	10.7	4.2	16.0	4.9	18.8	880	4.9
1/8 or 1/4	CAEA 750	2.1	102	13.6	125	6.12	1.1	192	7.80	1.8	11.0	280	17.1	5.3	141	25.8	760	3.0										
		2.5		6.12															1.4	8.34	2.1	9.36	3.5	13.6	4.2	15.3	840	4.3
		2.8		6.96															1.8	8.34	2.1	10.7	4.2	16.0	4.9	18.8	880	4.9

Standard Materials: Nickel-plated Brass, 303 Stainless Steel and 316 Stainless Steel.

# DAIA Series Full Cone Internal Air Atomizing Spray Nozzles



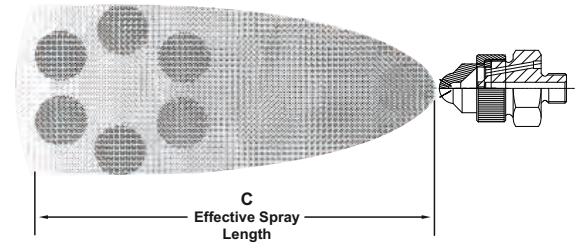
Full Cone spray pattern ( range 45° to 120° )



Full Cone spray pattern ( range 15° to 30° )

## DESIGN / SPRAY CHARACTERISTICS

- Internal Mix
- Very fine atomization
- Full Cone spray pattern ( range 15° to 120° )
- Moderate forward spray projection



## Flow Rates and Dimensions

Pressure-fed, Internal Mix, Wide Angle Round Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

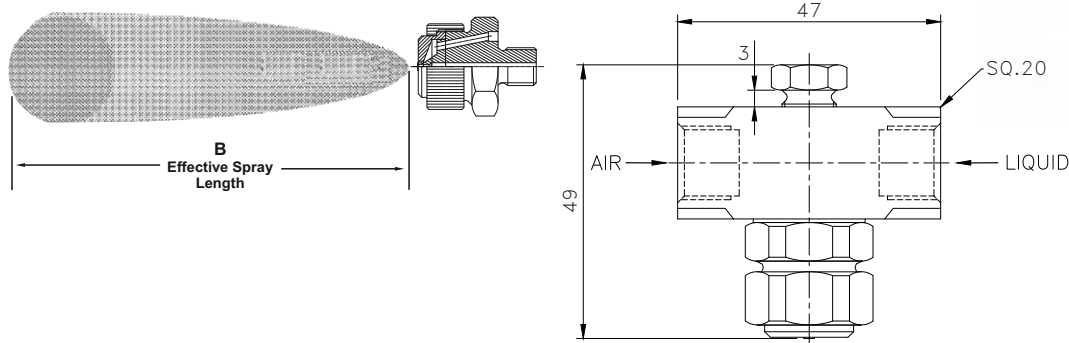
Pipe Size	Model No.	0.7 Bar Liquid			1.5 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions	
		Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	Air (bar)	l/h	Nm <sup>3</sup> /h	"C" Effective Spray Length(mm)	Max. Spray Length (m)
1/8 or 1/4	DAIA 050	0.6	5.3	0.60	1.1	8.1	0.79	1.5	8.1	0.92	2.4	8.9	1.24	3.1	10.5	1.44	230 240 250 260 300	1.5 1.8 2.1 2.7 4.0
		0.7	4.3	0.72	1.3	7.0	0.88	1.8	6.6	1.09	2.7	8.1	1.40	3.4	9.7	1.68		
		0.9	3.0	0.84	1.4	6.4	0.94	2.1	4.9	1.32	3.0	6.4	1.66	3.9	7.8	2.16		
		1.0	1.7	1.02	1.5	5.5	1.01	2.4	3.2	1.68	3.2	4.9	1.92	4.2	6.1	2.52		
					1.7	4.5	1.16				3.4	4.2	2.13	4.6	4.4	2.82		
1/8 or 1/4	DAIA 100	0.9	7.0	3.00	1.7	13.2	4.08	2.0	18.5	4.08	2.8	25.0	5.04	3.7	31.0	5.76	310 330 330 340 370	1.8 2.4 3.2 4.1 5.9
		1.0	2.1	3.72	1.8	9.8	4.74	2.1	15.1	4.56	3.0	22.0	5.52	3.8	28.0	6.30		
								2.2	11.7	5.10	3.1	18.5	6.06	3.9	26.0	6.78		
											3.2	15.1	6.54	4.1	23.0	7.32		
											3.4	12.1	7.14	4.2	20.0	7.80		
1/8 or 1/4	DAIA 150	1.1	12.3	2.40	2.2	16.3	3.72	2.7	21.0	4.14	4.2	19.3	6.00	5.6	22.0	7.80	230 240 240 250 280	2.7 4.6 5.5 7.3 9.4
		1.3	9.9	2.70	2.5	12.1	4.26	3.0	16.3	4.68	4.6	14.6	6.78	6.0	17.6	8.52		
		1.4	7.9	3.00	2.8	8.9	4.74	3.2	12.3	5.16	4.9	10.8	7.44	6.3	14.0	9.12		
		1.5	6.1	3.24	3.0	7.6	4.98	3.4	10.7	5.46	5.3	8.1	8.10	6.7	11.4	9.78		
		1.7	4.9	3.48	3.1	6.4	5.22	3.5	9.3	5.64	5.6	6.2	8.76	7.0	9.1	10.4		
1/8 or 1/4	DAIA 200	0.7	24.0	1.92	1.4	43.0	2.22	2.1	33.0	3.96	2.8	52.0	3.90	3.7	63.0	4.08	360 370 370 380 390	2.1 3.2 4.1 5.0 6.8
		0.9	13.6	2.64	1.5	35.0	2.94	2.2	26.0	4.68	3.0	46.0	4.56	3.8	58.0	4.74		
		1.0	7.6	3.42	1.7	28.0	3.66	2.4	18.9	5.34	3.1	39.0	5.22	4.0	52.0	6.06		
					1.8	21.0	4.26	2.5	11.7	6.00	3.2	33.0	5.94	4.2	41.0	6.66		
											3.4	26.0	6.60	4.6	27.0	8.28		
1/8 or 1/4	DAIA 250	1.3	36.0	5.10	2.1	57.0	6.96	3.1	53.0	9.36	4.2	64.0	11.8	5.6	74.0	14.7	330 340 370 380 400	5.5 6.4 8.2 9.1 10.4
		1.5	29.0	6.12	2.4	51.0	7.80	3.2	50.0	9.78	4.9	51.0	13.8	6.0	68.0	15.6		
		1.8	23.0	7.02	2.7	45.0	8.58	3.4	47.0	10.2	5.6	40.0	15.9	6.3	62.0	16.8		
		2.0	19.7	7.50	3.0	39.0	9.42	3.5	45.0	10.6	6.0	34.0	17.1	6.7	56.0	17.7		
		2.1	16.7	7.98	3.2	33.0	10.2	3.9	38.0	11.6	6.3	28.0	18.0	7.0	51.0	18.9		
1/8 or 1/4	DAIA 300	2.3	14.0	8.52	3.5	28.0	11.1	4.6	25.5	13.8	6.7	22.0	19.2				460 470 510 530 580	5.5 6.4 7.3 7.9 9.8
		2.4	11.4	8.94	4.2	13.6	13.2	4.9	18.5	14.7	7.0	17.8	20.1					
		1.7	27.0	9.36	3.0	39.0	13.8	3.4	50.0	15.0	4.6	62.0	19.2	6.0	93.0	23.7		
		1.8	20.0	10.0	3.1	33.0	14.4	3.5	43.0	15.6	4.9	47.0	20.7	6.3	77.0	25.5		
		2.0	15.9	10.7	3.2	27.0	15.3	3.7	41.0	16.5	5.3	36.0	22.5	6.7	62.0	27.6		

Standard Materials: Nickel-plated Brass, 303 Stainless Steel and 316 Stainless Steel.

# DASA Series Full Cone Siphon Air Atomizing Spray Nozzles

## DESIGN / SPRAY CHARACTERISTICS

- Lowest flow available
- Very fine atomization
- Narrow spray angle (12° - 25°)
- Full cone pattern
- Short to moderate forward spray projection



## Flow Rates and Dimensions

Siphon-fed, External Mix, Round Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	ATOMIZING AIR		Liquid Capacity in l/h (Liters Per Hour)								Spray Dimensions at 200 mm. Siphon Height	
				Gravity Head				Siphon Height					
		Air (bar)	Nm <sup>3</sup> /h	450 mm	300 mm	150 mm	100 mm	200 mm	300 mm	600 mm	900 mm	"B" Effective Spray Length(mm)	Max. Spray Length (m)
1/8 or 1/4	DASA 050	0.7	0.66	1.5	1.3	1.1	0.9	0.7	0.5			280	1.8
		1.5	1.02	1.8	1.7	1.5	1.3	1.2	1.1	0.6		280	1.9
		3.0	1.68	2.1	1.9	1.7	1.5	1.4	1.3	1.1	0.8	300	2.3
		4.0	2.16	2.2	2.0	1.8	1.6	1.5	1.4	1.2	0.9	360	2.6
1/8 or 1/4	DASA 150	0.7	0.78	24	2.1	1.7	1.5	1.2	0.8			300	2.1
		1.5	1.20	2.8	2.6	2.4	2.1	1.9	1.6	0.9		330	2.3
		3.0	1.92	3.4	3.1	2.9	2.8	2.6	2.4	1.7	1.1	380	2.6
		4.0	2.46	3.7	3.4	3.3	3.1	2.9	2.7	2.1	1.5	430	3.0
1/8 or 1/4	DASA 200	0.7	1.38	2.5	2.3	2.0	1.6	1.4	1.1			300	2.4
		1.5	2.16	2.9	2.8	2.5	2.2	2.0	1.7	0.9		330	2.7
		3.0	3.48	3.4	3.3	3.2	2.9	2.8	2.5	1.9	1.2	380	3.4
		4.0	4.44	3.7	3.6	3.5	3.4	3.3	3.0	2.5	2.0	430	4.0
1/8 or 1/4	DASA 250	0.7	1.14	4.5	4.0	3.4	2.1	1.8	1.4			380	3.0
		1.5	1.86	5.3	4.9	4.4	3.5	2.9	2.7	1.8		410	3.4
		3.0	3.00	6.0	5.6	5.0	4.4	4.0	3.4	2.4	1.2	460	4.0
		4.0	3.90	5.7	5.4	5.0	4.2	3.9	3.5	2.8	1.9	510	4.6
1/8 or 1/4	DASA 400	1.5	3.48	22	19.9	16.3	12.3	10.5	8.3	2.8		460	3.7
		3.0	5.28	25	23	19.5	16.7	14.2	11.5	6.4	2.8	510	4.3
		4.0	6.66	26	24	21	18.4	15.7	12.9	7.9	4.5	530	4.9
		5.6	8.82	26	24	22	19.7	17	14.6	9.8	6.1	580	5.5
1/8 or 1/4	DASA 450	2.0	8.64				27	22	16.8			510	6.7
		3.0	11.4				30	26	21			530	7.0
		4.0	14.4	44	43	40	31	28	23	11.0		580	7.6
		5.6	18.9		42	39	31	28	24	16.7	8.3	630	8.2

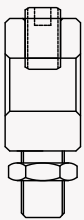
Standard Materials: Nickel-plated Brass, 303 Stainless Steel and 316 Stainless Steel.

# Tablet Coating Spray Nozzles

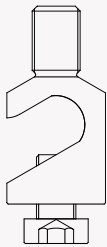


- RC Series
- RB Series
- RCS Series
- RDS Series

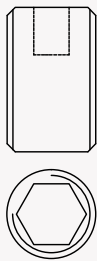
Optional Accessories available for R series coating spray nozzles



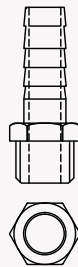
MOUNTING STUD  
For round rod  
(ACC405)



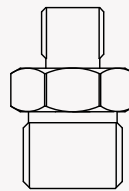
MOUNTING STUD  
For Hex rod  
(ACC406)



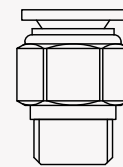
PLUG  
(ACC006)



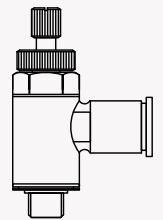
BARB CONNECTOR  
(ACC005)



NIPPLE  
(ACC303)



PUSH-IN  
CONNECTOR  
(ACC304)



FLOW REGULATOR  
(ACC305)

## Tablet Coating Process

**It is the process to apply coating material on external surface of tablets to enhance its efficiency and properties.**

Today many solid pharmaceutical dosage mediums are produced with coatings, either on the external surface of tablets, or on materials dispensed within gelatine capsules.

Coating serves a number of purposes right from protecting stomach lining from aggressive drugs to protecting the tablet from stomach acids. It also helps in maintaining the shape of the tablet and thus can offer a delayed release of the medication.

But for good results, a better coating medium is required. And the same can be fulfilled by Tablet coating spray nozzles.

### General purposes of tablet coating

- Covers unpleasant taste, colour and odour
- Chemical and physical protection from environment
- To control the release of drug with enteric coating
- It protects drug from gastric surrounding of stomach
- Provide way to identify the drug and improves appearance

### Results of bad coating

- Sticking or picking
- Roughness
- Twinning
- Peeling
- Cracking



Example of Bad Tablet Coating

## Granulation With RMG / HSG

Also known as wet granulation process. material is loaded into bowl having agitator and chopper and mixed rigorously then binder material is sprayed from top and granules are formed.

Good quality granules are foundation for good quality tablet.

Various liquid blenders are used for wet granulation.

Spraying binder over bulk material could reduce wet granulation cycle time and increase productivity.





## Fluid bed process consists of following applications :

### 1. Drying

Process of extracting moisture from solid bulk material by making it fluidized with high flow blow of air, so moisture is removed homogeneously and all over surface of every single particle.

### 2. Granulation/ Agglomeration

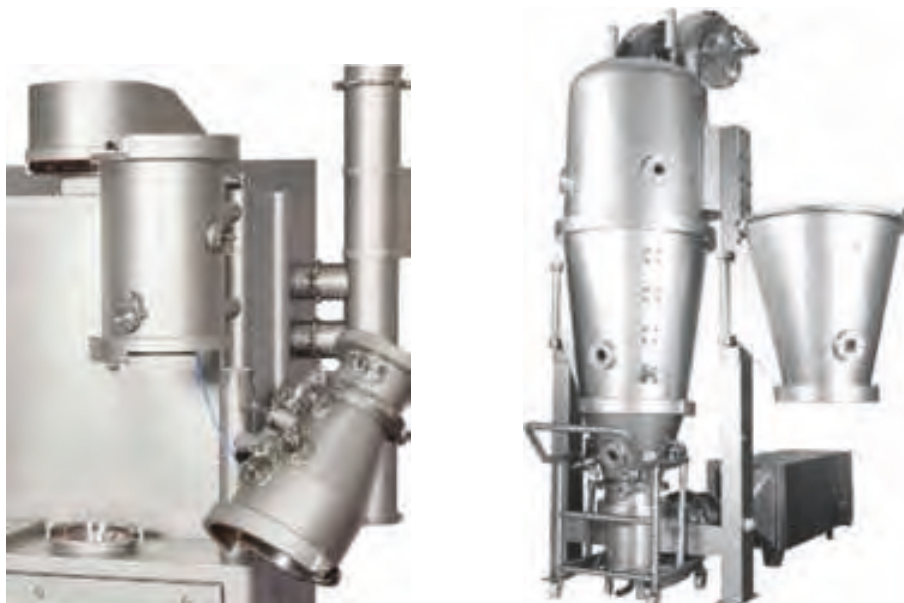
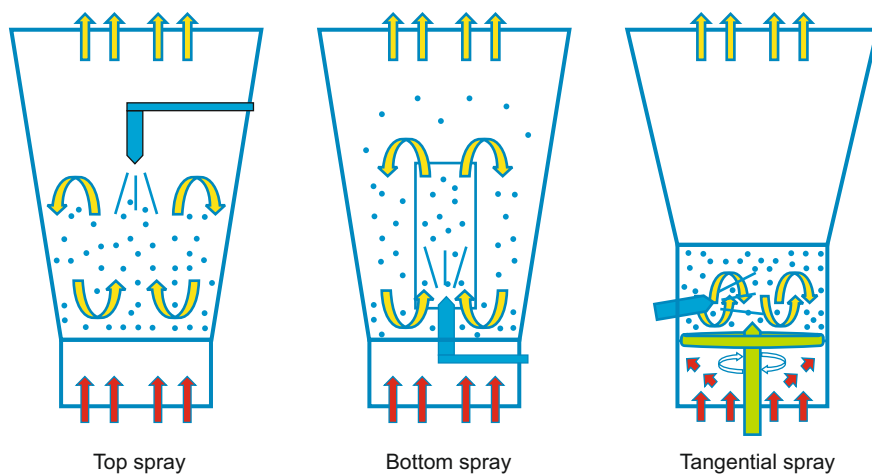
Powder particles of bulk material bonded by liquid fine spray. Liquid could be water or an organic solvent and the powder material will be mixed together. Agglomerate has less strength of particle bond.

### 3. Coating

Fluidized particles are coated with spray of coating material which enhances. coating film must be very uniform over the particle surface.

### 4. Tangential Coating

Centrifugal motion is used for making spherical pellets, at the same time particles are bonded by binder liquid. layering also can be done in same way.





# RC Series Tablet Coating Spray Nozzles



**Liquid Orifice Range: 0.5 to 1.8 MM**



Spraytech's popular RC Series tablet coating spray nozzle are specially designed to meet GMP requirements where surface texture plays very important role.

The unique Air Cap design makes it Anti Bearding and keeps coating process shutdown free, thus higher production ratio and quality requirements are achieved.

RC series spray nozzle is a compact device incorporating of independent controls for Liquid, Atomizing Air and Fan Air for fine tuning of spray capacity, droplet size and spray patterns. It is available in wide variety of spray setups that give a complete selection of flow rate and flat spray patterns.

RC series spray nozzles are externally mix nozzles. This means the liquid and air are mixed outside of air cap to produce complete atomized spray.

The liquid atomization is controlled by varying atomizing air and fan air pressures without changing liquid flow rates. The flat spray pattern is controlled by varying the fan air pressure in conjunction with the atomizing air. This is effective for high viscosity liquids, coatings and suspensions.

Tablet coating spray nozzle features a cylinder for controlled "on-off" operation. The cylinder controls a liquid clean-out/ Shut-off needle which also cleans the liquid orifice.

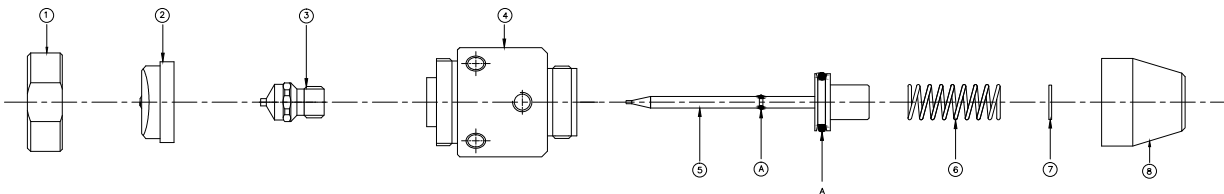
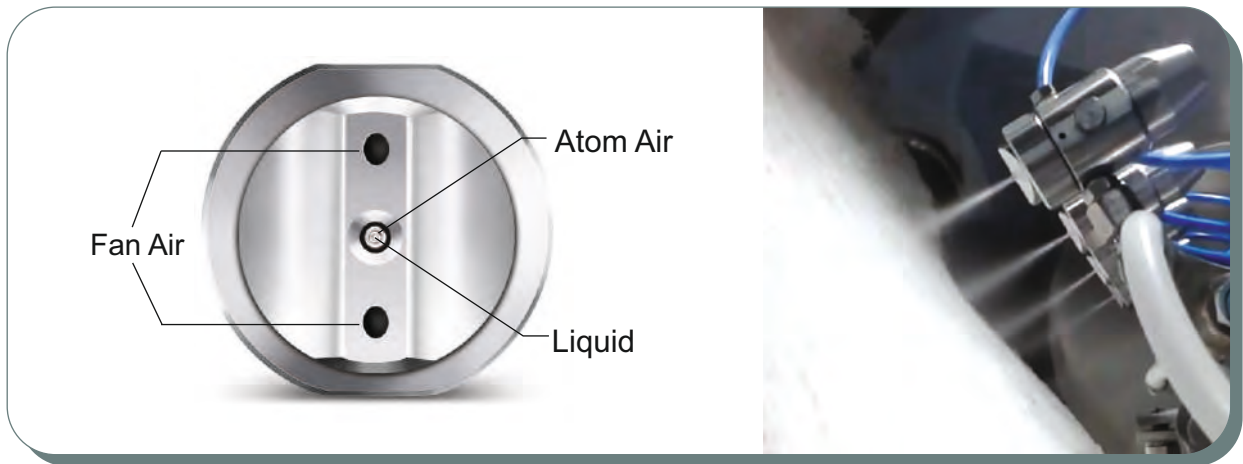
The RC Series coating Spray Nozzle are a compact, precision nozzles. Incorporating independent controls of liquid atomizing air and fan air for fine tuning of spray capacity droplet size and spray patterns. It is available in a wide variety of spray Set-ups that give a complete selection of flow rates and flat spray patterns.

Spray Nozzle	Type	RC
Spray Type :	Airborne	Air Atomised
Liquid orifice size Range (standard)	mm	0.8 - 1.8, (1.0)
Solution Flow Rate (typical per nozzle)	Liters/hour	6 - 30
Atomizing Air Pressure Range	bar	0.7 - 3
Spray Width Pressure Range	bar	1.0 - 4.0
Maximum Compressed Air Pressure	bar	5.5
Compressed Air Consumption (maximum @ 2.0 bar)	Nm <sup>3</sup> /hour	10.5
Seal Material (standard) check compatibility for organic use	FDA	Approved

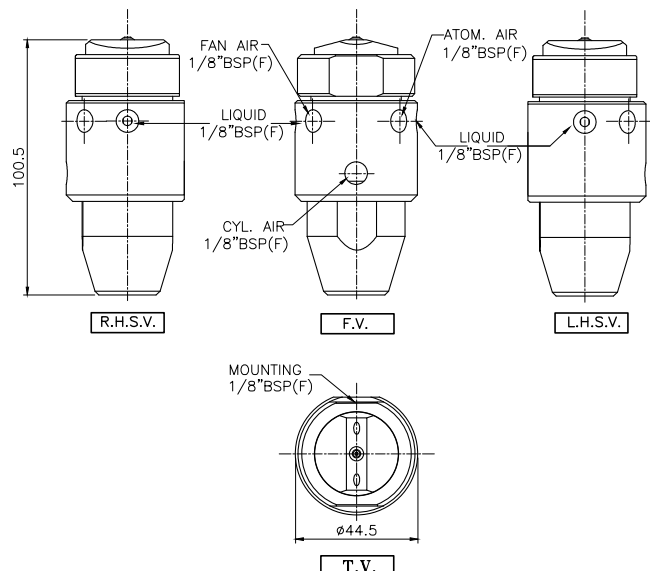
# RC Series Tablet Coating Spray Nozzles

## DESIGN FEATURES

1. GMP model
2. Complete SS316L construction
3. Separate atomizing and fan air lines for complete control.
4. Minimum part assembly for easy maintenance
5. Only 2 O-rings
6. Provides variable coverage and fine control of drop size without affecting liquid flow rates.
7. Non clogging and anti - bearding design
8. Auto shut-off & anti-drip feature
9. Self-cleaning needle design.
10. Available with and Without flow control feature



## Details of Inlet Connections



### Part Details

- |                   |                 |
|-------------------|-----------------|
| 1 Lock Nut        | 7 Strainer Disc |
| 2 Air Cap         | 8 End Cap       |
| 3 Liquid Nozzle   |                 |
| 4 Body            |                 |
| 5 Needle Assembly |                 |
| 6 Rear Spring     |                 |

# RB Series Coating Spray Nozzles



## Design Summary :

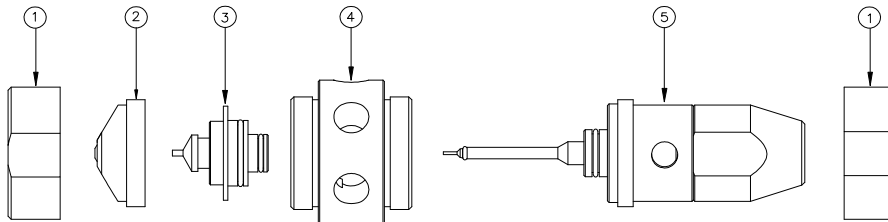
Liquid Orifice Range: 0.5 to 2.0 MM

- RB Series variable spray nozzles provide uniform spray distribution with uniform droplet sizes, even when spraying viscous fluids.
- RB series works with HVLP principle where the atomization is possible at lowest pressures.
- RB series comes with Independent inlets for Atomization air, Fan air, Cylinder air and Liquid for complete control over the spray nozzle.

## DESIGN FEATURES

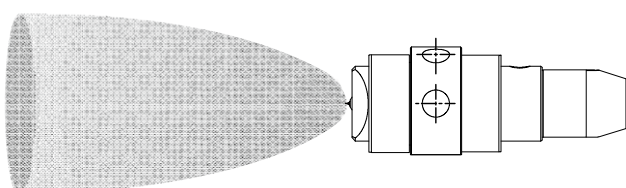
1. GMP model
2. Complete SS316L construction
3. Separate atomizing and fan air lines for complete control.
4. Provides variable coverage and fine control of drop size without affecting liquid flow rates.
5. Non clogging and anti - bearding design
6. Auto shut-off & anti-drip feature
7. Self-cleaning needle design.
8. Comes with Wide range of orifice size

- RB series is best suitable for auto coaters for large scale production.
- Additional inlet /outlet port allows for liquid re-circulation that effectively maintains the flow of viscous liquids.
- Having removable auto shut off and spring loaded needle cylinder assembly is provided for maintenance



## Part Details

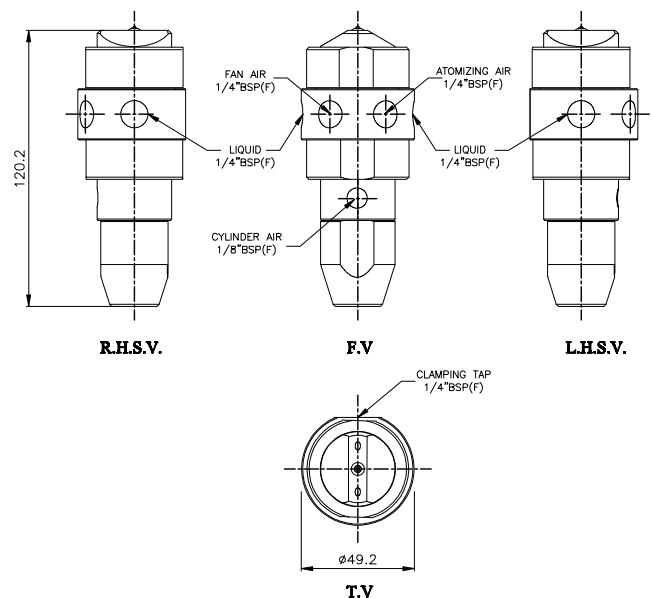
- 1 Lock Nut
- 2 Air Cap
- 3 Fluid Cap
- 4 Body
- 5 Cylinder (Needle) Assembly



**With fan air:** Flat Spray Pattern.

**Without fan air:** Round Spray Pattern.

## Details of Inlet Connections :





# RCS Series Coating Spray Nozzles



Liquid Orifice Range: 0.5 to 1.2MM

SPRAYTECH'S RCS series coating spray nozzles offers very compact design with innovative flow control feature. This feature offers the user to take the RCS coating nozzle from the lowest 20 ml to its max limit is just a spin.

RCS type coating spray nozzle is very light weight and features anti bearding air cap design which eliminates the deposition of material over the air cap and abolishes bearding over gun.

RCS comes with individual ports for liquid, Atomizing, Fan control and auto shut-off for total control. Also as it has external mixed design thus, atomized spray properties could be changed as per need with fine tuning of individual pressures of Atomizing air, Fan Air & Liquid pressure.

Innovative needle assembly provides the Auto-shut off, Anti-Drip and Auto Cleaning of liquid orifice.

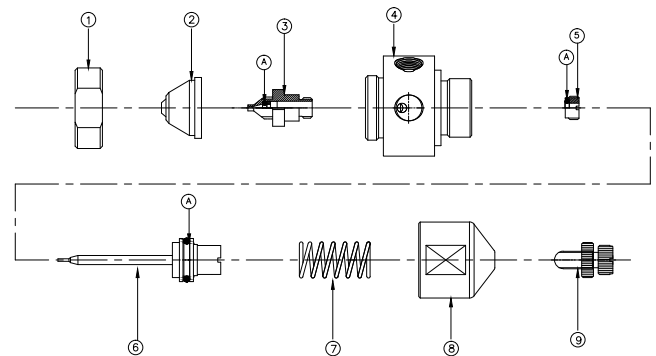
RCS type coating spray nozzle is best suitable for Lab-coater and Conventional coater.

Spray setup available with Flat Fan, and Round Pattern.

All Sealing materials are FDA Approved.

## DESIGN FEATURES

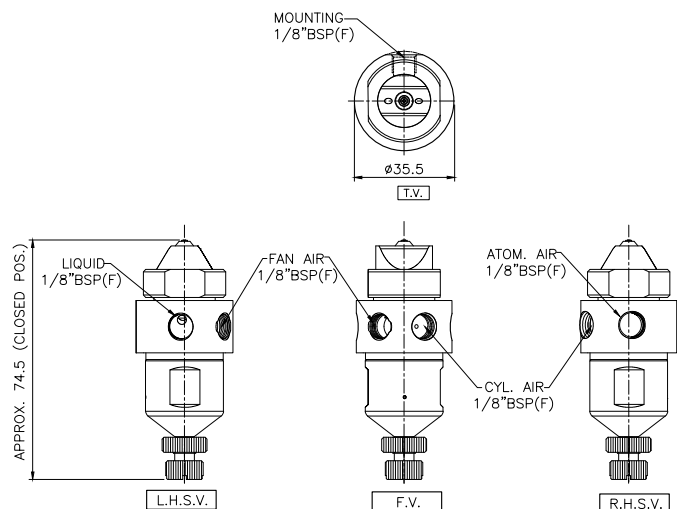
1. GMP model
2. Compact & lightweight design
3. Complete SS316L construction
4. Separate atomizing and fan air lines for complete control.
5. Minimum part assembly for easy maintenance
6. Provides variable coverage and fine control of drop size without affecting liquid flow rates.
7. Non clogging and anti - bearding design
8. Auto shut-off & anti-drip feature
9. Self-cleaning needle design.
10. Available with and Without flow control feature



## Part Details

- 1 Lock Nut (Front)
- 2 Air Cap
- 3 Liquid Nozzle
- 4 Body
- 5 Gland
- 6 Needle Assembly
- 7 Needle Spring
- 8 End Cap
- 9 Flow Control Regulator
- 10 Flow Adjustment Screw

## Details of Inlet Connections



# RCD Series Coating Spray Nozzles

Liquid Orifice Range: 0.5 to 1.8 MM

SPRAYTECH'S Latest Development, RDS series coating spray nozzles offers operation of spray using just three connections, 1 for Atomization air & Fan air combined, 1 for cylinder air and 1 for liquid. Only two air connections makes it best suitable for conventional pan coaters.

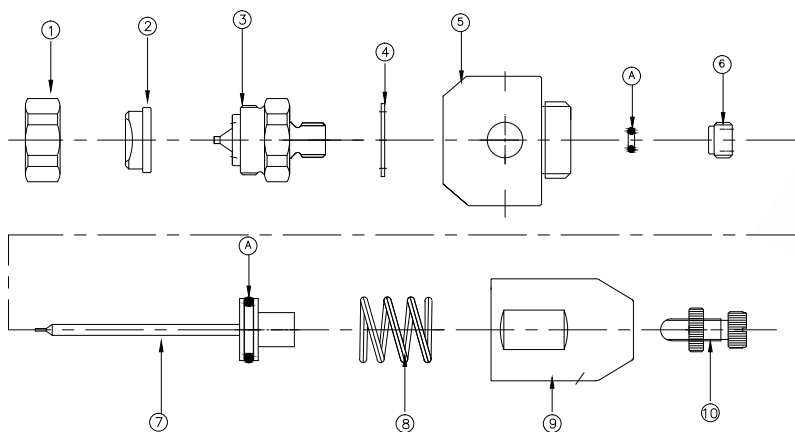
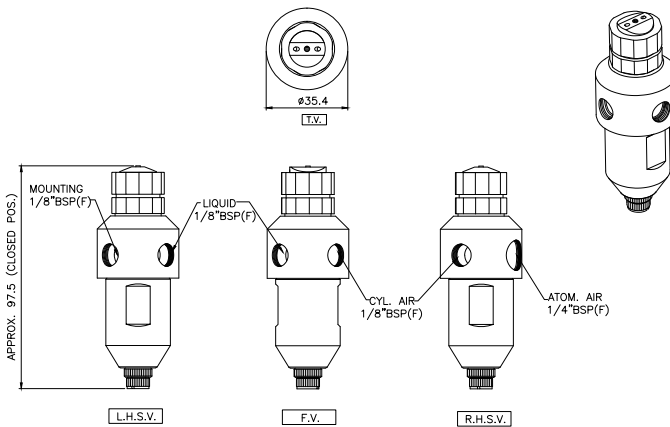
RDS offers variety of spray setups ranging from 0.5 mm to 1.8 mm.

RDS comes with Anti bearding air cap design for clog free operation and its special design needle makes it anti drip and auto shut off.

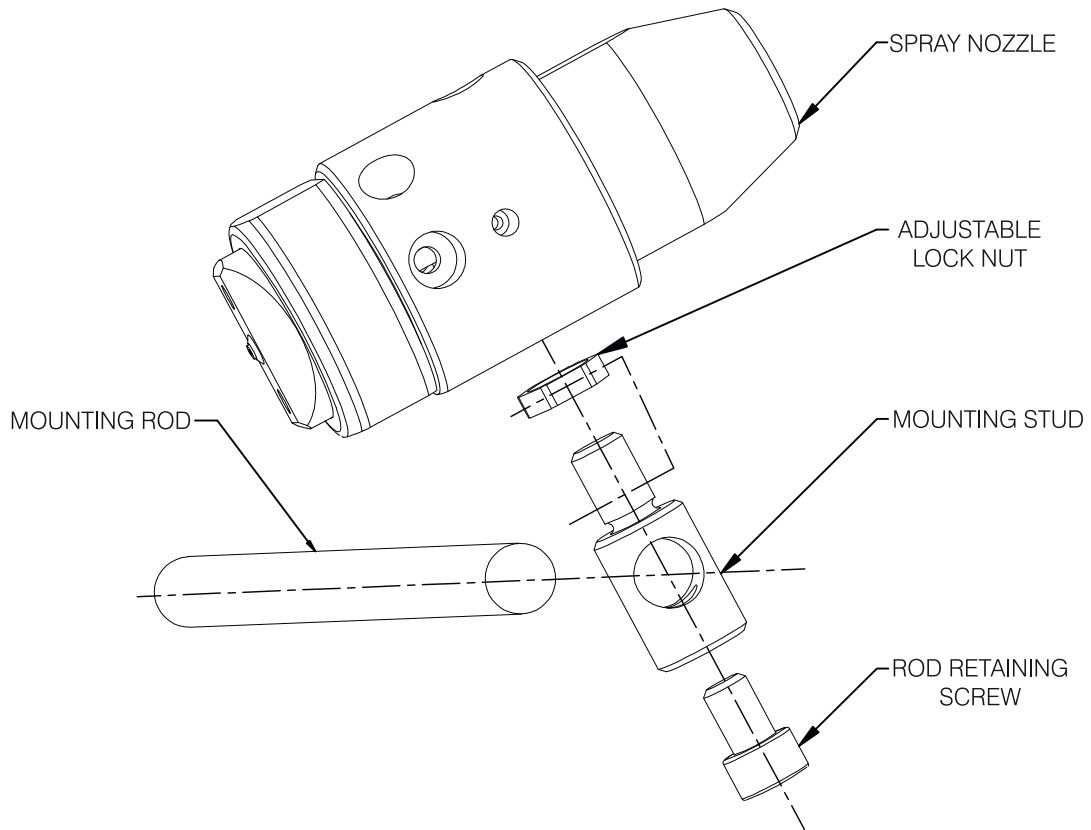
RDS comes with flow control feature to take total control over the flow rate.

## DESIGN FEATURES

1. GMP model
2. Complete SS316L construction
3. Only 3 connections
4. Minimum part assembly for easy maintenance
5. Provides variable coverage and fine control of drop size without affecting liquid flow rates.
6. Non clogging and anti - bearding design
7. Auto shut-off & anti-drip feature
8. Self-cleaning needle design.
9. Available with flow control feature

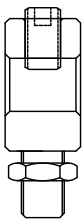


# Mounting Assembly

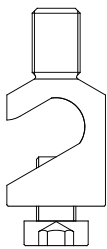


## Accessories

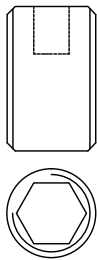
Optional Accessories available for R series coating spray nozzles



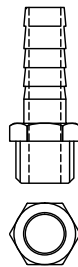
MOUNTING STUD  
For round rod  
(ACC405)



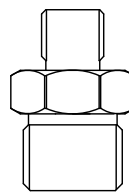
MOUNTING STUD  
For Hex rod  
(ACC406)



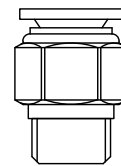
PLUG  
(ACC006)



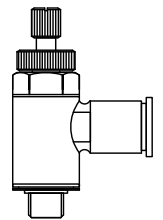
BARB CONNECTOR  
(ACC005)



NIPPLE  
(ACC303)



PUSH-IN  
CONNECTOR  
(ACC304)



FLOW REGULATOR  
(ACC305)

## TS 50

Spraytech's TS 50 is very compact spray nozzle designed specially design for Lab Scale Fluid Bed Processors. With length less than 50 mm it can be easily mounted in any lab model FBP. It is also available with wide range of spray rates with fine atomization.

### Design Features

- Compact design
- Narrow spray angle (Top down spray)
- Multiple orifice sizes for liquid nozzle
- Homogeneous spray distribution
- Minimum parts for easy maintenance
- Auto shut off feature (Available in TS 50AS)
- GMP Suitable design
- Made from SS316L and All O-rings from FDA Approved material

### Specifications

Spray pattern	: Full cone
Spray angle	: 15°-20°(Variable)
Orifice range	: 0.5 to 2.0 mm
Capacity	: 0.1 to 1.5 LPM



## TS 100

Spraytech's TS100 is a compact design Top spray granulation nozzle equipped with one spray head (single head) and is ideal for lab scale and small capacity FBP. The single head provides fine atomized cone spray pattern with adjustable spray angles. The unique air cap has air flow adjustment where the atomization and the spray angle can be fine-tuned.

Manufactured and designed considering GMP standards, TS100 is equipped with cylinder assembly which offers auto shutoff feature and needle assembly which shuts the liquid orifice to provide anti-drip function.

### Design Features

- Compact design
- Auto-shut off & Anti Drip feature
- Complete SS316L and Food grade Viton seals
- Anti-bearding air cap
- Interchangeable liquid nozzles
- Customised lance available

### Specifications

Spray pattern	: Full cone
Spray angle	: 20° - 30° (Variable)
Orifice range	: 0.5 to 2.5 mm
Capacity	: 0.05 to 2 LPM



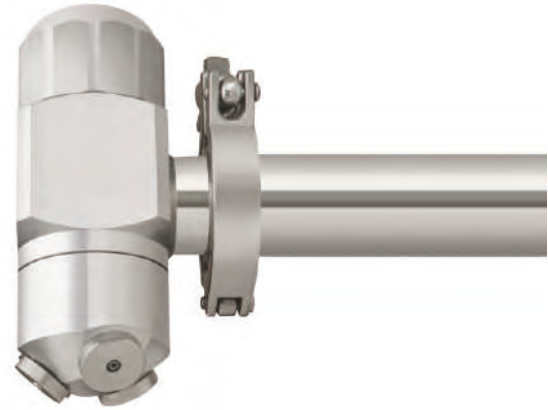


# FBP Top Spray Nozzle & Lance

## TS 300

Spraytech's TS300 is a multi-head design top spray granulation nozzle equipped with three spray head (Three head) suitable for medium capacity Fluid Bed Processors. It offers interchangeable liquid nozzle and air caps setups that works on external mix spray platform which enhances the spray quality and distribution in optimum way.

The multi-head setup provides three individual 20 degree full cone spray pattern which combines and forms a cluster of fine atomized spray. TS300 also offers cylinder assembly for auto shut-off operation.



### Design Features

- Interchangeable Liquid nozzle and air cap setups
- Auto-shut off Feature
- Wider spray angle with maximum coverage area
- Finest droplet size & Homogeneous spray distribution
- Complete SS316L and Food grade Viton seals
- Customised lance available

### Specifications

Spray pattern	: Full cone
Spray angle	: 60° - 90°
Orifice range	: 0.5 to 2.5 mm
Capacity	: 0.15 to 4 LPM



## TS 600

Spraytech's TS600 is a multi-head design top spray granulation nozzle equipped with six spray head (Referred as Six head) suitable for large capacity Fluid Bed Processors. The unique cluster head block comprises of six independent liquid nozzle and air cap setups. The six cluster head design provides higher capacity flow with homogenous spray pattern distribution.

### Design Features

- Interchangeable Liquid nozzle and air cap setups
- Auto-shut off Feature
- Wider spray angle with maximum coverage area
- Finest droplet size & Homogeneous spray distribution
- Complete SS316L and Food grade Viton seals
- customised lance available

### Specifications

Spray pattern	: Full cone(Circular type)
Spray angle	: 60° - 90°
Orifice range	: 0.5 to 2.5 mm
Capacity:	: 0.15 to 5 LPM



## WS 30

Spraytech's specially designed and customizable Fluid bed Bottom spray (Wurster coating) nozzle helps to improve the wurster coating application and also makes it possible to attain high-quality results in coating pellets and particles.

Designed for All type of Bottom Spray Coating, Allegiant spray distribution and fine droplets results in optimum quality of coating. Light weight design and easy to control the spray parameters. Minimum internal parts hence less maintenance.

### Design Features

- Optimum spray quality
- Easy to assemble and dismantle
- GMP Suitable design
- Available with various orifice sizes
- Custom made designs available
- Variable mounting height
- Compact design

### Specifications

Spray pattern	: Full cone
Spray angle	: 15° - 25° (Adjustable)
Orifice range	: 0.5 to 2.2 mm
Capacity:	: 0.1 to 1.5 LPM



## WS 50 & WS 50AS

Spraytech's specially designed and customizable Fluid bed Bottom spray (Wurster coating) nozzle helps to improve the wurster coating application and also makes it possible to attain high-quality results in coating pellets and particles.

Designed for Lab & small of Bottom Spray Coating, Applications. Allegiant spray distribution and fine droplets results in optimum quality of coating. Light weight design and easy to control the spray parameters. Minimum internal parts hence less maintenance. Also can be mounted directly on perforated sheet

### Design Features

- Optimum spray quality
- Easy to assemble and dismantle
- Auto shut off feature (Available in WS 50AS)
- Special air cap design to avoid material build-up
- GMP Suitable design
- Available with various orifices sizes
- Made from SS316L and All O-rings from FDA Approved material
- Custom made designs available
- Easy Mounting



### Specifications

Spray pattern	: Full cone
Spray angle	: 15° - 20° (Adjustable)
Orifice range	: 0.5 to 1.8 mm
Capacity:	: 0.1 to 1 LPM



## WS 200

Spraytech's specially designed and customizable WS 200 Fluid bed Bottom spray (Wurster coating) nozzle helps to improve the wurster coating application and also makes it possible to attain high-quality results in coating pellets and particles.

Suitable for all Small and Medium scale Bottom Spray Coating application. It provides homogenous spray distribution and fine droplets which results in optimum quality of coating. It is Light weight and easy to operate.

### Design Features

- Optimum spray quality
- Anti-drip spray tip
- Spray angle and atomization Adjustment
- Easy to assemble and dismantle
- Special air cap design to avoid material build-up
- GMP Suitable design
- Available with various orifices sizes
- Made from SS316L and All O-rings from FDA Approved material
- Custom made designs available

### Specifications

Spray pattern	: Full cone
Spray angle	: 15° - 20° (Adjustable)
Orifice range	: 0.5 to 2.0 mm
Capacity	: 0.1 to 1.5 LPM





## WS 300

Spraytech's WS 300 popularly known as High speed gun is specially designed for higher capacity Fluid bed Bottom spray (Wurster coating) application. Its unique design and Higher capacity helps to improve the wurster coating application and also makes it possible to attain high-quality results in coating pellets and particles in less time.

Suitable for all type of Bottom Spray Coating application with homogenous spray distribution and fine droplets that results in optimum quality of coating.

### Design Features

- High capacity spray nozzle
- Optimum spray quality
- Spray angle and atomization Adjustment
- Anti-drip spray tip
- Auto-clean needle assembly
- Special air cap design to avoid material build-up
- GMP Suitable design
- Anti-clogging lance
- Available with various orifices sizes
- Made from SS316L and All O-rings from FDA Approved material
- Custom made designs available



### Specifications

Spray pattern	: Full cone
Spray angle	: 15° -20° (Adjustable)
Orifice range	: 0.5 to 2.5 mm
Capacity	: 0.1 to 1.5 LPM

# RMG / HSG Top Spray Nozzle & Lance

## GN 400

Spraytech's RMG / HSG Top Spray Nozzles & Lance are design for Large Scale, Medium Scale and Lab Scale Rapid Mixer Granulator and High - Shear Granulator for Wet Granulation. Superior spray quality produces best in class granules from bulk. Manufactured according to GMP and available in wide range of spray rates. And external mixing spray setup enhances the spray quality and distribution in optimum way.

Spray Nozzles and special purpose lance designs available

### Design Features

- Available in 1, 3, 4 spray heads
- Available in various spray angles
- Auto-shut off feature
- Anti-drip spray heads
- Long Life Lance design
- Compact design of spray nozzle
- Homogeneous spray distribution
- Fine droplet size, best for wet granulation,
- GMP Suitable design
- Anti-clogging lance design
- Made from SS316L and All O-rings from FDA Approved material
- Custom made designs available





Spray angle range : 60° - 80°

Flow range : 10 LPM to 50 LPM

Features:

- Anti drip Spray setup
- Auto shut off
- Finest droplet Size

## Internal Mix Setup



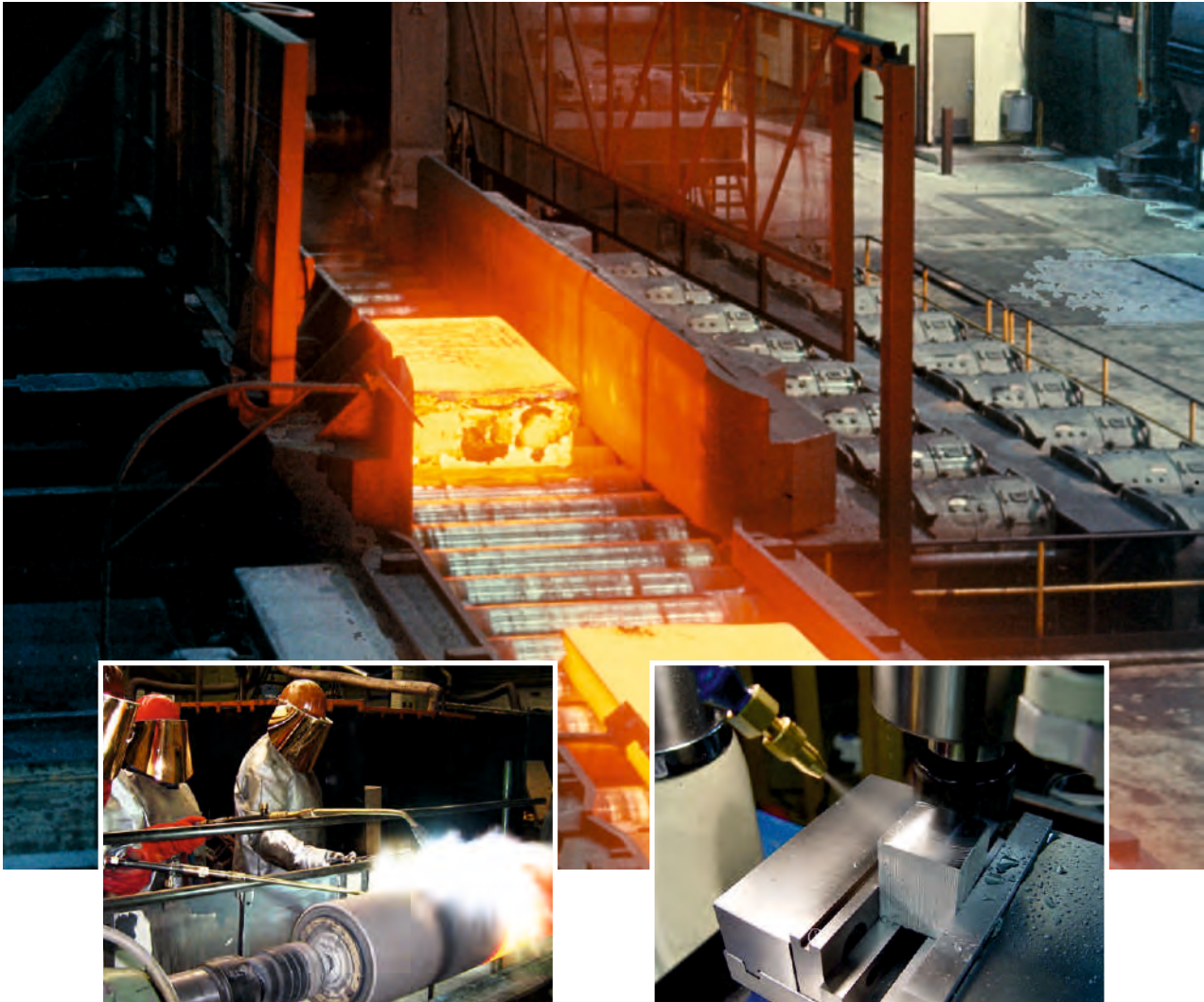
Special Design For R&D & Pilot  
RMG / HSG Equipment

Spray angle range: 20° - 90°

Flow range : 1 LPM to 8 LPM



## Steel Mill Spray Nozzles Spray Header, Lance & Engineering Systems



# Billet Caster Spray Nozzle

## 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 resistance to clogging
- Standard spray angle 45°, 65°, 80°, 90°, and other spray angle on request.

### Stainless steel

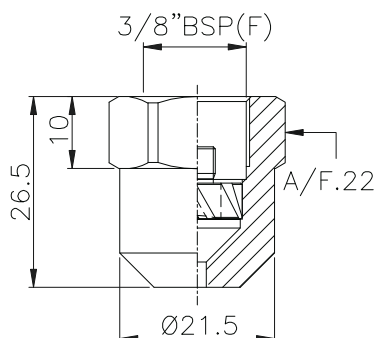


Flow Rate (l/min) @ Different Pressure Value (Bar)									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	DB 2045	45°	1.20	1.69	2.00	2.39	2.67	2.93	3.16
2	DB 2545	45°	1.99	2.11	2.50	2.98	3.34	3.65	3.95
3	DB 3045	45°	1.80	2.50	3.00	3.60	4.00	4.40	4.75
4	DB 3545	45°	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	16.00	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



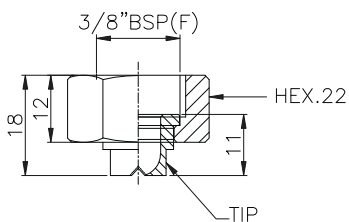
Flow Rate (l/min) @ Different Pressure Value (Bar)									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	DB 1580	80°	0.90	1.25	1.50	1.80	2.00	2.20	2.35
2	DB 2080	80°	1.20	1.70	2.00	2.40	2.65	2.90	3.15
3	DB 3080	80°	1.80	2.50	3.00	3.60	4.00	4.40	4.75
4	DB 3580	80°	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	10.70	11.70	12.65

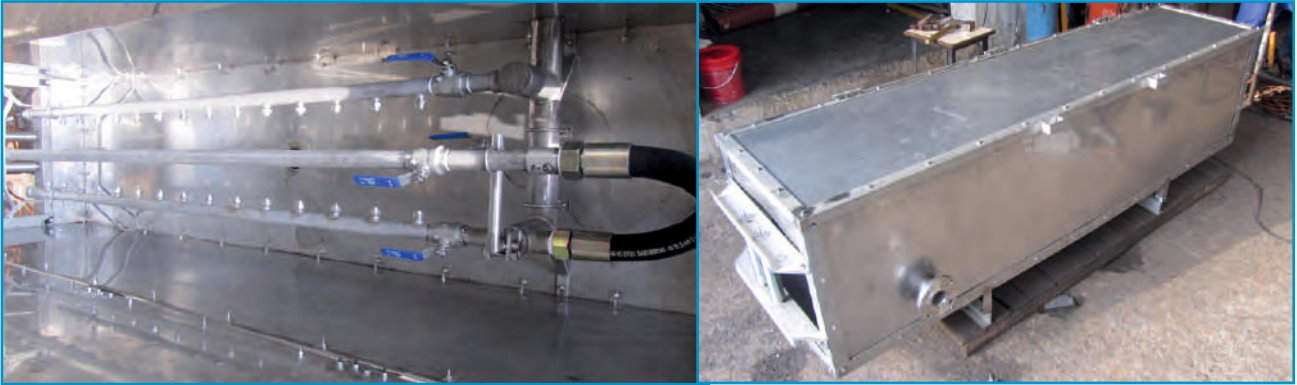
These part numbers are easy to use and identify, example:

Brass or Stainless steel 3/8" Female - CC 2065 = 2.00 litre/min @ 2.8 bar with a 65° angle

# Spray Nozzles for Secondary Cooling in Continuous Casting Machines

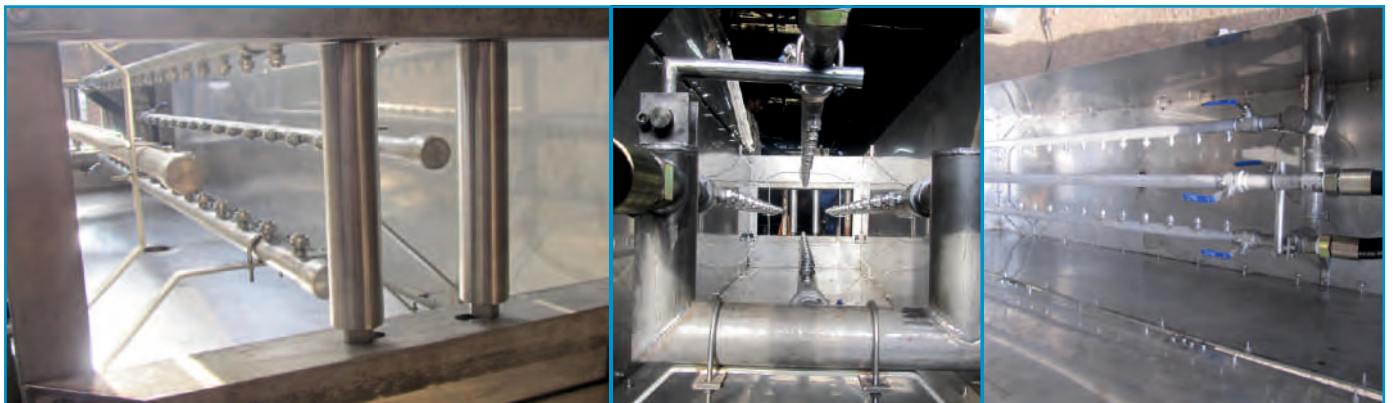
Type of Nozzles		Spray pattern 	Spray angle	V water [l/min] min/max			Turn down ratio (1 bar/7 bar water)	Material		End Connection	Applications	Features
				at p [bar]				Brass	nickle SS 304 / 316			
				1.0	2.0	7.0						
	Full cone circular pattern		45° 60° 90° 120°	min. max.	0.76 7.58	1.0 10.0	1.65 16.51	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
	Full cone circular pattern		45° 60° 90° 120°	min. max.	0.76 7.58	1.0 10.0	1.65 16.51	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
	Full cone square pattern		60° 75° 85° 115°	min. max.	0.95 7.58	1.25 10.0	2.06 16.51	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
	Oval Full cone		90°	min. max.	3.37 5.1	4.45 6.85	7.34 11.31	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
	Vanless Full cone circular		60° 90° 120°	min. max.	0.71 11.31	1.0 16.0	1.87 29.9	1:2.6	✓ ✓	1/4 BSPT/NPT 3/8 BSPT/NPT	Billet, Bloom (Rounds):	■ Vanless full cone nonclogging type

# Spray Header & System Fabrication



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.

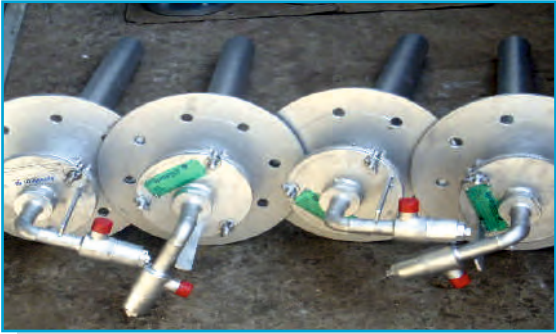




# Spray Headers Fabrication

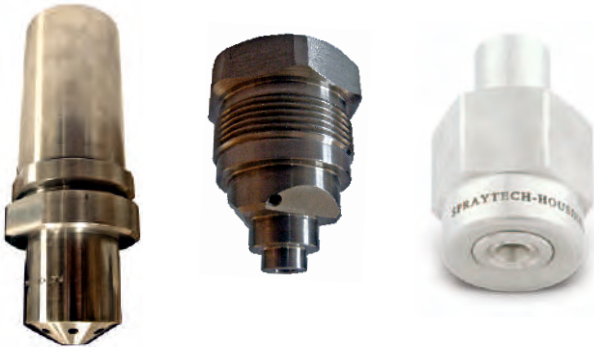


# Spray Lance Fabrication



# Special Purpose Spray Nozzle

## 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)

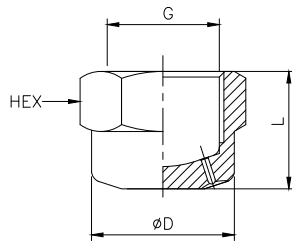
## Spillback Spray Nozzle



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



### 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.

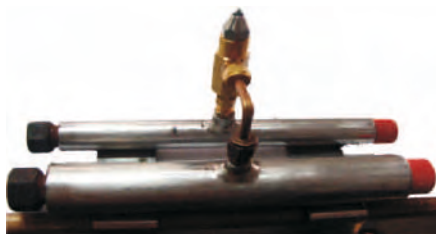
Nozzle Conn. (G)	D	L	Hex
3/4"	31.5	25.4	32
1"	40.5	29.4	41
1-1/4"	45.5	31	46

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

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



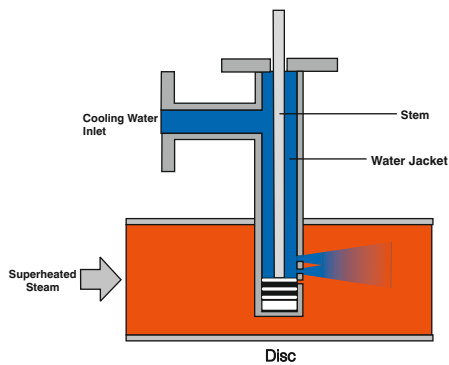
Water Flow Litres / hour	Water Pressure Bar	Air Pressure Bar	Air Rate Litres / sec (cfm)	Droplet Size Range micron
<b>Nozzle size 03 5H</b>	<b>0.4-8 lts/hr</b>			
3	1.0	4.0	0.8 (1.7)	1 to 5
<b>Nozzle size 05 2H</b>	<b>1-20 lts/hr</b>			
8	1.0	5.0	1.84 (3.9)	3 to 8
<b>Nozzle size 08 6H</b>	<b>2-26 lts/hr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



# Desuperheaters

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.

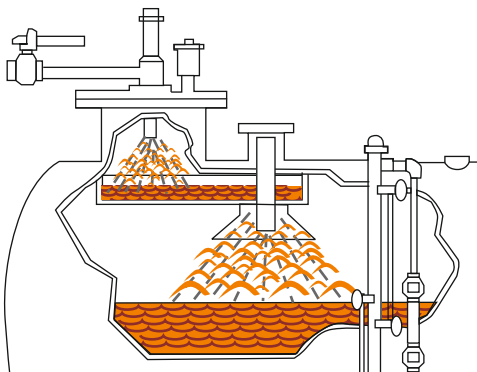


## Deaerator

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.

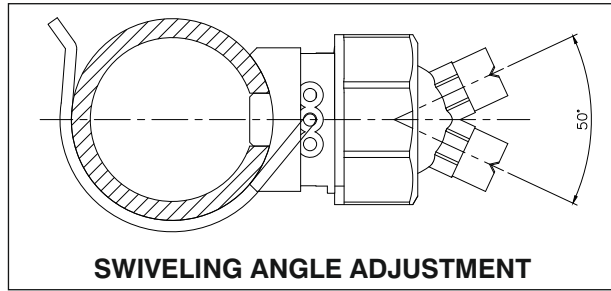
Spray type Deaerators are simple, cost effective and virtually maintenance free systems that can operate under variable loads without significant impact on heating or deaerating performances. For the above reasons, this kind of Deaerator is widely used for industrial applications. Spray Deaerators do 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.





# Clip On Spray Nozzles



## SPRAY CHARACTERISTICS :

These nozzles simply clip over a pre-drilled pipe (9/16" dia. hole) and are available with a variety of easy clip, in various spray patterns, flow rates and spray angles. Retaining cap holds the tip in position, even when the nozzle is jarred or vibrated.

## Range :

Flow rate (lpm) at 2 bar Pressure : 1 LPM to 40 LPM.  
Connection : 1/4", 3/8" BSP

## Construction :

Made of corrosion-resistant plastic and stainless steel. Heavy-duty spring clip good to 100 p.s.i. at 175°F. A 316SS clip is also available, if required. Simple quick assembling, Ball joint, omnidirectional swivelling range of 30° Simple quick assembling.

## Applications :

Part Cleaning, phosphating, degreasing, rinsing, surface treatment. Easy adjusting and cleaning.

## THE SPRAYTECH "CLIP-ON" ASSEMBLY

The spring clamp is the heaviest and most durable used in the industries. It provides long services at pressures up to 100 p.s.i.

Hundreds of standard nozzle balls and spray tip options are available when using our female threaded ball.

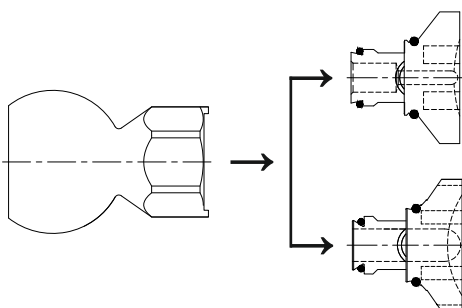
The cap has strong butress threads and is made from glass filled polypropylene.

Standard O-Ring seal is EPDM. Burna-N, Viton®, and special "retrofit" seals are available.

Square fitting glass filled polypropylene bodies are available in various pipe sizes and are good up to 175°F.

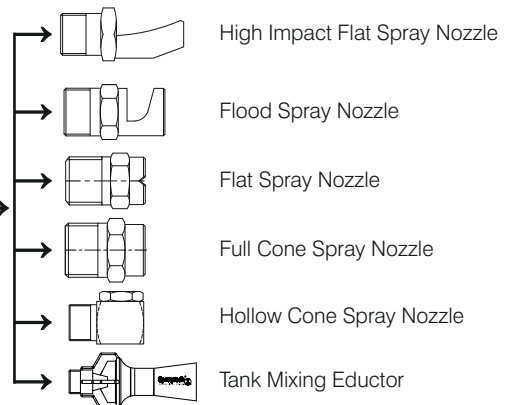
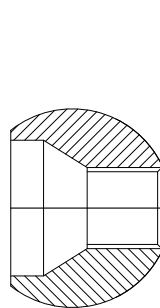
"Clip-on" assembly holds the ball securely in alignment to prevent movement when the cap is tightened. The "clip-on" assembly is optional on all Spraytech adjustable nozzles.

## QUICK RELEASE CLIP-ON ADAPTERS



Any quick release type spray nozzle

## THREADED BALL



# Clip On Type Assembly With Flat Spray Nozzles



Specially purpose dedicated designed Clipon type spray nozzle allows to mounting and removal from spray riser / header without efforts and spanners for cleaning purposes. and ball type body of spray nozzle provides swivel type joint to adjust in various directions.

Clipon type spray nozzles are enhanced with different sized clips (made of spring steel) which provides strong clamping on riser/ header. Clips are available in 1", 1-1/4", 1-1/2", 2" ID etc sizes.

- Ball body type spray nozzles allow to set in various spray directions as per requirement for surface to be cleaned.
- Clips used for clamping withstand to the pressure of 4 BARG.( 60 psi)
- Made of PP material which is resistant to chemicals, and give a long running life.
- Flat type spray tips give high impact with wide coverage.
- This type of spray nozzles can be used to spray Phosphates
- Maximum temperature of 180°F (82°C).

In addition to swivel ball type body, quick release type flat spray tip allow to get dismantled from clipon assembly without disturbing previous directional settings of assembly.

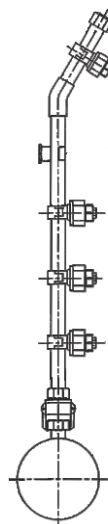
- Easy to mount on clipon assembly without disturbing previous directional settings
- Flat type spray tips give high impact with wide coverage.
- Clips used for clamping with stand to the pressure of 4 BARG.( 60 psi)
- Made of PP material which is resistant to chemicals, and give a long running life.
- Maximum temperature of 180°F (82°C).



## Quick Fit Risers & Header Manifolds

Our products for surface pretreatment plants is complete inclusive of the riser pipes, header manifolds as per the system manufacturers drawings & designs. As per the requirement of the system & equipment builders, Spraytech has developed all necessary parts for the professional assembly of the header manifolds and riser pipes. These are customized designs, to suit the process and plant layouts. All the header manifolds and riser pipes are also supplied with Spraytech fittings.

The header manifolds are fabricated to customized designed & plant layout. Typical manifold and risers mounted in a pre-treatment tunnel appears in the photo.



**Material :** PP : Polypropylene ; AISI 304 Stainless Steel

# TE Series Tank Mixing Eductor

## Design Features

- Effective, economical way to Circulate liquids in closed or open tanks
- No Moving parts
- Inherently clog resistant
- Requires minimal maintenance
- Nozzles operation creates multiplying effect on fluid flow

## Spray Characteristics

- Cone -shaped plume Flow rates: 26.7 to 12000 L/min (motive)
- The volume of discharge liquid will be 3-5 times greater than the motive liquid pumped.
- It's unique venturi design ensures proper mixing of tank Solution.

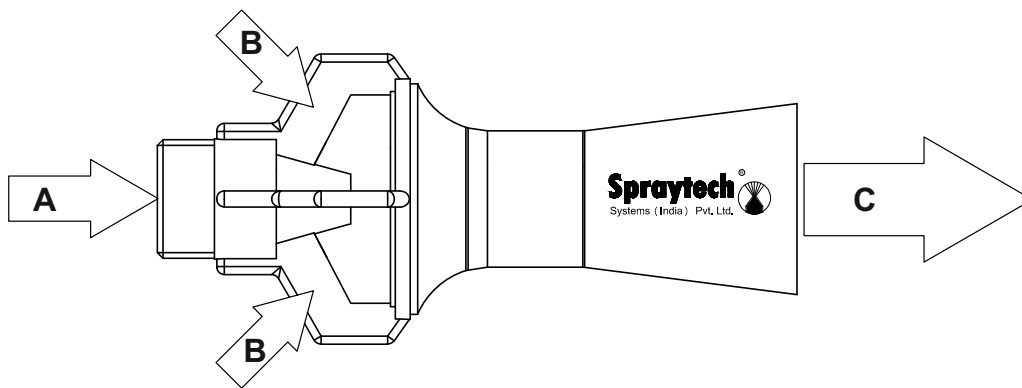


Plastic Versions



Metal Versions

Eductors have a unique venturi design which enables smaller pumps to circulate large volumes of tank solution. The eductor will circulate four to five gallons of solution for each gallon pumped. Eductors are used for mixing chemicals, suspending solids, adjusting pH, "sweeping" debris or sludge toward a filter intake and many other useful applications.



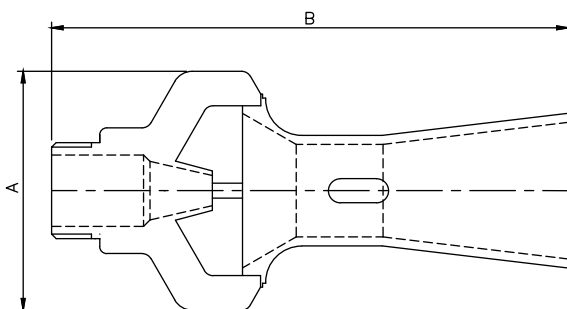
## Application

- Plating Tanks
- Phosphating Tanks
- Fertilizer tanks
- Pulp Tanks
- Sludge Tanks
- Paint Booths
- Anodizing Tanks
- Cooling Towers
- Decorative Fountains

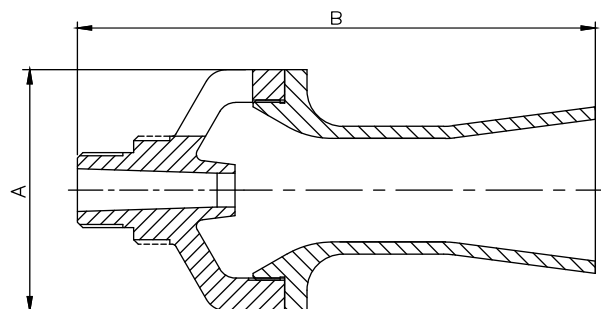
**A = Inlet Flow Rate**

**B = Entrained Flow Rate**

**C = (A+B) Out Flow**



Plastic Versions



Metal Versions



## Performance Data

SIZE	FLOW RATE	INLET LIQUID PRESSURE (bar)							
		.5	1	1.5	2	2.5	3	3.5	4.0
1/4	Inlet Flow Rate (l/min)	11.3	16.0	19.5	23	25	28	30	32
	Circulation /Rate (l/min)	53.3	75	91.5	107	118	130	140	150
	Effective Flow Field (m)	0.91	1.5	2.1	2.6	3.0	3.7	4.3	5.2
3/8	Inlet Flow Rate (l/min)	29	42	51	59	65	70	77	82
	Circulation /Rate (l/min)	145	210	255	295	325	350	385	410
	Effective Flow Field (m)	1.2	1.8	2.4	3.0	3.7	4.3	4.9	6.7
3/4	Inlet Flow Rate (l/min)	43	64	74	85	97	106	116	124
	Circulation /Rate (l/min)	215	320	370	425	485	530	580	620
	Effective Flow Field (m)	1.5	2.4	3.4	4.3	5.2	6.1	7.3	10.1
1 1/2	Inlet Flow Rate (l/min)	106	151	184	215	243	259	288	308
	Circulation /Rate (l/min)	530	755	920	1075	1215	1295	1440	1540
	Effective Flow Field (m)	2.3	3.7	4.9	6.1	7.3	8.8	10.4	14.0

Effective Flow Field is defined as 1"(30 cm) of flow/second.

## Dimensions :

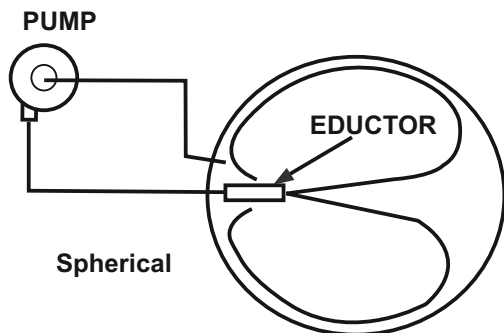
Serial No.	Inlet Connection. BSPT (M)	Orifice Dia. in. (mm)	Length in. (mm)	Dia. in. (mm)	Net Wieght oz. (kg)
1.	1/14"	06	81	33	.51(.01)
2.	3/8"	12	120	50	1(.03)
3.	1/2"	15	170	66	2.8(.08)
4.	3/4"	18	170	66	2.9(.08)
5.	1"	23	99	57	1.1(.03)
6.	1 1/2"	35	250	95	10.2(.29)

# TE Series Tank Mixing Eductor

METAL												
Connection Size BSPT / NPT		Part Number	KFavor	Motive Flow Rate LPM @ BAR							Dimensions (mm)	
				0.7 bar	1 bar	1.5 bar	2 bar	3 bar	5 bar	7 bar	A	B
Male	3/8	TE70	31.9	26.7	31.9	39.1	45.1	55.3	71.4	84.4	49.5	115
	1/2	TE110	50.1	41.9	50.1	61.3	70.8	87.0	112	132	59.5	150
	3/4	TE150	68.4	57.2	68.4	83.7	96.7	118	153	181	69.5	167
Female	1	TE230	105	87.7	105	128	148	182	234	277	83	200
	1 1/2	TE320	146	122	146	179	206	253	326	386	97	233
	2	TE620	282	236	282	345	399	489	631	746	121	286
Flanged	3	TE1500	684	572	684	837	967	1180	1530	1810	165	492
	4	TE2510	1130	950	1130	1390	1610	1970	2540	3000	213	864
	6	TE6010	2720	2270	2720	3330	3840	4710	6080	7190	321	1320
	8	TE10050	4550	3800	4550	5570	6430	7870	10200	12000	416	1730

Motive Flow Rate (LPM) =  $K \cdot \sqrt{\text{bar}}$   
 Standard Material: Brass, Carbon Steel, S.S.304, 310, 316, PVC, PVDF, P.P. Size from 1/4" to 3" NPT, BSPT, BSPP

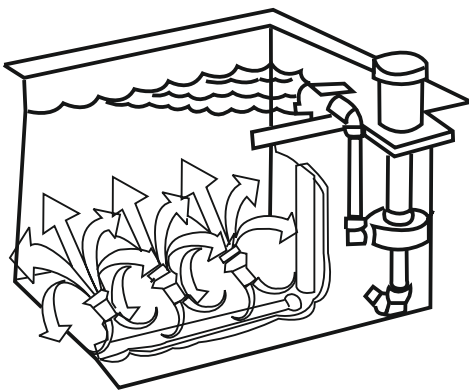
METAL													
Connection Size BSPT / NPT		Part Number		Motive Flow Rate Litters Per Minutes @BAR							Dimensions (mm)		
				0.7 bar	1 bar	1.5 bar	2 bar	2.5 bar	3 bar	3.5 bar	4 bar	A	B
Male	1/4	TE60	Intel Flow Rate (l/min) "A"	13.5	16	19.5	23	25	28	30	33	54	114
	3/8	TE73		27.8	33.2	40.7	47	52.5	57.6	62.2	67	49.5	115
	1/2	TE120		45.4	54.3	66.5	76.7	85.8	94	101	109	59.5	150
	3/4	TE137		52.2	62.4	76.4	88.2	98.6	108	117	126	73	162
	1	TE240		90.8	108	133	153	172	188	203	218	89	241
	1 1/2	TE340		130	155	190	219	245	269	290	313	114	248
	1/4	TE60	Entrained Flow Rate (l/min) "B"	54	64	78	92	100	112	120	132		
	3/8	TE73		111	132	163	188	210	230	249	268		
	1/2	TE120		182	217	307	307	343	376	404	436		
	3/4	TE137		209	250	353	353	394	432	468	504		
	1	TE240		363	432	612	612	688	752	812	872		
	1 1/2	TE340		520	620	876	876	980	1076	1160	1252		
	1/4	TE60	Total Out-Flow Rate (l/min) "A+B"	67.5	80	115	115	125	140	150	165		
	3/8	TE73		138.8	165.2	235	235	262.5	287.6	311.2	335		
	1/2	TE120		227.4	271.3	383.7	383.7	428.8	470	505	545		
3/4	TE137	261.2		312.4	381.4	441.2	492.6	450	585	630			
1	TE240	453.8		540	665	765	860	940	1015	1090			
1 1/2	TE340	650		775	950	1095	1225	1345	1450	1565			



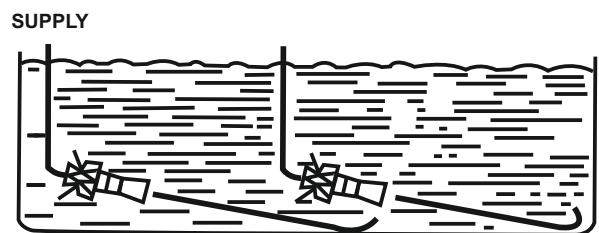
**Figure 1**  
Eductor in a round tank



**Figure 2**  
Eductors in a tank providing mixing.



**Figure 3**  
Multiple eductor assembly



**Figure 4**  
Eductors in a tank maintaining suspension and mixing of solids.

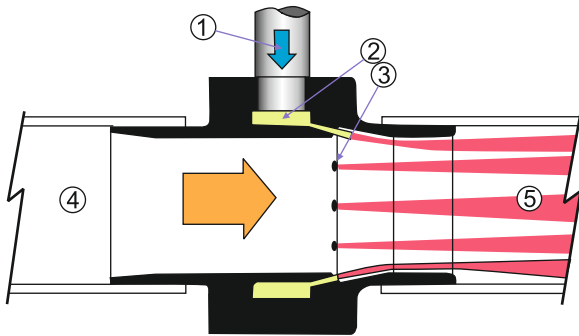
## Mounting

An eductor can be mounted in any position. The supply line and manifold piping to multiple eductors must be sized to supply uniform pressure to each eductor. It is important that the eductor be positioned within the tank to insure the free flow of liquid to be mixed into and out of the units. The greatest agitation occurs within the discharge plume; therefore, the discharge end should be aimed towards the most remote part of the tank. On the other hand, the intake end of the unit must be just far enough from the tank corner or wall to allow the free flow of liquid into the suction openings.

Tank shape and size influence the placement and number of eductors required to maintain even agitation. With a spherical tank, a single eductor mounted as shown in the Figure 1 illustration makes the best use of the mixing characteristics of the eductor. With no corners to impede liquid flow, the liquid circulates evenly.

In simple mixing applications in a cylindrical, square or rectangular tank, not a plating tank, the angular intersection of stagnation in these areas. A single eductor mounted as shown in Figure 2 will minimize this. For high agitation, use of multiple eductors are recommended as shown in Figure 3.

A slight downward angle of the eductors can be helpful in maintaining the velocity at the tank bottom which is necessary to keep solids in suspension for easier removal by a filter system. (See Figure 4)



## Compressed air flows through the inlet

(1) into an annular plenum chamber (2) It is then injected into the throat through directed nozzles (3) These jets of air create a vacuum at the intake (4) which draws material in and accelerates it through the unit (5) for conveying over long vertical or horizontal distances.

Air Conveyor is available in a number of styles, materials, and sizes. Each has a large, smooth, straight bore that allows as much material to pass through as possible. Infinite control of the flow rate though the Air conveyor can be controlled by a pressure regulator. Kits include a pressure regulator that is sized properly for flow.

The actual conveying rate is affected by the size, mass and geometry of the part to be conveyed along with the length, lift and number of bends in the hose, tube or pipe. These variables make it difficult to determine the exact conveying rate for any product, however, the application engineering can assist you by comparing the material you want to convey with something that has already been tested.

## Air Conveyor Performance

80 PSIG (5.5 BAR)	Air Consumption		Vaccum	
	SCFM	SLPM	H2O	kPa
Model				
2710	10.7	303	-72	-18
4214	14.7	416	-42	-11
4225	25.9	733	-42	-11
3633	33	934	-36.8	-9
2845	45	1274	-28.5	-7
2358	58.5	1656	-23.5	-6
1468	68.5	1939	-14.7	-4
1395	95	2690	-13.6	-3.4
1012	128	3625	-10.5	-2.6

Air Conveyor Comparison		
Material Type	Temperature Rating	Corrosion Resistance
Aluminum	275° F (135° C)	Fair
Stainless Steel (Type 303)	400° F (204° C)	Good
Stainless Steel (Type 316)	400° F (204° C)	Excellent
High Temperature Stainless Steel (Type 303)	900° F (482° C)	Good

## Applications :

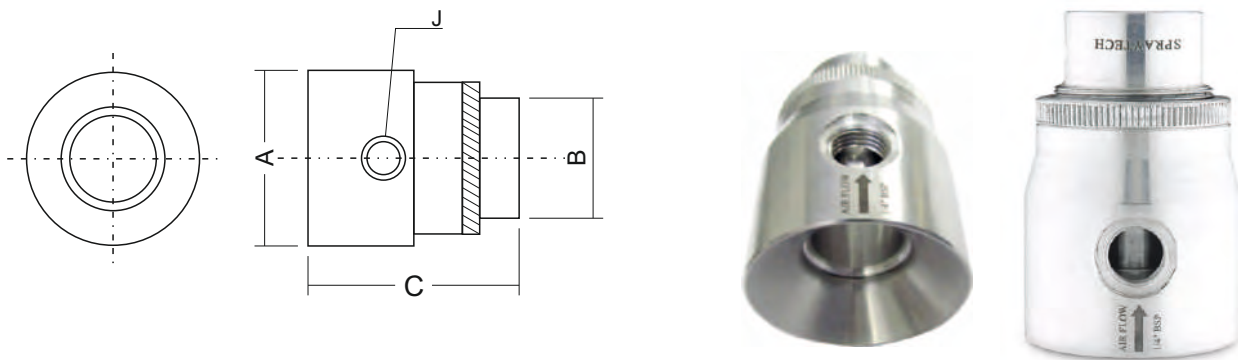
- Hopper loading
- Fiber tensioning
- Material conveying
- Water/trim removal
- Chip removal
- Part transfer
- Filling operations

# Adjustable Air Booster

## Adjustable Air Booster

The air gap is infinitely adjustable which regulates the consumption and outlet flow from a "breeze" to a "blast". They are available in aluminum or in stainless steel for food service, higher temperatures (400°F/204°C), and corrosive applications. High Temperature Stainless Steel Air Boosters for temperatures up to 700°F (374°C) are also available.

Force and flow for the Adjustable Air Booster is changed by turning the exhaust end (with the knurled ring loose) to open or close the continuous air gap. When desired performance is obtained, the knurled ring can be tightened to lock the flow at that setting. In most cases, a .002" to .004" (0.05mm to 0.10mm) air gap is ideal.



### Adjustable Air Booster Performance at 80 PSIG (5.5 BAR)

MODEL	Air Consumption		Amplification RATIO	Air Volume at Outlet		Air Volume at 6" (152mm)		Sound Level dBA
	SCFM	SLPM		SCFM	SLPM	SCFM	SLPM	
1089	8.9	252	10	89	2430	267	7556	78
1612	12.9	365	16	206	5635	618	17489	81
2021	21.5	608	20	430	11739	1290	36507	82
2235	35.2	997	22	774	21928	2323	65784	83
2450	50	1415	24	1200	33960	3600	101880	84

### Adjustable Air Booster Dimensions

MODEL #		A	B	C	D	E	F	G	H	J
1089	mm	38	19	57	11	18	14	27	32	1/8" NPT
1612	mm	51	32	73	21	25	19	35	44	1/4" NPT
2021	mm	79	51	83	42	27	19	38	70	3/8" NPT
2235	mm	102	76	103	56	31	32	46	89	1/2" NPT
2450	mm	127	102	127	77	38	44	54	114	1/2" NPT






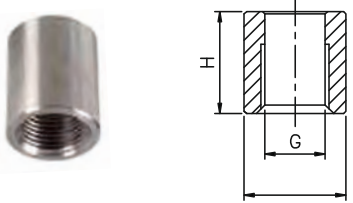
## NIPPLES, LOCKNUTS & INTERNAL FILTERS

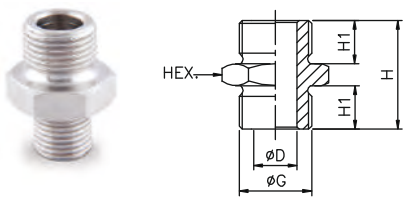
We offer a range of nipples and locknuts in different types and materials to suit most of our customers requirements. Produced in high quality materials and under strict tolerances they ensure a precise and reliable assembly with all nozzles. In your system small size filters ensure individual protection against clogging for individual low capacity nozzles.

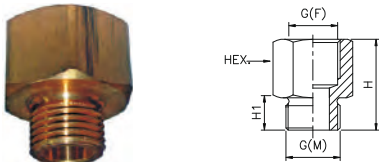
## PIPE CLAMPS AND SWIVEL JOINTS


The most extensive range of nozzle clamps engineered for industrial applications to give your system a modern and efficient design with the added value of an easy and well kept at peak performance and long periods of time. Three series of swivels in a wide size range allow the proper connection and quick pointing of the nozzles in your system, improving its overall performances. Swivel joints are available in brass and several stainless steel qualities.

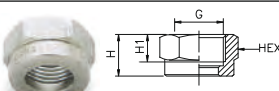
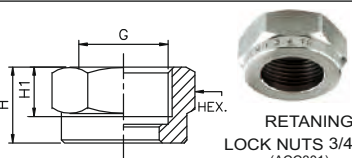
	Connector (ACC001)	CONNECTION	H	H1	H2	D	HEX
		3/8" (F) X 1/4" (F)	26	10	10	-	22
		1/2" (F) X 3/8" (F)	30	14	12	30	26
		3/4" (F) X 3/8" (F)	34	16	12	36	32
		1" (F) X 3/8" (F)	32	18	12	40	34
		1" (F) X 1/2" (F)	34	18	14	40	34
		1" (F) X 3/4" (F)	36	18	16	40	34
		2" (F) X 3/8" (F)	38	24	12	68	60
		2" (F) X 1/2" (F)	43	24	16	68	60
		2" (F) X 3/4" (F)	43	24	16	68	60

	COUPLING (ACC002)	CONNECTION	H	D
		1/8"	14	16
		1/4"	20	20
		3/8"	22	22
		1/2"	25	27
		3/4"	30	33.5
		1"	30	42
		1 1/4"	40	60
		1 1/2"	45	60
		2"	50	73
		2 1/2"	50	90
		3"	55	101.5


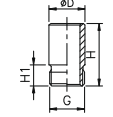

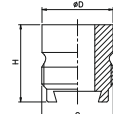

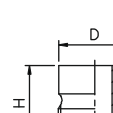

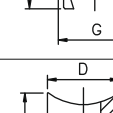

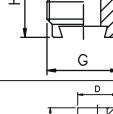
	<p><b>NIPPLE</b> (ACC003)</p>	CONNECTION	H	H1	HEX
		3/8" X 1/4"	25	10	22
		3/8" X 3/8"	25	10	22
		3/8" X 1/2"	30	10/14	24
		3/4" X 3/4"	36	14	32
		3/4" X 1/2"	36	14	32
		1" X 3/4"	38	16/14	38
		1" X 1"	42	17	38

	<p><b>SOCKET</b> (ACC004)</p>	CONNECTION	H	H1	H2	HEX
		1/8" (M) X 1/8" (F)	20	6.5	7	14
		1/4" (M) X 1/4" (F)	27.5	9.7	11	17
		1/4" (M) X 3/8" (F)	27	10	12	22
		3/8" (M) X 1/8" (F)	18.5	10.1	8	17
		3/8" (M) X 1/4" (F)	24	12	12	19
		1/2" (M) X 1/8" (F)	23	13.2	8	22
		1/2" (M) X 1/4" (F)	23	13.2	11	22
		1/2" (M) X 3/8" (F)	25	13.2	11	22
		3/4" (M) X 3/8" (F)	21	14.5	12	27
		3/4" (M) X 3/4" (F)	36	14	16	32
1" (M) X 1/2" (F)	26	18	14	36		


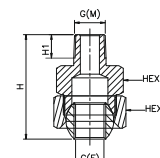

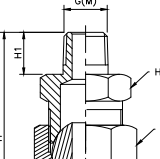

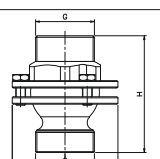

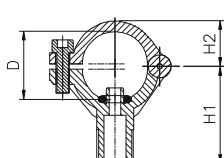
	<p><b>WELDING NIPPLE</b> With Radius (ACC201)</p>	CONNECTION	H	H1	D
		3/8"	18	11.5	17.5
		3/4"	27	15.5	27.5

 <p><b>LOCK NUTS 3/8"</b> (ACC302)</p>	 <p><b>RETAINING LOCK NUTS 3/4"</b> (ACC301)</p>	CONNECTION	H	H1	HEX
		3/8"BSPP	13	9.8	22
		3/4"BSPP	16	13	32
		1"BSPP	38	32	41

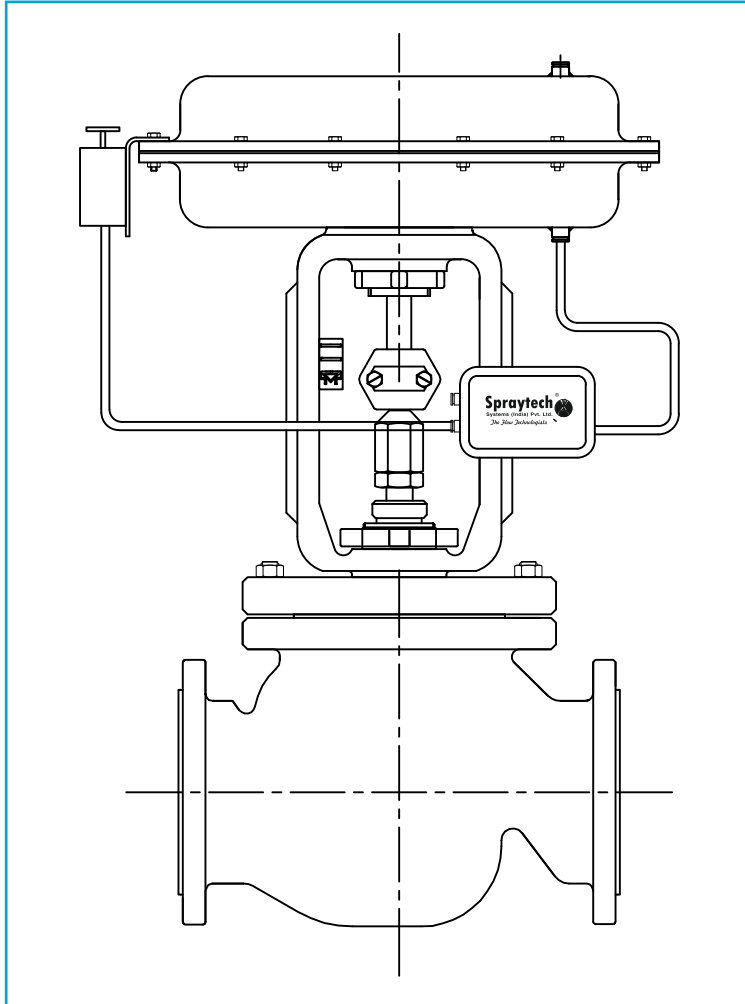
## Accessories Welding Nipple

 	Welding Nipple (ACC202)	<b>CONNECTION</b>	<b>H</b>	<b>H1</b>	<b>D</b>
		3/8" BSPP	18	11.5	17.2
 	Welding Nipple Dovetail (ACC203)	<b>CONNECTION</b>	<b>H</b>	<b>H1</b>	<b>D</b>
		3/8" BSPP	18	11.5	17
 	Dovetail Nipple (ACC204)	<b>CONNECTION</b>	<b>H</b>	<b>H1</b>	<b>D</b>
		3/4" BSPP	27	15.5	28
		3/4" BSPP	35	15.5	28
 	Dovetail Nipple With Radius (ACC205)	<b>CONNECTION</b>	<b>H</b>	<b>H1</b>	<b>D</b>
		1" BSPP	50	24	38
 	Dovetail Nipple (ACC205)	<b>CONNECTION</b>	<b>H</b>	<b>H1</b>	<b>D</b>
		1 1/4" BSPP	120	24	44

## Accessories Ball Joint

 (ACC401)		<b>CONNECTION</b>	<b>H</b>	<b>H1</b>	<b>HEX</b>	
		1/8"(M) X 1/8"(F)	35	6.5	22/22	
		1/4"(M) X 1/4"(F)	43.5	10	24/27	
		3/8"(M) X 3/8"(F)	40	10.1	27/30	
		3/8"(M) X 1/4"(F)	43.5	10.1	24/27	
		1/2"(M) X 1/2"(F)	61	13.2	41/41	
 (ACC402)		<b>CONNECTION</b>	<b>H</b>	<b>H1</b>	<b>HEX</b>	
		1/8"(M) X 1/8"(F)	-	-	-	
		1/4"(M) X 1/4"(F)	-	-	-	
		3/8"(M) X 3/8"(F)	-	-	-	
		3/8"(M) X 1/4"(F)	-	-	-	
		1/2"(M) X 1/2"(F)	-	-	-	
 (ACC403)		<b>CONNECTION</b>	<b>H</b>	<b>H1</b>	<b>D</b>	
		1"	90	22	90	
		1 1/2"	130	30	90	
 clamp (ACC404)		<b>PIPE</b>	<b>MOC</b>	<b>H1</b>	<b>H2</b>	<b>D</b>
		1/2"	PP/PVC	36	16	20/22
		3/4"	PP/PVC	40	17	25/27
		1"	PP/PVC	44	21	32/35

## Flow Elements



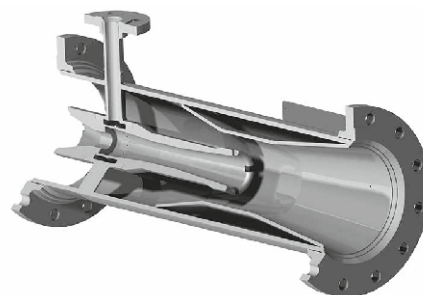
- PRDS
- Orifice assemblies
- Integral assemblies
- Differential pressure flow meter and transmitters analog and digital
- Multistage orifice assemblies
- Single seat globe control and manual valves
- Averaging pitot tubes
- V notch ball control valve
- Flow nozzle
- Positioners and position transmitters
- Flow venturi
- PID Sanitary globe control valve
- 3 way Globe control valve
- Self actuated pressure and flow and temperature regulators
- Manual valves ball, butterfly and gate type
- Sight flow indicators

## Pressure Reducing & Desuperheating Station

Desuperheaters reduce the temperature of superheated process steam by introducing finely atomized cooling water droplets into the steam flow.

Desuperheated steam is more efficient in the transfer of thermal energy, consequently desuperheaters are used to bring the outlet degree of superheat closer to that of saturation.

In typical process plants, process steam is usually superheated or heated to a temperature above saturation. The difference, between the saturation temperature and the actual temperature of the steam is called 'superheat'.



## Single seat globe control and manual valves

Spraytech Systems have gone ahead with its endeavour of optimizing in process control instruments, in adding control elements in its range of manufacture. We at Spraytech Systems have globe control valves till 16" and upto 2500#RF for applications from -196 °C till 550 °C.

Applications in flow element control lead to control of flow through a globe control valve affecting control of flow, pressure and temperature thus a playing a vide role in the control element of the plant.

### Applications

As a main manufacturer of process Instruments, we provide a comprehensive product range for all chemical processes from light and heavy-duty valves in modular design made of all common materials and exotic alloys according to DIN, ANSI to high-pressure valves complying with important company standards. Forged bodies, live-loaded packing, metal bellows, pressure-balanced plugs, heating jackets as well as corrosion-resistant, low-noise and low wear valve trims are included in our product portfolio for this field.

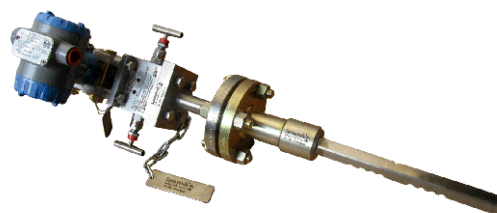
## Averaging pitot tubes

Spraytech Systems manufactured Averaging Pitot Tubes are another type of differential pressure flow meters. Averaging Pitot tubes are basically used to detect flow velocity of fluids, gasses, steam, steam water and absolutely all those media which at most with 3-5ppm of solids as the max size.

### Principle of operation

Averaging Pitot tube is nothing but an element which is suppose to measure the flow rate and offer the differential pressure to the flow meter mounted on top. The averaging Pitot tube works on the 80% velocity of the media rate at the top of the centre line in a velocity gradient in a pipe line or duct and 70% velocity of the media in the below portion of the centre line.

It does not work on the centre line velocity which is 100% for the media as what a orifice, a venturi and nozzle, and many more flow meter works. Thus the velocity of the media is perfectly averaged out and offered for DP measurement in the flow meter.





## Orifice and Orifice assemblies

Spraytech Systems orifice plate is a device used for measuring flow rate. Either a volumetric or mass flow rate may be determined, depending on the calculation associated with the it. It uses the same principle, namely Bernoulli's principle which states that there is a relationship between the pressure of the fluid and the velocity of the fluid. When the velocity increases, the pressure decreases and vice versa.

Following factors are used to judge the performance of Spraytech Systems Orifice plate :

1. Precision in the bore calculations
2. Quality of the installation
3. Condition of the plate itself
4. Orifice area ratio
5. Physical properties of the fluid flow under measurement, refer the free length table mentioned below



## 3 way globe control valve



Spraytech Systems have gone ahead with its endeavour of optimizing in process control instruments, in adding control elements in its range of manufacture. We at Spraytech Systems have 3 way globe control valves till 16" and up to 2500# RF for applications from -196°C till 550°C.

Valve body made of

- Cast iron
- Cast steel
- Cast stainless steel

Undivided valve bonnet

The control valves, designed according to the modular assembly principle, can be equipped with various accessories: Positioners, limit switches, solenoid valves and other accessories according to IEC 60534-6 and NAMUR recommendation.

## Sight flow indicators

SPRAYTECH SYSTEMS (INDIA) PVT. LTD. offers sight flow indicators of following types :

- Double Window - Plain
- Double Window - Rotary Wheel
- Double Window - Flapper
- Double Window - Drip Tube
- Full View

Specifications :-

Type	: Double Window - Plain / Rotary Wheel / Flapper / Drip Tube / Full View
Body	: CS, SS 304, SS 304L, SS 316, SS 316L, others on request
Retainer Flange	: CS, SS 304, SS 304L, SS 316, SS 316L, others on request
Cushion / Gasket	: C.A.F. / P.T.F.E. / Graph oils
Glass	: Toughened Borosilicate
Process Connection	: Flanged / Screwed / Welded / Triclamp
Fasteners	: SS, ASTM A193 Gr. B7 / A 194 Gr. 2H



## Valves



**Ball Valve**



**Butterfly Valve**



**Gate Valve**



**Check Valve**



**Globe Valve**

## Industries

- Chemical
- Fertilizer
- Power
- Oil & Gas
- Petrochemicals
- Water Treatment
- Pharma
- Paper & Pulp
- Steel
- Cement
- Municipal Corporations

## Applications

- Water & Environment
- Irrigation
- Water Transportation
- Water Treatment Plant
- Drinking Water Supply Schemes
- Hydro Projects
- Industrial Water
- Sewage Systems
- Ash Handling Plant
- Coal Handling Plant
- Steel Melting Shop

## Strainers & Filters Elements



- Filters
- Strainers
- Mixers
- Separators
- Pr. Vessels
- Valves

## Simplex / Duplex Basket Filters

1) Fabricated design with MOC in

A 106 / A53 / IS 2062 / AISI304 / 316 / 304L / 316L A 312 TP 304 / 316 / 304L / 316L / A 240 TP 304 Hastelloy, alloy 20, high / low temp. Alloys. Nonferrous like Monel etc.

2) Cast Design

A 216 Gr. WCB / A351 Gr. CF8[M] CF3[M] A 217 Gr. C5 / WC6 / WC9 / A352 LCB etc.

3) For duplex filters sizes up to 4" in 3 way ball valve design, common lever for change over

4) "6" & above in

- a) Transfer Valve design
- b) Butterfly Valve design
- c) Header design

Fabricated / cast. Operation by pneumatic / electrical actuator, Used where down time is unavailable.



**Duplex Basket Filter**



**Simplex Basket Filters**

## Self Cleaning Filters



- 1) Wedge wire design
- 2) SMP france STR design
- 3) Stampings design
- 4) Four compartments - auto wash design

Manual / Motorized. These filters are used for water, oil, Pulp, grease applications, element is provided with backwash arm. When element gets choked, diff. Pressure switch across the inlet / outlet gives a signal to the motor & drain gets opened simultaneously. The part of clean liquid goes in the reverse direction. Suitable where continuous flow is required. It can be supplied with control panel, motor, actuated drain valves, etc.

## Lube oil Filters Element

Available in pleated wire mesh Elements / Pleated paper elements as required for highly viscous fluids. These can be supplied at higher pressures upto 300 bar, DOF as fine as 5 microns.

## Compressed Air Filters

The unique design of Coalescing Separator, combines the simplicity & efficiency. As wet compressed air / gas / steam enters the Moisture Separator, it comes in contact with the multi layer dense media. Water droplets, as well as any other aerosols are intercepted by the coalesces and forced to coalesce. As the droplets grow in size and weight, the gravity pulls them down to Sump. The liquid that accumulates can then be drained.





## Strainers

- 1) 'Y' type cast / fabricated / forged
- 2) 'T' type fabricated / forged
- 3) Conical / Temporary, fabricated

MOC in CS / SS / alloy steel / non - ferrous,  
CSRL for housings and SS304 / 316 / 304L /  
316L / MONEL / PP / Brass for element.



## Sand Filters

- 1) Gravity sand filters
- 2) Pressure sand filters
- 3) Valveless auto gravity filters, spares for all above

### Valveless Auto Gravity Filters

1. Work on syphon, hence automatic.
2. No moving parts, hence less maintenance.
3. No pumps, electricity, compressed air required.
4. No scope for human error.



## Cartridge Filters [0.1 to any micron size]

### Cartridge of

PP	Borosilicate
Ceramic	Cellulose
Charcoal	Asbestos
Glass fibre	SS sintered
Cotton	Taper Basket
SS	Pleated Basket

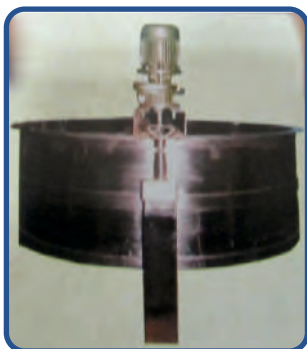
**Application :-** Solid Liquid, Liquid Gas, Solid Gas.



## Wedge Wire Element



## Mixer



For viscous fluid, the mixer is provided with 2 sets of blades, the outer one rotating at as low RPM as 15 to 25 & the inner one at comparatively higher RPM & in the reverse direction which mixes the ingredients uniformly all over.

Other versions of mixers are tiltable, rotating at higher RPM as required for low viscosity fluids.

Planetary gear mixers are also meant for higher viscous fluids.

MOC - AISI 304 / 316 / 304-L / 316-L etc.  
Provision for variable speed is available.

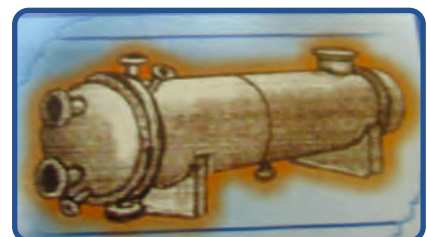
## Vessels

Pressure Vessels, heat Exchangers, Condensers, Reaction towers in accordance with ASME sec. -VIII Div.1, sec. IX, Tema, IS 2825 etc.

### MOC:

SA515 / SA516 / IS2002 / 2062 , A106 / A53 / IS1239 / 3589 / A105, ASTM A240 TP304 / SS316 / 304-L / 316-L / A 385 / 335 / A 312 TP 304 / 316 A182 / F304 / 316 / F69 / F22 / F11 etc.

Also consultancy available in: Design of filters / Valves / Vessels / Mixers. Computation of pressure drop, CV value, Thickness calculations, etc.





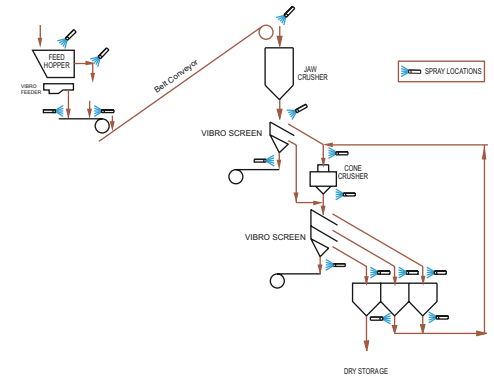
## Dust Suppression Systems

Technical Data on Request

### Introduction:-

The dust suppression system is meant to suppress the dust generated during transfer of material at feed/discharge points of conveyors in various transfer towers.

This system uses water and compressed air to produce micron sized droplets that are able to suppress respirable dust without adding any detectable moisture to the process.

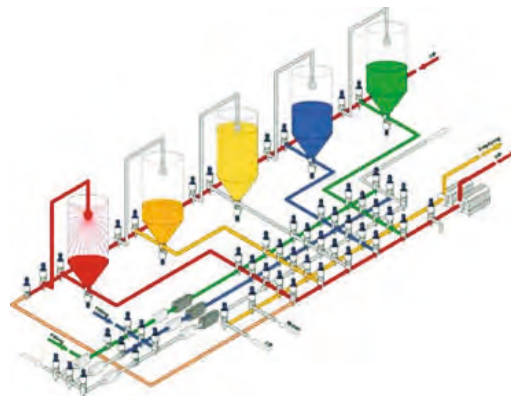
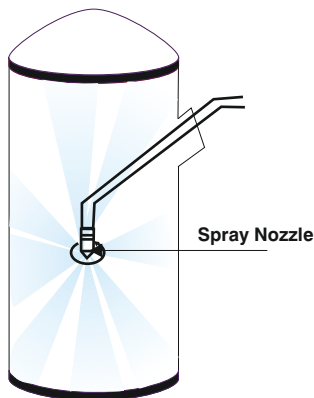


Technical Data on Request

## CIP (Clean In Place) Spray Systems

### Introduction:-

Tank cleaning system is used to clean the various types of industrial tanks. Tanks must be cleaned from Time to time for various reasons. We provide portable as well as fixed spray systems.

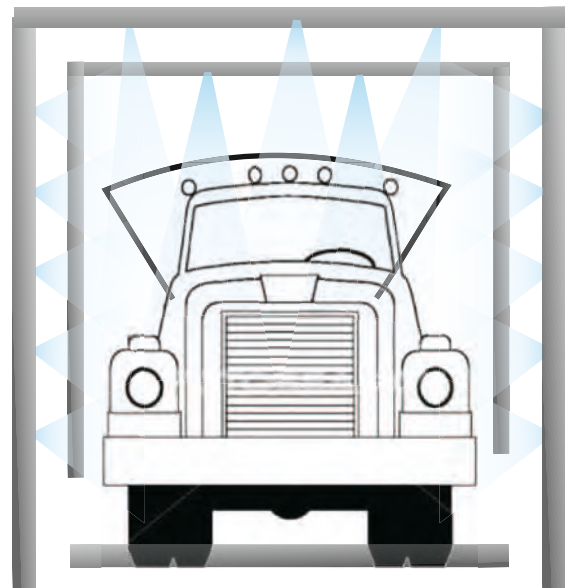


## Vehicle Washing Systems

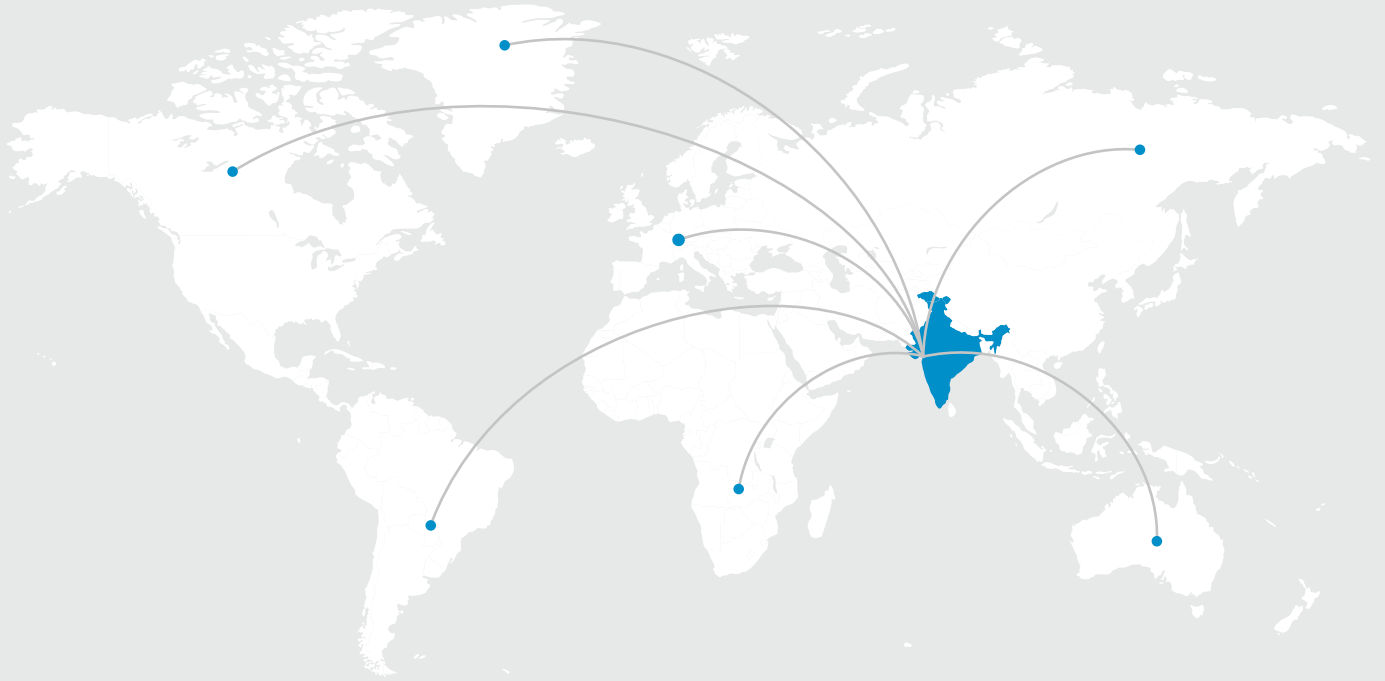
Technical Data on Request

### Introduction:-

"SPRAYTECH" have introduces a compressive list of semi automatic vehicle washing systems specifically designed for most types & sizes of vehicles. Depending on the type of vehicle only variation occurs in costs, washing speed & capabilities dependability, construction & washing techniques.







# OUR BRANCHES

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