

# Spray Nozzles

## Global Product Guide


**We have the  
nozzles to meet  
your industrial  
application  
needs.**

*Bob McCarthy*  
Engineering Manager

Precision Tested.  
People Trusted.

**DELAVALAN<sup>®</sup>**  
SPRAY TECHNOLOGIES





# We deliver nozzles you can depend on.

**Michelle Hambleton**

Director of Finance, Administration, & Logistics

## **Delavan® Spray Technologies Continually Meet Your Manufacturing Challenges.**

Delavan® Spray Technologies, part of R.W. Beckett Corporation, is a world leader in the design and manufacture of high quality spray nozzles and fluid handling systems. Since the company was founded back in 1935, the Delavan® name has always stood for quality, flexibility, and reliability.

Our specialist design teams can provide bespoke design, manufacture, and installation of everything from a single nozzle to a complete fluid handling system. Whichever nozzle you choose, Delavan®'s incoming materials and outgoing orders are routinely checked to ensure they meet rigorous quality standards. We can also adapt our manufacturing processes to meet the precise demands of recognized standards in many other industries around the world.

This brochure has been designed as an overview and features the majority of our most commonly used industrial products. Further information is available on our website or by contacting the office.





**We have the nozzle you  
need, and we're here to  
help you find it.**

*Daniel Williams  
Production Operative*

## **Choosing your nozzle will depend on several key factors.**

- Flow rate (capacity)
- Spray angle
- Material of manufacture
- Operating pressure
- Liquid to be sprayed
- Spray pattern
- Quality of atomization

***In addition, there are variations on these  
sprays for specific applications.***

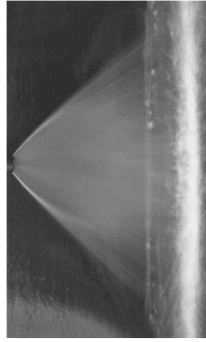
### ***A Selection of Typical Spray Patterns:***

- Flat Spray: An elliptical orifice formed by the intersection of a 'v' groove with a hemispherical cavity.
- Hollow Cone: A circular exit orifice which is preceded by a swirl chamber with a tangential inlet.
- Solid Cone: A circular exit orifice which is preceded by a swirl chamber with a multi-slotted in-line distributor and central line.
- Air Atomizing: These are produced by using air as the atomizing agent and sprays are generally of the external (siphon or pressure) and internal (pressure) mix design.

To help you with your choice of spray nozzle, each of the above key factors is discussed in detail on [www.conseroinc.com](http://www.conseroinc.com).

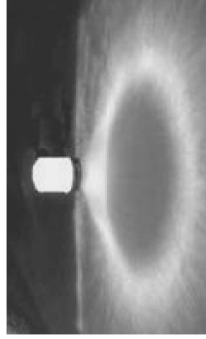
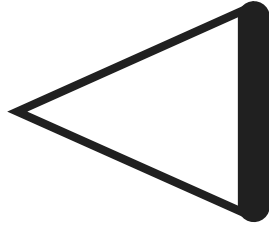
**DELAVALAN®**  
SPRAY TECHNOLOGIES

# A Selection of Typical Spray Patterns



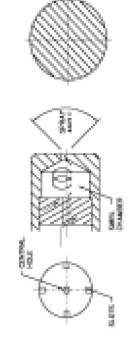
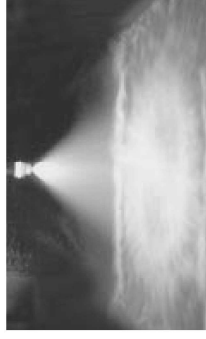
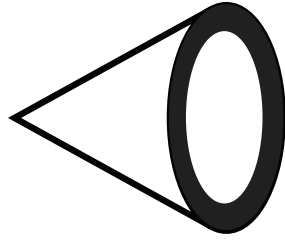
## Flat Spray

An elliptical orifice formed by the intersection of a 'V' groove with a hemispherical cavity.



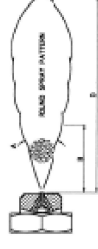
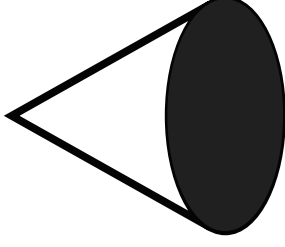
## Hollow Cone

A circular exit orifice which is preceded by a swirl chamber with a tangential inlet.



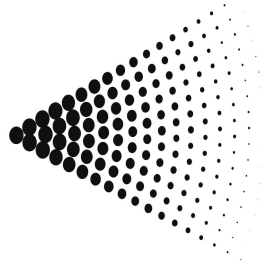
## Solid Cone

A circular exit orifice which is preceded by a swirl chamber with a multi-slotted in-line distributor and central line.



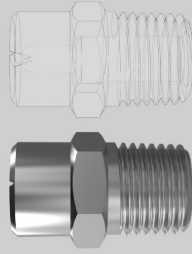
## Air Atomizing

These are produced by using air as the atomizing agent and sprays are generally of the external (siphon or pressure) and internal (pressure) mix design.



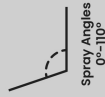
# Flat Spray Nozzles

## ACTYPE NOZZLE



One-piece male pipe thread design. Available in BSPT and NPT threads.

**Material:** Stainless Steel, Brass  
**Thread:** Male, BSPT, NPT  
**Thread Size:** 1/8-1"  
**Flow Rate:**  
 0.46-432.80 Liters/Min at 1-10 Bar G  
 0.12-115.25 Gal/Min at 15-145 PSIG



Uniform Flat Spray  
with Tapered Edges

## LF TYPE NOZZLE



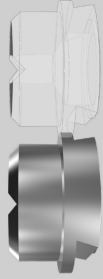
Flanged tip design for use with standard threaded bodies and caps.

**Material:** Stainless Steel, Brass  
**Thread:** Male  
**Thread Size:** 1/8-3/8"  
**Flow Rate:**  
 0.46-36.16 Liters/Min at 1-10 Bar G  
 0.12-9.61 Gal/Min at 15-145 PSIG



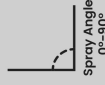
Uniform Flat Spray  
with Tapered Edges

## AD TYPE NOZZLE



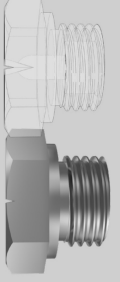
Large dovetailed tip provides positive alignment. Orifice is offset 15° to axis of dovetail plus welded body in Stainless Steel.

**Material:** Stainless Steel, Brass  
**Thread:** Male  
**Thread Size:** 1/2-3/4"  
**Flow Rate:**  
 2.27-143.80 Liters/Min at 1-10 Bar G  
 0.60-38.29 Gal/Min at 15-145 PSIG



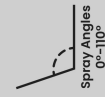
Uniform Flat Spray  
with Tapered Edges

## CACTYPE NOZZLE



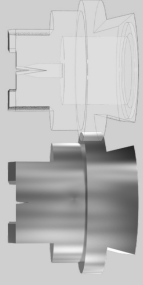
Compact, one-piece male pipe thread design.

**Material:** Stainless Steel, Brass  
**Thread:** Male, BSPP, NPT  
**Thread Size:** 1/16-3/4"  
**Flow Rate:**  
 0.46-215.60 Liters/Min at 1-10 Bar G  
 0.12-57.52 Gal/Min at 15-145 PSIG



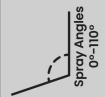
Uniform Flat Spray  
with Tapered Edges

## LD TYPE NOZZLE



Dovetailed tip design provides positive alignment. Orifice is offset 5° to axis of dovetail plus welded body in Stainless Steel.

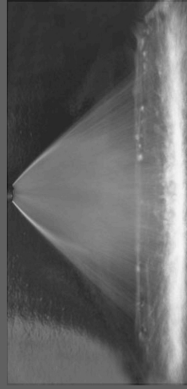
**Material:** Stainless Steel, Brass  
**Thread:** Male  
**Thread Size:** 1/8-3/8"  
**Flow Rate:**  
 0.46-36.16 Liters/Min at 1-10 Bar G  
 0.12-9.61 Gal/Min at 15-145 PSIG



Uniform Flat Spray  
with Tapered Edges

## Flat Spray Pattern

Producing a uniform flat fan shaped pattern with tapering edges



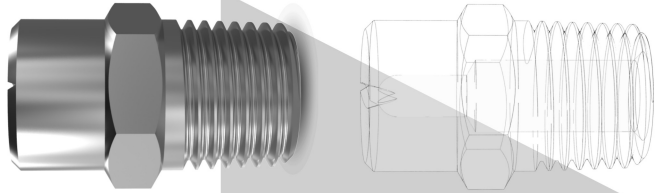
## Typical Applications

- Asphalt or Tar Laying
- Bottle Washing
- Coal & Gravel Washing
- Degreasing
- Dishwashing
- Foam Control
- Industrial Washers
- Metal Cleaning, Rinsing, & Washing
- Spray Coating
- Vehicle Washing
- Water Misting
- Water Fountains

# Flat Spray Nozzles

## AC Type Nozzle

One-piece male pipe thread design available in flow sizes from 2 – 600 with spray angles of 0°, 25°, 40°, 50°, 65°, 80°, 90°, 100°, 110°. Available in BSPT and NPT threads.



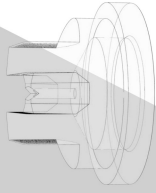
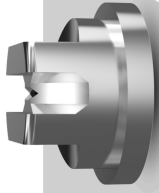
AC Type Nozzle														
Thread Sizes - Male Only										Available Spray Angles				
Nozzle Number	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M1	0°	15°	25°	40°	50°	65°	80°	90° 100° 110°
2	x	x	-	-	-	-	x	x	x	x	x	x	x	x
3	x	x	-	-	-	-	x	x	x	x	x	x	x	x
4	x	x	-	-	-	-	x	x	x	x	x	x	x	x
5	x	x	-	-	-	-	x	x	x	x	x	x	x	x
6	x	x	-	-	-	-	x	x	x	x	x	x	x	x
7	x	x	-	-	-	-	x	x	x	x	x	x	x	x
8	x	x	-	-	-	-	x	x	x	x	x	x	x	x
10	x	x	-	-	-	-	x	x	x	x	x	x	x	x
15	x	x	-	-	-	-	x	x	x	x	x	x	x	x
20	x	x	-	-	-	-	x	x	x	x	x	x	x	x
25	-	x	-	-	-	-	x	x	x	x	x	x	x	x
30	-	x	x	-	-	-	x	x	x	x	x	x	x	x
40	-	x	x	-	-	-	x	x	x	x	x	x	x	x
50	-	x	x	-	-	-	x	x	x	x	x	x	x	x
60	-	x	x	-	-	-	x	x	x	x	x	x	x	x
70	-	x	x	-	-	-	x	x	x	x	x	x	x	x
80	-	-	x	x	-	-	x	x	x	x	x	x	x	x
100	-	-	x	x	x	-	x	x	x	x	x	x	x	x
125	-	-	x	x	x	-	x	x	x	x	x	x	x	x
150	-	-	-	x	x	-	x	x	x	x	x	x	x	x
200	-	-	-	x	x	-	x	x	x	x	x	x	x	x
250	-	-	-	-	x	-	x	x	x	x	x	x	x	x
300	-	-	-	-	-	x	x	x	x	x	x	x	x	x
400	-	-	-	-	-	x	x	x	x	x	x	x	x	x
500	-	-	-	-	-	x	x	x	x	x	x	x	x	x
600	-	-	-	-	-	x	x	x	x	x	x	x	x	x

Flow Rate-AC Type Nozzle														
Flow Rate in Liters / Min at Bar G							Flow Rate in GAL / Min at PSIG							
Nozzle Number	1	2	3	4	5	7	10	Nozzle Number	15	30	40	60	80	100 145
2	0.46	0.65	0.80	0.89	0.99	1.24	1.43	2	0.12	0.17	0.20	0.24	0.26	0.33 0.40
3	0.68	0.97	1.18	1.36	1.53	1.81	2.23	3	0.18	0.26	0.30	0.36	0.40	0.48 0.58
4	0.90	1.27	1.56	1.83	2.03	2.36	2.86	4	0.24	0.34	0.40	0.48	0.54	0.63 0.76
5	1.15	1.62	1.99	2.28	2.55	3.02	3.62	5	0.30	0.43	0.50	0.60	0.67	0.80 0.96
6	1.37	1.94	2.37	2.72	3.07	3.61	4.46	6	0.36	0.51	0.60	0.72	0.81	0.95 1.14
7	1.59	2.25	2.75	3.21	3.54	4.21	5.36	7	0.42	0.59	0.70	0.85	0.94	1.11 1.34
8	1.83	2.59	3.17	3.66	3.98	5.03	5.80	8	0.48	0.68	0.80	0.97	1.05	1.33 1.60
10	2.27	3.21	3.93	4.46	5.19	5.95	7.14	10	0.60	0.85	1.00	1.18	1.37	1.57 1.89
15	3.44	4.21	6.16	6.70	7.78	9.15	10.71	15	0.91	1.11	1.50	1.77	2.06	2.42 2.92
20	4.46	6.25	8.05	9.37	9.94	12.35	14.73	20	1.18	1.65	2.00	2.48	2.63	3.26 3.93
25	5.80	8.03	9.94	11.38	12.75	15.09	18.08	25	1.53	2.12	2.50	3.01	3.37	3.99 4.81
30	6.70	9.82	11.84	13.84	15.13	17.84	21.43	30	1.77	2.59	3.00	3.66	4.00	4.71 5.67
40	9.37	12.05	15.62	18.30	20.57	24.25	28.57	40	2.48	3.18	4.00	4.83	5.43	6.41 7.72
50	11.61	16.07	19.89	22.77	25.50	30.19	36.16	50	3.07	4.25	5.00	6.02	6.74	7.98 9.61
60	13.84	19.20	23.67	27.23	30.69	36.14	43.30	60	3.66	5.07	6.00	7.19	8.11	9.55 11.51
70	16.07	22.77	27.46	32.14	35.88	42.54	50.45	70	4.25	6.02	7.00	8.49	9.48	11.24 13.54
80	18.75	25.45	31.72	36.61	41.06	48.03	57.14	80	4.95	6.72	8.00	9.67	10.85	12.69 15.29
100	22.77	31.70	39.30	45.53	51.00	60.38	72.32	100	6.02	8.37	10.00	12.03	13.47	15.95 19.22
125	28.46	39.62	49.12	56.91	63.75	75.48	90.40	125	7.52	7.83	12.50	15.03	16.84	19.94 24.02
150	34.37	48.21	59.19	68.31	76.50	90.10	108.00	150	9.08	12.74	15.00	18.04	20.21	23.81 28.69
200	45.53	64.28	79.07	91.10	102.00	120.30	143.80	200	12.03	16.98	20.00	24.06	26.95	31.78 38.29
250	58.84	80.36	98.50	113.40	127.50	150.00	179.90	250	15.54	21.23	25.00	29.96	33.68	39.63 47.75
300	68.30	96.87	118.40	136.60	152.60	180.70	215.60	300	18.04	25.59	30.00	36.09	40.31	47.74 57.52
400	90.60	128.60	157.70	182.10	204.00	241.10	287.90	400	23.94	33.97	40.00	48.12	53.89	63.69 76.73
500	114.00	161.30	197.50	228.00	254.90	301.60	360.50	500	30.12	42.61	50.00	60.23	67.34	79.68 96.00
600	136.80	193.50	237.00	273.70	306.00	362.10	432.80	600	36.14	51.12	60.00	72.31	80.84	95.66 115.25

# Flat Spray Nozzles

## LF Type Nozzle

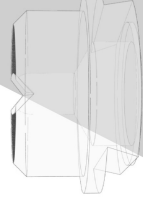
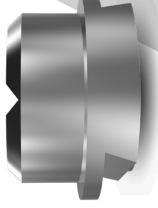
Flanged tip design for use with standard threaded bodies and caps, available in flow sizes from 2 – 50 with spray angles of 0, 25, 40, 50, 65, 80, 90, 100 and 110°. Body thread sizes 1/8", 1/4" & 3/8". See Accessories section.



LF Type Nozzle														
Thread Sizes				Available Spray Angles										
Nozzle Number	M 1/8	M 1/4	M 3/8	0°	15°	25°	40°	50°	65°	80°	90°	110°		
2	x	x	x	x	x	x	x	x	x	x	x	x		
3	x	x	x	x	x	x	x	x	x	x	x	x		
4	x	x	x	x	x	x	x	x	x	x	x	x		
5	x	x	x	x	x	x	x	x	x	x	x	x		
6	x	x	x	x	x	x	x	x	x	x	x	x		
8	x	x	x	x	x	x	x	x	x	x	x	x		
10	x	x	x	x	x	x	x	x	x	x	x	x		
15	x	x	x	x	x	x	x	x	x	x	x	x		
20	x	x	x	x	x	x	x	x	x	x	x	x		
25	x	x	x	x	x	x	x	x	x	x	x	x		
30	x	x	x	x	x	x	x	x	x	x	x	x		
40	x	x	x	x	x	x	x	x	x	x	x	x		
50	x	x	x	x	x	x	x	x	x	x	x	x		

## AD Type Nozzle

Large dovetailed tip design for use with special threaded/welded bodies and caps, providing positive alignment. Available in flow sizes from 10 – 200 with spray angles of 0, 25, 40, 50, 65, 80, 90°. Orifice is offset 15° to axis of dovetail plus welded body in Stainless Steel. See Accessories section.



AD Type Nozzle														
Thread Sizes				Available Spray Angles										
Nozzle Number	M 1/2	M 3/4	0°	25°	50°	65°	80°	90°						
10	x	x	x	x	x	x	x	x						
15	x	x	x	x	x	x	x	x						
20	x	x	x	x	x	x	x	x						
25	x	x	x	x	x	x	x	x						
30	x	x	x	x	x	x	x	x						
40	x	x	x	x	x	x	x	x						
50	x	x	x	x	x	x	x	x						
60	x	x	x	x	x	x	x	x						
70	x	x	x	x	x	x	x	x						
80	x	x	x	x	x	x	x	x						
100	x	x	x	x	x	x	x	x						
120	x	x	x	x	x	x	x	x						
150	x	x	x	x	x	x	x	x						
200	x	x	x	x	x	x	x	x						

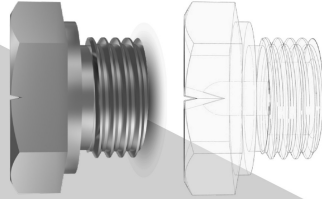
Flow Rate-LF Type Nozzle														
Flow Rate in Liters / Min at BAR G										Flow Rate in GAL / Min at PSIG				
Nozzle Number	1	2	3	4	5	7	10	Nozzle Number	15	30	40	60	80	100
2	0.46	0.65	0.80	0.89	0.99	1.24	1.43	2	0.12	0.17	0.20	0.24	0.26	0.33
3	0.68	0.97	1.18	1.36	1.53	1.81	2.23	3	0.18	0.26	0.30	0.36	0.40	0.48
4	0.90	1.27	1.56	1.83	2.03	2.36	2.86	4	0.24	0.34	0.40	0.48	0.54	0.63
5	1.15	1.62	1.99	2.28	2.55	3.02	3.62	5	0.30	0.43	0.50	0.60	0.67	0.80
6	1.37	1.94	2.37	2.72	3.07	3.61	4.46	6	0.36	0.51	0.60	0.72	0.81	0.95
7	1.59	2.25	2.75	3.21	3.54	4.21	5.36	7	0.42	0.59	0.70	0.85	0.94	1.11
8	1.83	2.59	3.17	3.66	3.98	5.03	5.80	8	0.48	0.68	0.80	0.97	1.05	1.33
10	2.27	3.21	3.93	4.46	5.19	5.95	7.14	10	0.60	0.85	1.00	1.18	1.37	1.57
15	3.44	4.21	6.16	6.70	7.78	9.15	10.71	15	0.91	1.11	1.50	1.77	2.06	2.42
20	4.46	6.25	8.05	9.37	9.94	12.35	14.73	20	1.18	1.65	2.00	2.48	2.63	3.26
25	5.80	8.03	9.94	11.38	12.75	15.09	18.08	25	1.53	2.12	2.50	3.01	3.37	3.99
30	6.70	9.82	11.84	13.84	15.13	17.84	21.43	30	1.77	2.59	3.00	3.66	4.00	4.71
40	9.37	12.05	15.62	18.30	20.57	24.25	28.57	40	2.48	3.18	4.00	4.83	5.43	6.41
50	11.61	16.07	19.89	22.77	25.50	30.19	36.16	50	3.07	4.25	5.00	6.02	6.74	7.98
60	13.84	19.20	23.67	27.23	30.69	36.14	43.30	60	3.66	5.07	6.00	7.19	8.11	9.55
70	16.07	22.77	27.46	32.14	35.88	42.54	50.45	70	4.25	6.02	7.00	8.49	9.48	11.24
80	18.75	25.45	31.72	36.61	41.06	48.03	57.14	80	4.95	6.72	8.00	9.67	10.85	12.69
100	22.77	31.70	39.30	45.53	51.00	60.38	72.32	100	6.02	8.37	10.00	12.03	13.47	15.92
120	27.30	38.90	47.40	54.73	61.10	72.40	86.30	120	7.35	10.39	12.00	14.70	17.00	20.00
150	34.37	48.21	59.19	68.31	76.50	90.10	108.00	150	9.08	12.74	15.00	18.04	20.21	23.81
200	45.53	64.28	79.07	91.10	102.00	120.30	143.80	200	12.03	16.98	20.00	24.06	26.95	31.78

Flow Rate-AD Type Nozzle														
Flow Rate in Liters / Min at BAR G										Flow Rate in GAL / Min at PSIG				
Nozzle Number	1	2	3	4	5	7	10	Nozzle Number	15	30	40	60	80	100
10	2.27	3.21	3.93	4.46	5.19	5.95	7.14	10	0.60	0.85	1.00	1.18	1.37	1.57
15	3.44	4.21	6.16	6.70	7.78	9.15	10.71	15	0.91	1.11	1.50	1.77	2.06	2.42
20	4.46	6.25	8.05	9.37	9.94	12.35	14.73	20	1.18	1.65	2.00	2.48	2.63	3.26
25	5.80	8.03	9.94	11.38	12.75	15.09	18.08	25	1.53	2.12	2.50	3.01	3.37	3.99
30	6.70	9.82	11.84	13.84	15.13	17.84	21.43	30	1.77	2.59	3.00	3.66	4.00	4.71
40	9.37	12.05	15.62	18.30	20.57	24.25	28.57	40	2.48	3.18	4.00	4.83	5.43	6.41
50	11.61	16.07	19.89	22.77	25.50	30.19	36.16	50	3.07	4.25	5.00	6.02	6.74	7.98
60	13.84	19.20	23.67	27.23	30.69	36.14	43.30	60	3.66	5.07	6.00	7.19	8.11	9.55
70	16.07	22.77	27.46	32.14	35.88	42.54	50.45	70	4.25	6.02	7.00	8.49	9.48	11.24
80	18.75	25.45	31.72	36.61	41.06	48.03	57.14	80	4.95	6.72	8.00	9.67	10.85	12.69
100	22.77	31.70	39.30	45.53	51.00	60.38	72.32	100	6.02	8.37	10.00	12.03	13.47	15.92
120	27.30	38.90	47.40	54.73	61.10	72.40	86.30	120	7.35	10.39	12.00	14.70	17.00	20.00
150	34.37	48.21	59.19	68.31	76.50	90.10	108.00	150	9.08	12.74	15.00	18.04	20.21	23.81
200	45.53	64.28	79.07	91.10	102.00	120.30	143.80	200	12.03	16.98	20.00	24.06	26.95	31.78

# Flat Spray Nozzles

## CAC Type Nozzle

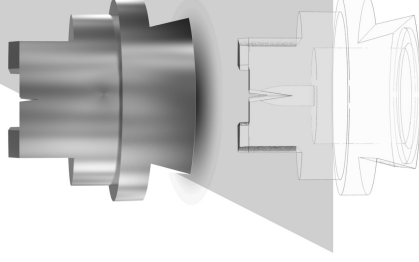
Compact, one-piece male pipe thread design available in flow sizes from 2 – 300 with spray angles of 0, 25, 40, 50, 65, 80, 90°. See chart for thread sizes (1/16" size is NPT only).



CAC Type Nozzle															
Nozzle Number	Thread Sizes - Male Only				Available Spray Angles										
	1/16" NPT	1/8" BSP	M 1/4	M 3/8	M 1/2	M 3/4	0°	15°	25°	40°	50°	65°	80°	90°	110°
2	x	x	x				x	x	x	x	x	x	x	x	x
3	x	x	x				x	x	x	x	x	x	x	x	x
4	x	x	x				x	x	x	x	x	x	x	x	x
5	x	x	x				x	x	x	x	x	x	x	x	x
6	x	x	x				x	x	x	x	x	x	x	x	x
7	x	x	x				x	x	x	x	x	x	x	x	x
8	x	x	x				x	x	x	x	x	x	x	x	x
10	x	x	x				x	x	x	x	x	x	x	x	x
15	x	x	x				x	x	x	x	x	x	x	x	x
20	x	x	x				x	x	x	x	x	x	x	x	x
25			x				x	x	x	x	x	x	x	x	x
30			x				x	x	x	x	x	x	x	x	x
40			x				x	x	x	x	x	x	x	x	x
50			x				x	x	x	x	x	x	x	x	x
60			x				x	x	x	x	x	x	x	x	x
70			x				x	x	x	x	x	x	x	x	x
80			x				x	x	x	x	x	x	x	x	x
100			x				x	x	x	x	x	x	x	x	x
125			x				x	x	x	x	x	x	x	x	x
150			x				x	x	x	x	x	x	x	x	x
200							x	x	x	x	x	x	x	x	x
250							x	x	x	x	x	x	x	x	x
300							x	x	x	x	x	x	x	x	x

## LD Type Nozzle

Dovetailed tip design for use with special threaded/welded bodies and caps, providing positive alignment. Available in flow sizes from 2 – 50 with spray angles of 0, 25, 40, 50, 65, 80, 90°. Orifice is offset 5° to axis of dovetail plus welded body in Stainless Steel. See Accessories section.



LD Type Nozzle															
Nozzle Number	Thread Sizes				Available Spray Angles										
	M 1/8	M 1/4	M 3/8		0°	25°	40°	50°	65°	80°	90°	100°	110°		
2	x	x	x		x	x	x	x	x	x	x	x	x		
4	x	x	x		x	x	x	x	x	x	x	x	x		
6	x	x	x		x	x	x	x	x	x	x	x	x		
8	x	x	x		x	x	x	x	x	x	x	x	x		
10	x	x	x		x	x	x	x	x	x	x	x	x		
15	x	x	x		x	x	x	x	x	x	x	x	x		
20	x	x	x		x	x	x	x	x	x	x	x	x		
25	x	x	x		x	x	x	x	x	x	x	x	x		
40	x	x	x		x	x	x	x	x	x	x	x	x		
50	x	x	x		x	x	x	x	x	x	x	x	x		

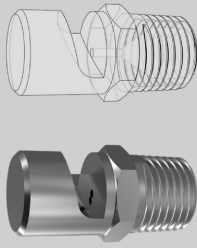
Flow Rate-LD Type Nozzle															
Flow Rate in Liters / Min at BAR G								Flow Rate in GAL / Min at PSIG							
Nozzle Number	1	2	3	4	5	7	10	Nozzle Number	15	30	40	60	80	100	145
2	0.46	0.65	0.80	0.89	0.99	1.24	1.43	2	0.12	0.17	0.20	0.24	0.26	0.33	0.40
3	0.68	0.97	1.18	1.36	1.53	1.81	2.23	3	0.18	0.26	0.30	0.36	0.40	0.48	0.58
4	0.90	1.27	1.56	1.83	2.03	2.36	2.86	4	0.24	0.34	0.40	0.48	0.54	0.63	0.76
5	1.15	1.62	1.99	2.28	2.55	3.02	3.62	5	0.30	0.43	0.50	0.60	0.67	0.80	0.96
6	1.37	1.94	2.37	2.72	3.07	3.61	4.46	6	0.36	0.51	0.60	0.72	0.81	0.95	1.14
7	1.59	2.25	2.75	3.21	3.54	4.21	5.36	7	0.42	0.59	0.70	0.85	0.94	1.11	1.34
8	1.83	2.59	3.17	3.66	3.98	5.03	5.80	8	0.48	0.68	0.80	0.97	1.05	1.33	1.60
10	2.27	3.21	3.93	4.46	5.19	5.95	7.14	10	0.60	0.85	1.00	1.18	1.37	1.57	1.89
15	3.44	4.21	6.16	6.70	7.78	9.15	10.71	15	0.91	1.11	1.50	1.77	2.06	2.42	2.92
20	4.46	6.25	8.05	9.37	9.94	12.35	14.73	20	1.18	1.65	2.00	2.48	2.63	3.26	3.93
25	5.80	8.03	9.94	11.38	12.75	15.09	18.08	25	1.53	2.12	2.50	3.01	3.37	3.99	4.81
30	6.70	9.82	11.84	13.84	15.13	17.84	21.43	30	1.77	2.59	3.00	3.66	4.00	4.71	5.67
40	9.37	12.05	15.62	18.30	20.57	24.25	28.57	40	2.48	3.18	4.00	4.83	5.43	6.41	7.72
50	11.61	16.07	19.89	23.50	27.50	32.19	36.16	50	3.07	4.25	5.00	6.02	6.74	7.98	9.61
60	13.84	19.20	23.67	27.23	30.69	36.14	43.30	60	3.66	5.07	6.00	7.19	8.11	9.55	11.51
70	16.07	22.77	27.46	32.14	35.88	42.54	50.45	70	4.25	6.02	7.00	8.49	9.48	11.24	13.54
80	18.75	25.45	31.72	36.61	41.06	48.03	57.14	80	4.95	6.72	8.00	9.67	10.85	12.69	15.29
100	22.77	31.70	39.30	45.53	51.00	60.38	72.32	100	6.02	8.37	10.00	12.03	13.47	15.95	19.22
125	28.46	39.62	49.12	56.91	63.75	75.48	90.40	125	7.52	7.83	12.50	15.03	16.84	19.94	24.02
150	34.37	48.21	59.19	68.31	76.50	90.10	108.00	150	9.08	12.74	15.00	18.04	20.21	23.81	28.69
200	45.53	64.28	79.07	91.10	102.00	120.30	143.80	200	12.03	16.98	20.00	24.06	26.95	31.78	38.29
250	58.84	80.36	98.50	113.40	127.50	150.00	179.90	250	15.54	21.23	25.00	29.96	33.68	39.63	47.75
300	68.30	96.87	118.40	136.60	152.60	180.70	215.60	300	18.04	25.59	30.00	36.09	40.31	47.74	57.52

Precision Tested. People Trusted.



# Flat Spray Flooding Nozzles

## AN TYPE NOZZLE



Material: Stainless Steel, Brass

Thread: Male, BSPT, NPT

Thread Size: 1/8-1"

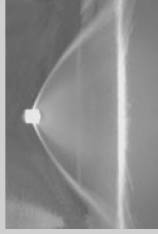
Flow Rate: 0.38-270.00 Liters/Min at 0.5-4 Bar G

Flow Rate: 0.10-71.28 Gal/Min at 7-60 PSIG



Spray Angles  
90°-160°

Spray Pattern:  
Wide Flat Spray



## AN Type Flat Spray Pattern

Deflector type design  
producing a wide flat  
spray pattern at low  
pressures

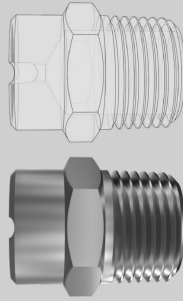
Flow Rate-AN Type Nozzle															
Flow Rate in Liters / Min at BAR G							Flow Rate in GAL / Min at PSIG								
Nozzle Number	0.5	0.7	1	1.5	2	3	4	Nozzle Number	7	10	15	20	30	40	60
1	-	0.38	0.46	0.56	0.65	0.79	0.91	1	-	0.10	0.12	0.14	0.17	0.20	0.25
1.5	0.48	0.57	0.68	0.84	0.97	1.18	1.37	1.5	0.12	0.15	0.18	0.21	0.26	0.30	0.37
2	0.65	0.76	0.91	1.12	1.29	1.57	1.82	2	0.17	0.20	0.24	0.28	0.35	0.40	0.49
2.5	0.81	0.95	1.14	1.40	1.61	1.96	2.28	2.5	0.20	0.25	0.30	0.35	0.43	0.50	0.61
3	0.97	1.14	1.38	1.66	1.92	2.37	2.72	3	0.25	0.30	0.37	0.42	0.52	0.60	0.74
5	1.61	1.92	2.28	2.79	3.21	3.94	4.42	5	0.42	0.50	0.61	0.71	0.87	1.00	1.23
7.5	2.40	2.84	3.39	4.36	4.91	5.92	6.70	7.5	0.63	0.75	0.92	1.10	1.30	1.50	1.84
10	3.23	3.81	4.46	5.49	6.29	7.91	9.38	10	0.84	1.00	1.20	1.40	1.70	2.00	2.45
15	4.99	5.67	6.70	8.24	9.64	11.80	13.80	15	1.30	1.50	1.80	2.10	2.60	3.00	3.68
18	5.70	6.86	8.17	9.94	11.60	14.20	16.40	18	1.50	1.80	2.20	2.50	3.10	3.60	4.41
20	6.56	7.59	8.93	11.00	13.00	15.70	18.30	20	1.70	2.00	2.40	2.80	3.50	4.00	4.90
25	8.09	9.61	11.60	13.80	16.10	19.73	22.80	25	2.10	2.50	3.10	3.50	4.30	5.00	6.13
30	9.70	11.40	13.80	16.60	19.00	23.70	27.20	30	2.50	3.00	3.70	4.20	5.10	6.00	7.35
35	16.60	13.30	15.60	19.40	22.70	27.50	32.10	35	3.00	3.50	4.20	4.90	6.10	7.00	8.58
40	12.70	15.20	18.30	22.40	25.70	31.50	36.40	40	3.30	4.00	4.90	5.70	6.90	8.00	9.80
45	14.50	17.10	20.40	25.00	28.90	35.40	40.90	45	3.83	4.51	5.39	6.60	7.63	9.35	10.80
50	16.20	19.00	22.70	28.00	32.00	39.40	46.40	50	4.20	5.00	6.10	7.10	8.60	10.00	12.25
60	19.20	22.90	27.20	33.60	38.70	47.30	54.60	60	5.00	6.00	7.30	8.50	10.40	12.00	14.71
70	22.60	26.70	31.90	39.10	45.10	55.30	63.80	70	5.97	7.05	8.42	10.32	11.91	14.60	16.84
75	24.20	28.60	34.20	41.80	48.30	59.20	68.40	75	6.30	7.50	9.20	10.60	13.00	15.00	18.38
80	25.90	30.50	36.40	44.60	51.30	63.10	72.90	80	6.70	8.00	9.80	11.30	13.80	16.00	19.61
90	29.00	34.30	41.00	50.20	58.00	71.00	82.00	90	7.66	9.05	10.82	13.25	15.31	18.74	21.65
100	32.30	38.10	45.40	55.60	64.30	78.90	91.10	100	8.40	10.00	12.20	14.10	17.30	20.20	24.51
108	34.80	41.20	49.20	60.30	69.60	85.30	98.50	108	9.19	10.88	12.99	15.92	18.37	22.52	26.00
120	38.50	45.70	54.60	67.00	77.30	94.70	109.00	120	10.00	12.00	14.70	17.00	20.80	24.00	29.41
150	48.50	57.20	68.40	83.60	96.70	118.00	137.00	150	12.60	15.00	18.40	21.20	26.00	30.00	36.76
180	58.10	68.70	82.10	101.00	116.00	142.00	164.00	180	15.34	18.14	21.67	26.66	30.62	37.49	43.29
200	64.70	76.20	90.70	111.00	129.00	158.00	182.00	200	16.80	20.00	24.40	28.20	34.60	40.00	49.02
210	67.30	80.10	95.60	117.00	135.00	166.00	191.00	210	17.50	21.00	25.70	29.60	36.30	42.00	51.47
250	79.40	94.00	112.00	138.00	159.00	195.00	225.00	250	20.96	24.82	29.57	36.43	41.97	51.48	59.40
300	95.30	113.00	135.00	165.00	191.00	234.00	270.00	300	25.16	29.83	35.64	43.56	50.42	61.77	71.28

AN Type Nozzle												
Thread Sizes (BSPT) - Male Only						Thread Sizes (BSPT) - Male Only						Spray Angle (°) at 1.5-bar
Nozzle Number	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M1	
1	x	x										110
1.5	x										x	130
2	x	x									x	135
2.5	x	x									x	150
3	x	x	x								x	140
5	x	x	x								x	140
7.5	x	x	x								x	145
10	x	x	x								x	150
15	x	x	x									
18	x	x	x									
20	x	x	x	x								
25	x	x	x	x								
30	x	x	x	x								
35	x	x	x	x								
40	x	x	x	x								
45	x	x	x	x								
50	x	x	x	x	x							
60	x	x	x	x	x							
70	x	x	x	x	x							
75	x	x	x	x	x							
80	x	x	x	x	x							
90	x	x	x	x	x							
100	x	x	x	x	x							
108	x	x	x	x	x							

Precision Tested. People Trusted.

# Flat Spray Pressure Wash Nozzles

## AZ TYPE NOZZLE



One-piece male pipe thread design.

Material: Stainless Steel, Brass

Thread: Male, BSPT, NPT

Thread Size: 1/8-1/4"

Flow Rate:

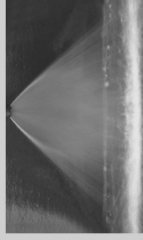
3.50-95.40 Liters/Min at 15-70 Bar G

0.92-25.20 Gal/Min at 200-1,000 PSIG



Spray Pattern:  
Uniform Flat Spray

Spray Angles  
0-50°



## AZ Type Spray Pattern

Producing a uniform flat fan pattern with high impact


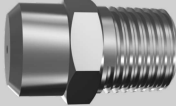

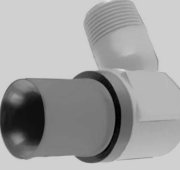
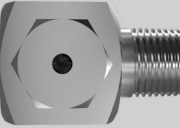
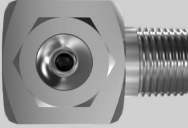

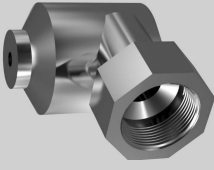
















Flow Rate-AZ Type Nozzle										
Flow Rate in Liters / Min at Bar G										
Nozzle Number	15	20	25	35	40	50	60	70	70	
4	3.50	4.10	4.60	5.40	5.80	6.50	7.10	7.60		
4.5	4.00	4.60	5.10	6.10	6.50	7.30	8.00	8.60		
5	4.40	5.10	5.70	6.70	7.20	8.10	8.80	9.50		
5.5	4.90	5.60	6.30	7.40	7.90	8.90	9.70	10.50		
6	5.30	6.10	6.80	8.10	8.70	9.70	10.60	11.40		
6.5	5.70	6.60	7.40	8.80	9.40	10.50	11.50	12.40		
7	6.20	7.10	8.00	9.40	10.10	11.30	12.40	13.40		
7.5	6.60	7.60	8.60	10.10	10.80	12.10	13.20	14.30		
8	7.10	8.20	9.10	10.80	11.50	12.90	14.10	15.30		
8.5	7.50	8.70	9.70	11.50	12.30	13.70	15.00	16.20		
9	8.00	9.20	10.30	12.10	13.00	14.50	16.00	17.20		
10	8.80	10.20	11.40	13.50	14.40	16.10	17.70	19.10		
15	13.20	15.30	17.10	20.20	21.60	24.20	26.50	28.60		
20	17.70	20.40	22.80	27.00	28.80	32.20	35.30	38.10		
30	24.50	30.60	34.20	40.50	43.30	48.40	53.00	57.20		
40	35.30	40.80	45.60	54.00	57.70	64.50	70.60	76.30		
50	44.10	51.00	57.00	67.40	72.00	80.60	88.30	95.40		

Flow Rate-AZ Type Nozzle										
Flow Rate in GAL / Min at PSIG										
Nozzle Number	200	300	400	500	600	700	800	1000		
4	0.92	1.08	1.22	1.43	1.53	1.72	1.88	2.01		
4.5	1.06	1.22	1.35	1.61	1.72	1.93	2.11	2.27		
5	1.16	1.35	1.51	1.77	1.90	2.14	2.32	2.51		
5.5	1.29	1.48	1.66	1.95	2.09	2.35	2.56	2.77		
6	1.40	1.61	1.80	2.14	2.30	2.56	2.80	3.01		
6.5	1.51	1.74	1.95	2.32	2.48	2.77	3.04	3.28		
7	1.64	1.88	2.11	2.48	2.67	2.99	3.28	3.54		
7.5	1.74	2.01	2.27	2.67	2.85	3.20	3.49	3.78		
8	1.88	2.17	2.40	2.85	3.04	3.41	3.72	4.04		
8.5	1.98	2.30	2.56	3.04	3.25	3.62	3.96	4.28		
9	2.11	2.43	2.72	3.20	3.43	3.83	4.23	4.54		
10	2.32	2.69	3.01	3.57	3.80	4.25	4.68	5.05		
15	3.49	4.04	4.52	5.34	5.71	6.39	7.00	7.56		
20	4.68	5.39	6.02	7.13	7.61	8.51	9.33	10.07		
30	6.47	8.08	9.03	10.70	11.44	12.79	14.00	15.11		
40	9.33	10.78	12.05	14.27	15.24	17.04	18.65	20.17		
50	11.65	13.47	15.06	17.81	19.02	21.29	23.33	25.20		

AZ Type Nozzle										
Nozzle Number	Orifice Dia mm	Thread Sizes		Available Spray Angles						
		M 1/8	M 1/4	0°	15°	25°	40°	50°		
4	1.25	x	x	x	x	x	x	x		
4.5	1.30	x	x	x	x	x	x	x		
5	1.40	x	x	x	x	x	x	x		
5.5	1.45	x	x	x	x	x	x	x		
6	1.50	x	x	x	x	x	x	x		
6.5	1.60	x	x	x	x	x	x	x		
7	1.65	x	x	x	x	x	x	x		
7.5	1.70	x	x	x	x	x	x	x		
8	1.75	x	x	x	x	x	x	x		
8.5	1.80	x	x	x	x	x	x	x		
9	1.90	x	x	x	x	x	x	x		
10	2.00	x	x	x	x	x	x	x		
15	2.40	x	x	x	x	x	x	x		
20	2.80	x	x	x	x	x	x	x		
30	3.60	x	x	x	x	x	x	x		
40	4.00	x	x	x	x	x	x	x		
50	4.40	x	x	x	x	x	x	x		

Precision Tested. People Trusted.

# Hollow Cone Nozzles

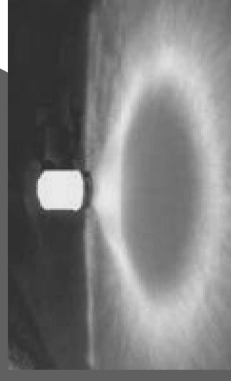
WDA TYPE NOZZLE	WM TYPE NOZZLE	WRW TYPE NOZZLE	RA TYPE NOZZLE	AE TYPE NOZZLE	AF TYPE NOZZLE	WS TYPE NOZZLE	BE TYPE NOZZLE
							
Small Hollow Cone Nozzle. Consists of five parts: body, orifice disc, distributor, retainer, and strainer.	Small Hollow Cone Nozzle	Two-piece design with no internal vanes. Right angle configuration. Nylon only.	Two-piece right angle design with no internal vanes. Patented dual swirl chamber produces "Raindrop" spray. Nylon only.	Two-piece right angle design (body and cap) with no internal vanes.	Two-piece right angle design (body and cap) with no internal vanes.	Three-part construction: body, core, and adaptor.	Large Hollow Cone Nozzle. One-piece body in a right angle design. Stainless Steel standard.
Thread: Male, Female, UNEF Thread Size: 1/8-1/4" Flow Rate: 1.45-2670.0 Liters/Min at 2-35 Bar G 0.39-70.00 Gal/Min at 40-500 PSIG	Thread: Male, BSPT, NPT Thread Size: 1/4" Flow Rate: 3.08-49.0 Liters/Min at 1.5-8 Bar G 0.80-13.00 Gal/Min at 30-115 PSIG	Thread: Male, NPT Thread Size: 1/4" Flow Rate: 0.46-3.60 Liters/Min at 1-7 Bar G 0.12-0.95 Gal/Min at 15-100 PSIG	Thread: Male, NPT Thread Size: 1/4-3/4" Flow Rate: 0.45-121.00 Liters/Min at 1-7 Bar G 0.12-32.00 Gal/Min at 15-100 PSIG	Thread: Male Thread Size: 1/8-1" Flow Rate: 0.46-211.00 Liters/Min at 1-7 Bar G 0.12-55.70 Gal/Min at 15-100 PSIG	Thread: Male, NPT Thread Size: 1/8-1" Flow Rate: 0.46-121.00 Liters/Min at 1-7 Bar G 0.12-32.00 Gal/Min at 15-100 PSIG	Thread: Male, NPT Thread Size: 1/8-3/4" Flow Rate: 0.46-60.3 Liters/Min at 1-7 Bar G 0.12-15.9 Gal/Min at 15-100 PSIG	Thread: Female Thread Size: 1 1/4-2" Flow Rate: 33.20-938.00 Liters/Min at 0.15-4.0 Bar G 12.30-252.00 Gal/Min at 5-60 PSIG
							
							

## Typical Applications

- Aerating Water
- Brine Sprays
- Chemical Processing
- Coil Defrosting
- Dust Control
- Evaporative Condensers
- Evaporative Coolers
- Industrial Washers
- Roof Cooling
- Spray Coating
- Gas Scrubbing & Washing
- Cooling Towers
- Coal Washing
- Degreasing
- Gravel Washing
- Dishwashing
- Foam Control
- Industrial Washing
- Water Fountains

## Hollow Cone Spray Pattern

Produces a fine atomization with no central distribution



# Small Hollow Cone Nozzles



## WDA Type Nozzle

Basic nozzle thread 9/16" – 24 UNEF, with optional adaptors providing 1/8" and 1/4" pipe threads. Flow sizes from 0.5 to 35 with spray angles of 30°, 45°, 60°, 70°, 80° and 90°. Nozzle consists of five parts: body, orifice disc, distributor, retainer, and strainer.

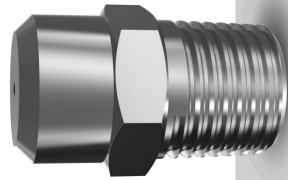
WDA Type Nozzle									
Nozzle Number	Thread Sizes			Available Spray Angles					
	F 1/8	M 1/8	F 1/4	30°	45°	60°	70°	80°	90°
0.5	x	x	x			x	x	x	x
0.75	x	x	x			x	x	x	x
1	x	x	x	x	x	x	x	x	x
1.5	x	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	x
2.5	x	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	x
5	x	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	x
12	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	x
20	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	x
30	x	x	x	x	x	x	x	x	x
35	x	x	x	x	x	x	x	x	x

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## Flow Rate-WDA Type Nozzle

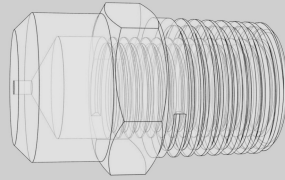
Nozzle Number	Flow Rate in Liters / Hour at Bar G										Flow Rate in GAL / Hour at PSIG						
	2	3	5	7	10	15	20	35	Nozzle Number	40	75	100	125	150	300	500	
0.5	-	-	1.45	1.72	2.05	2.51	2.87	3.82	0.5	-	0.39	0.45	0.50	0.55	0.77	1.00	
0.75	-	-	2.16	2.56	3.05	3.74	4.32	5.72	0.75	-	0.58	0.67	0.75	0.82	1.16	1.50	
1	-	-	2.87	3.40	4.10	5.02	5.77	7.63	1	-	0.77	0.89	1.00	1.10	1.55	2.00	
1.5	-	-	4.32	5.11	6.15	7.53	8.64	11.40	1.5	-	1.16	1.34	1.50	1.65	2.32	3.00	
2	-	-	5.77	6.83	8.19	10.00	11.60	15.30	2	-	1.55	1.79	2.00	2.20	3.10	4.00	
2.5	-	-	7.19	8.55	10.20	12.50	14.50	19.10	2.5	-	1.93	2.24	2.50	2.74	3.88	5.00	
3	-	-	8.64	10.20	12.30	15.10	17.30	22.90	3	-	2.32	2.68	3.00	3.30	4.65	6.00	
4	-	8.69	11.50	13.70	16.40	20.10	23.10	30.50	4	2.20	3.10	3.60	4.00	4.40	6.20	8.00	
5	-	11.10	14.50	17.20	20.50	25.10	28.70	38.20	5	2.80	3.90	4.50	5.00	5.50	7.70	10.00	
6	-	14.20	17.50	20.60	24.60	30.10	34.60	45.80	6	3.60	4.70	5.40	6.00	6.60	9.30	12.00	
8	-	17.80	23.10	27.50	33.10	40.60	46.20	61.10	8	4.50	6.20	7.20	8.00	8.90	12.40	16.00	
10	17.90	22.10	28.70	34.00	41.00	50.20	57.70	76.30	10	5.60	7.70	8.90	10.00	11.00	15.50	20.00	
12	21.60	26.90	34.60	40.80	49.20	60.20	69.30	91.60	12	6.80	9.30	10.70	12.00	13.20	18.60	24.00	
14	25.30	31.20	40.20	47.70	57.00	69.80	80.80	107.00	14	7.90	10.80	12.50	14.00	15.30	21.70	28.00	
16	29.01	35.60	46.20	54.60	65.20	79.80	92.40	122.00	16	9.00	12.40	14.30	16.00	17.50	24.80	32.00	
18	32.80	39.90	51.80	61.40	73.40	89.90	104.00	137.00	18	10.10	13.90	16.10	18.00	19.70	27.90	36.00	
20	32.80	44.60	57.80	68.30	81.60	99.90	115.00	153.00	20	11.30	15.50	17.90	20.00	21.90	31.00	40.00	
24	45.80	53.30	69.30	82.10	98.00	120.00	139.00	183.00	24	13.50	18.60	21.50	24.00	26.30	37.20	48.00	
30	54.40	66.80	86.40	102.00	123.00	150.00	173.00	229.00	30	16.90	23.20	25.80	30.00	32.90	46.50	60.00	
35	54.40	78.20	101.00	120.00	143.00	175.00	202.00	267.00	35	19.80	27.20	31.40	35.00	38.40	54.30	70.00	

# Small Hollow Cone Nozzles



## WM Type Nozzle

Male threaded nozzle only available in 1/4" BSPT or NPT as standard. See chart for available flow sizes. Standard spray angles of 80°.



WM Type Nozzle		
Nozzle Number	Thread Sizes BSPT or NPT 1/4	Spray Angle
WM 108	x	80°
WM 208	x	80°
WM 308	x	80°
WM 508	x	80°
WM 1008	x	80°

Flow Rate-WM Type Nozzle														
Nozzle Number	Flow Rate in Liters / Hour at Bar G						Nozzle Number	Flow Rate in GAL / Hour at PSIG						
	1.5	2	3	4	6	7		8	30	40	60	90	100	115
WM 108	-	-	3.08	3.53	4.36	4.57	5.04	WM 108	-	0.80	0.90	1.10	1.20	1.30
WM 208	4.73	5.36	6.39	7.37	8.76	9.15	9.37	WM 208	1.40	1.70	2.00	2.30	2.40	2.50
WM 308	6.87	8.04	9.47	10.60	12.80	13.70	14.40	WM 308	2.10	2.50	2.80	3.40	3.60	3.80
WM 508	10.89	12.70	15.20	17.40	21.10	22.90	24.50	WM 508	3.40	4.00	4.60	5.60	6.10	6.50
WM 1008	21.31	24.60	30.10	34.60	42.60	45.70	49.10	WM 1008	6.50	8.00	9.10	11.30	12.10	13.00

# Hollow Cone Nozzles

## WRW Type Nozzle



WRW 2, 4, and 6 available. Two-piece design (body and cap) with no internal vanes. Right angle configuration. Available in Nylon only.

WRW Type Nozzle		
Nozzle Number	Thread Sizes (NPT) - Male Only	Spray angle (°) at 3 - bar
2	x	115
4	x	115
6	x	110

## Flow Rate-WRW Type Nozzle

Nozzle Number	Flow Rate in Liters / Min at Bar G						Flow Rate in GAL / Min at PSIG								
	1	2	3	4	5	6	7	Nozzle Number	15	30	40	60	70	90	100
2	0.46	0.64	0.79	0.91	1.00	1.10	1.20	2	0.12	0.17	0.21	0.24	0.26	0.29	0.32
4	0.92	1.30	1.60	1.80	2.00	2.20	2.40	4	0.24	0.34	0.42	0.49	0.53	0.60	0.63
6	1.30	1.90	2.40	2.70	3.10	3.40	3.60	6	0.34	0.50	0.63	0.71	0.82	0.90	0.95

## RA Type Nozzle

Two-piece right angle design (body and cap) with no internal vanes. Patented dual swirl chamber produces "Raindrop" type spray. Available in Nylon only.

RA Type Nozzle		
Nozzle Number	Thread Sizes (NPT) - Male Only	Spray Angle (°) at 3-bar
2	x	120
4	x	120
5	x	120
6	x	120
8	x	120
10	x	120
15	x	120
50	x	140
80	x	140
100	x	140
200	x	140

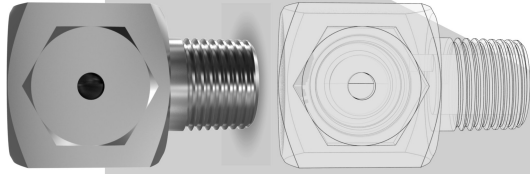


## Flow Rate-RA Type Nozzle

Flow Rate in Liters / Min at Bar G								Flow Rate in GAL / Min at PSIG							
Nozzle Number	1	2	3	4	5	6	7	Nozzle Number	15	30	40	60	70	90	100
2	0.45	0.64	0.79	0.91	1.00	1.10	1.20	2	0.12	0.17	0.20	0.24	0.26	0.29	0.31
4	0.92	1.30	1.60	1.80	2.00	2.20	2.40	4	0.24	0.35	0.40	0.48	0.52	0.59	0.63
5	1.13	1.60	2.00	2.30	2.50	2.80	3.00	5	0.31	0.43	0.50	0.61	0.66	0.75	0.79
6	1.34	1.90	2.40	2.70	3.10	3.40	3.60	6	0.37	0.52	0.60	0.73	0.79	0.89	0.95
8	1.84	2.60	3.20	3.60	4.10	4.50	4.80	8	0.49	0.69	0.80	0.98	1.06	1.20	1.26
10	2.26	3.20	3.90	4.60	5.10	5.60	6.00	10	0.61	0.87	1.00	1.20	1.30	1.47	1.60
15	3.39	4.80	5.85	6.90	7.65	8.40	9.00	15	0.92	1.30	1.50	1.84	1.98	2.25	2.37
50	11.40	16.10	19.70	22.80	25.50	27.90	30.20	50	3.00	4.30	5.20	6.00	6.70	7.40	8.00
80	18.20	25.80	31.60	36.50	40.80	44.70	48.20	80	4.80	6.80	8.40	9.70	10.80	11.80	12.70
100	22.80	32.20	39.50	45.60	51.00	55.80	60.30	100	6.00	8.50	9.80	12.00	12.96	14.70	15.90
200	45.60	64.50	79.00	91.20	102.00	112.00	121.00	200	12.10	17.00	20.90	24.10	27.00	29.60	32.00

# Hollow Cone Nozzles

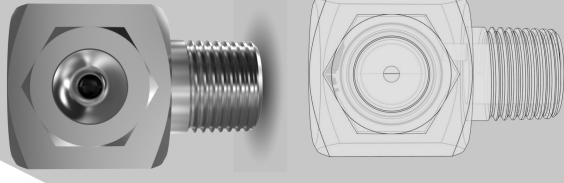
## AE Type Nozzle



Two-piece right angle design (body and cap) with no internal vanes. Available in flow sizes from 2 – 350 with a nominal spray angle of 70° – 90° depending on flow size and pressure.

Nozzle Number	AE Type Nozzle						Spray Angle (°) at 1.5 bar
	Thread Sizes - Male Only						
	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M 1	
2	x	x					70
4	x	x					70
6	x	x					70
10	x	x	x				70
15	x	x	x				70
20	x	x	x				70
25	x	x	x				70
30		x	x				70
40				x			65
50				x			75
60				x			75
80				x	x		65
100				x	x		75
125				x	x		85
150					x	x	95
200					x	x	80
250						x	70
300						x	75
350						x	80

## AF Type Nozzle



Two-piece right angle design (body and cap) with no internal vanes. Available in flow sizes from 2 – 250 with a nominal spray angle of 100° – 120° depending on flow size and pressure.

AF Type Nozzle							
Nozzle Number	Thread Sizes (NPT) - Male Only						Spray Angle (°) at 3-bar
	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M 1	
2	X	X					100
4	X	X					100
6	X	X					100
10	X	X					100
15	X	X	X				100
20			X				100
25			X				110
30			X				110
50			X	X			115
80				X			115
100				X	X		115
150					X	X	115
200						X	120
250						X	120

## Flow Rate-AE Type Nozzle

Nozzle Number	Flow Rate in Liters / Min at Bar G							Nozzle Number	Flow Rate in GAL / Min at PSIG						
	1	2	3	4	5	6	7		15	30	40	60	70	90	100
2	0.46	0.64	0.79	0.91	1.00	1.10	1.20	2	0.12	0.17	0.21	0.24	0.26	0.29	0.32
4	0.92	1.30	1.60	1.80	2.00	2.20	2.40	4	0.24	0.34	0.42	0.48	0.53	0.58	0.63
6	1.30	1.90	2.40	2.70	3.10	3.40	3.60	6	0.34	0.50	0.63	0.71	0.82	0.90	0.95
10	2.30	3.20	3.90	4.60	5.10	5.60	6.00	10	0.61	0.85	1.03	1.22	1.35	1.48	1.59
15	3.40	4.80	5.90	6.80	7.60	8.40	9.00	15	0.90	1.27	1.56	1.80	2.01	2.22	2.38
20	4.50	6.40	7.90	9.10	10.20	11.20	12.10	20	1.19	1.69	2.09	2.40	2.69	2.96	3.20
25	5.70	8.10	9.90	11.40	12.70	14.00	15.10	25	1.51	2.14	2.62	3.01	3.36	3.70	3.99
30	6.90	9.70	11.80	13.70	15.30	16.80	18.10	30	1.82	2.56	3.12	3.62	4.04	4.44	4.78
40	9.10	12.90	15.80	18.20	20.40	22.30	24.10	40	2.40	3.40	4.20	4.80	5.40	5.90	6.40
50	11.40	16.10	19.70	22.80	25.50	27.90	30.20	50	3.00	4.30	5.20	6.00	6.70	7.40	8.00
60	13.60	19.30	23.70	27.30	30.60	33.50	36.20	60	3.60	5.10	6.30	7.20	8.10	8.90	9.60
80	18.20	25.80	31.60	36.50	40.80	44.70	48.20	80	4.80	6.80	8.40	9.70	10.80	11.80	12.70
100	22.80	32.20	39.50	45.60	50.90	55.80	60.30	100	6.00	8.50	9.80	12.00	12.96	14.70	15.90
125	28.50	40.30	49.40	57.00	63.70	69.80	75.40	125	7.50	10.70	13.10	15.10	16.80	18.40	19.90
150	34.20	48.30	59.20	68.40	76.40	83.70	90.50	150	9.00	12.80	15.60	18.10	20.20	22.10	23.90
200	45.60	64.50	79.00	91.20	102.00	112.00	121.00	200	12.10	17.00	20.90	24.10	27.00	29.60	32.00
250	57.00	80.70	98.80	114.10	128.00	140.00	151.00	250	15.10	21.30	26.14	30.10	33.80	37.00	39.90
300	68.40	96.80	119.00	137.00	153.00	168.00	181.00	300	18.10	25.60	31.40	36.20	40.40	44.40	47.80
350	79.80	113.00	138.00	160.00	179.00	196.00	211.00	350	21.10	29.90	36.50	42.30	47.30	51.80	55.70

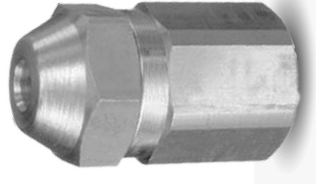
## Flow Rate-AF Type Nozzle

Flow Rate in Liters / Min at Bar G								Flow Rate in GAL / Min at PSIG							
Nozzle Number	1	2	3	4	5	6	7	Nozzle Number	15	30	40	60	70	90	100
2	0.46	0.64	0.79	0.91	1.00	1.10	1.20	2	0.12	0.17	0.21	0.24	0.26	0.29	0.32
4	0.92	1.30	1.60	1.80	2.00	2.20	2.40	4	0.24	0.34	0.42	0.48	0.53	0.58	0.63
6	1.30	1.90	2.40	2.70	3.10	3.40	3.60	6	0.34	0.50	0.63	0.71	0.82	0.90	0.95
10	2.30	3.20	3.90	4.60	5.10	5.60	6.00	10	0.61	0.85	1.03	1.22	1.35	1.48	1.59
15	3.40	4.80	5.90	6.80	7.60	8.40	9.00	15	0.90	1.27	1.56	1.80	2.01	2.22	2.38
20	4.50	6.40	7.90	9.10	10.20	11.20	12.10	20	1.19	1.69	2.09	2.40	2.69	2.96	3.20
25	5.70	8.10	9.90	11.40	12.70	14.00	15.10	25	1.51	2.14	2.62	3.01	3.36	3.70	3.99
30	6.90	9.70	11.80	13.70	15.30	16.80	18.10	30	1.82	2.56	3.12	3.62	4.04	4.44	4.78
50	11.40	16.10	19.70	22.80	25.50	27.90	30.20	50	3.00	4.30	5.20	6.00	6.70	7.40	8.00
80	18.20	25.80	31.60	36.50	40.80	44.70	48.20	80	4.80	6.80	8.40	9.70	10.80	11.80	12.70
100	22.80	32.20	39.50	45.60	50.90	55.80	60.30	100	6.00	8.50	9.80	12.00	12.96	14.70	15.90
150	34.20	48.30	59.20	68.40	76.40	83.70	90.50	150	9.00	12.80	15.60	18.10	20.20	22.10	23.90
200	45.60	64.50	79.00	91.20	102.00	112.00	121.00	200	12.10	17.00	20.90	24.10	27.00	29.60	32.00

Precision Tested. People Trusted.



# Hollow Cone Nozzles



## WS Type Nozzle

Three-part construction: body, core, and adaptor. Available in flow sizes from 2 – 100. Nominal spray angle 75°. Available in NPT male or female thread only.

WS Type Nozzle						
Nozzle Number	Thread Sizes (NPT) - Male Only					Spray Angle (°) at 3-bar
	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	
2	x					75
4	x	x				75
6	x	x	x			75
8		x	x			75
10		x	x			75
15			x	x		75
20			x	x		75
30				x		75
40				x		75
50				x	x	75
60				x	x	75
80					x	75
100					x	75

Flow Rate-WS Type Nozzle														
Flow Rate in Liters / Min at Bar G														
Nozzle Number	1	2	3	4	5	6	7	Nozzle Number	15	30	40	60	70	100
2	0.46	0.64	0.79	0.91	1.00	1.10	1.2	2	0.12	0.17	0.21	0.24	0.26	0.32
4	0.92	1.30	1.60	1.80	2.00	2.20	2.4	4	0.24	0.34	0.42	0.48	0.53	0.64
6	1.30	1.90	2.40	2.70	3.10	3.40	3.6	6	0.34	0.50	0.63	0.71	0.82	0.95
8	1.88	2.60	3.20	3.60	4.10	4.50	4.8	8	0.50	0.69	0.84	0.95	1.08	1.27
10	2.30	3.20	3.90	4.60	5.10	5.60	6	10	0.61	0.85	1.03	1.22	1.50	1.59
15	3.40	4.80	5.90	6.80	7.60	8.40	9	15	0.90	1.27	1.56	1.80	2.01	2.38
20	4.50	6.40	7.96	9.10	10.20	11.20	12.1	20	1.19	1.69	2.09	2.40	2.69	3.20
30	6.90	9.70	11.80	13.70	15.30	16.80	18.1	30	1.82	2.56	3.12	3.62	4.04	4.78
40	9.10	12.90	15.80	18.20	20.40	22.30	24.1	40	2.40	3.40	4.20	4.80	5.40	6.40
50	11.40	16.10	19.70	22.80	25.50	27.90	30.2	50	3.00	4.30	5.20	6.00	6.70	8.00
60	13.60	19.30	23.70	27.30	30.60	33.50	36.2	60	3.60	5.10	6.30	7.20	8.10	9.60
80	18.20	25.80	31.60	36.50	40.80	44.70	48.2	80	4.80	6.80	8.40	9.70	10.80	12.70
100	22.8	32.2	39.5	45.6	51	55.8	60.3	100	6	8.5	9.8	12	12.96	14.7

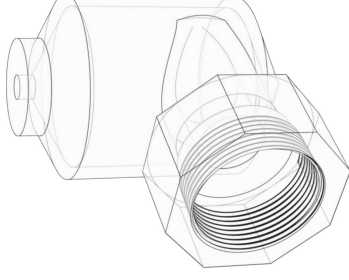
Precision Tested. People Trusted.

# Large Hollow Cone Nozzles



## BE Type Nozzle

One-piece body in a right angle design. Nominal spray angle of 55° to 90° dependant upon flow size and pressure. (See chart for details.) Materials are Stainless Steel as standard.



BE Type Nozzle					Spray Angle (°) at 0.7-bar
Nozzle Number	Thread Sizes				
	F 1 1/4"	F 1 1/2"	F 2"		
23	x	x		62	
28	x	x		65	
36	x	x		70	
43	x	x		78	
49	x	x		80	
54	x	x		87	
63			x	70	
75			x	80	
88			x	80	
100			x	80	
112			x	80	
122			x	80	
144			x	85	

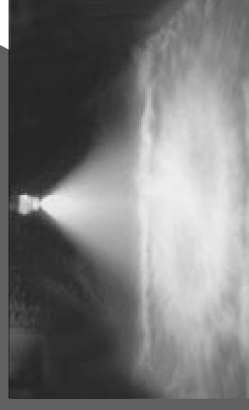
Flow Rate-BE Type Nozzle														
Flow Rate in Liters / Min at Bar G														
Nozzle Number	0.15	0.3	0.5	0.7	1	1.5	2	3	4.0	Nozzle Number	5	10	15	20
23	33.20	45.00	56.00	64.00	77.00	92.30	107.00	130.00	150.00	23	12.30	16.80	20.70	23.40
28	37.90	52.10	65.60	75.50	91.50	109.00	128.00	152.00	175.00	28	14.40	19.80	24.60	27.60
36	50.90	66.30	84.80	98.40	118.00	142.00	163.00	198.00	228.00	36	18.60	25.80	31.80	36.00
43	59.20	79.50	101.00	117.00	140.00	168.00	192.00	237.00	268.00	43	22.20	30.60	37.50	42.60
49	68.70	90.00	116.00	135.00	160.00	193.00	223.00	272.00	321.00	49	25.50	35.40	42.90	48.90
54	75.80	102.00	128.00	149.00	180.00	213.00	254.00	313.00	353.00	54	28.20	39.00	48.30	54.00
63	91.20	123.00	159.00	188.00	210.00	249.00	281.00	341.00	402.00	63	34.80	49.20	56.40	63.00
75	104.00	152.00	200.00	226.00	245.00	296.00	339.00	417.00	504.00	75	43.80	59.40	65.40	75.00
88	123.00	180.00	230.00	256.00	283.00	346.00	393.00	492.00	598.00	88	50.40	67.20	76.20	87.00
100	156.00	208.00	262.00	274.00	324.00	393.00	442.00	549.00	661.00	100	57.60	72.00	87.00	99.60
112	180.00	227.00	284.00	306.00	362.00	440.00	473.00	587.00	705.00	112	62.40	80.40	97.20	112.00
122	199.00	246.00	306.00	332.00	402.00	483.00	554.00	682.00	813.00	122	67.20	87.00	108.00	122.00
144	208.00	256.00	317.00	371.00	442.00	568.00	665.00	814.00	938.00	144	69.60	97.20	119.00	144.00

# Solid Cone Nozzles

WDB TYPE NOZZLE	BF TYPE NOZZLE	BITYPE NOZZLE	BQ TYPE NOZZLE	BN TYPE NOZZLE	BT TYPE NOZZLE	CM TYPE NOZZLE	BY TYPE NOZZLE	MCN TYPE NOZZLE
								
Small Solid Cone Basic nozzle thread 9/16" - 24 UNEF with optional adaptors providing 1/8" & 1/4" pipe threads.	Small Solid Cone with flanged tip design for use with standard bodies and caps.	One-piece body with pressed in cross-milled core.	One-piece body with pressed in cross-milled core. Produces a square pattern.	One-piece body with pressed in cross-milled core.	One-piece body with pressed in cross-milled core.	Large Solid Cone Nozzle. One-piece body with removable vane type core.	Large Solid Cone Nozzle. One-piece body with removable vane type core.	The type MCN is a cone spray nozzle. This compact nozzle permits the maximum liquid throughput for a given pipe size with the large free passageway minimizing clogging. Larger sizes available upon request.
Thread: Male, Female, UNEF Thread Size: 1/8-1/4" Flow Rate: 1.45-26700 Liters/Min at 2-35 Bar G 0.39-70.00 Gal/Min at 40-500 PSIG	Thread: Male Thread Size: 1/8-3/8" Flow Rate: 0.80-1816 Liters/Min at 0.35-7.0 Bar G 0.35-4.80 Gal/Min at 15-100 PSIG	Thread: Male, BSPT, NPT Thread Size: 1/8-1" Flow Rate: 0.88-128.27 Liters/Min at 0.35-7.0 Bar G 0.23-33.00 Gal/Min at 5-100 PSIG	Thread: Male, BSPT, NPT Thread Size: 1/8-1" Flow Rate: 0.88-128.27 Liters/Min at 0.35-7.0 Bar G 0.23-33.00 Gal/Min at 5-100 PSIG	Thread: Male, BSPT, NPT Thread Size: 1/8-1" Flow Rate: 0.88-130.29 Liters/Min at 0.35-7.0 Bar G 0.23-33.60 Gal/Min at 5-100 PSIG	Thread: Male, BSPT, NPT Thread Size: 1/8-1" Flow Rate: 0.88-130.29 Liters/Min at 0.35-7.0 Bar G 0.23-33.60 Gal/Min at 5-100 PSIG	Thread: Female Thread Size: 1 1/4-2" Flow Rate: 25.90-781.00 Liters/Min at 0.2-6.0 Bar G 8.74-219.00 Gal/Min at 5-100 PSIG	Thread: Female Thread Size: 1 1/4-2" Flow Rate: 38.30-515.00 Liters/Min at 0.2-6.0 Bar G 13.04-130.35 Gal/Min at 5-100 PSIG	Thread: Male, BSPT, NPT Thread Size: 1/8-1" Flow Rate: 2.26-484.00 Liters/Min at 0.5-5 Bar G 0.50-106.00 Gal/Min at 5-50 PSIG
								
Solid Cone Producing uniform distribution across a wide pressure range	Solid Cone Producing uniform distribution across a wide pressure range	Solid Cone Producing uniform distribution across a wide pressure range	Solid Cone Producing uniform distribution across a wide pressure range	Solid Cone Producing uniform distribution across a wide pressure range	Solid Cone Producing uniform distribution across a wide pressure range	Solid Cone Producing uniform distribution across a wide pressure range	Solid Cone Producing uniform distribution across a wide pressure range	Solid Cone Producing uniform distribution across a wide pressure range

## Typical Applications

- Aerating Water
- Brine Sprays
- Chemical Processing
- Coil Defrosting
- Dust Control
- Evaporative Condensers
- Evaporative Coolers
- Industrial Washers
- Roof Cooling
- Spray Coating
- Gas Scrubbing & Washing
- Cooling Towers
- Coal Washing
- Degreasing
- Gravel Washing
- Dishwashing
- Foam Control
- Industrial Washing
- Water Fountains



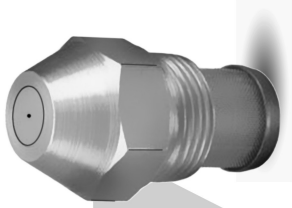
## Solid Cone Spray Pattern

Produces uniform distribution across a wide pressure range

**DELAHAN®**  
SPRAY TECHNOLOGIES

# Small Solid Cone Nozzles

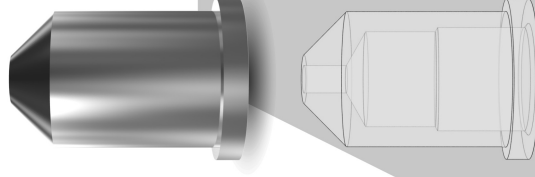
## WDB Type Nozzle



Basic nozzle thread 9/16" – 24 UNF, with optional adaptors providing 1/8" and 1/4" pipe threads. Flow sizes from 0.5 to 20 with spray angles of 30°, 45°, 60°, 70°, 80° and 90°.

WDB Type Nozzle									
Nozzle Number	Thread Sizes				Available Spray Angles				
	F 1/8	M 1/4	F 1/4	30°	45°	60°	70°	80°	90°
0.5	x	x	x			x	x	x	x
0.75	x	x	x	x	x			x	x
1	x	x	x	x	x	x	x	x	x
1.5	x	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	x
2.5	x	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	x
5	x	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	x
12	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	x
20	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	x
30	x	x	x	x	x	x	x	x	x
35	x	x	x	x	x	x	x	x	x

# Solid Cone Nozzles



## BF Type Nozzle

Flanged tip design for use with standard bodies and caps in sizes from 3 – 16. Spray angles of 60° and 90°.

BF Type Nozzle					
Nozzle Number	Thread Sizes			Available Spray Angles	
	M 1/8	M 1/4	M 3/8	60°	90°
3	x	x	x	x	x
4	x	x	x	x	x
5	x	x	x	x	x
6	x	x	x	x	x
8	x	x	x	x	x
10	x	x	x	x	x
12	x	x	x	x	x
16	x	x	x	x	x

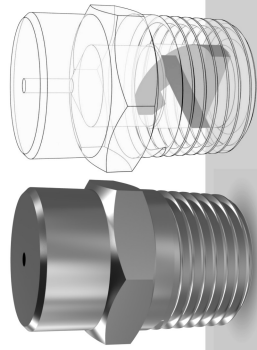
Flow Rate-BF Type Nozzle																	
Flow Rate in Liters / Min at Bar G										Flow Rate in GAL / Min at PSIG							
Nozzle Number	0.35	0.7	1	1.5	2	3	4	5	7.0	Nozzle Number	15	20	30	45	60	70	100
3	0.80	1.14	1.34	1.67	1.90	2.32	2.57	2.81	3.41	3	0.35	0.44	0.50	0.61	0.68	0.74	0.90
4	1.07	1.52	1.79	2.22	2.53	3.10	3.42	3.75	4.54	4	0.47	0.59	0.67	0.82	0.90	0.99	1.20
5	1.33	1.90	2.23	2.78	3.15	3.86	4.28	4.68	5.68	5	0.59	0.73	0.83	1.02	1.13	1.24	1.50
6	1.60	2.29	2.68	3.34	3.79	4.64	5.13	5.62	6.81	6	0.71	0.88	1.00	1.23	1.36	1.48	1.80
8	2.13	3.05	3.57	4.44	5.28	6.18	6.84	7.49	9.08	8	0.94	1.17	1.36	1.63	1.81	1.98	2.40
10	2.67	3.81	4.40	5.56	6.31	7.72	8.56	9.36	11.35	10	0.94	1.47	1.67	2.04	2.26	2.47	3.00
12	3.20	4.57	5.36	6.67	7.58	9.28	10.27	11.24	13.62	12	1.42	1.76	2.00	2.45	2.71	2.97	3.60
16	4.27	6.10	7.14	8.90	10.10	12.37	13.73	14.98	18.16	16	1.89	2.35	2.67	3.27	3.63	3.69	4.80

## Flow Rate-WDB Type Nozzle

Flow Rate in Liters / Hour at Bar G										Flow Rate in GAL / Hour at PSIG						
Nozzle Number	2	3	5	7	10	15	20	35	Nozzle Number	40	75	100	125	150	300	500
0.5	-	-	1.45	1.72	2.05	2.51	2.87	3.82	0.5	-	0.39	0.45	0.50	0.55	0.77	1.00
0.75	-	-	2.16	2.56	3.05	3.74	4.32	5.72	0.75	-	0.58	0.67	0.75	0.82	1.16	1.50
1	-	-	2.87	3.40	4.10	5.02	5.77	7.63	1	-	0.77	0.89	1.00	1.10	1.55	2.00
1.5	-	-	4.32	5.11	6.15	7.53	8.64	11.40	1.5	-	1.16	1.34	1.50	1.65	2.32	3.00
2	-	-	5.77	6.83	8.19	10.00	11.60	15.30	2	-	1.55	1.79	2.00	2.20	3.10	4.00
2.5	-	-	7.19	8.55	10.20	12.50	14.50	19.10	2.5	-	1.93	2.24	2.50	2.74	3.88	5.00
3	-	-	8.64	10.20	12.30	15.10	17.30	22.90	3	-	2.32	2.68	3.00	3.30	4.65	6.00
4	-	8.69	11.50	13.70	16.40	20.10	23.10	30.50	4	2.20	3.10	3.60	4.00	4.40	6.20	8.00
5	-	11.10	14.50	17.20	20.50	25.10	28.70	38.20	5	2.80	3.90	4.50	5.00	5.50	7.70	10.00
6	-	14.20	17.50	20.60	24.60	30.10	34.60	45.80	6	3.60	4.70	5.40	6.00	6.60	9.30	12.00
8	-	17.80	23.10	27.50	33.10	40.60	46.20	61.10	8	4.50	6.20	7.20	8.00	8.90	12.40	16.00
10	17.90	22.10	28.70	34.00	41.00	50.20	57.70	76.30	10	5.60	7.70	8.90	10.00	11.00	15.50	20.00
12	21.60	26.90	34.60	40.80	49.20	60.20	69.30	91.60	12	6.80	9.30	10.70	12.00	13.20	18.60	24.00
14	25.30	31.20	40.20	47.70	57.00	69.80	80.80	107.00	14	7.90	10.80	12.50	14.00	15.30	21.70	28.00
16	29.01	35.60	46.20	54.60	65.20	79.80	92.40	122.00	16	9.00	12.40	14.30	16.00	17.50	24.80	32.00
18	32.80	39.90	51.80	61.40	73.40	89.90	104.00	137.00	18	10.10	13.90	16.10	18.00	19.70	27.90	36.00
20	32.80	44.60	57.80	68.30	81.60	99.90	115.00	153.00	20	11.30	15.50	17.90	20.00	21.90	31.00	40.00
24	45.80	53.30	69.30	82.10	98.00	120.00	139.00	183.00	24	13.50	18.60	21.50	24.00	26.30	37.20	48.00
30	54.40	66.80	86.40	102.00	123.00	150.00	173.00	229.00	30	16.90	23.20	25.80	30.00	32.90	46.50	60.00
35	54.40	78.20	101.00	120.00	143.00	175.00	202.00	267.00	35	19.80	27.20	31.40	35.00	38.40	54.30	70.00

# Solid Cone Nozzles

## BI Type Nozzle



BI 6 – 193 available.  
One-piece body with pressed  
in cross-milled core. Spray  
angles from 35° to 100°  
dependent upon flow size  
and pressure. See chart for  
available thread sizes.

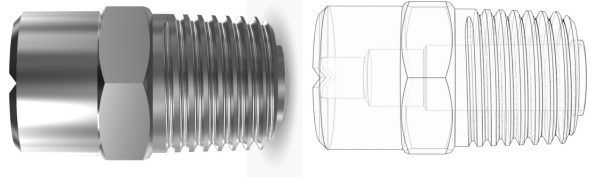
Nozzle Number	Thread Sizes BSPT or NPT - Male Only						Spray Angle (°) at 2-bar
	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M1	
6	x	x					47
8	x	x					56
11	x	x					64
12	x						70
16	x	x	x				60
20	x	x	x				73
22	x	x	x				80
27			x	x			53
32			x	x			70
42			x	x	x		76
49			x	x	x		86
63				x	x		80
77				x	x		73
89					x		85
102					x		97
105						x	57
123						x	73
162						x	86
193						x	10

## Flow Rate-BI Type Nozzle

Nozzle Number	Flow Rate in Liters / Min at Bar G										Flow Rate in GAL / Min at PSIG						
	0.35	1	1.5	2	3	4	7.0	Nozzle Number	5	15	20	30	40	60	100		
6	0.88	1.50	1.88	2.18	2.65	2.87	3.54	6	0.23	0.40	0.47	0.58	0.66	0.76	0.91		
8	1.30	2.28	2.84	3.23	4.00	4.55	5.72	8	0.34	0.60	0.71	0.85	1.00	1.20	1.48		
11	1.63	2.87	3.62	4.05	4.87	5.36	6.74	11	0.42	0.76	0.90	1.07	1.21	1.42	1.74		
12	2.09	3.41	4.09	4.55	5.30	5.91	7.58	12	0.54	0.90	1.02	1.20	1.32	1.56	1.96		
16	2.50	4.41	5.30	6.14	7.27	8.00	10.04	16	0.65	1.16	1.32	1.62	1.81	2.11	2.59		
20	3.11	5.46	6.50	7.54	9.06	10.00	12.63	20	0.80	1.44	1.62	1.99	2.26	2.64	3.25		
22	3.58	6.24	7.51	8.32	9.78	10.91	14.24	22	0.92	1.64	1.87	2.20	2.44	2.88	3.67		
27	4.23	7.42	9.01	10.10	12.32	13.64	17.47	27	1.09	1.96	2.24	2.68	3.07	3.60	4.50		
32	5.81	8.88	10.81	12.32	14.44	15.96	20.40	32	1.50	2.34	2.70	3.24	3.59	4.20	5.28		
42	6.74	11.82	14.44	15.96	19.29	21.41	27.37	42	1.74	3.12	3.60	4.20	4.80	5.64	7.08		
49	8.17	14.24	16.36	18.69	23.13	25.05	32.52	49	2.11	3.76	4.08	4.92	5.76	6.60	8.40		
63	10.20	17.07	20.50	23.84	28.89	32.22	41.31	63	2.64	4.50	5.16	6.30	7.20	8.53	10.70		
77	12.32	20.50	23.94	29.09	34.95	36.68	49.29	77	3.18	5.40	6.36	7.69	8.70	10.20	12.70		
89	13.94	23.74	29.39	33.63	40.00	44.54	56.26	89	3.60	5.24	7.32	8.88	9.96	11.80	14.50		
102	14.95	27.37	33.73	36.68	46.26	50.00	64.54	102	3.84	7.20	8.40	10.50	11.50	13.20	16.70		
105	16.26	27.78	33.73	39.79	48.18	52.32	67.37	105	4.20	7.32	8.40	10.60	12.30	13.80	17.40		
123	19.49	34.64	42.32	46.56	57.77	63.63	80.40	123	5.04	9.12	10.60	12.30	14.40	16.80	20.80		
162	25.55	44.64	53.03	61.41	72.22	79.08	101.00	162	6.60	11.80	13.20	16.20	18.00	21.00	26.20		
193	28.79	50.10	60.70	73.23	87.57	99.08	128.27	193	7.44	13.20	15.10	19.30	22.60	26.20	33.00		

Precision Tested. People Trusted.

## BQ Type Nozzle



BQ 6 – 193 available. One-piece body with pressed in  
cross-milled core. Spray angles from 35° to 100° dependent  
upon flow size and pressure. See chart for available thread  
sizes. Produces a square pattern.

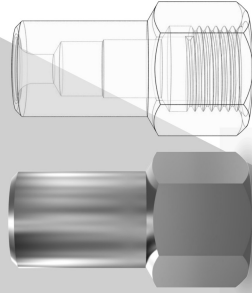
Nozzle Number	Thread Sizes BSPT or NPT						Spray Angle (°) at 2-bar
	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M1	
6	x	x					47
8	x	x					56
11	x	x					64
12	x						70
16	x	x	x				60
20	x	x	x				73
22	x	x	x				80
27			x	x			53
32			x	x			70
42			x	x			76
49			x	x			86
63				x	x		80
77					x		73
89					x		85
102					x		97
105						x	57
123						x	73
162						x	86
193						x	100

## Flow Rate-BQ Type Nozzle

Nozzle Number	Flow Rate in Liters / Min at Bar G										Flow Rate in GAL / Min at PSIG						
	0.35	1	1.5	2	3	4	7.0	Nozzle Number	5	15	20	30	40	60	100		
6	0.88	1.50	1.88	2.18	2.65	2.87	3.54	6	0.23	0.40	0.47	0.58	0.66	0.76	0.91		
8	1.30	2.28	2.84	3.23	4.00	4.55	5.72	8	0.34	0.60	0.71	0.85	1.00	1.20	1.48		
11	1.63	2.87	3.62	4.05	4.87	5.36	6.74	11	0.42	0.76	0.90	1.07	1.21	1.42	1.74		
12	2.09	3.41	4.09	4.55	5.30	5.91	7.58	12	0.54	0.90	1.02	1.20	1.32	1.56	1.96		
16	2.50	4.41	5.30	6.14	7.27	8.00	10.04	16	0.65	1.16	1.32	1.62	1.81	2.11	2.59		
20	3.11	5.46	6.50	7.54	9.06	10.00	12.63	20	0.80	1.44	1.62	1.99	2.26	2.64	3.25		
22	3.58	6.24	7.51	8.32	9.78	10.91	14.24	22	0.92	1.64	1.87	2.20	2.44	2.88	3.67		
27	4.23	7.42	9.01	10.10	12.32	13.64	17.47	27	1.09	1.96	2.24	2.68	3.07	3.60	4.50		
32	5.81	8.88	10.81	12.32	14.44	15.96	20.40	32	1.50	2.34	2.70	3.24	3.59	4.20	5.28		
42	6.74	11.82	14.44	15.96	19.29	21.41	27.37	42	1.74	3.12	3.60	4.20	4.80	5.64	7.08		
49	8.17	14.24	16.36	18.69	23.13	25.05	32.52	49	2.11	3.76	4.08	4.92	5.76	6.60	8.40		
63	10.20	17.07	20.50	23.84	28.89	32.22	41.31	63	2.64	4.50	5.16	6.30	7.20	8.53	10.70		
77	12.32	20.50	23.94	29.09	34.95	36.68	49.29	77	3.18	5.40	6.36	7.69	8.70	10.20	12.70		
89	13.94	23.74	29.39	33.63	40.00	44.54	56.26	89	3.60	5.24	7.32	8.88	9.96	11.80	14.50		
102	14.95	27.37	33.73	36.68	46.26	50.00	64.54	102	3.84	7.20	8.40	10.20	11.50	13.20	16.70		
105	16.26	27.78	33.73	39.79	48.18	52.32	67.37	105	4.20	7.32	8.40	10.50	12.00	13.80	17.40		
123	19.49	34.64	42.32	46.56	57.77	63.63	80.40	123	5.04	9.12	10.60	12.30	14.40	16.80	20.80		
162	25.55	44.64	53.03	61.41	72.22	79.08	101.00	162	6.60	11.80	13.20	16.20	18.00	21.00	26.20		
193	28.79	50.10	60.70	73.23	87.57	99.08	128.27	193	7.44	13.20	15.10	19.30	22.60	26.20	33.00		

# Solid Cone Nozzles

## BN Type Nozzle



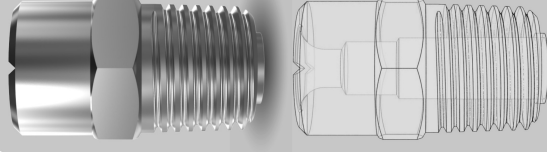
BN 6 – 200 available.  
One-piece body with  
pressed in cross-milled core.  
Spray angles from 85° to 135°  
dependent upon flow size  
and pressure. See chart for  
available thread sizes.

Nozzle Number	BN Type Nozzle						Spray Angle (°) at 2-bar
	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M 1	
6	x	x					100
8	x	x					120
11	x	x					120
15	x	x					110
18	x	x					120
22	x	x					110
25			x				120
32			x				112
39			x				120
46			x				112
48			x				120
59			x				120
65			x				120
73				x			110
82				x			128
94				x			110
98				x			120
136					x		115
153						x	120
200						x	125

Precision Tested. People Trusted.

BT 6 – 200 available. One-piece body with pressed in  
cross-milled core. Spray angles from 85° to 135° dependent  
upon flow size and pressure. See chart for available thread sizes.

## BT Type Nozzle



Nozzle Number	BT Type Nozzle						Spray Angle (°) at 2-bar
	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M 1	
6	x	x					100
8	x	x					120
11	x	x					120
15	x	x					110
18	x	x					120
22			x				110
25			x				120
32			x				110
39			x				120
46			x				112
48			x				120
59			x				128
65			x				110
73				x			120
82					x		112
94					x		120
98					x		120
136						x	115
153						x	120
200						x	125

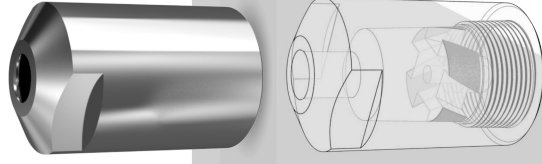
## Flow Rate-BT Type Nozzle

Nozzle Number	Flow Rate in Liters / Min at Bar G						Nozzle Number	Flow Rate in GAL / Min at PSIG							
	0.35	1	1.5	2	3	4		7.0	5	15	20	30	40	60	100
6	0.88	1.50	1.88	2.18	2.65	2.87	3.54	6	0.23	0.40	0.50	0.58	0.70	0.76	0.93
8	1.30	2.28	2.84	3.23	4.00	4.55	5.72	8	0.34	0.60	0.75	0.85	1.06	1.20	1.51
11	1.86	3.23	3.86	4.31	5.15	5.45	7.43	11	0.48	0.85	0.96	1.14	1.28	1.44	1.92
15	2.60	4.50	5.26	5.59	6.64	7.24	9.16	15	0.69	1.19	1.39	1.48	1.75	1.91	2.42
18	3.10	5.39	6.30	6.70	7.96	8.68	10.98	18	0.82	1.42	1.66	1.77	2.10	2.29	2.90
22	3.95	6.84	8.00	8.50	10.10	11.01	13.94	22	1.02	1.80	1.99	2.24	2.52	2.93	3.60
25	4.27	7.24	8.43	9.32	11.01	12.32	15.76	25	1.10	1.91	2.10	2.46	2.76	3.24	4.08
32	5.90	9.15	10.80	11.92	14.30	15.78	19.90	32	1.56	2.42	2.85	3.15	3.78	4.17	5.25
39	7.20	11.15	13.14	14.52	17.40	19.20	24.25	39	1.90	2.94	3.47	3.83	4.59	5.07	6.40
46	8.13	13.64	15.86	17.27	19.29	22.32	27.88	46	2.10	3.60	3.96	4.56	4.80	5.88	7.20
48	8.33	15.25	16.87	18.18	23.13	24.54	32.52	48	2.28	4.02	4.20	4.80	5.76	6.48	8.40
59	9.29	15.96	19.29	22.32	26.06	28.18	37.67	59	2.40	4.20	4.80	5.88	6.48	7.44	9.72
65	12.00	18.60	21.92	24.21	29.00	32.05	40.40	65	3.17	4.91	5.79	6.39	7.66	8.46	10.67
73	13.50	20.88	24.50	27.19	32.60	36.00	45.40	73	3.56	5.51	6.47	7.18	8.61	9.50	11.99
82	15.35	23.74	27.98	30.91	37.07	40.91	51.61	82	3.96	6.24	6.96	8.16	9.24	10.80	13.30
94	16.77	26.87	32.72	35.45	41.92	45.96	59.89	94	4.32	7.08	8.16	9.36	10.40	12.10	15.50
98	18.08	27.78	34.24	37.27	44.34	50.00	64.54	98	4.68	7.32	8.52	9.84	11.00	13.20	16.70
136	24.14	42.32	48.18	51.41	60.20	67.77	86.86	136	6.24	11.20	12.00	13.60	15.00	17.90	22.40
153	27.88	46.97	53.93	57.97	67.47	76.36	98.07	153	7.20	12.40	13.40	15.30	16.80	20.20	25.30
200	29.69	51.41	62.62	75.95	88.68	99.59	130.29	200	7.68	13.60	15.60	20.00	22.10	26.30	33.60

# Large Solid Cone Nozzles

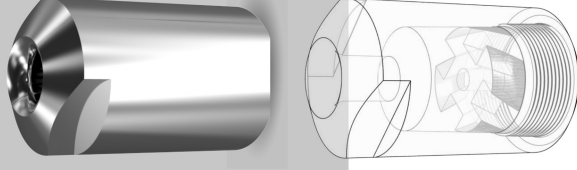
## CM Type Nozzle

CM 16 – 105 available. One-piece body with removable vane type core. Spray angles of 45° to 110° dependent upon flow size and pressure. See chart for available thread sizes.



CM Type Nozzle				
Nozzle Number	Thread Sizes - Female Only			Spray Angle (°) at 0.7 bar
	F 1 1/4"	F 1 1/2"	F 2"	
16	x			60
22	x			70
27	x			70
33	x			70
29		x		60
35		x		60
42		x		70
48		x		75
54		x		85
64			x	73
71			x	77
81			x	75
90			x	85
98			x	88
105			x	94

## BY Type Nozzle



BY 23 – 96 available. One-piece body with removable vane type core. Spray angles of 70° to 130° dependent upon flow size and pressure. See chart for available thread sizes.

BY Type Nozzle				
Nozzle Number	Thread Sizes - Female Only			Spray Angle (°) at 0.7 bar
	F 1 1/4"	F 1 1/2"	F 2"	
23	x			112
28	x			108
35	x			105
37		x		116
42		x		115
47		x		110
52		x		117
66			x	105
73			x	120
78			x	120
89			x	110
96			x	105

Flow Rate-CM Type Nozzle																		
Flow Rate in Liters / Min at Bar G											Flow Rate in GAL / Min at PSIG							
Nozzle Number	0.2	0.35	0.7	1	1.5	2	3	4	5.0	6.0	Nozzle Number	5	10	15	30	40	80	100
16	25.90	33.30	45.70	53.60	64.40	72.30	87.60	99.60	110.00	119.00	16	8.74	12.00	14.40	19.50	22.20	30.50	33.40
22	34.20	44.00	59.90	70.10	84.30	96.40	115.00	131.00	145.00	153.00	22	11.60	15.70	18.00	25.90	29.20	40.40	44.20
27	43.40	55.80	76.40	89.30	106.00	121.00	146.00	166.00	184.00	200.00	27	14.70	20.00	24.00	32.50	37.10	51.00	55.80
33	52.20	67.70	91.90	108.00	129.00	146.00	177.00	202.00	222.00	243.00	33	17.80	24.10	29.10	39.40	44.80	61.60	68.10
29	45.10	57.60	79.60	94.20	112.00	128.00	154.00	177.00	197.00	212.00	29	15.10	20.90	25.30	34.50	39.20	54.60	60.20
35	36.20	70.00	96.50	114.00	137.00	156.00	187.00	216.00	238.00	259.00	35	18.40	25.30	30.60	42.00	47.60	66.20	72.90
42	66.10	86.00	117.00	137.00	168.00	191.00	229.00	261.00	289.00	317.00	42	22.60	30.70	36.90	51.30	58.10	80.20	89.00
48	74.10	96.50	133.00	158.00	188.00	216.00	259.00	298.00	326.00	355.00	48	25.30	34.90	42.40	58.10	66.60	90.60	99.90
54	83.50	108.00	148.00	175.00	211.00	241.00	288.00	330.00	367.00	398.00	54	28.30	38.90	47.00	64.90	73.10	102.00	112.00
64	96.90	126.00	175.00	206.00	248.00	284.00	341.00	389.00	437.00	503.00	64	33.10	45.90	55.40	76.40	86.50	121.00	132.00
71	109.00	142.00	195.00	231.00	279.00	321.00	335.00	440.00	488.00	536.00	71	37.30	51.20	62.20	86.30	97.80	136.00	150.00
81	123.00	161.00	222.00	261.00	316.00	362.00	436.00	504.00	553.00	603.00	81	42.10	58.20	70.30	97.40	111.00	154.00	171.00
90	137.00	181.00	250.00	294.00	353.00	408.00	492.00	558.00	618.00	679.00	90	47.40	65.70	79.00	110.00	125.00	172.00	190.00
98	149.00	195.00	207.00	316.00	385.00	451.00	526.00	607.00	670.00	728.00	98	51.20	71.00	84.90	121.00	133.00	186.00	205.00
105	160.00	209.00	288.00	339.00	413.00	473.00	568.00	625.00	718.00	781.00	105	54.90	75.80	91.10	127.00	144.00	199.00	219.00

Flow Rate-BY Type Nozzle																			
Nozzle Number	Flow Rate in Liters / Min at Bar G										Nozzle Number	Flow Rate in GAL / Min at PSIG							
	0.2	0.35	0.7	1	1.5	2	3	4	5.0	6.0		5	10	15	30	40	80	100	
23	38.30	49.40	64.00	75.40	90.00	103.00	117.00	138.00	147.00	160.00	23	13.04	16.90	19.90	27.19	29.61	38.81	45.67	
28	46.40	59.50	78.20	91.50	108.00	118.00	145.00	163.00	179.00	192.00	28	15.71	20.64	24.16	31.15	36.70	47.25	54.38	
35	58.90	75.90	101.10	115.00	133.00	137.00	179.00	206.00	225.00	258.00	35	20.04	26.69	30.36	36.17	45.31	59.40	72.33	
37	62.90	80.50	106.00	125.00	146.00	166.00	199.00	216.00	252.00	274.00	37	21.25	27.98	33.00	43.82	50.37	66.53	77.61	
42	69.60	89.20	119.00	138.00	164.00	187.00	218.00	248.00	275.00	302.00	42	23.55	31.41	36.43	49.37	55.18	72.60	85.27	
47	76.30	98.80	133.00	154.00	184.00	210.00	254.00	292.00	319.00	348.00	47	26.08	35.11	40.65	55.44	64.29	84.21	98.47	
52	86.60	110.00	146.00	170.00	203.00	227.00	277.00	318.00	353.00	-	52	29.04	38.54	44.88	59.93	70.11	93.19	-	
66	105.00	137.00	188.00	219.00	259.00	294.00	355.00	401.00	-	-	66	36.17	49.63	57.81	77.61	89.85	-	-	
73	116.00	149.00	204.00	240.00	286.00	325.00	390.00	452.00	-	-	73	39.33	53.85	63.36	85.80	98.71	-	-	
78	125.00	161.00	220.00	256.00	306.00	347.00	420.00	-	-	-	78	42.50	58.08	67.58	91.61	106.30	-	-	
89	141.00	183.00	247.00	291.00	344.00	403.00	486.00	-	-	-	89	48.31	65.21	76.82	106.39	123.01	-	-	
96	152.00	197.00	270.00	313.00	375.00	441.00	515.00	-	-	-	96	52.01	71.28	82.63	116.42	130.35	-	-	

Precision Tested. People Trusted.



# Large Solid Cone Nozzles

## MCN Type Nozzle

The type MCN is a cone spray nozzle available in spray angles from 60° - 120°. This compact nozzle permits the maximum liquid throughput for a given pipe size, with the large free passageway minimizing clogging. Nozzles available in thread sizes of 1/8" to 1" BSPT or NPT. Larger sizes available upon request.



MCN Type Nozzle						
Nozzle Number	Thread Sizes (BSPT or NPT) - Male Only				Spray Angle (°)	
	M 1/8	M 1/4	M 3/8	M 1/2	M 3/4	M 1
6	x					60-90-120
8	x					60-90-120
6		x				60-90-120
8		x				60-90-120
10		x				60-90-120
6			x			60-90-120
8			x			60-90-120
10			x			60-90-120
12			x			60-90-120
14			x			60-90-120
16			x			60-90-120
20			x			60-90-120
24				x		60-90-120
28				x		60-90-120
32				x	x	60-90-120
40						60-90-120
48						60-90-120

## Flow Rate-MCN Type Nozzle

Flow Rate in Liters / Min at Bar G							Flow Rate in GAL / Min at PSIG						
Nozzle Number	0.5	0.7	1	2	3	5	Nozzle Number	5	10	20	30	40	50
6	2.26	2.67	3.19	4.50	5.50	7.10	6	0.50	0.70	0.99	1.21	1.40	1.57
8	4.19	4.96	5.93	8.40	10.30	13.20	8	0.92	1.30	1.84	2.25	2.60	2.91
10	6.45	7.63	9.12	12.90	15.80	20.40	10	1.41	2.00	2.83	3.46	4.00	4.47
12	9.67	11.40	13.70	19.30	23.70	30.60	12	2.12	3.00	4.24	5.20	6.00	6.71
14	31.10	15.40	18.50	26.10	32.00	41.30	14	2.86	4.05	5.73	7.01	8.10	9.06
16	17.10	20.20	24.20	34.20	41.80	54.00	16	3.75	5.30	7.50	9.18	10.60	11.90
20	26.60	31.50	37.60	53.20	65.10	84.10	20	5.83	8.25	11.70	14.30	16.50	18.40
24	38.80	46.00	54.90	77.70	95.10	123.00	24	8.52	12.10	17.00	20.90	24.10	26.90
28	53.20	62.90	75.20	106.00	130.00	168.00	28	11.70	16.50	23.30	28.60	33.00	36.90
32	67.70	80.10	95.70	135.00	166.00	214.00	32	14.80	21.00	29.70	36.40	42.00	47.00
40	108.00	128.00	153.00	216.00	264.00	341.00	40	23.70	33.50	47.40	58.00	67.00	74.90
48	153.00	181.00	216.00	306.00	375.00	484.00	48	33.60	47.50	67.20	82.30	95.00	106.00

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# Accessories

## Standard Threaded Nozzle Bodies and Caps

These are designed to accept any standard flanged tip from the standard nozzle range.



Standard Threaded Nozzle Bodies Selection Chart - BSP Threads					
Thread Size BSP	Material	Male	Female	Cap Thread Size	Cap Number
M or F 1/8	Brass	A320110016	A320120015	3/8" BSPP	A292830013
M or F 1/8	Stainless steel 303	A320110024	A320120023	3/8" BSPP	A292830021
M or F 1/4	Brass	A320130014	A320140013	3/8" BSPP	A292830013
M or F 1/4	Stainless steel 303	A320130022	A320140021	3/8" BSPP	A292830021
M or F 3/8	Brass	A320160011	A320170010	3/8" BSPP	A292830013
M or F 3/8	Stainless steel 303	A320160029	A320170028	3/8" BSPP	A292830021

Standard Threaded Nozzle Bodies Selection Chart - BSP Threads					
Thread Size NPT	Material	Male	Female	Cap Thread Size	Cap Number
M 1/8	Brass	A011710019	-	11/16" - 16 UN	A011650015
M 1/8	Stainless steel 303	A011710033	-	11/16" - 16 UN	A011650031
M or F 1/4	Brass	A011670013	A011690011	11/16" - 16 UN	A011650015
M or F 1/4	Stainless steel 303	A011670039	A011690037	11/16" - 16 UN	A011650031
M or F 3/8	Brass	A507010013	A507020012	11/16" - 16 UN	A011650015
M or F 3/8	Stainless steel 303	A507010021	A507020020	11/16" - 16 UN	A011650031
M 1/4	Nylon	A084740016	-	11/16" - 16 UN	A084750015

## Dovetail Nozzle Bodies

- 1/8", 1/4", & 3/8" Dovetail bodies for use with LD Tip
- 3/4" & 1/2" Dovetail bodies for use with AD Tip
- High pressure caps available for all bodies in LD range

Please note: Welding Body version available if required.

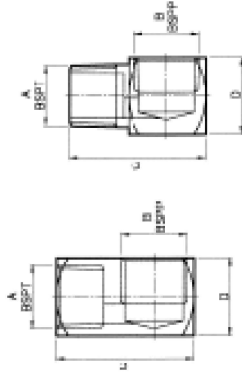
Dovetail Nozzle Bodies				
Type	Brass	Use Brass Cap No	Stainless Steel	Use S/S Cap No
1/4" BSP LDM Body	x	W00105-2	x	W00105-1
1/4" NPT LDMX Body	x	W00105-2	x	W00105-1
3/8" BSP LDM Body	x	W00105-2	x	W00105-1
3/8" NPT LDMX Body	x	W00105-2	x	W00105-1
1/2" BSP ADM Body	x	W06248-1	x	W06248-3X
1/2" NPT ADMX Body	x	W06248-1	x	W06248-3
3/4" BSP ADM Body	x	W06248-1	x	W06248-3
3/4" NPT ADMX Body	x	W06248-1	x	W06248-3
LDM Welding Nipple Body	x		x	W00105-1
ADM Welding Nipple Body	x		x	W06248-3

# Accessories



## Adaptors

- 90° adaptor for positioning of nozzles
- Available in Brass and Stainless Steel – other materials available to special order



Adaptors Selection Chart

Part Number Male Adaptor	Part Number Male Adaptor	Thread Size A	Thread Size B	Part Number Fe-		Part Number Female Adaptor
				male Adaptor	male Adaptor	
Brass	Stainless			Brass	Stainless	
W137130024	W137130016	1/8"	1/8"	W067851011	W067853033	
W000811015	W000812021	1/4"	1/8"	W002162029	W002161013	
W003180020	W003180012	1/4"	1/4"	W004640022	W004640014	
W000822020	W000821014	3/8"	1/4"	W002172028	W002171012	
W003190029	W003190011	3/8"	3/8"	W004630023	W004630015	
W000832029	W000831013	1/2"	3/8"	W002182027	W002181011	
W003200026	W003200034	1/2"	1/2"	W004620024	W004620016	
W000842028	W000841012	3/4"	1/2"	W002190020	W002191010	
W001940029	W001940037	3/4"	3/4"	W001960027	W001960019	
W000852027	W000851011	1"	3/4"	W002202023	W002201017	
W004681026	W004681018	1"	1"	W004700024	W004700016	

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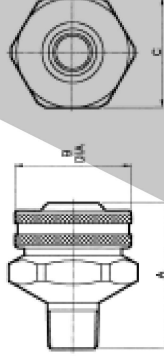
## Adjustable Joint

### Features and Positioning:

- Facilitates finger-tight nozzle adjustment without disturbing piping system
- Complete 360° radial adjustment and 50° angular adjustment

### Construction and Materials:

- Available with male inlet connections and female outlets in BSP or NPT threads
- Available in Brass and Stainless Steel
- Positive O-ring seal handles pressures up to 35 Bar G



Adjustable Joint Selection Chart

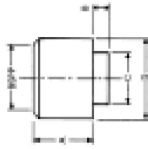
Part Number	Material	Inlet Thread BSP	Outlet Thread BSP	A	B	C
W091111010	Brass	1/8"	1/8"	28.60	25.40	20.80
W091113016	Stainless	1/8"	1/8"	28.60	25.40	20.80
W091111028	Brass	1/4"	1/8"	28.60	25.40	20.80
W091113024	Stainless	1/4"	1/8"	28.60	25.40	20.80
W091111036	Brass	1/4"	1/4"	34.90	31.80	25.70
W130601120	Poly	1/4"	1/4"			
W091113032	Stainless	1/4"	1/4"	34.90	31.80	25.70
W091111044	Brass	3/8"	1/4"	34.90	31.80	25.70
W130603126	Poly	3/8"	1/4"			
W091113040	Stainless	3/8"	1/4"	34.90	31.80	25.70
W091111051	Brass	3/8"	3/8"	44.50	38.10	31.80
W130604124	Poly	3/8"	3/8"			
W091113057	Stainless	3/8"	3/8"	44.50	38.10	31.80
W091111069	Brass	1/2"	1/2"	55.60	44.50	31.80
W130607127	Poly	1/2"	1/2"			
W091113065	Stainless	1/2"	1/2"	55.60	44.50	31.80
W091111077	Brass	3/4"	3/4"	61.10	50.80	38.00
W091113073	Stainless	3/4"	3/4"	61.10	50.80	38.00
W091111085	Brass	1"	1"	75.00	70.00	60.00
W091113081	Stainless	1"	1"	75.00	70.00	60.00

# Accessories

## Nozzle Sockets

Used for welding or brazing to spray pipe/manifold assemblies to enable male threaded nozzles to be fitted.

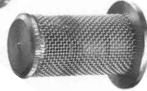
- Available with female BSP threads only
- Available in Brass, Stainless Steel, and Mild Steel
- Refer to chart for pipe drilled hole size



Nozzle Sockets Selection Chart							
HNS Number	Thread Size	Material	Part Number	A	B	C	D
125	1/8"	Brass	W003510010	12.7	3.2	9.1	14.3
125	1/8"	Stainless	W003510036	12.7	3.2	9.1	14.3
250	1/4"	Brass	W003520019	15.9	3.2	15.1	19.1
250	1/4"	Stainless	W003520035	15.9	3.2	15.1	19.1
375	3/8"	Brass	W003530018	19.1	3.2	15.1	25.4
375	3/8"	Stainless	W003530034	19.1	3.2	15.1	25.4
500	1/2"	Brass	W003540017	22.3	4.8	21.8	31.8
500	1/2"	Stainless	W003540033	22.3	4.8	21.8	31.8
750	3/4"	Brass	W003550016	22.3	4.8	21.8	31.8
750	3/4"	Stainless	W003550032	22.3	4.8	21.8	31.8
1000	1"	Brass	W003560031	25.4	6.4	31.4	38.1
1000	1"	Stainless	W003560031	25.4	6.4	31.4	38.1

## Tip Filters

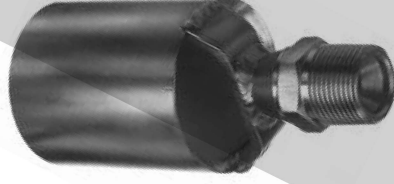
- Standard Flanges – for use with standard flanged nozzles
- Ball Check – for use with standard flanged nozzles to help stop dripping after pressure shut off
- Threaded – for use with nozzle range



Tip Filters Selection Chart						
Mesh Size	Material	Flange	Ball Check Strainer	Threaded (SC)	Flange (FC)	
24	Brass	-	A35280064	-	-	-
24	Stainless	-	-	-	-	-
40	Brass	-	-	W000891017	-	-
40	Stainless	-	-	W000893013	-	-
50	Brass	A281750032	A35280015	-	-	-
50	Stainless	A281750016	-	-	-	-
80	Brass	-	-	W000891025	-	-
80	Stainless	-	-	W000893021	-	-
100	Brass	A281750040	A35280023	-	-	-
100	Stainless	A281750024	A35280080	-	-	-
150	Brass	-	-	-	-	-
150	Stainless	-	-	-	-	-
200	Brass	A281750073	-	W000891033	-	-
200	Stainless	A281750107	-	W000893039	-	-
60	Poly	-	-	-	-	W184360011
100	Poly	-	-	-	-	W184360029

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# Special Purpose



## Type BB Eductor

- One-piece design with no internal components. Available with 3/8, 1/2, and 3/4 BSP male threads.
- Maximum Design Pressure: Stainless Steel – 500 psi (35 bar).
- Maximum Design Temperature: Stainless Steel – 900°F (500°C).



Thread Sizes (BSP) Male Only						
Nozzle Number	3/8	1/2	3/4	Approx Orifice Size in mm		
50	x					4.4
75	x	x				5.4
100	x	x	x			6.4
125		x	x			7.1
150		x	x			7.8
175		x	x			8.4
200		x	x			8.8
250			x			9.8
300			x			11
350			x			11.9
400			x			12.7

Flow Rate per Nozzle							
Flow Rate in GAL / Min at PSIG							
Nozzle Number	0.7	1	1.5	2	3	4	5.0
50	2.5	4.3	5.3	6.1	6.8	7.98	8.5
75	3.8	6.5	7.9	9.2	10.3	11.9	12.8
100	5	8.5	10.6	12	13.5	15.9	17
125	6.3	10.6	13.2	15.3	16.8	19.9	21.3
150	7.6	13.16	15.9	18.2	20.2	23.8	25.5
175	8.8	14.9	18.2	21.1	23.6	27.9	29.3
200	10	16	20.8	24	27	31.7	34
250	12.6	21.2	26.1	30.1	33.8	39.6	42.5
300	15.1	25.6	31.3	36.1	40.4	47.7	52.3
350	17.6	29.7	36.5	42.1	47	55.6	59.4
400	20.1	34.1	41.5	47.9	53.5	63.7	68.2

Flow Rate per Nozzle							
Flow Rate in Liters / Min at Bar G							
Nozzle Number	0.7	1	1.5	2	3	4	5.0
50	9.61	11.61	14.2	16.4	20	23.1	25.8
75	14.42	17.42	21.3	24.6	30	34.8	38.9
100	19.1	22.8	27.94	32.24	40	45.6	51
125	24	29	35.5	40.25	50	58	63.75
150	28.8	34.4	41.67	48.6	60	68.8	76.5
175	33.4	39.9	48.9	56.48	69	79.8	89.25
200	38	45.5	55.7	64.3	78.8	91	102
250	47.6	57	69.6	80.4	98.75	114	128
300	57.2	68.3	82.33	96.9	118.3	136.6	153
350	66.5	79.63	97.5	112.53	138	159.28	178
400	76	90.6	111.96	129	157	181.2	202.5

# Nozzle Application Enquiry Form

Name	E-Mail
Company	Telephone Number
Address	Fax Number

To specify any type of nozzle it is essential to provide several pieces of information:	
Flow Rate: which can be given in a variety of units such as:	<ul style="list-style-type: none"> <li>• Litres per minute</li> <li>• M<sup>3</sup>/hour</li> <li>• Gallons per minute (specify US or Imp)</li> <li>• Kg per hour (density will be required if different from water)</li> </ul>
Operating Pressure:	
which can be given in a variety of units such as:	<ul style="list-style-type: none"> <li>• Bar G.</li> <li>• Kg/cm<sup>2</sup></li> <li>• Head in Metres or Feet</li> <li>• P.S.I.G.</li> <li>• kPa (Kilo Pascals)</li> </ul>
Spray Angle:	
Type of Spray Pattern:	<ul style="list-style-type: none"> <li>• Flat</li> <li>• Hollow Cone</li> <li>• Solid Cone/Circular or Square</li> <li>• Air Atomizing</li> </ul>
Liquid Being Sprayed:	
If different from water the following are required:	<ul style="list-style-type: none"> <li>• Density:</li> <li>• Surface Tension:</li> <li>• Viscosity:</li> <li>• Solids Content:</li> </ul>
Application or Purpose of Nozzle (not always necessary) e.g.	<ul style="list-style-type: none"> <li>• Washing/Rinsing</li> <li>• Gas Scrubbing</li> <li>• Aeration of Liquids</li> <li>• Gas Cooling - Separate Enquiry Sheet Required</li> <li>• Spray Drying - Separate Enquiry Sheet Required</li> <li>• Cleaning in Place</li> <li>• Quenching</li> <li>• De-Scaling</li> <li>• Humidification</li> </ul>

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804-359-8448

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Canonsburg, PA 15317  
412-598-0209

E-mail: [sales@conseroinc.com](mailto:sales@conseroinc.com) • Web: [conseroinc.com](http://conseroinc.com)

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