



TF

Wide Range of Flows and Angles

DESIGN FEATURES

- The original spiral nozzle invented by BETE and continuously improved!
- High energy efficiency
- One-piece/no internal parts
- Clog-resistant performance
- High discharge velocity
- Male connection standard; female connection available by special order

SPRAY CHARACTERISTICS

- Wide range of flow rates and spray angles
- Fine atomization

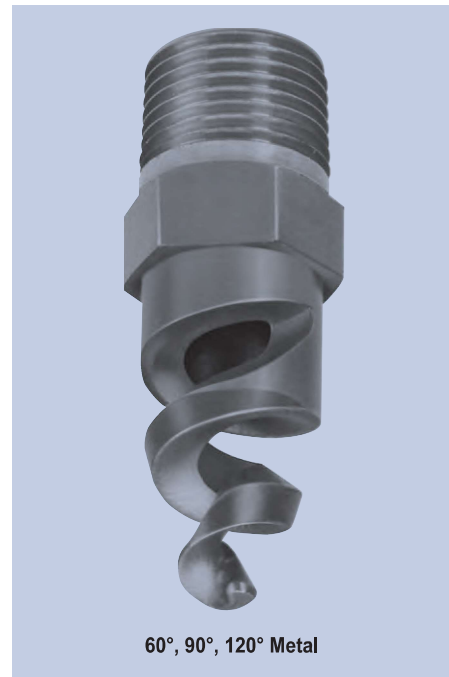
Spray patterns: Full Cone.

For Hollow Cone, see page 45

Spray angles: 50° to 180°

Flow rates: 0.5 to 3320 gpm
(Higher flow rates available)

Available with FM approval: N series (page 102), 1/4" TF8 NN, FCN in brass, 1/2" TF24-150 in multiple materials



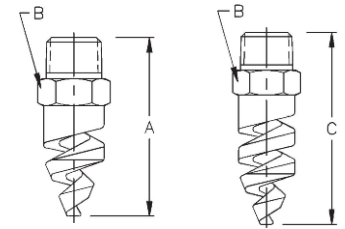
Full Cone 60° (NN)



Full Cone 90° (FCN)



Full Cone 150°/170°



90°, 120°

150°, 170°

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

TF Full Cone Flow Rates and Dimensions

Full Cone, 60° (NN), 90° (FCN or FFCN), 120° (FC or FFC), 150°, and 170° Spray Angles, 1/8" to 4" Pipe Sizes

Male Pipe Size	Nozzle Number	Available Spray Angles					K Factor	GALLONS PER MINUTE @ PSI															Approx. (in.)		Dim. (in.) for Metal Only*			Wt. (oz.)	
		60°	90°	120°	150°	170°		5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI	100 PSI	200 PSI	400 PSI	Orif. Dia.	Free Pass. Dia.	A**	B	C	60° Metal	90° 120° Metal Plas.				
1/8	TF6	60°	90°	120°	150°	170°	0.221	0.495	0.70	0.99	1.21	1.40	1.57	1.71	1.98	2.21	3.13	4.43	0.09	0.09	1.69	0.56	1.69	1.00	0.20				
	TF8	60°	90°	120°	150°	170°	0.411	0.919	1.30	1.84	2.25	2.60	2.91	3.18	3.68	4.11	5.81	8.22	0.13	0.13	1.69	0.56	2.19						
1/4	TF6	60°	90°	120°	150°	170°	0.221	0.495	0.70	0.99	1.21	1.40	1.57	1.71	1.98	2.21	3.13	4.43	0.09	0.09	1.88	0.56	1.88						
	TF8	60°	90°	120°	150°	170°	0.411	0.919	1.30	1.84	2.25	2.60	2.91	3.18	3.68	4.11	5.81	8.22	0.13	0.13	1.88	0.56	2.38	1.25	0.20				
	TF10	60°	90°	120°	150°	170°	0.632	1.41	2.00	2.83	3.46	4.00	4.47	4.90	5.66	6.32	8.94	12.6	0.16	0.13	1.88	0.56	2.38						
3/8	TF6	60°	90°	120°			0.221	0.495	0.70	0.99	1.21	1.40	1.57	1.71	1.98	2.21	3.13	4.43	0.09	0.09									
	TF8	60°	90°	120°			0.411	0.919	1.30	1.84	2.25	2.60	2.91	3.18	3.68	4.11	5.81	8.22	0.13	0.13									
	TF10	60°	90°	120°			0.632	1.41	2.00	2.83	3.46	4.00	4.47	4.90	5.66	6.32	8.94	12.6	0.16	0.13									
	TF12	60°	90°	120°	150°	170°	0.949	2.12	3.00	4.24	5.20	6.00	6.71	7.35	8.49	9.49	13.4	19.0	0.19	0.13	1.88	0.69	2.38	1.63	0.25				
	TF14	60°	90°	120°	150°	170°	1.28	2.86	4.05	5.73	7.01	8.10	9.06	9.92	11.5	12.8	18.1	25.6	0.22	0.13									
	TF16	60°	90°	120°	150°	170°	1.68	3.75	5.30	7.50	9.18	10.6	11.9	13.0	15.0	16.8	23.7	33.5	0.25	0.13									
1/2	TF20	60°	90°	120°	150°	170°	2.61	5.83	8.25	11.7	14.3	16.5	18.4	20.2	23.3	26.1	36.9	52.2	0.31	0.13									
	TF24	60°	90°	120°	150°	170°	3.81	8.52	12.1	17.0	20.9	24.1	26.9	29.5	34.1	38.1	53.9	76.2	0.38	0.19	2.50	0.88	3.06	3.00	0.50				
3/4	TF28	60°	90°	120°	150°	170°	5.22	11.7	16.5	23.3	28.6	33.0	36.9	40.4	46.7	52.2	73.8	104	0.44	0.19									
	TF32	60°	90°	120°	150°	170°	6.64	14.8	21.0	29.7	36.4	42.0	47.0	51.4	59.4	66.4	93.9	133	0.50	0.19	2.75	1.13	3.50	5.50	0.88				
1	TF40	60°	90°	120°	150°	170°	10.6	23.7	33.5	47.4	58.0	67.0	74.9	82.1	94.8	106	150	212	0.63	0.25	3.63	1.38	4.38	8.50	2.50				
	TF48	60°	90°	120°	150°	170°	15.0	33.6	47.5	67.2	82.3	95.0	106	116	134	150	212	300	0.75	0.25									
1 1/2	TF56	60°	90°	120°	150°	170°	20.4	45.6	64.5	91.2	112	129	144	158	182	204	288	408	0.88	0.31				5.38					
	TF64	60°	90°	120°	150°	170°	26.7	59.7	84.5	120	146	169	189	207	239	267	378	534	1.00	0.31	4.38	2.00	5.38	22.0	4.25				
	TF72	60°	90°	120°	150°	170°	30.4	67.9	96.0	136	166	192	215	235	272	304	429	607	1.13	0.31				5.63					
2	TF88	60°	90°	120°	150°	170°	44.3	99.0	140	198	242	280	313	343	396	443	626	885	1.38	0.44	5.63	2.50	5.88	46.0	8.00				
	TF96 ¹	60°	90°	120°	150°	170°	55.9	125	177	250	306	354	395	433	500	559	791	1120	1.50	0.44	6.88	2.50	7.00	54.0	9.00				
3	TF112	60°	90°	120°	150°	170°	81.0	181	256	362	443	512	572	627	724	810	1150	1620	1.75	0.56				114	20.0				
	TF128	60°	90°	120°	150°	170°	107	239	339	480	588	679	759	831	960	1070	1510	2150	2.00	0.56	8.63	3.50	9.25						
4	TF160	60°	90°	120°			166	371	525	742	909	1050	1170	1290	1480	1660	2350	3320	2.50	0.63	10.1	4.50		169	27.0				

Flow Rate (GPM) = K √PSI *Dimensions are for bar stock, cast sizes may vary. **60° nozzles slightly longer, consult BETE. ¹ Three turn nozzles

Standard Materials: Brass, 316 Stainless Steel, PVC, Polypropylene, and PTFE (Poly. not available for TF6 thru TF10).

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.