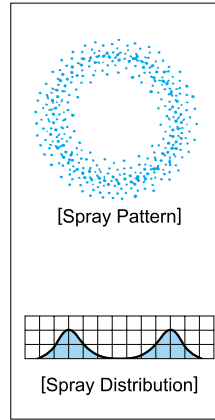


Extremely Fine Mist and Ultra-Small Capacity Hollow Cone Spray Nozzles

KB



[Features]

- Ultra-small capacity hollow cone spray nozzle with the finest atomization among hydraulic nozzles.
- Capable of generating extremely fine spray.
- The whirl chamber is formed by a ceramic orifice and closer(*1), which provides excellent wear-resistance.

[Standard Pressure]

0.7MPa

[Applications]

Humidifying : Air handling units, green houses, etc.
Cooling : Gases, thin plates, poultry, etc.
Spraying : Alcohol, chemicals, etc.

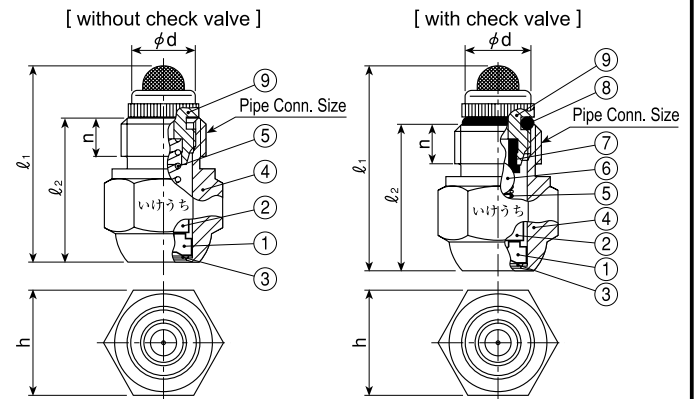
Hollow Cone

KB-series

KB-series (with ceramic orifice inserted)	
Structure	• Spray orifice and closer are made of ceramics. • Thread is parallel male pipe thread (G$\frac{1}{4}$B; PF$\frac{1}{4}$M). • All models equipped with built-in strainers.
Material	• Spray orifice & closer : ceramic • Metal parts : B (brass) or S303 (stainless steel 303)

Series	Pipe Conn. Size	Dimensions(mm)					Mass(g)	
		ℓ_1	ℓ_2	h	n	ϕd	S303	B
KB (w/o check valve)	$\frac{1}{4}$ M (PF) [G $\frac{1}{4}$ B]	31	22.5	16 (B) 17 (S303)	6	11	24.8	25
KB※CV (w/ check valve)	$\frac{1}{4}$ M (PF) [G $\frac{1}{4}$ B]	32	22.5	16 (B) 17 (S303)	6	11	25.3	25.5

[Note] Appearance and dimensions may differ slightly depending on materials and nozzle codes.



- ①Ceramic orifice ②Ceramic closer (*1) ③Packing-PTFE ④Nozzle body
⑤Spring ⑥Ball-S304 ⑦Packing-NBR ⑧O-ring-NBR
⑨Strainer-B+S304 or S303+S304

*1) In our newly-designed KB (with code N) nozzles (see p.47), the closer is made of polyester elastomer, not ceramic.

Spray Angle Code	Spray Capacity Code (*2)	Pipe Conn. Size	Spray Angle			Spray Capacity (ℓ/hr)										Mean Drop. Dia. (μm)	Free Pass. Dia. (mm)	Strainer Mesh Size
			0.3 MPa	0.7 MPa	2 MPa	0.3 MPa	0.4 MPa	0.5 MPa	0.6 MPa	0.7 MPa	1 MPa	1.2 MPa	1.5 MPa	2 MPa				
80°	063N	1/4M(PF) [G1/4B]	65°	80°	80°	1.31	1.51	1.69	1.85	2.00	2.39	2.62	2.93	3.38	45	0.20	200	
	071		—	80°	80°	—	1.70	1.90	2.08	2.25	2.69	2.95	3.29	3.81		0.15	200	
	08		—	80°	80°	—	1.97	2.20	2.41	2.60	3.11	3.40	3.80	4.40		0.15	200	
	09		—	80°	80°	—	2.23	2.49	2.73	2.95	3.53	3.86	4.32	4.99	5	0.15	200	
	10N		65°	80°	80°	2.13	2.46	2.75	3.01	3.25	3.89	4.26	4.76	5.50		0.25	200	
	125N		65°	80°	80°	2.68	3.10	3.47	3.80	4.10	4.90	5.37	6.00	6.94	60	0.30	200	
	14		—	80°	80°	—	3.48	3.89	4.26	4.60	5.50	6.02	6.73	7.78	50	0.15	200	
	16N		65°	80°	80°	3.44	3.97	4.44	4.86	5.25	6.28	6.88	7.69	8.88	0.35	150		
	20N		65°	80°	80°	4.32	4.99	5.58	6.11	6.60	7.90	8.65	9.66	11.2	0.40	150		
	22N		65°	80°	80°	4.75	5.48	6.13	6.71	7.25	8.67	9.50	10.6	12.3	5	0.40	150	
	25	70°	80°	80°	5.40	6.24	6.97	7.64	8.25	9.87	10.8	12.1	14.0	0.25		150		
	28	70°	80°	80°	6.05	6.99	7.82	8.56	9.25	11.1	12.1	13.5	15.7	0.30	150			
	32	1/4M(PF) [G1/4B]	70°	80°	80°	6.94	8.01	8.96	9.82	10.6	12.7	13.9	15.5	17.9	75	0.30	150	
	38		70°	80°	80°	8.25	9.52	10.7	11.7	12.6	15.1	16.5	18.4	21.3	65	0.40	150	
	45		70°	80°	80°	9.79	11.3	12.6	13.9	15.0	17.9	19.6	21.9	25.3	0.40	100		
	50		70°	80°	80°	10.9	12.6	14.0	15.4	16.6	19.9	21.8	24.3	28.1	0.40	100		
	56		70°	80°	80°	12.2	14.1	15.7	17.2	18.6	22.3	24.4	27.2	31.5	5	0.40	100	
	63		72°	80°	80°	13.7	15.8	17.7	19.4	21.0	25.1	27.5	30.7	35.5		0.40	100	
	71		72°	80°	80°	15.5	17.8	20.0	21.9	23.6	28.2	30.9	34.6	39.9	0.50	100		
	80		72°	80°	80°	17.5	20.2	22.6	24.7	26.7	31.9	35.0	39.0	45.1	0.50	100		
	90		73°	80°	80°	19.6	22.7	25.4	27.8	30.0	35.9	39.3	43.9	50.8	110	0.50	100	
	100		73°	80°	80°	21.8	25.2	28.2	30.9	33.3	39.9	43.7	48.8	56.4	90	0.50	100	
	1250		73°	80°	80°	27.2	31.5	35.2	38.5	41.6	49.8	54.5	60.9	70.4	5	0.50	100	
	180		74°	80°	80°	39.2	45.3	50.6	55.5	59.9	71.6	78.5	87.6	101	150	0.60	100	
	200		74°	80°	80°	43.6	50.4	56.3	61.7	66.6	79.7	87.3	97.5	113	130	0.60	100	
	320		75°	80°	80°	69.7	80.5	90.0	98.6	107	127	140	156	180	210	0.60	100	
60°	063		1/4M(PF) [G1/4B]	—	60°	60°	—	1.51	1.69	1.85	2.00	2.39	2.62	2.93	3.38	45	0.15	200
	14			—	60°	60°	—	3.48	3.89	4.26	4.60	5.50	6.02	6.73	7.78	5	0.15	200
	32	—		60°	60°	—	8.01	8.96	9.82	10.6	12.7	13.9	15.5	17.9	0.30		150	
	56	50°		60°	60°	12.2	14.1	15.7	17.2	18.6	22.3	24.4	27.2	31.5	90	0.40	100	
	140	53°		60°	60°	30.5	35.2	39.4	43.2	46.6	55.7	61.0	68.2	78.8	130	0.50	100	
	280	54°		60°	60°	61.0	70.5	78.8	86.4	93.2	112	122	136	158	190	0.60	100	

*2) Spray Capacity Code with N is our newly-designed KB-series. See page 47 for the features.

[Note]

The spray capacity of KB nozzle is shown as ℓ/hr. The spray capacity code does not correspond with the spray capacity at the standard pressure.

Extremely Fine Mist and Ultra-Small Capacity / Hollow Cone Spray Nozzles

KB-series

Features of newly-designed KB (with code "N") series

● **Anti-clogging design**

- Larger orifice diameter (1.3~2.6 times) compared with conventional KB.
- Strongly clog-resistant and extremely-fine spray.

● **Available in wide range from low (0.2MPa) to high (10MPa) pressure**

- Capable of spraying from 0.2MPa Able to spray at low capacity.
- Designed to withstand pressures up to 10MPa Suitable for even finer atomization. (*1)

*1) When spraying at pressures of 2MPa and above, use SUS303 nozzles.

■ **Spray capacity of newly-designed KB at high pressure (3MPa~10MPa)**

Spray Angle Code	Spray Capacity Code	Spray Angle	Spray Capacity (ℓ/hr)				Mean Drop. Dia. at 10MPa (μm)
			3 MPa	5 MPa	7 MPa	10 MPa	
80°	063N	80°	4.14	5.34	6.33	7.56	33
	10N		6.74	8.70	10.3	12.3	
	125N		8.50	11.0	13.0	15.5	5
	16N		10.9	14.0	16.6	19.8	
	20N		13.7	17.7	20.9	24.9	
	22N		15.1	19.4	22.9	27.4	40

Check Valve

For drip-free shut-off, KB nozzles with check valves are available.

The standard operating pressure of check valve is 0.4MPa. Supply pressure minus the operating pressure of the check valve (0.4MPa) is the atomizing pressure.

How to order

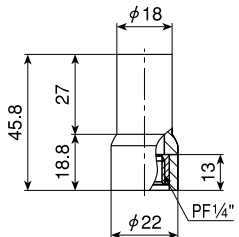
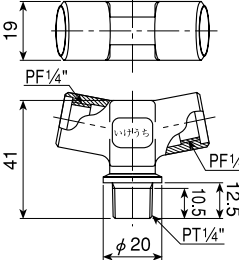
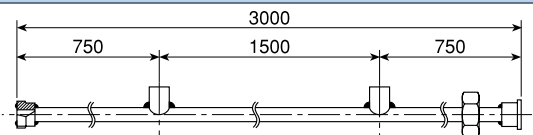
Please inquire or order for a specific nozzle using this coding system.

〈Example〉...1/4MKB80071BCV-RW

1/4 MKB 80 071 B CV -RW

Spray Angle Code	Spray Capacity Code	Material	Check Valve
80°	063N	B	CV (with Check Valve)
60°	320	S303	— (without Check Valve)

Related Products for KB-series

Series	Appearance	Structure	Features
Fitting for PVC pipe 13AKB adaptor PVC			• Fitting for KB to 13A (1/2") Tee. • Material : PVC
Two-way adaptor			• Adaptor for connecting 2 pcs. of KB. • Three types of threads for pipe connection (1/4PT, 1/4PF, M15X1) are available. • Material : Chrome-plated brass
Spray header			• Stainless steel header with two-way adaptor. • Length of header : 3m or 4m • Please contact us for details.

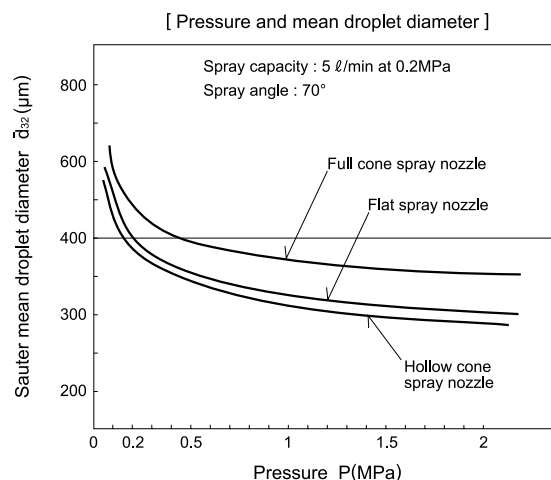
For Effective Use of Hollow Cone Spray Nozzles

Mean Droplet Diameter

If spray pressure, spray capacity and spray angle are kept the same, the mean droplet diameter of a hollow cone spray nozzle is the smallest among all hydraulic nozzles.

Reducing the mean droplet diameter increases the total surface area of the spray liquid which has a great effect on transport phenomena of materials, such as chemical reaction, absorption, adsorption, etc.

Hollow cone spray nozzles are suitable for cooling and washing gases, humidifying and chemical reactions.



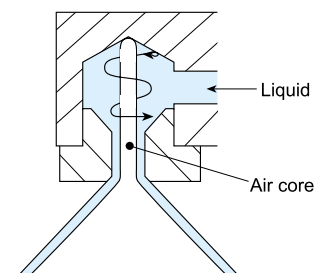
Free Passage Diameter

Free passage diameter shows the approximate value of the smallest dimension of liquid passage in the nozzle. Among hollow cone spray nozzles, **AAP** and **TAA-series** have no obstructions inside and minimize clogging problems.

Wear Resistance

In the tangential hollow cone spray nozzles an air core is generated in the center of the vortex current, which causes wear at the end of the air core when the spraying liquid contains slurry.

In order to maintain optimum nozzle performance, the nozzle material is very important. That is why IKEUCHI's hollow cone spray nozzles are made of highly wear-resistant ceramics and SiC, etc.



Viscosity

As the viscosity of liquid increases, the spray capacity of hollow cone spray nozzles increases but the spray angle decreases. Also, the mean droplet diameter becomes larger. Because viscous liquid increases the resistance inside the pipe, the liquid pressure drop must be also taken into consideration.

