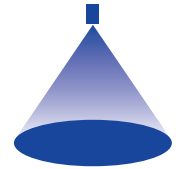


# ➤ Axial-flow full cone nozzles Series 490/491



### 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

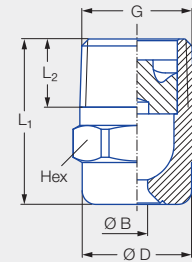


Figure 1

Series 490/491

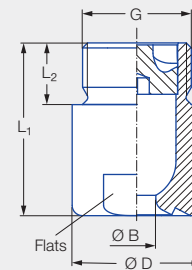


Figure 2

Code	Figure	G	Dimensions [mm]				Weight [g] (brass)
			L <sub>1</sub>	L <sub>2</sub>	Ø D	Hex/Flats	
<b>CA</b>	1	1/8 BSPT	18.0	6.5	10.0	11	13.0
<b>CC</b>	1	1/4 BSPT	22.0	10.0	13.0	14	16.0
<b>CE</b>	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
<b>CG</b>	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
<b>AK</b>	2	3/4 BSPP	42.0	15.0	32.0	27	190.0
<b>AM</b>	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]							H = 250 [mm]	H = 500 [mm]	
		1Y	30	1/8 BSPT	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPP			1 BSPP	0.5	1.0							
														Stainless steel 316L	Brass	2.0	3.0			5.0
45°	<b>490.403</b>	●	●	<b>CA</b>						1.25	1.25	0.57	0.76	<b>1.00</b>	1.18	1.44	1.65	1.90	200	400
	<b>490.523</b>	●	●	<b>CA</b>						1.70	1.70	1.15	1.52	<b>2.00</b>	2.35	2.89	3.30	3.81	200	410
	<b>490.603</b>	●	●		<b>CC</b>	<b>CE<sup>1</sup></b>				2.00	2.00	1.81	2.39	<b>3.15</b>	3.70	4.54	5.20	6.00	200	410
	<b>490.643</b>	●	●		<b>CC</b>	<b>CE<sup>1</sup></b>				2.45	2.45	2.30	3.03	<b>4.00</b>	4.70	5.77	6.60	7.61	200	410
	<b>490.683</b>		●			<b>CE</b>				2.55	2.55	2.87	3.79	<b>5.00</b>	5.88	7.21	8.25	9.52	210	410
	<b>490.703</b>		●			<b>CE</b>				2.65	2.65	3.22	4.24	<b>5.60</b>	6.59	8.08	9.24	10.66	210	420
	<b>490.723</b>	●	●			<b>CE</b>				2.85	2.85	3.62	4.77	<b>6.30</b>	7.41	9.09	10.40	11.99	210	420
	<b>490.783</b>		●				<b>CG</b>			3.45	3.45	5.17	6.82	<b>9.00</b>	10.58	12.98	14.85	17.13	210	430
	<b>490.843</b>		●				<b>CG</b>			3.80	3.80	7.18	9.47	<b>12.50</b>	14.70	18.03	20.63	23.80	220	430

<sup>1</sup> 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]						H = 250 [mm]	H = 500 [mm]		
		1Y	30	1/8 BSPT	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPT			1 BSPT	0.5	1.0	2.0	3.0	5.0			7.0	10.0
		Stainless steel 316L	Brass																	
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]							H = 250 [mm]	H = 500 [mm]
		1Y	30	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		
		Stainless steel 316L	Brass																	
120°	490.608	●	●	CA						2.10	2.05	1.81	2.39	<b>3.15</b>	3.70	4.54	5.20	6.00	820	1,370
	490.648	●	●		CC	CE				2.40	2.40	2.30	3.03	<b>4.00</b>	4.70	5.77	6.60	7.61	840	1,400
	490.688	●	●		CC	CE				2.75	2.75	2.87	3.79	<b>5.00</b>	5.88	7.21	8.25	9.52	850	1,430
	490.728	●	●		CC	CE				3.20	2.80	3.62	4.77	<b>6.30</b>	7.41	9.09	10.40	11.99	860	1,470
	490.748	●	●			CE				3.20	3.20	4.08	5.38	<b>7.10</b>	8.35	10.24	11.72	13.52	870	1,500
	490.768	●	●			CE				3.45	3.45	4.59	6.06	<b>8.00</b>	9.41	11.54	13.20	15.23	880	1,530
	490.808	●	●			CE				3.90	3.90	5.74	7.58	<b>10.00</b>	11.76	14.43	16.51	19.04	900	1,580
	490.848	●	●			CE				4.70	4.00	7.18	9.47	<b>12.50</b>	14.70	18.03	20.63	23.80	910	1,630
	490.888	●	●					CG		5.10	4.50	9.19	12.13	<b>16.00</b>	18.82	23.08	26.41	30.46	920	1,680
	490.928	●	●					CG		5.80	4.75	11.49	15.16	<b>20.00</b>	23.52	28.85	33.01	38.07	930	1,700
	490.968	●	●					CG	AK	6.65	4.85	14.36	18.95	<b>25.00</b>	29.40	36.07	41.26	47.59	930	1,710
	491.048	●	●						AK	9.10	5.85	22.97	30.31	<b>40.00</b>	47.04	57.71	66.02	76.15	930	1,730
	491.128	●	●						AM	10.80	7.75	36.18	47.75	<b>63.00</b>	74.09	90.89	103.98	119.93	930	1,740
	491.148	●							AM	11.40	7.65	40.78	53.81	<b>71.00</b>	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 Type + Material no. + Code = Ordering no.  
 example: 490.608 + 1Y + CA = 490.608.1Y.CA



Assembly accessories can be found in Chapter 9 "Accessories".