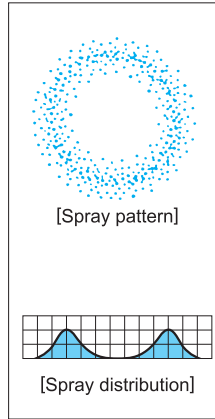


Extremely Fine Fog and Ultra-small Capacity Hollow Cone Spray Nozzles

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,^(*) which provides excellent wear resistance.

[Standard Pressure]

0.7 MPa

[Applications]

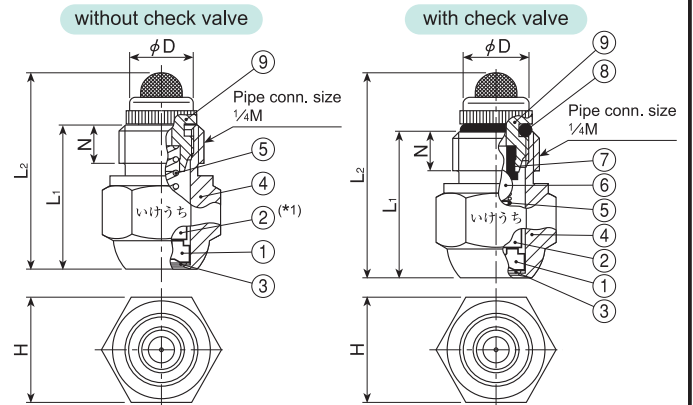
- Humidifying: Air handling units, green houses
- Cooling: Gas, thin plates, poultry
- Spraying: Alcohol, chemicals

Hollow Cone

KB series

KB series (with ceramic orifice inserted)	
Structure	<ul style="list-style-type: none"> ● Spray orifice and closer are made of ceramics. ● Male parallel pipe thread (G$\frac{1}{4}$B; PF$\frac{1}{4}$M). ● All models equipped with built-in strainers.
Material	<ul style="list-style-type: none"> ● Spray orifice & closer: ceramic ● Metal parts: S303 or B (brass)

Series	Dimensions (mm)					Mass (g)	
	L ₁	L ₂	H	ϕ D	N	S303	B
KB (w/o check valve)	22.5	31	17 (S303) 16 (B)	10.5	6	24.8	25
KB**CV (w/ check valve)	22.5	32	17 (S303) 16 (B)	10.5	6	25.3	25.5



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

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

*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)	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	65	80	80	1.36	1.55	1.72	1.86	2.00	2.35	2.56	2.83	3.22	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
		08	—	80	80	—	1.97	2.20	2.41	2.60	3.11	3.40	3.80	4.40	5	0.15	200
		09	—	80	80	—	2.23	2.49	2.73	2.95	3.53	3.86	4.32	4.99			
		10N	65	80	80	2.19	2.51	2.78	3.03	3.25	3.84	4.18	4.63	5.30	60	0.25	200
		125N	65	80	80	2.77	3.16	3.51	3.82	4.10	4.84	5.27	5.84	6.68			
		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	3.51	4.02	4.47	4.88	5.25	6.22	6.79	7.55	8.66			
		20N	65	80	80	4.41	5.06	5.62	6.13	6.60	7.82	8.53	9.49	10.9	5	0.40	150
		22N	65	80	80	4.84	5.55	6.18	6.74	7.25	8.59	9.37	10.4	12.0			
		25	70	80	80	5.40	6.24	6.97	7.64	8.25	9.87	10.8	12.1	14.0	5	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			
		32	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			
		45	70	80	80	9.79	11.3	12.6	13.9	15.0	17.9	19.6	21.9	25.3	5	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			
		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			
		71	72	80	80	15.5	17.8	20.0	21.9	23.6	28.2	30.9	34.6	39.9	5	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			
	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
	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				5
	200	74	80	80	43.6	50.4	56.3	61.7	66.6	79.7	87.3	97.5	113	5	0.60	100	
	320	75	80	80	69.7	80.5	90.0	98.6	107	127	140	156	180				210
60	063	—	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				0.15
		32	—	60	60	—	8.01	8.96	9.82	10.6	12.7	13.9	15.5	17.9	5	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			
		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			

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

[Note]

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

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 (0.2 MPa) to high (10 MPa) pressure**

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

*When spraying at pressure of 2 MPa and above, use S303 nozzles.

■ **Spray capacity of KB (with code "N") series at high pressure (3–10 MPa)**

Spray Angle Code	Spray Capacity Code	Spray Angle (°)	Spray Capacity (ℓ/hr)				Mean Drop. Dia. at 10 MPa (μm)
			3 MPa	5 MPa	7 MPa	10 MPa	
80	063N	80	3.88	4.89	5.70	6.70	33
	10N		6.40	8.11	9.48	11.2	
	125N		8.07	10.2	12.0	14.1	5
	16N		10.5	13.4	15.7	18.6	
	20N		13.2	16.8	19.8	23.4	
22N	14.5	18.5	21.7	25.7	40		

Check Valve

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

The standard operating pressure for check valve is 0.4 MPa. Supply pressure minus the operating pressure of the check valve (0.4 MPa) is the atomizing pressure. KB series nozzles with check valves are not guaranteed for spray angle and spray capacity.

How to order


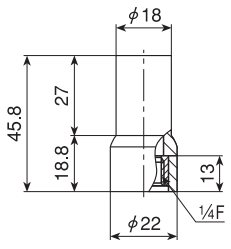

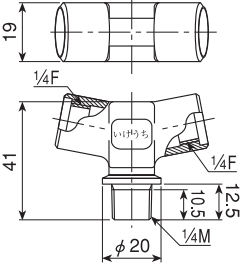

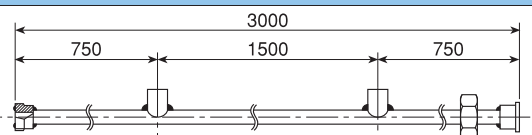
Please inquire or order for a specific nozzle using this coding system.

〈Example〉...1/4MKB80071S303CV-RW

1/4 MKB 80 071 S303 CV -RW

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

Related Products for KB series

Series	Appearance	Structure	Features
Fitting for PVC pipe 13AKB adaptor PVC			<ul style="list-style-type: none"> • Fitting for KB to 13A (1/2") Tee. • Material: PVC
Two-way adaptor			<ul style="list-style-type: none"> • Adaptor for connecting 2 pcs. of KB. Three types of threads for pipe connection (male taper thread, male parallel thread, or M15x1) are available. • Material: Chrome-plated brass
Spray header			<ul style="list-style-type: none"> • Stainless steel header with two-way adaptors. • Length of header: 3 m or 4 m. Please contact us for details.

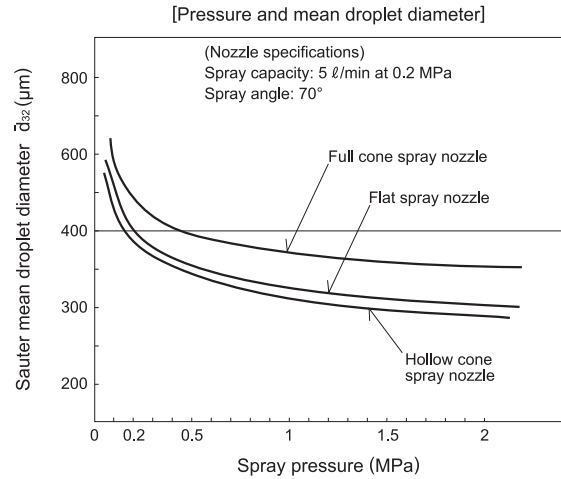
Effective Use of Hollow Cone Spray Nozzles

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.



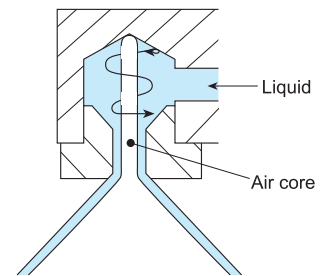
Free Passage Diameter

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** nozzles 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.

