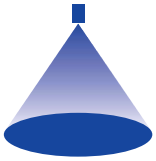
Axial-flow full cone nozzles
Series 490/491



Features:
- Extremely uniform liquid distribution
- Very stable spray angle
- Non clogging due to large free cross sections

Applications:
- Cleaning and washing processes
- Surface spraying
- Chemical process engineering
- Foam control

PATENTED

Series 490/491

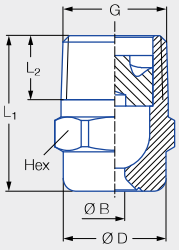


Figure 1

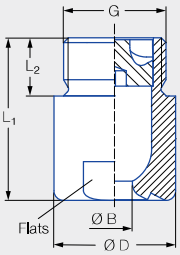


Figure 2

Code	Figure	G	Dimensions [mm]				Weight [g] (brass)
			L_1	L_2	Ø D	Hex/Flats	
CA	1	1/8 BSPT	18.0	6.5	10.0	11	13.0
CC	1	1/4 BSPT	22.0	10.0	13.0	14	16.0
CE	1	3/8 BSPT	24.5	10.0	16.0	17	30.0
CE	1	3/8 BSPT	30.0	10.0	16.0	17	50.0
CG	1	1/2 BSPT	32.5	13.0	21.0	22	60.0
CG	1	1/2 BSPT	43.5	13.0	21.0	22	85.0
AK	2	3/4 BSPP	42.0	15.0	32.0	27	190.0
AM	2	1 BSPP	56.0	17.0	40.0	36	350.0

Spray angle	Ordering no.										Bore diameter B [mm]	Narrowest free cross sections Ø [mm]	V̇ water [l/min]							Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.		Code									p [bar]								
		1Y Stainless steel 316L	30 Brass	1/8 BSPT	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPP	1 BSPP				0.5	1.0	**2.0**	3.0	5.0	7.0	10.0	H = 250 [mm]	H = 500 [mm]
45°	**490.403**	●	●	**CA**						1.25	1.25	0.57	0.76	**1.00**	1.18	1.44	1.65	1.90	200	400
	490.523	●	●	**CA**						1.70	1.70	1.15	1.52	**2.00**	2.35	2.89	3.30	3.81	200	410
	490.603	●	●		**CC**	**CE**[1]				2.00	2.00	1.81	2.39	**3.15**	3.70	4.54	5.20	6.00	200	410
	490.643	●	●		**CC**	**CE**[1]				2.45	2.45	2.30	3.03	**4.00**	4.70	5.77	6.60	7.61	200	410
	490.683		●			**CE**				2.55	2.55	2.87	3.79	**5.00**	5.88	7.21	8.25	9.52	210	410
	490.703		●			**CE**				2.65	2.65	3.22	4.24	**5.60**	6.59	8.08	9.24	10.66	210	420
	490.723	●	●			**CE**				2.85	2.85	3.62	4.77	**6.30**	7.41	9.09	10.40	11.99	210	420
	490.783		●				**CG**			3.45	3.45	5.17	6.82	**9.00**	10.58	12.98	14.85	17.13	210	430
	490.843		●				**CG**			3.80	3.80	7.18	9.47	**12.50**	14.70	18.03	20.63	23.80	220	430

[1] Only available in material 30.

Spray angle	Ordering no.										Bore diameter B [mm]	Narrowest free cross sections Ø [mm]	V̇ water [l/min]							Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.		Code									p [bar]								
		1Y	30																		
		Stainless steel 316L	Brass	1/8 BSPT	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPP	1 BSPP			0.5	1.0	2.0	3.0	5.0	7.0	10.0	H = 250 [mm]	H = 500 [mm]
60°	490.404	●	●	CA						1.15	1.15	0.57	0.76	**1.00**	1.18	1.44	1.65	1.90	260	520
	490.444	●		CA						1.25	1.25	0.72	0.95	**1.25**	1.47	1.80	2.06	2.38	260	520
	490.484	●	●	CA						1.45	1.45	0.92	1.21	**1.60**	1.88	2.31	2.64	3.05	260	520
	490.524	●	●	CA						1.60	1.60	1.15	1.52	**2.00**	2.35	2.89	3.30	3.81	270	530
	490.564	●	●	CA						1.80	1.80	1.44	1.89	**2.50**	2.94	3.61	4.13	4.76	270	530
	490.604	●	●	CA	CC	CE				2.05	2.05	1.81	2.39	**3.15**	3.70	4.54	5.20	6.00	270	540
	490.644	●	●		CC	CE				2.30	2.30	2.30	3.03	**4.00**	4.70	5.77	6.60	7.61	270	540
	490.684	●	●		CC	CE				2.60	2.60	2.87	3.79	**5.00**	5.88	7.21	8.25	9.52	280	550
	490.724	●	●		CC	CE				2.95	2.80	3.62	4.77	**6.30**	7.41	9.09	10.40	11.99	280	560
	490.764	●	●			CE				3.25	3.25	4.59	6.06	**8.00**	9.41	11.54	13.20	15.23	290	560
	490.804	●	●			CE				3.70	3.70	5.74	7.58	**10.00**	11.76	14.43	16.51	19.04	290	570
	490.844	●	●				CG			4.05	4.05	7.18	9.47	**12.50**	14.70	18.03	20.63	23.80	290	570
	490.884	●	●				CG			4.65	4.65	9.19	12.13	**16.00**	18.82	23.08	26.41	30.46	300	580
	490.924	●	●					AK		5.20	5.20	11.49	15.16	**20.00**	23.52	28.85	33.01	38.07	300	590
	490.964	●	●					AK		5.80	5.80	14.36	18.95	**25.00**	29.40	36.07	41.26	47.59	300	590
	491.044	●	●						AM	7.25	7.25	22.97	30.31	**40.00**	47.04	57.71	66.02	76.15	300	600
	491.084	●	●						AM	8.15	8.15	28.72	37.89	**50.00**	58.80	72.13	82.53	95.18	300	600
90°	490.406	●	●	CA						1.20	1.20	0.57	0.76	**1.00**	1.18	1.44	1.65	1.90	490	880
	490.446		●	CA						1.30	1.30	0.72	0.95	**1.25**	1.47	1.80	2.06	2.38	490	900
	490.486	●	●	CA						1.45	1.45	0.92	1.21	**1.60**	1.88	2.31	2.64	3.05	500	900
	490.526	●	●	CA						1.70	1.55	1.15	1.52	**2.00**	2.35	2.89	3.30	3.81	500	910
	490.566	●	●	CA						1.90	1.90	1.44	1.89	**2.50**	2.94	3.61	4.13	4.76	510	920
	490.606	●	●	CA		CE				2.10	2.05	1.81	2.39	**3.15**	3.70	4.54	5.20	6.00	510	930
	490.646	●	●		CC	CE				2.40	2.40	2.30	3.03	**4.00**	4.70	5.77	6.60	7.61	520	950
	490.686	●	●		CC	CE				2.70	2.70	2.87	3.79	**5.00**	5.88	7.21	8.25	9.52	520	960
	490.726	●	●		CC	CE				3.20	2.80	3.62	4.77	**6.30**	7.41	9.09	10.40	11.99	530	970
	490.746	●	●			CE				3.15	3.15	4.08	5.38	**7.10**	8.35	10.24	11.72	13.52	530	980
	490.766	●	●			CE				3.40	3.40	4.59	6.06	**8.00**	9.41	11.54	13.20	15.23	540	980
	490.806	●	●			CE				3.90	3.90	5.74	7.58	**10.00**	11.76	14.43	16.51	19.04	550	990
	490.846	●	●			CE				4.65	4.00	7.18	9.47	**12.50**	14.70	18.03	20.63	23.80	550	1,000
	490.886	●	●				CG			5.45	4.50	9.19	12.13	**16.00**	18.82	23.08	26.41	30.46	550	1,010
	490.926	●	●				CG			5.90	4.50	11.49	15.16	**20.00**	23.52	28.85	33.01	38.07	560	1,010
	490.966	●	●				CG	AK		6.55	4.85	14.36	18.95	**25.00**	29.40	36.07	41.26	47.59	560	1,020
	491.006	●	●					AK		7.55	5.50	18.09	23.87	**31.50**	37.05	45.45	51.99	59.97	560	1,030
	491.046	●	●					AK		8.60	6.60	22.97	30.31	**40.00**	47.04	57.71	66.02	76.15	560	1,040
	491.086	●	●						AM	9.45	7.25	28.72	37.89	**50.00**	58.80	72.13	82.53	95.18	560	1,040
	491.126	●	●						AM	10.40	8.00	36.18	47.75	**63.00**	74.09	90.89	103.98	119.93	560	1,040
	491.146	●							AM	11.00	7.50	40.78	53.81	**71.00**	83.50	102.43	117.19	135.16	560	1,040
120°	490.368	●	●	CA						0.85	0.65	0.36	0.48	**0.63**	0.74	0.91	1.04	1.20	700	1,240
	490.408	●	●	CA						1.20	1.20	0.57	0.76	**1.00**	1.18	1.44	1.65	1.90	720	1,260
	490.448	●	●	CA						1.30	1.30	0.72	0.95	**1.25**	1.47	1.80	2.06	2.38	740	1,280
	490.488	●	●	CA						1.45	1.45	0.92	1.21	**1.60**	1.88	2.31	2.64	3.05	760	1,300
	490.528	●	●	CA						1.70	1.70	1.15	1.52	**2.00**	2.35	2.89	3.30	3.81	780	1,320
	490.568	●	●	CA						1.90	1.90	1.44	1.89	**2.50**	2.94	3.61	4.13	4.76	800	1,340

Spray angle	Ordering no.										Bore diameter B [mm]	Narrowest free cross sections Ø [mm]	V̇ water [l/min]							Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.		Code									p [bar]								
		1Y	30																		
		Stainless steel 316L	Brass	1/8 BSPT	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPP	1 BSPP				0.5	1.0	**2.0**	3.0	5.0	7.0	10.0	H = 250 [mm]	H = 500 [mm]
120°	**490.608**	●	●	**CA**						2.10	2.05	1.81	2.39	**3.15**	3.70	4.54	5.20	6.00	820	1,370
	490.648	●	●		**CC**	**CE**				2.40	2.40	2.30	3.03	**4.00**	4.70	5.77	6.60	7.61	840	1,400
	490.688	●	●		**CC**	**CE**				2.75	2.75	2.87	3.79	**5.00**	5.88	7.21	8.25	9.52	850	1,430
	490.728	●	●		**CC**	**CE**				3.20	2.80	3.62	4.77	**6.30**	7.41	9.09	10.40	11.99	860	1,470
	490.748	●	●			**CE**				3.20	3.20	4.08	5.38	**7.10**	8.35	10.24	11.72	13.52	870	1,500
	490.768	●	●			**CE**				3.45	3.45	4.59	6.06	**8.00**	9.41	11.54	13.20	15.23	880	1,530
	490.808	●	●			**CE**				3.90	3.90	5.74	7.58	**10.00**	11.76	14.43	16.51	19.04	900	1,580
	490.848	●	●			CE				4.70	4.00	7.18	9.47	**12.50**	14.70	18.03	20.63	23.80	910	1,630
	490.888	●	●				**CG**			5.10	4.50	9.19	12.13	**16.00**	18.82	23.08	26.41	30.46	920	1,680
	490.928	●	●				**CG**			5.80	4.75	11.49	15.16	**20.00**	23.52	28.85	33.01	38.07	930	1,700
	490.968	●	●				CG	**AK**		6.65	4.85	14.36	18.95	**25.00**	29.40	36.07	41.26	47.59	930	1,710
	491.048	●	●					**AK**		9.10	5.85	22.97	30.31	**40.00**	47.04	57.71	66.02	76.15	930	1,730
	491.128	●	●						**AM**	10.80	7.75	36.18	47.75	**63.00**	74.09	90.89	103.98	119.93	930	1,740
	491.148	●							**AM**	11.40	7.65	40.78	53.81	**71.00**	83.50	102.43	117.19	135.16	930	1,750

Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0,4}$
(≤ 10 bar)

Ordering example:	Type	+	Material no.	+	Code	=	Ordering no.
	490.608	+	1Y	+	CA	=	490.608.1Y.CA

Assembly accessories can be found in Chapter 9 “Accessories”.