

BJ

Low Flow

DESIGN FEATURES

- Three-piece construction
- Interchangeable spray tips
- Integral strainer available (refer to page 121 for more information)
- Male and female connections

SPRAY CHARACTERISTICS

- Relatively coarse atomization
- Uniform distribution with tapered edges for use in overlapping sprays

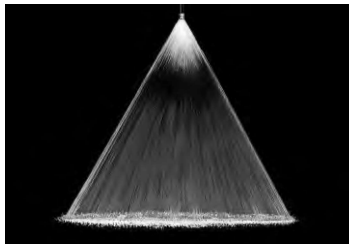
Spray pattern: Flat Fan

Spray angles: 0° to 110°

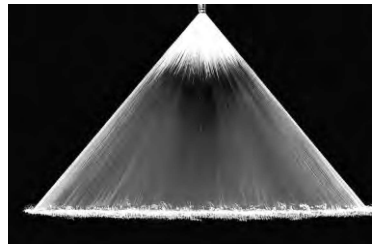
Flow rate: 0.024 to 24.7 gpm



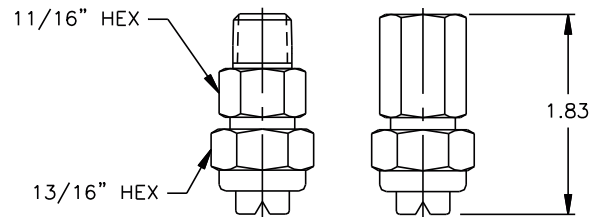
Metal



Fan 50°



Fan 80°



Dimensions are approximate. Check with BETE for critical dimension applications.

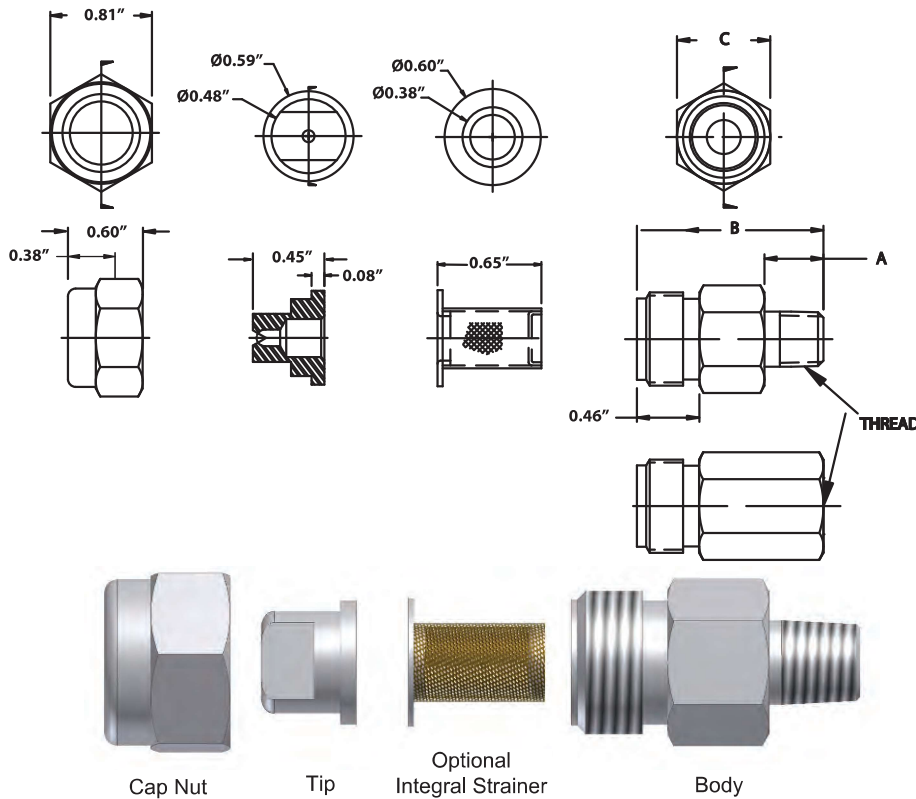
BJ Spray Angles and Weights

Fan, 0° to 110° Spray Angles, 1/8", 1/4", 3/8", and 1/2" Pipe Size, Male and Female

Pipe Size	Nozzle Number	Flow Rate @ 40 psi	Available Spray Angle										Optional Strainer Mesh Size	Wt. (Oz.)	
			0°	15°	25°	40°	50°	65°	73°	80°	95°	110°			
1/8"	BJ 0067	0.067	0°	15°	25°	40°	50°	65°		73°				100	2
	BJ 0077	0.077													
	BJ 01	0.10	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 0116	0.12													
OR	BJ 015	0.15	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°	50	2
	BJ 0154	0.15													
	BJ 02	0.20	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 0231	0.23													
1/4"	BJ 03	0.30	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°	50	2
	BJ 0308	0.31													
	BJ 0385	0.39	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 04	0.40	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
OR	BJ 0462	0.46												50	2
	BJ 05	0.50	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 06	0.60	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 0616	0.62													
3/8"	BJ 077	0.77												50	2
	BJ 08	0.80	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 0924	0.92													
	BJ 10	1.0	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
1/2"	BJ 15	1.5	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°	50	2
	BJ 20	2.0	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 30	3.0	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 40	4.0	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
3/8"	BJ 50	5.0												50	2
	BJ 60	6.0	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 70	7.0	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		
	BJ 70	7.0	0°	15°	25°	40°	50°	65°		73°	80°	95°	110°		

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.



THREAD	A	B	C
1/8" MALE	0.44"	1.38"	11/16"
1/8" FEM	N/A	1.38"	11/16"
1/4" MALE	0.56"	1.38"	11/16"
1/4" FEM	N/A	1.38"	11/16"
3/8" MALE	0.56"	1.38"	11/16"
3/8" FEM	N/A	1.38"	13/16"
1/2" MALE	0.62"	1.38"	7/8"
1/2" FEM	N/A	1.38"	1 1/8"

Dimensions are approximate. Check with BETE for critical dimension applications.

BJ Flow Rates

Fan, 0°, 15°, 25°, 40°, 50°, 65°, 73°, 80°, 95°, 110° Spray Angles, 1/8", 1/4" and 3/8" Pipe Size, Male and Female

Pipe Size	Nozzle Number	Equiv. Orifice Dia. (in.)	K Factor	GALLONS PER MINUTE @ PSI									
				5 PSI	10 PSI	20 PSI	40 PSI	60 PSI	80 PSI	100 PSI	200 PSI	300 PSI	500 PSI
1/8	BJ 0067	0.023	0.0106	0.024	0.034	0.047	0.067	0.082	0.095	0.11	0.15	0.18	0.24
	BJ 0077	0.023	0.0122	0.027	0.039	0.054	0.077	0.094	0.11	0.12	0.17	0.21	0.27
	BJ 01	0.028	0.0158	0.035	0.050	0.071	0.10	0.12	0.14	0.16	0.22	0.27	0.35
	BJ 0116	0.028	0.0183	0.041	0.058	0.082	0.12	0.14	0.16	0.18	0.26	0.32	0.41
OR	BJ 015	0.033	0.0237	0.053	0.075	0.11	0.15	0.18	0.21	0.24	0.34	0.41	0.53
	BJ 0154	0.033	0.0243	0.054	0.077	0.11	0.15	0.19	0.22	0.24	0.34	0.42	0.54
1/4	BJ 02	0.039	0.0316	0.071	0.10	0.14	0.20	0.24	0.28	0.32	0.45	0.55	0.71
	BJ 0231	0.040	0.0365	0.082	0.12	0.16	0.23	0.28	0.33	0.37	0.52	0.63	0.82
	BJ 03	0.047	0.0474	0.11	0.15	0.21	0.30	0.37	0.42	0.47	0.67	0.82	1.1
	BJ 0308	0.047	0.0487	0.11	0.15	0.22	0.31	0.38	0.44	0.49	0.69	0.84	1.1
OR	BJ 0385	0.051	0.0609	0.14	0.19	0.27	0.39	0.47	0.54	0.61	0.86	1.1	1.4
	BJ 04	0.055	0.0632	0.14	0.20	0.28	0.40	0.49	0.57	0.63	0.89	1.1	1.4
3/8	BJ 0462	0.056	0.0730	0.16	0.23	0.33	0.46	0.57	0.65	0.73	1.0	1.3	1.6
	BJ 05	0.061	0.0791	0.18	0.25	0.35	0.50	0.61	0.71	0.79	1.1	1.4	1.8
	BJ 06	0.067	0.0949	0.21	0.30	0.42	0.60	0.73	0.85	0.95	1.3	1.6	2.1
	BJ 0616	0.067	0.0974	0.22	0.31	0.44	0.62	0.75	0.87	0.97	1.4	1.7	2.2
OR	BJ 077	0.072	0.122	0.27	0.39	0.54	0.77	0.94	1.09	1.2	1.7	2.1	2.7
	BJ 08	0.074	0.127	0.28	0.40	0.57	0.80	0.98	1.1	1.3	1.8	2.2	2.8
1/2"	BJ 0924	0.076	0.148	0.33	0.46	0.65	0.92	1.1	1.3	1.5	2.1	2.5	3.3
	BJ 10	0.086	0.158	0.35	0.5	0.71	1.0	1.2	1.4	1.6	2.2	2.7	3.5
	BJ 15	0.107	0.237	0.53	0.75	1.1	1.5	1.8	2.1	2.4	3.4	4.1	5.3
	BJ 20	0.125	0.316	0.71	1.0	1.4	2.0	2.4	2.8	3.2	4.5	5.5	7.1
3/8	BJ 30	0.141	0.474	1.1	1.5	2.1	3.0	3.7	4.2	4.7	6.7	8.2	10.6
	BJ 40	0.156	0.633	1.4	2.0	2.8	4.0	4.9	5.7	6.3	8.9	11.0	14.1
	BJ 50	0.172	0.791	1.8	2.5	3.5	5.0	6.1	7.1	7.9	11.2	13.7	17.7
	BJ 60	0.188	0.949	2.1	3.0	4.2	6.0	7.3	8.5	9.5	13.4	16.4	21.2
OR	BJ 70	0.203	1.107	2.5	3.5	4.9	7.0	8.6	9.9	11.1	15.7	19.2	24.7

$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

Standard Materials: Brass, 303 Stainless Steel, and 316 Stainless Steel (for nozzle number BJ01 and higher).

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.



HydroPulse®

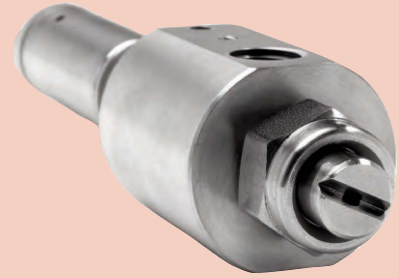
Pneumatically Actuated - Low Flow Flat Fan

DESIGN FEATURES

- Interchangeable flat fan spray tips
- Pneumatically actuated for crisp on/off spray
- Straight through porting for in-series set-up
- Variety of mounting brackets available

SPRAY CHARACTERISTICS

- Relatively coarse atomization
 - Uniform distribution with tapered edges for use in overlapping sprays
- Spray pattern:** Flat Fan
Spray angles: 0° to 110°
Flow rate: 0.024 to 24.7 gpm



HP01 Assembly



HP02 Assembly



Easy to maintain; positive sealing performance!

- **Fluid Connection Size:** 1/8", 1/4", Female, NPT/BSP
Two fluid ports are standard, allowing for an in-series setup; a plug to seal one port is included.
- **Maximum Fluid Pressure:** 600 psi
- **Air Cylinders:** Single-acting spring extend type. Air pressure retracts the rod and allows flow through the nozzle. Removing air pressure extends the rod and seals the nozzle. Double-acting cylinder available upon request.
- **Air Connection Size:** 1/8" Female NPT; 1/8" Female BSP Adapter automatically included when fluid connection is BSP
- **Air Cylinder Pressure:** Minimum: 30 psi*; Maximum: 250 psi.
*For larger BJ tips, more pressure may be required to break seal.
- **Frequency Rating:** Up to 180 cycles/minute, with an appropriate solenoid valve (Cv=0.08 minimum).
- **Weights:** HP01 Assembly: 1.3 lbs; HP02 Assembly: 1.5 lbs
- **Operating Temperature Range:** -15 °F to 400 °F. Nylon Mounting Hardware: 250 °F MAX
- **Standard Materials:**

Body: Nickel-plated Brass or 303 Stainless Steel

Internals: PTFE, Viton, 303SS

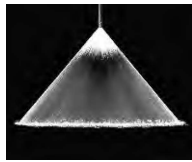
Air Cylinder: Stainless Steel, Anodized Aluminum, PTFE, and Viton®

Fluid Seals: FDA-compliant Viton®

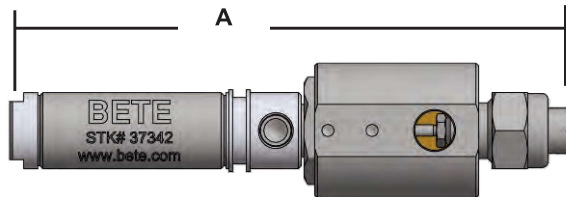
TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.

FAN

HydroPulse® Components & Options



Fan 80°



A - Overall Length (inches)	
HP01	HP02
6	7.59

Flat Fan (BJ) Tip - Flow Rates, Dimensions, and Angles

Nozzle Tip Number	K Factor	GALLONS PER MINUTE @ PSI							Equivalent Orifice Dia. (in.)	Available Spray Angles
		5 PSI	10 PSI	20 PSI	40 PSI	80 PSI	100 PSI	500 PSI		
BJ 0067	0.0106	0.024	0.034	0.047	0.067	0.095	0.11	0.24	0.023	0, 15, 25, 40, 50, 65, 80
BJ 0077	0.0122	0.027	0.039	0.054	0.077	0.11	0.12	0.27	0.023	73
BJ 01	0.0158	0.035	0.050	0.071	0.100	0.14	0.16	0.35	0.028	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 0116	0.0183	0.041	0.058	0.082	0.116	0.164	0.183	0.41	0.036	73
BJ 015	0.0237	0.053	0.075	0.11	0.15	0.21	0.24	0.53	0.038	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 02	0.0316	0.071	0.10	0.14	0.20	0.28	0.32	0.71	0.039	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 03	0.0474	0.11	0.15	0.21	0.30	0.42	0.47	1.1	0.047	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 04	0.0632	0.14	0.20	0.28	0.40	0.57	0.63	1.4	0.055	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 05	0.0791	0.18	0.25	0.35	0.50	0.71	0.79	1.8	0.061	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 06	0.0949	0.21	0.30	0.42	0.60	0.85	0.95	2.1	0.067	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 08	0.127	0.28	0.40	0.57	0.80	1.1	1.3	2.8	0.074	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 10	0.158	0.35	0.50	0.71	1.0	1.4	1.6	3.5	0.086	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 15	0.237	0.53	0.75	1.1	1.5	2.1	2.4	5.3	0.107	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 20*	0.316	0.71	1.0	1.4	2.0	2.8	3.2	7.1	0.125	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 30*	0.474	1.1	1.5	2.1	3.0	4.2	4.7	10.6	0.141	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 40*	0.633	1.4	2.0	2.8	4.0	5.7	6.3	14.1	0.156	0, 15, 25, 40, 50, 65, 80, 95, 110
BJ 50*	0.791	1.8	2.5	3.5	5.0	7.1	7.9	17.7	0.172	15, 25, 40, 50, 65, 80, 95, 110
BJ 60*	0.949	2.1	3.0	4.2	6.0	8.5	9.5	21.2	0.188	15, 25, 40, 50, 65, 80, 95, 110
BJ 70*	1.107	2.5	3.5	4.9	7.0	9.9	11.1	24.7	0.203	15, 25, 40, 50, 65, 80, 95, 110

***HP
02
ONLY**

$$\text{Flow Rate (GPM)} = K\sqrt{\text{PSI}}$$

BJ Tip Materials: Brass, 303 Stainless Steel, and 316 Stainless Steel.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.



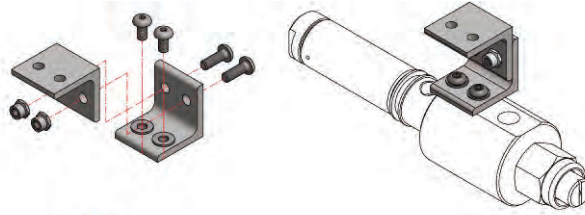
FAN

CALL 413-772-0846
Call for the name of your nearest BETE representative.

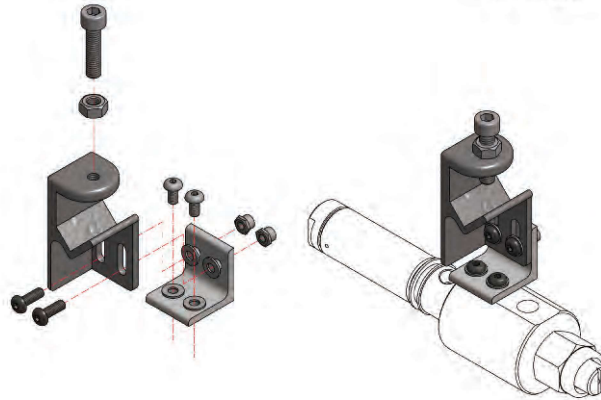
HydroPulse

Optional Mounting Bracket Kits

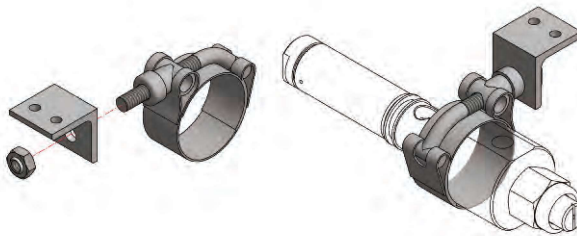
**Kit 01
Angle Bracket**



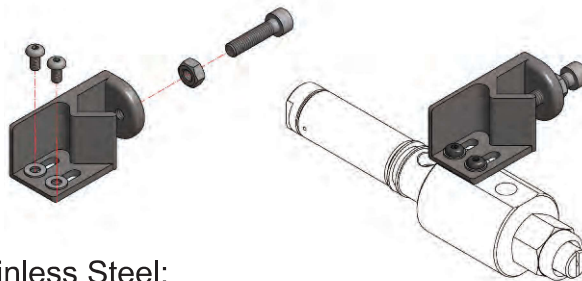
**Kit 02
V-Block Bracket**



**Kit 03
Clamp Bracket**



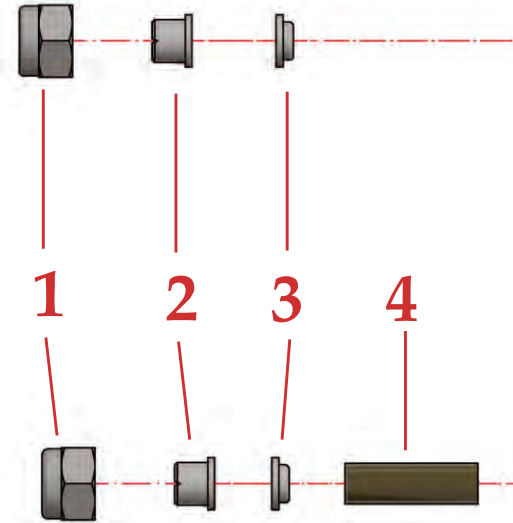
**Kit 04
Direct Mount
V-Block Bracket**



Brackets: 316 Stainless Steel;
Hardware: 18-8SS with Nylon locking insert



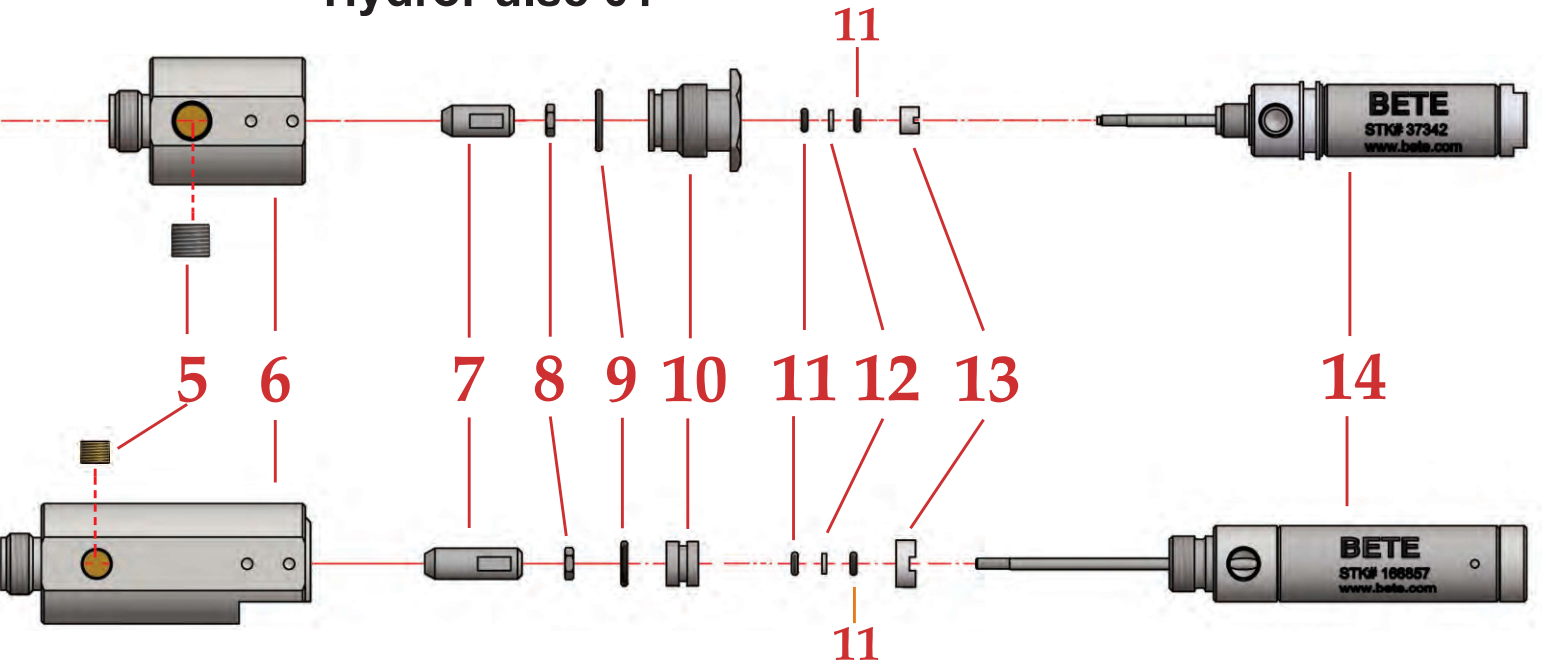
**In-series set-up possible; see
instruction manual for more details.**



Item Number	Part Name
1	CAP NUT
2	TIP (BJ, BJH, CW, ST)
3	SEALING WASHER
4	FLOW CONDITIONER (HP 02 ONLY)
5	HEX SOCKET PLUG
6	BODY
7	SEALING TIP
8	JAM NUT
9	BUSHING O-RING
10	BUSHING
11	AIR CYLINDER O-RING (x2)
12	BACK-UP RING
13	COMPRESSIBLE BUSHING
14	AIR CYLINDER

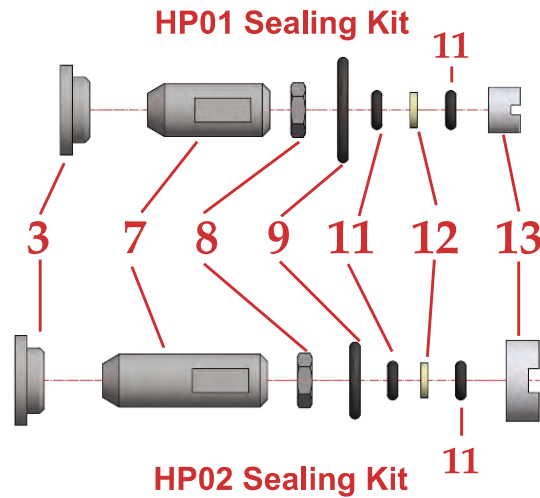
HydroPulse® Components & Options

HydroPulse 01

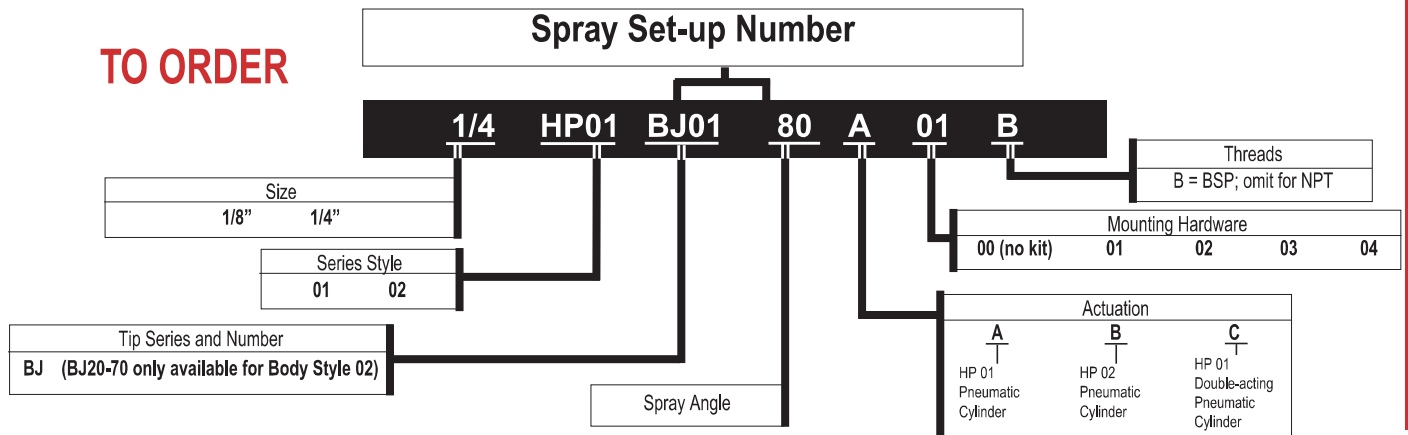


FAN

HydroPulse 02



TO ORDER



CALL 413-772-0846
Call for the name of your nearest BETE representative.

NFV

Fan Nozzle with Integral Strainer Option

DESIGN FEATURES

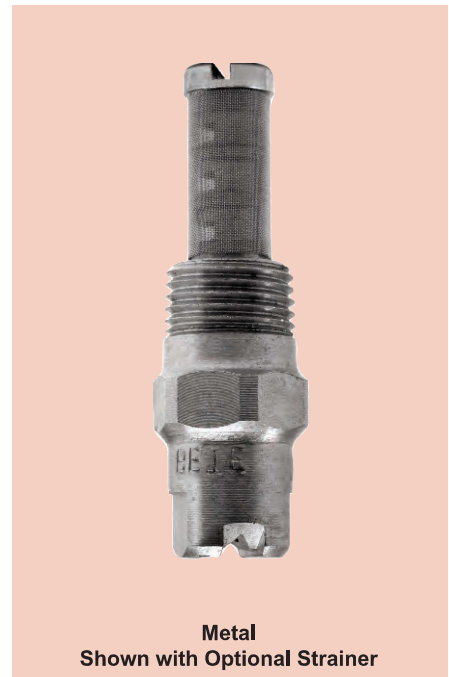
- One-piece construction
- No internal parts
- Male connection
- Low nozzle maintenance
- Optional removable strainer for easy cleaning

Connections: Male NPT and BSP

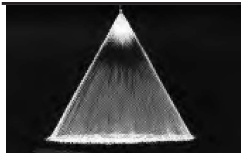
Optional Strainer: 50, 100, 200 mesh

SPRAY CHARACTERISTICS

- High impact
 - Uniform distribution
- Spray pattern:** Flat Fan and Straight Jet
Spray angles: 0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
 NFV0067: Max. spray angle available 95°
Flow rates: 0.041 to 12.6 gpm



Metal
Shown with Optional Strainer

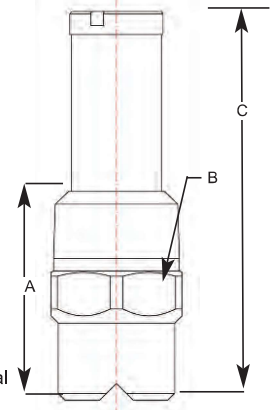


Fan 50°

Call BETE to verify spray angle performance at operating pressures above 70 psi.

NFV Dimensions

Pipe Size	Dimensions (in.)			Wt. (oz.)
	A	B	C	
1/8	0.88	0.44	1.49	1.00
1/4	1.06	0.56	1.69	1.50



1/8" - 1/4" Metal

To Order: Spray Set-up Number

1/4 NFV 0067 95 -L -B 303

pipe size | series | nozzle number | spray angle | optional strainer, also specify mesh size | specify material | BSP thread

NFV Flow Rates

Fan and Straight Jet, 0°, 15°, 25°, 40°, 50°, 65°, 80°, 95° (all sizes); 110° (NFV01 and higher)

Male Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI										Equiv. Orifice Dia. (in.)	Screen Mesh Selection Guide
			15 PSI	20 PSI	30 PSI	40 PSI	60 PSI	80 PSI	100 PSI	150 PSI	200 PSI	400 PSI		
1/8" or 1/4"	NFV0067**	0.0106	0.041	0.047	0.057	0.067	0.082	0.095	0.110	0.130	0.150	0.210	0.023	100
	NFV01	0.0158	0.06	0.07	0.09	0.10	0.12	0.14	0.16	0.19	0.22	0.32	0.026	100
	NFV015	0.0237	0.09	0.11	0.13	0.15	0.18	0.21	0.24	0.29	0.34	0.47	0.031	100
	NFV02	0.0316	0.12	0.14	0.17	0.20	0.25	0.28	0.32	0.39	0.45	0.63	0.036	100
	NFV025	0.0395	0.15	0.18	0.22	0.25	0.31	0.35	0.40	0.48	0.56	0.79	0.040	50
	NFV03	0.0474	0.18	0.21	0.26	0.30	0.37	0.42	0.47	0.58	0.67	0.95	0.043	50
	NFV04	0.0632	0.25	0.28	0.35	0.40	0.49	0.57	0.63	0.78	0.89	1.25	0.052	50
	NFV05	0.0791	0.31	0.35	0.43	0.50	0.61	0.71	0.79	0.97	1.12	1.58	0.057	50
	NFV06	0.0949	0.37	0.42	0.52	0.60	0.74	0.85	0.95	1.16	1.34	1.90	0.062	50
	NFV07	0.111	0.43	0.50	0.61	0.70	0.86	0.99	1.11	1.36	1.57	2.22	0.082	50
NFV08	0.126	0.49	0.57	0.69	0.80	0.98	1.13	1.26	1.55	1.79	2.53	0.072	50	
NFV10	0.158	0.61	0.71	0.87	1.00	1.22	1.41	1.58	1.94	2.24	3.16	0.080	50	
NFV15	0.237	0.92	1.06	1.30	1.50	1.84	2.12	2.37	2.90	3.35	4.74	0.094	50	
NFV20	0.316	1.22	1.41	1.73	2.00	2.45	2.83	3.16	3.87	4.47	6.32	0.109	50	
NFV30	0.474	1.84	2.12	2.60	3.00	3.67	4.24	4.74	5.81	6.71	9.49	0.141	50	
NFV40	0.632	2.45	2.45	3.46	4.00	4.90	5.66	6.32	7.75	8.94	12.60	0.156	50	

**NFV0067: Max. spray angle available: 95°

Flow Rate (GPM) = $K \sqrt{\text{PSI}}$ Standard Materials: Brass and 303 Stainless Steel. Highlighted NFVs available in 316 Stainless Steel.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.

NF

Standard Fan Nozzle

DESIGN FEATURES

- One-piece construction
- No internal parts
- Sizes for all applications
- Male connection

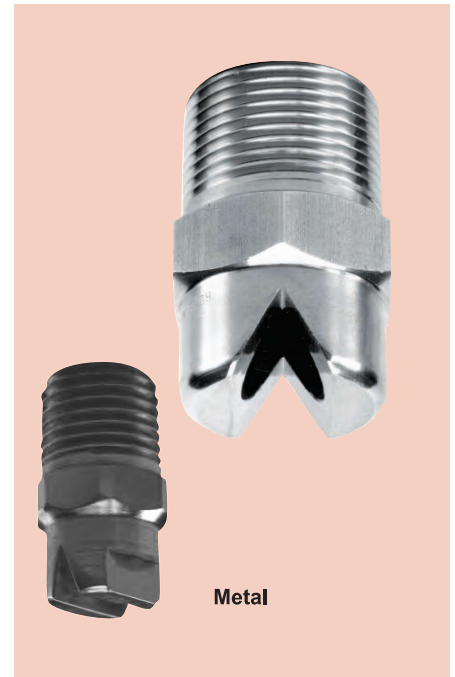
SPRAY CHARACTERISTICS

- High impact
- Uniform distribution with tapered edges for overlapping sprays
- Extra-wide angles available

Spray pattern: Fan and Straight Jet

Spray angles: 0° to 120°

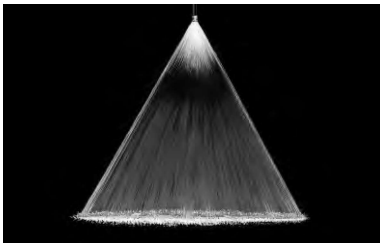
Flow rates: 0.103 to 1380 gpm



Metal

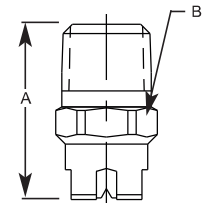


FAN



Fan 50°

Call BETE to verify spray angle performance at operating pressures above 70 psi.



3/8" - 2" Metal

Dimensions are approximate. Check with BETE for critical dimension applications.

NF Flow Rates

Straight Jet: 0°; and Fan: 15°, 30°, 50°, 65°, 80°, 90°, 110°, and 120° Spray Angles, 1/8" to 2" Pipe Sizes

Male Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI													Equiv. Orifice Dia. (in.)
			5 PSI	10 PSI	15 PSI	20 PSI	30 PSI	40 PSI	60 PSI	80 PSI	100 PSI	150 PSI	200 PSI	400 PSI		
1/8 or 1/4 or 3/8	NF01	0.0158	0.03	0.05	0.06	0.07	0.09	0.10	0.12	0.14	0.16	0.19	0.22	0.32	0.026	
	NF015	0.0237	0.05	0.08	0.09	0.11	0.13	0.15	0.18	0.21	0.24	0.29	0.34	0.47	0.031	
	NF02	0.0316	0.07	0.10	0.12	0.14	0.17	0.20	0.25	0.32	0.32	0.39	0.45	0.63	0.036	
	NF025	0.0395	0.09	0.13	0.15	0.18	0.22	0.25	0.31	0.35	0.40	0.48	0.56	0.79	0.040	
	NF03	0.0474	0.11	0.15	0.18	0.21	0.26	0.30	0.37	0.42	0.47	0.58	0.67	0.95	0.043	
	NF04	0.0632	0.14	0.20	0.25	0.28	0.35	0.40	0.49	0.57	0.63	0.78	0.89	1.25	0.052	
	NF05	0.0791	0.18	0.25	0.31	0.35	0.43	0.50	0.61	0.71	0.79	0.97	1.12	1.58	0.057	
	NF06	0.0949	0.21	0.30	0.37	0.42	0.52	0.60	0.74	0.85	0.95	1.16	1.34	1.90	0.062	
NF08	0.126	0.28	0.40	0.49	0.57	0.69	0.80	0.98	1.13	1.26	1.55	1.79	2.53	0.072		
1/8 or 1/4 or 3/8	NF10	0.158	0.35	0.50	0.61	0.71	0.87	1.00	1.22	1.41	1.58	1.94	2.24	3.16	0.080	
	NF15	0.237	0.53	0.75	0.92	1.06	1.30	1.50	1.84	2.12	2.37	2.90	3.35	4.74	0.094	
	NF20	0.316	0.71	1.00	1.22	1.41	1.73	2.00	2.45	2.83	3.16	3.87	4.47	6.32	0.109	
	NF30	0.474	1.06	1.50	1.84	2.12	2.60	3.00	3.67	4.24	4.74	5.81	6.71	9.49	0.141	
NF40	0.632	1.41	2.00	2.45	2.83	3.46	4.00	4.90	5.66	6.32	7.75	8.94	12.6	0.156		
1/4 or 3/8	NF50	0.791	1.77	2.50	3.06	3.54	4.33	5.00	6.12	7.07	7.91	9.68	11.2	15.8	0.172	
	NF60	0.949	2.12	3.00	3.67	4.24	5.20	6.00	7.35	8.49	9.49	11.6	13.4	19.0	0.186	
	NF70	1.11	2.47	3.50	4.29	4.95	6.06	7.00	8.57	9.90	11.1	13.6	15.6	22.1	0.203	
3/8 or 1/2	NF60	0.949	2.12	3.00	3.67	4.24	5.20	6.00	7.35	8.49	9.49	11.6	13.4	19.0	0.186	
	NF70	1.11	2.47	3.50	4.29	4.95	6.06	7.00	8.57	9.90	11.1	13.6	15.6	22.1	0.203	
	NF80	1.26	2.83	4.00	4.90	5.66	6.93	8.00	9.80	11.3	12.6	15.5	17.9	25.3	0.219	
	NF90	1.42	3.18	4.50	5.51	6.36	7.79	9.00	11.0	12.7	14.2	17.4	20.1	28.5	0.234	
	NF100	1.58	3.54	5.00	6.12	7.07	8.66	10.0	12.2	14.1	15.8	19.4	22.4	31.6	0.250	
	NF120	1.90	4.24	6.00	7.35	8.49	10.4	12.0	14.7	17.0	19.0	23.2	26.8	37.9	0.266	
1/2	NF150	2.37	5.30	7.50	9.19	10.6	13.0	15.0	18.4	21.2	23.7	29.0	33.5	47.4	0.297	
	NF200	3.16	7.07	10.0	12.2	14.1	17.3	20.0	24.5	28.3	31.6	38.7	44.7	63.2	0.344	
3/4	NF300	4.74	10.6	15.0	18.4	21.2	26.0	30.0	36.7	42.4	47.4	58.1	67.1	94.9	0.422	
	NF400	6.32	14.1	20.0	24.5	28.3	34.6	40.0	49.0	56.6	63.2	77.5	89.4	126	0.500	
1	NF400	6.32	14.1	20.0	24.5	28.3	34.6	40.0	49.0	56.6	63.2	77.5	89.4	126	0.500	
	NF750	11.9	26.5	37.5	45.9	53.0	64.9	75.0	92.0	106	119	145	168	237	0.688	
1 1/4	NF800	12.6	28.3	40.0	49.0	56.6	69.3	80.0	98.0	113	126	155	179	253	0.719	
	NF1150	18.2	40.7	57.5	70.4	81.3	100	115	141	163	182	223	257	364	0.859	
1 1/2	NF1500	23.7	53.0	75.0	91.9	106	130	150	184	212	237	290	335	474	0.969	
2	NF2250	35.6	79.5	113	138	160	195	225	276	318	356	436	500	715	1.19	

NF Dimensions

Pipe Size	Dim. for Metal Only (in.)		Wt. (oz.) Metal Plas.
	A	B	
1/8	0.88	0.44	1.00 0.25
1/4	1.06	0.56	1.50 0.38
3/8	1.25	0.69	2.00 0.50
1/2	1.50	0.88	3.00 1.00
3/4	1.75	1.13	6.00 1.50
1	2.19	1.38	8.00 2.00
1 1/4	2.50	1.75	12.0 3.00
1 1/2	3.00	2.00	20.0 5.00
2	3.50	2.50	56.0 10.0

Flow Rate (GPM) = $K \sqrt{PSI}$ Standard Materials: Brass, 303 Stainless Steel, 316 Stainless Steel, PVC and PTFE (PTFE not available in nozzle numbers NF025 and under).

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

NFD

Dovetail Flat Fan

DESIGN FEATURES

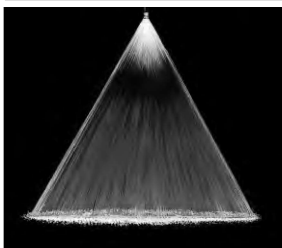
- Dovetail joint guarantees alignment of interchangeable tips
- Dimensionally compatible with other dovetail systems
- Tips offset 5° or 15° for overlapping spray patterns
- Tapered overlapping spray provides uniform coverage
- Male, female and welded connections
- Other sizes available upon request

SPRAY CHARACTERISTICS

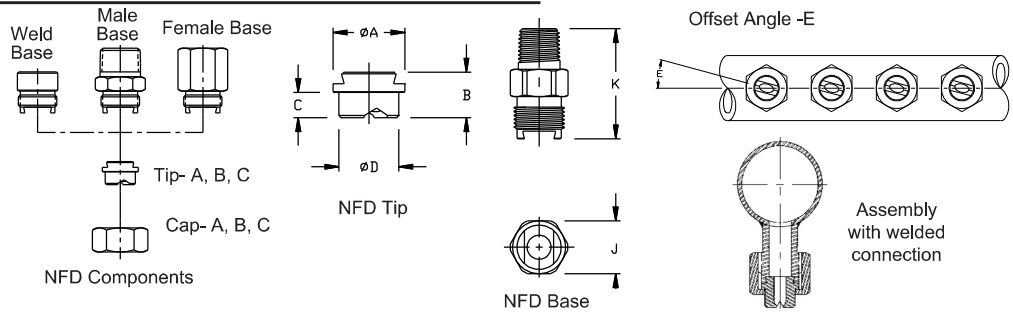
Spray pattern: Flat Fan
Spray angles: 20°, 30°, 45°, 60°, 90° and 120°. Special angles are available on request
Flow rates: 0.04 to 157 gpm



Metal



Fan 45°



Dimensions are approximate. Check with BETE for critical dimension applications.

NFD Flow Rates and Dimensions

Fan, 20°, 30°, 45°, 60°, 90°, 120° Spray Angles, 1/4", 3/8", 1/2", 3/4" and 1-1/4" Pipe Size, or Welded Connections

Cap & Tip Size	Nozzle Number	Base Sizes* Available	K Factor	GALLONS PER MINUTE @ PSI									Equiv. Orifice Dia. (in.)	Approximate Tip Dimensions (in.)					Wt. (Oz.)	BSP NPT Pipe	Approx. Base Dim. (in.)	
				10 PSI	20 PSI	40 PSI	60 PSI	80 PSI	100 PSI	200 PSI	400 PSI	A		B	C	D	E	J			K	
A	NFD 010	1/4 3/8 1/2	0.016	0.049	0.070	0.10	0.12	0.14	0.16	0.22	0.31	0.028	0.58	5°	1.5	1/4"	0.69	1.44				
	NFD 014	1/4 3/8 1/2	0.022	0.070	0.10	0.14	0.17	0.20	0.22	0.31	0.44	0.035										
	NFD 019	1/4 3/8 1/2	0.031	0.10	0.14	0.19	0.24	0.28	0.31	0.44	0.62	0.039										
	NFD 031	1/4 3/8 1/2	0.049	0.15	0.22	0.31	0.38	0.44	0.49	0.69	0.98	0.047										
	NFD 039	1/4 3/8 1/2	0.061	0.19	0.27	0.39	0.47	0.55	0.61	0.87	1.22	0.053										
	NFD 050	1/4 3/8 1/2	0.078	0.25	0.35	0.50	0.61	0.70	0.78	1.10	1.56	0.059										
	NFD 059	1/4 3/8 1/2	0.093	0.29	0.42	0.59	0.72	0.83	0.93	1.32	1.86	0.065										
	NFD 077	1/4 3/8 1/2	0.122	0.39	0.55	0.77	0.95	1.10	1.22	1.73	2.44	0.079										
	NFD 097	1/4 3/8 1/2	0.154	0.49	0.69	0.97	1.19	1.38	1.54	2.18	3.08	0.087										
	NFD 12	1/4 3/8 1/2	0.196	0.62	0.88	1.24	1.52	1.75	1.96	2.77	3.92	0.098										
NFD 15	1/4 3/8 1/2	0.233	0.74	1.04	1.47	1.80	2.08	2.33	3.30	4.66	0.106											
NFD 49	1/4 3/8 1/2	0.781	2.47	3.49	4.94	6.05	6.98	7.81	11.0	15.6	0.197	0.94	6.0	3/8"	0.69	1.44						
NFD 20	3/4	0.309	0.98	1.38	1.95	2.39	2.76	3.09	4.37	6.18	0.118											
NFD 25	3/4	0.392	1.24	1.75	2.48	3.04	3.50	3.92	5.54	7.84	0.138											
NFD 31	3/4	0.488	1.54	2.18	3.09	3.78	4.37	4.88	6.90	9.76	0.157											
NFD 39	3/4	0.612	1.94	2.74	3.87	4.74	5.48	6.12	8.65	12.2	0.177											
NFD 50	3/4	0.785	2.48	3.51	4.95	6.08	7.02	7.85	11.1	15.6	0.197											
NFD 62	3/4	0.981	3.10	4.39	6.21	7.60	8.77	9.81	13.9	19.6	0.217											
NFD 77	3/4	1.22	3.87	5.48	7.72	9.49	11.0	12.2	17.2	24.4	0.236											
NFD 87	3/4	1.37	4.34	6.14	8.66	10.6	12.3	13.7	19.4	27.4	0.252											
NFD 104	3/4	1.64	5.19	7.34	10.4	12.7	14.7	16.4	23.2	32.8	0.283											
NFD 124	3/4	1.96	6.20	8.77	12.4	15.2	17.5	19.6	27.7	39.2	0.315											
NFD 155	3/4	2.45	7.75	11.0	15.5	19.0	21.9	24.5	34.6	49.0	0.354											
NFD 195	3/4	3.08	9.75	13.8	19.5	23.9	27.6	30.8	43.6	61.6	0.394											
C	NFD 124	1-1/4	1.96	6.20	8.77	12.4	15.2	17.5	19.6	27.7	39.2	0.315	1.51	0.87	0.53	1.26	15°	8.0	1-1/4"	1.75	2.50	
	NFD 195	1-1/4	3.08	9.75	13.8	19.5	23.9	27.6	30.8	43.6	61.6	0.394										
	NFD 309	1-1/4	4.88	15.4	21.8	30.9	37.8	43.7	48.8	69.1	97.6	0.475										
	NFD 496**	1-1/4	7.85	24.8	35.1	49.6	60.8	70.2	78.5	111	157	0.591										

**NFD 496 not available in 120°

Flow Rate (GPM) = $K \sqrt{PSI}$ *NPT, BSP, male or female or weldable pipe connections. Dimensions are for male base; female and weldable vary.

Standard Materials: Brass, 303 Stainless Steel and 316 Stainless Steel. Weldable adapters also available in mild steel.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.

NFS

Stubby Flat Fan

DESIGN FEATURES

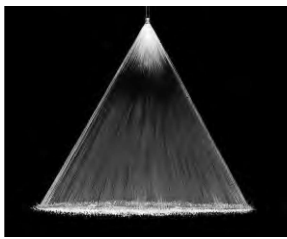
- Extremely short length for minimum projection and maximum clearance
- Produces a flat fan spray pattern available in a variety of spray angles
- Available in straight (parallel) threads only, NPSM and G
- Requires gasket to seal connection

SPRAY CHARACTERISTICS

Spray pattern: Fan
Spray angles: 20°, 30°, 45°, 60°, 90° and 120° standard
Flow rates: 0.049 to 295 gpm



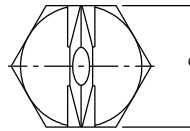
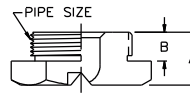
Metal



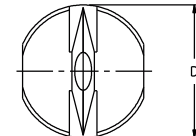
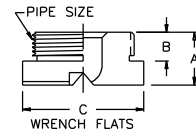
Fan 45°



Fan 90°



Metal



Plastic

Dimensions are approximate. Check with BETE for critical dimension applications.

NFS Flow Rates and Dimensions

Flat Fan, 20°, 30°, 45°, 60°, 90° & 120° Spray Angles, 1/4" to 2" Pipe Sizes

NFS Dimensions and Spray Angles

** Male Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI												Equiv. Orifice Dia. (in)
			5 PSI	10 PSI	15 PSI	20 PSI	30 PSI	40 PSI	60 PSI	80 PSI	100 PSI	150 PSI	200 PSI		
1/4	NFS 012	0.020	0.04	0.06	0.08	0.09	0.11	0.12	0.15	0.18	0.20	0.24	0.28	0.315	
	NFS 019	0.031	0.07	0.10	0.12	0.14	0.17	0.19	0.24	0.28	0.31	0.38	0.44	0.0394	
	NFS 031	0.049	0.11	0.16	0.19	0.22	0.27	0.31	0.38	0.44	0.49	0.60	0.70	0.0472	
	NFS 039	0.061	0.14	0.19	0.24	0.27	0.34	0.39	0.47	0.55	0.61	0.75	0.87	0.0531	
	NFS 050	0.078	0.18	0.25	0.30	0.35	0.43	0.50	0.61	0.70	0.78	0.96	1.11	0.0591	
	NFS 059	0.093	0.21	0.29	0.36	0.42	0.51	0.59	0.72	0.83	0.93	1.14	1.32	0.0650	
	NFS 077	0.122	0.27	0.39	0.47	0.55	0.67	0.77	0.95	1.10	1.22	1.50	1.73	0.0787	
	NFS 098	0.155	0.35	0.49	0.60	0.69	0.85	0.98	1.20	1.38	1.55	1.89	2.19	0.0866	
	NFS 12	0.196	0.44	0.62	0.76	0.88	1.07	1.24	1.52	1.75	1.96	2.40	2.77	0.0984	
	NFS 15	0.233	0.52	0.74	0.90	1.04	1.28	1.47	1.80	2.08	2.33	2.85	3.29	0.106	
1/4 or 3/4"	NFS 20	0.309	0.69	0.98	1.20	1.38	1.69	1.97	2.39	2.76	3.09	3.78	4.36	0.118	
	NFS 25	0.392	0.88	1.24	1.52	1.75	2.15	2.48	3.04	3.51	3.92	4.80	5.55	0.138	
	NFS 31	0.492	1.10	1.56	1.91	2.20	2.70	3.11	3.81	4.40	4.92	6.03	6.96	0.157	
	NFS 39	0.612	1.37	1.94	2.37	2.74	3.35	3.87	4.74	5.48	6.12	7.50	8.66	0.177	
	NFS 50	0.785	1.75	2.48	3.04	3.51	4.30	4.96	6.08	7.02	7.85	9.61	11.1	0.197	
	NFS 62	0.981	2.19	3.10	3.80	4.39	5.37	6.25	7.60	8.77	9.81	12.0	13.9	0.217	
	NFS 77	1.22	2.74	3.87	4.74	5.48	6.71	7.75	9.49	11.0	12.2	15.0	17.3	0.236	
3/4"	NFS 93	1.47	3.28	4.65	5.69	6.57	8.05	9.29	11.4	13.1	14.7	18.0	20.8	0.272	
3/4" or 1-1/4	NFS 124	1.96	4.39	6.20	7.60	8.77	10.7	12.4	15.2	17.5	19.6	24.0	27.7	0.315	
	NFS 155	2.45	5.48	7.75	9.49	11.0	13.4	15.5	19.0	21.9	24.5	30.0	34.6	0.354	
	NFS 185	2.92	6.53	9.24	11.3	13.1	16.0	18.5	22.6	26.1	29.2	35.8	41.3	0.374	
	NFS 195	3.09	6.91	9.77	12.0	13.8	16.9	19.5	23.9	27.6	30.9	37.8	43.7	0.394	
1-1/4	NFS 309	4.88	10.9	15.4	18.9	21.8	26.7	30.9	37.8	43.7	48.8	59.8	69.1	0.472	
	NFS 496	7.85	17.5	24.8	30.4	35.1	43.0	49.6	60.8	70.2	78.5	96.1	111	0.591	
2	NFS 557	8.81	19.7	27.8	34.1	39.4	48.2	55.7	68.2	78.8	88.1	108	125	0.630	
	NFS 620	9.81	21.9	31.0	38.0	43.9	53.7	62.0	76.0	87.7	98.1	120	139	0.669	
	NFS 775	12.2	27.4	38.7	47.4	54.8	67.1	77.5	94.9	110	122	150	173	0.748	
	NFS 977	15.5	34.5	48.9	59.8	69.1	84.6	97.7	120	138	155	189	219	0.827	
	NFS 1130	17.9	40.0	56.6	69.3	80.0	98.0	113	139	160	179	219	253	0.886	
	NFS 1320	20.9	46.6	65.9	80.8	93.3	114	132	162	187	209	255	295	0.965	

Pipe Size	Nozzle Number	Spray Angles Available	Dimensions (in)			
			A	B	C	D
1/4	NFS 012 To NFS 39	20° 30° 45° 60° 90° 120°	0.47			
	NFS 50	20° 30° 45° 60° 90°	0.69			
	NFS 62	45° 60° 90°				
	NFS 77	45°	0.75			
3/4	NFS 20 To NFS 77	20° 30° 45° 60° 90° 120°	0.59			
	NFS 93*	120°	0.31			
	NFS 124	20° 30° 45° 60° 90° 120°				
	NFS 155	20° 30° 45° 60° 90° 120°	1.25			
	NFS 185	120°				
	NFS 195	20° 30° 45° 60° 90° 120°	1.38			
1-1/4	NFS 124 To NFS 496	20° 30° 45° 60° 90° 120°	0.87	0.47	2.0	
	NFS 557 To NFS 1320	20° 30° 45° 60° 90° 120°	1.25	0.79	2.75	

Flow Rate (GPM) = $K \sqrt{PSI}$ **Available in straight (parallel) threads only, NPSM and G.

Standard Materials: Brass, 316 Stainless Steel, 303 Stainless Steel and PVC.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

FF

Extra-Wide Angle

DESIGN FEATURES

- One-piece construction
- Clog-resistant
- Durable
- All 3/8" FFs in Brass are available with UL approval
- Male connection

SPRAY CHARACTERISTICS

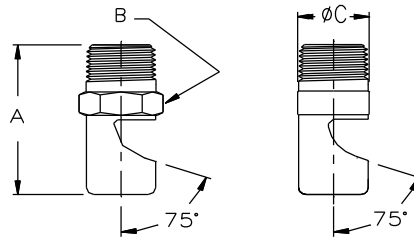
- Extra-wide 105° and 145° spray angles
 - Medium-impact spray
 - Spray discharge deflected 75° from inlet axis
 - Coarse atomization
- Spray pattern:** Flat Fan
Spray angle: 105° or 145°, as listed
Flow rates: 0.014 to 235 gpm



Plastic



Fan 145°



Metal

Plastic

Dimensions are approximate. Check with BETE for critical dimension applications.

FF Flow Rates

Fan, 105° and 145° Spray Angles, 1/8" to 1" Pipe Sizes

Male Pipe Size	Nozzle Number	Spray Angle	K Factor	GALLONS PER MINUTE @ PSI												Approx. Orifice Dia. (in.)
				3 PSI	5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI	100 PSI	200 PSI		
1/8	FF016	105°	0.00791	0.014	0.018	0.025	0.035	0.043	0.050	0.056	0.061	0.071	0.079	0.112	0.016	
	FF024	105°	0.0158	0.027	0.035	0.050	0.071	0.087	0.100	0.112	0.122	0.141	0.158	0.224	0.024	
	FF028	105°	0.0237	0.041	0.053	0.075	0.106	0.130	0.150	0.168	0.184	0.212	0.237	0.335	0.028	
	FF033	105°	0.0316	0.055	0.071	0.100	0.141	0.173	0.200	0.224	0.245	0.283	0.316	0.447	0.033	
	FF041	145°	0.0474	0.082	0.106	0.150	0.212	0.260	0.300	0.335	0.367	0.424	0.474	0.671	0.041	
	FF046	145°	0.0632	0.110	0.141	0.200	0.283	0.346	0.400	0.447	0.490	0.566	0.632	0.894	0.046	
	FF052	145°	0.0791	0.137	0.177	0.250	0.354	0.433	0.500	0.559	0.612	0.707	0.791	1.11	0.052	
	FF057	145°	0.0949	0.164	0.212	0.300	0.424	0.520	0.600	0.671	0.735	0.849	0.949	1.34	0.057	
FF065	145°	0.126	0.219	0.283	0.400	0.566	0.693	0.800	0.894	0.980	1.13	1.26	1.79	0.065		
1/8 or 1/4	FF073	145°	0.158	0.274	0.354	0.500	0.707	0.866	1.00	1.12	1.22	1.41	1.58	2.24	0.073	
	FF093	145°	0.237	0.411	0.530	0.750	1.06	1.30	1.50	1.68	1.84	2.12	2.37	3.35	0.093	
	FF104	145°	0.316	0.548	0.707	1.00	1.41	1.73	2.00	2.24	2.45	2.83	3.16	4.47	0.104	
	FF116	145°	0.379	0.657	0.849	1.20	1.70	2.08	2.40	2.68	2.94	3.39	3.79	5.37	0.116	
	FF125	145°	0.395	0.685	0.884	1.25	1.77	2.17	2.50	2.80	3.06	3.54	3.95	5.59	0.125	
	FF129	145°	0.474	0.822	1.06	1.50	2.12	2.60	3.00	3.35	3.67	4.24	4.74	6.71	0.129	
	FF141	145°	0.569	0.986	1.27	1.80	2.55	3.12	3.60	4.02	4.41	5.09	5.69	8.05	0.141	
FF148	145°	0.632	1.10	1.41	2.00	2.83	3.46	4.00	4.47	4.90	5.66	6.32	8.94	0.148		
1/4	FF156	145°	0.696	1.20	1.56	2.20	3.11	3.81	4.40	4.92	5.39	6.22	6.96	9.84	0.156	
	FF161	145°	0.759	1.31	1.70	2.40	3.39	4.16	4.80	5.37	5.88	6.79	7.59	10.7	0.161	
	FF173	145°	0.854	1.48	1.91	2.70	3.82	4.68	5.40	6.04	6.61	7.64	8.54	12.1	0.173	

FF Dimensions

Pipe Size	Dim. (in.)			Wt. (oz)	
	A	B	C	M	P
1/8	1.00	0.44	0.50	0.49	0.11
1/4	1.38	0.56	0.63	1.23	0.26

$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

Standard Materials: Brass, 303 Stainless Steel, 316 Stainless Steel, PVC, and PTFE

(PTFE and PVC not available in nozzles FF016 to FF028; PTFE not available in nozzles FF033 to FF065).

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

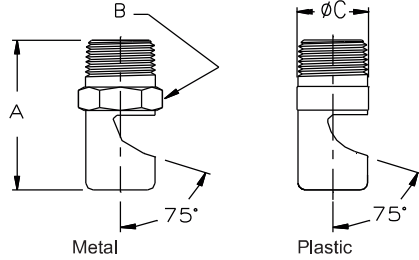
TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.



Metal



All 3/8" FFs in Brass are available with UL approval



Dimensions are approximate. Check with BETE for critical dimension applications.

FF Flow Rates															FF Dimensions						
Fan, 105° and 145° Spray Angles, 1/8" to 1" Pipe Sizes																					
Male Pipe Size	Nozzle Number	Spray Angle	K Factor	GALLONS PER MINUTE @ PSI											Approx. Orifice Dia. (in.)	Pipe Size	Dim. (in.)			Wt. (oz)	
				3 PSI	5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI	100 PSI	200 PSI			A	B	C	M	P
3/8	FF187	145°	0.949	1.64	2.12	3.00	4.24	5.20	6.00	6.71	7.35	8.49	9.49	13.4	0.187	3/8	1.75	0.68	0.75	2.54	0.53
	FF196	145°	1.11	1.92	2.47	3.50	4.95	6.06	7.00	7.83	8.57	9.90	11.1	15.7	0.196						
	FF209	145°	1.18	2.04	2.64	3.73	5.28	6.46	7.46	8.34	9.14	10.1	11.8	16.7	0.209						
	FF218	145°	1.26	2.19	2.83	4.00	5.66	6.93	8.00	8.94	9.80	11.3	12.6	17.9	0.218						
	FF221	145°	1.42	2.46	3.18	4.50	6.36	7.79	9.00	10.1	11.0	12.7	14.2	20.1	0.221						
1/2	FF209	145°	1.18	2.04	2.64	3.73	5.28	6.46	7.46	8.34	9.14	10.1	11.8	16.7	0.209	1/2	2.00	0.88	0.88	4.13	0.88
	FF218	145°	1.26	2.19	2.83	4.00	5.66	6.93	8.00	8.90	9.80	11.3	12.6	17.9	0.218						
	FF250	145°	1.66	2.88	3.71	5.25	7.42	9.09	10.5	11.7	12.9	14.8	16.6	23.5	0.250						
	FF256	145°	1.90	3.29	4.24	6.00	8.49	10.4	12.0	13.4	14.7	17.0	19.0	26.8	0.256						
	FF281	145°	2.21	3.83	4.95	7.00	9.90	12.1	14.0	15.7	17.1	19.8	22.1	31.3	0.281						
	FF312	145°	2.53	4.38	5.66	8.00	11.3	13.9	16.0	17.9	19.6	22.6	25.3	35.8	0.312						
	FF375	145°	3.79	6.57	8.49	12.0	17.0	20.8	24.0	26.8	29.4	33.9	37.9	53.7	0.375						
3/4	FF316	145°	2.85	4.93	6.36	9.00	12.7	15.6	18.0	20.1	22.0	25.5	28.5	40.2	0.316	3/4	2.63	1.38	1.50	12.2	2.57
	FF332	145°	3.16	5.48	7.07	10.0	14.1	17.3	20.0	22.4	24.5	28.3	31.6	44.7	0.332						
	FF348	145°	3.48	6.02	7.78	11.0	15.6	19.1	22.0	24.6	26.9	31.1	34.8	49.2	0.348						
	FF375	145°	3.79	6.57	8.49	12.0	17.0	20.8	24.0	26.8	29.4	33.9	37.9	53.7	0.375						
	FF406	145°	4.43	7.67	9.90	14.0	19.8	24.2	28.0	31.3	34.3	39.6	44.3	62.6	0.406						
	FF437	145°	5.06	8.76	11.3	16.0	22.6	27.7	32.0	35.8	39.2	45.3	50.6	71.6	0.437						
	FF453	145°	5.69	9.86	12.7	18.0	25.5	31.2	36.0	40.2	44.1	50.9	56.9	80.5	0.453						
	FF484	145°	6.64	11.5	14.8	21.0	29.7	36.4	42.0	47.0	51.4	59.4	66.4	93.9	0.484						
	FF500	145°	7.59	13.1	17.0	24.0	33.9	41.6	48.0	53.7	58.8	67.9	75.9	107	0.500						
1	FF578	145°	9.49	16.4	21.2	30.0	42.4	52.0	60.0	67.1	73.5	84.9	94.9	134	0.578	1	3.38	2.00	2.00	32.0	6.77
	FF625	145°	11.5	20.0	25.8	36.5	51.6	63.2	73.0	81.6	89.4	103	115	163	0.625						
	FF703	145°	14.2	24.6	31.8	45.0	63.6	77.9	90.0	101	110	127	142	201	0.703						
	FF750	145°	16.6	28.8	37.1	52.5	74.2	90.9	105	117	129	148	166	235	0.750						

Flow Rate (GPM) = $K \sqrt{PSI}$

Standard Materials: Brass, 303 Stainless Steel, 316 Stainless Steel, PVC, and PTFE.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.



CALL 413-772-0846
Call for the name of your nearest BETE representative.

EZ FF NF SPN

EZ Change Quick Connection System

DESIGN FEATURES

- Nozzles can be changed in seconds without tools
- Three part nozzle, base, gasket and interchangeable tip
- Exclusive ramped engagement for efficient automatic alignment
- Threaded adapters will accommodate other standard BETE nozzles. Shut-off plugs are also available.
- Sanitary EZs are available with weld connection and no knurling

SPRAY CHARACTERISTICS

- Available in six standard tips: EZFF; EZNF; EZSPN; EZWL; EZTF, and EZWT

More EZ tips:

Full Cone: page 30

Hollow Cone: page 46

Flow rates: 0.02 to 42.5 gpm

Spray Angle:

EZFF: 105° and 145°

EZNF: 0°, 15°, 30°, 50°, 65°, 80°, 90°, 110°, 120°

EZSPN: 15°, 25°, 35°, 40° and 50°



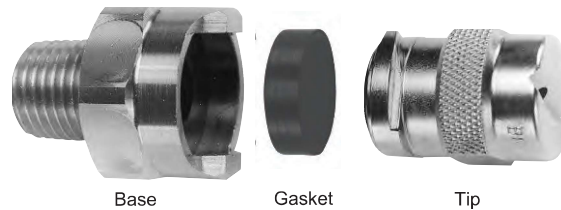
EZNF



145° Fan



50° Fan



Base

Gasket

Tip

Dimensions are approximate. Check with BETE for critical dimension applications.

EZFF Flow Rates and Dimensions

Deflected Flat Fan 105° and 145° Spray Angles 1/8" to 1/2" Pipe Sizes

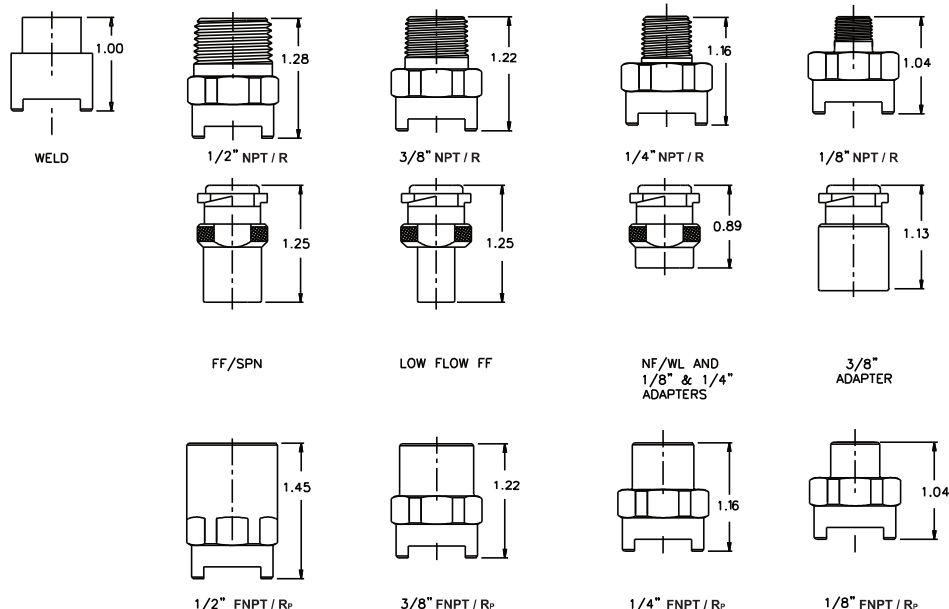
Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI											Approx. Orifice Dia. (in.)	Pipe Size	Approx. Assembly Dim. (in.) Hex Length	Wt. (oz.)
			5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	60 PSI	80 PSI	100 PSI	200 PSI	400 PSI	500 PSI				
1/8"	EZFF016*	0.00791	0.02	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.11	0.16	0.18	0.016	1/8"	0.88 1.99	2.2
	EZFF024*	0.0158	0.03	0.05	0.71	0.09	0.10	0.12	0.14	0.16	0.22	0.32	0.35	0.024			
	EZFF028*	0.0237	0.05	0.07	0.11	0.13	0.15	0.18	0.21	0.237	0.34	0.47	0.53	0.028			
	EZFF033*	0.0316	0.07	0.10	0.14	0.17	0.20	0.24	0.28	0.32	0.48	0.63	0.71	0.033			
	EZFF041	0.0474	0.11	0.15	0.21	0.26	0.30	0.37	0.42	0.47	0.67	0.95	1.06	0.041			
	EZFF046	0.0632	0.14	0.20	0.25	0.37	0.40	0.49	0.57	0.63	0.89	1.26	1.41	0.046			
	EZFF052	0.0791	0.18	0.25	0.35	0.43	0.50	0.61	0.71	0.79	1.11	1.58	1.77	0.052			
	EZFF057	0.0949	0.21	0.30	0.42	0.52	0.60	0.74	0.85	0.95	1.34	1.90	2.12	0.057			
	EZFF065	0.126	0.28	0.40	0.57	0.69	0.80	0.98	1.13	1.26	1.79	2.52	2.82	0.065			
	EZFF073	0.158	0.35	0.50	0.71	0.87	1.00	1.22	1.41	1.58	2.24	3.16	3.53	0.073			
TO	EZFF093	0.237	0.53	0.75	1.06	1.30	1.50	1.84	2.12	2.37	3.35	4.74	5.30	0.093	1/4"	0.88 2.11	2.2
	EZFF104	0.316	0.71	1.00	1.41	1.73	2.00	2.45	2.83	3.16	4.47	6.32	7.07	0.104			
	EZFF116	0.379	0.85	1.20	1.70	2.08	2.40	2.94	3.39	3.79	5.37	7.58	8.48	0.116			
	EZFF125	0.395	0.88	1.25	1.77	2.17	2.50	3.06	3.54	3.95	5.59	7.90	8.83	0.125			
	EZFF129	0.474	1.06	1.50	2.12	2.60	3.00	3.67	4.24	4.74	6.71	9.48	10.6	0.129			
1/2"	EZFF141	0.569	1.27	1.80	2.55	3.12	3.60	4.41	5.09	5.69	8.05	11.4	12.7	0.141	3/8"	0.88 2.17	2.6
	EZFF148	0.632	1.41	2.00	2.83	3.46	4.00	4.90	5.66	6.32	8.94	12.6	14.1	0.148			
	EZFF156	0.696	1.58	2.20	3.11	3.81	4.40	5.39	6.22	6.96	9.84	13.9	15.6	0.156			
	EZFF161	0.759	1.70	2.40	3.39	4.16	4.80	5.88	6.79	7.59	10.7	15.2	17.0	0.161			
	EZFF173	0.854	1.91	2.70	3.82	4.68	5.40	6.61	7.64	8.54	12.1	17.1	19.1	0.173			
	EZFF187	0.949	2.12	3.00	4.24	5.20	6.00	7.35	8.49	9.49	13.4	19.0	21.2	0.187			
	EZFF196	1.11	2.47	3.50	4.95	6.06	7.00	8.57	9.90	11.1	15.7	22.2	24.8	0.196			
1/4"	EZFF218	1.26	2.83	4.00	5.66	6.93	8.00	9.80	11.3	12.6	17.9	25.2	28.2	0.218	1/2"	0.88 2.23	2.9
	EZFF221	1.42	3.18	4.50	6.36	7.79	9.00	11.0	12.7	14.2	20.1	28.4	31.8	0.221			
TO	EZFF250	1.66	3.71	5.25	7.42	9.09	10.5	12.9	14.8	16.6	23.5	33.2	37.1	0.250	1/2"	0.88 2.23	2.9
1/2"	EZFF256	1.90	4.24	6.00	8.49	10.4	12.0	14.7	17.0	19.0	26.8	38.0	42.5	0.256			

Flow Rate (GPM) = $K \sqrt{PSI}$

*Available in 105° only; all others 145° FF218 - FF256 not available with 1/8" base

Standard Materials: 303 Stainless Steel, 316 Stainless Steel, Brass, Viton gaskets standard.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.



Dimensions are approximate. Check with BETE for critical dimension applications.

EZNF Flow Rates and Dimensions

Fan and Straight Jet 0°, 15°, 30°, 50°, 65°, 80°, 90°, 110° and 120° Spray Angles 1/8" to 1/2" Pipe Sizes

Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI											Equivalent Orifice Dia. (in.)	Approx. Assembly Dim. (in.)		Wt. (oz.)		
			5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	60 PSI	80 PSI	100 PSI	200 PSI	400 PSI	500 PSI		Hex	Length			
1/8"	EZNF01	0.0158	0.03	0.05	0.07	0.09	0.10	0.12	0.14	0.16	0.22	0.31	0.35	0.026	1/8"	0.88	1.63	2.2	
	EZNF015	0.0237	0.05	0.07	0.11	0.13	0.15	0.18	0.21	0.24	0.33	0.47	0.53	0.031					
	EZNF02	0.0316	0.07	0.10	0.14	0.17	0.20	0.24	0.28	0.32	0.48	0.63	0.71	0.036					
	TO	EZNF025	0.0395	0.09	0.12	0.18	0.22	0.25	0.31	0.35	0.40	0.56	0.79	0.88	0.040	1/4"	0.88	1.75	2.2
		EZNF03	0.0474	0.11	0.15	0.21	0.26	0.30	0.37	0.42	0.47	0.67	0.95	1.06	0.043				
		EZNF04	0.0632	0.14	0.20	0.28	0.35	0.40	0.49	0.57	0.63	0.89	1.26	1.41	0.052				
		1/2"	EZNF05	0.0791	0.18	0.25	0.35	0.43	0.50	0.61	0.71	0.79	1.12	1.58	1.77	0.057	3/8"	0.88	1.81
EZNF06			0.0949	0.21	0.30	0.42	0.52	0.60	0.73	0.85	0.95	1.34	1.90	2.12	0.062				
EZNF08			0.126	0.28	0.40	0.57	0.69	0.80	0.98	1.13	1.26	1.79	2.53	2.83	0.072				
1/4" - 1/2"			EZNF10	0.158	0.35	0.50	0.71	0.87	1.00	1.22	1.41	1.58	2.24	3.16	3.54	0.080	1/2"	0.88	1.87
	EZNF15		0.237	0.53	0.75	1.06	1.30	1.50	1.84	2.12	2.37	3.35	4.74	5.30	0.094				
	EZNF20		0.316	0.71	1.00	1.41	1.73	2.00	2.45	2.83	3.16	4.47	6.32	7.07	0.109				
	1/4" - 1/2"		EZNF30	0.474	1.06	1.50	2.12	2.60	3.00	3.67	4.24	4.74	6.71	9.49	10.6	0.141	1/2"	0.88	1.87
		EZNF40	0.632	1.41	2.00	2.83	3.46	4.00	4.90	5.66	6.32	8.94	12.6	14.1	0.156				
		EZNF50	0.791	1.77	2.50	3.54	4.33	5.00	6.12	7.07	7.91	11.2	15.8	17.7	0.172				
		EZNF60	0.949	2.12	3.00	4.24	5.20	6.00	7.35	8.49	9.49	13.4	19.0	21.2	0.185				
EZNF70		1.11	2.47	3.50	4.95	6.06	7.00	8.57	9.90	11.1	15.6	22.1	24.8	0.203					
1/4" - 1/2"	EZNF80	1.26	2.83	4.00	5.66	6.93	8.00	9.80	11.3	12.6	17.9	25.3	28.3	0.219	1/2"	0.88	2.23	2.9	
	EZNF90	1.42	3.18	4.50	6.36	7.79	9.00	11.0	12.7	14.2	20.1	28.4	31.8	0.234					

Flow Rate (GPM) = $K \sqrt{PSI}$

Standard Materials: 303 Stainless Steel, 316 Stainless Steel, Brass, Viton gaskets standard.

EZSPN Flow Rates and Dimensions

Fan 15°, 25°, 35°, 40° and 50° Spray Angles 1/8" to 1/2" Pipe Sizes

Pipe Size	Nozzle Number	Available Spray Angles	K Factor	GALLONS PER MINUTE @ PSI											Equiv. Orifice Dia. (in.)	Deflection Angle @ Spray Angle			Approx. Assembly Dim. (in.)		Wt. (oz.)
				5 PSI	10 PSI	20 PSI	40 PSI	80 PSI	100 PSI	200 PSI	400 PSI	500 PSI	15°	25°		35°	40°	50°	Hex	Length	
1/8"	EZSPN10	15° 35° 50°	0.158	0.35	0.50	0.71	1.00	1.40	1.60	2.20	3.16	3.54	0.057	5°	35°	55°	1/8"	0.88	1.99	2.2	
	EZSPN20	15° 35° 50°	0.316	0.71	1.00	1.41	2.00	2.83	3.16	4.47	6.32	7.07	0.080	5°	35°	45°					
	EZSPN25	15° 35° 50°	0.395	0.88	1.25	1.77	2.50	3.54	3.90	5.59	7.91	8.84	0.094	5°	35°	50°					
TO	EZSPN30	15° 35°	0.474	1.06	1.50	2.12	3.00	4.24	4.74	6.71	9.49	10.6	0.109	5°	28°		1/4"	0.88	2.11	2.2	
	EZSPN40	15° 25° 35° 40° 50°	0.632	1.41	2.00	2.83	4.00	5.66	6.32	9.00	12.6	14.1	0.141	5°	20°	35°					
	EZSPN50	15° 35° 40°	0.791	1.77	2.50	3.54	5.00	7.07	7.91	11.2	15.8	17.7	0.156	5°	23°	33°					
1/2"	EZSPN60	15° 35° 40° 50°	0.949	2.12	3.00	4.24	6.00	8.49	9.49	13.4	19.0	21.2	0.172	5°	20°	33°	3/8"	0.88	2.17	2.6	
	EZSPN70	15° 35° 40° 50°	1.11	2.47	3.50	4.95	7.00	9.90	11.1	15.7	22.1	24.7	0.185	5°	29°						
1/4"	EZSPN80	15° 35° 40° 50°	1.27	2.83	4.00	5.66	8.00	11.3	12.6	17.9	25.3	28.3	0.203	5°	25°	26°	1/2"	0.88	2.23	2.9	
	EZSPN90	15° 35° 40° 50°	1.42	3.18	4.50	6.36	9.00	12.7	14.2	20.1	28.5	31.8	0.219	5°	28°						
1/2"	EZSPN100	15° 35° 40° 50°	1.58	3.54	5.00	7.07	10.0	14.1	15.8	22.4	31.6	35.4	0.234	5°	25°	28°					

Flow Rate (GPM) = $K \sqrt{PSI}$ SPN80 - SPN100 not available with 1/8" base

Standard Materials: 303 Stainless Steel, 316 Stainless Steel, Brass, Viton gaskets standard.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.



CALL 413-772-0846
Call for the name of your nearest BETE representative.