

HYDROPULSE® - PNEUMATIC

Liquid inlet connection	¼" NPT or BSPP, liquid; ⅛" NPT or BSPP, cylinder air; or ½" tri-clamp
Maximum flow rate	12.6 GPM
Maximum rated liquid pressure	600 PSI
Operating temperature range	-15°F to 400°F
Air cylinder pressure	30 PSI to 250 PSI
Air cylinder operation	Single acting (spring return) or double acting.
Maximum cycle frequency	3 cycles/sec
Nozzle construction	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



Nozzle Tip	K Factor	GALLONS PER MINUTE @ PSI								Equivalent Orifice Dia. (in.)	Available Spray Angles
		5 PSI	10 PSI	20 PSI	40 PSI	80 PSI	100 PSI	500 PSI			
BJ 0067	0.0106	0.024	0.034	0.047	0.067	0.095	0.11	0.24	0.023	0°, 15°, 25°, 40°, 50°, 65°, 80°	
BJ 01	0.0158	0.035	0.050	0.071	0.100	0.14	0.16	0.35	0.028	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 015	0.0237	0.053	0.075	0.11	0.15	0.21	0.24	0.53	0.038	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 02	0.0316	0.071	0.1	0.14	0.20	0.28	0.32	0.71	0.039	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 03	0.0474	0.11	0.15	0.21	0.30	0.42	0.47	1.1	0.047	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 04	0.0632	0.14	0.20	0.28	0.40	0.57	0.63	1.4	0.055	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 05	0.0791	0.18	0.25	0.35	0.50	0.71	0.79	1.8	0.061	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 06	0.0949	0.21	0.30	0.42	0.60	0.85	0.95	2.1	0.067	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 08	0.127	0.28	0.40	0.57	0.80	1.1	1.3	2.8	0.074	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 10	0.158	0.35	0.50	0.71	1.0	1.4	1.6	3.5	0.086	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	
BJ 15	0.237	0.53	0.75	1.1	1.5	2.1	2.4	5.3	0.107	0°, 15°, 25°, 40°, 50°, 65°, 80°, 95°, 110°	

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

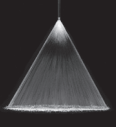
BJ Tip Materials: Brass, 303 Stainless Steel, and 316 Stainless Steel.

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

BJH Flow Rates and Dimensions

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



	GALLONS PER MINUTE @ PSI							Equivalent Orifice Dia. (in.)	Available Spray Angles
	K Factor	30 PSI	40 PSI	50 PSI	100 PSI	500 PSI			
BJH-0.18	0.0012	-	-	-	0.012	0.027	0.007	5°, 10°, 15°, 20°, 25°, 30°, 33°, 40°, 50°	
BJH-0.28	0.0030	-	-	-	0.030	0.067	0.011	5°, 10°, 20°, 33°, 40°, 50°, 65°, 73°	
BJH-0.38	0.0055	-	-	-	0.055	0.123	0.015	10°, 20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°	
BJH-0.45	0.0076	0.042	0.048	0.054	0.076	0.170	0.018	10°, 20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°, 110°, 120°	
BJH-0.53	0.0105	0.058	0.067	0.075	0.105	0.236	0.021		
BJH-0.66	0.0164	0.090	0.104	0.116	0.164	0.367	0.026		
BJH-0.68	0.0174	0.095	0.110	0.123	0.174	0.389	0.027	10°, 20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°, 110°, 120°	
BJH-0.78	0.0229	0.125	0.145	0.162	0.229	0.512	0.031		
BJH-0.89	0.0298	0.163	0.188	0.211	0.298	0.666	0.035		
BJH-0.99	0.0369	0.202	0.233	0.261	0.369	0.825	0.039		
BJH-1.14	0.0490	0.268	0.310	0.346	0.490	1.10	0.045	20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°, 110°, 120°	
BJH-1.29	0.0627	0.343	0.397	0.443	0.627	1.40	0.051		
BJH-1.45	0.0792	0.434	0.501	0.560	0.792	1.77	0.057	20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°, 110°	
BJH-1.60	0.0964	0.528	0.727	0.813	1.15	2.57	0.069	20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°, 100°	
BJH-1.80	0.122	0.668	0.772	0.863	1.22	2.73	0.071	20°, 33°, 40°, 50°, 65°, 73°, 80°, 90°	
BJH-1.91	0.137	0.750	0.866	0.969	1.37	3.06	0.075	20°, 33°, 40°, 50°, 65°, 73°, 80°	

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


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



	GALLONS PER MINUTE @ PSI											Approx Orifice Dia. (in.)
	K Factor	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI	
CW25	0.04	0.13	0.18	0.22	0.25	0.28	0.30	0.33	0.35	0.37	0.38	0.045
CW50	0.09	0.26	0.36	0.44	0.50	0.56	0.60	0.65	0.69	0.73	0.77	0.054
CW75	0.13	0.39	0.54	0.66	0.75	0.83	0.91	0.98	1.04	1.10	1.15	0.063
CW100	0.18	0.52	0.72	0.87	1.00	1.11	1.21	1.30	1.39	1.46	1.54	0.086

$$\text{Flow Rate (GPM)} = K(\text{PSI})^{0.47}$$

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



GALLONS PER MINUTE @ PSI

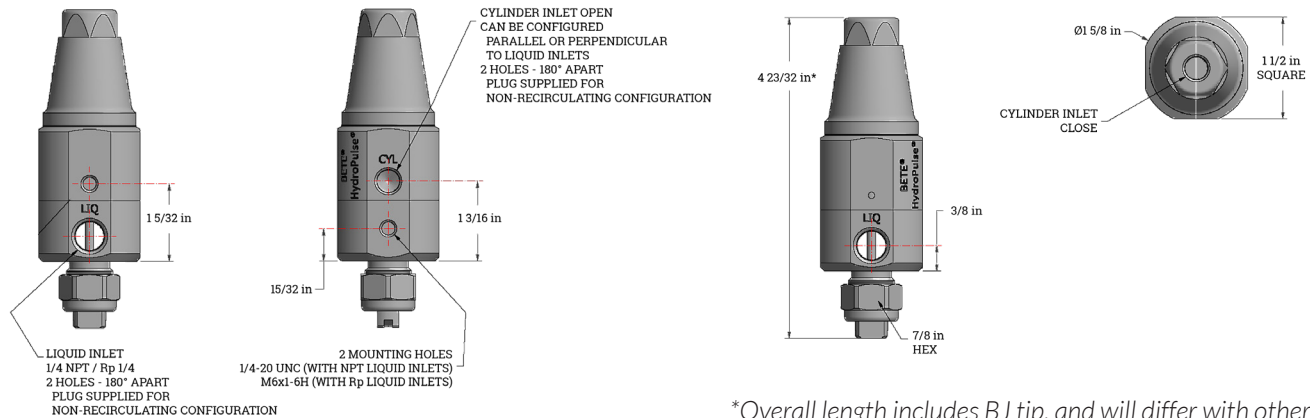
	K Factor	5 PSI	10 PSI	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI	100 PSI	200 PSI	400 PSI	Approx Orifice Dia. (in.)
ST6	0.22	0.49	0.70	0.86	0.99	1.21	1.40	1.57	1.71	1.98	2.21	3.13	4.43	0.09
ST8	0.41	0.92	1.30	1.59	1.84	2.25	2.60	2.91	3.18	3.68	4.11	5.81	8.22	0.13
ST10	0.63	1.41	2.00	2.45	2.83	3.46	4.00	4.47	4.90	5.66	6.32	8.94	12.6	0.16

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

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

Spray Angle
 series dependent

Tip Rating
 series dependent

Tip Series

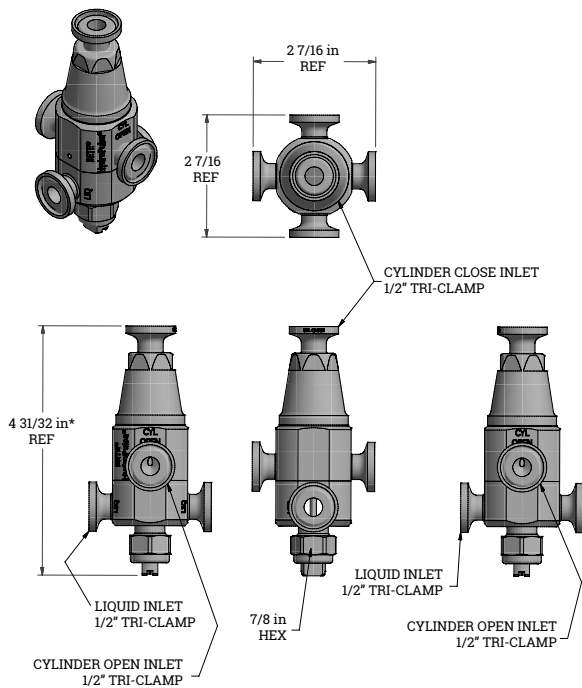
BJ
 BJH
 CW
 ST

PNEUMATIC HYDROPULSE AUTOMATIC SPRAY NOZZLES WITH HYGIENIC TRI-CLAMP CONNECTIONS

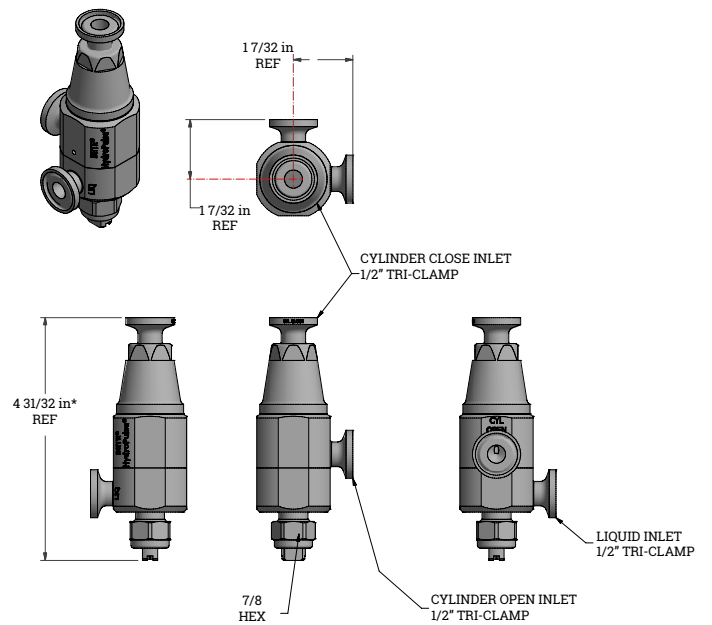
Tri-clamps are sanitary pipe connections commonly used in the food, beverage, biopharmaceutical, and personal care industries.



1/2" TRI-CLAMP PHP-00 (RECIRCULATING)



1/2" TRI-CLAMP PHP-01 (NON-RECIRCULATING)



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