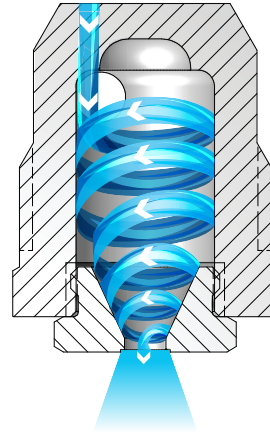


**OVERVIEW: WHIRLJET IN-LINE, OFFSET AND DEFLECTED SPRAYS**

- Hollow cone spray pattern
- In-line versions ideal for dust control in mining operations
  - BD versions have a lower profile projection for installation in a tee or pipe header
  - In-line BDM features recessed orifice area to protect from damage; self-locking cap to prevent loss due to vibration; fiberglass-reinforced nylon inlet body
- BA offset style ideal for installations with physical space limitations
- Spray angles: Standard – 43° to 94°, Wide – 102° to 125°
- Deflected spray versions available with 120°, 150° and 180° included angle of spray at 10 psi (0.7 bar)
- Uniform spray distribution from .11 to 38 gpm (.41 to 145 lpm)
- Operating pressures up to 500 psi (35 bar)



**WhirlJet BD, BDM and BA Nozzles**

Liquid passes through a hole on the inlet side of the nozzle. The liquid then enters a whirlchamber where it spins in a circle at high speed. The rotation forces the liquid away from the center toward the edges. This causes the liquid to exit the orifice in a hollow cone pattern.

**WHIRLJET OPTIONS**



**BD**  
3/8" to 1-1/2" male conn.  
In-line nozzle  
Removable cap



**BDM "Miner Nozzle"**  
3/8" male conn.  
In-line nozzle  
Removable cap/nylon body



**BA**  
3/8" to 1/2" male conn.  
Offset style nozzle  
Removable cap



**DeflectoJet® 8686**  
1/8" to 3/8" male conn.  
Deflected nozzle  
Removable deflector cap

**RELATIVE DROP SIZE IN MICRONS**

10 to 100	100 to 500	500 to 1000	1000 to 5000
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Drop size will vary based on flow rate and pressure.

**ORDERING INFORMATION**

**WHIRLJET BD**

Inlet Conn.	Nozzle Type	—	Material Code	Capacity Size
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**Example**  
3/8 BD — SS 10

BSPT connections require the addition of a "B" prior to the inlet connection.

**WHIRLJET BDM**

Inlet Conn.	Nozzle Type	—	Capacity Size
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**Example**  
3/8 BDM — 5

BSPT connections require the addition of a "B" prior to the inlet connection.

**WHIRLJET BA**

Inlet Conn.	Nozzle Type	—	Material Code	Capacity Size
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**Example**  
1/2 BA — SS 25

BSPT connections require the addition of a "B" prior to the inlet connection.

**DEFLECTOJET 8686**

Nozzle No.	Inlet Conn.	—	Material Code	Capacity Size	—	Spray Angle
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**Example**  
8686 — 1/4 — SS 1 — 120

BSPT connections require the addition of a "B" prior to the nozzle number.

**QUICK REFERENCE GUIDE**

Model	Connection	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
<b>BD</b>	M	3/8 to 1-1/2	Brass, 303 stainless steel (SS)	D29	D32
<b>BD-W</b>	M	3/8 to 3/4	Brass, 303 stainless steel (SS)	D30	
<b>BDM</b>	M	3/8	Nylon/Brass cap	D30	
<b>BA</b>	M	3/8 to 1/2	Brass, 303 stainless steel (SS), 309 stainless steel (309SS)	D31	
<b>8686</b>	M	1/8 to 3/8	Brass, 303 stainless steel (SS)	D31	

M = male thread. There is no material code for brass. Leave material code blank when ordering. Other materials available upon request. For more dimensions and sizes, contact your sales engineer.



S

PERFORMANCE DATA:  
STANDARD ANGLE SPRAY



Inlet Conn. (in.)	Nozzle Type BD	Capacity Size	Inlet Dia. Nom. (mm)	Orifice Dia. Nom. (mm)	Flow Rate Capacity (liters per minute)											Spray Angle (°)		
					0.2 bar	0.4 bar	0.5 bar	0.7 bar	1 bar	1.5 bar	2 bar	3 bar	4 bar	6 bar	7 bar	0.5 bar	1.5 bar	6 bar
3/8	●	2	2.4	2.0	.41	.58	.64	.76	.91	1.1	1.3	1.6	1.8	2.2	2.4	51	60	70
	●	3	2.4	2.4	.61	.86	.97	1.1	1.4	1.7	1.9	2.4	2.7	3.4	3.6	52	64	77
	●	5	2.8	3.2	1.0	1.4	1.6	1.9	2.3	2.8	3.2	3.9	4.6	5.6	6.0	56	67	76
	●	8	4.0	4.0	1.6	2.3	2.6	3.1	3.6	4.5	5.2	6.3	7.3	8.9	9.6	56	65	70
	●	10	4.0	4.4	2.0	2.9	3.2	3.8	4.6	5.6	6.4	7.9	9.1	11.2	12.1	55	65	72
	●	20-10	4.0*	4.4	–	4.0	4.5	5.3	6.4	7.8	9.0	11.1	12.8	15.6	16.9	61	65	67
1/2	●	5	3.2	3.6	1.0	1.4	1.6	1.9	2.3	2.8	3.2	3.9	4.6	5.6	6.0	63	73	79
	●	8	4.0	4.0	1.6	2.3	2.6	3.1	3.6	4.5	5.2	6.3	7.3	8.9	9.6	61	69	73
	●	10	4.4	4.4	2.0	2.9	3.2	3.8	4.6	5.6	6.4	7.9	9.1	11.2	12.1	63	70	74
	●	15	4.4*	5.2	3.1	4.3	4.8	5.7	6.8	8.4	9.7	11.8	13.7	16.8	18.1	60	67	70
	●	20	4.8*	6.0	4.1	5.8	6.4	7.6	9.1	11.2	12.9	15.8	18.2	22	24	63	65	69
	●	25	5.2*	7.1	5.1	7.2	8.1	9.5	11.4	14.0	16.1	19.7	23	28	30	59	63	68
3/4	●	5	3.6	3.2	1.0	1.4	1.6	1.9	2.3	2.8	3.2	3.9	4.6	5.6	6.0	64	73	79
	●	8	4.4	4.0	1.6	2.3	2.6	3.1	3.6	4.5	5.2	6.3	7.3	8.9	9.6	62	70	74
	●	10	5.2	4.4	2.0	2.9	3.2	3.8	4.6	5.6	6.4	7.9	9.1	11.2	12.1	64	72	75
	●	15	6.4	5.6	3.1	4.3	4.8	5.7	6.8	8.4	9.7	11.8	13.7	16.8	18.1	64	72	74
	●	20	7.1	6.4	4.1	5.8	6.4	7.6	9.1	11.2	12.9	15.8	18.2	22	24	63	70	74
	●	25	7.1	7.5	5.1	7.2	8.1	9.5	11.4	14.0	16.1	19.7	23	28	30	63	70	74
	●	50-50.3	7.1*	9.5	10.2	13.3	16.1	19.1	23	28	32	39	46	56	60	70	72	73
1-1/2	●	40	9.5*	7.9	8.2	11.5	12.9	15.3	18.2	22	26	32	36	45	48	70	73	74
	●	50	9.5*	9.5	10.2	13.3	16.1	19.1	23	28	32	39	46	56	60	72	75	77
	●	60	9.5*	11.1	12.2	17.3	19.3	23	27	34	39	47	55	67	72	74	76	79
	●	70	9.5*	12.7	14.3	20	23	27	32	39	45	55	64	78	84	76	79	83
	●	80	9.5*	14.3	16.3	23	26	31	36	45	52	63	73	89	96	78	82	84
	●	90	9.5*	14.7	18.3	26	29	34	41	50	58	71	82	101	109	81	84	84
	●	100	9.5*	15.9	20	29	32	38	46	56	64	79	91	112	121	83	86	86
	●	110	9.5*	17.1	22	32	35	42	50	61	71	87	100	123	133	85	88	88
	●	120	9.5*	18.3	24	35	39	46	55	67	77	95	109	134	145	87	90	90

\*Dual inlets, each in diameter specified.

Highlighted column shows the rated pressure.



**W** PERFORMANCE DATA:  
**WIDE ANGLE SPRAY**



Inlet Conn. (in.)	Nozzle Type BD-W	Capacity Size	Inlet Dia. Nom. (mm)	Orifice Dia. Nom. (mm)	Flow Rate Capacity (liters per minute)											Spray Angle (°)		
					0.2 bar	0.4 bar	0.5 bar	0.7 bar	1 bar	1.5 bar	2 bar	3 bar	4 bar	6 bar	7 bar	0.5 bar	1.5 bar	6 bar
3/8	●	3-2W	2.4	2.0	–	–	.73	.84	1.0	1.2	1.4	1.7	2.0	2.5	2.7	112	109	90
	●	3-3W	2.4	2.8	–	–	.96	1.1	1.4	1.7	1.9	2.4	2.7	3.4	3.6	115	112	97
	●	3-5W	2.4	3.2	–	–	1.1	1.3	1.6	1.9	2.2	2.7	3.1	3.8	4.2	117	113	103
	●	5-5W	2.8	3.2	–	–	1.6	1.9	2.3	2.8	3.2	3.9	4.5	5.6	6.1	115	112	102
	●	5-10W	2.8	4.4	–	1.5	2.1	2.5	3.0	3.6	4.1	5.1	6.0	7.2	8.0	119	119	109
	●	8-8W	3.9	3.9	–	1.8	2.6	3.1	3.6	4.4	5.2	6.3	7.4	9.0	9.5	116	110	98
	●	8-10W	3.9	4.4	–	2.1	2.9	3.4	4.1	5.1	6.0	7.1	8.2	9.9	10.7	118	113	101
	●	10-10W	3.9	4.4	–	2.3	3.2	3.8	4.5	5.5	6.3	7.9	9.3	11.0	11.8	118	111	100
1/2	●	5-3W	3.2	2.8	.67	.75	1.0	1.2	1.5	1.8	2.0	2.5	2.9	3.5	3.8	118	113	100
	●	5-5W	3.2	3.2	1.0	1.1	1.6	1.9	2.3	2.8	3.2	3.9	4.5	5.6	6.1	121	116	102
	●	8-8W	3.9	3.9	1.6	1.8	2.6	3.1	3.6	4.4	5.2	6.3	7.4	9.0	9.5	119	113	103
	●	10-15W	4.4	5.6	2.5	2.8	3.9	4.6	5.6	6.7	7.8	9.5	11.1	13.4	14.5	120	112	102
	●	15-15W*	4.4	5.6	3.0	3.4	5.0	5.7	6.7	8.3	9.7	11.9	14.1	16.7	18.3	117	111	104
3/4	●	8-25W	4.4	7.5	2.6	2.9	4.2	5.0	6.0	7.5	8.6	10.3	11.9	14.6	15.6	124	120	111
	●	10-10W	5.2	4.4	2.0	2.2	3.2	3.8	4.5	5.5	6.3	7.9	9.3	11.0	11.8	118	111	100
	●	10-30W	5.2	7.9	3.7	4.1	6.2	7.2	8.6	10.3	11.9	14.6	16.8	21	23	124	117	108
	●	15-15W	6.4	5.6	3.0	3.4	5.0	5.7	6.7	8.3	9.7	11.9	13.8	16.7	18.3	117	112	102
	●	15-25W	6.4	7.5	4.1	4.6	6.2	7.3	8.9	10.7	12.6	15.4	17.9	22	23	119	114	106
	●	20-25W	7.1	7.5	4.8	5.4	8.1	9.5	11.5	13.8	16.0	19.7	23	28	30	118	112	105
	●	20-30W	7.1	7.9	5.2	5.8	8.5	9.9	11.9	14.6	16.8	21	24	29	31	118	112	105
	●	25-25W	7.1	7.5	5.2	5.8	8.1	9.5	11.5	13.8	16.0	19.7	23	28	30	117	110	103
	●	25-30W	7.1	7.9	5.6	6.3	8.9	10.7	12.7	15.8	18.2	22	26	31	34	117	110	103

\*Dual inlets, each in diameter specified.

Highlighted column shows the rated pressure.

**S** PERFORMANCE DATA:  
**STANDARD ANGLE SPRAY**

Inlet Conn. (in.)	Nozzle Type BDM	Capacity Size	Orifice Dia. Nom. (mm)	Flow Rate Capacity (liters per minute)								Spray Angle (°)		
				0.7 bar	1.5 bar	3 bar	7 bar	15 bar	20 bar	25 bar	35 bar	1.5 bar	7 bar	35 bar
3/8	●	2-0.5	1.2	–	–	.63	.96	1.4	1.6	1.8	2.2	–	52	45
	●	2-1	1.6	–	.61	.87	1.3	1.9	2.2	2.5	3.0	53	65	50
	●	2	2.0	.76	1.1	1.6	2.4	3.5	4.1	4.6	5.4	60	69	62
	●	3-2	2.0	.84	1.2	1.7	2.7	3.9	4.5	5.0	5.9	57	68	58
	●	3	2.4	1.1	1.7	2.4	3.6	5.3	6.1	6.8	8.1	64	75	64
	●	5	3.2	1.9	2.8	3.9	6.0	8.8	10.2	11.4	13.5	73	78	72
	●	10-2	2.0	1.3	2.0	2.8	4.2	6.2	7.1	8.0	9.4	30	46	40
	●	20-10	4.4	5.3	7.8	11.1	16.9	25	29	32	38	61	60	49

Maximum recommended operating pressure is 500 psi (34.5 bar).

Highlighted column shows the rated pressure.



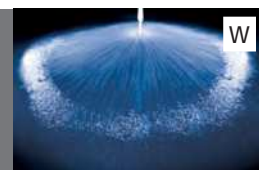
**S** PERFORMANCE DATA:  
**STANDARD ANGLE SPRAY**



Inlet Conn. (in.)	Nozzle Type BA	Capacity Size	Inlet Dia. Nom. (mm)	Orifice Dia. Nom. (mm)	Flow Rate Capacity (liters per minute)						Spray Angle (°)		
					0.4 bar	0.7 bar	1.5 bar	3 bar	4 bar	7 bar	0.5 bar	1.5 bar	6 bar
3/8	●	3	2.4	2.4	.86	1.1	1.7	2.4	2.7	3.6	52	64	77
	●	5	3.6	3.2	1.4	1.9	2.8	3.9	4.6	6.0	64	73	79
	●	8	4.8	4.0	2.3	3.1	4.5	6.3	7.3	9.6	62	70	74
	●	10	5.2	4.4	2.9	3.8	5.6	7.9	9.1	12.1	64	72	75
	●	15	6.4	5.6	4.3	5.7	8.4	11.8	13.7	18.1	64	72	74
	●	20	7.1	6.4	5.8	7.6	11.2	15.8	18.2	24	63	70	74
	●	25	7.5	7.5	7.2	9.5	14.0	19.7	23	30	63	70	74
1/2	●	25	9.5	6.4	7.2	9.5	14.0	19.7	23	30	63	66	71
	●	30	9.5	7.5	8.6	11.4	16.8	24	27	36	67	71	75
	●	40	9.5	9.1	11.5	15.3	22	32	36	48	72	76	78
	●	50	9.5	11.1	14.4	19.1	28	39	46	60	74	79	82
	●	60	9.5	13.1	17.3	23	34	47	55	72	77	82	86

Highlighted column shows the rated pressure.

**W** PERFORMANCE DATA:  
**WIDE ANGLE SPRAY**

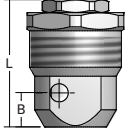
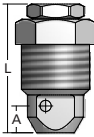
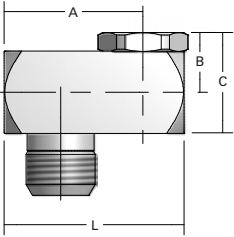
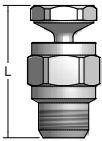


Inlet Conn. (in.)	Nozzle Type DeflectoJet® 8686	Capacity Size	Flow Rate Capacity (liters per minute)						
			0.4 bar	0.7 bar	1.5 bar	3 bar	4 bar	6 bar	7 bar
1/8	●	.37	1.1	1.4	2.1	3.0	3.4	4.2	4.5
	●	.5	1.4	1.9	2.8	4.0	4.6	5.6	6.0
	●	.75	2.2	2.9	4.2	5.9	6.8	8.4	9.0
1/4	●	1	2.9	3.8	5.6	7.9	9.1	11.2	12.1
	●	1.5	4.3	5.7	8.3	11.8	13.7	16.8	18.1
	●	2	5.8	7.7	11.2	15.8	18.2	22	24
	●	2.5	7.2	9.5	13.9	19.7	23	28	30
3/8	●	3	8.8	11.6	17.0	24	27	34	36
	●	3.5	10.4	13.7	20	28	32	39	42
	●	4	11.9	15.7	23	32	36	45	48
	●	4.5	12.9	17.1	25	36	41	50	54
	●	5	14.4	19.1	28	39	46	56	60

Highlighted column shows the rated pressure.



**DIMENSIONS AND WEIGHTS**

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	A (mm)	B (mm)	C (mm)	Net Weight (kg)
	<b>BD (M)</b>	3/8	31.8	11/16	–	6.7	–	0.03
		1/2	37.3	7/8	–	8.0	–	0.06
		3/4	44.5	1-1/16	–	9.5	–	0.11
		1-1/2	66.7	2	–	8.0	–	0.60
	<b>BD-W (M)</b>	3/8	31.8	11/16	–	6.7	–	0.03
		1/2	37.3	7/8	–	7.9	–	0.06
		3/4	44.4	1-1/16	–	9.5	–	0.11
	<b>BDM (M)</b>	3/8	32.5	11/16	6.7	–	–	0.01
	<b>BA (M)</b>	3/8	38.1	–	26.6	14.7	24.2	0.11
		1/2	55.6	–	42.9	14.7	27.4	0.27
	<b>8686 (M)</b>	1/8	30.2	1/2	–	–	–	0.02
		1/4	33.3	5/8	–	–	–	0.03
		3/8	44.5	7/8	–	–	–	0.08

Based on the largest/heaviest version of each type.