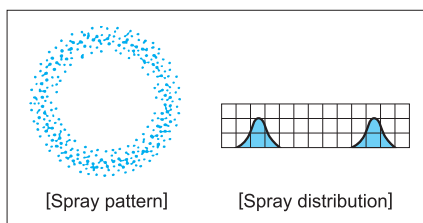
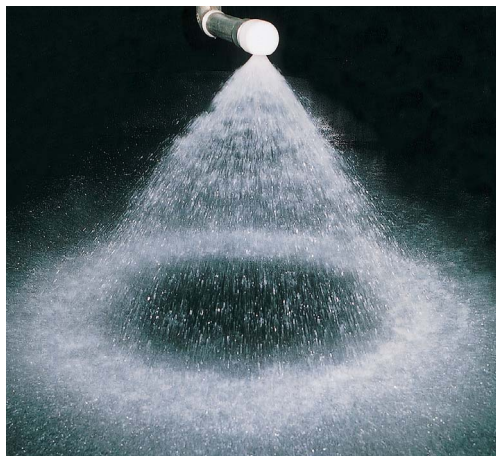


Alumina Ceramic and Medium Capacity Hollow Cone Spray Nozzles

AP-AL92

Hollow Cone



[Features]

- Hollow cone spray nozzle made of alumina ceramic having excellent wear-resistance. Relatively fine atomization.
- Stable spray pattern both at low and high pressure.
- No-whirler design minimizes clogging.
- Spraying axis 90° from the axis of the nozzle inlet.

[Standard Pressure]

0.2 MPa

[Applications]

Cleaning: Gas, air, machines, pre-painting treatment

Cooling: Gas, air handling unit, roofs, machinery, foods, warm water

Spraying: Aeration, humidification

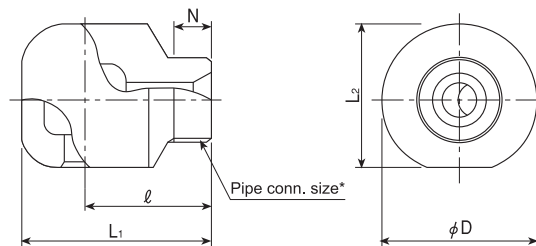
AP-AL92 series

AP-AL92 series	
Structure	<ul style="list-style-type: none"> ● Alumina ceramic one-piece structure. ● No obstructions in nozzle interior.
Material	● 92% Alumina

* If installed into a metal header, this nozzle should be used with a socket made of S316, shown on page 85 (otherwise, the thread may be damaged). Please refer to page 85.

Pipe conn. size*	Dimensions (mm)					Mass (g)
	L ₁	L ₂	ℓ	φD	N	
½ M	48.5	36	33.5	38	14	120
¾ M	59	44	39	46	15	200
1M	74	52.5	50	56	18	390
1½M	105	81.5	70	85	20	1,400
2M	127	99	82	104	24	2,100
2½M	162	123.5	102	128	29	4,500
3M	205	150	135	160	31	8,900

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



* When used with our S316 socket, socket thread for pipe connection is female thread.
Drawing for nozzle with socket is available on request.
(The above drawing is nozzle only)

Spray Capacity Code	Pipe Conn. Size							Spray Angle (°)			Spray Capacity (ℓ/min)							Mean Drop. Dia. (μm)	Free Pass. Dia. (mm)
	½M	¾M	1M	1½M	2M	2½M	3M	0.05 MPa	0.2 MPa	0.5 MPa	0.03 MPa	0.05 MPa	0.1 MPa	0.15 MPa	0.2 MPa	0.3 MPa	0.5 MPa		
14	○							76	80	83	5.62	7.19	10.0	12.2	14.0	17.0	21.7	580	6.8
16	○							76	80	83	6.43	8.22	11.5	13.9	16.0	19.4	24.9		7.2
18	○							76	80	83	7.23	9.24	12.9	15.7	18.0	21.9	28.0	5	7.5
20	○							76	80	83	8.03	10.3	14.0	17.4	20.0	24.3	31.1		7.5
23	○							76	80	83	9.24	11.8	16.5	20.0	23.0	28.0	35.7	800	8.0
26		○						76	80	83	10.4	13.4	18.6	22.6	26.0	31.6	40.4	670	9.2
30		○						76	80	83	12.1	15.4	21.5	26.1	30.0	36.5	46.6	5	9.9
35		○						76	80	83	14.1	18.0	25.1	30.5	35.0	42.5	54.4		10.3
40		○						76	80	83	16.1	20.5	28.7	34.8	40.0	48.6	62.1	850	10.5
45			○					81	85	89	18.1	23.1	32.2	39.2	45.0	54.7	69.9	750	12.1
50			○					81	85	89	20.1	25.7	35.8	43.5	50.0	60.8	77.7		12.3
55			○					81	85	89	22.1	28.2	39.4	47.9	55.0	66.8	85.4	5	13.1
60			○					81	85	89	24.1	30.8	43.0	52.2	60.0	72.9	93.2		13.7
70			○					81	85	89	28.1	35.9	50.2	61.0	70.0	85.1	109	1,000	15.0
80				○				81	85	89	32.1	41.1	57.3	69.7	80.0	97.2	124	1,000	15.3
100				○				81	85	89	40.2	51.4	71.7	87.1	100	122	155		16.2
120				○				81	85	89	48.2	61.6	86.0	104	120	146	186	5	16.6
150				○				81	85	89	60.3	77.0	107	131	150	182	233		18.0
200					○			81	85	89	80.3	103	143	174	200	243	311		22.5
250					○			81	85	89	100	128	179	218	250	304	388	1,400	24.3
300						○		81	85	89	121	154	215	261	300	365	466	1,500	28.8
400						○		81	85	89	161	205	287	348	400	486	621	5	30.6
500							○	81	85	89	201	257	358	435	500	608	777		36.9
600							○	81	85	89	241	308	430	522	600	729	932	1,800	39.6

How to order

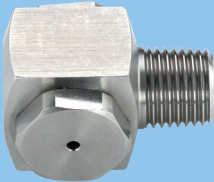
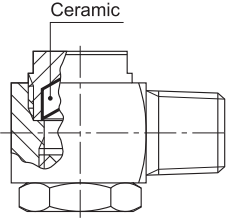

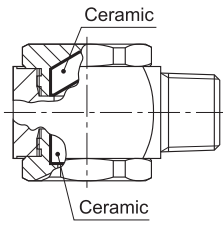
Please inquire or order for a specific nozzle using this coding system.

〈Example〉...1½MAP14AL92

1½M	AP	14	AL92
Pipe Conn. Size		Spray Capacity Code	
1½M		14	
3M		600	

Related Products

Hollow cone spray nozzles are superior in atomizing performance. On the other hand, the wear at the bottom of the nozzle is increased by an air core generated inside the nozzle. For spraying slurry, wear resistance of nozzles must be considered. For such applications, **AP series** hollow cone spray nozzles with highly wear-resistant ceramics are available. Please inquire with us for details.

Series	Appearance	Structure	Features	Applications
AP			Hollow cone spray nozzle with ceramic bottom.	Spraying slurry
AP (with ceramic orifice inserted)			Hollow cone spray nozzle with ceramic bottom and ceramic orifice.	Spraying slurry

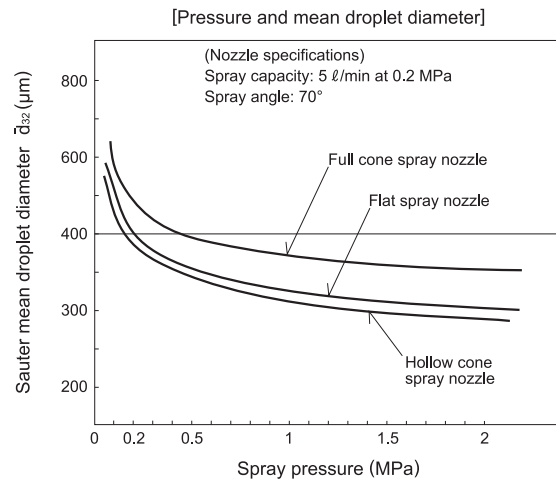
Effective Use of Hollow Cone Spray Nozzles

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.



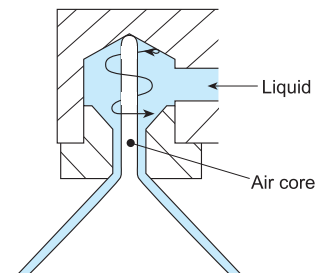
Free Passage Diameter

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

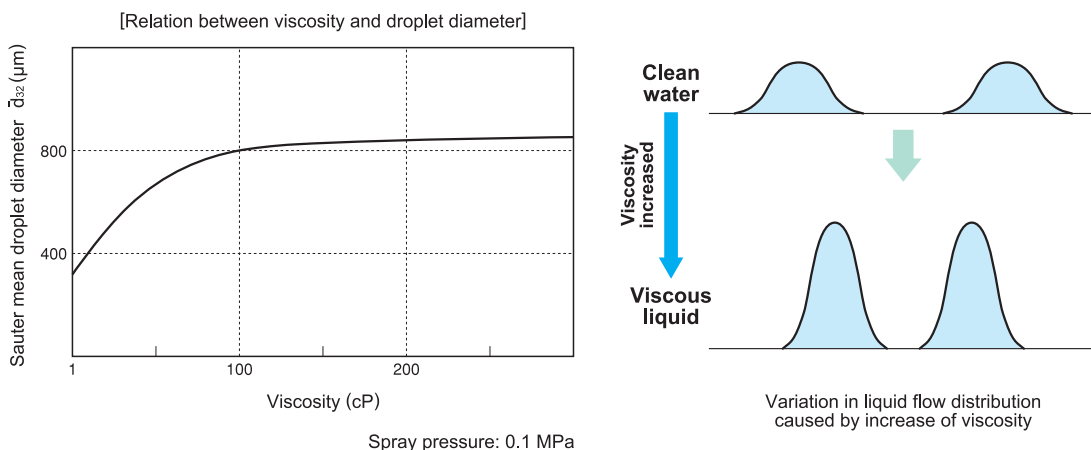
In the tangential hollow cone spray nozzles an air core is generated in the center of the vortex current, which causes wear at the end of the air core when the spraying liquid contains slurry.

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


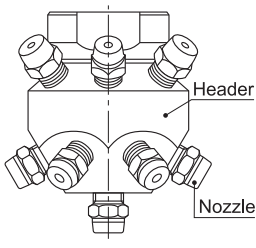
As the viscosity of liquid increases, the spray capacity of hollow cone spray nozzles increases but the spray angle decreases. Also, the mean droplet diameter becomes larger. Because viscous liquid increases the resistance inside the pipe, the liquid pressure drop must be also taken into consideration.



7-head Full Cone Spray Nozzles / Standard type 7JJXP series

Related Products

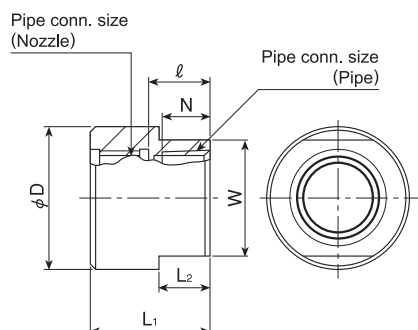
13JJXP series (13-head Full Cone Spray Nozzles)

Series	Appearance	Structure	Features	Applications
13JJXP			<ul style="list-style-type: none"> • Full cone spray pattern with uniform spray distribution. • 13 pcs. of JJXP series full cone spray nozzles are screwed into a very compact header. • Spray droplet diameter is smaller than those of other single-head full cone spray nozzles having the same spray capacity. 	<ul style="list-style-type: none"> • Gas cooling • Moisture control

Socket for Alumina Nozzles

Optional socket available for alumina nozzles (AP-AL92, JUXP-AL92, AJP-AL92 series).

Material of socket: S316



Nominal diameter	Pipe conn. size		Dimensions (mm)						Mass (g)
	Nozzle	Pipe	L ₁	L ₂	ℓ	W	φ D	N	
1/2	1/2	1/2	34	10	18	27	30	14	120
3/4	3/4	3/4	39	14	21	35	40	15	230
3/4x1	1	3/4	41	18	21	41	50	15	200
1	1	1	43	18	23	41	50	17	400
1x1½	1½	1	47	24	24	60	70	17	560
1½	1½	1½	50	24	27	60	70	19	840
1½x2	2	1½	54	27	27	70	80	19	680
2	2	2	58	27	31	70	80	23	1,100
2x2½	2½	2	62	30	31	90	100	23	1,400
2½	2½	2½	66	30	35	90	100	27	2,000
2½x3	3	2½	71	35	36	100	110	27	1,500
3	3	3	75	35	40	100	110	30	2,200

* Thread for connecting pipe is female taper thread.