



FULL CONE NOZZLES

ABSORPTION · FIRE PROTECTION
CHEMICAL INJECTION · RINSING
FOAM CONTROL · CLEANING
GAS TREATMENT · DESUPERHEATING
MIST ELIMINATION · COOLING
DUST CONTROL



FULL CONE NOZZLES INTRODUCTION



CHOOSE FROM THE INDUSTRY'S LARGEST SELECTION

Styles:

- Conventional
- Quick-connect
- Maximum free passage

Spray patterns:

- Standard
- Wide angle
- Narrow angle
- Square
- Wide angle square
- Oval

Spray angles: 15° to 170°

Flow rate range: .05 to 8728 gpm (.19 to 32530 lpm)

Operating pressure range: up to 400 psi (25 bar)

Connections:

- 1/8" to 12" pipe sizes
- Female and male NPT and BSPT
- Flange

Materials:

- Brass
- Mild steel
- 303 stainless steel
- 316 stainless steel
- Polyvinyl chloride
- Hardened stainless steel
- Kynar®
- Polypropylene
- ProMax®
- PTFE
- Other specialty materials available

See Trademark Registration and Ownership, page i-1.

OPTIMIZE THE PERFORMANCE OF FULLJET® NOZZLES:

Prevent debris from damaging and clogging nozzles, valves and pumps by using strainers. **T-style strainers** are available in a wide range of sizes, materials and pressure ratings.

See page F4



Precisely position spray nozzles to ensure proper coverage of target and minimize overspray with **adjustable ball fittings**. Leak-proof, clog-resistant fittings are available in several sizes and styles.

See page F23



Use **split-eyelet connectors** to simplify and facilitate installation of nozzles, gauges, hoses and other fittings. Economical connectors eliminate cutting, threading and brazing.

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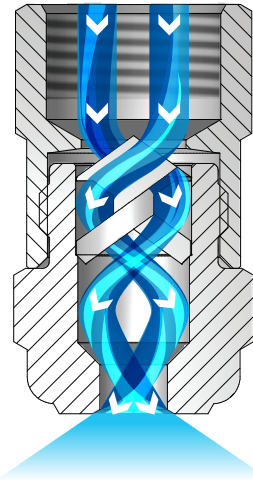
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OVERVIEW: FULLJET G AND H

- Solid cone-shaped spray pattern with round impact area
- Unique vane design minimizes turbulence of the fluid to ensure uniform spray distribution and consistent spray coverage
- Large unobstructed flow passages minimize clogging and increase throughput
- Removable caps and vanes in most models make maintenance fast and easy
- Standard, wide and narrow spray angles



FullJet G and H Nozzles

The liquid enters the nozzle and proceeds through the vane. The vane causes the liquid to swirl. The design of the nozzle ensures the liquid continues to swirl as it enters the orifice. The liquid breaks up as it exits the nozzle orifice forming a well defined cone pattern. The drops are uniform in size and distributed equally throughout the spray pattern.

FULLJET G NOZZLES

- Spray angles: Standard – 43° to 94°, Narrow – 15° or 30°, Wide – 112° to 120°
- Uniform spray distribution from .07 to 25 gpm (.29 to 92 lpm)
- Operating pressures up to 300 psi (20 bar)
- Wall-mount versions for installation on room exterior, vessel or pipeline
- Right-angle mount versions for 90° angle mounting in areas with limited space



G
1/8" to 1/2" female conn.
Removable cap and vane



GG
1/8" to 1/2" male conn.
Removable cap and vane

FULLJET G OPTIONS

GD – 1/8" to 1/2" female conn.
Wall-mount
Removable cap and vane

GGD – 1/8" to 1/2" male conn.
Wall-mount
Removable cap and vane

GA – 1/8" to 1/2" female conn.
Angle-type
Removable cap and vane

GGA – 1/8" to 1/2" male conn.
Angle-type
Removable cap and vane


G-15
1/8" to 1/2" female conn.
Removable cap and vane

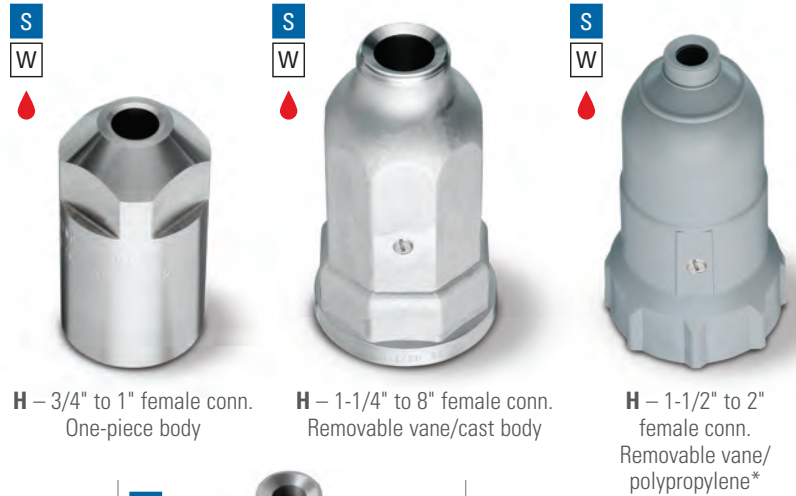
GG-15
1/8" to 1/2" male conn.
Removable cap and vane

G-30
1/8" to 3/4" female conn.
Removable cap and vane

GG-30
1/8" to 3/4" male conn.
Removable cap and vane

FULLJET H NOZZLES

- Spray angles: Standard – 43° to 94°, Narrow – 15° or 30°, Wide – 102° to 125°
- Uniform spray distribution from .07 to 5324 gpm (.29 to 19842 lpm)
- Operating pressures up to 300 psi (20 bar)
- Wall-mount versions for installation on room exterior, vessel or pipeline
- Certain nozzles available with UL listing 



FULLJET H OPTIONS

 <p>HH – 1/8" to 1" male conn. One-piece body</p>	 <p>D-HH – 1/2" to 3/4" male conn. One-piece body/plastic**</p>	 <p>HF – 4" to 10" flange conn. Removable vane/cast body</p>	
 <p>HD – 3/4" to 3" female conn. Wall-mount One-piece body</p>	 <p>H-15 – 3/4" to 3" female conn. One-piece body Removable vane</p>	 <p>H-15 – 4" to 5" female conn. Two-piece cast body Removable vane</p>	 <p>HH-30 – 1" to 2-1/2" male conn. One-piece body Removable vane</p>

*Max. temperature for polypropylene: 150°F (66°C). ** Max. temperature for Kynar®: 212°F (100°C).

ORDERING INFORMATION

FULLJET G, GD, GA, G-15, G-30, H, HF, HD, H-15 AND HH-30

Inlet Conn.	Nozzle Type	–	Material Code	Capacity Size	Example
					1/4 G – SS 10

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

FULLJET D-HH

Nozzle Prefix	Inlet Conn.	Nozzle Type	–	Material Code	Spray Angle	Capacity Size	Example
							D 1/2 HH – PP 70 24

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

**RELATIVE DROP SIZE
IN MICRONS**



Drop size will vary based on flow rate and pressure.

QUICK REFERENCE GUIDE

Model	Connection/ Type	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
G	F	1/8 to 1/2	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)	B7	B12
GG	M	1/8 to 1/2			
GD	F, Wall-mount	1/8 to 1/2			
GGD	M, Wall-mount	1/8 to 1/2			
GA	F, Angle-type	1/8 to 1/2			
GGA	M, Angle-type	1/8 to 1/2			
G-W	F	1/8 to 1/2	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)	B10	
GG-W	M	1/8 to 1/2			
GA-W	F, Angle-type	1/8 to 1/2			
GGA-W	M, Angle-type	1/8 to 1/2			
G-15	F	1/8 to 1/2	Brass, 303 stainless steel (SS)	B11	
GG-15	M	1/8 to 1/2			
G-30	F	1/8 to 3/4	Brass, 303 stainless steel (SS), 316 stainless steel/303 caps (SS)	B11	
GG-30	M	1/8 to 3/4			
H	F	3/4 to 1	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)	B7	
H	F, Cast	1-1/4 to 8	Brass, 316 stainless steel (SS)	B7–B9	
H	F	1-1/2 to 2	Polypropylene (PP)	B8	
HH	M	1/8 to 1	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)	B7	
D-HH	M	1/2 to 3/4	Kynar®, Polypropylene (PP)	B9	
HF	Flange, Cast	4 to 10	Brass, 316 stainless steel (SS)	B8, B9	
HD	F, Wall-mount	3/4 to 3	Brass, Mild steel (I), 303 stainless steel (SS)	B7, B8	
H-W	F	3/4 to 1	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS)	B10	
H-W	F, Cast	1-1/4 to 4	Brass, 316 stainless steel (SS)		
H-W	F	1-1/2 to 2	Polypropylene (PP)		
HH-W	M	1/8 to 1-1/2	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)	B11	
H-15	F	3/4 to 3	Brass, 303 stainless steel (SS)		
H-15	F, Cast	4 to 5	Brass, 316 stainless steel/303 caps (SS)		
HH-30	M	1 to 2-1/2	Brass, 303 stainless steel (SS), 316 stainless steel/303 caps (SS)	B11	

F = female thread; 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										Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)										Spray Angle (°)		
	Standard				Wall-Mount			Angle						0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	0.5 bar	1.5 bar	6 bar		
	G	GG	H	HH	HF	GD	HD	GGD	GA	GGA																
1/8	•	•		•		•		•			1	.79	.64	-	-	.38	.54	.74	1.0	1.1	1.3	-	58	53		
	•	•		•							1.5	1.2	.64	.44	.49	.57	.80	1.1	1.5	1.6	1.9	52	65	59		
	•	•		•		•		•	•	•	2	1.2	1.0	.59	.65	.76	1.1	1.5	2.0	2.2	2.6	43	50	46		
	•	•		•		•		•	•	•	3	1.5	1.0	.88	.98	1.1	1.6	2.2	3.1	3.3	3.9	52	65	59		
	•	•		•		•		•	•	•	3.5	1.6	1.3	1.0	1.1	1.3	1.9	2.6	3.6	3.8	4.5	43	50	46		
									•	•		3.9	2.0	1.0	1.1	1.3	1.5	2.1	2.9	4.0	4.3	5.1	77	84	79	
	•	•		•		•		•	•	•	5	2.0	1.3	1.5	1.6	1.9	2.7	3.7	5.1	5.5	6.5	52	65	59		
1/4								•	•		6.1	2.3	1.3	1.8	2.0	2.3	3.3	4.5	6.2	6.7	7.9	69	74	68		
	•	•		•		•		•	•	•	6.5	2.4	1.6	1.9	2.1	2.5	3.5	4.8	6.7	7.1	8.4	45	50	46		
	•	•		•		•		•	•	•	10	3.2	1.6	3.0	3.3	3.8	5.4	7.5	10.3	11.0	13.0	58	67	61		
3/8								•	•		12.5	3.2	1.6	3.7	4.1	4.8	6.8	9.3	12.8	13.7	16.2	69	74	68		
	•	•		•		•		•	•	•	9.5	2.6	2.4	2.8	3.1	3.6	5.1	7.1	9.7	10.4	12.3	45	50	46		
	•	•		•		•		•	•	•	15	3.6	2.4	4.4	4.9	5.7	8.1	11.2	15.4	16.5	19.4	64	67	61		
									•	•		20	4.0	2.8	6.0	6.6	7.6	10.7	14.5	19.6	22	26	76	80	73	
1/2	•	•		•		•		•	•	•	22	4.5	2.8	6.5	7.2	8.4	11.9	16.4	23	24	28	87	90	82		
	•	•		•		•		•	•	•	16	3.5	3.2	4.7	5.2	6.1	8.7	11.9	16.4	17.6	21	48	50	46		
	•	•		•		•		•	•	•	25	4.6	3.2	7.4	8.2	9.5	13.5	18.6	26	27	32	64	67	61		
	•	•		•		•		•	•	•	32	5.2	3.6	9.4	10.4	12.2	17.3	24	33	35	41	72	75	68		
									•	•		50	6.7	4.0	14.7	16.3	19.1	27	37	51	55	65	91	94	86	
3/4			•	•		•					2.5	4.9	4.4	8.7	9.6	11.2	15.9	22	30	32	38	48	50	46		
			•	•		•					4.0	6.4	4.4	13.9	15.4	18.0	26	35	48	52	61	67	70	63		
			•	•		•					7.0	9.5	5.2	24	27	31	45	61	84	91	107	89	92	84		
1			•	•		•					4.2	6.0	5.6	14.6	16.2	18.9	27	37	51	54	64	48	50	46		
			•	•		•					7.0	8.3	5.6	24	27	31	45	61	84	91	107	67	68	62		
			•	•		•					8.0	9.5	5.6	28	31	36	51	70	97	104	122	72	81	82		
			•	•		•					10	11.9	5.6	35	38	45	64	88	121	130	153	78	90	94		
			•	•		•					12	11.9	6.4	42	46	54	77	105	145	155	183	89	92	84		
			•	•		•																				
1-1/4			•			•					6	7.4	6.4	21	23	27	38	53	72	78	92	48	50	44		
			•			•					10	9.6	6.4	35	38	45	64	88	121	130	153	64	67	58		
			•			•					12	10.7	6.4	42	46	54	77	105	145	155	183	66	70	60		
			•			•					14	12.3	6.4	49	54	63	89	123	169	181	214	77	80	70		
			•			•					16	12.7	7.9	56	62	72	102	140	193	207	244	73	76	66		
		•			•					20	15.1	7.9	69	77	90	128	175	241	259	305	90	93	81			

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type										Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)										Spray Angle (°)		
	Standard					Wall-Mount			Angle					0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	0.5 bar	1.5 bar	6 bar		
	G	GG	H	HH	HF	GD	HD	GGD	GA	GGA																
1-1/2			●				●				10	9.5	8.7	35	38	45	64	88	121	130	153	48	50	44		
			●				●				16	12.7	8.7	56	62	72	102	140	193	207	244	72	74	64		
			●				●				20	14.3	8.7	69	77	90	128	175	241	259	305	74	76	66		
			●				●				30*	18.3	10.3	104	115	135	191	263	362	389	458	91	94	82		
2			●				●				17	12.7	11.1	59	65	76	108	149	205	220	259	49	50	44		
			●				●				30	17.3	11.1	104	115	135	191	263	362	389	458	72	74	64		
			●				●				35	19.2	11.1	122	135	157	223	307	422	453	534	75	77	68		
			●				●				40	21.0	11.1	139	154	180	255	351	483	518	611	78	80	70		
			●				●				50*	23.8	14.3	174	192	225	319	439	603	648	763	83	85	75		
			●				●				60*	28.6	14.3	208	231	269	383	526	724	777	916	98	100	86		
2-1/2			●				●				25	15.1	14.3	87	96	112	159	219	302	324	382	49	50	44		
			●				●				50	22.2	14.3	174	192	225	319	439	603	648	763	72	74	64		
			●				●				60	24.6	14.3	208	231	269	383	526	724	777	916	76	78	68		
			●				●				70	28.6	14.3	243	269	314	446	614	845	907	1068	79	82	72		
			●				●				80	28.6	17.5	278	308	359	510	702	965	1036	1221	86	88	77		
			●				●				90	30.2	17.5	312	346	404	574	790	1086	1166	1374	95	97	84		
3			●				●				42	19.1	17.5	146	162	189	268	368	507	544	641	49	50	44		
			●				●				80	27.8	17.5	278	308	359	510	702	965	1036	1221	81	84	73		
			●				●				90	30.2	17.5	312	346	404	574	790	1086	1166	1374	86	89	77		
			●				●				100	32.5	17.5	347	385	449	638	877	1207	1295	1526	92	95	83		
			●				●				110	33.3	18.2	382	423	494	702	965	1327	1425	1679	86	89	77		
			●				●				120	34.9	20.6	417	462	539	765	1053	1448	1554	1832	102	105	89		
4			●		●						160	42.9	19.1	556	616	719	1020	1404	1931	2073	2442	87	90	70		
			●		●						180	47.2	22.2	625	693	808	1148	1579	2172	2332	2747	92	95	83		
			●		●						200	50.8	25.4	694	769	898	1276	1755	2413	2591	3053	97	100	87		
			●		●						210	54.8	25.4	729	808	943	1339	1842	2534	2720	3205	102	105	91		
5			●		●						250	47.6	28.6	868	962	1123	1594	2193	3017	3238	3816	89	91	80		
			●		●						280	52.8	28.6	972	1077	1258	1786	2456	3379	3627	4274	93	96	84		
			●		●						320	68.3	34.9	1111	1231	1437	2041	2807	3861	4145	4884	97	100	87		
			●		●						330	72.2	34.9	1146	1270	1482	2105	2895	3982	4275	5037	102	105	91		
6			●		●						350	61.1	41.3	1215	1347	1572	2232	3070	4223	4534	5342	87	90	78		
			●		●						400	69.1	41.3	1389	1539	1797	2551	3509	4827	5181	6105	92	95	83		
			●		●						450	77	44.5	1562	1731	2021	2870	3948	5430	5829	6868	97	100	87		
			●		●						480	81.8	44.5	1667	1847	2156	3061	4211	5792	6218	7326	102	105	91		

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

*These capacity sizes are not available for H in polypropylene.

Highlighted column shows the rated pressure.



S PERFORMANCE DATA: **STANDARD ANGLE SPRAY**

Inlet Conn. (in.)	Nozzle Type										Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)										Spray Angle (°)		
	Standard					Wall-Mount			Angle					0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	0.5 bar	1.5 bar	6 bar		
	G	GG	H	HH	HF	GD	HD	GGD	GA	GGA																
8			●		●						500	69.9	47.6	1736	1924	2246	3189	4386	6033	6477	7632	78	80	70		
			●		●						600	80.2	47.6	2083	2308	2695	3827	5264	7240	7772	9158	86	88	77		
			●		●						700	91.3	47.6	2430	2693	3144	4464	6141	8447	9068	10684	92	95	83		
			●		●						800	102	57.2	2778	3078	3593	5102	7018	9654	10363	12211	102	105	91		
			●		●						900	124	57.2	3125	3463	4042	5740	7895	10860	11658	13737	106	110	96		
10					●						800	85.1	63.5	2778	3078	3593	5102	7018	9654	10363	12211	78	80	70		
					●						1000	101	63.5	3472	3847	4492	6378	8773	12067	12954	15263	86	89	77		
					●						1200	122	66.7	4167	4617	5390	7653	10527	14480	15544	18316	97	100	87		
					●						1300	135	66.7	4514	5002	5839	8291	11404	15687	16840	19842	103	106	92		

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.

S PERFORMANCE DATA: **STANDARD ANGLE SPRAY**

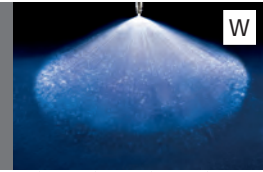
Inlet Conn. (in.)	Nozzle Type			Capacity Size	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)									
	D-HH					0.4 bar	0.5 bar	0.7 bar	1.5 bar	2 bar	3 bar	4 bar	6 bar	7 bar	10 bar
	Spray Angle														
	70°	90°	120°												
1/2	●	●		24	4.0	6.4	7.6	9.1	12.5	15.1	17.4	20.8	23.8	26.1	31.4
		●		26	4.0	7.2	8.3	9.8	13.6	16.3	18.9	22.3	25.7	28.4	34.1
	●	●		27.5	4.1	7.6	8.7	10.4	14.4	17.4	20.1	23.8	27.3	29.9	36.3
	●	●	●	31	2.9	8.7	9.8	11.7	16.3	19.3	22.3	26.9	30.7	33.7	40.9
		●	●	40	3.5	11	12.9	15.1	20.8	25	29.1	34.4	39.4	43.5	52.6
		●	●	50	4.1	13.6	15.9	18.9	26.1	31.4	36.3	43.2	49.2	54.5	65.9
		●	●	58	5.0	15.9	18.5	22	30.3	36.3	42	50	57.2	63.2	76.5
3/4		●		3.4	5.0	11	12.9	15.1	20.8	25.4	29.1	34.4	39.4	43.5	52.6
		●		4.1	5.0	13.2	15.5	18.2	25	30.7	34.8	41.6	47.7	52.2	63.2
		●		4.8	5.0	15.5	18.2	21.2	29.1	35.6	40.5	48.8	55.6	61.3	73.8
		●	●	6	5.6	19.7	22.7	26.9	37.1	44.3	51.5	60.9	69.7	77.6	93.5
		●	●	7	5.6	22.7	26.5	31.4	43.2	51.9	60.2	71.2	81.4	90.5	109.4
		●	●	8.5	5.7	27.6	32.2	37.9	52.2	62.8	72.7	86.3	98.4	109.0	131.7
			●	10	5.7	32.6	37.9	44.7	61.3	73.8	84.4	101.8	116.2	128.7	155.2

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.



W PERFORMANCE DATA:
WIDE ANGLE SPRAY



Inlet Conn. (in.)	Nozzle Type						Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)						Spray Angle (°)			
	Standard				Angle					0.4 bar	0.5 bar	0.7 bar	1 bar	1.5 bar	3 bar	6 bar	0.4 bar	0.7 bar	6 bar
	G-W	GG-W	HH-W	H-W	GA-W	GGA-W													
1/8	•	•					1.5W	1.2	.64	-	-	.57	.67	.80	1.1	1.5	-	120	86
	•	•	•				2.8W	1.6	1.0	-	-	1.1	1.2	1.5	2.0	2.7	-	120	102
	•	•	•		•	•	4.3W	2.0	1.0	-	-	1.6	1.9	2.3	3.1	4.2	-	120	102
	•	•					5.6W	2.4	1.0	-	1.8	2.1	2.5	3.0	4.0	5.5	-	120	102
	•	•	•		•	•	8W	2.4	1.3	-	2.6	3.0	3.6	4.3	6.0	8.2	-	120	103
1/4	•	•					10W	2.8	1.3	3.0	3.3	3.8	4.5	5.4	7.5	10.3	112	120	103
	•	•					12W	3.2	1.3	3.5	3.9	4.6	5.4	6.5	8.9	12.3	114	120	103
	•	•	•		•	•	14W	3.6	1.6	4.2	4.6	5.3	6.2	7.5	10.2	13.8	114	120	103
3/8	•	•	•				17W	4.0	1.6	5.1	5.6	6.5	7.6	9.1	12.3	16.7	114	120	103
	•	•	•		•	•	20W	4.4	2.4	6.0	6.6	7.6	8.9	10.7	14.5	19.6	114	120	104
	•	•	•				24W	4.8	2.4	7.2	7.9	9.1	10.7	12.8	17.3	24	114	120	104
	•	•	•				27W	5.2	2.8	8.0	8.9	10.3	12.0	14.4	19.5	26	114	120	106
1/2	•	•	•				30W	5.6	2.8	8.9	9.9	11.4	13.4	16.0	22	29	114	120	108
	•	•	•		•	•	35W	6.0	3.2	10.4	11.5	13.3	15.6	18.7	25	34	114	120	108
	•	•	•				40W	6.4	3.2	11.9	13.1	15.2	17.9	21	29	39	114	120	108
	•	•	•				45W	6.4	3.6	13.4	14.8	17.1	20	24	33	44	114	120	110
	•	•	•		•	•	50W	6.7	4.0	14.7	16.3	19.1	22	27	37	51	114	120	112
3/4			•	•			6W	9.9	4.4	21	23	27	31	37	51	69	115	120	112
1			•	•			11W	13.1	5.6	38	42	49	57	69	93	126	117	120	117
1-1/4			•	•			16W	15.5	6.4	56	62	71	83	100	135	184	118	121	119
1-1/2			•	•			24W	18.3	10.3	84	92	107	125	150	203	275	119	124	119
2				•			47W	25.0	11.1	164	181	210	245	293	398	539	120	124	119
2-1/2				•			70W	31.8	14.3	244	269	312	365	436	592	803	120	125	119
3				•			95W	34.9	17.5	331	365	424	496	592	803	1090	120	125	119
4				•			188W	50.8	20.6	655	723	838	981	1172	1590	2157	120	125	119

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.



N PERFORMANCE DATA:
NARROW ANGLE SPRAY

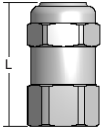
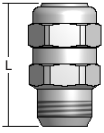
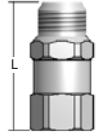
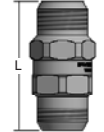


Inlet Conn. (in.)	Nozzle Type						Capacity Size	Orifice Dia. Nom. (mm)	Flow Rate Capacity (liters per minute)										Spray Angle (°)			
	G-15	G-30	GG-15	GG-30	H-15	HH-30			0.7 bar	1 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	15 bar	20 bar	0.7 bar	1 bar	3 bar	7 bar	
1/8	●		●				1507	1.6	1.3	1.6	2.0	2.8	3.9	4.2	5.0	6.2	7.1	13	14	15	15	
	●		●				1514	2.4	2.7	3.2	3.9	5.5	7.8	8.4	10.1	12.4	14.3	13	14	15	15	
1/4	●		●				1530	3.2	5.7	6.8	8.4	11.8	16.8	18.1	22	26	31	13	14	15	15	
3/8	●		●				1550	4.4	9.5	11.4	14.0	19.7	28	30	36	44	51	13	14	15	15	
1/2	●		●				1590	5.6	17.2	21	25	36	50	54	65	79	92	13	14	15	15	
3/4					●		15150	7.5	29	34	42	59	84	90	108	132	153	13	14	15	15	
1					●		15280	9.9	53	64	78	111	156	169	202	247	285	13	14	15	15	
1-1/4					●		15430	12.3	82	98	120	170	240	259	310	380	438	14	14	15	15	
1-1/2					●		15630	15.1	120	144	176	249	352	381	455	557	643	14	14	15	15	
2					●		151150	20.2	219	262	321	454	642	694	829	1015	1172	14	14	15	15	
2-1/2					●		151750	24.6	334	399	489	691	977	1055	1261	1545	1784	14	14	15	15	
3					●		152500	29.4	477	570	698	987	1396	1508	1802	2207	2548	14	14	15	15	
4					●		154500	39.7	858	1026	1256	1777	2513	2714	3244	3973	4587	14	14	15	15	
5					●		157000	48.8	1335	1596	1954	2764	3908	4222	5046	6180	7136	14	14	15	15	
1/8		●		●			3001.4	.79	.27	.32	.39	.55	.78	.84	1.0	1.2	1.4	11	17	30	31	
		●		●			3002.5	.79	.48	.57	.70	.99	1.4	1.5	1.8	2.2	2.5	12	17	30	32	
		●		●			3004	1.2	.76	.91	1.1	1.6	2.2	2.4	2.9	3.5	4.1	20	26	30	32	
		●		●			3007	1.6	1.3	1.6	2.0	2.8	3.9	4.2	5.0	6.2	7.1	20	23	30	30	
1/4		●		●		3009	2.0	1.7	2.1	2.5	3.6	5.0	5.4	6.5	7.9	9.2	20	23	30	30		
3/8		●		●		3014	2.4	2.7	3.2	3.9	5.5	7.8	8.4	10.1	12.4	14.3	20	25	30	30		
1/2		●		●		3030	3.2	5.7	6.8	8.4	11.8	16.8	18.1	22	26	31	21	26	30	31		
3/4		●		●		3050	4.4	9.5	11.4	14.0	19.7	28	30	36	44	51	22	26	30	31		
1						●	3070	5.2	13.3	16.0	19.5	28	39	42	50	62	71	22	27	30	30	
						●	30100	6.4	19.1	23	28	39	56	60	72	88	102	22	27	30	30	
1-1/4						●	30150	7.5	29	34	42	59	84	90	108	132	153	22	27	30	30	
						●	30200	8.7	38	46	56	79	112	121	144	177	204	22	27	30	30	
1-1/2						●	30250	9.5	48	57	70	99	140	151	180	221	255	22	27	30	30	
						●	30300	10.3	57	68	84	118	168	181	216	265	306	22	27	30	30	
2						●	30350	11.1	67	80	98	138	195	211	252	309	357	22	28	30	30	
						●	30400	11.9	76	91	112	158	223	241	288	353	408	22	28	30	30	
						●	30500	13.5	95	114	140	197	279	302	360	441	510	22	28	30	30	
2-1/2						●	30600	14.7	114	137	168	237	335	362	432	530	612	22	28	30	30	
						●	30700	15.9	133	160	195	276	391	422	505	618	714	22	28	30	30	
						●	301000	19.1	191	228	279	395	558	603	721	883	1019	22	28	30	30	
						●	301100	19.8	210	251	307	434	614	663	793	971	1121	22	28	30	30	
					●	301200	20.6	229	274	335	474	670	724	865	1059	1223	22	28	30	30		

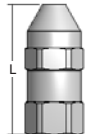
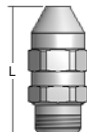
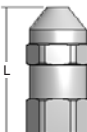
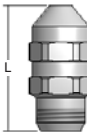
Highlighted column shows the rated pressure.



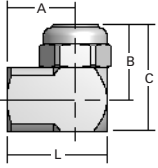
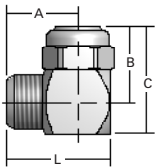
DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	Net Weight (kg)
	G (F) G-W (F)	1/8	55.6	9/16	0.03
		1/4	37.3	11/16	0.04
		3/8	46.0	13/16	0.07
		1/2	57.2	1	0.17
	GG (M) GG-W (M)	1/8	32.5	9/16	0.02
		1/4	39.7	11/16	0.04
		3/8	46.8	13/16	0.07
		1/2	56.4	1	0.17
	GD (F)	1/8	35.3	9/16	0.03
		1/4	40.9	11/16	0.04
		3/8	46.0	1	0.07
		1/2	30.6	1	0.13
	GGD (M)	1/8	36.9	9/16	0.03
		1/4	43.3	11/16	0.04
		3/8	46.8	13/16	0.07
		1/2	55.2	1	0.13

Based on the largest/heaviest version of each type.

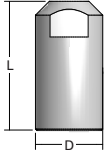
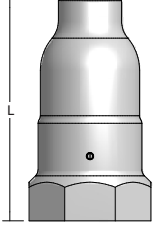
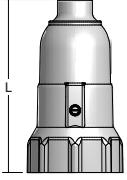
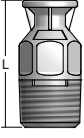
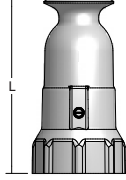
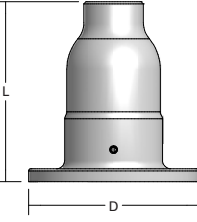
Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	Net Weight (kg)
	G-15 (F)	1/8	33.3	9/16	0.03
		1/4	41.3	11/16	0.06
		3/8	47.6	13/16	0.09
		1/2	61.1	1	0.17
	GG-15 (M)	1/8	34.9	9/16	0.03
		1/4	43.7	11/16	0.04
		3/8	48.4	13/16	0.09
		1/2	61.1	1	0.17
	G-30 (F)	1/8	35.3	11/16	0.06
		1/4	42.9	13/16	0.09
		3/8	54.0	1	0.17
		1/2	59.5	1-1/4	0.32
		3/4	84.1	1-1/2	0.43
	GG-30 (M)	1/8	38.9	23/32	0.06
		1/4	45.2	13/16	0.09
		3/8	55.6	13/16	0.16
		1/2	69.9	1-1/4	0.26
		3/4	87.3	1-1/2	0.57

Based on the largest/heaviest version of each type.

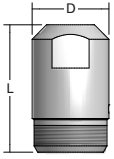
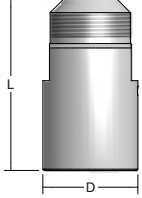
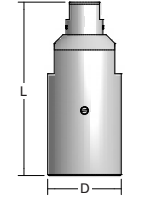
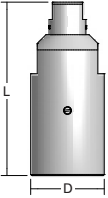
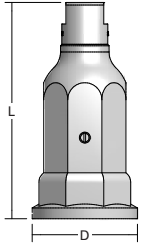
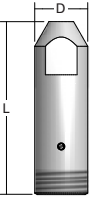
Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	A (mm)	B (mm)	C (mm)	Net Weight (kg)
	GA (F) GA-W (F)	1/8	23.1	16.0	14.3	21.4	0.04
		1/4	28.7	20.1	19.8	28.6	0.06
		3/8	32.5	22.2	30.2	40.5	0.09
		1/2	39.7	27.0	38.9	51.6	0.18
	GGA (M) GGA-W (M)	1/8	23.9	16.8	14.3	21.4	0.04
		1/4	29.5	20.8	19.8	28.6	0.06
		3/8	33.3	23.0	30.2	40.5	0.09
		1/2	40.9	28.2	34.5	47.2	0.18

Based on the largest/heaviest version of each type.

DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	D (Dia.) (mm)	Net Weight (kg)	
	H (F) H-W (F)	3/4	55.6	31.8	0.21	
		1	69.4	38.1	0.35	
	H (F) H-W (F) Cast	1-1/4	87.4	52.4 oct.	0.73	
		1-1/2	103.2	58.7 oct.	0.72	
		2	138.2	76.2 oct.	1.7	
		2-1/2	160.3	87.3 oct.	2.15	
		3	187.3	103.2 oct.	2.70	
		4	242.9	138.1 oct.	5.44	
		H (F) Cast	5	293.7	171.5 oct.	13.97
			6	365.1	203.2 oct.	22.23
	H (F) Polypropylene	1-1/2	104.1	59.5	0.06	
		2	131.8	76.2	0.11	
	D-HH (M) Polypropylene	1/2	43.2	19.1	0.01	
		3/4	53.1	25.4	0.03	
	H-W (F) Polypropylene	1-1/2	107.7	59.5	0.05	
		2	138.8	71.4	0.11	
	HF (Flange)	4	206.4	222.3	13.06	
		5	268.2	254.0	15.56	
		6	320.7	279.4	22.23	
		8	422.3	342.9	54.43	
		10	527.1	406.4	87.54	

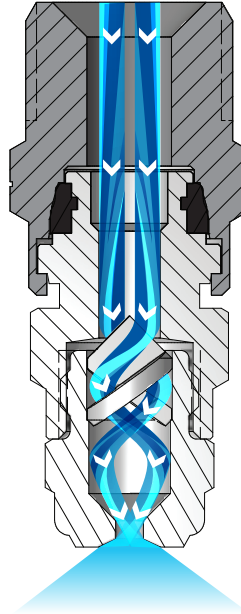
Based on the largest/heaviest version of each type.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	D (Dia.) (mm)	Net Weight (kg)
	HH (M) HH-W (M)	1/8	22.2	12.7	0.01
		1/4	22.4	13.5	0.01
		3/8	23.9	16.7	0.03
		1/2	29.4	20.6	0.04
		3/4	38.9	27.0	0.10
		1	51.6	33.3	0.20
	HH-W (M) (Wide angle only) Standard angle not available for these sizes	1-1/4	69.9	42.9	0.61
		1-1/2	82.6	50.8	0.81
	HD (F)	3/4	54.0	31.8	0.17
		1	68.3	38.1	0.29
		1-1/4	85.7	47.6	0.73
		1-1/2	103.2	57.2	1.34
		2	128.6	69.9	1.88
		2-1/2	158.8	82.6	3.56
		3	185.7	101.6	5.74
			H-15 (F)	3/4	72.2
1	92.1			38.1	0.54
1-1/4	117.5			47.6	1.04
1-1/2	127.0			58.7	1.11
2	183.4			76.2	1.24
2-1/2	219.9			79.0	2.83
	H-15 (F) Cast	4	338.1	138.1	6.70
		5	428.6	171.5	17.70
	HH-30 (M)	1	92.1	33.3	0.45
		1-1/4	154.7	44.5	1.16
		1-1/2	157.2	47.6	1.33
		2	199.6	60.3	5.32
		2-1/2	263.5	73.0	5.44
		3	263.5	88.9	14.45

Based on the largest/heaviest version of each type.

OVERVIEW: QUICK FULLJET AND PROMAX QUICK FULLJET












- Reduce maintenance time – bodies remain on pipe/header; quick quarter-turn removes/installs spray tips with automatic alignment
- Save on nozzle replacement costs – bodies can be reused, only spray tips are replaced
- Spray angles: Standard – 43° to 91°, Narrow – 15° or 30°, Wide – 102° to 120°
- Uniform spray distribution from .10 to 19.4 gpm (.38 to 72 lpm)
- Operating pressures up to 300 psi (20 bar)
- Choice of metal or ProMax materials. ProMax features:
 - ProMax material, a special grade of polypropylene, resists build-up and chemical attack; for use up to 150 psi (10 bar)
 - Internal O-ring provides a positive seal between the body and tip; seal remains attached to tip eliminating accidental loss
 - Optional external O-ring protects nozzle from contaminants
 - Tips are color-coded for easy flow rate identification



Quick FullJet and ProMax Quick FullJet Nozzles

The liquid enters the nozzle and proceeds through the vane. The vane causes the liquid to swirl. The design of the nozzle ensures the liquid continues to swirl as it enters the orifice. The liquid breaks up as it exits the nozzle orifice forming a well-defined cone pattern. The drops are uniform in size and distributed equally throughout the spray pattern.

QUICK FULLJET OPTIONS

<p>S W</p>  <p>QJLA Body 3/8" to 1/2" female conn.</p>	 <p>QJJA Body 1/8" to 1/2" male conn.</p>	 <p>QJILA Body 3/8" to 1/2" male conn.</p>	
 <p>QGA Spray Tip + QJA Body 1/8" to 1/2" female conn. Removable cap and vane</p>	<p>S W</p>  <p>QLGA Spray Tip Removable cap and vane/ Large conn. Use with QJLA and QJILA bodies</p>	<p>S W</p>  <p>QHA Spray Tip Non-removable vane Use with QJA and QJJA bodies</p>	<p>S W</p>  <p>QLHA Spray Tip Non-removable vane/ Large conn. Use with QJLA and QJILA bodies</p>
<p>N</p>  <p>QGA-15 Spray Tip Removable cap and vane Use with QJA and QJJA bodies</p>	<p>N</p>  <p>QLGA-15 Spray Tip Removable cap and vane/ Large conn. Use with QJLA and QJILA bodies</p>	<p>N</p>  <p>QGA-30 Spray Tip Removable cap and vane Use with QJA and QJJA bodies</p>	<p>N</p>  <p>QLGA-30 Spray Tip Removable cap and vane/ Large conn. Use with QJLA and QJILA bodies</p>

PROMAX QUICK FULLJET OPTIONS



QPHA Spray Tip + QPPA Body
1/8" to 1/2" male conn.
Optional external O-ring



QPHA Spray Tip – Brown
QPHA-1 .1 gpm (.38 lpm)
Use with QPPA body



QPHA Spray Tip – White
QPHA-1.5 .15 gpm (.57 lpm)
QPHA-2.8W .28 gpm (1.1 lpm)
Use with QPPA body



QPHA Spray Tip – Gray
QPHA-2 .2 gpm (.76 lpm)
Use with QPPA body



QPHA Spray Tip – Black
QPHA-3 .3 gpm (1.1 lpm)
QPHA-4.3W .43 gpm (1.6 lpm)
Use with QPPA body



QPHA Spray Tip – Orange
QPHA-3.5 .35 gpm (1.3 lpm)
QPHA-5.6W .56 gpm (2.1 lpm)
Use with QPPA body



QPHA Spray Tip – Green
QPHA-5 .5 gpm (1.9 lpm)
QPHA-8W .8 gpm (3.1 lpm)
Use with QPPA body



QPHA Spray Tip – Yellow
QPHA-6.5 .65 gpm (2.5 lpm)
QPHA-10W 1.0 gpm (3.8 lpm)
Use with QPPA body



QPHA Spray Tip – Beige
QPHA-8 .8 gpm (3.1 lpm)
Use with QPPA body



QPHA Spray Tip – Blue
QPHA-10 1.0 gpm (3.8 lpm)
QPHA-12W 1.2 gpm (4.6 lpm)
Use with QPPA body

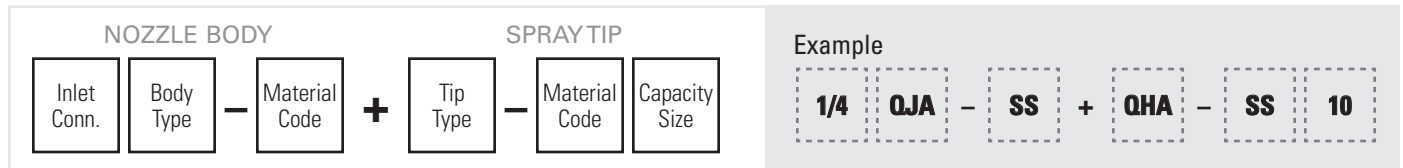


QPHA Spray Tip – Red
QPHA-15 1.5 gpm (5.7 lpm)
QPHA-14W 1.4 gpm (5.3 lpm)
Use with QPPA body

Capacities at 10 psi (0.7 bar).

ORDERING INFORMATION

METAL QUICK FULLJET



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

PROMAX QUICK FULLJET



Optional external O-ring for ProMax Quick FullJet nozzle: CP7717-2/17-VI

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

RELATIVE DROP SIZE IN MICRONS



Drop size will vary based on flow rate and pressure.

QUICK REFERENCE GUIDE

Model	Connection	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
QJA and QJLA bodies	F	1/8 to 1/2	Brass, 303 stainless steel (SS)	–	B19
QJJA and QJJLA bodies	M	1/8 to 1/2		–	
QGA, QLGA, QHA and QLHA spray tips	NA	NA		B17	
OPPA body	M	1/4 to 3/8	ProMax	–	
OPHA spray tips	NA	NA		B17	
QGA-W, QLGA-W, QHA-W and QLHA-W spray tips	NA	NA	Brass, 303 stainless steel (SS)	B18	
OPHA-W spray tips	NA	NA	ProMax		
QGA-15, QLGA-15, QGA-30 and QLGA-30 spray tips	NA	NA	Brass, 303 stainless steel (SS)		

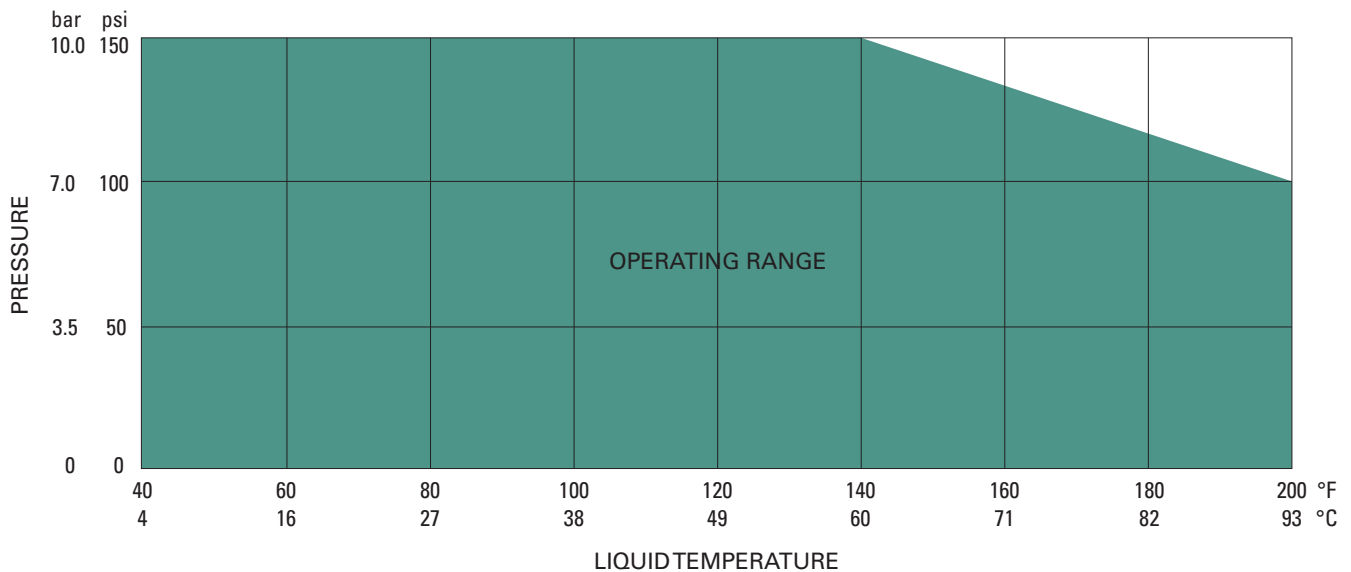
F = female thread; M = male thread. NA = not applicable. There is no material code for brass. Leave material code blank when ordering. For ProMax, the material code is built into part number. Other materials available upon request.

Brass Quick FullJet nozzles have Buna-N seal. Stainless steel FullJet nozzles have a Viton® seal.

For more dimensions and sizes, contact your sales engineer.

PROMAX QUICKJET NOZZLE MAXIMUM PRESSURES AT VARIOUS TEMPERATURES

The recommended maximum operating pressure for ProMax QuickJet nozzles varies based on temperature. As temperature increases, the recommended operating pressure decreases. Do not use outside of operating range.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Quick FullJet Tip Type					Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)										Spray Angle (°)		
	QGA	QLGA	QHA	QLHA	QPHA				0.5 bar	0.7 bar	1.5 bar	3 bar	5 bar	6 bar	7 bar	10 bar	0.5 bar	1.5 bar	6 bar		
1/8, 1/4, 3/8, 1/2	●				●	1	.89	.64	–	.38	.54	.74	.94	1.0	1.1	1.3	–	58	53		
	●				●	1.5	1.2	.64	.49	.57	.80	1.1	1.4	1.5	1.6	1.9	52	65	59		
	●				●	2	1.2	1.0	.65	.76	1.1	1.5	1.9	2.0	2.2	2.6	43	50	46		
	●				●	2.5	1.35	1.0	.82	.95	1.4	1.9	2.4	2.6	2.7	3.2	43	50	46		
	●				●	3	1.5	1.0	.98	1.1	1.6	2.2	2.8	3.1	3.3	3.9	52	65	59		
	●		●		●	3.5	1.6	1.3	1.1	1.3	1.9	2.6	3.3	3.6	3.8	4.5	43	50	46		
	●				●	4	1.7	1.3	1.3	1.5	2.2	3.0	3.8	4.1	4.4	5.2	48	55	50		
	●				●	5	2.0	1.3	1.6	1.9	2.7	3.7	4.7	5.1	5.5	6.5	52	65	59		
1/4, 3/8, 1/2	●		●		●	6.5	2.4	1.6	2.1	2.5	3.5	4.8	6.1	6.7	7.1	8.4	45	50	46		
					●	8	2.4	1.6	2.6	3.0	4.3	6.0	7.5	8.2	8.8	10.4	54	65	61		
	●		●		●	10	3.2	1.6	3.3	3.8	5.4	7.5	9.4	10.3	11.0	13.0	58	67	61		
					●	15	3.6	1.6	4.9	5.7	8.1	11.2	14.1	15.4	16.5	19.4	80	85	80		
3/8, 1/2	●					9.5	2.6	2.4	3.1	3.6	5.1	7.1	8.9	9.7	10.4	12.3	45	50	46		
	●			●		15	3.6	2.4	4.9	5.7	8.1	11.2	14.1	15.4	16.5	19.4	64	67	61		
	●					20	4.0	2.8	6.6	7.6	10.7	14.5	18.8	19.6	22	26	76	80	73		
	●			●		22	4.5	2.8	7.2	8.4	11.9	16.4	21	23	24	28	87	90	82		
1/2		●				16	3.5	3.2	5.2	6.1	8.7	11.9	15.1	16.4	17.6	21	48	50	46		
		●				20	4.1	3.2	6.6	7.6	10.7	14.5	18.8	19.6	22	26	62	65	59		
		●		●		25	4.6	3.2	8.2	9.5	13.5	18.6	24	26	27	32	64	67	61		
		●				30	4.8	3.6	9.9	11.4	16.0	22	28	29	33	39	69	72	66		
		●				32	5.2	3.6	10.4	12.2	17.3	24	30	33	35	41	72	75	68		
		●				40	6.2	3.6	13.1	15.2	21	29	38	39	44	52	88	91	83		
		●				50	6.8	4.0	16.3	19.1	27	37	47	51	55	65	91	94	86		

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.



W PERFORMANCE DATA:
WIDE ANGLE SPRAY

Inlet Conn. (in.)	Quick FullJet Tip Type					Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)						Spray Angle (°)		
	QGA-W	QLGA-W	QHA-W	QLHA-W	QPHA-W				0.5 bar	0.7 bar	1 bar	3 bar	5 bar	6 bar	0.4 bar	0.7 bar	6 bar
1/8, 1/4, 3/8, 1/2	●		●		●	2.8W	1.6	1.0	–	1.1	1.2	2.0	2.5	2.7	–	120	102
	●				●	4.3W	2.0	1.0	–	1.6	1.9	3.1	3.9	4.2	–	120	102
	●		●		●	5.6W	2.4	1.0	1.8	2.1	2.5	4.0	5.1	5.5	–	120	102
	●		●		●	8W	2.4	1.3	2.6	3.0	3.6	5.8	7.2	7.8	–	120	103
1/4, 3/8, 1/2	●		●		●	10W	2.8	1.3	3.3	3.8	4.5	7.2	9.1	9.8	112	120	103
	●		●		●	12W	3.2	1.3	3.9	4.6	5.3	8.7	10.9	11.8	114	120	103
	●		●		●	14W	3.6	1.6	4.6	5.3	6.2	10.1	12.7	13.7	114	120	103
3/8, 1/2	●					17W	4.0	1.6	5.6	6.5	7.6	12.3	15.4	16.7	114	120	103
	●			●		20W	4.4	2.4	6.6	7.6	8.9	14.5	18.1	19.6	114	120	104
	●					24W	4.8	2.4	7.9	9.1	10.7	17.4	22	24	114	120	104
	●					27W	5.2	2.8	8.9	10.3	12.0	19.5	24	26	114	120	106
1/2		●				30W	5.6	2.8	9.9	11.4	13.4	22	27	29	114	120	108
		●				35W	6.0	3.2	11.5	13.3	15.6	25	32	34	114	120	108
		●				40W	6.4	3.2	13.1	15.2	17.8	29	36	39	114	120	108
		●				45W	6.4	3.6	14.8	17.1	20	33	41	44	114	120	110
		●				50W	6.7	4.0	16.4	19.1	22	36	45	49	114	120	112

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.

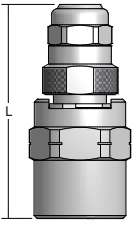
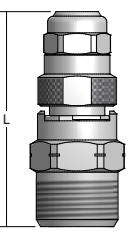
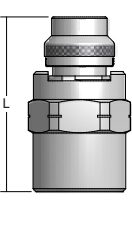
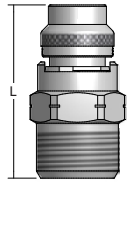
N PERFORMANCE DATA:
NARROW ANGLE SPRAY

Body Inlet Conn. (in.)	Quick FullJet Tip Type				Capacity Size	Orifice Dia. Nom. (mm)	Flow Rate Capacity (liters per minute)										Spray Angle (°)			
	QGA-15	QGA-30	QLGA-15	QLGA-30			0.7 bar	1 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	15 bar	20 bar	0.7 bar	1 bar	3 bar	7 bar	
1/8, 1/4, 3/8, 1/2	●				1507	1.6	1.3	1.6	2.0	2.8	3.9	4.2	5.0	6.2	7.1	13	14	15	15	
	●				1514	2.4	2.7	3.2	3.9	5.5	7.8	8.4	10.1	12.4	14.3	13	14	15	15	
1/4, 3/8, 1/2	●				1530	3.2	5.7	6.8	8.4	11.8	16.8	18.1	22	26	31	13	14	15	15	
3/8, 1/2	●				1550	4.4	9.5	11.4	14.0	19.7	28	30	36	44	51	13	14	15	15	
1/2			●		1590	5.6	17.2	21	25	36	50	54	65	79	92	13	14	15	15	
1/8, 1/4, 3/8, 1/2		●			3001.4	.79	.27	.32	.39	.55	.78	.84	1.0	1.2	1.4	11	17	30	31	
		●			3002.5	.79	.48	.57	.70	.99	1.4	1.5	1.8	2.2	2.5	12	17	30	32	
		●			3004	1.2	.76	.91	1.1	1.6	2.2	2.4	2.9	3.5	4.1	20	26	30	32	
		●			3007	1.6	1.3	1.6	2.0	2.8	3.9	4.2	5.0	6.2	7.1	20	23	30	30	
1/4, 3/8, 1/2		●			3009	2.0	1.7	2.1	2.5	3.6	5.0	5.4	6.5	7.9	9.2	20	23	30	30	
3/8, 1/2			●		3014	2.4	2.7	3.2	3.9	5.5	7.8	8.4	10.1	12.4	14.3	20	25	30	30	

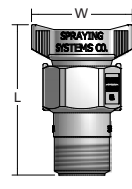
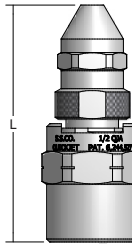
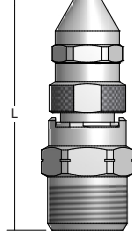
Highlighted column shows the rated pressure.



DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	W (Width) (mm)	Net Weight (kg)
	QJA (F) + QGA	1/8, 1/4, 3/8, 1/2	59.7	1	–	0.12
	QJA (F) + QGA-W	1/8, 1/4, 3/8, 1/2	67.6	1	–	0.12
	QJLA (F) + QLGA	3/8, 1/2	78.2	1-1/8	–	0.25
	QJLA (F) + QLGA-W	3/8, 1/2	82.9	1-1/8	–	0.26
	QJJA (M) + QGA	1/8, 1/4, 3/8, 1/2	57.2	7/8	–	0.11
	QJJA (M) + QGA-W	1/8, 1/4, 3/8, 1/2	65.2	7/8	–	0.12
	QJJLA (M) + QLGA	3/8, 1/2	79.1	1-1/8	–	0.23
	QJJLA (M) + QLGA-W	3/8, 1/2	83.6	1-1/8	–	0.25
	QJA (F) + QHA	1/8, 1/4, 3/8, 1/2	50.3	1	–	0.11
	QJA (F) + QHA-W	1/8, 1/4, 3/8, 1/2	48.1	1	–	0.10
	QJLA (F) + QLHA	3/8, 1/2	60.1	1-1/8	–	0.17
	QJLA (F) + QLHA-W	3/8, 1/2	54.4	1-1/8	–	0.14
	QJJA (M) + QHA	1/8, 1/4, 3/8, 1/2	45.0	7/8	–	0.09
	QJJA (M) + QHA-W	1/8, 1/4, 3/8, 1/2	45.8	7/8	–	0.10
	QJJLA (M) + QLHA	3/8, 1/2	60.3	1-1/8	–	0.15
	QJJLA (M) + QLHA-W	3/8, 1/2	55.1	1-1/8	–	0.14

Based on the largest/heaviest version of each type.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	W (Width) (mm)	Net Weight (kg)
	QPPA (M) + QPHA or QPHA-W	1/8, 1/4, 3/8, 1/2	48.2	7/8	31.8	0.01
	QJA (F) + QGA-15 or QGA-30	1/8, 1/4, 3/8, 1/2	69.5	1	–	0.16
	QJLA (F) + QLGA-15 or QLGA-30	3/8, 1/2	87.0	1-1/8	–	0.27
	QJJA (M) + QGA-15 or QGA-30	1/8, 1/4, 3/8, 1/2	66.9	7/8	–	0.13
	QJJLA (M) + QLGA-15 or QLGA-30	3/8, 1/2	88.0	1-1/8	–	0.26

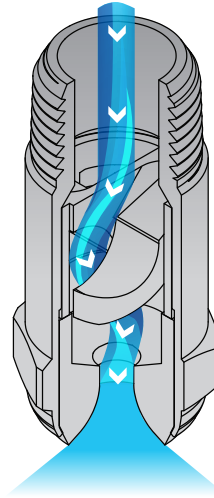
Based on the largest/heaviest version of each type.

BODY TYPES

Inlet Conn. (in.)	QuickJet and ProMax QuickJet Bodies				
	Conn. F		Conn. M		
	QJA	QJLA	QJJA	QJJLA	QPPA
1/8	•		•		•
1/4	•		•		•
3/8	•	•	•	•	•
1/2	•	•	•	•	•

OVERVIEW: FULLJET MAXIMUM FREE PASSAGE (MFP)

- Solid cone-shaped spray pattern
- Patented vane design provides largest free passage of maximum free passage nozzles; ideal for use with fluids with particulates
- More uniform spray distribution than other large free passage nozzles
- Uniform spray distribution from 1.4 to 57 gpm (5.3 to 216 lpm)
- Operating pressures up to 80 psi (6 bar)
- Spray angles: 60°, 90° and 115°



MFP FullJet Nozzles

The liquid comes in contact with the vane as it enters the nozzle. The unique vane design stabilizes the fluid before it enters the swirl region. The swirling liquid passes through the nozzle and breaks up as it exits the nozzle orifice. The spray pattern produced is a well-defined cone shape consisting of uniform drops equally distributed throughout the spray pattern. The large, open passages in the nozzle minimize clogging.

FULLJET MAXIMUM FREE PASSAGE (MFP) OPTIONS

PATENTED VANE TECHNOLOGY

PROVIDES SUPERIOR PERFORMANCE

PLUS NEW SIZES AND CAPACITIES NOW AVAILABLE



HMFP
3/8" to 1-1/2" female conn.



HMFP
2" to 3" female conn.



HHMFP
3/8" to 1-1/2" male conn.



HHMFP
2" to 3" male conn.

ORDERING INFORMATION

FULLJET MAXIMUM FREE PASSAGE (MFP)

Inlet Conn.	Nozzle Type	—	Material Code	Spray Angle	Capacity Size	Example
						3/4 HHMFP — SS 90 70

BSPT connections require the addition of a "B" prior to the inlet connection. Use material code SS for 316 stainless steel MFP nozzles.

RELATIVE DROP SIZE IN MICRONS



Drop size will vary based on flow rate and pressure.

QUICK REFERENCE GUIDE

Model	Connection/Type	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
HMFP	F	3/8 to 1	316 stainless steel vane and choice of brass or 316 stainless steel (SS) bodies	B21-B22	B23
	F	1-1/4 to 3	316 stainless steel vane and 316 stainless steel (SS) body		
HHMFP	M	3/8 to 1	316 stainless steel vane and choice of brass or 316 stainless steel (SS) bodies	B21-B22	
	M	1-1/4 to 3	316 stainless steel vane and 316 stainless steel (SS) body		

F = female thread; 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		Capacity Size	Approx. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)				Spray Angle (°)					
	HMFP	HHMFP			Flow Rate Capacity (liters per minute)				60° Series		90° Series		115° Series	
					0.7 bar	1.5 bar	3 bar	6 bar	0.7 bar	3 bar	0.7 bar	3 bar	0.7 bar	3 bar
3/8	●	●	14	3.2	5.3	7.2	9.5	12.6	60	62	90	84	115	100
	●	●	22	4.0	8.4	11.4	15.0	19.8	60	62	90	84	115	100
	●	●	32	4.8	12.2	16.5	22	29	60	62	90	84	115	100
1/2	●	●	32	4.8	12.2	16.5	22	29	60	62	90	84	115	100
	●	●	51	5.5	19.4	26	35	46	60	62	90	84	115	100
	●	●	57	6.4	22	29	39	51	60	62	90	84	115	100
3/4	●	●	70	7.1	27	36	48	63	60	62	90	84	115	100
	●	●	84	7.9	32	43	57	76	60	62	90	84	115	100
	●	●	100	8.7	38	52	68	90	60	62	90	84	115	100
	●	●	120	9.5	46	62	82	108	60	62	90	84	115	100
1	●	●	120	9.5	46	62	82	108	60	62	90	84	115	100
	●	●	150	10.3	57	76	99	129	60	62	90	88	115	105
	●	●	170	11.1	65	86	113	146	60	62	90	88	115	105
1-1/4	●	●	170	11.1	65	86	113	146	60	62	90	88	115	105
	●	●	200	11.9	76	102	132	172	60	62	90	88	115	105
	●	●	220	12.7	84	112	146	189	60	62	90	88	115	105
	●	●	240	13.5	91	122	159	207	60	62	90	88	115	105
	●	●	260	14.3	99	132	172	224	60	62	90	88	115	105

Approximate Free Passage Diameter is the approximate diameter as listed of foreign matter that can pass through the nozzle without clogging. **Highlighted column shows the rated pressure.**



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type		Capacity Size	Approx. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)				Spray Angle (°)					
	HMFP	HHMFP			0.7 bar	1.5 bar	3 bar	6 bar	60° Series		90° Series		115° Series	
									0.7 bar	3 bar	0.7 bar	3 bar	0.7 bar	3 bar
1-1/2	●	●	240	13.7	91	126	170	227	60	59	89	89	108	104
	●	●	260	14.2	99	137	184	246	62	61	90	92	113	103
	●	●	280	14.5	107	147	198	265	62	62	89	91	113	107
	●	●	300	15.0	114	164	226	313	63	62	93	92	114	108
	●	●	350	16.0	133	191	264	365	63	63	91	93	117	113
	●	●	400	16.8	153	218	302	418	64	64	92	93	120	115
	●	●	450	17.8	172	245	339	470	65	63	92	91	117	116
2	●	●	500	19.3	191	274	382	533	59	58	90	86	103	98
	●	●	600	20.8	229	329	459	639	61	58	89	86	108	102
	●	●	700	21.8	267	384	535	746	62	57	92	91	114	106
	●	●	800	24.6	305	439	612	852	60	57	93	89	113	111
2-1/2	●	●	1000	25.4	381	539	739	1013	61	58	92	90	112	112
	●	●	1200	30.7	457	647	887	1216	63	59	94	91	110	108
	●	●	1400	34.5	534	755	1035	1419	62	60	93	92	113	111
	●	●	1700	35.8	648	917	1257	1723	62	60	89	88	112	110
3	●	●	1800	25.4	686	949	1274	1712	61	59	90	92	112	108
	●	●	2000	43.9	762	1054	1416	1902	63	61	93	91	112	109
	●	●	2400	55.9	914	1265	1699	2282	62	60	95	93	114	111

Approximate Free Passage Diameter is the approximate diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.




DIMENSIONS AND WEIGHTS

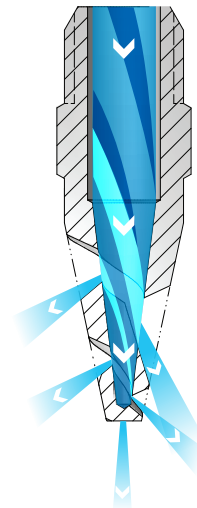
Nozzle	Nozzle Type	Inlet Conn. (in.)	Spray Angle	Capacity Size	L (mm)	Hex. (in.)	Net Weight (kg)
	HMFP (F)	3/8	60°, 90°, 115°	14, 22	37.1	13/16	0.07
			60°, 90°, 115°	32	43.2	13/16	0.07
		1/2	60°, 90°, 115°	32	45.0	1	0.13
			60°, 90°, 115°	51, 57	53.9	1	0.13
		3/4	60°, 90°, 115°	70	61.0	1-1/4	0.25
			60°, 90°, 115°	84	67.0	1-3/8	0.36
			60°, 90°, 115°	100	73.5	1-3/8	0.38
			60°, 90°, 115°	120	78.0	1-3/8	0.37
		1	60°, 90°, 115°	120, 150, 170	82.6	1-3/4	0.64
		1-1/4	60°, 90°, 115°	170, 200, 220, 240, 260	95.3	2	0.86
1-1/2	60°, 90°, 115°	240, 260, 280, 300, 350, 400, 450	111.3	2-3/16	1		
	HMFP (F)	2	60°, 90°, 115°	500, 600, 700, 800	165.8	2-3/4 dia.	1.5
		2-1/2	60°, 90°, 115°	1000, 1200, 1400, 1700	203.2	3-13/16 dia.	2.65
		3	60°, 90°, 115°	1800, 2000, 2400	239.8	4-3/16 dia.	3.25
	HHMFP (M)	3/8	60°, 90°, 115°	14, 22	25.4	11/16	0.04
			60°, 90°, 115°	32	43.2	3/4	0.06
		1/2	60°, 90°, 115°	32	31.1	7/8	0.07
			60°, 90°, 115°	51, 57	55.8	1	0.14
		3/4	60°, 90°, 115°	70	46.0	1-1/8	0.14
			60°, 90°, 115°	84	68.9	1-3/8	0.33
			60°, 90°, 115°	100	75.7	1-3/8	0.34
			60°, 90°, 115°	120	78.7	1-3/8	0.33
		1	60°, 90°, 115°	120, 150, 170	82.6	1-3/4	0.64
		1-1/4	60°, 90°, 115°	170, 200, 220, 240, 260	95.3	2	0.91
1-1/2	60°, 90°, 115°	240, 260, 280, 300, 350, 400, 450	111.3	2-3/16	1.04		
	HHMFP (M)	2	60°, 90°, 115°	500, 600, 700, 800	165.8	2-3/4 dia.	1.5
		2-1/2	60°, 90°, 115°	1000, 1200, 1400, 1700	203.2	3-13/16 dia.	2.65
		3	60°, 90°, 115°	1800, 2000, 2400	239.8	4-3/16 dia.	3.25

Based on the largest/heaviest version of each type.

OVERVIEW: SPIRALJET

- Solid cone-shaped spray pattern
- Open passages ideal for use with fluids with particulates
- Maximum liquid throughput for a given pipe size
- Spray angles from 60° to 170°
- Uniform spray distribution from .7 to 3320 gpm (2.7 to 11967 lpm)
- Operating pressures up to 400 psi (25 bar)
- Compact size enables easy installation or retrofit on most pipe systems
- Certain nozzles available with UL listing  for fire protection applications

For other certifications, contact your sales engineer.



SpiralJet HHSJ and HHSJX Nozzles

The liquid enters the nozzle and passes through the orifice. The liquid exits the nozzle through the voids in the spiral. As it deflects off the spiral surface, a full cone pattern is formed.

SPIRALJET OPTIONS



HHSJ

1/4" to 2" male conn.
Hex. body style/316 stainless steel

Other body styles, connection sizes and materials available.
See Quick Reference Guide.



HHSJX

3/8" to 2" male conn.
Extra large free passage design
Hex. body style/brass

Other body styles, connection sizes and materials available.
See Quick Reference Guide.

ORDERING INFORMATION

SPIRALJET

Inlet Conn.	Nozzle Type	—	Material Code	Spray Angle	Capacity Size	Example
						1/4 HHSJ — SS 120 07

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

**RELATIVE DROP SIZE
IN MICRONS**



Drop size will vary based on flow rate and pressure.



QUICK REFERENCE GUIDE

Model	Connection/Type	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
HHSJ	M, Hex.	1/4 to 2	Brass, 316 stainless steel (316SS)	B25	B26
	M, Flats, Cast	1/4 to 4	316 stainless steel (SS)		
	M, Round	1/4 to 4	Polyvinyl chloride (PVC), PTFE (TEF)		
HHSJX	M, Hex.	3/8 to 2	Brass	B26	
	M, Flats, Cast	3/8 to 2	316 stainless steel (SS)		
	M, Round	3/8 to 2	Polypropylene (PP), Polyvinyl chloride (PVC)		

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	Spray Angle at 0.7 bar					Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)				
		60°	90°	120°	150°	170°				0.7 bar	1.5 bar	3 bar	7 bar	25 bar
1/4	●	●	●	●			07	2.4	2.4	2.7	3.9	5.5	8.4	16.0
	●	●	●	●	●	●	13	3.2	3.2	5.0	7.3	10.3	15.7	30
	●	●	●	●	●	●	20	4.0	3.2	7.6	11.2	15.8	24	46
3/8	●	●					07	2.4	2.4	2.7	3.9	5.5	8.4	16.0
	●	●					13	3.2	3.2	5.0	7.3	10.3	15.7	30
	●	●					20	4.0	3.2	7.6	11.2	15.8	24	46
	●	●	●	●	●	●	30	4.8	3.2	11.4	16.8	24	36	68
	●	●	●	●	●	●	40	5.6	3.2	15.3	22	32	48	91
	●	●	●	●	●	●	53	6.4	3.2	20	30	42	64	121
	●	●	●	●	●	●	82	7.9	3.2	31	46	65	99	187
1/2	●	●	●	●	●	●	120	9.5	4.8	46	67	95	145	274
	●	●	●	●	●	●	164	11.1	4.8	63	92	129	198	374
	●					●	210	12.7	4.8	80	117	166	253	479
3/4	●	●	●	●	●	●	210	12.7	4.8	80	117	166	253	479
1	●	●	●	●	●	●	340	15.9	6.4	130	190	268	410	775
	●	●	●	●	●	●	470	19.1	6.4	179	262	371	567	1071
1-1/2	●	●	●	●	●	●	640	22.2	7.9	244	357	505	772	1459
	●	●	●	●	●	●	820	25.4	7.9	313	458	647	989	1869
	●	●	●	●	●	●	960	28.6	7.9	366	536	758	1158	2188
2	●	●	●	●	●	●	1400	34.9	11.1	534	782	1105	1689	3191
	●	●	●	●	●	●	1780	38.1	11.1	679	994	1406	2147	4057
3	●	●	●	●			2560	44.5	14.3	976	1429	2021	3088	5835
	●	●	●	●			3360	50.8	14.3	1282	1876	2653	4053	7659
4	●	●	●	●			5250	63.5	15.9	2002	2931	4145	6332	11967

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.
Highlighted column shows the rated pressure.



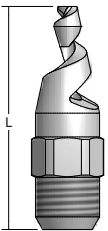
S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type	Spray Angle at 0.7 bar		Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)				
		HHSJX	90°				120°	0.7 bar	1.5 bar	3 bar	7 bar
3/8	●	●	●	30	4.8	4.8	11.4	16.8	24	36	68
	●	●	●	40	5.6	5.6	15.3	22	32	48	91
	●	●	●	53	6.4	6.4	20	30	42	64	121
	●	●	●	82	7.9	7.9	31	46	65	99	187
1/2	●	●	●	120	9.5	9.5	46	67	95	145	274
	●	●	●	164	11.1	11.1	63	92	129	198	374
3/4	●	●	●	210	12.7	12.7	80	117	166	253	479
1	●	●	●	340	15.9	15.9	130	190	268	410	775
	●	●	●	470	19.1	19.1	179	262	371	567	1071
1-1/2	●	●	●	640	22.2	22.2	244	357	505	772	1459
	●	●	●	820	25.4	25.4	313	458	647	989	1869
	●	●	●	960	28.6	28.6	366	536	758	1158	2188
2	●	●	●	1400	34.9	34.9	534	782	1105	1689	3191
	●	●	●	1780	38.1	38.1	679	994	1406	2147	4057

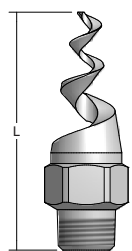
Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.

DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	Net Weight (kg)
	HHSJ (M)	1/4	54.0	9/16	0.03
		3/8	60.3	11/16	0.05
		1/2	79.4	7/8	0.10
		3/4	87.3	1-1/16	0.15
		1	115.9	1-3/8	0.28
		1-1/2	171.5	2	0.77
		2	174.6	2-1/2	0.99
		3	301.6	3-3/4	2.61
		4	336.6	4-1/2	4.65

Based on the largest/heaviest version of each type.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	Net Weight (kg)
	HHSJX (M)	3/8	69.9	7/8	0.09
		1/2	85.7	1-1/16	0.13
		3/4	117.5	1-3/8	0.23
		1	130.2	1-3/4	0.51
		1-1/2	171.5	2	0.85
		2	279.4	3	2.49

Based on the largest/heaviest version of each type.

OVERVIEW: DISTRIBOJET EXTRA LARGE FREE PASSAGE

- Solid cone-shaped spray pattern with round impact area
- Extra large flow passages and large open orifice eliminate clogging
- Internal vane is cast as part of the nozzle
- Uniform spray distribution from 27 to 8728 gpm (122 to 32530 lpm)
- Operating pressures up to 60 psi (4 bar); full cone pattern develops at 1 psi (.07 bar)
- 50°, 60°, 80° and 95° spray angles; 50° and 65° styles feature specially designed grooved orifices for accurate flow rates and spray angle control



DistriboJet R, RF and RR Nozzles

The liquid comes in contact with the vane cast inside the nozzle as it enters. This contact causes the liquid to swirl. As the liquid flows through the extra large flow passages, the liquid continues to swirl. The liquid breaks up as it exits the large open orifice producing a deluge-like cone pattern.

DISTRIBOJET EXTRA LARGE FREE PASSAGE OPTIONS



R
2" to 8" female conn.



RF
4" to 12" flange conn.



RR
2" to 8" male conn.

ORDERING INFORMATION

DISTRIBOJET EXTRA LARGE FREE PASSAGE DESIGN

Inlet Conn.	Nozzle Type	Material Code	Spray Angle	Capacity Size	Example
					2 RR - SS 50 45

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

**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.

QUICK REFERENCE GUIDE

Model	Connection/Type	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
R	F, Cast	2 to 8	Brass, 316 stainless steel (SS)	B28, B29	B29
RR	M, Cast	2 to 8			
RF	Flange, Cast	4 to 12			

F = female thread; 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												Capacity Size	Flow Rate Capacity (liters per minute)							
	R				RR				RF					0.1 bar	0.2 bar	0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	4 bar
	Spray Angle																				
	50°	65°	80°	95°	50°	65°	80°	95°	50°	65°	80°	95°									
2	•	•		•	•	•		•					45	122	168	231	256	298	424	583	665
		•		•		•		•					60	163	224	308	341	398	565	777	887
2-1/2	•	•		•	•	•		•					70	190	261	359	398	464	659	907	1035
		•		•		•		•					90	244	335	461	511	597	848	1166	1331
3	•	•		•	•	•		•					110	298	410	564	625	730	1036	1425	1627
		•		•		•		•					140	379	522	718	795	929	1318	1814	2070
4	•	•	•		•	•	•		•	•	•		160	434	596	820	909	1061	1507	2073	2366
		•		•		•		•	•	•		•	190	515	708	974	1079	1260	1789	2461	2809
		•		•		•		•		•		•	250	677	932	1282	1420	1658	2354	3238	3697
5	•	•	•		•	•	•		•	•	•		250	677	932	1282	1420	1658	2354	3238	3697
		•		•		•		•	•	•		•	280	759	1044	1436	1591	1857	2637	3627	4140
		•		•		•		•		•		•	380	1030	1416	1948	2159	2520	3579	4922	5619
6	•	•	•		•	•	•		•	•	•		360	975	1342	1846	2045	2388	3390	4663	5323
		•		•		•		•	•	•		•	400	1084	1491	2051	2273	2653	3767	5181	5915
		•		•		•		•		•		•	560	1517	2087	2871	3182	3714	5274	7254	8280
8	•	•	•		•	•	•		•	•	•		650	1761	2423	3333	3693	4311	6121	8420	9611
		•		•		•		•	•	•		•	750	2032	2795	3845	4261	4974	7063	9715	11090
		•		•		•		•		•		•	850	2303	3168	4358	4829	5637	8005	11011	12569
				•				•				•	1000	2710	3727	5127	5681	6632	9417	12954	14787

For orifice information, contact your sales engineer.

Highlighted column shows the rated pressure.



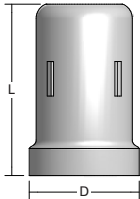
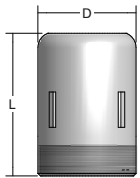
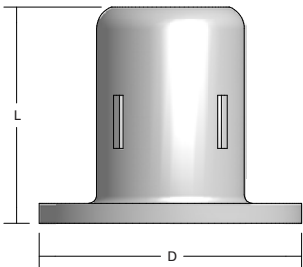
S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type												Capacity Size	Flow Rate Capacity (liters per minute)										
	R				RR				RF					0.1 bar	0.2 bar	0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	4 bar			
	Spray Angle																							
	50°	65°	80°	95°	50°	65°	80°	95°	50°	65°	80°	95°												
12											●		1400	3794	5218	7178	7954	9285	13184	18135	20701			
												●	1600	4335	5964	8203	9090	10612	15067	20726	23658			
													●	1700	4606	6336	8716	9658	11275	16009	22021	25137		
														●	1800	4877	6709	9229	10226	11938	16951	23317	26616	
															●	2000	5419	7455	10254	11363	13265	18834	25907	29573
																●	2200	5961	8200	11279	12499	14591	20718	28498

For orifice information, contact your sales engineer.

Highlighted column shows the rated pressure.

DIMENSIONS AND WEIGHTS

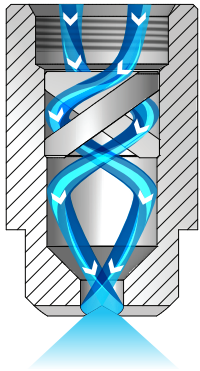
Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	D (Dia.) (mm)	Net Weight (kg)
	R (F)	2	112.7	74.6	1.36
		2-1/2	138.9	88.1	2.49
		3	165.1	104.8	3.40
		4	206.4	127.0	6.12
		5	254.8	161.9	14.97
		6	300.0	193.7	17.46
		8	388.9	241.3	34.02
	RR (M)	2	82.6	60.3	0.91
		2-1/2	101.6	73.0	2.38
		3	123.8	88.9	2.61
		4	165.1	114.3	4.54
		5	211.1	141.3	11.34
		6	247.7	168.3	13.15
		8	330.2	219.1	25.40
	RF (Flange)	4	166.7	225.4	10.43
		5	223.8	250.8	17.69
		6	249.2	276.2	20.41
		8	330.2	339.7	38.56
		12	495.3	482.6	91.17

Based on the largest/heaviest version of each type.



OVERVIEW: FULLJET SQUARE AND OVAL SPRAY PATTERNS AND VANELESS DESIGN

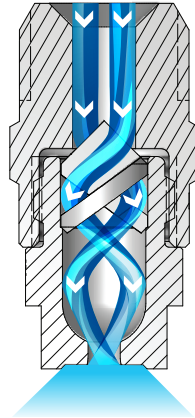
FullJet G and H Square Spray Nozzles



Square spray

As the liquid enters the nozzle, it flows over and through the vane. This creates the initial swirling of the liquid. The design of the nozzle ensures the liquid continues to swirl after passing through the vane. As the liquid exits the orifice, it interacts with cross cuts located on the face of the nozzle and forms a square spray pattern.

FullJet G-VL and GG-VL Nozzles



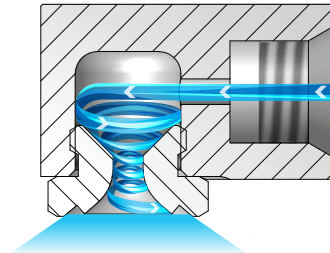
Oval spray

As the liquid enters the nozzle, it flows over and through the vane. This creates the initial swirling of the liquid. The design of the nozzle ensures the liquid continues to swirl after passing through the vane. The exit orifice of the nozzle has an oval shape. The liquid follows the oval shape as it exits the nozzle.

FullJet GANV and GGANV Nozzles

Vaneless spray

The liquid begins to swirl as it enters the swirlchamber. The swirling continues as it passes through the orifice. The breakup of the liquid occurs as it exits the nozzle orifice in a well-defined cone pattern.



FULLJET SQUARE SPRAY PATTERN

- Cone-shaped spray pattern with square-like impact area for coverage of rectangular areas or spray zones
- Unique vane design and large flow passages provide superior spray pattern control
- Uniform spray distribution from .26 to 1977 gpm (1.1 to 7371 lpm)
- Operating pressures up to 150 psi (10 bar)
- Spray angles: Standard – 43° to 94°, Wide – 112° to 120°

S



G-SQ

1/8" to 1/2" female conn.
Removable cap and vane

S



W



H-SQ

1" female conn.
One-piece body

FULLJET SQUARE SPRAY OPTIONS

S



GG-SQ – 1/8" to 1/2" male conn.
Removable cap and vane

S



W



H-SQ – 1-1/4" to 6" female conn.
Removable vane/cast body

S



W



HH-SQ – 1/8" to 1" male conn.
One-piece body

W



H-WSQ – 3/4" to 1" female conn.
One-piece body

W



H-WSQ – 1-1/4" to 3" female conn.
Removable vane/cast body

W



HH-WSQ – 1/4" to 1" male conn.
One-piece body

FULLJET OVAL SPRAY PATTERN

- Solid cone-shaped spray pattern with oval impact area; the width of the spray is approximately half its length
- Unique vane design provides superior spray pattern control
- Uniform spray distribution from .59 to 3.2 gpm (2.2 to 11.9 lpm)
- Operating pressures up to 150 psi (10 bar)
- Spray angles: Standard – 43° to 94°



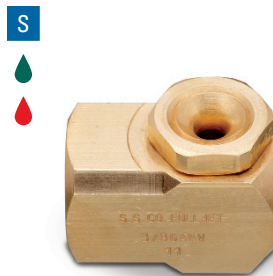
G-VL – 3/8" female conn.
Removable cap and vane



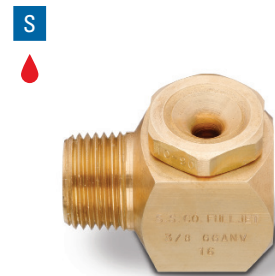
GG-VL – 3/8" male conn.
Removable cap and vane

FULLJET VANELESS DESIGN

- Solid cone-shaped spray pattern with round impact area
- Uniform spray distribution from .35 to 23 gpm (1.4 to 87 lpm)
- Operating pressures up to 100 psi (7 bar)
- No vane for unrestricted flow – coarse spray is projected at 90° from axis at the inlet
- Spray angles: Standard – 43° to 94°



GANV – 1/4" to 1/2" female conn.
Vaneless design
Removable cap



GGANV – 1/4" to 1/2" male conn.
Vaneless design
Removable cap

ORDERING INFORMATION

FULLJET SQUARE SPRAY PATTERN

Inlet Conn.	Nozzle Type	–	Material Code	Capacity Size	Example
					1/4 G – SS 12SQ

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

FULLJET OVAL SPRAY PATTERN

Inlet Conn.	Nozzle Type	–	Material Code	Capacity Size	Example
					3/8 G – SS 4.9VL

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

FULLJET VANELESS DESIGN

Inlet Conn.	Nozzle Type	–	Material Code	Capacity Size	Example
					1/4 GANV – SS 10

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

RELATIVE DROP SIZE IN MICRONS



Drop size will vary based on flow rate and pressure.

QUICK REFERENCE GUIDE

Model	Connection/ Type	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
G-SQ	F	1/8 to 1/2	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS)	B32	B35
GG-SQ	M				
H-SQ	F	1	Brass, Mild steel (I), 303 stainless steel (SS)	B32	
H-SQ	F, Cast	1-1/4 to 6	Brass, 316 stainless steel (SS)	B33	
HH-SQ	M	1/8 to 1	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)	B32	
H-WSQ	F	3/4 to 1	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS)	B33	
H-WSQ	F, Cast	1-1/4 to 3	Brass, 316 stainless steel (SS)		
HH-WSQ	M	1/4 to 1	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)		
G-VL	F	3/8	Brass, 303 stainless steel (SS)	B34	
GG-VL	M				
GANV	F	1/4 to 1/2	Brass, 303 stainless steel (SS)		
GGANV	M				

F = female thread; 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				Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)								Spray Angle (°)		
	G-SQ	GG-SQ	HH-SQ	H-SQ				0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	0.5 bar	1.5 bar	6 bar
1/8	●	●	●		3.6SQ	1.6	1.3	1.1	1.2	1.4	1.9	2.7	3.7	4.0	4.7	40	52	47
	●	●	●		4.8SQ	1.9	1.3	1.4	1.6	1.8	2.6	3.6	4.9	5.3	6.2	48	63	57
	●	●	●		6SQ	2.4	1.3	1.8	2.0	2.3	3.2	4.5	6.1	6.6	7.8	60	66	60
1/4	●	●	●		10SQ	2.8	1.6	2.9	3.3	3.8	5.4	7.4	10.2	11.0	13.0	62	67	61
	●	●	●		12SQ	3.2	1.6	3.5	3.9	4.6	6.5	8.9	12.3	13.2	15.5	70	75	68
			●		14.5SQ	3.9	1.6	4.3	4.7	5.5	7.8	10.8	14.8	15.9	18.8	78	82	75
3/8	●	●	●		18SQ	4.0	2.4	5.3	5.9	6.9	9.7	13.4	18.4	19.8	23	71	75	68
1/2	●	●	●		29SQ	5.6	3.2	8.5	9.5	11.1	15.7	22	30	32	38	71	75	68
			●		36SQ	6.4	3.2	10.6	11.8	13.7	19.5	27	37	40	47	78	82	75
3/4			●		50SQ	6.7	4.4	14.7	16.3	19.1	27	37	51	55	65	71	75	68
1			●	●	106SQ	9.9	5.6	31	35	40	57	79	109	117	137	78	80	73

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type				Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)										Spray Angle (°)		
	G-SQ	GG-SQ	HH-SQ	H-SQ				0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	0.5 bar	1.5 bar	6 bar		
1-1/4				●	177SQ	12.7	6.4	52	58	67	96	132	181	195	229	78	80	73		
1-1/2				●	230SQ	14.3	8.7	68	75	88	124	171	236	253	298	73	77	70		
2				●	290SQ	15.5	11.1	85	95	111	157	216	297	319	376	66	70	64		
				●	360SQ	17.4	11.1	106	118	137	195	268	369	396	466	70	74	67		
2-1/2				●	480SQ	21	11.1	141	157	183	260	357	492	528	622	79	82	74		
				●	490SQ	19.8	14.3	144	160	187	265	365	502	539	635	62	67	61		
				●	590SQ	22.2	14.3	174	193	225	319	439	604	649	764	75	78	71		
5				●	950SQ	28.6	17.5	280	310	362	514	707	973	1044	1231	81	84	76		
				●	2980SQ	47.6	28.6	878	973	1136	1613	2219	3052	3276	3860	89	91	83		
6				●	5690SQ	81.8	44.5	1677	1858	2169	3080	4236	5827	6255	7371	102	105	95		

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.

W PERFORMANCE DATA:
WIDE ANGLE SPRAY



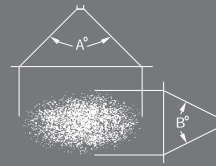
Inlet Conn. (in.)	Nozzle Type		Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)							Spray Angle (°)		
	H-WSQ	HH-WSQ				0.4 bar	0.5 bar	0.7 bar	1 bar	1.5 bar	3 bar	6 bar	0.4 bar	0.7 bar	6 bar
1/4		●	14WSQ	3.6	1.6	4.2	4.6	5.3	6.2	7.5	10.1	13.7	99	101	93
3/8		●	17WSQ	4.0	1.6	5.1	5.6	6.5	7.6	9.1	12.3	16.7	99	101	93
		●	20WSQ	4.4	2.4	6.0	6.6	7.6	8.9	10.7	14.5	19.6	104	110	94
		●	24WSQ	4.8	2.4	7.1	7.9	9.1	10.7	12.8	17.4	24	104	110	94
1/2		●	27WSQ	5.2	2.8	8.0	8.9	10.3	12.0	14.4	19.5	26	104	110	98
		●	30WSQ	5.6	2.8	8.9	9.9	11.4	13.4	16.0	22	29	104	110	102
		●	35WSQ	6.0	3.2	10.4	11.5	13.3	15.6	18.7	25	34	104	110	102
		●	40WSQ	6.4	3.2	11.9	13.1	15.2	17.8	21	29	39	104	110	102
1/2		●	45WSQ	6.4	3.6	13.4	14.8	17.1	20	24	33	44	104	110	102
		●	50WSQ	6.7	4.0	14.9	16.4	19.1	22	27	36	49	104	110	102
3/4	●	●	71WSQ	9.9	4.4	21	23	27	32	38	51	70	105	110	102
1	●	●	130WSQ	13.1	5.6	39	43	50	58	69	94	127	107	110	107
1-1/4	●		190WSQ	15.5	6.4	57	62	72	85	101	137	186	108	111	109
1-1/2	●		290WSQ	18.3	10.3	86	95	111	129	155	210	284	109	114	109
2	●		560WSQ	25	11.1	167	184	213	250	298	405	549	110	114	109
2-1/2	●		830WSQ	31.8	14.3	247	273	316	370	442	600	814	110	115	109
3	●		1070WSQ	34.8	17.5	319	352	408	477	570	774	1049	110	115	109

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY



Inlet Conn. (in.)	Nozzle Type		Capacity Size	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)							Spray Angle (°)							
	G-VL	GG-VL			1 bar	2 bar	3 bar	4 bar	6 bar	7 bar	10 bar	1 bar		3 bar		7 bar		10 bar	
												A°	B°	A°	B°	A°	B°	A°	B°
3/8	●	●	4.9VL	1.0	2.2	3.0	3.6	4.2	5.0	5.4	6.3	104	66	90	60	86	52	83	47
	●	●	6.5VL	1.3	2.9	4.0	4.8	5.5	6.7	7.1	8.4	106	64	95	60	85	50	81	45
	●	●	8.1VL	1.3	3.6	5.0	6.0	6.9	8.3	8.9	10.5	102	64	100	65	84	50	80	45
	●	●	9.2VL	1.3	4.1	5.7	6.8	7.8	9.4	10.1	11.9	103	65	100	65	86	51	81	46

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.
Calibration pressure = 10 psi (0.7 bar).

S PERFORMANCE DATA:
STANDARD ANGLE SPRAY



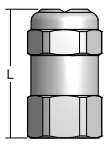
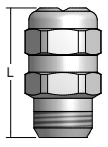
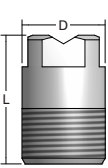
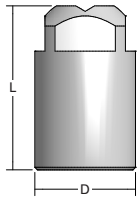
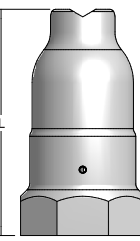
Inlet Conn. (in.)	Nozzle Type		Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)								Spray Angle (°)		
	GANV	GGANV				0.4 bar	0.5 bar	0.7 bar	1 bar	1.5 bar	3 bar	6 bar	7 bar	0.5 bar	1.5 bar	6 bar
1/4	●	●	5	2.8	2.0	1.4	1.6	1.9	2.3	2.8	3.9	5.6	6.0	68	75	82
	●	●	7	3.2	2.4	2.0	2.3	2.7	3.2	3.9	5.5	7.8	8.4	68	75	82
	●	●	8	4.0	2.8	2.3	2.6	3.1	3.6	4.5	6.3	8.9	9.6	75	80	85
	●	●	10	4.0	3.2	2.9	3.2	3.8	4.6	5.6	7.9	11.2	12.1	75	80	85
	●	●	11	4.0	3.6	3.2	3.5	4.2	5.0	6.1	8.7	12.3	13.3	75	80	85
3/8	●	●	11	4.4	3.2	3.2	3.5	4.2	5.0	6.1	8.7	12.3	13.3	75	85	83
	●	●	13	4.4	3.6	3.7	4.2	5.0	5.9	7.3	10.3	14.5	15.7	75	85	83
	●	●	16	4.4	4.0	4.6	5.2	6.1	7.3	8.9	12.6	17.9	19.3	75	85	83
	●	●	20	5.6	4.4	5.8	6.4	7.6	9.1	11.2	15.8	22	24	75	85	83
	●	●	23	5.6	4.8	6.6	7.4	8.8	10.5	12.8	18.2	26	28	75	85	83
	●	●	26	6.0	5.2	7.5	8.4	9.9	11.9	14.5	21	29	31	75	85	83
	●	●	29	6.0	5.6	8.4	9.3	11.1	13.2	16.2	23	32	35	75	85	83
1/2	●	●	33	7.5	6.0	9.5	10.6	12.6	15.0	18.4	26	37	40	75	85	83
	●	●	32	7.9	5.2	9.2	10.3	12.2	14.6	17.9	25	36	39	85	90	95
	●	●	40	7.9	6.0	11.5	12.9	15.3	18.2	22	32	45	48	85	90	95
	●	●	48	7.9	7.1	13.8	15.5	18.3	22	27	38	54	58	85	90	95
	●	●	56	9.9	7.5	16.1	18.1	21	26	31	44	63	68	85	90	95
	●	●	64	9.9	8.3	18.5	21	24	29	36	51	71	77	85	90	95
	●	●	72	9.9	9.1	21	23	27	33	40	57	80	87	85	90	95

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

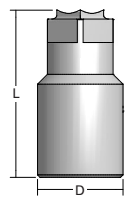
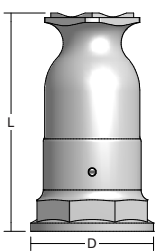
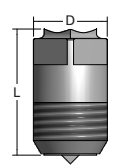
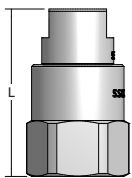
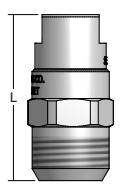
Highlighted column shows the rated pressure.



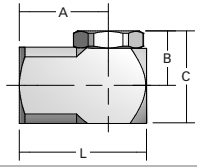
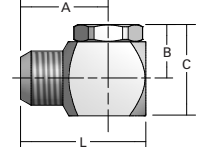
DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	D (Dia.) (mm)	Net Weight (kg)
	G-SQ (F)	1/8	28.5	9/16	—	0.03
		1/4	34.1	11/16	—	0.04
	GG-SQ (M)	1/8	30.1	9/16	—	0.01
		1/4	36.5	11/16	—	0.01
	HH-SQ (M)	1/8	22.2	—	12.7	0.01
		1/4	22.2	—	13.5	0.02
		3/8	23.8	—	16.7	0.05
		1/2	28.7	—	20.6	0.10
		3/4	38.9	—	27.0	0.04
		1	51.6	—	33.3	0.37
	H-SQ (F)	1	68.3	—	38.1	0.37
	H-SQ (F) Cast	1-1/4	68.3	1-7/8 oct.	—	0.48
		1-1/2	101.6	2-1/8 oct.	—	0.72
		2	127.0	2-5/8 oct.	—	1.17
		2-1/2	156.4	3-1/8 oct.	—	2.28
		5	311.2	6-3/4 oct.	—	1.08
		6	365.1	8 oct.	—	1.50

Based on the largest/heaviest version of each type.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	D (Dia.) (mm)	Net Weight (kg)
	H-WSQ (F)	3/4	40.5	—	31.7	0.10
		1	52.8	—	38.0	0.18
	H-WSQ (F) Cast	1-1/4	85.7	—	52.4	0.40
		1-1/2	101.6	—	58.7	0.70
		2	127.0	—	76.2	1.28
		2-1/2	156.4	—	87.3	2.06
		3	186.5	—	103.2	3.02
	HH-WSQ (M)	1/4	23.0	—	13.5	0.01
		3/8	30.2	—	16.7	0.03
		1/2	34.9	—	20.6	0.05
		3/4	40.5	—	27.0	0.10
		1	52.8	—	33.3	0.20
	G-VL (F)	3/8	38.1	13/16	57.1	0.06
	GG-VL (M)	3/8	38.1	13/16	57.1	0.05

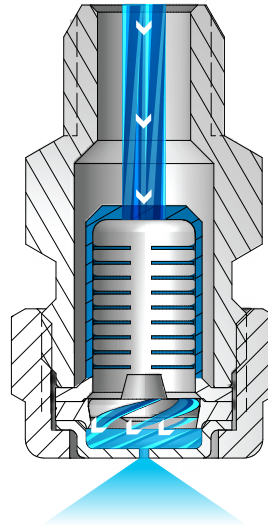
Based on the largest/heaviest version of each type.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	A (mm)	B (mm)	C (mm)	Net Weight (kg)
	GANV (F)	1/4	31.8	22.2	13.6	23.1	0.06
		3/8	35.7	24.6	16.0	27.1	0.09
		1/2	46.0	33.3	19.2	31.9	0.18
	GGANV (M)	1/4	31.8	22.2	13.6	23.1	0.06
		3/8	35.7	24.6	16.0	27.1	0.09
		1/2	47.6	34.9	19.2	31.9	0.18

Based on the largest/heaviest version of each type.

OVERVIEW: UNIJET

- Quick-connect nozzles reduce maintenance time – bodies remain on pipe/header
- Save on nozzle replacement costs – bodies can be reused, only spray tips are replaced; tips fit on male or female bodies
- Solid cone-shaped spray pattern with round impact area or cone-shaped spray pattern with square-like impact area for coverage of rectangular areas or spray zones
- Spray angles: Standard – 43° to 91°, Wide – 112° to 120°
- Uniform spray distribution from .08 to 7.4 gpm (.3 to 28 lpm)
- Operating pressures up to 300 psi (20 bar)



UniJet D and TG Nozzles

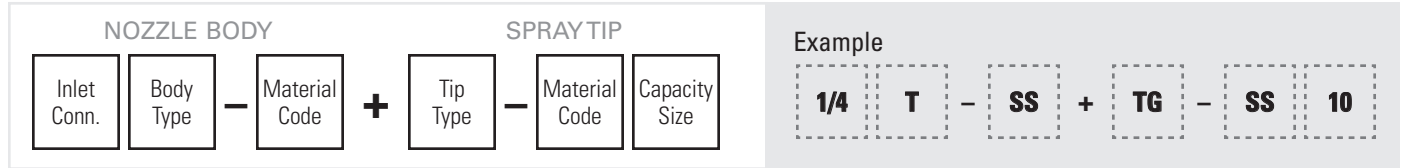
As the liquid enters the nozzle, it passes through an internal strainer and into the slotted core where the swirling begins. The swirling continues as the liquid passes through a disc. The breakup of the liquid occurs as it exits the orifice, producing a well-defined cone pattern. The drops are uniform in size and distributed equally throughout the spray pattern.

UNIJET OPTIONS



ORDERING INFORMATION

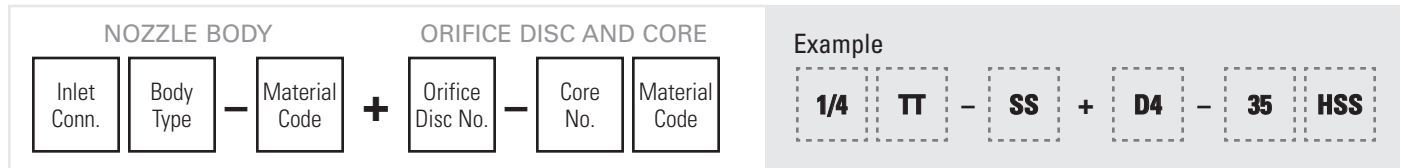
UNIJET



UniJet nozzle assemblies include a pre-sized wire mesh based on orifice diameter. When ordering just a UniJet spray tip, the mesh is not included. See Accessories, page F6 for a mesh selection guide and ordering information.

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

UNIJET – DISC AND CORE TYPE



UniJet nozzle assemblies include a pre-sized wire mesh based on orifice diameter. When ordering just a UniJet spray tip, the mesh is not included. See Accessories, page F6 for a mesh selection guide and ordering information.

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

QUICK REFERENCE GUIDE

Model	Connection	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
T body	F	1/8 to 1/2	Brass, 303 stainless steel (SS)	-	B40
TT body	M			-	
D spray tip	NA	NA	303 stainless steel (SS), Hardened stainless steel (HSS)	B38	
TG spray tip	NA	NA	Brass, 303 stainless steel (SS)	B39	
TG-W and TH-W spray tips	NA	NA	Brass, 303 stainless steel (SS)	B39	
TG-SQ spray tip	NA	NA	Brass, 303 stainless steel (SS)	B40	

F = female thread; M = male thread; NA = not applicable. 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.

**RELATIVE DROP SIZE
IN MICRONS**



Drop size will vary based on flow rate and pressure.

S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Body Inlet Conn. (in.)	UniJet Tip Type	Orifice Disc No. – Core No.	Orifice Dia. Nom. (mm)	Flow Rate Capacity (liters per minute)								Spray Angle (°)		
				0.7 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	15 bar	20 bar	1.5 bar	3 bar	6 bar
1/4	●	D1-31	.79	.31	.41	.59	.80	.92	1.0	1.2	1.4	49	47	43
	●	D1.5-31	.91	.39	.51	.76	1.0	1.2	1.3	1.6	1.8	57	65	53
	●	D2-31	1.0	.45	.59	.86	1.2	1.4	1.5	1.8	2.0	62	63	61
	●	D3-31	1.2	.49	.64	.95	1.3	1.5	1.6	1.9	2.2	63	65	63
	●	D1-33	.79	.32	.42	.56	.78	.90	.98	1.2	1.4	27	32	35
	●	D1.5-33	.91	.42	.55	.75	1.0	1.2	1.3	1.6	1.9	37	43	45
	●	D2-33	1.0	.47	.62	.95	1.3	1.5	1.7	2.0	2.3	45	52	55
	●	D3-33	1.2	.57	.75	1.1	1.6	1.8	2.0	2.5	2.8	48	54	57
	●	D4-33	1.6	.78	1.0	1.5	2.1	2.4	2.7	3.3	3.7	50	56	61
	●	D1-35	.79	.30	.39	.58	.78	.90	.97	1.2	1.3	19	23	26
	●	D1.5-35	.91	.41	.54	.76	1.0	1.2	1.3	1.5	1.7	23	27	29
	●	D2-35	1.0	.53	.70	.99	1.3	1.5	1.7	2.0	2.2	40	44	47
	●	D3-35	1.2	.58	.76	1.2	1.6	1.8	2.0	2.4	2.8	45	50	52
	●	D4-35	1.6	1.0	1.3	2.0	2.8	3.2	3.5	4.2	4.8	68	70	71
	●	D5-35	2.0	1.3	1.7	2.6	3.6	4.1	4.5	5.5	6.3	67	69	71
	●	D2-56	1.0	–	–	.98	1.4	1.6	1.8	2.2	2.5	–	14	17
	●	D3-56	1.2	–	–	1.3	1.9	2.2	2.4	3.0	3.4	–	20	23
	●	D4-56	1.6	–	1.3	2.2	3.1	3.6	4.0	4.8	5.6	20	26	29
	●	D5-56	2.0	1.4	1.8	3.0	4.3	4.9	5.5	6.7	7.8	26	32	34
	●	D6-56	2.4	2.2	2.8	4.5	6.5	7.5	8.5	10.2	11.9	34	39	41
●	D7-56	2.8	2.9	3.8	6.0	8.5	9.8	11.0	13.5	15.6	45	52	54	
●	D8-56	3.2	3.7	4.9	7.6	10.8	12.4	13.9	17.0	19.6	52	57	59	
●	D10-56	4.0	5.1	6.7	10.6	15.0	17.3	19.3	24	27	62	65	67	

For nozzles using Orifice Disc Nos. 1, 1.5 and 2 or Core Nos. 31 and 33, Slotted Strainer No. 4514-20 equivalent to 25 mesh screen size is supplied. For all other larger capacity Discs and Cores, Slotted Strainer No. 4514-32 equivalent to 16 mesh screen size is supplied.

Other body sizes may be available. Contact your sales engineer for further information.

For additional information see Data Sheet 4498-1.

Highlighted column shows the rated pressure.



S PERFORMANCE DATA: **STANDARD ANGLE SPRAY**

Body Inlet Conn. (in.)	UniJet Tip Type		Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)								Spray Angle (°)		
	TG					0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	0.5 bar	1.5 bar	6 bar
1/4	●		.3	.51	.41	–	–	–	.16	.22	.31	.33	.39	–	50	61
	●		.4	.56	.46	–	–	–	.22	.30	.41	.44	.52	–	56	63
	●		.5	.61	.51	–	–	–	.27	.37	.51	.55	.65	–	56	63
	●		.6	.69	.51	–	–	–	.32	.45	.61	.66	.78	–	54	62
	●		.7	.76	.51	–	–	–	.38	.52	.72	.77	.91	–	54	63
	●		1	.94	.64	–	–	.38	.54	.74	1.0	1.1	1.3	–	58	53
	●		2	1.19	1.0	.59	.65	.76	1.1	1.5	2.0	2.2	2.6	43	50	46
	●		3	1.57	1.0	.88	.98	1.1	1.6	2.2	3.1	3.3	3.9	52	65	59
	●		3.5	1.70	1.3	1.0	1.1	1.3	1.9	2.6	3.6	3.8	4.5	43	50	46
	●		5	2.08	1.3	1.5	1.6	1.9	2.7	3.7	5.1	5.5	6.5	52	65	59
	●		6.5	2.38	1.6	1.9	2.1	2.5	3.5	4.8	6.7	7.1	8.4	45	50	46
	●		10	3.18	1.6	3.0	3.3	3.8	5.4	7.5	10.3	11.0	13.0	58	67	61

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Other body sizes may be available. Contact your sales engineer for further information.

Highlighted column shows the rated pressure.

W PERFORMANCE DATA: **WIDE ANGLE SPRAY**

Body Inlet Conn. (in.)	UniJet Tip Type		Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)							Spray Angle (°)		
	TG-W	TH-W				0.4 bar	0.5 bar	0.7 bar	1 bar	1.5 bar	3 bar	6 bar	0.4 bar	0.7 bar	6 bar
1/8, 1/4	●	●	2.8W	1.6	1.0	–	–	1.1	1.2	1.5	2.0	2.7	–	120	102
	●	●	4.3W	2.0	1.0	–	–	1.6	1.9	2.3	3.1	4.2	–	120	102
	●	●	5.6W	2.4	1.0	–	1.8	2.1	2.5	3.0	4.0	5.5	–	120	102
	●	●	8W	2.4	1.3	–	2.6	3.0	3.6	4.3	6.0	8.2	–	120	103
1/4	●	●	10W	2.8	1.3	3.0	3.3	3.8	4.5	5.4	7.5	10.3	112	120	103
	●		12W	3.2	1.3	3.5	3.9	4.6	5.4	6.5	8.9	12.3	114	120	103
	●	●	14W	3.6	1.6	4.2	4.6	5.3	6.2	7.5	10.2	13.8	114	120	103
3/8		●	17W	4.0	1.6	5.1	5.6	6.5	7.6	9.1	12.3	16.7	114	120	103
		●	20W	4.4	2.4	6.0	6.6	7.6	8.9	10.7	14.5	19.6	114	120	104
		●	24W	4.8	2.4	7.2	7.9	9.1	10.7	12.8	17.3	24	114	120	104
		●	27W	5.2	2.8	8.0	8.9	10.3	12.0	14.4	19.5	26	114	120	106
1/2		●	30W	5.6	2.8	8.9	9.9	11.4	13.4	16.0	22	29	114	120	108
		●	35W	6.0	3.2	10.4	11.5	13.3	15.6	18.7	25	34	114	120	108

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

Other body sizes may be available. Contact your sales engineer for further information.

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

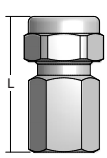
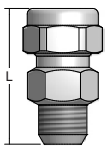
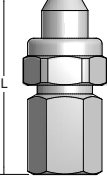
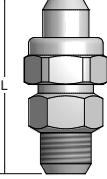
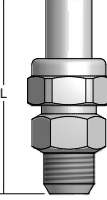
Body Inlet Conn. (in.)	UniJet Tip Type	Capacity Size	Orifice Dia. Nom. (mm)	Max. Free Passage Dia. (mm)	Flow Rate Capacity (liters per minute)								Spray Angle (°)		
	TG-SQ				0.4 bar	0.5 bar	0.7 bar	1.5 bar	3 bar	6 bar	7 bar	10 bar	0.5 bar	1.5 bar	6 bar
1/4	●	6SQ	2.4	1.3	1.8	2.0	2.3	3.2	4.5	6.1	6.6	7.8	60	66	60
	●	8SQ	2.5	1.3	2.4	2.6	3.0	4.3	6.0	8.2	8.8	10.4	70	75	68
	●	10SQ	2.8	1.6	2.9	3.3	3.8	5.4	7.4	10.2	11.0	13.0	62	66	60
	●	12SQ	3.2	1.6	3.5	3.9	4.6	6.5	8.9	12.3	13.2	15.5	70	75	68
3/8	●	18SQ	4.0	2.4	5.3	5.9	6.9	9.7	13.4	18.4	19.8	23	71	75	68

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

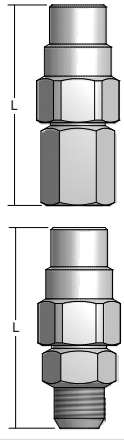
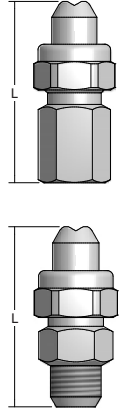
Other body sizes may be available. Contact your sales engineer for further information.

Highlighted column shows the rated pressure.

DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	Net Weight (kg)
	T (F) + D	1/4	38.1	13/16	0.06
	TT (M) + D	1/4	38.1	13/16	0.05
	T (F) + TG	1/4	46.8	13/16	0.06
	TT (M) + TG	1/4	46.8	13/16	0.06
	T (F) + TG-W TT (M) + TG-W	1/8	52.8	13/16	0.06
		1/4	52.8	13/16	0.07

Based on the largest/heaviest version of each type. Additional sizes are available.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Hex. (in.)	Net Weight (kg)
	T (F) + TH-W TT (M) + TH-W	1/8	54.8	13/16	0.11
		1/4	67.9	13/16	0.11
		3/8	68	13/16	0.12
		1/2	66.3	1	0.12
	T (F) + TG-SQ TT (M) + TG-SQ	1/4	57.9	13/16	0.05
		3/8	58.1	13/16	0.06

Based on the largest/heaviest version of each type. Additional sizes are available.