Flange-type, Large Capacity
Hollow Cone Spray Nozzles

TAA

Hollow Cone
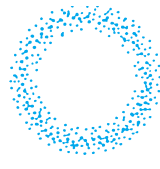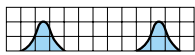
[Spray Pattern]

[Spray Distribution]

[Features]
- Stable spray pattern under low pressures owing to the involute vortex chamber design.
- Made of highly wear-resistant SiC (Silicon carbide).
- Flanged connection.
- Lightweight as made in all SiC (less than half of metal nozzle).
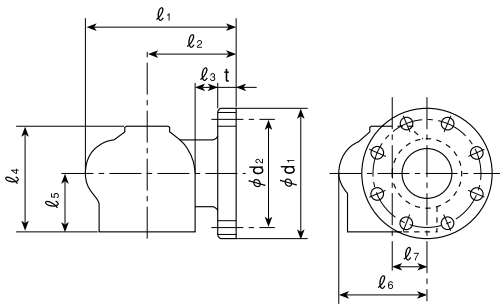
[Standard Pressure]
0.07MPa

[Applications]
- Absorption tower of flue gas desulfurization equipment
- Spraying slurry, etc.

TAA-series

	TAA-series
Structure	• One-piece cast-molded ceramics. • Flanged connection.
Material	• SiC (silicon carbide)

Series	Flange Size *	ℓ1	ℓ2	ℓ3	ℓ4	ℓ5	ℓ6	ℓ7	φd1	φd2 (PCD)	t	Qty. of bolt holes	φ(mm)	Mass (g)
TAA	2T(200)	151	99	37	102	57	74	28	155	120	22	4	19	1800
	2T(300)	169	106	37	112	62	90	35	155	120	22	4	19	2000
	3T(400)	184	114	37	129	71	100	38	185	150	24	8	19	3100
	3T(500)	202	122	37	145	82	116	45	185	150	24	8	19	3700
	3T(650)	210	125	36	150	85	124	49	185	150	24	8	19	4000
	3T(800)	210	125	36	150	85	124	49	185	150	24	8	19	4000
	4T(1000)	253	154	55	177	100	143	56	210	175	24	8	19	6000
	4T(1200)	271	161	55	187	105	159	63	210	175	24	8	19	6800

Dimensions(mm) / Flange (JIS10K)

*) Figures in ( ) after Flange Size indicate the spray capacity codes.

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

Spray Capacity Code	Flange Size			Spray Angle			Spray Capacity (ℓ/min)					Mean Drop. Dia. (μm)	Free Pass. Dia. (mm)
	2T	3T	4T	0.03 MPa	0.07 MPa	0.1 MPa	0.03 MPa	0.05 MPa	0.07 MPa	0.1 MPa	0.15 MPa		
200	○			62°	67°	69°	133	170	200	237	288	1,800	28
300	○			62°	67°	69°	199	255	300	356	432	2,100	33
400		○		62°	67°	69°	266	340	400	474	576	2,100	38
500		○		62°	67°	69°	332	425	500	592	720	≀	41
650		○		62°	67°	69°	432	552	650	770	936		50
800		○		75°	80°	82°	532	680	800	950	1,154	3,600	57
1,000			○	75°	80°	82°	665	850	1,000	1,187	1,442	3,600	63
1,200			○	75°	80°	82°	798	1,020	1,200	1,424	1,731	3,800	68

[Note] 1. As TAA of SiC is die-cast molded, this nozzle is guaranteed for spray capacity within ±10% and for spray angle within ±7°.
2. Bolt tightening torque for connecting the flange should not exceed 3000N-cm per bolt.

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

〈Example〉…2TAA200SiC

2   TAA   200   SiC

Flange Size
- 2
- 3
- 4

Spray Capacity Code
- 200
- ≀
- 1200

Related Products
TAA nozzles made of chemical-resistant PP are also available.

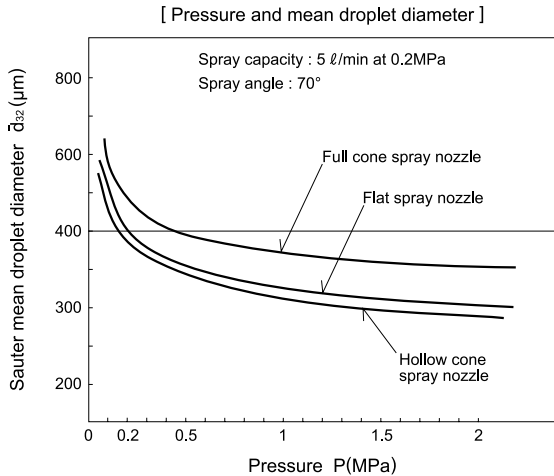| Series	Appearance	Structure	Features
TWAA-SiC		Nozzle	• Two-direction (180° opposite direction) jet type made of SiC Ceramic.
TAA-PP		Body / Cap	• Hollow cone spray nozzle made of PP. • Chemical-resistant and lightweight.

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For Effective Use of Hollow Cone Spray Nozzles

Full Cone

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.

[Pressure and mean droplet diameter]

Spray capacity : 5 ℓ/min at 0.2MPa
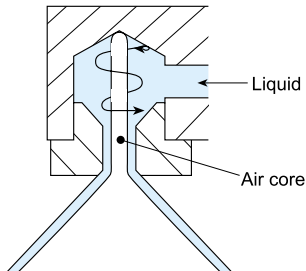Spray angle : 70°

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.

[Relation between liquid pressure and Sauter mean droplet diameter]

Tap water	100	200	300
○	◑	◐	●
(cP)

Variation in liquid flow distribution caused by increase of viscosity

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