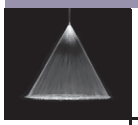
HYDROPULSE® - PNEUMATIC

Liquid inlet connection	¼" NPT or BSPP, liquid; ⅛" NPT or BSPP, cylinder air; or DN10 tri-clamp
Maximum flow rate	57.7 LPM
Maximum rated liquid pressure	42 bar
Operating temperature range	-26°C to 204°C
Air cylinder pressure	2 bar to 17 bar
Air cylinder operation	Single acting (spring return) or double acting.
Maximum cycle frequency	3 cycles/sec
Nozzle construction	316 Stainless steel wetted components, Viton® (FKM) seals
Interchangeable BJ, BJH, CW, and ST nozzle tip options.	

Provides a controlled intermittent liquid spray using only liquid pressure as the force for atomization. Offers drip-free performance. Pneumatically actuated for crisp on/off precision spray performance.

BJ Flow Rates and Dimensions

Fan, 0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110° Spray Angles



	K Factor	LITERS PER MINUTE @ BAR 0.3 bar	1 bar	2 bar	5 bar	10 bar	20 bar	40 bar	Equivalent Orifice Dia. (mm)	Available Spray Angles
BJ 0067	0.153	0.084	0.153	0.220	0.340	0.480	0.680	0.970	0.580	0°, 15°, 25°, 40°, 50°, 65°, 80°
BJ 01	0.228	0.120	0.228	0.320	0.510	0.720	1.02	1.44	0.710	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 015	0.342	0.190	0.342	0.480	0.760	1.08	1.53	2.16	0.970	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 02	0.456	0.250	0.456	0.640	1.02	1.44	2.04	2.88	0.990	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 03	0.684	0.370	0.684	0.970	1.53	2.16	3.06	4.32	1.19	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 04	0.912	0.500	0.912	1.29	2.04	2.88	4.08	5.77	1.40	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 05	1.14	0.620	1.14	1.61	2.55	3.60	5.10	7.21	1.55	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 06	1.37	0.750	1.37	1.93	3.06	4.32	6.11	8.65	1.70	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 08	1.82	1.00	1.82	2.58	4.08	5.77	8.15	11.5	1.88	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 10	2.28	1.25	2.28	3.22	5.10	7.21	10.2	14.4	2.18	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°
BJ 15	3.42	1.87	3.42	4.83	7.64	10.8	15.3	21.6	2.72	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°

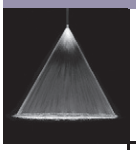
Flow Rate (l/min) = $K\sqrt{bar}$

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

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

BJH Flow Rates and Dimensions

5° to 120° Spray Angles, Tungsten Carbide Insert with 303 Stainless Steel Housing

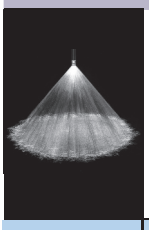


	LITERS PER MINUTE @ BAR							
	K Factor	2 bar	3 bar	4 bar	7 bar	30 bar	Equivalent Orifice Dia. (mm)	Available Spray Angles
BJH-0.18	0.018	-	-	-	0.048	0.099	0.18	5°, 10°, 15°, 20°, 25°, 30°, 33°, 40°, 50°
BJH-0.28	0.043	-	-	-	0.114	0.236	0.28	5°, 10°, 20°, 33°, 40°, 50°, 65°, 73°
BJH-0.38	0.079	-	-	-	0.209	0.433	0.38	10°, 20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°
BJH-0.45	0.110	-	-	-	0.291	0.602	0.45	10°, 20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°,
BJH-0.53	0.152	0.215	0.263	0.304	0.402	0.833	0.53	100°, 110°, 120°
BJH-0.66	0.237	0.335	0.410	0.474	0.627	1.30	0.66	
BJH-0.78	0.330	0.467	0.572	0.660	0.873	1.81	0.78	10°, 20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°,
BJH-0.89	0.430	0.608	0.745	0.860	1.14	2.36	0.89	100°, 110°, 120°
BJH-0.99	0.532	0.752	0.921	1.06	1.41	2.91	0.99	
BJH-1.14	0.706	0.998	1.22	1.41	1.87	3.87	1.14	20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°,
BJH-1.29	0.904	1.28	1.57	1.81	2.39	4.95	1.29	100°, 110°, 120°
BJH-1.45	1.14	1.61	1.97	2.28	3.02	6.24	1.45	20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°, 110°
BJH-1.60	1.39	1.97	2.41	2.78	3.68	7.61	1.60	20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°
BJH-1.80	1.76	2.49	3.05	3.52	4.66	9.64	1.80	20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°
BJH-1.91	1.98	2.80	3.43	3.96	5.24	10.8	1.91	20°, 33°, 40°, 50°, 65°, 73°, 80°

Flow Rate (l/min) = K√ bar
BJH Tip Materials: Tungsten Carbide Insert with 303 Stainless Steel Housing
Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

CW Flow Rates and Dimensions

Full Cone and Hollow Cone, 80° and 120° Spray Angles



	LITERS PER MINUTE @ BAR									
	K Factor	0.5 bar	0.7 bar	1 bar	2 bar	3 bar	5 bar	10 bar	15 bar	Approx Orifice Dia. (mm.)
CW25	0.59	0.42	0.50	0.59	0.81	0.99	1.25	1.73	2.10	1.14
CW50	1.17	0.85	0.99	1.17	1.63	1.97	2.50	3.47	4.19	1.37
CW75	1.76	1.27	1.49	1.76	2.44	2.95	3.75	5.20	6.29	1.60
CW100	2.35	1.70	1.99	2.35	3.25	3.94	5.01	6.93	8.39	2.18

Flow Rate (l/min) = K (bar)$^{0.47}$
CW Tip Materials: Brass, 303 Stainless Steel and 316 Stainless Steel.
Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

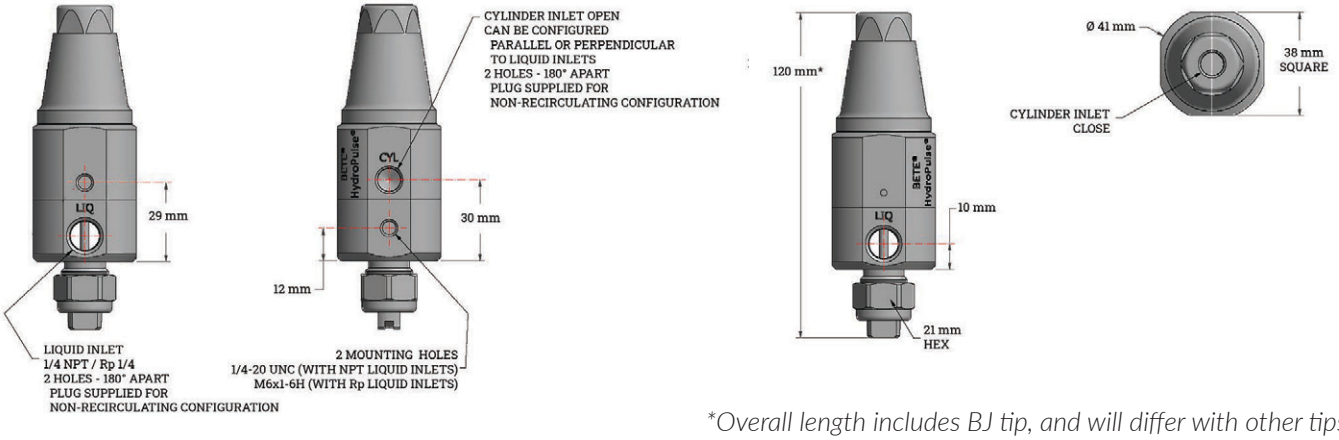
ST Flow Rates and Dimensions

Full Cone, 90° (FCN) and 120° (FC) Spray Angles

	K Factor	LITERS PER MINUTE @ BAR 0.5 bar	0.7 bar	1 bar	2 bar	3 bar	5 bar	10 bar	20 bar	Approx Orifice Dia. (mm.)
ST6	3.19	2.26	2.67	3.19	4.5	5.5	7.1	10.1	14.3	2.38
ST8	5.93	4.19	4.96	5.93	8.4	10.3	13.2	18.7	26.5	3.18
ST10	9.12	6.45	7.63	9.12	12.9	15.8	20.4	28.8	40.8	3.97

Flow Rate (l/min) = $K\sqrt{bar}$
ST Tip Materials: Cobalt Alloy 6
Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

¼-PHP-00 (RECIRCULATING)



**Overall length includes BJ tip, and will differ with other tips.*

Pneumatic HydroPulse Ordering Nomenclature

TRI-1/2 PHP 00 BJ 01 90

Connection
1/2" ASME Tri-clamp: TRI-1/2
1/4" NPT thread: 1/4
1/4" BSPP thread: 1/4 B
DN10 DIN 32676/A Tri-clamp: TRE01-DN10

Series Name
PHP

Body Style
recirculating - 00
non-recirculating - 01

Tip Series
BJ
BJH
CW
ST

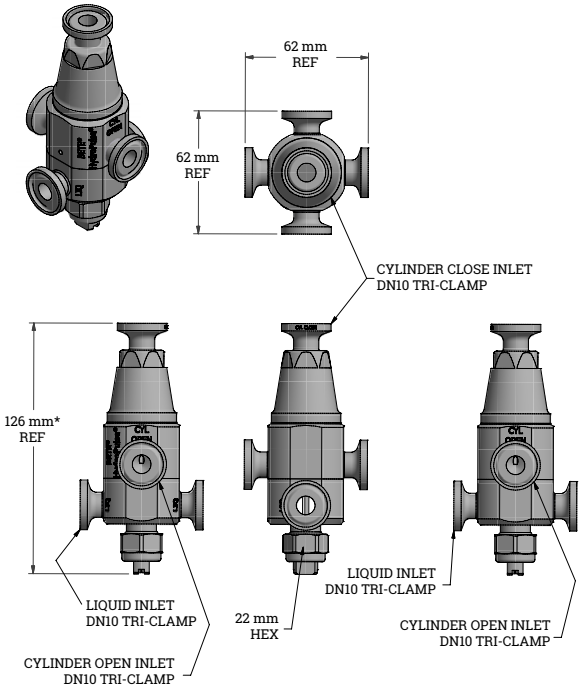
Tip Rating
series dependent

Spray Angle
series dependent

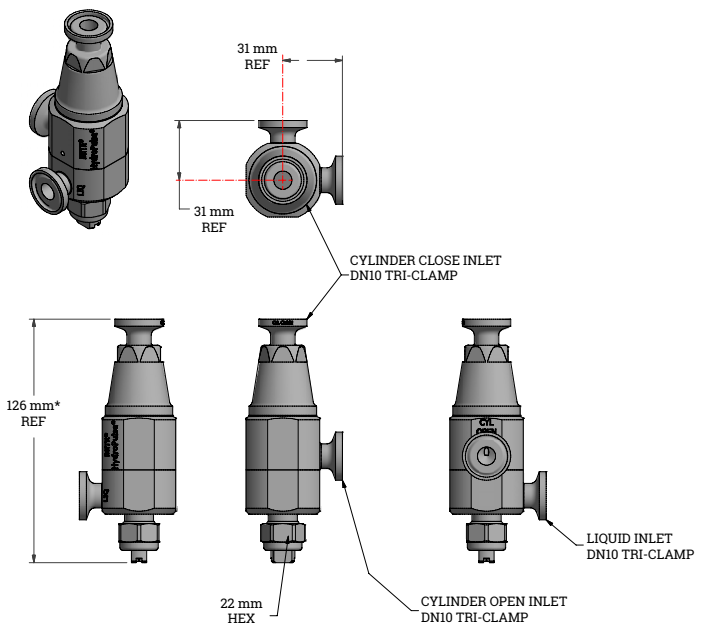
PNEUMATIC HYDROPULSE AUTOMATIC SPRAY NOZZLES WITH HYGIENIC TRI-CLAMP CONNECTIONS

Tri-clamps are sanitary pipe connections commonly used in the food, beverage, biopharmaceutical, and personal care industries.

DN10 TRI-CLAMP PHP-00 (RECIRCULATING)



DN10 TRI-CLAMP PHP-01 (NON - RECIRCULATING)



**Overall length includes BJ tip, and will differ with other tips.*