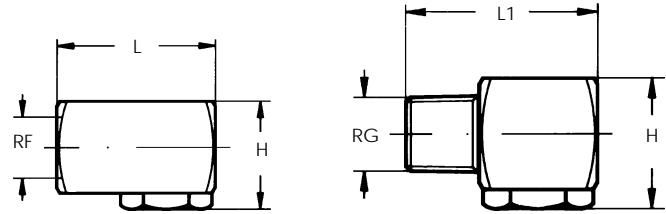
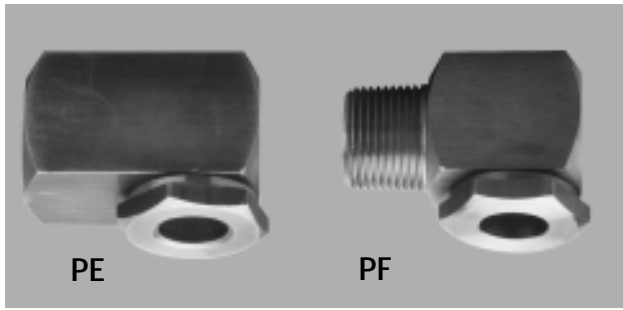


# PE/PF

## HOLLOW-CONE NOZZLES



The performance of PE/PF nozzles is identical to that of PA/PB nozzles shown on the two previous pages, except that all nozzles in this series are fully machined. This makes it possible to offer PE/PF nozzles in a large variety of materials.

**Note:** PE/PF nozzles can be ordered with a sloped bottom instead of the standard configuration. The sloped bottom design reduces the “drilling effect” created by the liquid vortex within the whirl chamber.

Connection: PE (female thread)  
PF (male thread)

Materials: Brass (T1)  
303 stainless steel (B1)  
316 stainless steel (B3)  
Other materials on request

To order a sloped bottom nozzle, replace the “S” in the nozzle code by an “A”.

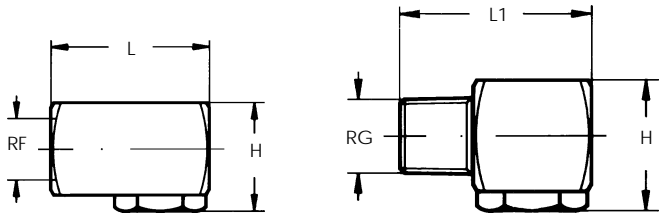
PEN	Nozzle code	RF/RG	D2	D3	Flow rates (gpm) at various pressures (psi)											Spray angle			Dimensions		
																7 psi	20 psi	80 psi	L	L1	H
					3	5	7	10	20	30	40	60	80	100	150						
●	2180xxSN	3/8"	0.240	0.311	1.3	1.6	1.9	2.3	3.2	4.0	4.6	5.6	6.5	7.3	8.9	40	50	54		137/64"	11/16"
●	2220xxSN		0.291	0.311	1.5	2.0	2.3	2.8	4.0	4.9	5.6	6.9	7.9	8.9	10.9	40	47	51			
●	2390xxSN		0.342	0.374	2.7	3.5	4.2	5.0	7.0	8.6	10.0	12.2	14.1	15.7	19.3	40	47	50			

PES	Nozzle code	RF/RG	D2	D3	Flow rates (gpm) at various pressures (psi)											Spray angle			Dimensions		
																7 psi	20 psi	80 psi	L	L1	H
					3	5	7	10	20	30	40	60	80	100	150						
●	0390xxSN	1/8"	0.036	0.043	-	-	0.042	0.050	0.070	0.086	0.10	0.12	0.14	0.16	0.19	34	58	69	1"	113/64"	3/4"
●	0780xxSN		0.055	0.055	-	-	0.083	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.39	36	64	76			
●	1160xxSN		0.083	0.079	-	0.14	0.17	0.20	0.29	0.35	0.41	0.50	0.58	0.65	0.79	52	61	69			
●	1230xxSN		0.094	0.094	-	0.21	0.25	0.29	0.42	0.51	0.59	0.72	0.83	0.93	1.1	52	64	77			
●	1390xxSN		0.118	0.130	0.27	0.35	0.42	0.50	0.70	0.86	1.0	1.2	1.4	1.6	1.9	56	67	76			
●	1630xxSN		0.150	0.153	0.44	0.57	0.67	0.80	1.1	1.4	1.6	2.0	2.3	2.5	3.1	56	65	70			
●	1780xxSN		0.173	0.173	0.55	0.70	0.83	1.0	1.4	1.7	2.0	2.4	2.8	3.1	3.9	55	65	72			
●	0781xxSN	1/4"	0.055	0.055	-	-	0.083	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.39	48	62	71	117/64"	13/8"	29/32"
●	1161xxSN		0.083	0.087	-	-	0.17	0.20	0.29	0.35	0.41	0.50	0.58	0.65	0.79	51	65	78			
●	1231xxSN		0.094	0.094	-	0.21	0.25	0.29	0.42	0.51	0.59	0.72	0.83	0.93	1.1	51	65	78			
●	1391xxSN		0.142	0.146	-	0.35	0.42	0.50	0.70	0.86	1.0	1.2	1.4	1.6	1.9	63	73	79			
●	1631xxSN		0.161	0.157	0.44	0.57	0.67	0.80	1.1	1.4	1.6	2.0	2.3	2.5	3.1	61	69	73			
●	1781xxSN		0.185	0.177	0.55	0.70	0.83	1.0	1.4	1.7	2.0	2.4	2.8	3.1	3.9	63	70	74			
●	2117xxSN		0.228	0.201	0.82	1.1	1.2	1.5	2.1	2.6	3.0	3.7	4.2	4.7	5.8	63	71	72			
●	1392xxSN	3/8"	0.138	0.130	0.27	0.35	0.42	0.50	0.71	0.87	1.0	1.2	1.4	1.6	1.9	64	73	79	115/32"	137/64"	11/16"
●	1632xxSN		0.177	0.165	0.44	0.57	0.67	0.81	1.1	1.4	1.6	2.0	2.3	2.6	3.1	62	70	74			
●	1782xxSN		0.197	0.177	0.55	0.71	0.83	1.0	1.4	1.7	2.0	2.4	2.8	3.2	3.9	64	72	75			
●	2118xxSN		0.240	0.213	0.82	1.1	1.3	1.5	2.1	2.6	3.0	3.7	4.3	4.8	5.8	64	72	74			
●	2157xxSN		0.279	0.252	1.1	1.4	1.7	2.0	2.8	3.5	4.0	4.9	5.7	6.3	7.8	63	70	74			
●	2196xxSN		0.291	0.291	1.4	1.8	2.1	2.5	3.5	4.3	5.0	6.1	7.1	7.9	9.7	63	70	74			
●	2230xxSN		0.327	0.311	1.6	2.1	2.5	2.9	4.2	5.1	5.9	7.2	8.3	9.3	11.4	63	70	74			
●	2197xxSN	1/2"	0.374	0.252	1.4	1.8	2.1	2.5	3.6	4.4	5.0	6.2	7.1	8.0	9.7	63	66	71	131/32"	131/32"	11/16"
●	2231xxSN		0.374	0.295	1.6	2.1	2.5	2.9	4.2	5.1	5.9	7.2	8.3	9.3	11.4	67	71	75			
●	2310xxSN		0.374	0.358	2.2	2.8	3.3	4.0	5.6	6.9	7.9	9.7	11.2	12.5	15.3	72	76	78			
●	2391xxSN		0.374	0.437	2.7	3.5	4.2	5.0	7.1	8.6	10.0	12.2	14.1	15.8	19.3	74	79	82			
●	2470xxSN		0.374	0.516	3.3	4.2	5.0	6.0	8.5	10.4	12.0	14.7	17.0	19.0	23.2	77	82	86			
●	2311xxSN	3/4"	0.500	0.311	2.2	2.8	3.3	4.0	5.6	6.9	7.9	9.7	11.2	12.6	15.4	70	73	74	211/64"	29/32"	117/32"
●	2392xxSN		0.500	0.374	2.7	3.5	4.2	5.0	7.1	8.7	10.0	12.3	14.1	15.8	19.4	72	75	77			
●	2471xxSN		0.500	0.437	3.3	4.3	5.0	6.0	8.5	10.4	12.0	14.7	17.0	19.0	23.3	74	76	79			
●	2550xxSN		0.500	0.500	3.8	5.0	5.9	7.0	9.9	12.2	14.0	17.2	19.9	22.2	27.2	76	79	83			
●	2630xxSN		0.500	0.563	4.4	5.7	6.7	8.0	11.4	13.9	16.1	19.7	22.7	25.4	31.1	78	82	84			
●	2700xxSN		0.500	0.579	4.9	6.3	7.5	8.9	12.6	15.5	17.9	21.9	25.3	28.3	34.6	81	84	84			
●	2780xxSN		0.500	0.626	5.5	7.0	8.3	10.0	14.1	17.2	19.9	24.4	28.2	31.5	38.6	83	86	86			
●	2860xxSN		0.500	0.673	6.0	7.8	9.2	11.0	15.5	19.0	22.0	26.9	31.0	34.7	42.5	85	88	88			
●	2940xxSN		0.500	0.720	6.6	8.5	10.0	12.0	17.0	20.8	24.0	29.4	33.9	37.9	46.5	87	90	90			

PET	PFT	Nozzle code	RF/RG	D2	D3	Flow rates (gpm) at various pressures (psi)											Spray angle			Dimensions		
																	7 psi	20 psi	80 psi	L	L1	H
						3	5	7	10	20	30	40	60	80	100	150						
●	●	2390xxSN	3/8"	0.342	0.374	2.7	3.5	4.2	5.0	7.0	8.6	10.0	12.2	14.1	15.7	19.3	72	76	78		137/64"	11/16"

HYDRAULIC NOZZLES  
HOLLOW-CONE

### WIDE ANGLE



Wide angle PE/PF hollow-cone nozzles, have a precision machined outlet orifice. They produce a wide spray angle, fine drops, and are resistant to clogging.

Connection: PE (female thread)  
PF (male thread)

Materials: Brass (T1)  
303 stainless steel (B1)  
316 stainless steel (B3)

PEW	PFW	Nozzle code	RF/RG	D2	D3	Flow rates (gpm) at various pressures (psi)										Spray angle			Dimensions			
																10	20	80	L	L1	H	
						3	5	7	10	20	30	40	60	80	100	150	psi	psi	psi			
•	•	0390xxSN	1/8"	0.036	0.043	-	-	-	0.050	0.070	0.086	0.10	0.12	0.14	0.16	0.19	112	117	98	1"	113/64"	3/4"
•	•	0780xxSN		0.055	0.067	-	-	-	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.39	114	125	110			
•	•	1200xxSN		0.083	0.106	-	-	0.21	0.26	0.36	0.44	0.51	0.63	0.72	0.81	0.99	114	114	97			
•	•	1230xxSN		0.094	0.106	-	-	0.25	0.29	0.42	0.51	0.59	0.72	0.83	0.93	1.1	114	114	97			
•	•	1270xxSN		0.094	0.130	-	-	0.29	0.34	0.49	0.60	0.69	0.84	0.97	1.1	1.3	116	110	95			
•	•	1320xxSN		0.083	0.177	-	-	0.34	0.41	0.58	0.71	0.82	1.0	1.2	1.3	1.6	130	135	120			
•	•	1390xxSN		0.118	0.130	-	-	0.42	0.50	0.70	0.86	1.0	1.2	1.4	1.6	1.9	116	110	92			
•	•	1510xxSN		0.118	0.177	0.36	0.46	0.54	0.65	0.92	1.1	1.3	1.6	1.8	2.1	2.5	126	121	95			
•	•	1700xxSN		0.150	0.177	0.49	0.63	0.75	0.89	1.3	1.5	1.8	2.2	2.5	2.8	3.5	124	112	90			
•	•	0781xxSN	1/4"	0.055	0.067	-	-	-	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.39	110	117	111	117/64"	13/8"	29/32"
•	•	1130xxSN		0.055	0.130	-	-	-	0.17	0.23	0.29	0.33	0.41	0.47	0.52	0.64	100	123	124			
•	•	1160xxSN		0.055	0.177	-	-	-	0.20	0.29	0.35	0.41	0.50	0.58	0.65	0.79	140	144	139			
•	•	1190xxSN		0.055	0.212	-	-	-	0.24	0.34	0.42	0.48	0.59	0.69	0.77	0.94	105	128	132			
•	•	1271xxSN		0.083	0.130	-	-	0.29	0.34	0.49	0.60	0.69	0.84	0.97	1.1	1.3	118	123	113			
•	•	1321xxSN		0.083	0.177	-	-	0.34	0.41	0.58	0.71	0.82	1.0	1.2	1.3	1.6	138	136	126			
•	•	1391xxSN		0.142	0.130	-	-	0.42	0.50	0.70	0.86	1.0	1.2	1.4	1.6	1.9	114	113	104			
•	•	1511xxSN		0.142	0.177	0.36	0.46	0.54	0.65	0.92	1.1	1.3	1.6	1.8	2.1	2.5	130	130	119			
•	•	1600xxSN		0.142	0.212	0.42	0.54	0.64	0.77	1.1	1.3	1.5	1.9	2.2	2.4	3.0	130	132	120			
•	•	1701xxSN		0.161	0.177	0.49	0.63	0.75	0.89	1.3	1.5	1.8	2.2	2.5	2.8	3.5	129	122	103			
•	•	1780xxSN		0.185	0.177	0.55	0.70	0.83	1.0	1.4	1.7	2.0	2.4	2.8	3.1	3.9	120	108	95			
•	•	1860xxSN		0.185	0.212	0.60	0.78	0.92	1.1	1.6	1.9	2.2	2.7	3.1	3.5	4.3	129	122	107			
•	•	1940xxSN		0.185	0.212	0.66	0.85	1.0	1.2	1.7	2.1	2.4	2.9	3.4	3.8	4.6	120	108	97			
•	•	2117xxSN		0.228	0.212	0.82	1.1	1.2	1.5	2.1	2.6	3.0	3.7	4.2	4.7	5.8	101	95	88			
•	•	1512xxSN	3/8"	0.138	0.177	0.36	0.46	0.55	0.65	0.92	1.1	1.3	1.6	1.8	2.1	2.5	130	123	102	115/32"	131/32"	11/8"
•	•	1601xxSN		0.138	0.177	0.42	0.54	0.64	0.77	1.1	1.3	1.5	1.9	2.2	2.4	3.0	138	131	112			
•	•	1702xxSN		0.177	0.177	0.49	0.63	0.75	0.89	1.3	1.5	1.8	2.2	2.5	2.8	3.5	122	110	96			
•	•	1781xxSN		0.197	0.177	0.55	0.70	0.83	1.0	1.4	1.7	2.0	2.4	2.8	3.1	3.9	116	108	93			
•	•	1861xxSN		0.197	0.212	0.60	0.78	0.92	1.1	1.6	1.9	2.2	2.7	3.1	3.5	4.3	133	120	105			
•	•	1941xxSN		0.197	0.212	0.66	0.85	1.0	1.2	1.7	2.1	2.4	2.9	3.4	3.8	4.6	126	115	100			
•	•	2102xxSN		0.197	0.212	0.70	0.90	1.1	1.3	1.8	2.2	2.6	3.1	3.6	4.0	4.9	122	118	109			
•	•	2110xxSN		0.197	0.232	0.77	1.0	1.2	1.4	2.0	2.4	2.8	3.4	4.0	4.4	5.4	118	112	102			
•	•	2118xxSN		0.240	0.232	0.82	1.1	1.3	1.5	2.1	2.6	3.0	3.7	4.3	4.8	5.8	116	106	95			
•	•	2133xxSN		0.240	0.232	0.93	1.2	1.4	1.7	2.4	2.9	3.4	4.2	4.8	5.4	6.6	113	108	98			
•	•	2157xxSN		0.279	0.232	1.1	1.4	1.7	2.0	2.8	3.5	4.0	4.9	5.7	6.3	7.8	106	102	95			
•	•	2172xxSN		0.279	0.311	1.2	1.6	1.8	2.2	3.1	3.8	4.4	5.4	6.2	6.9	8.5	116	110	102			
•	•	2196xxSN		0.291	0.311	1.4	1.8	2.1	2.5	3.5	4.3	5.0	6.1	7.1	7.9	9.7	105	100	93			
•	•	2220xxSN		0.291	0.311	1.5	2.0	2.3	2.8	4.0	4.9	5.6	6.9	7.9	8.9	10.9	105	101	94			
•	•	2390xxSN	1/2"	0.374	0.347	2.7	3.5	4.2	5.0	7.0	8.6	10.0	12.2	14.1	15.7	19.3	110	102	93	131/32"	131/32"	127/64"
•	•	2630xxSN	3/4"	0.500	0.500	4.4	5.7	6.7	8.0	11.4	13.9	16.1	19.7	22.7	25.4	31.1	115	107	97	211/64"	29/32"	137/64"

HYDRAULIC NOZZLES  
HOLLOW-CONE