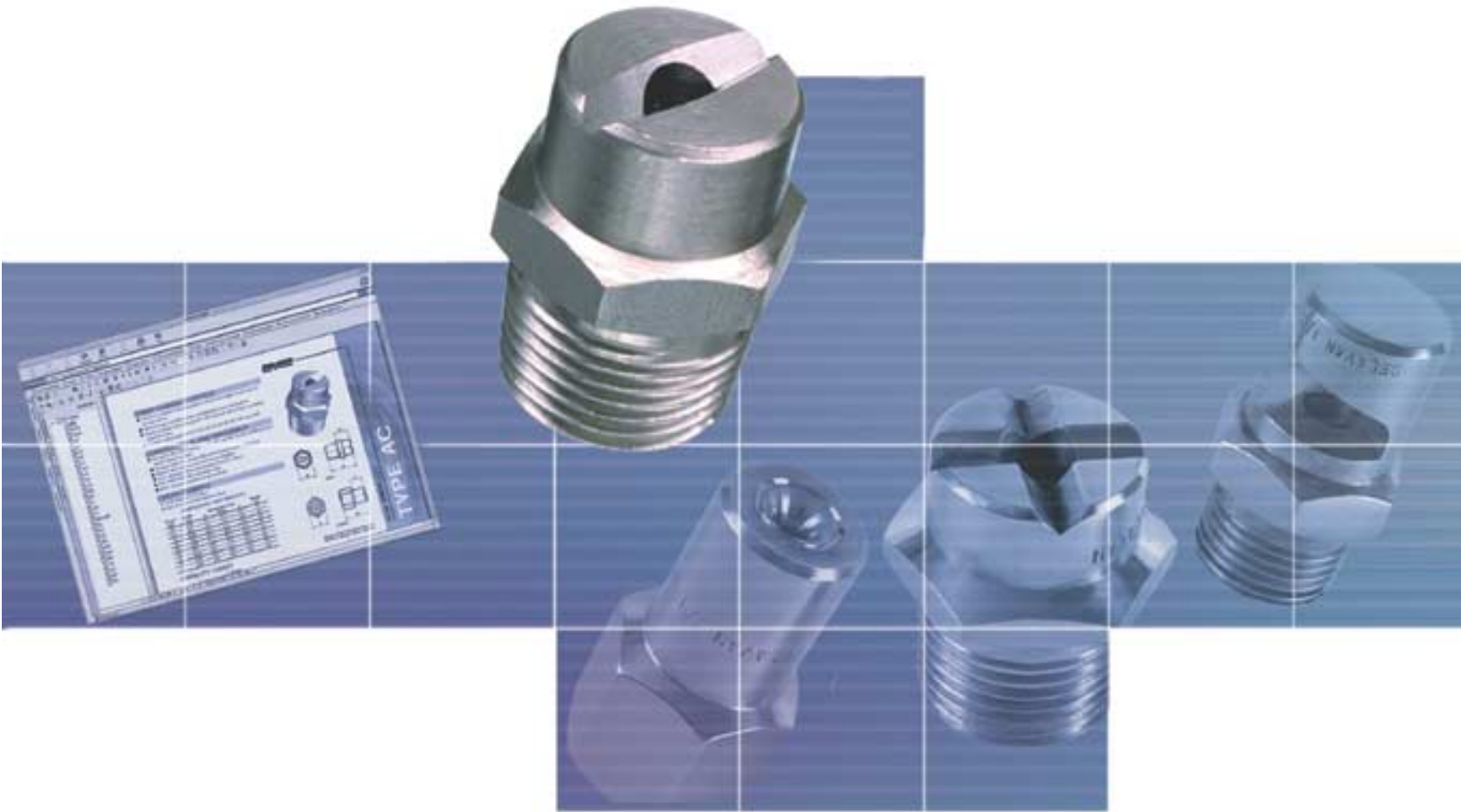


**GOODRICH**

**DELAVAN**<sup>®</sup>  
Spray Technologies



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# SPRAY NOZZLES

**A GLOBAL PRODUCT GUIDE**

to the most frequently specified nozzles for  
general industrial applications

# WELCOME TO DELAVAN

## Meeting the **challenges** of new **industries** and *NEW markets*.

Delavan is proud to be part of the Goodrich Corporation. Since the company was founded in 1935, the Delavan name has always stood for quality, flexibility and reliability. Today Delavan Spray Technologies is a world leader in the design and manufacture of high quality nozzles and fluid handling systems.

Operating from dedicated manufacturing and design facilities in the UK and USA, Delavan supplies more than 30,000 components to thousands of customers in virtually every imaginable manufacturing and processing industry. With distributors in more than 60 countries around the world, Delavan products, expertise and quality are all available globally.

Specialist design teams can also provide bespoke design, manufacture and installation of everything from a single nozzle to a complete fluid handling system. From metal finishing to paper production, from the chemical industry to food processing, from brewing to the mining, steel, automotive, oil heating and water industries...the name on the world's finest nozzles and fluid handling system is Delavan.



Delavan Spray Technologies  
Widnes, United Kingdom

Delavan Spray Technologies  
Bamberg,  
South  
Carolina, USA



Whichever nozzle you choose, you can be sure of its quality. Delavan's quality control procedures ensure that both 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 recognised 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. Please note that this is not an exhaustive list of our products and further information can be found in our Specifiers Guide on CD-rom or on the Delavan website.

Delavan now also offer a range of specialist product brochures including Spray Drying, Steel Industry, Spray Nozzles & Showers for the Pulp & Paper Industry, Variable Coating Nozzle (VCN) and Safety Showers. These publications are featured on the back cover of this brochure – contact our Customer Service Team for further information.



# NOZZLE TECHNOLOGY

## INTRODUCTION

This page gives a basic introduction to nozzle technology. To help you make the best use of Delavan products and services we have produced a full 16 page guide to spray nozzle technology. This is available on our web site or on CD-rom and is designed to take you through the fundamentals of spray technology step by step.

## TYPES OF NOZZLE

In addition there are variations on these sprays for specific applications. Please refer to the Application Guide section on our website or CD-rom. These are:-

- a) Flat sprays
- b) Hollow cone sprays
- c) Solid cone sprays
- d) Air atomising sprays

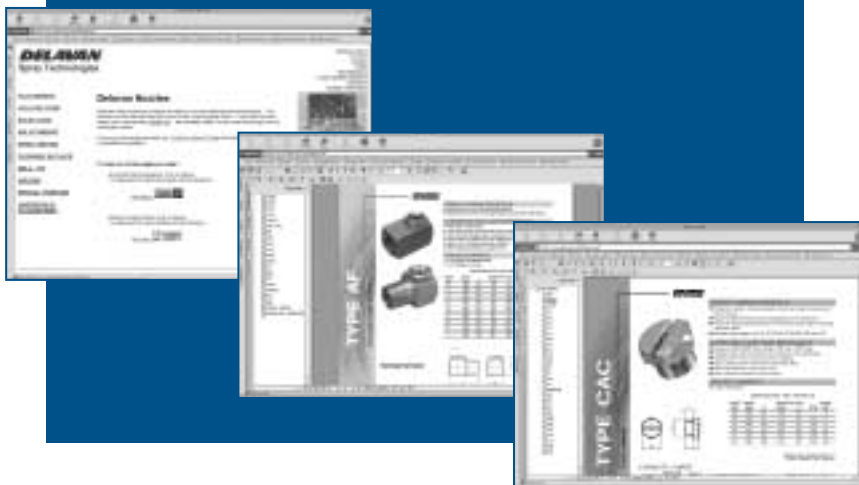
In addition there are variations on these sprays for specific applications. Refer to the Application Guide section.

Delavan produces a vast range of spray nozzles with many variations on each basic type. Your choice of nozzle will depend on several key factors. These are:

1. Flow rate (capacity)
2. Operating pressure
3. Spray pattern
4. Spray angle
5. Liquid to be sprayed
6. Quality of atomisation
7. Material of manufacture

To help you with your choice of spray nozzle, each of the above key factors is discussed in detail on our website.

[www.delavan.com](http://www.delavan.com)



## A SELECTION OF TYPICAL SPRAY PATTERNS

### FLAT SPRAY

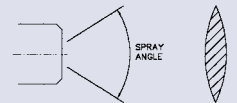
An elliptical orifice formed by the intersection of a 'V' groove with a hemispherical cavity.



Nozzle Diagram

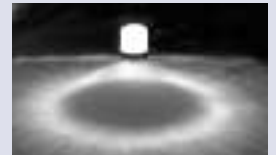


Spray Diagram

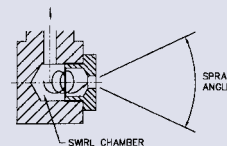


### HOLLOW CONE

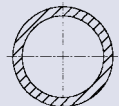
A circular exit orifice which is preceded by a swirl chamber with a tangential inlet.



Nozzle Diagram



Spray Diagram

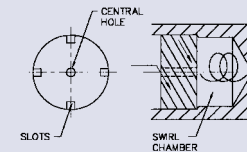


### SOLID CONE

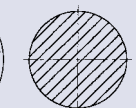
A circular exit orifice which is preceded by a swirl chamber with a multi-slotted in-line distributor and central line.



Nozzle Diagram



Spray Diagram

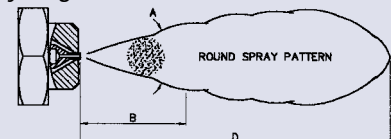


### AIR ATOMISING

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



Spray Diagram



# NOZZLE RANGE & INDEX

The following two pages give a brief overview of all the Delavan Industrial spray nozzles and accessories. The products highlighted in blue are illustrated further in the brochure on the pages indicated.

Information on all our products can be found on our website at [www.delavan.com](http://www.delavan.com), or alternatively you can request a copy of our CD-rom. Don't forget WE ARE HERE TO HELP – If you need more detailed information or advice then Delavan personnel are always available to answer your questions.

## FLAT SPRAY NOZZLES

	Nozzle Type	Spray Angles	Basic Description	
FLAT SPRAY	AC/WF	0° – 90°	1/8"-1" Male BSPT thread, 1/4" and 3/8" Female BSPP thread.	Page 6
	CAC	0° – 90°	1/16" NPT, 1/4" to 3/4" BSPP Male thread. More compact than AC type.	Page 6
	ACS	0° – 90°	1/8" and 1/4" Male BSPT thread. Supplied with optional strainer.	
	LF	0° – 110°	Flanged tip design for use with standard threaded bodies and caps.	Page 6
	LA	0° – 90°	Large flanged tip design for use with threaded/welded bodies and caps.	Page 6
	LC	0° – 110°	Robust flanged tip design for use with standard threaded bodies and caps.	
	LE	80°	Flanged tip design for use with standard threaded bodies and caps.	Page 6
	LX	70° offset	Flanged tip design for use with standard threaded bodies and caps.	
	WJ	70° offset	1/4"-1" Male BSPT thread.	
	LK	15° – 90°	Flanged tip design for use with standard threaded bodies and caps, ceramic orifice insert.	
	LD	0° – 90°	Flanged tip design with dovetail connection. Uses special bodies for positive alignment.	Page 6
	AD	0° – 90°	Flanged tip design with dovetail connection. Uses special bodies for positive alignment.	Page 6
	ED	45° – 90°	Flat disc with 5/8" UNF thread for direct fitting into pipe walls.	
	EF	45° – 90°	Flat disc as ED, but for use with standard bodies and caps.	
	D	90° – 140°	Flanged tip design for use with standard threaded bodies and caps.	Page 8
	AN/F	90° – 140°	1/8"-1" Male BSPT thread.	Page 8
TJ/SJ	25° – 50°	1/4"-1/2" Male BSPT thread.	Page 8	
SPECIAL PURPOSE	Blow-off	55° – 100°	Flanged tip design for use with standard threaded bodies and caps.	
	SL	80° – 115°	Flanged tip design for use with standard threaded bodies and caps.	
	DJ	80° – 115°	1/4"-1/2" Male BSPT thread.	

	Nozzle Type	Spray Angles	Basic Description	
HIGH PRESSURE	AZ	0° – 50°	1/8"-1/4" Male BSPT thread.	Page 8
	BZ	30°	1/4"-1/2" Male BSPT thread.	
	343	25° and 32°	3/8" Male NPT thread.	
	344	25° and 32°	3/8" Male NPT thread.	
	DD	25° and 32°	3/4" and 1" Male NPT thread and welding bodies. Dovetail connection for positive alignment of orifice.	
	AQ	25° – 95°	1/4" Male BSPT thread. Tungsten Carbide orifice insert.	
	LQ	25° – 95°	Flanged tip design with dovetail connection. Uses special bodies for positive alignment.	
	DQ	25° and 32°	3/4" and 1" Male NPT thread and welding bodies. Dovetail connection for positive alignment of orifice. Tungsten Carbide orifice insert.	
	DE	25° and 32°	3/4" and 1" Male NPT thread. Unique connection for positive alignment of orifice. Tungsten Carbide orifice insert.	

## HOLLOW CONE NOZZLES

	Nozzle Type	Spray Angles	Basic Description	
HOLLOW CONE	WM	40°, 60°, 80°	1/4" BSPT Male thread.	Page 10
	WG	60°, 80°	Flanged tip design for use with standard bodies and caps.	Page 10
	WA	60°, 80°	9/16" UNEF thread for use with special Male and Female BSP threaded adaptors.	Page 10
	WDA	30°, 45°, 60°, 70°, 80°, 90°	9/16" UNEF thread for use with special Male and Female BSP threaded adaptors.	Page 10
	HB/HC	70°	Flanged tip design for use with standard bodies and caps.	Page 10
	BJ	44° – 98°	1/8"-1" BSPT Male and BSPP Female threads.	
	DC	20° – 110°	Two piece nozzle design for use with standard bodies and caps.	
	AG	65° – 75°	3/8"-3/4" BSPT Male thread.	
	AH	100° – 115°	3/8"-3/4" BSPT Male thread.	
	WS	75°	1/8"-3/4" NPT Male and Female threads	
	CBJ	44° – 98°	1/8"-1" BSPP Male threads. More compact than BJ type.	Page 12
	PJ	90°, 120°, 150°, 180°, 210°	1/4"-3/4" BSPT Male threads.	
	AE	70° – 90°	1/8"-1" BSPT Male and BSPP Female threads.	Page 12
	AF	100° – 120°	1/8"-1" BSPT Male and BSPP Female threads.	Page 12
	WR	45° – 155°	3/8" NPT Male and Female threads.	Page 12
	WRW	110° – 140°	1/4" and 3/4" NPT Male threads.	Page 12
	RA	120° – 140°	1/4" and 3/4" NPT Male threads.	Page 12
	BE	55° – 90°	1 1/4"-4" BSPT Female threads.	Page 14
	WRA-WRS	50° – 100°	1 1/2" BSPT Male thread or Quick Coupler Adaptor connection.	Page 14
	WRA-RD WRS-RD	100° – 135°	1 1/2" BSPT Male thread or Quick Coupler Adaptor connection.	



# NOZZLE RANGE & INDEX

## SOLID CONE NOZZLES

Nozzle Type	Spray Angles	Basic Description
<b>WDB</b>	30°, 45°, 60°, 70°, 80°, 90°	9/16" UNEF thread for use with special Male and Female BSP threaded adaptors.
<b>BL</b>	45°, 60°, 90°	1/8" BSPT Male thread.
<b>BP</b>	45°, 60°, 90°	1/8" BSPT Male thread.
<b>WL</b>	45°, 60°, 90°	Flanged tip design for use with standard bodies and caps.
<b>BF</b>	30°, 60°, 90°, 120°	Flanged tip design for use with standard bodies and caps.
<b>BI</b>	35° – 100°	1/8"-1" BSPT Male and BSPP Female threads.
<b>BN</b>	85° – 130°	1/8"-1" BSPT Male and BSPP Female threads.
<b>CT</b>	45° – 90°	1/8"-1/2" NPT Male and Female threads.
<b>CU</b>	45° – 80°	1/4"-3/8" NPT Male threads.
<b>BK</b>	20° – 105°	1/8"-1" BSPT Male and BSPP Female threads.
<b>CJM</b>	30°	1/8"-2" BSPT Male threads.
<b>CJF</b>	30°	1/8"-1" BSPP Female and 1 1/4"-4" BSPT Female threads.
<b>CM</b>	45° – 110°	1 1/4"-8" BSPT Female threads.
<b>BY</b>	70° – 130°	1 1/4"-3" BSPT Female threads.
<b>CA</b>	45° – 98°	1"-4" BSPT Female threads.
<b>CB</b>	45° – 95°	1"-3" NB welded connection.
<b>BC</b>	50°, 65°, 80°, 90°, 120°	3/8" BSPP Female thread.
<b>BX</b>	50°, 65°, 80°, 90°, 120°	3/8" BSPP Female thread.
<b>BQ</b>	35° – 100°	1/8"-1" BSPT Male and BSPP Female threads.
<b>BT</b>	85° – 130°	1/8"-1" BSPT Male and BSPP Female threads.
<b>CU/SQ</b>	60° – 65°	1/4"-1/2" NPT Male threads.
<b>CBI</b>	35° – 100°	1/8"-1" BSPP Male threads. More compact than BI type.
<b>CBN</b>	85° – 130°	1/8"-1" BSPP Male threads. More compact than BN type.
<b>CBQ</b>	35° – 100°	1/8"-1" BSPP Male threads. More compact than BQ type.
<b>CBT</b>	85° – 130°	1/8"-1" BSPP Male threads. More compact than BT type.
<b>RBI</b>	35° – 100°	1/8"-1" BSPT Male and BSPP Female threads. Right angle design.
<b>RBN</b>	85° – 130°	1/8"-1" BSPT Male and BSPP Female threads. Right angle design.
<b>NBI</b>	41° – 100°	1/8"-1" BSPT Male and BSPP Female threads. Right angle design.
<b>NBN</b>	110° – 128°	1/8"-1" BSPT Male and BSPP Female threads. Right angle design.
<b>QI/QN/ QQ/QT</b>	42° – 120°	Quick attach connection to 1 1/4" and 1 1/2" NB eyelets.

SOLID CONE

## ACCESSORIES

Item Type	Basic Description
<b>NOZZLE BODIES</b>	1/8"-3/8" BSPT Male and BSPP Female threads for use with flanged and dovetail type nozzles.
<b>NOZZLE CAPS</b>	3/8" BSPP and 1 1/16"-16 UN threaded for use with the above bodies.
<b>SWIVELS</b>	1/8"-1/4" NPT Female and 1/4" NPT Male inlets with outlet for above caps with flanged type nozzles.
<b>EYELETS BODIES</b>	1/2"-1 1/2" N.B. Eyelets with various outlet connections for nozzles.
<b>TIP FILTERS</b>	Flanged filters with various mesh sizes for use with the above.
<b>T-LINE STRAINERS</b>	1/2"-1 1/2" T Line Strainers with various mesh sizes. Polypropylene & Nylon.
<b>PRV'S</b>	Pressure relieve vlves upto 700 PSIG (48 Bar). Brass & Nylon
<b>BALL VALVE</b>	1/2"-3" in Polyglass.
<b>HIGH PRESSURE SPRAY GUNS</b>	Various high pressure handguns, lances and accessories.
<b>ADJUSTABLE JOINTS</b>	1/8"-1" Male/Female adjustable joint with various angles of inclination.
<b>HNS - HEADER NOZZLE SOCKETS</b>	1/8"-1" BSPP Female threaded sockets for use with threaded nozzles.
<b>ADAPTORS</b>	1/8"-1" BSPT Male and BSPP Female x 90° adaptor for use with threaded nozzles.
<b>PIPE SUPPORT CLIPS &amp; CLAMPS</b>	Clips 1 1/4" and 1 1/2". Clamps 1/2" - 1 1/2".

ACCESSORIES

## SPECIAL PURPOSE

Nozzle Type	Spray Angles	Basic Description
<b>AJ150</b>	0°	1/4" BSPT or 1/4" NPT Male thread
<b>BB</b>	0°	3/8"-3/4" BSPT Male thread.
<b>1505</b>	0°	Flat disc for use with standard bodies and caps.
<b>RO</b>	0°	1/4"-1" BSPT Male thread.
<b>CON</b>	0°	Flanged tip design for use with standard bodies and caps.
<b>BYPASS</b>	75° – 85°	3/4"-1/2" NPT Male threads. Used with special adaptors.
<b>KIT ONE</b>	115° – 130°	3/4"-1" hosetail connections with 1/2 or 1 metre risers.
<b>FN</b>	180°	1/2" BSPP Female thread.

SPECIAL PURPOSE

All nozzles depicted in this brochure are subject to a manufacturing tolerance of +/- 5% of rated capacity and within +/- 5° of rated spray angle when tested with water.

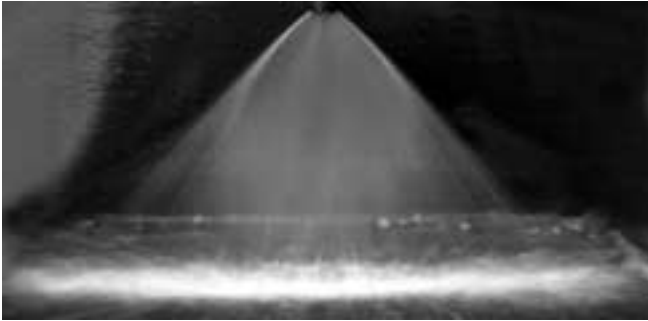
Contact our Customer Service Team or your local distributor for further details  
 Tel: +44 (0) 151 424 6821 or alternatively e-mail: sales@delavan.co.uk  
 USA Tel: Toll free: 1-800 Delavan or alternatively e-mail sales@delavan.com

**DELAVAN**  
 Spray Technologies

# FLAT SPRAY NOZZLES

Producing a uniform flat fan shaped pattern with tapering edges

## TYPE AC SPRAY PATTERN



## TYPICAL APPLICATIONS

Asphalt or tar laying, bottle washing, coal and gravel washing, degreasing, dishwashing, foam control, industrial washers, metal cleaning-rinsing and washing, spray coating, vehicle washing, water misting and water fountains.



### AC/WF Type Nozzle

One-piece male pipe thread design available in flow sizes from 2 – 600 with spray angles of 0, 5, 15, 25, 40, 50, 65, 80, 90°. Type WF is NPT thread; AC is BSPT thread. See chart for thread sizes (1/8" ACM6 & larger also available in PVC & PVDF).

### CAC Type Nozzle

Compact, one-piece male pipe thread design available in flow sizes from 2 – 300 with spray angles of 0, 5, 15, 25, 40, 50, 65, 80, 90°. See chart for thread sizes (1/16" size is NPT only).



### 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, 15, 25, 40, 50, 65, 80, 90, 100 and 110°. Body thread sizes 1/8", 1/2" & 3/4". See Accessories section.

### LA Type

Large flanged tip design for use with threaded/welded bodies and caps, available in flow sizes from 10 – 200 with spray angles of 0, 15, 25, 40, 50, 65, 80, 90°. Body thread sizes 1/2" & 3/8". See Accessories section.



### AD Type

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, 15, 25, 40, 50, 65, 80, 90°. Orifice is offset 15° to axis of dovetail plus welded body in Stainless Steel. See Accessories section.

### LD Type

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, 15, 25, 40, 50, 65, 80, 90°. Orifice is offset 15° to axis of dovetail plus welded body in Stainless Steel. See Accessories section.



### LE Type

Flanged tip design for use with standard threaded bodies and caps, available in flow sizes from 2 – 15 with spray angle of 80°. Produces an even flat fan pattern with hard edges. Body thread sizes 1/8", 1/4" & 3/8". See Accessories section.

Unless otherwise stated, all nozzles and tips are available in Brass and Stainless Steel as standard.

# FLAT SPRAY CAPACITY CHART

NOZZLE NUMBER	THREAD SIZES		FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG						
	AC	CAC	1	2	3	4	5	7	10	15	30	40	60	80	100	145
2	1/8, 1/4	1/16, 1/8, 1/4	0.46	0.65	0.80	0.89	0.99	1.24	1.43	0.12	0.17	0.20	0.24	0.26	0.33	0.40
3	1/8, 1/4	1/16, 1/8, 1/4	0.68	0.97	1.18	1.36	1.53	1.81	2.23	0.18	0.26	0.30	0.36	0.40	0.48	0.58
4	1/8, 1/4	1/16, 1/8, 1/4	0.90	1.27	1.56	1.83	2.03	2.38	2.86	0.24	0.34	0.40	0.48	0.54	0.63	0.76
5	1/8, 1/4	1/16, 1/8, 1/4	1.15	1.62	1.99	2.28	2.55	3.02	3.62	0.30	0.43	0.50	0.60	0.67	0.80	0.96
6	1/8, 1/4	1/16, 1/8, 1/4	1.37	1.94	2.37	2.72	3.07	3.61	4.46	0.36	0.51	0.60	0.72	0.81	0.95	1.14
7	1/8, 1/4	1/16, 1/8, 1/4	1.59	2.25	2.75	3.21	3.54	4.21	5.36	0.42	0.59	0.70	0.85	0.94	1.11	1.34
8	1/8, 1/4	1/16, 1/8, 1/4	1.83	2.59	3.17	3.66	3.98	5.03	5.80	0.48	0.68	0.80	0.97	1.05	1.33	1.60
10	1/8, 1/4	1/16, 1/8, 1/4	2.27	3.21	3.93	4.46	5.19	5.95	7.14	0.60	0.85	1.00	1.18	1.37	1.57	1.89
15	1/8, 1/4	1/16, 1/8, 1/4	3.44	4.21	6.16	6.70	7.78	9.15	10.71	0.91	1.11	1.50	1.77	2.06	2.42	2.92
20	1/8, 1/4	1/16, 1/8, 1/4	4.46	6.25	8.05	9.37	9.94	12.35	14.73	1.18	1.65	2.00	2.48	2.63	3.26	3.93
25	1/4	1/4	5.80	8.03	9.94	11.38	12.75	15.09	18.08	1.53	2.12	2.50	3.01	3.37	3.99	4.81
30	1/4, 3/8	1/4, 1/8	6.70	9.82	11.84	13.84	15.13	17.84	21.43	1.77	2.59	3.00	3.66	4.00	4.71	5.67
40	1/4, 3/8	1/4, 1/8	9.37	12.05	15.62	18.30	20.57	24.25	28.57	2.48	3.18	4.00	4.83	5.43	6.41	7.72
50	1/4, 3/8	1/4, 1/8	11.61	16.07	19.89	22.77	25.50	30.19	36.16	3.07	4.25	5.00	6.02	6.74	7.98	9.61
60	1/4, 3/8	1/4, 1/8	13.84	19.20	23.67	27.23	30.69	36.14	43.30	3.66	5.07	6.00	7.19	8.11	9.55	11.51
70	1/4, 3/8	1/4, 1/8	16.07	22.77	27.46	32.14	35.88	42.54	50.45	4.25	6.02	7.00	8.49	9.48	11.24	13.54
80	3/8, 1/2	3/8, 1/2	18.75	25.45	31.72	36.61	41.06	48.03	57.14	4.95	6.72	8.00	9.67	10.85	12.69	15.29
100	3/8, 1/2, 3/4	3/8, 1/2, 3/4	22.77	31.70	39.30	45.53	51.00	60.38	72.32	6.02	8.37	10.00	12.03	13.47	15.95	19.22
125	3/8, 1/2, 3/4	3/8, 1/2, 3/4	28.46	39.62	49.12	56.91	63.75	75.48	90.40	7.52	7.83	12.50	15.03	16.84	19.94	24.02
150	1/2, 3/4	1/2, 3/4	34.37	48.21	59.19	68.31	76.50	90.10	108.00	9.08	12.74	15.00	18.04	20.21	23.81	28.69
200	1/2, 3/4	1/2, 3/4	45.53	64.28	79.07	91.10	102.00	120.30	143.80	12.03	16.98	20.00	24.06	26.95	31.78	38.29
250	3/4	3/4	58.84	80.36	98.50	113.40	127.50	150.00	179.90	15.54	21.23	25.00	29.96	33.68	39.63	47.75
300	3/4, 1	3/4	68.30	96.87	118.40	136.60	152.60	180.70	215.60	18.04	25.59	30.00	36.09	40.31	47.74	57.52
400	3/4, 1	-	90.60	128.60	157.70	182.10	204.00	241.10	287.90	23.94	33.97	40.00	48.12	53.89	63.69	76.73
500	1	-	114.00	161.30	197.50	228.00	254.90	301.60	360.50	30.12	42.61	50.00	60.23	67.34	79.68	96.00
600	1	-	136.80	193.50	237.00	273.70	306.00	362.10	432.80	36.14	51.12	60.00	72.31	80.84	95.66	115.25

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# FLOODING NOZZLES

Deflector type design producing wide flat spray pattern at low pressures

TYPE AN SPRAY PATTERN



## TYPICAL APPLICATIONS

Asphalt or tar laying, bottle washing, coal and gravel washing, degreasing, dishwashing, foam control, industrial washers, metal cleaning-rinsing and washing, spray coating, vehicle washing, water misting and water fountains.



## D Type

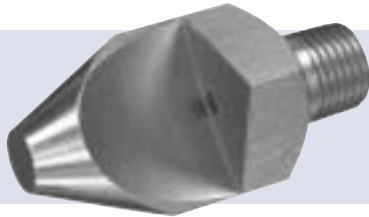
Flanged tip design for use with standard threaded bodies and caps, available in flow sizes from 0.5 – 30 with a nominal spray angle of 90° - 140° depending on flow size and pressure. Spray exits at a 75° angle from the inlet orifice. Body thread sizes 1/8", 1/4" & 3/8".

## AN/F Type Nozzle

One-piece male pipe thread design available in flow sizes from 0.5 – 300 with a nominal spray angle of 90° - 140° depending on flow size and pressure. Spray exits at a 75° angle from the inlet orifice. Type F is NPT thread; Type AN is BSPT thread.



# HIGH IMPACT DEFLECTOR NOZZLES



## TJ/SJ Type Nozzle

One-piece male pipe thread design available in flow sizes from 10 – 200 with spray angles of 25, 35, 40 and 50°. SJ is NPT thread and type TJ is BSPT thread.

# PRESSURE WASHER NOZZLES

Producing a uniform flat fan shaped pattern with high impact



## AZ/AA Type Nozzle

One-piece male pipe thread design available in flow sizes from 4 – 50 and spray angles of 0, 15, 25, 40, and 50°. Type AA is NPT thread; type AZ is BSPT thread.

Unless otherwise stated, all nozzles and tips are available in Brass and Stainless Steel as standard.



# FLOODING NOZZLES AN/F & D CAPACITY CHART

NOZZLE NUMBER	THREAD SIZE	FLOW RATE IN LITRES/MIN AT BAR G								FLOW RATE IN GPM AT PSIG					
		0.5	0.7	1	1.5	2	3	4	7	10	15	20	30	40	60
0.5	1/8	-	0.19	0.23	0.28	0.32	0.39	0.46	-	0.05	0.06	0.07	0.08	0.10	0.12
0.75	1/8	-	0.29	0.34	0.42	0.48	0.59	0.68	-	0.08	0.09	0.11	0.13	0.15	0.18
1	1/8	-	0.38	0.46	0.56	0.65	0.79	0.91	-	0.10	0.12	0.14	0.17	0.20	0.25
1.5	1/8	0.48	0.57	0.68	0.84	0.97	1.18	1.37	0.12	0.15	0.18	0.21	0.26	0.30	0.37
2	1/8	0.65	0.76	0.91	1.12	1.29	1.57	1.82	0.17	0.20	0.24	0.28	0.35	0.40	0.49
2.5	1/8, 1/4	0.81	0.95	1.14	1.40	1.61	1.96	2.28	0.20	0.25	0.30	0.35	0.43	0.50	0.61
3	1/8, 1/4	0.97	1.14	1.38	1.66	1.92	2.37	2.72	0.25	0.30	0.37	0.42	0.52	0.60	0.74
5	1/8, 1/4	1.61	1.92	2.28	2.79	3.21	3.94	4.42	0.42	0.50	0.61	0.71	0.87	1.00	1.23
7.5	1/8, 1/4	2.40	2.84	3.39	4.36	4.91	5.92	6.70	0.63	0.75	0.92	1.10	1.30	1.50	1.84
10	1/8, 1/4	3.23	3.81	4.46	5.49	6.29	7.91	9.38	0.84	1.00	1.20	1.40	1.70	2.00	2.45
15	1/8, 1/4	4.99	5.67	6.70	8.24	9.64	11.80	13.80	1.30	1.50	1.80	2.10	2.60	3.00	3.68
18	1/8, 1/4	5.70	6.86	8.17	9.94	11.60	14.20	16.40	1.50	1.80	2.20	2.50	3.10	3.60	4.41
20	1/8, 1/4, 3/8, 1/2	6.56	7.59	8.93	11.00	13.00	15.70	18.30	1.70	2.00	2.40	2.80	3.50	4.00	4.90
25	1/4, 3/8, 1/2	8.09	9.61	11.60	13.80	16.10	19.73	22.80	2.10	2.50	3.10	3.50	4.30	5.00	6.13
30	1/4, 3/8, 1/2	9.70	11.40	13.80	16.60	19.00	23.70	27.20	2.50	3.00	3.70	4.20	5.10	6.00	7.35
35	1/4, 3/8, 1/2	16.60	13.30	15.60	19.40	22.70	27.50	32.10	3.00	3.50	4.20	4.90	6.10	7.00	8.58
40	3/8, 1/2	12.70	15.20	18.30	22.40	25.70	31.50	36.40	3.30	4.00	4.90	5.70	6.90	8.00	9.80
45	3/8, 1/2	14.50	17.10	20.40	25.00	28.90	35.40	40.90	3.83	4.51	5.39	6.60	7.63	9.35	10.80
50	3/8, 1/2, 3/4	16.20	19.00	22.70	28.00	32.00	39.40	46.40	4.20	5.00	6.10	7.10	8.60	10.00	12.25
60	3/8, 1/2, 3/4	19.20	22.90	27.20	33.60	38.70	47.30	54.60	5.00	6.00	7.30	8.50	10.40	12.00	14.71
70	3/8, 1/2, 3/4	22.60	26.70	31.90	39.10	45.10	55.30	63.80	5.97	7.05	8.42	10.32	11.91	14.60	16.84
75	3/8, 1/2, 3/4	24.20	28.60	34.20	41.80	48.30	59.20	68.40	6.30	7.50	9.20	10.60	13.00	15.00	18.38
80	3/8, 1/2, 3/4	25.90	30.50	36.40	44.60	51.30	63.10	72.90	6.70	8.00	9.80	11.30	13.80	16.00	19.61
90	1/2, 3/4	29.00	34.30	41.00	50.20	58.00	71.00	82.00	7.66	9.05	10.82	13.25	15.31	18.74	21.65
100	1/2, 3/4	32.30	38.10	45.40	55.60	64.30	78.90	91.10	8.40	10.00	12.20	14.10	17.30	20.00	24.51
108	1/2, 3/4	34.80	41.20	49.20	60.30	69.60	85.30	98.50	9.19	10.88	12.99	15.92	18.37	22.52	26.00
120	1/2, 3/4	38.50	45.70	54.60	67.00	77.30	94.70	109.00	10.00	12.00	14.70	17.00	20.80	24.00	29.41
150	3/4, 1	48.50	57.20	68.40	83.60	96.70	118.00	137.00	12.60	15.00	18.40	21.20	26.00	30.00	36.76
180	3/4, 1	58.10	68.70	82.10	101.00	116.00	142.00	164.00	15.34	18.14	21.67	26.66	30.62	37.49	43.29
200	3/4, 1	64.70	76.20	90.70	111.00	129.00	158.00	182.00	16.80	20.00	24.40	28.20	34.60	40.00	49.02
210	3/4, 1	67.30	80.10	95.60	117.00	135.00	166.00	191.00	17.50	21.00	25.70	29.60	36.30	42.00	51.47
250	1	79.40	94.00	112.00	138.00	159.00	195.00	225.00	20.96	24.82	29.57	36.43	41.97	51.48	59.40
300	1	95.30	113.00	135.00	165.00	191.00	234.00	270.00	25.16	29.83	35.64	43.56	50.42	61.77	71.28

# TJ CAPACITY CHART

NOZZLE NUMBER	THREAD SIZE	SPRAY ANGLES	FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG					
			0.7	2	3	4	5	6	7	10	20	40	60	80	100
TJ10	1/4	25, 35, 40, 50	1.9	3.2	3.9	4.6	5.1	5.6	6.0	0.5	0.7	1.0	1.2	1.4	1.6
	1/8	35	1.9	3.2	3.9	4.6	5.1	5.6	6.0	0.5	0.7	1.0	1.2	1.4	1.6
TJ20	1/4	25, 35	3.8	6.4	7.9	9.1	10.2	11.2	12.1	1.0	1.4	2.0	2.4	2.8	3.2
	3/8	50	4.7	8.1	9.9	11.4	12.7	14.0	15.1	1.2	1.7	2.5	3.1	3.5	3.9
TJ25	1/4	35, 50	4.7	8.1	9.9	11.4	12.7	14.0	15.1	1.2	1.7	2.5	3.1	3.5	3.9
	3/8	35, 50	5.7	9.7	11.8	13.7	15.3	16.8	18.1	1.5	2.1	3.0	3.7	4.2	4.7
TJ40	3/8	35, 40, 50	7.6	12.9	15.8	18.2	20.4	22.3	24.1	2.0	2.8	4.0	4.8	5.6	6.4
	1/4	25, 35, 50	7.6	12.9	15.8	18.2	20.4	22.3	24.1	2.0	2.8	4.0	4.8	5.6	6.4
TJ50	3/8	40	9.5	16.1	19.7	22.8	25.5	27.9	30.2	2.5	3.5	5.0	6.1	7.1	7.9
	1/2	35	9.5	16.1	19.7	22.8	25.5	27.9	30.2	2.5	3.5	5.0	6.1	7.1	7.9
TJ60	3/8	35, 40, 50	11.4	19.3	23.9	27.3	30.6	33.5	36.2	3.0	4.2	6.0	7.4	8.5	9.4
TJ80	1/2	35, 50	15.2	25.8	31.6	36.5	40.8	44.7	48.2	4.0	5.7	8.0	9.8	11.3	12.7
TJ90	3/8	40	17.1	29.0	35.9	41.0	45.9	50.3	54.3	4.5	6.4	9.0	10.1	12.7	14.2
TJ100	3/8	40, 50	19.1	32.2	39.5	45.6	51.0	55.8	60.3	5.0	7.0	10.0	12.2	14.3	15.8
	1/2	35, 50	19.1	32.2	39.5	45.6	51.0	55.8	60.3	5.0	7.0	10.0	12.2	14.3	15.8
TJ200	3/8	50	38.2	64.5	79.0	91.2	102.0	112.0	122.0	10.1	14.1	20.2	24.5	28.3	32.0
	1/2	35, 50	38.2	64.5	79.0	91.2	102.0	112.0	122.0	10.1	14.1	20.2	24.5	28.3	32.0

# HIGH PRESSURE AZ/AA CAPACITY CHART

NOZZLE NUMBER	THREAD SIZE	FLOW RATE IN LITRES/MIN AT BAR G									FLOW RATE IN GPM AT PSIG							
		15	20	25	35	40	50	60	70	200	300	400	500	600	700	800	1000	
4	1/8, 1/4	3.50	4.10	4.60	5.40	5.80	6.50	7.10	7.60	0.92	1.08	1.22	1.43	1.53	1.72	1.88	2.01	
4.5	1/8, 1/4	4.00	4.60	5.10	6.10	6.50	7.30	8.00	8.60	1.06	1.22	1.35	1.61	1.72	1.93	2.11	2.27	
5	1/8, 1/4	4.40	5.10	5.70	6.70	7.20	8.10	8.80	9.50	1.16	1.35	1.51	1.77	1.90	2.14	2.32	2.51	
5.5	1/8, 1/4	4.90	5.60	6.30	7.40	7.90	8.90	9.70	10.50	1.29	1.48	1.66	1.95	2.09	2.35	2.56	2.77	
6	1/8, 1/4	5.30	6.10	6.80	8.10	8.70	9.70	10.60	11.40	1.40	1.61	1.80	2.14	2.30	2.56	2.80	3.01	
6.5	1/8, 1/4	5.70	6.60	7.40	8.80	9.40	10.50	11.50	12.40	1.51	1.74	1.95	2.32	2.48	2.77	3.04	3.28	
7	1/8, 1/4	6.20	7.10	8.00	9.40	10.10	11.30	12.40	13.40	1.64	1.88	2.11	2.48	2.67	2.99	3.28	3.54	
7.5	1/8, 1/4	6.60	7.60	8.60	10.10	10.80	12.10	13.20	14.30	1.74	2.01	2.27	2.67	2.85	3.20	3.49	3.78	
8	1/8, 1/4	7.10	8.20	9.10	10.80	11.50	12.90	14.10	15.30	1.88	2.17	2.40	2.85	3.04	3.41	3.72	4.04	
8.5	1/8, 1/4	7.50	8.70	9.70	11.50	12.30	13.70	15.00	16.20	1.98	2.30	2.56	3.04	3.25	3.62	3.96	4.28	
9	1/8, 1/4	8.00	9.20	10.30	12.10	13.00	14.50	16.00	17.20	2.11	2.43	2.72	3.20	3.43	3.83	4.23	4.54	
10	1/8, 1/4	8.80	10.20	11.40	13.50	14.40	16.10	17.70	19.10	2.32	2.69	3.01	3.57	3.80	4.25	4.68	5.05	
15	1/8, 1/4	13.20	15.30	17.10	20.20	21.60	24.20	26.50	28.60	3.49	4.04	4.52	5.34	5.71	6.39	7.00	7.56	
20	1/8, 1/4	17.70	20.40	22.80	27.00	28.80	32.20	35.30	38.10	4.68	5.39	6.02	7.13	7.61	8.51	9.33	10.07	
30	1/8, 1/4	24.50	30.60	34.20	40.50	43.30	48.40	53.00	57.20	6.47	8.08	9.03	10.70	11.44	12.79	14.00	15.11	
40	1/4	35.30	40.80	45.60	54.00	57.70	64.50	70.60	76.30	9.33	10.78	12.05	14.27	15.24	17.04	18.65	20.17	
50	1/4	44.10	51.00	57.00	67.40	72.00	80.60	88.30	95.40	11.65	13.47	15.06	17.81	19.02	21.29	23.33	25.20	

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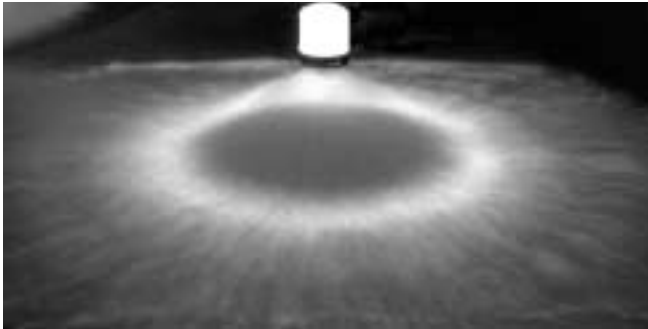
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**DELAVAN**  
Spray Technologies

# SMALL HOLLOW CONE NOZZLES

Producing finest atomisation with no central distribution

## TYPICAL SPRAY PATTERN



## TYPICAL APPLICATIONS

Aerating water, brine sprays, chemical processing, coil defrosting, dust control, evaporative condensers, evaporative coolers, industrial washers, roof cooling, spray ponds, spray coating, gas scrubbing and washing, humidification, gas cooling, cooling towers, coal washing, degreasing, gravel washing, dishwashing, foam control, industrial washing and water fountains.



### HB/HC Type

Flanged tip design for use with standard threaded bodies and caps, available in flow sizes from 1 – 26 with nominal spray angle of 70°.

### 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 20 with spray angles of 30°, 45°, 60°, 70°, 80° and 90°. Nozzle consists of five parts, body, orifice disc, distributor, retainer and strainer (used up to WDA 14).



### WA Type

Basic nozzle thread is 9/16" – 24 UNEF, with optional adaptors providing 1/8" and 1/4" pipe threads. Standard spray angles are 60° and 80°. See chart for available flow sizes.

### WM Type Nozzle

Male threaded nozzle only available in 1/2" BSPT as standard. See chart for available flow sizes. Standard spray angles of 60° and 80°.



### WG Type

Flanged tip design for use with standard threaded bodies and caps. See chart for available flow sizes. Standard spray angles of 60° and 80°.

Unless otherwise stated, all nozzles and tips are available in Brass and Stainless Steel as standard.

# SMALL HOLLOW CONE - HB/HC CAPACITY CHART

NOZZLE NUMBER	FLOW RATE IN LITRES/HOUR AT BAR G						FLOW RATE IN GPH AT PSIG						
	2	3	4	5	6	7	40	75	100	125	150	300	500
1	3.23	3.95	4.56	5.10	5.58	6.03	1.00	1.40	1.60	1.80	2.00	2.80	3.60
1.25	4.03	4.93	5.70	6.37	6.98	7.54	1.30	1.70	2.10	2.30	2.50	3.60	4.60
1.5	4.84	5.92	6.84	7.64	8.37	9.04	1.50	2.10	2.40	2.70	2.90	4.10	5.30
2	6.45	7.89	9.12	10.20	11.20	12.10	2.00	2.70	3.20	3.50	3.90	5.50	7.10
2.5	8.05	9.57	11.40	12.70	14.00	15.10	2.50	3.40	4.00	4.40	4.90	6.90	8.90
3	9.65	11.80	13.70	15.30	16.70	18.00	3.00	4.10	4.70	5.30	5.90	8.30	10.70
4	12.90	15.80	18.20	20.40	22.30	24.10	4.00	5.40	6.40	7.00	7.80	11.00	14.20
5	16.10	19.70	22.80	25.50	27.90	30.10	5.00	6.80	7.90	8.90	9.80	13.80	17.80
6	19.30	23.70	27.30	30.60	33.50	36.20	6.00	8.20	9.50	10.60	11.70	16.60	21.40
8	25.80	31.60	36.50	40.80	44.70	48.30	8.00	11.00	12.60	14.20	15.60	22.10	28.50
10	32.20	39.50	45.60	51.00	55.80	60.30	10.00	13.70	15.80	17.70	19.50	27.60	35.60
12	38.60	47.40	54.70	61.10	67.00	72.40	12.00	16.40	19.00	21.20	23.40	33.10	42.70
14	45.10	55.30	63.80	71.30	78.10	84.40	14.00	19.20	22.10	24.80	27.30	38.60	49.80
18	58.00	71.00	82.00	91.70	100.00	108.00	18.00	24.60	28.40	31.90	35.10	49.70	64.10
22	71.00	86.80	100.00	112.00	123.00	133.00	22.00	30.10	34.90	39.00	42.90	60.70	78.30
26	84.00	103.00	119.00	132.00	145.00	157.00	26.00	35.50	41.30	46.00	50.70	71.70	92.50

# SMALL HOLLOW CONE - WA/WM/WG CAPACITY CHART

NOZZLE NUMBER 60°	NOZZLE NUMBER 80°	FLOW RATE IN LITRES/HOUR AT BAR G						FLOW RATE IN GPH AT PSIG					
		2	3	4	6	7	8	30	40	60	90	100	115
056	058	-	-	1.47	2.04	2.29	2.46	-	-	0.40	0.50	0.60	0.70
076	078	-	2.22	2.59	3.12	3.20	3.48	-	0.60	0.70	0.80	0.90	0.90
106	1058	-	3.08	3.53	4.36	4.57	5.04	-	0.80	0.90	1.10	1.20	1.30
126	128	-	3.74	4.20	5.21	5.49	5.80	-	1.00	1.10	1.40	1.50	1.60
156	158	-	4.97	5.36	6.39	6.86	7.23	-	1.30	1.40	1.70	1.80	1.90
206	208	5.36	6.39	7.37	8.76	9.15	9.37	1.40	1.70	2.00	2.30	2.40	2.50
256	258	6.47	7.91	8.93	10.70	11.40	12.10	1.70	2.10	2.40	2.80	3.00	3.20
306	308	8.04	9.47	10.60	12.80	13.70	14.40	2.10	2.50	2.80	3.40	3.60	3.80
356	358	9.15	10.90	12.30	14.90	16.00	17.00	2.40	2.90	3.30	3.90	4.20	4.50
406	408	10.00	12.30	14.10	17.00	18.30	19.40	2.60	3.30	3.70	4.50	4.80	5.10
456	458	11.50	13.70	15.60	18.90	20.60	21.90	3.00	3.60	4.10	5.00	5.40	5.80
506	508	12.70	15.20	17.40	21.10	22.90	24.50	3.40	4.00	4.60	5.60	6.10	6.50
556	558	13.80	16.80	19.20	23.20	25.20	26.90	3.70	4.40	5.00	6.10	6.70	7.10
606	608	15.10	18.00	21.00	25.60	27.40	29.20	4.00	4.80	5.60	6.80	7.20	7.70
706	708	17.90	21.30	24.60	29.80	32.00	34.40	4.80	5.60	6.50	7.90	8.50	9.10
806	808	20.10	26.00	27.70	34.30	36.60	39.70	5.30	6.90	7.30	9.10	9.70	10.50
1006	1008	24.60	30.10	34.60	42.60	45.70	49.10	6.50	8.00	9.10	11.30	12.10	13.00
1056	1058	25.40	31.20	36.40	45.00	48.00	51.30	6.70	8.20	10.04	11.90	12.70	13.60
1156	1158	29.50	35.00	41.10	49.20	52.60	55.80	7.80	9.30	10.90	13.00	13.90	14.70
1406	1408	33.50	41.20	47.50	59.70	64.00	67.90	8.90	10.90	12.60	15.80	16.90	17.90
1706	1708	39.70	49.20	56.20	69.80	77.80	85.30	10.50	13.00	14.90	18.40	20.60	22.50
2006	2008	49.10	59.20	69.20	85.20	91.50	97.30	13.00	15.70	18.30	22.50	24.20	25.70

# SMALL HOLLOW CONE - WDA CAPACITY CHART

NOZZLE NUMBER	FLOW RATE IN LITRES/HOUR AT BAR G							FLOW RATE IN GPH AT PSIG						
	3	5	7	10	15	20	35	40	75	100	125	150	300	500
0.5	-	1.45	1.72	2.05	2.51	2.87	3.82	-	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	-	0.58	0.67	0.75	0.82	1.16	1.50
1	-	2.87	3.40	4.10	5.02	5.77	7.63	-	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	-	1.16	1.34	1.50	1.65	2.32	3.00
2	-	5.77	6.83	8.19	10.00	11.60	15.30	-	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	-	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	-	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	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	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	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	4.50	6.20	7.20	8.00	8.90	12.40	16.00
10	22.10	28.70	34.00	41.00	50.20	57.70	76.30	5.60	7.70	8.90	10.00	11.00	15.50	20.00
12	26.90	34.60	40.80	49.20	60.20	69.30	91.60	6.80	9.30	10.70	12.00	13.20	18.60	24.00
14	31.20	40.20	47.70	57.00	69.80	80.80	107.00	7.90	10.80	12.50	14.00	15.30	21.70	28.00
16	35.60	46.20	54.60	65.20	79.80	92.40	122.00	9.00	12.40	14.30	16.00	17.50	24.80	32.00
18	39.90	51.80	61.40	73.40	89.90	104.00	137.00	10.10	13.90	16.10	18.00	19.70	27.90	36.00
20	44.60	57.80	68.30	81.60	99.90	115.00	153.00	11.30	15.50	17.90	20.00	21.90	31.00	40.00

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Tel: +44 (0) 151 424 6821 or alternatively e-mail: sales@delavan.co.uk

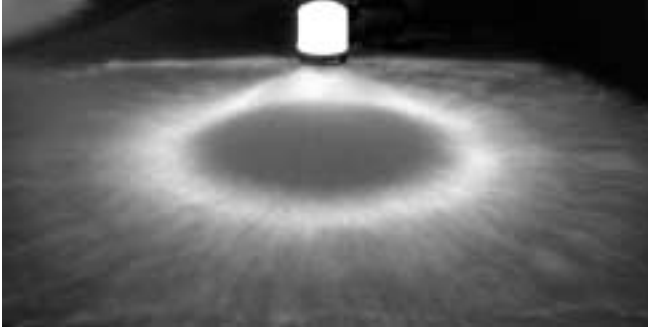
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Spray Technologies

# HOLLOW CONE NOZZLES

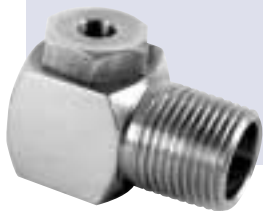
Producing fine atomisation with no central distribution\*

## TYPICAL SPRAY PATTERN



## TYPICAL APPLICATIONS

Aerating water, brine sprays, chemical processing, coil defrosting, dust control, evaporative condensers, evaporative coolers, industrial washers, roof cooling, spray ponds, spray coating, gas scrubbing and washing, humidification, gas cooling, cooling towers, coal washing, degreasing, gravel washing, dishwashing, foam control, industrial washing and water fountains.

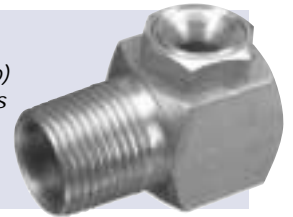


### AE Type Nozzle

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.

### 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.



### WRW Type Nozzle

WRW 2 – 240 available. Two piece design (body and cap) with no internal vanes. Right angle configuration. Available spray angles of 110, 115 and 140° depending upon flow size and pressure. WRW 2 – 20 available in 1/2" NPT male thread only and WRW 20 – 240 available in 1/2" NPT male thread only. Available in Nylon only.

### RA \*Special design Type Nozzle

Two piece right angle design (body and cap) with no internal vanes. Available in flow sizes from 2 – 280 with a nominal spray angle of 120° - 140° depending on flow size and pressure. Patented dual swirl chamber produces "Raindrop" type spray. Available in Nylon only.



### 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.

### WR Type Nozzle

Two piece right angle design (body and cap) with no internal vanes. 3/8" NPT male and female threads only. Available in Polypropylene only.



Unless otherwise stated, all nozzles and tips are available in Brass and Stainless Steel as standard.

# HOLLOW CONE - AE/AF/WRW/RA/WS CAPACITY CHART

NOZZLE NUMBER	AE BSPT	AF	WRW	RA NPT	WS	FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG						
						1	2	3	4	5	6	7	15	30	40	60	70	90	100
2	1/8, 1/4	1/8, 1/4	1/4	1/4	1/8	0.46	0.64	0.79	0.91	1.00	1.10	1.20	0.12	0.17	0.21	0.24	0.26	0.29	0.32
4	1/8, 1/4	1/8, 1/4	1/4	1/4	1/8, 1/4	0.92	1.30	1.60	1.80	2.00	2.20	2.40	0.24	0.34	0.42	0.48	0.53	0.85	0.63
5			1/4	1/4		1.10	1.60	2.00	2.30	2.50	2.80	3.00	0.29	0.42	0.53	0.61	0.66	0.74	0.79
6	1/8, 1/4	1/8, 1/4	1/4	1/4	1/8, 1/4, 3/8	1.30	1.90	2.40	2.70	3.10	3.40	3.60	0.34	0.50	0.63	0.71	0.82	0.90	0.95
8				1/4		1.88	2.60	3.20	3.60	4.10	4.50	4.80	0.50	0.69	0.84	0.95	1.08	1.19	1.27
10	1/8, 1/4, 3/8	1/8, 1/4	1/4	1/4	1/4, 3/8	2.30	3.20	3.90	4.60	5.10	5.60	6.00	0.61	0.85	1.03	1.22	1.35	1.48	1.59
15	1/8, 1/4, 3/8	1/8, 1/4, 3/8	1/4		3/8, 1/2	3.40	4.80	5.90	6.80	7.60	8.40	9.00	0.90	1.27	1.56	1.80	2.01	2.22	2.38
20	1/8, 1/4, 3/8	3/8	1/4, 3/4	3/4	3/8, 1/2	4.50	6.40	7.96	9.10	10.20	11.20	12.10	1.19	1.69	2.09	2.40	2.69	2.96	3.20
25	1/4, 3/8	3/8				5.70	8.10	9.90	11.40	12.70	14.00	15.10	1.51	2.14	2.62	3.01	3.36	3.70	3.99
30	1/4, 3/8	3/8	3/4	3/4	1/2	6.90	9.70	11.80	13.70	15.30	16.80	18.10	1.82	2.56	3.12	3.62	4.04	4.44	4.78
40	1/2		3/4		1/2	9.10	12.90	15.80	18.20	20.40	22.30	24.10	2.40	3.40	4.20	4.80	5.40	5.90	6.40
50	1/2	3/8, 1/2		3/4	1/2, 3/4	11.40	16.10	19.70	22.80	25.50	27.90	30.20	3.00	4.30	5.20	6.00	6.70	7.40	8.00
60	1/2, 3/4		3/4		1/2, 3/4	13.60	19.30	23.70	27.30	30.60	33.50	36.20	3.60	5.10	6.30	7.20	8.10	8.90	9.60
80	1/2, 3/4	1/2	3/4	3/4	3/4	18.20	25.80	31.60	36.50	40.80	44.70	48.20	4.80	6.80	8.40	9.70	10.80	11.80	12.70
100	1/2, 3/4	1/2, 3/4	3/4	3/4	3/4	22.80	32.20	39.50	45.60	41.00	55.80	60.30	6.00	8.50	9.80	12.00	12.96	14.70	15.90
120			3/4			27.30	38.70	47.40	54.70	61.20	67.00	72.40	7.21	10.22	12.51	14.44	16.16	17.69	19.11
125	1/2, 3/4					28.50	40.30	49.40	57.00	63.70	69.80	75.40	7.50	10.70	13.10	15.10	16.80	18.40	19.90
150	3/4, 1	3/4, 1				34.20	48.30	59.20	68.40	76.40	83.70	90.50	9.00	12.80	15.60	18.10	20.20	22.10	23.90
160			3/4	3/4		36.50	51.60	63.20	73.00	81.60	89.40	96.50	9.64	13.62	16.68	19.27	21.54	23.60	25.48
200	3/4, 1	1	3/4	3/4		45.60	64.50	79.00	91.20	102.00	112.00	121.00	12.10	17.00	20.90	24.10	27.00	29.60	32.00
240			3/4			54.70	77.40	94.70	109.00	122.00	134.00	145.00	14.44	20.43	25.00	28.78	32.21	35.37	38.28
250	1	1				57.00	80.70	98.80	114.10	128.00	140.00	151.00	15.10	21.30	26.14	30.10	33.80	37.00	39.90
280				3/4		64.10	90.30	111.00	128.00	143.00	156.00	169.00	16.92	23.84	29.30	33.79	37.75	41.18	44.61
300	1					68.40	96.80	119.00	137.00	153.00	168.00	181.00	18.10	25.60	31.40	36.20	40.40	44.40	47.80
350	1					79.80	113.00	138.00	160.00	179.00	196.00	211.00	21.10	29.90	36.50	42.30	47.30	51.80	55.70

# HOLLOW CONE - WR CAPACITY CHART

NOZZLE NUMBER POLYPROPYLENE		FLOW RATE IN LITRES/MIN AT BAR G					FLOW RATE IN GPM AT PSIG					SPRAY ANGLE (°) AT 3 BAR (40PSIG)
MALE	FEMALE	1.5	3	4	5	7	20	40	60	80	100	
29203-25	29204-25	3.5	4.70	5.50	6.10	7.30	0.85	1.20	1.50	1.70	1.90	75
29203-37	29204-37	3.90	5.50	6.40	7.10	8.50	0.99	1.40	1.70	2.00	2.20	80
29203-26	29204-26	4.30	6.30	7.30	8.20	9.70	1.10	1.60	2.00	2.30	2.60	90
29203-27	29204-27	5.50	7.60	9.50	10.20	12.10	1.40	2.00	2.50	2.80	3.20	70
29203-1	29204-1	6.70	9.50	10.90	12.20	14.50	1.70	2.40	2.90	3.40	3.80	95
29203-2	29204-2	8.30	11.80	13.70	15.30	18.10	2.10	3.00	3.70	4.20	4.70	90
29203-34	29204-34	8.30	11.80	13.70	15.30	18.10	2.10	3.00	3.70	4.20	4.70	155
29203-28	29204-28	9.50	13.80	16.00	17.80	21.10	2.40	3.50	4.30	4.90	5.50	105
29203-3	29204-3	9.90	14.20	16.40	18.30	21.70	2.50	3.60	4.40	5.10	5.70	85
29203-29	29208-29	11.10	15.20	19.00	21.40	24.20	2.80	4.00	4.90	5.70	6.30	60
29203-4	29204-4	12.20	17.40	20.10	22.40	26.50	3.10	4.40	5.40	6.20	6.90	80
29203-5	29204-5	12.20	17.40	20.10	22.40	26.50	3.10	4.40	5.40	6.20	6.90	95
29203-6	29204-6	13.80	19.70	22.80	25.70	30.20	3.50	5.00	6.10	7.10	7.90	75
29203-7	29204-7	13.80	19.70	22.80	25.50	30.20	3.50	5.00	6.10	7.10	7.90	130
29203-44	29204-44	15.40	22.00	25.50	28.60	33.80	3.90	5.60	6.90	7.90	8.80	50
29203-30	29204-30	15.80	22.50	26.00	29.00	34.40	4.00	5.70	7.00	8.10	9.00	90
29203-31	29204-31	16.60	23.60	27.40	30.60	36.20	4.20	6.00	7.30	8.50	9.50	60
29203-40	29204-40	16.60	23.60	27.40	30.60	36.20	4.20	6.00	7.30	8.50	9.50	45
29203-32	29204-32	19.80	27.60	31.90	35.70	42.20	5.00	7.00	8.60	9.90	11.10	65
29203-8	29204-8	19.80	27.60	31.90	35.70	42.20	5.00	7.00	8.60	9.90	11.10	90
29203-33	29204-33	20.90	29.60	34.20	38.30	45.20	5.30	7.50	9.20	10.60	11.90	85
29203-9	29204-9	22.50	31.60	36.50	40.80	48.20	5.70	8.00	9.80	11.30	12.60	85
29203-10	29204-10	22.50	31.60	36.50	40.80	48.20	5.70	8.00	9.80	11.30	12.60	125
29203-35	29204-35	25.30	35.60	41.00	45.90	27.30	6.40	9.00	11.00	12.70	14.20	60
29203-45	29204-45	28.00	39.50	45.60	51.00	60.30	7.10	10.00	12.20	14.10	15.80	50
29203-12	29204-12	28.00	39.50	45.60	51.00	60.30	7.10	10.00	12.20	14.10	15.80	70
29203-11	29204-11	28.00	39.50	45.60	51.00	60.30	7.10	10.00	12.20	14.10	15.80	115

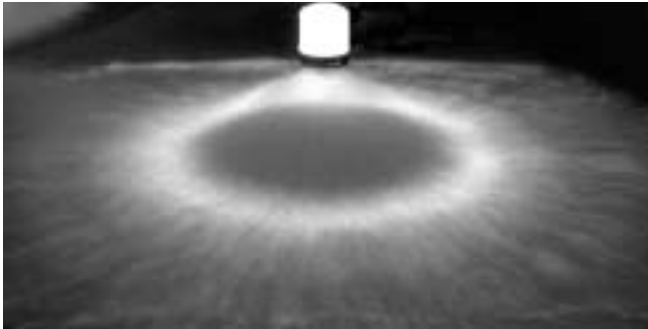
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# LARGE HOLLOW CONE NOZZLES

Producing uniform atomisation with no central distribution

## TYPICAL SPRAY PATTERN



## TYPICAL APPLICATIONS

Aerating water, brine sprays, chemical processing, coil defrosting, dust control, evaporative condensers, evaporative coolers, industrial washers, roof cooling, spray ponds, spray coating, gas scrubbing and washing, humidification, gas cooling, cooling towers, coal washing, degreasing, gravel washing, dishwashing, foam control, industrial washing and water fountains.



## WRA Type Nozzle

Two piece construction (Body and cap) in a right angle design. Nominal spray angles of 50° to 100° dependent upon flow size and pressure. Type WRA has an inlet designed for insertion into a quick coupler connection. Material is Glass filled Polypropylene.



## WRS Type Nozzle

WRS is designed to promote larger droplet size. Material is Glass filled Polypropylene. WRS spray angles from 100°-135°.

## BE Type Nozzle

One piece cast 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, Cast Iron, Gunmetal and Stainless Steel as standard.

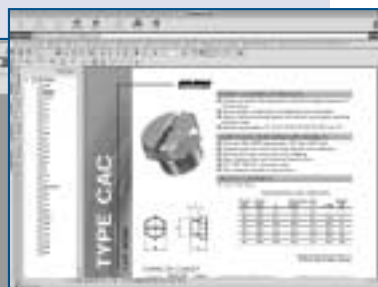
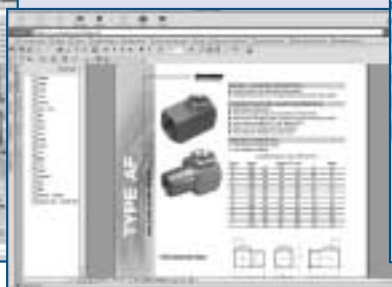


Unless otherwise stated, all nozzles and tips are available in Brass and Stainless Steel as standard.

This is not our complete range of products, to see a full listing visit our website @

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for further details, or send for our CD format Specifiers guide.



# LARGE HOLLOW CONE - WRA/WRS CAPACITY CHART

NOZZLE NUMBER WRA & WRS	FLOW RATE IN LITRES/MIN AT BAR G					FLOW RATE IN GPM AT PSIG				
	0.3	0.7	1	1.5	2	5	10	15	20	30
14	25	38	45	55	62	7.20	9.90	12.30	14.00	16.80
18	32	48	57	69	80	9.30	12.90	15.90	18.00	25.00
21	37	56	66	80	92	10.80	14.90	18.30	21.00	25.20
23	41	62	74	90	103	12.30	16.80	20.70	23.00	28.80
28	49	74	88	107	122	14.40	19.80	24.60	28.00	33.60
36	63	96	114	139	160	18.60	25.80	31.80	36.00	43.80
43	75	114	136	166	190	22.20	30.60	37.50	42.60	51.60
49	86	131	156	191	219	25.50	35.40	42.90	49.00	60.00
54	95	144	172	210	241	28.20	39.00	48.30	54.00	68.40
63	110	168	200	244	281	34.80	49.20	56.40	63.00	75.60
75	132	201	240	293	338	43.80	59.40	65.40	75.00	91.20
88	154	234	279	340	392	50.40	67.20	76.20	88.00	106.00
100	174	266	317	388	447	57.60	72.00	87.00	100.00	119.00
112	197	299	357	437	501	62.40	80.40	97.20	112.00	127.00

# LARGE HOLLOW CONE - BE CAPACITY CHART

NOZZLE NUMBER	THREAD SIZE	FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG						
		0.3	0.5	0.7	1	2	3	4	5	10	15	20	30	40	60
23	1 1/4 1 1/2	45.00	56.00	64.00	77.00	107.00	130.00	150.00	12.30	16.80	20.70	23.40	28.80	33.00	40.20
28	1 1/4 1 1/2	52.10	65.60	75.50	91.50	128.00	152.00	175.00	14.40	19.80	24.60	27.60	33.60	38.40	47.20
36	1 1/4 1 1/2	66.30	84.80	98.40	118.00	163.00	198.00	228.00	18.60	25.80	31.80	36.00	43.80	50.10	61.20
43	1 1/4 1 1/2	79.50	101.00	117.00	140.00	192.00	237.00	268.00	22.20	30.60	37.50	42.60	51.60	60.00	72.00
49	1 1/4 1 1/2	90.00	116.00	135.00	160.00	223.00	272.00	321.00	25.50	35.40	42.90	48.90	60.00	69.00	86.40
54	1 1/4 1 1/2	102.00	128.00	149.00	180.00	254.00	313.00	353.00	28.20	39.00	48.30	54.00	68.40	79.20	94.80
63	2	123.00	159.00	188.00	210.00	281.00	341.00	402.00	34.80	49.20	56.40	63.00	75.60	86.40	108.00
75	2	152.00	200.00	226.00	243.00	339.00	417.00	504.00	43.80	59.40	65.40	75.00	91.20	106.00	136.00
88	2	180.00	230.00	256.00	283.00	393.00	492.00	598.00	50.40	67.20	76.20	87.60	106.00	125.00	161.00
100	2	208.00	262.00	274.00	324.00	442.00	549.00	661.00	57.60	72.00	87.00	99.60	119.00	139.00	178.00
112	2	227.00	284.00	306.00	362.00	473.00	587.00	705.00	62.40	80.40	97.20	112.00	127.00	149.00	190.00
122	2	246.00	306.00	332.00	402.00	554.00	682.00	813.00	67.20	87.00	108.00	122.00	149.00	173.00	218.00
144	2	256.00	317.00	371.00	442.00	665.00	814.00	938.00	69.60	97.20	119.00	144.00	179.00	206.00	252.00

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# SMALL SOLID CONE NOZZLES

Producing uniform distribution with fine atomisation

## TYPICAL SPRAY PATTERN



## TYPICAL APPLICATIONS

Aerating water, brine sprays, chemical processing, coil defrosting, dust control, evaporative condensers, evaporative coolers, industrial washers, roof cooling, spray coating, gas scrubbing and washing, cooling towers, coal washing, degreasing, gravel washing, dishwashing, foam control, industrial washing and water fountains.



### WDB Type Nozzle

Basic nozzle thread 9/16" - 24 UNEF, with optional adaptors providing 1/8" and 1/2" pipe threads. Flow sizes from 0.5 to 20 with spray angles of 30°, 45°, 60°, 70°, 80° and 90°.



### BL Type Nozzle

One-piece body with removable screwed core, using allen key. Available only with 1/8" BSPT thread and in flow sizes from 3 - 20 with spray angles of 45°, 60° and 90°.

Unless otherwise stated, all nozzles and tips are available in Brass and Stainless Steel as standard.

### WL Type

Flanged tip design for use with standard threaded bodies and caps, available in flow sizes from 3 - 20 with spray angles of 45°, 60° and 90°. One-piece body with removable screwed core, using allen key.



### BF Type

Flanged tip design for use with standard bodies and caps in sizes from 1 - 16. Spray angles of 30°, 60°, 90° and 120°.



# SMALL SOLID CONE - WDB CAPACITY CHART

NOZZLE NUMBER	FLOW RATE IN LITRES/HOUR AT BAR G								FLOW RATE IN GPH AT PSIG						
	3	5	7	10	15	20	35	40	75	100	125	150	300	500	
0.5*	-	1.45	1.72	2.05	2.51	2.87	3.82	-	0.39	0.45	0.55	0.63	0.77	1.00	
0.75*	-	2.16	2.56	3.05	3.74	4.32	5.72	-	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	-	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	-	1.16	1.34	1.50	1.65	2.32	3.00	
2	-	5.77	6.83	8.19	10.00	11.60	15.30	-	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	-	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	-	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	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	2.80	3.90	4.50	5.00	5.55	7.70	10.00	
6	14.20	17.50	20.60	24.60	30.10	34.60	45.80	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	4.50	6.20	7.20	8.00	8.90	12.40	16.00	
10	22.10	28.70	34.00	41.00	50.20	57.70	76.30	5.60	7.70	8.90	10.00	11.00	15.50	20.00	
12	26.90	34.60	40.80	49.20	60.20	69.30	91.60	6.80	9.30	10.70	12.00	13.20	18.60	24.00	
14	31.20	40.20	47.70	57.00	69.80	80.80	107.00	7.90	10.80	12.50	14.00	15.30	21.70	28.00	
16**	35.60	46.20	54.60	65.20	79.80	92.40	122.00	9.00	12.40	14.30	16.00	17.50	24.80	32.00	
18**	39.90	51.80	61.40	73.40	89.90	104.00	137.00	10.10	13.90	16.10	18.00	19.70	27.90	36.00	
20**	44.60	57.80	68.30	81.60	99.90	115.00	153.00	11.30	15.50	17.90	20.00	21.90	31.00	40.00	

# SMALL SOLID CONE - WL/BL CAPACITY CHART

NOZZLE NUMBER	MESH SIZE	FLOW RATE IN LITRES/HOUR AT BAR G								FLOW RATE IN GPH AT PSIG							
		0.7	1	1.5	2	3	4	6	7	10	15	20	30	45	60	90	100
3	200	7.40	8.70	10.40	11.90	14.20	16.20	18.90	20.70	1.82	2.17	2.64	3.06	3.75	4.33	5.31	5.73
4	200	9.90	11.60	13.90	16.00	19.00	21.70	25.30	27.70	2.43	2.88	3.54	4.09	5.02	5.79	7.08	7.66
5	200	12.30	14.40	17.30	19.90	23.70	27.00	31.50	34.60	3.04	3.62	4.44	5.13	6.26	7.24	8.85	9.56
6	100	14.80	17.30	20.70	23.90	28.40	32.40	37.80	41.50	3.62	4.33	5.31	6.13	7.50	8.67	10.62	11.47
7	100	17.30	20.30	24.20	27.90	33.20	37.80	44.20	48.50	4.23	5.05	6.21	7.16	8.77	10.12	12.39	13.39
8	100	19.70	23.10	27.70	31.80	37.90	43.20	50.40	55.30	4.83	5.79	7.08	8.19	10.01	11.57	14.16	15.30
9	100	22.20	26.00	31.20	35.90	42.70	48.70	56.80	62.30	5.44	6.50	7.98	9.19	11.28	13.02	15.93	17.22
10	100	24.60	28.90	34.60	39.80	47.40	54.00	63.00	69.20	6.05	7.21	8.85	10.22	12.52	14.45	17.70	19.13
16	50	39.50	46.30	55.40	63.80	75.90	86.50	101.00	111.00	9.70	11.54	14.16	16.35	20.05	23.14	28.27	30.64
20	50	49.30	57.80	69.20	79.60	94.80	108.00	126.00	138.00	12.10	14.45	17.70	20.45	25.04	28.80	35.40	38.31

# SMALL SOLID CONE - BF CAPACITY CHART

NOZZLE NUMBER	FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG						
	1	1.5	2	3	4	5	7	15	20	30	45	60	70	100
1	0.45	0.56	0.64	0.78	0.86	0.94	1.14	0.12	0.15	0.17	0.21	0.23	0.25	0.30
2	0.89	1.11	1.26	1.54	1.71	1.87	2.27	0.24	0.29	0.33	0.41	0.45	0.49	0.60
3	1.34	1.67	1.90	2.32	2.57	2.81	3.41	0.35	0.44	0.50	0.61	0.68	0.74	0.90
4	1.79	2.22	2.53	3.10	3.42	3.75	4.54	0.47	0.59	0.67	0.82	0.90	0.99	1.20
5	2.23	2.78	3.15	3.86	4.28	4.68	5.68	0.59	0.73	0.83	1.02	1.13	1.24	1.50
6	2.68	3.34	3.79	4.64	5.13	5.62	6.81	0.71	0.88	1.00	1.23	1.36	1.48	1.80
8	3.57	4.44	6.28	6.18	6.84	7.49	9.08	0.94	1.17	1.66	1.63	1.81	1.98	2.40
10	4.40	5.56	6.31	7.72	8.56	9.36	11.35	1.16	1.47	1.67	2.04	2.26	2.47	3.00
12	5.36	6.67	7.58	9.28	10.27	11.24	13.62	1.42	1.76	2.00	2.45	2.71	2.97	3.60
16	7.14	8.90	10.10	12.37	13.73	14.98	18.16	1.89	2.35	2.67	3.27	3.63	3.96	4.80

\* Not available in 30 or 45 degree

\*\* These sizes are supplied without strainers

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**DELAVAN**  
Spray Technologies

# SOLID CONE NOZZLES

Producing uniform distribution across a wide pressure range

## TYPICAL SPRAY PATTERN



## TYPICAL APPLICATIONS

Aerating water, brine sprays, chemical processing, coil defrosting, dust control, evaporative condensers, evaporative coolers, industrial washers, roof cooling, spray coating, gas scrubbing and washing, cooling towers, coal washing, degreasing, gravel washing, dishwashing, foam control, industrial washing and water fountains.



### BI Type Nozzle

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

### BQ Type Nozzle

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



### BN Type Nozzle

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

### BT Type Nozzle

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



### CT Type Nozzle

CT 2 – 40 available. Two-piece body design available in flow sizes from 2 – 40 with spray angles from 45° to 90°. See chart for available thread sizes.

Unless otherwise stated, all nozzles and tips are available in Brass and Stainless Steel as standard.



# SOLID CONE - BI/BQ CAPACITY CHART

NOZZLE NUMBER MALE & FEMALE	THREAD SIZE	FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG						
		0.35	1	1.5	2	3	4	7	5	15	20	30	40	60	100
6	1/8 & 1/4	0.88	1.50	1.88	2.18	2.65	2.87	3.54	0.23	0.40	0.47	0.58	0.66	0.76	0.91
8	1/8 & 1/4	1.30	2.28	2.84	3.23	4.00	4.55	5.72	0.34	0.60	0.71	0.85	1.00	1.20	1.48
11	1/8 & 1/4	1.63	2.87	3.62	4.05	4.87	5.36	6.74	0.42	0.76	0.90	1.07	1.21	1.42	1.74
12	1/8 to 3/8	2.09	3.41	4.09	4.55	5.30	5.91	7.58	0.54	0.90	1.02	1.20	1.32	1.56	1.96
16	1/4 & 3/8	2.50	4.41	5.30	6.14	7.27	8.00	10.04	0.65	1.16	1.32	1.62	1.81	2.11	2.59
20	1/4 & 3/8	3.11	5.46	6.50	7.54	9.06	10.00	12.63	0.80	1.44	1.62	1.99	2.26	2.64	3.25
22	1/4 & 3/8	3.58	6.24	7.51	8.32	9.78	10.91	14.24	0.92	1.64	1.87	2.20	2.44	2.88	3.67
27	3/8 & 1/2	4.23	7.42	9.01	10.10	12.32	13.64	17.47	1.09	1.96	2.24	2.68	3.07	3.60	4.50
32	3/8 & 1/2	5.81	8.88	10.81	12.32	14.44	15.96	20.40	1.50	2.34	2.70	3.24	3.59	4.20	5.28
42	1/2 & 3/4	6.74	11.82	14.44	15.96	19.29	21.41	27.37	1.74	3.12	3.60	4.20	4.80	5.64	7.08
49	1/2 & 3/4	8.17	14.24	16.36	18.69	23.13	25.05	32.52	2.11	3.76	4.08	4.92	5.76	6.60	8.40
63	1/2 & 3/4	10.20	17.07	20.50	23.84	28.89	32.22	41.31	2.64	4.50	5.16	6.30	7.20	8.53	10.70
77	3/4	12.32	20.50	23.94	29.09	34.95	38.68	49.29	3.18	5.40	6.36	7.69	8.70	10.20	12.70
89	3/4	13.94	23.74	29.39	33.63	40.00	44.54	56.26	3.60	5.24	7.32	8.88	9.96	11.80	14.50
102	3/4	14.85	27.37	33.73	38.68	46.26	50.00	64.54	3.84	7.20	8.40	10.20	11.50	13.20	16.70
105	1	16.26	27.78	33.73	39.79	48.18	52.32	67.37	4.20	7.32	8.40	10.50	12.00	13.80	17.40
123	1	19.49	34.64	42.32	46.56	57.77	63.63	80.40	5.04	9.12	10.60	12.30	14.40	16.80	20.80
140	1	22.73	38.18	45.25	53.23	62.12	68.18	85.95	5.88	10.10	11.30	14.00	15.50	18.00	22.20
162	1	25.55	44.64	53.03	61.41	72.22	79.08	101.00	6.60	11.80	13.20	16.20	18.00	21.00	26.20
193	1	28.79	50.10	60.70	73.23	87.57	99.08	128.27	7.44	13.20	15.10	19.30	22.60	26.20	33.00

# SOLID CONE - CT CAPACITY CHART

NOZZLE NUMBER FEMALE	NOZZLE NUMBER MALE	THREAD SIZE	FLOW RATE IN LITRES/MIN AT BAR G					FLOW RATE IN GPM AT PSIG						
			0.35	0.7	1.5	3	5	7	5	10	20	40	80	100
2	2	1/8	0.53	0.76	1.10	1.58	1.98	2.29	0.14	0.20	0.28	0.40	0.55	0.60
3	3	1/8	0.84	1.14	1.70	2.37	2.88	3.43	0.22	0.30	0.43	0.60	0.80	0.90
3.5	3.5	1/8	0.95	1.34	1.98	2.69	3.32	3.82	0.25	0.35	0.50	0.68	0.92	1.00
4	4	1/8	1.07	1.53	2.21	3.16	3.97	4.77	0.28	0.40	0.56	0.80	1.10	1.25
5	5	1/8	1.37	1.91	2.77	3.75	4.69	5.72	0.36	0.50	0.70	0.95	1.30	1.50
6.5	6.5	1/4	1.79	2.48	3.56	5.14	6.13	7.25	0.47	0.65	0.90	1.30	1.70	1.90
9.5	9.5	1/8, 3/8	2.63	3.63	5.14	7.11	9.02	10.69	0.69	0.95	1.30	1.80	2.50	2.80
10	10	1/4	2.78	3.82	5.53	7.50	9.74	11.45	0.73	1.00	1.40	1.90	2.70	3.00
15	15	3/8	4.20	5.72	8.30	11.45	14.42	16.79	1.10	1.50	2.10	2.90	4.00	4.40
16	16	1/2	4.60	6.10	8.69	12.25	15.50	17.94	1.20	1.60	2.20	3.10	4.30	4.70
22	22	3/8	6.10	8.40	11.85	16.60	20.92	24.42	1.60	2.20	3.00	4.20	5.80	6.40
25	25	1/2	6.87	9.54	13.83	18.96	24.16	28.24	1.80	2.50	3.50	4.80	6.70	7.40
32	32	1/2	8.78	12.20	17.38	24.10	30.65	35.87	2.30	3.20	4.40	6.10	8.50	9.40
40	40	1/2	11.07	15.26	21.73	30.00	38.22	45.03	2.90	4.00	5.50	7.60	10.60	11.80

# SOLID CONE - BN/BT CAPACITY CHART

NOZZLE NUMBER MALE & FEMALE	THREAD SIZE	FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG						
		0.35	1	1.5	2	3	4	7	5	15	20	30	40	60	100
6	1/8, 1/4	0.88	1.50	1.88	2.18	2.65	2.87	3.54	0.23	0.40	0.50	0.58	0.70	0.76	0.93
8	1/8, 1/4	1.30	2.28	2.84	3.23	4.00	4.55	5.72	0.34	0.60	0.75	0.85	1.06	1.20	1.51
11	1/8, 1/4	1.86	3.23	3.86	4.31	5.15	5.45	7.43	0.48	0.85	0.96	1.14	1.28	1.44	1.92
15	1/4	2.60	4.50	5.26	5.59	6.64	7.24	9.16	0.69	1.19	1.39	1.48	1.75	1.91	2.42
18	1/4	3.10	5.39	6.30	6.70	7.96	8.68	10.98	0.82	1.42	1.66	1.77	2.10	2.29	2.90
22	1/4, 3/8	3.95	6.84	8.00	8.50	10.10	11.01	13.94	1.02	1.80	1.99	2.24	2.52	2.93	3.60
25	3/8	4.27	7.24	8.43	9.32	11.01	12.32	15.76	1.10	1.91	2.10	2.46	2.76	3.24	4.08
32	3/8	5.90	9.15	10.80	11.92	14.30	15.78	19.90	1.56	2.42	2.85	3.15	3.78	4.17	5.25
39	3/8	7.20	11.15	13.14	14.52	17.40	19.20	24.25	1.90	2.94	3.47	3.83	4.59	5.07	6.40
46	3/8, 1/2	8.13	13.64	15.86	17.27	19.29	22.32	27.88	2.10	3.60	3.96	4.56	4.80	5.88	7.20
48	3/8, 1/2	8.33	15.25	16.87	18.18	23.13	24.54	32.52	2.28	4.02	4.20	4.80	5.76	6.48	8.40
59	1/2	9.29	15.96	19.29	22.32	26.06	28.18	37.67	2.40	4.20	4.80	5.88	6.48	7.44	9.72
65	1/2	12.00	18.60	21.92	24.21	29.00	32.05	40.40	3.17	4.91	5.79	6.39	7.66	8.46	10.67
73	1/2	13.50	20.88	24.50	27.19	32.60	36.00	45.40	3.56	5.51	6.47	7.18	8.61	9.50	11.99
82	3/4	15.35	23.74	27.98	30.91	37.07	40.91	51.61	3.96	6.24	6.96	8.16	9.24	10.80	13.30
94	3/4	16.77	26.87	32.72	35.45	41.92	45.96	59.89	4.32	7.08	8.16	9.36	10.40	12.10	15.50
98	3/4	18.08	27.78	34.24	37.27	44.34	50.00	64.54	4.68	7.32	8.52	9.84	11.00	13.20	16.70
136	1	24.14	42.32	48.18	51.41	60.20	67.77	86.86	6.24	11.20	12.00	13.60	15.00	17.90	22.40
153	1	27.88	46.97	53.93	57.97	67.47	76.36	98.07	7.20	12.40	13.40	15.30	16.80	20.20	25.30
200	1	29.69	51.41	62.62	75.95	88.68	99.59	130.29	7.68	13.60	15.60	20.00	22.10	26.30	33.60

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# LARGE SOLID CONE NOZZLES

Producing uniform distribution at low pressures

## TYPICAL SPRAY PATTERN



## TYPICAL APPLICATIONS

Aerating water, brine sprays, chemical processing, coil defrosting, dust control, evaporative condensers, evaporative coolers, industrial washers, roof cooling, spray coating, gas scrubbing and washing, cooling towers, coal washing, degreasing, gravel washing, dishwashing, foam control, industrial washing and water fountains.



## CM Type Nozzle

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

Unless otherwise stated, all nozzles are available in Cast Iron, Stainless Steel and Gunmetal as standard.



## BY Type Nozzle

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

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# LARGE SOLID CONE - CM CAPACITY CHART

NOZZLE NUMBER FEMALE	THREAD SIZE	FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG						
		0.35	0.7	1	2	3	5	7	5	10	15	30	40	80	100
16	1 1/4	33.30	45.70	53.60	72.30	87.60	110.00	127.00	8.74	12.00	14.40	19.50	22.20	30.50	33.40
22	1 1/4	44.00	59.90	70.10	96.40	115.00	145.00	168.00	11.60	15.70	18.00	25.90	29.20	40.40	44.20
27	1 1/4	55.80	76.40	89.30	121.00	146.00	184.00	213.00	14.70	20.00	24.00	32.50	37.10	51.00	55.80
33	1 1/4	67.70	91.90	108.00	146.00	177.00	222.00	259.00	17.80	24.10	29.10	39.40	44.80	61.60	68.10
29	1 1/2	57.60	79.60	94.20	128.00	154.00	197.00	229.00	15.1	20.90	25.30	34.50	39.20	54.60	60.20
35	1 1/2	70.00	96.50	114.00	156.00	187.00	238.00	278.00	18.40	25.30	30.60	42.00	47.60	66.20	72.90
42	1 1/2	86.00	117.00	137.00	191.00	229.00	289.00	339.00	22.60	30.70	36.90	51.30	58.10	80.20	89.00
48	1 1/2	96.50	133.00	158.00	216.00	259.00	326.00	381.00	25.30	34.90	42.40	58.10	66.60	90.60	99.90
54	1 1/2	108.00	148.00	175.00	241.00	288.00	367.00	427.00	28.30	38.90	47.00	64.90	73.10	102.00	112.00
64	2	126.00	175.00	206.00	284.00	341.00	437.00	503.00	33.10	45.90	55.40	76.40	86.50	121.00	132.00
71	2	142.00	195.00	231.00	321.00	335.00	488.00	572.00	37.30	51.20	62.20	86.30	97.80	136.00	150.00
81	2	161.00	222.00	261.00	362.00	436.00	553.00	650.00	42.10	58.20	70.30	97.40	111.00	154.00	171.00
90	2	181.00	250.00	294.00	408.00	492.00	618.00	723.00	47.40	65.70	79.00	110.00	125.00	172.00	190.00
98	2	195.00	270.00	316.00	451.00	526.00	670.00	782.00	51.20	71.00	84.90	121.00	133.00	186.00	205.00
105	2	209.00	288.00	339.00	473.00	568.00	718.00	833.00	54.90	75.80	91.10	127.00	144.00	199.00	219.00

# LARGE SOLID CONE - BY CAPACITY CHART

NOZZLE NUMBER FEMALE	THREAD SIZE	FLOW RATE IN LITRES/MIN AT BAR G							FLOW RATE IN GPM AT PSIG						
		0.35	0.7	1	2	3	5	7	5	10	15	30	40	80	100
23	1 1/4	49.40	64.00	75.40	103.00	117.00	147.00	173.00	13.04	16.90	19.90	27.19	29.61	38.81	45.67
28	1 1/4	59.50	78.20	91.50	118.00	145.00	179.00	206.00	15.71	20.64	24.16	31.15	36.70	47.25	54.38
35	1 1/4	75.90	101.10	115.00	137.00	179.00	225.00	274.00	20.04	26.69	30.36	36.17	45.31	59.40	72.33
37	1 1/2	80.50	106.00	125.00	166.00	199.00	252.00	294.00	21.25	27.98	33.00	43.82	50.37	66.53	77.61
42	1 1/2	89.20	119.00	138.00	187.00	218.00	275.00	323.00	23.55	31.41	36.43	49.37	55.18	72.60	85.27
47	1 1/2	98.80	133.00	154.00	210.00	254.00	319.00	373.00	26.08	35.11	40.65	55.44	64.29	84.21	98.47
52	1 1/2	110.00	146.00	170.00	227.00	277.00	353.00	-	29.04	38.54	44.88	59.93	70.11	93.19	-
66	2	137.00	188.00	219.00	294.00	355.00	-	-	36.17	49.63	57.81	77.61	89.85	-	-
73	2	149.00	204.00	240.00	325.00	390.00	-	-	39.33	53.85	63.36	85.80	98.71	-	-
78	2	161.00	220.00	256.00	347.00	420.00	-	-	42.50	58.08	67.58	91.61	106.30	-	-
89	2	183.00	247.00	291.00	403.00	486.00	-	-	48.31	65.21	76.82	106.39	123.01	-	-
96	2	197.00	270.00	313.00	441.00	515.00	-	-	52.01	71.28	82.63	116.42	130.35	-	-

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 USA Tel: Toll free: 1-800 Delavan or alternatively e-mail sales@delavan.com

# 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

THREAD SIZE	PART NUMBER					CAP THREAD
	MALE BRASS	FEMALE BRASS	MALE S/S	FEMALE S/S	NYLON	
1/8 BSP	32011-1	32012-1	32011-3	32012-3		3/8" BSPP
1/4 BSP	32013-1	32014-1	32013-3	32014-3		3/8" BSPP
3/8 BSP	32016-1	32017-1	32016-3	32017-3		3/8" BSPP
1/8 NPT	1171-1	1173-1	1171-3	1173-3		11/16" - 16UN
1/4 NPT	1167-1	1169-1	1167-3	1169-3	8474	11/16" - 16UN
3/8 NPT	50701-1	50702-1	50701-2	50702-2		11/16" - 16UN

### STANDARD THREADED NOZZLE CAP SELECTION CHART

THREAD SIZE	PART NUMBER			
	BRASS	STAINLESS STEEL	POLYPROPYLENE	NYLON
3/8 BSP	W00105-2	W00105-1	W01783	
11/16" - 16 UN	1165-1	1165-3		8475
3/4" BSP	W06248-1	W06248-3		



## Dovetail Nozzle Bodies

Features:

- 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 & CAPS SELECTION CHART

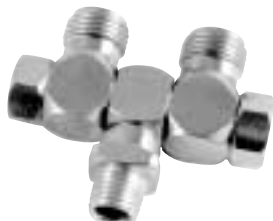
Type	Brass	Use Brass Cap No	Stainless Steel	Mild Steel	Use S/S Cap No
1/4" BSP LDM Body	✓	W00105-2	✓		W00105-1
1/4" NPT LDMX Body	✓	W00105-2	✓		W00105-1
3/8" BSP LDM Body	✓	W00105-2	✓		W00105-1
3/8" NPT LDMX Body	✓	W00105-2	✓		W00105-1
1/2" BSP ADM Body	✓	W06248-1	✓		W06248-3
1/2" NPT ADMX Body	✓	W06248-1	✓		W06248-3
3/4" BSP ADM Body	✓	W06248-1	✓		W06248-3
3/4" NPT ADMX Body	✓	W06248-1	✓		W06248-3
LDW Welding Nipple Body			✓	✓	W00105-1
ADW Welding Nipple Body			✓	✓	W06248-3



## Swivels

Features:

- Single and double swivel nozzle bodies available in brass or nylon (white or black)
- Positive, leak-proof seals
- Can be adjusted a full 360° for directed spraying
- Maximum Design Pressure: Metals - 50 psig (3.4 Bar), Nylon - 100 psig (7 Bar)
- Maximum Design Temperature: 120°F (50°C)



### SWIVEL NOZZLE BODIES SELECTION CHART

PART NUMBER	TYPE	MATERIAL	INLET PIPE SIZE
33764-1	Single	Brass	1/8 NPTF
33765-1	Double	Brass	1/8 NPTF
33764-2	Single	Brass	1/4 NPTF
33765-2	Double	Brass	1/4 NPTF
33764-3	Single	Brass	1/4 NPTM
33764-3	Double	Brass	1/4 NPTM
30387-8	Single	Black Nylon	1/8 NPTF
30384-7	Double	Black Nylon	1/8 NPTF
30387-9	Single	Black Nylon	1/4 NPTF
30384-8	Double	Black Nylon	1/4 NPTF
30387-12	Single	White Nylon	1/4 NPTF
30384-11	Double	White Nylon	1/4 NPTF
50554-1	Single Shutoff	Black Nylon	1/4 NPTF
50554-2	Single Shutoff	White Nylon	1/4 NPTF
50555-1	Double Shutoff	Black Nylon	1/4 NPTF
50555-2	Double Shutoff	White Nylon	1/4 NPTF

Note: All outlets are 11/16" - 16UN

## Eyelet Bodies

Connect nozzles to pipe or hose

### Features:

- Delavan eyelets offer the most economical method of attaching spray nozzles to pipe systems
- Easy installation; drill pipe or tube and clamp on eyelet
- Deliver high flow rate with minimum pressure drop
- Varied outlet sizes accept all standard flanged nozzle tips and filters or special swivel nozzles
- Design provided leak-proof service

### Construction and Materials:

- One-piece design, hinged bridge, locking screw
- Polypropylene/Nylon



## EYELET BODIES SELECTION CHART

PART NUMBER	CLAMP/ BODY MATERIAL	NPT/BSP		SCREW P/N	SEAL P/N	DRILL SIZE FOR BOOM	BODY THREAD NPTM
		PIPE SIZE	TUBE SIZE				
10001	Nylon	1/2"	3/4"	10083	04010-1	87.5(11/32)	11/16-16
10000-2	Nylon	3/4"	1"	10083	04010-2	11.1(7/16)	11/16-16
38202	Nylon	1/2"	3/4"	10083	04010-1	87.5(11/32)	1/2" - 14
W06043	Poly	3/4"	1"	452020033	162503103	10.3	3/8 BSPM
W06046	Poly	1"	1 1/4"	452020033	162503103	10.3	3/8 BSPM

## AP BALL JET NOZZLE SELECTION CHART IN LPM

PART NUMBER	COLOR CODE	Flow Rate in Litres/Min at Bar G			
		1	2	3	4
AP10	Tan	2.27	3.21	3.93	4.46
AP15	Light Blue	3.44	4.21	6.16	6.70
AP20	Light Green	4.46	6.25	8.05	9.37
AP25	Maroon	5.80	8.03	9.94	11.38
AP30	Dark Blue	6.70	9.82	11.84	13.84
AP40	Red	9.37	12.05	15.62	18.30
AP50	Brown	11.61	16.07	19.89	22.77
AP60	Grey	13.84	19.20	23.67	27.23
AP70	Pink	16.07	22.77	27.46	32.14

## AP BALL JET NOZZLE SELECTION CHART IN GPM

PART NUMBER	COLOR CODE	Flow Rate in GPM at PSIG			
		15	30	40	60
AP10	Tan	0.60	0.85	1.00	1.18
AP15	Light Blue	0.91	1.11	1.50	1.77
AP20	Light Green	1.18	1.65	2.00	2.48
AP25	Maroon	1.53	2.12	2.50	3.01
AP30	Dark Blue	1.77	2.59	3.00	3.66
AP40	Red	2.48	3.18	4.00	4.83
AP50	Brown	3.07	4.25	5.00	6.02
AP60	Grey	3.66	5.07	6.00	7.19
AP70	Pink	4.25	6.02	7.00	8.49

## 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 WM, WG and WA nozzle range



## TIP FILTERS SELECTION CHART

MATERIAL AND MESH SIZE	PART NUMBERS		
	STANDARD FLANGES	BALL CHECK	THREADED (SC TYPE)
Stainless Steel 40	-	-	W00089-301
Stainless Steel 50	28175-1	35288-7	-
Stainless Steel 80	-	-	W00089-302
Stainless Steel 100	28175-2	35288-8	-
Stainless Steel 200	28175-10	35288-10	W00089-303
Glass Filled Poly 50	26642-1	-	-
Glass Filled Poly 100	26642-2	-	-
Glass Filled Poly 200	26642-4	-	-
Nylon 50	-	50136-1	-
Nylon 100	-	50136-2	-

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**DELAVAN**  
Spray Technologies



# ACCESSORIES



## T-Line Strainer

### Features:

- Filter bowl and body in white nylon or black polypropylene
- Nylon filters have Viton and Buna gaskets and polypropylene filters have EPDM gaskets
- Maximum design pressure: Nylon: 150 psi (10 bar); Polypropylene 75 psi (5 bar)
- Maximum design temperature: 70°F (21°C)

## T-LINE STRAINER SELECTION CHART POLYPROPYLENE

Mesh Size	1/2"		3/4"		1"		1 1/4"		1 1/2"	
	Complete Ass.	Screen	Complete Ass.	Screen	Complete Ass.	Screen	Complete Ass.	Screen	Complete Ass.	Screen
20	W11736-53	W12544-4	W11736-56	W12544-4	W11736-59	W12544-7	W11736-62	W12544-10	W11736-65	W12544-13
40	W11736-54	W12544-5	W11736-57	W12544-5	W11736-60	W12544-8	W11736-63	W12544-11	W11736-66	W12544-14
80	W11736-55	W12544-6	W11736-58	W12544-6	W11736-61	W12544-9	W11736-64	W12544-12	W11736-67	W12544-15
Replacement Gasket (poly)	W12545-6		W12545-6		W12545-9		W12545-9		W12545-9	

## T-LINE STRAINER SELECTION CHART NYLON

Mesh Size	1/2"		3/4"		1"		1 1/4"		1 1/2"	
	Complete Ass.	Screen	Complete Ass.	Screen	Complete Ass.	Screen	Complete Ass.	Screen	Complete Ass.	Screen
20	W11736-4	W12544-4	W11736-7	W12544-4	W11736-10	W12544-7	W11736-13	W12544-10	W11736-16	W12544-13
40	W11736-5	W12544-5	W11736-8	W12544-5	W11736-11	W12544-8	W11736-14	W12544-11	W11736-17	W12544-14
80	W11736-6	W12544-6	W11736-9	W12544-6	W11736-12	W12544-9	W11736-15	W12544-12	W11736-18	W12544-15
Replacement Gasket (buna)	W12545-4		W12545-8		W12545-8		W12545-8		W12545-8	



## PRV's

### Features:

- Nylon PRV for maximum corrosion resistance with max pressure upto 400 psig (27Bar)
- Brass PRV for durability and strength with max pressure upto 700 psig (48 Bar)
- Construction that allows useage of up to 15gpm (57Lpm)
- A positive viton seal prevents leakage and provides the best chemical resistance

## PRV'S SELECTION CHART

PRESSURE RANGE		MATERIAL	
PSIG	Bar	Brass	Nylon
0-250	0-17		13895-7
0-100	0-7	37562-5	13895-16
0-400	0-27.6		13895-17
0-60	0-4		13895-18
100-250	7-17	37562-6	
250-400	17-27.6	37562-7	
400-700	27.6-48	37562-8	

Pipe Size (NPT) 3/4" inlet and outlet.

Warning - PRV can explode if plumbed improperly. Be sure fluid flow is correct and product is never operated at higher than maximum pressures listed

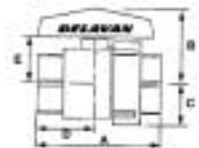


## Ball Valves

### Half Union Ball Valve

### Features:

- Half-union, full post ball valves are made of Poly-Glass for excellent corrosion protection and added strength but are also light weight and easy to handle
- Restriction free-flow
- Viton O-rings
- Teflon ball seats for long-life and sure seating of ball
- Simple design allows easy access to the valve when replacing seals becomes necessary
- Special retaining collar makes valve mounting quick and easy



## BALL VALVE SELECTION CHART

Part No 45638	PIPE SIZE NPT (F)	DIMENSIONS IN (mm)				
		A	B	C	D	E
-1	1/2" FP	2.8(70)	1.9(48)	0.87(22)	1.3(32)	0.98(25)
-2	3/4" FP	3.6(92)	2.2(55)	1.2(30)	1.7(43)	1.3(32)
-3	1" FP	3.6(92)	2.2(55)	1.2(30)	1.7(43)	1.3(32)
-4	1.25 FP	4.6(117)	3.3(85)	1.9(49)	2.1(54)	2.0(52)
-5	1.5 FP	4.6(117)	3.3(85)	1.9(49)	2.1(54)	2.0(52)
-7	2 FP	5.5(140)	3.9(100)	2.3(59)	2.7(68)	2.5(64)
-8	3 FP	6.7(170)	4.7(120)	2.9(75)	3.5(89)	3.4(86)

Max Design Pressure: 1/2" - 1" 150 psig (8.5 Bar)

1/5" - 3" 100 psig (7 Bar)

Max Design Temperature: 120°F (50°C)

## HIGH PRESSURE SPRAY GUNS SELECTION CHART

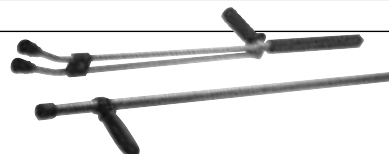
	PART NUMBER
Hand Gun (Brass with S/S seat)	50389-1
Hand Gun (All Stainless Steel)	W186280001
Steel Lance 18" (45cm)	50551
Steel Lance 24" (60cm)	50552
Stainless Steel Lance 20" (50cm)	W196230020
Stainless Steel Lance 40" (100cm)	W196230012
Repair Kit	50424



## High Pressure Spray Guns

### Features:

- Manufactured in a range of flows and pressures
- Various models in different styles
- Trigger lock-off for safety
- A range of compatible hand lances and accessories are available
- Max design pressure : 3500 PSIG (172 Bar)
- Max design temperature: 160°F (70°C)



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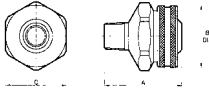
## Adjustable Joint

### 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

ASSEMBLY NUMBER		INLET SIZE BSPT/NPT	OUTLET SIZE BSPT/NPT	A		B		Angular Adjustment
BSP	NPT			mm	Inches	mm	Inches	
W09111-1	31090-2	1/8"	1/8"	28.6	1.1/8	25.4	1	50
W09111-2	31090-4	1/4"	1/8"	28.6	1.1/8	25.4	1	50
W09111-3	31090-6	1/4"	1/4"	34.9	1.3/8	31.8	1 1/4	50
W09111-4	31090-8	3/8"	1/4"	34.9	1.3/8	31.8	1 1/4	50
W09111-5	31090-10	3/8"	3/8"	44.5	1.3/4	38.1	1 1/2	40
W09111-6	31090-12	1/2"	1/2"	55.6	2 3/16	44.5	1 3/4	40
W09111-7	31090-14	3/4"	3/4"	61.1	2 13/32	50.8	2	40
W09111-8	31090-16	1"	1"	75	2 19/20	70	2 3/4	40

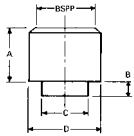


## Nozzle Sockets

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

### Features:

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



## NOZZLE SOCKETS SELECTION CHART

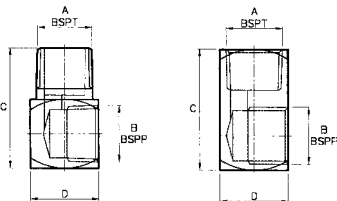
HNS NUMBER	THREAD SIZE	DIMENSIONS IN (mm)				HOLE SIZE
		A	B	C	D	
125	1/8"	12.7	3.2	9.1	14.3	9.5
250	1/4"	15.9	3.2	15.1	19.1	15.9
375	3/8"	19.1	3.2	15.1	25.4	15.9
500	1/2"	22.3	4.8	21.8	31.8	22.2
750	3/4"	22.3	4.8	21.8	31.8	22.2
1000	1"	25.3	6.4	31.4	38.1	31.8



## Adaptors

### Features:

- 90° adaptor for positioning of nozzles
- Available in brass and stainless steel – other materials available to special order



## ADAPTORS SELECTION CHART

MALE ADAPTOR PART NO		FEMALE ADAPTOR PART NO		A		B	
STAINLESS STEEL	BRASS	STAINLESS STEEL	BRASS	THREAD SIZE Male & Female	THREAD SIZE Male & Female	THREAD SIZE Male & Female	THREAD SIZE Male & Female
W00081-1	W00081-2	W00216-1	W000216-2	1/4"		1/8"	
W00318-1	W00318-2	W00464-1	W00464-2	1/4"		1/4"	
W00082-1	W00082-2	W00217-1	W00217-2	3/8"		1/4"	
W00319-1	W00319-2	W00463-1	W00463-2	3/8"		3/8"	
W00083-1	W00083-2	W00218-1	W00218-2	1/2"		3/8"	
W00320-1	W00320-2	W00462-1	W00462-2	1/2"		1/2"	
W00084-1	W00084-2	W00219-1	W00219-2	3/4"		1/2"	
W00194-1	W00194-2	W00196-1	W00196-2	3/4"		3/4"	
W00085-1	W00085-2	W00220-1	W00220-2	1"		3/4"	
W00468-1	W00468-2	W00470-1	W00470-2	1"		1"	



## Pipe Support Clips & Clamps

### Features:

- Quick and secure method of attaching plastic pipes to sheet metal or hangers
- Glass reinforced polypropylene for strength and chemical resistance
- Sizes to fit 1/2", 3/4", 1.25" and 1.5" nominal bore pipe sizes (clips 1.25 and 1.5 only)
- Support fixing screw will not turn when locking nut is being screwed down
- Accepts fixing screws of varying lengths



## PIPE SUPPORT CLIP SELECTION CHART

ITEM NO	DESCRIPTION IN (mm)	P/N W13772 1.25"	P/N W13773 1.5"
1	Screw 0.39 x 1.6 (10x40)	HSC0100037	HSC0100037
2	Body Polyglass	W13774	W13258
3	Spring Clip (SS)	W13257	W13258
4	Nyloc Nut 0.39 (10)	HNU0004028	HNU0004028

## PIPE SUPPORT CLAMP SELECTION CHART

PART NO	PIPE SIZE	SCREW SIZE IN (mm)
W10892-1	1/2" NB	0.31 x 1.7 (8 x 45)
W10892-2	3/4" NB	0.31 x 1.7 (8 x 45)
W10892-3	1.24" NB	0.39 x 1.6 (10 x 40)
W10892-4	1.5" NB	0.39 x 1.6 (10 x 40)

### Construction and Materials:

- Clip is one-piece body with spring clip. Clamp is one-piece with hinged bridge piece
- Both with glass reinforced body. Clip has stainless steel spring clip and Clamp has stainless steel hinge pin, screw insert and fixing screws

### Typical Ordering Instructions:

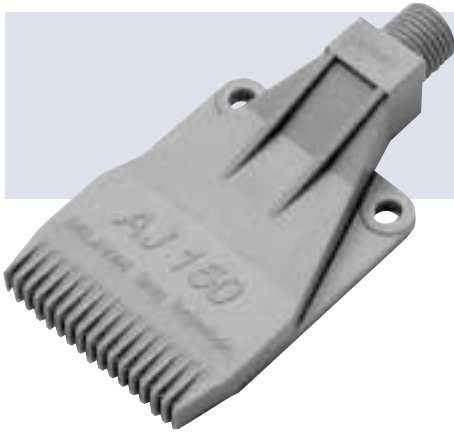
- W13772 Support Clip to fit 1.25" NB Pipe or W10892-2 Pipe Clamp to fit 1/2" NB Pipe
- Maximum pressure and temperature is needed

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USA Tel: Toll free: 1-800 Delavan or alternatively e-mail sales@delavan.com

# SPECIAL PURPOSE

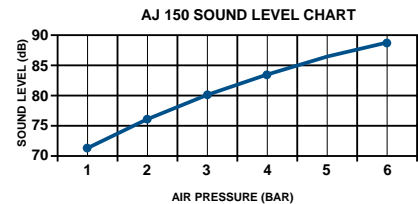
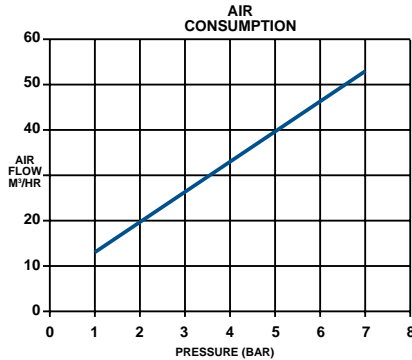
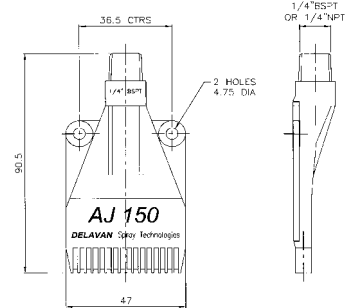


## AJ150 Type Nozzle

Delivers high impact, flat streams of compressed air.  
Can be mounted side by side to produce an air curtain.  
Available in Polyacetal.

1/4" BSPT AJ 150 Part No:- W18783-1

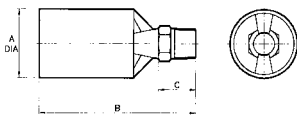
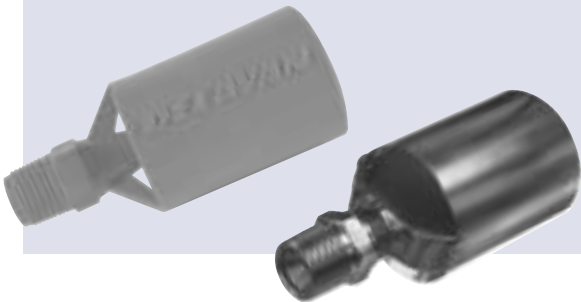
1/4" NPT AJ 150 Part No:- W18783-2



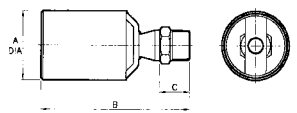
## Type BB Educator

### Features:

- One piece design with no internal components. Available with 3/8, 1/4 and 1/2 BSP male threads.
- Maximum Design Pressure:- Stainless Steel - 500 psi (35 bar). Polypropylene - 150 psi (10 bar)
- Maximum Design Temperature:- Stainless Steel - 900°F (500°C). Polypropylene - 170°F (75°C)



MOULDED EDUCATOR



METAL EDUCATOR

## BB EDUCATOR NOZZLE SELECTION CHART IN LPM

NOZZLE NUMBER	ORI SIZE Inch(mm)	THREAD SIZE	Flow Rate in Litres/Min at Bar G						
			0.7	2	3	4	5	7	15
50	0.173 (4.4)	3/8, 1/2	9.60	16.40	20.00	21.30	25.80	30.19	32.20
75	0.212 (5.4)	3/8, 1/2	14.40	24.60	30.00	34.80	38.90	45.30	48.30
100	0.25 (6.4)	3/8, 1/2, 3/4	19.10	32.20	40.00	45.60	51.00	60.38	64.40
125	0.279 (7.1)	1/2, 3/4	24.00	40.30	50.00	58.00	63.75	75.48	80.50
150	0.307 (7.8)	1/2, 3/4	28.80	48.60	60.00	68.80	76.50	90.12	96.40
175	0.330 (8.4)	1/2, 3/4	33.40	56.50	69.00	79.80	89.25	105.57	110.90
200	0.346 (8.8)	1/2, 3/4	38.00	64.30	78.80	91.00	102.00	120.31	128.60
250	0.385 (9.8)	1/2, 3/4	47.60	80.40	98.80	114.00	128.00	150.00	160.80
300	0.433 (11.0)	1/2, 3/4	57.20	96.90	118.30	136.60	153.00	180.70	197.80
350	0.468 (11.9)	1/2, 3/4	66.50	112.50	138.00	156.20	178.00	210.54	225.00
400	0.5 (12.7)	1/2, 3/4	76.00	129.00	157.00	181.20	202.50	241.10	258.00

## BB EDUCATOR NOZZLE SELECTION CHART IN GPM

NOZZLE NUMBER	ORI SIZE Inch(mm)	THREAD SIZE	Flow Rate in GPM at PSIG						
			10	30	40	60	70	100	115
50	0.173 (4.4)	3/8, 1/2	2.50	4.30	5.30	6.10	6.80	7.98	8.50
75	0.212 (5.4)	3/8, 1/2	3.80	6.50	7.90	9.20	10.30	11.90	12.80
100	0.25 (6.4)	3/8, 1/2, 3/4	5.00	8.50	10.60	12.00	13.50	15.90	17.00
125	0.279 (7.1)	1/2, 3/4	6.30	10.60	13.20	15.30	16.80	19.90	21.30
150	0.307 (7.8)	1/2, 3/4	7.60	15.80	15.90	18.20	20.20	23.80	25.50
175	0.330 (8.4)	1/2, 3/4	8.80	14.90	18.20	21.10	23.60	27.90	29.30
200	0.346 (8.8)	1/2, 3/4	10.00	16.00	20.80	24.00	27.00	31.70	34.00
250	0.385 (9.8)	1/2, 3/4	12.60	21.20	26.10	30.10	33.80	39.60	42.50
300	0.433 (11.0)	1/2, 3/4	15.10	25.60	31.30	36.10	40.40	47.70	52.30
350	0.468 (11.9)	1/2, 3/4	17.60	29.70	36.50	42.10	47.00	55.60	59.40
400	0.5 (12.7)	1/2, 3/4	20.10	34.10	41.50	47.90	53.50	63.70	68.20

Contact our Customer Service Team or your local distributor for further details

Tel: +44 (0) 151 424 6821 or alternatively e-mail: sales@delavan.co.uk

USA Tel: Toll free: 1-800 Delavan or alternatively e-mail sales@delavan.com

# Nozzle Specification Information Fax Back Form

This enquiry sheet serves as a guide so that we may better assist you in proper nozzle selection. Many times the optimum nozzle combination cannot be found on the first attempt but the more completely this form is filled out, the better our chance of success.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tel No: \_\_\_\_\_ Fax No: \_\_\_\_\_

**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:

- Litres per minute
- Gallons per minute (specify US or Imp)
- M<sup>3</sup>/hour
- Kg per hour (density will be required if different from water)

**Operating pressure:** \_\_\_\_\_

which can be given in a variety of units such as:

- Bar.G.
- P.S.I.G.
- Kg/cm<sup>2</sup>
- kPa (Kilo Pascals)
- Head in Metres or Feet

**Spray angle:** \_\_\_\_\_

**Type of spray pattern:** \_\_\_\_\_

- Flat
- Solid Cone/Circular or Square
- Hollow Cone
- Air Atomising

**Liquid being sprayed:** \_\_\_\_\_

If different from water the following are required:

- Density: \_\_\_\_\_
- Viscosity: \_\_\_\_\_
- Surface Tension: \_\_\_\_\_
- Solids Content : \_\_\_\_\_

**Application or Purpose of Nozzle** (not always necessary) e.g.

- Washing/Rinsing
- Cleaning in Place
- Humidification
- Gas Scrubbing
- Quenching
- Aeration of liquids
- De-Scaling
- Gas Cooling - Separate Enquiry Sheet required (Available on our website or on CD-rom)
- Spray Drying - Separate Enquiry Sheet required (Available on our website or on CD-rom)

\_\_\_\_\_

\_\_\_\_\_

Please fax back to:  
**+ 44 (0) 151 495 1043**  
or for the USA **803 245 4146**

Contact our Customer Service Team or your local distributor for further details

Tel: +44 (0) 151 424 6821 or alternatively e-mail: sales@delavan.co.uk

USA Tel: Toll free: 1-800 Delavan or alternatively e-mail sales@delavan.com

**DELAVAN**  
Spray Technologies

# Everything you'll ever need to know about nozzles

## Total Control - Specifiers Guide

Available in CD format - the easiest to use in the Industry

With over 30,000 nozzle and accessory listings and details. Also featuring an in-depth guide to nozzle technology.



### Metal Manufacturing

This guide gives a general overview into the uses and applications of nozzles in the steel making process.



### Spray Drying Product Guide

This guide includes an introduction to spray drying technology as well as Delavan's comprehensive range of Spray Drying nozzles.



### Spray Nozzles and Showers for the Pulp & Paper Industry

This 12 page guide includes nozzles and showers needed for the various stages involved in the paper making process.



### Variable Coating Nozzle

This guide gives a brief overview of our new VCN nozzle, showing its use in a wide variety of applications.



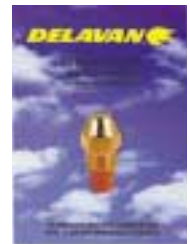
### Safety Showers & Eyebaths

A 20 page guide of our comprehensive range of emergency safety showers, eyebaths and associated products.



### Oil Burner Guide

A new guide to Delavan's extensive range of oil burner nozzles.



Details of all our products are available on our website @ [www.delavan.com](http://www.delavan.com)

Dealer Stamp

# Delavan Distributor Deutschland [www.duesen.de](http://www.duesen.de)

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