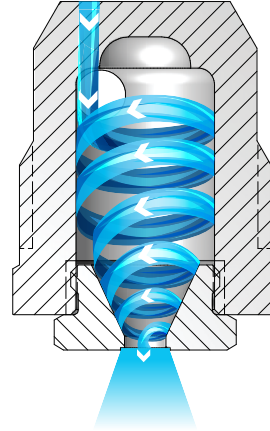


OVERVIEW: WHIRLJET IN-LINE, OFFSET AND DEFLECTED SPRAYS

- 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
BD	M	3/8 to 1-1/2	Brass, 303 stainless steel (SS)	D29	D32
BD-W	M	3/8 to 3/4	Brass, 303 stainless steel (SS)	D30	
BDM	M	3/8	Nylon/Brass cap	D30	
BA	M	3/8 to 1/2	Brass, 303 stainless steel (SS), 309 stainless steel (309SS)	D31	
8686	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. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)											Spray Angle (°)		
					3 psi	5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	80 psi
3/8	●	2	.094	.078	.11	.14	.17	.20	.24	.28	.35	.40	.49	.57	.63	51	60	70
	●	3	.094	.094	.16	.21	.25	.30	.37	.42	.52	.60	.73	.85	.95	52	64	77
	●	5	.109	.125	.27	.35	.42	.50	.61	.71	.87	1.0	1.2	1.4	1.6	56	67	76
	●	8	.156	.156	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	56	65	70
	●	10	.156	.172	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	55	65	72
	●	20-10	.156*	.172	–	4.0	1.1	1.4	1.7	1.9	2.4	2.7	3.3	3.8	4.3	61	65	67
1/2	●	5	.125	.141	.27	.35	.42	.50	.61	.71	.87	1.0	1.2	1.4	1.6	63	73	79
	●	8	.156	.156	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	61	69	73
	●	10	.172	.172	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	63	70	74
	●	15	.172*	.203	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.7	60	67	70
	●	20	.188*	.234	1.1	1.4	1.7	2.0	2.4	2.8	3.5	4.0	4.9	5.7	6.3	63	65	69
	●	25	.203*	.281	1.4	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	59	63	68
3/4	●	5	.141	.125	.27	.35	.42	.50	.61	.71	.87	1.0	1.2	1.4	1.6	64	73	79
	●	8	.172	.156	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	62	70	74
	●	10	.203	.172	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	64	72	75
	●	15	.250	.219	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.7	64	72	74
	●	20	.281	.250	1.1	1.4	1.7	2.0	2.4	2.8	3.5	4.0	4.9	5.7	6.3	63	70	74
	●	25	.281	.297	1.4	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	63	70	74
	●	50-50.3	.281*	.375	2.7	3.5	4.2	5.0	6.0	7.0	8.5	10.0	12.2	14.1	15.8	70	72	73
1-1/2	●	40	.375*	.313	2.2	2.8	3.3	4.0	4.9	5.7	6.9	8.0	9.8	11.3	12.6	70	73	74
	●	50	.375*	.375	2.7	3.5	4.2	5.0	6.1	7.1	8.7	10.0	12.2	14.1	15.8	72	75	77
	●	60	.375*	.438	3.3	4.2	5.0	6.0	7.3	8.5	10.4	12.0	14.7	17.0	19.0	74	76	79
	●	70	.375*	.500	3.8	4.9	5.9	7.0	8.6	9.9	12.1	14.0	17.1	19.8	22	76	79	83
	●	80	.375*	.563	4.4	5.7	6.7	8.0	9.8	11.3	13.9	16.0	19.6	23	25	78	82	84
	●	90	.375*	.578	4.9	6.4	7.5	9.0	11.0	12.7	15.6	18.0	22	25	28	81	84	84
	●	100	.375*	.625	5.5	7.1	8.4	10.0	12.2	14.1	17.3	20	24	28	32	83	86	86
	●	110	.375*	.672	6.0	7.8	9.2	11.0	13.5	15.6	19.1	22	27	31	35	85	88	88
	●	120	.375*	.719	6.6	8.5	10.0	12.0	14.7	17.0	21	24	29	34	38	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. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)											Spray Angle (°)		
					3 psi	5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	80 psi
3/8	●	3-2W	.094	.078	-	-	.19	.22	.27	.31	.38	.44	.54	.62	.70	112	109	90
	●	3-3W	.094	.109	-	-	.25	.30	.37	.42	.52	.60	.73	.85	.95	115	112	97
	●	3-5W	.094	.125	-	-	.29	.34	.42	.48	.59	.68	.83	.96	1.1	117	113	103
	●	5-5W	.109	.125	-	-	.42	.50	.61	.71	.86	1.0	1.2	1.4	1.6	115	112	102
	●	5-10W	.109	.172	-	.46	.54	.65	.80	.92	1.1	1.3	1.6	1.8	2.1	119	119	109
	●	8-8W	.156	.156	-	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	116	110	98
	●	8-10W	.156	.172	-	.64	.75	.90	1.1	1.3	1.6	1.8	2.2	2.5	2.8	118	113	101
	●	10-10W	.156	.172	-	.71	.84	1.0	1.2	1.4	1.7	2.0	2.5	2.8	3.1	118	111	100
1/2	●	5-3W	.125	.109	.18	.23	.27	.32	.39	.45	.55	.64	.78	.90	1.0	118	113	100
	●	5-5W	.125	.125	.27	.35	.42	.50	.61	.71	.86	1.0	1.2	1.4	1.6	121	116	102
	●	8-8W	.156	.156	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	119	113	103
	●	10-15W	.172	.219	.66	.86	1.0	1.2	1.5	1.7	2.1	2.4	3.0	3.4	3.8	120	112	102
	●	15-15W*	.172	.219	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.8	4.2	4.8	117	111	104
3/4	●	8-25W	.172	.297	.71	.92	1.1	1.3	1.6	1.9	2.3	2.6	3.2	3.7	4.1	124	120	111
	●	10-10W	.203	.172	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.5	2.8	3.1	118	111	100
	●	10-30W	.203	.312	1.0	1.3	1.6	1.9	2.3	2.6	3.2	3.7	4.5	5.2	5.9	124	117	108
	●	15-15W	.250	.219	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.8	117	112	102
	●	15-25W	.250	.297	1.1	1.4	1.6	1.9	2.4	2.7	3.4	3.9	4.8	5.5	6.1	119	114	106
	●	20-25W	.281	.297	1.3	1.7	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.0	7.9	118	112	105
	●	20-30W	.281	.312	1.4	1.8	2.2	2.6	3.2	3.7	4.5	5.2	6.4	7.4	8.2	118	112	105
	●	25-25W	.281	.297	1.4	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.0	7.9	117	110	103
	●	25-30W	.281	.312	1.5	2.0	2.3	2.8	3.4	4.0	4.9	5.6	6.9	7.9	8.9	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. (in.)	Flow Rate Capacity (gallons per minute)									Spray Angle (°)		
				10 psi	20 psi	40 psi	100 psi	200 psi	300 psi	400 psi	500 psi	20 psi	100 psi	500 psi	
3/8	●	2-0.5	.047	-	-	.16	.25	.36	.44	.51	.57	-	52	45	
	●	2-1	.063	-	.16	.22	.36	.51	.62	.72	.80	53	65	50	
	●	2	.078	.20	.28	.40	.63	.89	1.1	1.3	1.4	60	69	62	
	●	3-2	.078	.22	.31	.44	.69	.98	1.2	1.4	1.6	57	68	58	
	●	3	.094	.30	.42	.60	.95	1.3	1.6	1.9	2.1	64	75	64	
	●	5	.125	.50	.71	1.0	1.6	2.2	2.7	3.2	3.5	73	78	72	
	●	10-2	.078	.35	.49	.70	1.1	1.6	1.9	2.2	2.5	30	46	40	
	●	20-10	.172	1.4	1.9	2.7	4.3	6.0	7.4	8.5	9.5	61	60	49	

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

Highlighted column shows the rated pressure.



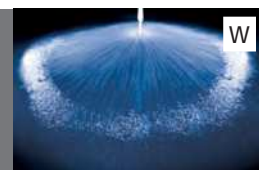
S PERFORMANCE DATA:
STANDARD ANGLE SPRAY



Inlet Conn. (in.)	Nozzle Type BA	Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)						Spray Angle (°)		
					5 psi	10 psi	20 psi	40 psi	60 psi	100 psi	7 psi	20 psi	80 psi
3/8	●	3	.094	.094	.21	.30	.42	.60	.73	.95	52	64	77
	●	5	.141	.125	.35	.50	.71	1.0	1.2	1.6	64	73	79
	●	8	.188	.156	.57	.80	1.1	1.6	2.0	2.5	62	70	74
	●	10	.203	.172	.71	1.0	1.4	2.0	2.4	3.2	64	72	75
	●	15	.250	.219	1.1	1.5	2.1	3.0	3.7	4.7	64	72	74
	●	20	.281	.250	1.4	2.0	2.8	4.0	4.9	6.3	63	70	74
	●	25	.297	.297	1.8	2.5	3.5	5.0	6.1	7.9	63	70	74
1/2	●	25	.375	.250	1.8	2.5	3.5	5.0	6.1	7.9	63	66	71
	●	30	.375	.297	2.1	3.0	4.2	6.0	7.3	9.5	67	71	75
	●	40	.375	.359	2.8	4.0	5.7	8.0	9.8	12.6	72	76	78
	●	50	.375	.438	3.5	5.0	7.1	10.0	12.2	15.8	74	79	82
	●	60	.375	.516	4.2	6.0	8.5	12.0	14.7	19.0	77	82	86

Highlighted column shows the rated pressure.

W PERFORMANCE DATA:
WIDE ANGLE SPRAY

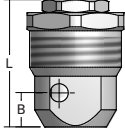
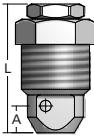
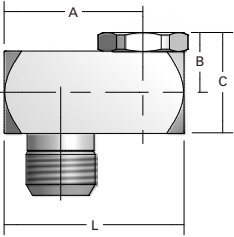
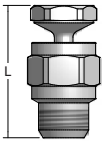


Inlet Conn. (in.)	Nozzle Type DeflectoJet® 8686	Capacity Size	Flow Rate Capacity (gallons per minute)						
			5 psi	10 psi	20 psi	40 psi	60 psi	80 psi	100 psi
1/8	●	.37	.27	.38	.53	.75	.92	1.1	1.2
	●	.5	.35	.50	.70	1.0	1.2	1.4	1.6
	●	.75	.53	.75	1.1	1.5	1.8	2.1	2.4
1/4	●	1	.71	1.0	1.4	2.0	2.5	2.8	3.2
	●	1.5	1.1	1.5	2.1	3.0	3.7	4.2	4.7
	●	2	1.4	2.0	2.8	4.0	4.9	5.6	6.3
	●	2.5	1.8	2.5	3.5	5.0	6.1	7.1	7.9
3/8	●	3	2.1	3.0	4.2	6.0	7.3	8.5	9.5
	●	3.5	2.5	3.5	5.0	7.0	8.6	9.9	11.0
	●	4	2.8	4.0	5.7	8.0	9.8	11.3	12.6
	●	4.5	3.2	4.5	6.4	9.0	11.0	12.7	14.2
	●	5	3.5	5.0	7.1	10.0	12.3	14.2	15.8

Highlighted column shows the rated pressure.



DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (in.)	Hex. (in.)	A (in.)	B (in.)	C (in.)	Net Weight (oz.)
	BD (M)	3/8	1.250	11/16	–	0.266	–	1
		1/2	1.469	7/8	–	0.311	–	2
		3/4	1.750	1-1/16	–	0.375	–	4
		1-1/2	2.625	2	–	0.311	–	21
	BD-W (M)	3/8	1.250	11/16	–	0.266	–	1
		1/2	1.469	7/8	–	0.311	–	2
		3/4	1.750	1-1/16	–	0.375	–	4
	BDM (M)	3/8	1.281	11/16	0.266	–	–	0.5
	BA (M)	3/8	1.500	–	1.046	0.578	0.953	4
		1/2	2.188	–	1.688	0.578	1.078	9.5
	8686 (M)	1/8	1.188	1/2	–	–	–	0.8
		1/4	1.313	5/8	–	–	–	1
		3/8	1.750	7/8	–	–	–	2.8

Based on the largest/heaviest version of each type.