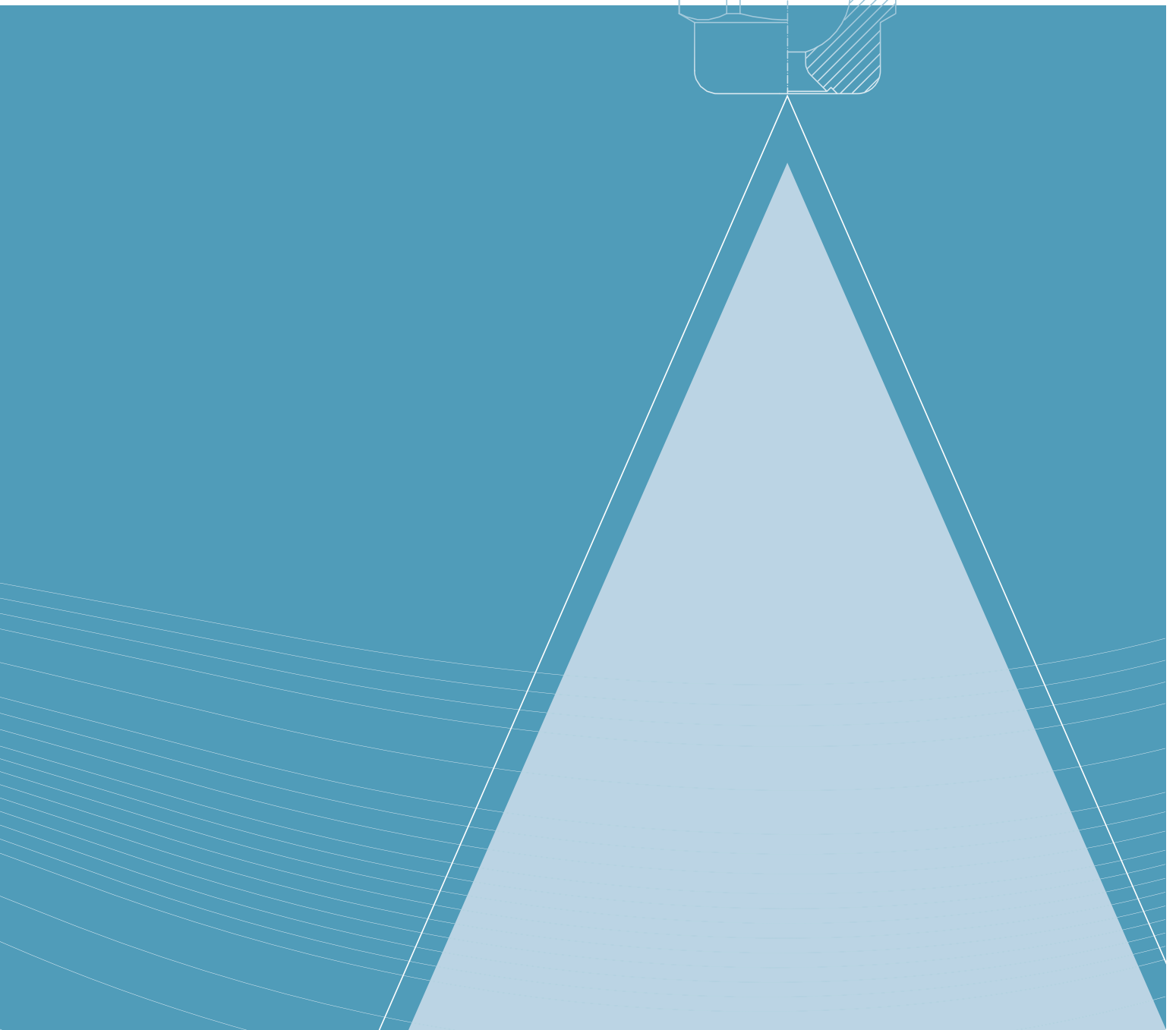
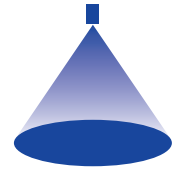


➤➤ FULL CONE NOZZLES



➤➤ FULL CONE NOZZLES OVERVIEW OF TYPES



Lechler full cone nozzles are characterised by uniform liquid distribution over the entire circular impact area and are used, among other things, for surface spraying, in cleaning and washing processes and also in chemical process engineering. Full cone nozzles come in a variety of sizes and are made available as an axial full cone or a tangential full cone design. For special applications, unique types are made available, e.g. cluster head nozzles and deflector-plate nozzles.

Axial-flow full cone nozzles



- Axial flow
- Uniform liquid distribution
- Full surface impact
- Extensive flow rate range
- Extensive range of spray angles
- Standard materials:
Stainless steel 316Ti/316L, Brass, PVDF (special material available on request)

Tangential-flow full cone nozzles



- Tangential flow
- Uniform liquid distribution
- Full surface impact
- Maximum free passage making less susceptible to clogging
- Stable spray angle
- Standard materials:
Stainless steel 316L, Brass, PVDF (special material available on request)

Cluster head nozzles



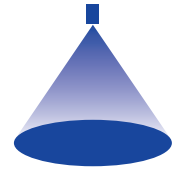
- Axial flow
- Multi-nozzle spray head
- Full surface impact
- Atomized spray – very fine droplets
- Small droplet sizes
- Enlarged droplet surface area
- Standard materials:
Stainless steel 316Ti/316L, Brass
(special material available on request)









Deflector-plate nozzles









- Axial flow
- Large impact area
- Large free cross sections
- Standard materials:
Stainless steel 316Ti/316L, Brass
(special material available on request)

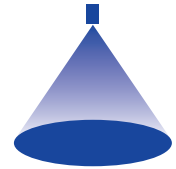
FULL CONE NOZZLES OVERVIEW OF SERIES



		Axial-flow full cone nozzles			
					
Series		490/491	460/461	405	403
Information on page		84	87	89	90
 Flow rate at p = 2 bar	Very low < 5 l/min	•	•		
	Low 5 l/min–25 l/min	•	•		
	Medium 25 l/min–80 l/min	•	•		
	High 80 l/min–400 l/min			•	
	Very high > 400 l/min				•
 Spray angle	Small 45°	•			
	Medium 60°–90°	•	•	•	•
	Large ≥ 120°	•	•	•	•
 Nozzle material	Stainless steel	•		•	•
	Brass	•		•	
	Plastic		•		
 Nozzle connection		1/8 BSPT 1/4 BSPT 3/8 BSPT 1/2 BSPT 3/4 BSPP 1 BSPP	1/8 BSPT 1/4 BSPT 3/8 BSPT 1/2 BSPT 3/4 BSPT 3/4 BSPP 1 BSPP	1 1/4 BSPP 1 1/2 BSPP 2 BSPP	2 1/2 BSPP 3 BSPP 3 1/2 BSPP 4 BSPP

		Tangential-flow full cone nozzles		Cluster head nozzles	Deflector-plate nozzles
					
419	468/494	422/423	422 with bayonet quick-release system	502/503	524/525
91	92	93/95	97	98	99
	•	•	•	•	
	•	•		•	•
		•		•	•
• (at p = 1 bar)		•			•
• (at p = 1 bar)					
•	•	•	•	•	
•	•	•	•	•	•
•	•	•		•	•
	•	•		•	•
	•	•	•		
2 BSPP 2 1/2 BSPP 3 BSPP	Assembly with retaining nut 3/8 BSPP	1/4 BSPT 3/8 BSPT 1/2 BSPT 3/4 BSPT 1 BSPT	Assembly with bayonet quick-release system	1/2 BSPP 3/4 BSPP	1/2 BSPP

➤ 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



Series 490/491

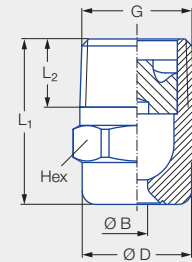


Figure 1

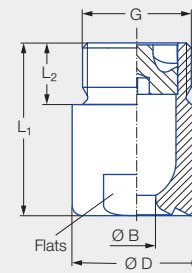


Figure 2

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]							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
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]							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]									
		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		H = 250 [mm]	H = 500 [mm]
		Stainless steel 316L	Brass																		
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)

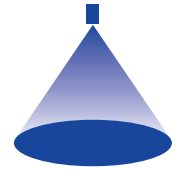
Ordering Type + Material no. + Code = Ordering no.
 example: 490.608 + 1Y + CA = 490.608.1Y.CA



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



➤ Axial-flow full cone nozzles Series 460/461



Features:

- Extremely uniform liquid distribution

Applications:

- Cleaning and washing processes
- Cooling
- Surface spraying
- Chemical process engineering



Series 460/461

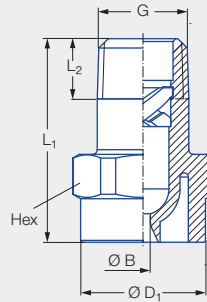


Figure 1

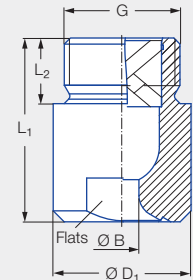


Figure 2

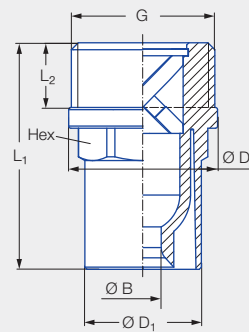




Figure 3

Code	Figure	G	Dimensions [mm]					Weight [g]
			L ₁	L ₂	Ø D ₁	Ø D ₂	Hex/Flats	
CA	1	1/8 BSPT	22.0	6.5	13.0	–	14	2.7
CC	1	1/4 BSPT	22.0	9.7	13.0	–	14	3.3
CE	1	3/8 BSPT	30.0	10.0	17.0	–	17	6.4
CG	1	1/2 BSPT	43.5	13.2	22.0	–	22	14.5
CK	2	3/4 BSPT	42.0	15.0	31.5	–	27	19.9
AK	2	3/4 BSPP	42.0	15.0	31.5	–	27	24.3
AM	3	1 BSPP	52.5	15.0	27.0	34.5	27	34.4

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]									
			5E	1/8 BSPT	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPT			3/4 BSPP	1 BSPP								
													PVDF	0.5	1.0	2.0	3.0	5.0	7.0	10.0
60°	460.524	●	CA							1.60	1.60	1.15	1.52	2.00	2.35	2.89	3.30	3.81	210	380
	460.644	●	CC							2.40	1.90	2.30	3.03	4.00	4.70	5.77	6.60	7.61	240	420
	460.724	●	CC							2.80	2.10	3.15	4.45	6.30	7.72	8.91	9.96	14.09	260	450
	460.964	●						AK		5.80	4.90	14.36	18.95	25.00	29.40	36.07	41.26	47.59	310	560





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]										
		5E	1/8 BSPT	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 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]
		PVDF																			
90°	460.326	●	CA							0.80	0.55	0.23	0.30	0.40	0.47	0.58	0.66	0.76	430	750	
	460.406	●	CA							1.20	0.85	0.57	0.76	1.00	1.18	1.44	1.65	1.90	440	780	
	460.486	●	CA							1.45	1.20	0.92	1.21	1.60	1.88	2.31	2.64	3.05	450	800	
	460.526	●	CA							1.65	1.30	1.15	1.52	2.00	2.35	2.89	3.30	3.81	450	820	
	460.606	●	CA		CE					2.05	1.45	1.81	2.39	3.15	3.70	4.54	5.20	6.00	470	850	
	460.646	●		CC						2.30	1.80	2.30	3.03	4.00	4.70	5.77	6.60	7.61	480	870	
	460.726	●			CE					2.95	2.00	3.62	4.77	6.30	7.41	9.09	10.40	11.99	500	900	
	460.746	●			CE					3.30	1.90	4.08	5.38	7.10	8.35	10.24	11.72	13.52	510	910	
	460.766	●			CE					3.30	2.40	4.59	6.06	8.00	9.41	11.54	13.20	15.23	510	910	
	460.806	●			CE					3.70	2.70	5.74	7.58	10.00	11.76	14.43	16.51	19.04	520	920	
	460.846	●			CE					4.05	3.20	7.18	9.47	12.50	14.70	18.03	20.63	23.80	520	930	
	460.886	●			CE	CG				4.70	3.10	9.19	12.13	16.00	18.82	23.08	26.41	30.46	520	930	
	460.926	●				CG				5.10	2.80	11.49	15.16	20.00	23.52	28.85	33.01	38.07	520	940	
	460.966	●				CG				5.80	3.80	14.36	18.95	25.00	29.40	36.07	41.26	47.59	520	940	
	461.006	●				CG				6.40	3.80	18.09	23.87	31.50	37.05	45.45	51.99	59.97	520	940	
461.046	●					CK			7.20	5.30	22.97	30.31	40.00	47.04	57.71	66.02	76.15	520	950		
461.086	●						AM		8.40	5.00	25.00	35.36	50.00	61.24	70.71	79.06	111.80	530	950		
120°	460.368	●	CA							0.95	0.65	0.32	0.45	0.63	0.77	0.89	1.00	1.41	650	1,030	
	460.408	●	CA							1.20	0.85	0.57	0.76	1.00	1.18	1.44	1.65	1.90	680	1,100	
	460.488	●	CA							1.50	1.00	0.92	1.21	1.60	1.88	2.31	2.64	3.05	700	1,160	
	460.528	●	CA							1.65	1.20	1.15	1.52	2.00	2.35	2.89	3.30	3.81	710	1,200	
	460.608	●	CA							2.10	1.40	1.81	2.39	3.15	3.70	4.54	5.20	6.00	730	1,270	
	460.648	●		CC						2.45	1.60	2.30	3.03	4.00	4.70	5.77	6.60	7.61	750	1,310	
	460.728	●			CE					3.10	1.90	3.62	4.77	6.30	7.41	9.09	10.40	11.99	780	1,380	
	460.748	●			CE					3.30	1.90	4.08	5.38	7.10	8.35	10.24	11.72	13.52	790	1,400	
	460.768	●			CE					3.50	1.90	4.59	6.06	8.00	9.41	11.54	13.20	15.23	790	1,410	
	460.808	●			CE					3.80	2.40	5.74	7.58	10.00	11.76	14.43	16.51	19.04	810	1,430	
	460.848	●			CE					4.20	2.70	7.18	9.47	12.50	14.70	18.03	20.63	23.80	820	1,450	
	460.888	●				CG				4.60	3.10	9.19	12.13	16.00	18.82	23.08	26.41	30.46	830	1,470	
	460.968	●				CG				5.90	4.10	14.36	18.95	25.00	29.40	36.07	41.26	47.59	850	1,500	
	461.048	● ¹					CK			7.60	4.90	22.97	30.31	40.00	47.04	57.71	66.02	76.15	870	1,530	

¹ Material PP (mat. no. 53).

Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$
 (≤ 10 bar)

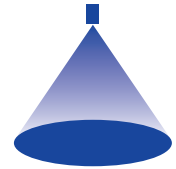
Ordering Type + Material no. + Code = Ordering no.
 example: 460.326 + 5E + CA = 460.326.5E.CA



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



➤ Axial-flow full cone nozzles Series 405



Features:

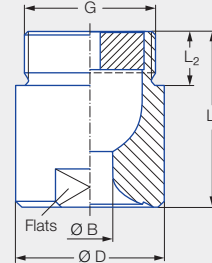
- Extremely uniform liquid distribution

Applications:

- Surface spraying
- Chemical process engineering
- Cleaning and washing processes
- Water treatment



Series 405




Code	G	Dimensions [mm]				Weight [kg] (brass)
		L ₁	L ₂	Ø D	Flats	
AP	1 1/4 BSPP	50.0	19.0	49.0	41	0.5
AR	1 1/2 BSPP	60.0	19.0	59.0	50	0.9
AV	2 BSPP	78.0	24.0	68.0	60	1.6

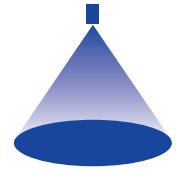
Spray angle	Ordering no.						Bore diameter B [mm]	Narrowest free cross sections Ø [mm]	V̇ water [l/min]						Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.		Code					p [bar]						H = 500 [mm]	H = 1,000 [mm]
		1Y	30	1 1/4 BSPP	1 1/2 BSPP	2 BSPP			0.3	0.5	1.0	2.0	3.0	5.0		
		Stainless steel 316L	Brass													
60°	405.204	●	●	AP			11.2	5.8	47	57	76	100	118	144	600	1,140
	405.284	●	●		AR		14.3	7.0	75	92	121	160	188	231	630	1,210
	405.324	●	●			AV	16.4	7.5	94	115	152	200	235	289	650	1,250
	405.364	●	●			AV	18.4	8.5	117	144	189	250	294	361	650	1,250
	405.404	●				AV	20.0	7.0	147	181	239	315	370	454	650	1,250
90°	405.206	●	●	AP			12.0	5.0	47	57	76	100	118	144	1,120	2,100
	405.286	●	●		AR		15.2	6.2	75	92	121	160	188	231	1,120	2,100
	405.326	●				AV	17.2	7.7	94	115	152	200	235	289	1,120	2,100
	405.366	●				AV	19.5	8.7	117	144	189	250	294	361	1,120	2,100
	405.406	●	●			AV	22.0	9.5	147	181	239	315	370	454	1,120	2,100
120°	405.208	●	●	AP			12.7	5.0	47	57	76	100	118	144	1,850	3,050
	405.288	●	●		AR		16.0	6.6	75	92	121	160	188	231	1,900	3,150
	405.328	●				AV	17.8	7.9	94	115	152	200	235	289	1,900	3,200
	405.368	●	●			AV	20.1	8.8	117	144	189	250	294	361	1,900	3,200
	405.408	●	●			AV	22.4	9.1	147	181	239	315	370	454	1,900	3,200

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: 405.204 + 1Y + AP = 405.204.1Y.AP

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

➤ Axial-flow full cone nozzles Series 403



Features:

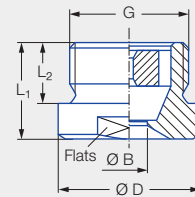
- Extremely uniform liquid distribution

Applications:

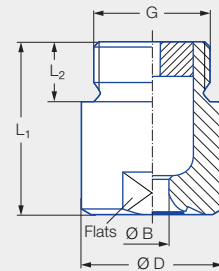
- Surface spraying
- Spraying over packings
- Chemical process engineering
- Cleaning and washing processes
- Cooling



Series 403



90° version



120° version

90° version

Type	G	Dimensions [mm]				Weight [kg]
		L ₁	L ₂	Ø D	Flats	
403.446/403.486	2 1/2 BSPP	52.0	27.0	83.0	75	1.3
403.526	3 BSPP	60.0	30.0	98.0	85	2.0
403.606	3 1/2 BSPP	70.0	32.0	118.0	105	3.6

120° version

Type	G	Dimensions [mm]				Weight [kg]
		L ₁	L ₂	Ø D	Flats	
403.448/403.488	2 1/2 BSPP	124.0	27.0	83.0	75	3.2
403.528	3 BSPP	153.0	30.0	98.0	85	5.4
403.608	3 1/2 BSPP	156.0	32.0	118.0	105	8.3
403.628	4 BSPP	165.0	36.0	128.0	110	9.6

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.			p [bar]							 H = 500 [mm] H = 1,000 [mm]	
		1Y			0.3	0.5	1.0	2.0	3.0	5.0	7.0		
90°	403.446	●	25.0	12.0	187	230	303	400	470	577	660	1,000	1,780
	403.486	●	29.5	12.0	234	287	379	500	588	721	825	1,000	1,780
	403.526	●	32.0	13.8	295	362	477	630	741	909	1,040	1,000	1,780
	403.606	●	40.0	15.0	468	574	758	1,000	1,176	1,443	1,651	1,000	1,780
120°	403.448	●	25.5	10.0	187	230	303	400	470	577	660	1,700	2,930
	403.488	●	29.5	11.0	234	287	379	500	588	721	825	1,700	2,930
	403.528	●	32.0	15.0	295	362	477	630	741	909	1,040	1,700	2,930
	403.608	●	42.0	12.0	468	574	758	1,000	1,176	1,443	1,651	1,700	2,930
	403.628	●	45.0	15.0	585	718	947	1,250	1,470	1,803	2,063	1,700	2,930

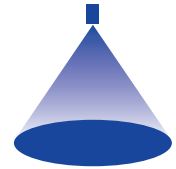
Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$
(≤ 10 bar)

Ordering Type + Material no. = Ordering no.
example: 403.446 + 1Y = 403.446.1Y

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

➤ Axial-flow full cone nozzles

Series 419 FreeFlow



Features:

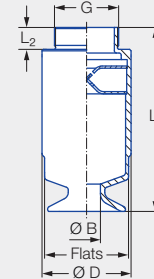
- Non clogging due to very large free cross sections
- Very stable spray angle
- Uniform liquid distribution

Applications:

- Cleaning and washing processes
- Dust control
- Absorption
- Distillation



Series 419



Type	Code	G	Dimensions [mm]				Weight [kg]
			L ₁	L ₂	Ø D	Flats	
419.3xx	AV	2 BSPP	133.0	24.0	70.0	65	1.8
419.4xx	AV	2 BSPP	177.0	24.0	80.0	75	2.3
419.51x	AV	2 BSPP	217.0	27.0	102.0	95	4.0
419.51x	AY	2 1/2 BSPP	220.0	27.0	102.0	95	4.4
419.54x	AY	2 1/2 BSPP	220.0	27.0	102.0	95	4.3
419.57x	AY	2 1/2 BSPP	256.0	27.0	115.0	105	6.0
419.57x	LA	3 BSPP	259.0	30.0	115.0	105	6.4
419.608	LA	3 BSPP	266.0	30.0	122.0	115	6.1
419.6xx	LA	3 BSPP	276.0	30.0	122.0	115	6.3

Spray angle ¹	Ordering no.					Bore diameter B [mm]	Narrowest free cross sections Ø [mm]	V̇ water [l/min]					Spray diameter D [mm] (at p = 1 bar)	
	Type	Mat. no.	Code					p [bar]					 H = 500 [mm] H = 1,000 [mm]	
		H1	2 BSPP	2 1/2 BSPP	3 BSPP			0.3	0.5	1.0	2.0	5.0		
90°	419.366	●	AV			18.40	18.40	117	143	189	249	360	1,200	2,200
	419.396	●	AV			21.00	20.75	140	172	227	300	432	1,200	2,200
	419.446	●	AV			23.10	23.10	187	230	303	400	577	1,200	2,200
	419.486	●	AV			27.00	26.40	234	287	379	500	721	1,200	2,200
	419.516	●	AV	AY		26.70	26.70	281	345	455	600	866	1,200	2,200
	419.546	●		AY		31.20	31.20	332	408	538	710	1,024	1,200	2,200
	419.576	●		AY	LA	33.50	33.50	398	488	644	850	1,226	1,200	2,200
	419.606	●			LA	37.10	37.10	468	574	758	1,000	1,443	1,200	2,200
419.626	●			LA	41.30	41.30	585	718	947	1,250	1,803	1,200	2,200	
120°	419.368	●	AV			18.50	18.50	117	143	189	249	360	1,660	2,900
	419.398	●	AV			22.00	20.75	140	172	227	300	432	1,660	2,900
	419.448	●	AV			23.80	23.80	187	230	303	400	577	1,660	2,900
	419.488	●	AV			27.00	26.40	234	287	379	500	721	1,660	2,900
	419.518	●	AV	AY		28.50	28.50	281	345	455	600	866	1,660	2,900
	419.548	●		AY		32.20	32.00	332	408	538	710	1,024	1,660	2,900
	419.578	●		AY	LA	34.90	34.90	398	488	644	850	1,226	1,660	2,900
	419.608	●			LA	37.10	37.10	468	574	758	1,000	1,443	1,660	2,900
419.628	●			LA	45.00	41.50	585	718	947	1,250	1,803	1,660	2,900	

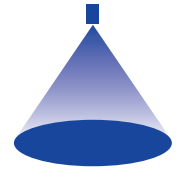
¹ Spray angle at 1 bar.

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: 419.366 + 1Y + AV = 419.366.1Y.AV

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

➤ Axial-flow full cone nozzles Series 468/494



Features:

- Extremely uniform liquid distribution
- Assembly with retaining nut

Applications:

- Surface spraying
- Chemical process engineering
- Cleaning and washing processes
- Water treatment



Series 468/494

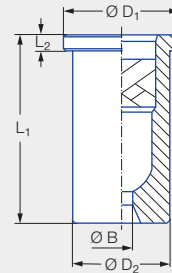


Figure 1
(468)

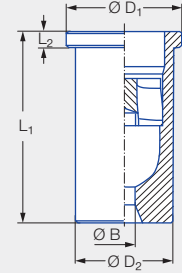



Figure 2
(494)

Code	Figure	Dimensions [mm]			Weight [g] (brass)
		L ₂	Ø D ₁	Ø D ₂	
Assembly with retaining nut 3/8 BSPP	1	2.00	14.80	12.65	18.00
	2	2.00	14.80	12.65	18.00

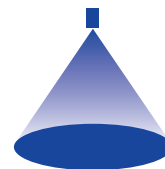
Spray angle	Ordering no.				Bore diameter B [mm]	Narrowest free cross sections Ø [mm]	L ₁ [mm]	V̇ water [l/min]						Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.						p [bar]						H = 250 [mm]	H = 500 [mm]
		1Y	30	5E				0.5	1.0	2.0	3.0	5.0	10.0		
60°	494.604	●	●		2.05	2.05	18.00	1.81	2.39	3.15	3.70	4.54	6.00	280	560
	468.644			●	2.32	2.80	24.50	2.30	3.03	4.00	4.70	5.77	7.61	290	570
	494.644		●		2.32	2.80	24.50	2.30	3.03	4.00	4.70	5.77	7.61	290	570
	494.684		●		2.63	2.80	24.50	2.87	3.79	5.00	5.88	7.21	9.52	300	580
	494.724	●	●		2.96	2.80	24.50	3.62	4.77	6.30	7.41	9.09	11.99	310	590
90°	468.526			●	1.71	1.55	18.00	1.15	1.52	2.00	2.35	2.89	3.81	460	780
	494.526	●	●		1.71	1.55	18.00	1.15	1.52	2.00	2.35	2.89	3.81	460	780
	494.846	●	●		4.95	3.20	24.50	7.18	9.47	12.50	14.70	18.03	23.80	500	920
120°	494.368		●		0.85	0.65	18,00	0.36	0.48	0.63	0.74	0.91	1.20	740	1,750
	494.408	●	●		1.20	1.20	18,00	0.57	0.76	1.00	1.18	1.44	1.90	740	1,750
	494.488	●	●		1.49	1.55	18,00	0.92	1.21	1.60	1.88	2.31	3.05	740	1,750
	494.528	●	●		1.70	1.75	18,00	1.15	1.52	2.00	2.35	2.89	3.81	740	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. = Ordering no.
example: 494.604 + 1Y = 494.604.1Y

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

➤ Tangential-flow full cone nozzles stainless steel/brass version Series 422/423



Features:

- Tangentially arranged supply of liquid
- Without swirl inserts
- Non-clogging
- Stable spray angle
- Uniform liquid distribution

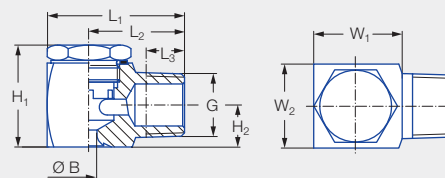


Figure 1

Applications:

- Surface spraying
- Cooling
- Cleaning and washing processes
- Foam control

Series 422/423

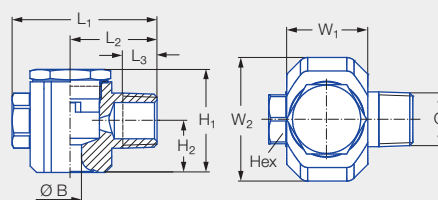


Figure 2

Code	Figure	G	Dimensions [mm]								Weight [g] (stainless steel 316L)
			H ₁	H ₂	L ₁	L ₂	L ₃	W ₁	W ₂	Hex	
CC	1	1/4 BSPT	21.0	8.0	28.0	20.0	9.7	15.6	16.0	–	44.0
CE	1	3/8 BSPT	26.7	11.0	36.0	25.0	10.1	23.2	22.0	–	101.0
CG	2	1/2 BSPT	40.0	20.0	56.0	33.5	13.2	32.0	48.0	19	370.0
CK	2	3/4 BSPT	57.0	23.5	65.5	38.5	14.5	40.0	63.0	27	830.0
CM	2	1 BSPT	66.0	27.3	85.0	48.5	16.8	55.0	78.0	36	1.581.0

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]	
		Stainless steel 316L	Brass	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPT			1 BSPT	0.5	1.0	2.0	3.0	5.0			10.0
60°	422.644	●	●		CE			3.00	3.00	2.00	2.83	4.00	4.90	6.32	8.94	300	580	
90°	422.406	●	●	CC				1.40	1.40	0.50	0.71	1.00	1.22	1.58	2.24	430	800	
	422.486	●		CC				1.85	1.85	0.80	1.13	1.60	1.96	2.53	3.58	450	820	
	422.566	●	●	CC				2.25	2.25	1.25	1.77	2.50	3.06	3.95	5.59	470	840	
	422.606	●	●		CE			2.55	2.55	1.57	2.23	3.15	3.86	4.98	7.04	480	860	
	422.646	●	●		CE			2.90	2.90	2.00	2.83	4.00	4.90	6.32	8.94	500	880	
	422.726		●		CE			3.70	3.70	3.15	4.45	6.30	7.72	9.96	14.09	520	910	
	422.766	●			CE			4.15	4.15	4.00	5.66	8.00	9.80	12.65	17.89	520	910	
	422.806		●		CE			4.65	4.65	5.00	7.07	10.00	12.25	15.81	22.36	520	910	
	422.846	●	●		CE			5.10	5.10	6.25	8.84	12.50	15.31	19.76	27.95	520	910	
	422.886	●	●		CE			5.85	5.85	8.00	11.31	16.00	19.60	25.30	35.78	520	910	
422.966	●				CG		8.00	8.00	12.50	17.68	25.00	30.62	39.53	55.90	520	910		



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	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPT	1 BSPT			0.5	1.0	2.0	3.0	5.0	10.0		
		Stainless steel 316L	Brass															
120°	422.488		●	CC					1.90	1.90	0.80	1.13	1.60	1.96	2.53	3.58	670	1,200
	422.568	●	●	CC					2.45	2.40	1.25	1.77	2.50	3.06	3.95	5.59	700	1,230
	422.608		●		CE				2.70	2.70	1.57	2.23	3.15	3.86	4.98	7.04	710	1,250
	422.728	●	●		CE				4.00	3.90	3.15	4.45	6.30	7.72	9.96	14.09	770	1,360
	422.808	●			CE				4.90	4.90	5.00	7.07	10.00	12.25	15.81	22.36	830	1,490
	422.848	●	●		CE				5.30	5.30	6.25	8.84	12.50	15.31	19.76	27.95	860	1,550
	422.888	●	●		CE				6.60	6.00	8.00	11.31	16.00	19.60	25.30	35.78	880	1,570
	422.928	●				CG			7.30	7.30	10.00	14.14	20.00	24.49	31.62	44.72	890	1,580
	422.968	●	●			CG			8.00	8.00	12.50	17.68	25.00	30.62	39.53	55.90	890	1,590
	423.008	●				CG			8.70	8.70	15.75	22.27	31.50	38.58	49.81	70.44	890	1,590
	423.128	●					CK		12.70	12.30	31.50	44.55	63.00	77.16	99.61	140.87	890	1,590
423.208	●						CM	17.00	16.00	50.00	70.71	100.00	122.47	158.11	223.61	890	1,590	

Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$

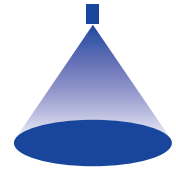
Ordering Type + Material no. + Code = Ordering no.
 example: 422.488 + 30 + CC = 422.488.30.CC



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

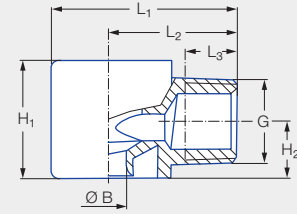
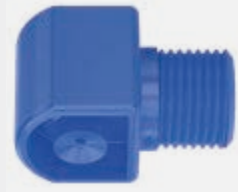


➤ Tangential-flow full cone nozzles, plastic version Series 422/423



Features:

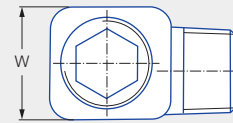
- Tangentially arranged supply of liquid
- Without swirl inserts
- Non-clogging
- Stable spray angle
- Uniform liquid distribution
- High chemical resistance



Applications:

- Surface spraying
- Cooling
- Cleaning and washing processes
- Foam control

Series 422/423



Code	G	Dimensions [mm]						Weight [g]
		H ₁	H ₂	L ₁	L ₂	L ₃	Flats	
CC	1/4 BSPT	16.0	8.0	28.0	20.0	9.8	16.0	7.0
CE	3/8 BSPT	23.0	11.2	36.0	25.0	10.1	22.0	16.0
CG	1/2 BSPT	38.0	19.2	49.5	33.5	13.2	32.0	40.0
CK	3/4 BSPT	50.0	24.5	58.5	38.5	18.5	41.0	50.0

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]
		5E	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPT			0.5	1.0	2.0	3.0	5.0	10.0		
60°	422.724	●		CE			3.60	3.60	3.15	4.45	6.30	7.72	9.96	14.09	320	560
90°	422.406	●	CC				1.50	1.45	0.50	0.71	1.00	1.22	1.58	2.24	530	900
	422.566	●	CC				2.30	2.20	1.25	1.77	2.50	3.06	3.95	5.59	530	920
	422.606	●		CE			2.60	2.50	1.58	2.23	3.15	3.86	4.98	7.04	540	920
	422.646	●		CE			3.00	2.90	2.00	2.83	4.00	4.90	6.32	8.94	540	930
	422.726	●		CE			3.70	3.60	3.15	4.45	6.30	7.72	9.96	14.09	550	950
	422.806	●		CE			4.65	4.60	5.00	7.07	10.00	12.25	15.81	22.36	560	980
	422.846	●		CE			5.10	5.10	6.25	8.84	12.50	15.31	19.76	27.95	560	990
	422.886	●		CE			5.80	5.80	8.00	11.31	16.00	19.60	25.30	35.78	570	1,010
	422.926	●			CG		7.30	7.30	10.00	14.14	20.00	24.49	31.62	44.72	570	1,030
	422.966	●			CG		8.00	8.00	12.50	17.68	25.00	30.62	39.53	55.90	580	1,040
	423.006	●			CG		8.70	8.70	15.75	22.27	31.50	38.58	49.81	70.44	580	1,040
423.126	●				CK	12.00	12.00	31.50	44.55	63.00	77.16	99.61	140.87	580	1,050	






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]
		5E	1/4 BSPT	3/8 BSPT	1/2 BSPT	3/4 BSPT			0.5	1.0	2.0	3.0	5.0	10.0		
		PVDF														
120°	422.408	●	CC				1.50	1.45							0.50	0.71
	422.448	●	CC				1.65	1.60	0.63	0.88	1.25	1.53	1.98	2.80	680	1,210
	422.488	●	CC				1.90	1.90	0.80	1.13	1.60	1.96	2.53	3.58	680	1,230
	422.568	●	CC				2.40	2.40	1.25	1.77	2.50	3.06	3.95	5.59	700	1,260
	422.728	●		CE			4.00	3.90	3.15	4.45	6.30	7.72	9.96	14.09	770	1,400
	422.888	●		CE			6.60	6.00	8.00	11.31	16.00	19.60	25.30	35.78	850	1,560
	422.968	●			CG		8.00	8.00	12.50	17.68	25.00	30.62	39.53	55.90	960	1,620
	423.008	●			CG		8.70	8.70	15.75	22.27	31.50	38.58	49.81	70.44	970	1,630
423.128	●				CK	12.70	12.30	31.50	44.55	63.00	77.16	99.61	140.87	990	1,660	

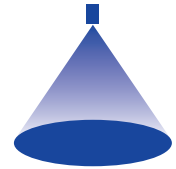
Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$

Ordering Type + Material no. + Code = Ordering no.
 example: 422.408 + 5E + CC = 422.408.5E.CC

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



➤ Tangential-flow full cone nozzles, plastic version with bayonet quick-release system Series 422



Features:

- Without swirl inserts
- Non-clogging
- Stable spray angle
- Simple and quick assembly
- Uniform liquid distribution
- High chemical resistance



Applications:

- Surface spraying
- Cooling
- Cleaning and washing processes
- Foam control

Series 422

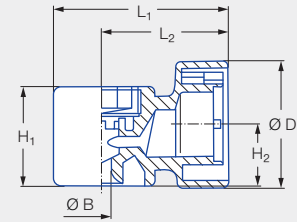


Figure 1

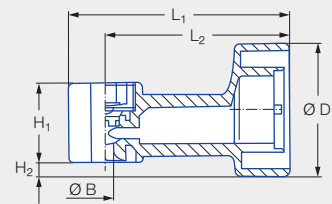




Figure 2

Type	Code	Figure	Dimensions [mm]					Weight [g] (PVDF)
			H ₁	H ₂	L ₁	L ₂	Ø D	
422.644/422.606/422.608	KB	1	23.0	14.0	40.0	29.0	29.5	20.0
422.406/422.408/422.528	KB	2	17.5	3.5	48.0	40.0	29.5	14.0

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]	
		5E	53											
		PVDF	PP				Bayonet quick-release system	0.5	1.0	2.0	3.0	5.0	10.0	
60°	422.644		●	KB	2.90	2.90	2.00	2.83	4.00	4.90	6.32	8.94	250	490
90°	422.406	●		KB	1.50	1.45	0.50	0.71	1.00	1.22	1.58	2.24	530	900
	422.606	●		KB	2.60	2.50	1.58	2.23	3.15	3.86	4.98	7.04	540	920
120°	422.408	●		KB	1.50	1.45	0.50	0.71	1.00	1.22	1.58	2.24	670	1,140
	422.528	●		KB	2.10	2.00	1.00	1.41	2.00	2.45	3.16	4.47	690	1,220
	422.608	●		KB	2.60	2.50	1.58	2.23	3.15	3.86	4.98	7.04	710	1,260

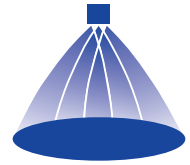
Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$

Ordering Type + Material no. + Code = Ordering no.
example: 422.644 + 53 + KB = 422.644.53.KB

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

Cluster head nozzles

Series 502/503



Features:

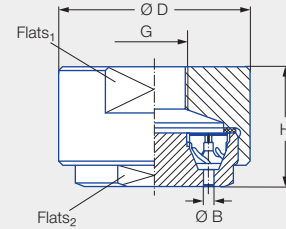
- Fine, uniform atomization
- Stable spray angle
- Space-saving installation
- Maintenance-friendly design
- High temperature and chemical resistance

Applications:

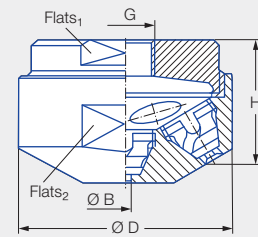
- Chlorine precipitation
- Absorption
- Dust suppression
- Degassing of liquids
- Desuperheating



Series 502/503



70° version



130° version

70° version

G	Dimensions [mm]				Weight [g] (brass)
	H	Ø D	Flats ₁	Flats ₂	
1/2 BSPP	25.0	50.0	46	38	250.0
3/4 BSPP	46.0	75.0	65	55	870.0

130° version

G	Dimensions [mm]				Weight [g] (brass)
	H	Ø D	Flats ₁	Flats ₂	
1/2 BSPP	28.0	40.0	27	36	150.0
3/4 BSPP	53.0	60.0	50	55	410.0

Spray angle	Ordering no.			BSPP	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.					p [bar]					H = 500 [mm]	H = 1,000 [mm]
		17 ¹	30				0.5	1.0	2.0	5.0	10.0		
70°	502.445		●	1/2	0.90	0.50	–	–	1.25	1.98	2.80	270	360
	502.985	●		3/4	3.30	2.00	14.00	19.80	28.00	44.27	62.61	610	1,000
	503.065	●		3/4	4.90	2.00	22.50	31.82	45.00	71.15	100.62	920	1,520
130°	502.448	●	●	1/2	0.90	0.50	–	–	1.25	1.98	2.80	310	370
	502.548	●	●	1/2	1.80	0.50	–	1.58	2.24	3.54	5.01	450	570
	502.748	●	●	3/4	1.90	1.90	3.55	5.02	7.10	11.23	15.88	1,110	1,400
	502.838	●	●	3/4	2.90	2.00	5.90	8.34	11.80	18.66	26.39	1,500	2,060
	502.908	●	●	3/4	4.00	2.00	9.00	12.73	18.00	28.46	40.25	1,770	2,650
	503.028	●	●	3/4	4.20	2.00	17.75	25.10	35.50	56.13	79.38	2,050	3,150
	503.118	●	●	3/4	6.50	2.00	30.00	42.43	60.00	94.87	134.16	2,300	3,550

¹ We reserve the right to supply material 316Ti or 316L under material no. 17.

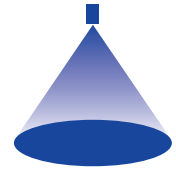
Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$

Ordering Type + Material no. = Ordering no.
example: 502.445 + 30 = 502.445.30

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

Deflector-plate nozzles

Series 524/525

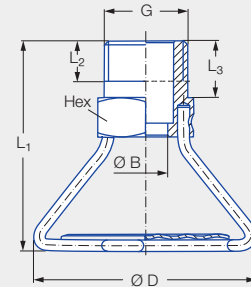


Features:

- Full cone atomization
- Large impact area
- Non-clogging

Applications:

- Fire fighting
- Sprinkling
- Dust suppression



Series 524/525

G	Dimensions [mm]					Weight [g] (brass)
	L ₁	L ₂	L ₃	Ø D	Hex	
1/2 BSPP	53.5	11.0	14.5	56.0	24	68.0

Spray angle	Ordering no.			Bore diameter B [mm]	V̇ water [l/min]						Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.			p [bar]						H = 1,000 [mm]	H = 3,000 [mm]
		17 ¹	30		0.5	1.0	2.0	3.0	5.0	10.0		
180°	524.809	●	●	4.00	5.00	7.07	10.00	12.25	15.81	22.36	3,800	4,300
	525.049	●	●	8.00	20.00	28.28	40.00	48.99	63.25	89.44	10,000	11,500
	525.109		●	9.30	28.00	39.60	56.00	89.59	88.54	125.22	10,500	12,750
	525.169		●	10.90	40.00	56.57	80.00	97.98	126.49	178.89	10,500	14,500
	525.229		●	12.20	56.00	79.20	112.00	137.17	177.09	250.44	7,500	11,500
	525.269	●	●	12.30	70.00	98.99	140.00	171.46	221.36	313.05	7,000	12,000

¹ We reserve the right to supply material 316Ti or 316L under material no. 17.

Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$

Ordering Type + Material no. = Ordering no.
 example: 524.809 + 17 = 524.809.17

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

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