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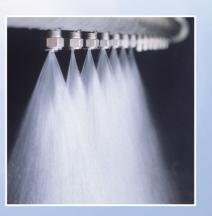
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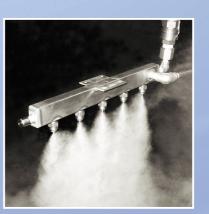


LINEUP OF IKEUCHI'S SPRAY NOZZLES









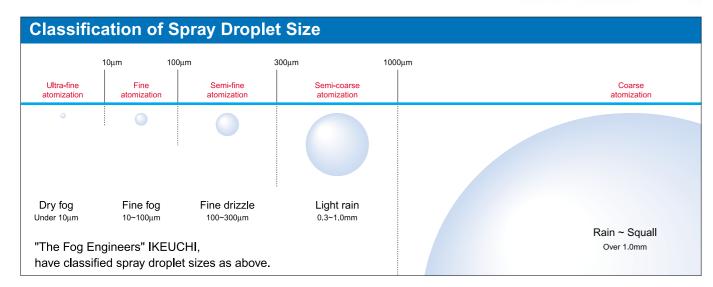


IKEUCHI, "The Fog Engineers"

Based on accumulated advanced technology and know-how as fog engineers, IKEUCHI continues to pursue methods to generate and utilize fog to meet the ever diversifying and sophisticated needs of its customers, and to contribute to the development of a greater industrial world.

Accuracy Guarantee on Nozzle Performance

IKEUCHI's hydraulic nozzles are guaranteed for spray capacities within ±5% and spray angles within ±5°.



Variety of Spray Nozzles

Hydraulic **Spray Nozzles**

Produce atomization using liquid pressure

Flat Spray Nozzles

Provide a flat fan spray pattern with mountain-shaped or even distribution. Ideal for (high-pressure) cleaning and spraying



Cone Spray Nozzles

Provide a hollow cone or full cone spray pattern (or square pattern). Suitable for gas cleaning, steel plate cooling, humidifying, etc.



Solid Stream Jet Nozzles

Solid stream with highest spray impact. Ideal for powerful cleaning.

Special Purpose Nozzles

Slit nozzles, air nozzles, ejector nozzles, etc.

Pneumatic Spray Nozzles

Produce atomization using air and liquid pressures

Fine Fog Nozzles

Widely used pneumatic nozzles for gas cooling, moisture control, precision cleaning, etc. Mean droplet diameter: 10-100µm

Secondary Cooling Nozzles

Ideal for steel cooling and precision cleaning in the electronics industry. Mean droplet diameter: 100µm or more (semi-fine atomization)

Clog-resistant Nozzles

Designed specially for spraying viscous liquid.

Ultra-Low Pressure Semi-Fine Fog Nozzles

Utilize blower air instead of compressed air for atomizing to save installation and running cost.

Steam Driving Nozzles

Innovative pneumatic nozzles using steam instead of compressed air for atomizing.

HYDRAULIC SPRAY NOZZLES — FLAT SPRAY

[Symbol key] : Features : Main applications

Standard Flat Spray Nozzles



[Spray pattern]

[Spray distribution]



3-piece V/VV







3-piece

VE series

VEP

series

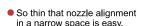
- Flat spray pattern with mountainshaped distribution. Tapered spray pattern edges provide uniform spray distribution in multiple-nozzle arrange



For polishing, available in UPE material (UVVP) or urethane rubber tip inserted VVP-U.



Coin-shaped **CVVP** series







Quick detachable INVV

 Quick installation without tools, which saves maintenance time

Applications that require accurate nozzle positioning

*Successor to ISVV series

Even Flat Spray Nozzles



[Spray pattern]

[Spray distribution]







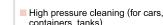
 Flat spray with uniform distribution and even spray impact across the entire spray area Cleaning, cooling and spraying One-piece



VNP

High-pressure Flat spray with uniform distribution.

Off-center Even Flat Spray Nozzles





Descaling nozzles **DSP** series

Powerful cleaning and descaling nozzle with a thin flat spray like



Descaling nozzles **TDSS** series

Water saving & high impact descaling nozzle for steel industries. Longer lasting design, uniform

(See TDSS individual catalog)

Wide-angle Flat Spray Nozzles



[Spray pattern]

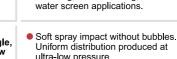
[Spray distribution]











clogging.

Spraying developer in semi-conductor manufacturing processes.

Produces wide-angle flat spray at

low liquid pressure with minima

Cleaning, foam breaking,





Off-center

[Spray pattern]

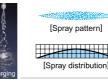
[Spray distribution]

distribution across the entire spray area solves the problem of accumulation of spray fluid in multiple-nozzle arrangements. No need for oblique installation. Steel plate cooling, water rinsing

after acid washing

Special Flat Spray Nozzles

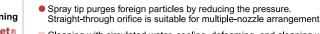


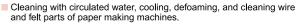






















- The ratio of spray pattern width and thickness is 3 · 1· having wider. spray thickness than standard flat spray nozzles
- Steel plate cooling, water rinsing after acid washing.

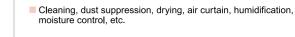


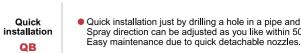












Quick installation just by drilling a hole in a pipe and inserting a nozzle.
 Spray direction can be adjusted as you like within 50°.

Pre-treatment for painting, water cleaning, etc.

Produces flat spray pattern in air or steam.

2

QB

HYDRAULIC SPRAY NOZZLES — CONE SPRAY

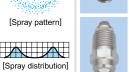
[Symbol key] : Features : Main applications

Hollow Cone Spray Nozzles











capacity KB series

Semi-fine fog,

small capacity

series

Medium

capacity

AAP



spraying, etc.

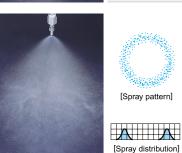


 Finest atomization among hydraulic nozzles. ultra-smal Low cost plastic nozzle capacity with ceramic orifice.

KBN series

Cooling, humidifying, dust suppression

 Ceramic orifice and closer provide excellent wear-resistance. Humidifying, cooling, spraying, etc.









Small KD Cooling, spraying, etc.



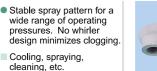
pressures. No whirler

Cooling, spraying,

cleaning, etc.



- Stable spray pattern under low pressure. Medium capacity Made of high-alumina
 - ceramic; excellent wear-
 - Cooling, cleaning, etc.



Large capacity ΤΔΔ series

series

 Stable spray pattern under low pressure.

 Made of silicon carbide; high wear-resistance, lightweight. Spraying in absorber of gas desulfurization equipment, slurry spraying, etc.

Quick installation without tools, saving

Applications that require accurate

maintenance time

nozzle positioning.

*Successor to ISJJX(-Y) series

small spray capacity.

Plastic nozzle with disc whirler,

providing uniform distribution at

Pure water cleaning, spraying, etc.

Full Cone Spray Nozzles



[Spray pattern]

[Spray distribution]

Small capacity series

High wear-resistance due to ceramic orifice and ceramic closer

Spraying, cleaning, cooling, etc.



Standard type **JJXP** series

 Spray capacity ranges from small to medium. X-shaped whirler provides largest free passage for minimal clogging. Available in brass, stainless steel, PVDF.

Cleaning, cooling, spraying, etc.



Ceramic orifice & JUP series

 Ceramic disc whirler and ceramic orifice provide excellent

desulfurization equipment or slurry

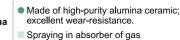
Cooling, reacting, spraying, etc.



Cleaning, cooling, spraying, etc.

flange connection.







All alumina **JUXP**



TJJX

Square spray pattern with uniform

distribution, which leaves no gaps

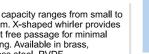
in multiple-nozzle arrangements.

Cleaning, cooling, spraying.

spraving. Large spray capacity,

Large capacity

 Smallest spray capacity among full cone spray nozzles.







Quickdetachable etching **SNAPJet®** series

Quick

detachable

INJJX(-Y)

series

capacity

JJRP

series

 High spray impact providing uniform, high-precision etching effect.



spray NJJP No whirler; minimal clogging. Unique design to produce narrowangle full cone spray. Cleaning, cooling, etc.



Clog-resistant A.IP series

Unique design having no whirler to produce full cone spray minimizes clogging. Material option: high-purity alumina ceramic for high wear-resistance. Cleaning, cooling, applications where clogging is a concern.



Wide-angle spray **BBXP**

 Spray angle of 120° provides larger spray coverage. Fire extinguishing, cooling,

spraying, etc.

Special Full Cone Spray Nozzles



[Spray pattern]

[Spray distribution

Square Spray Nozzles



Square spray **SSXP** series







7pcs. of KB hollow cone spray nozzles with compact adaptor produce large volume of fine

Gas cooling, moisture control,

humidification.



[Spray distribution]

3

7-head. standard type **7JJXP**

 7pcs. of JJXP full cone spray nozzles with compact adaptor. Spray droplet diameter is about half the size of other full cone spray nozzles having the same spray capacity.

Gas cooling, dust suppression, etc.

HYDRAULIC SPRAY NOZZLES — SOLID STREAM

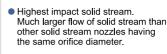
[Symbol key] : Features : Main applications

Solid Stream Spray Nozzles



[Spray pattern]

type CP/CCP

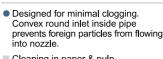


High pressure cleaning.





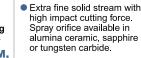




Cleaning in paper & pulp making process.



nozzles CM/CTM CMP-T



Paper trimming, cleaning of precision machine parts, food cutting, etc.

Multiple-orifice Solid Stream Spray Nozzles











Multiple-orifice Solid Stream 2CP/2CCP 7CP/7CCP

 Multiple solid streams with high impact force. 2-orifice and 7-orifice types are available. Compact design

Bottle washing, cleaning dandy rolls and returnable containers, etc.

Special Solid Stream Spray Nozzles



[Spray pattern]

[Spray distribution]





Spray tip purges foreign particles by reducing the pressure.
 Straight-through orifice is suitable for multiple-nozzle

Cleaning with circulated water, cooling, defoaming, and

cleaning wire and felt parts of paper making machines.





Pipe cleaning RSP series

- Cleans inside pipes and tubes, moves by spraying high-impact solid stream jets in different directions as driving force.
- Cleaning inside pipes/drains/tubes, removing scale and dirt inside tubes of heat exchangers and cooling machines

SPECIAL PURPOSE NOZZLES

TAIFUJet® series

Air Nozzles









Takes in surrounding air, boosting the volume of powerful air flow. Available in stainless steel or plastic. ■ Blow-off drying/dust, cleaning, cooling, etc.

Special Purpose Nozzles / Accessories



SLNH-H/SLNHA-H series

Slit nozzles with thin laminar

flow of water or air.



Spray capacity is variable without changing spray pressure. Single/multiple-head, single/ multiple-orifice type.

SPB series



ES series

Compact rotating nozzle; rotates by cleaning liquid force only. Ideal for tank cleaning, CIP cleaning.



EJX series

supplied amount. Ideal for solution agitation



UT Ball Joints

 Adaptor for adjusting spray Metal or plastic.

PNEUMATIC SPRAY NOZZLES

[Symbol key] •: Features : Main applications

Fine Fog Nozzles







- Fine atomization with mean droplet diameters 10-50μm. Unique, minimal-clogging design. Available in flat/full cone/hollow cone spray pattern. Spray can be regulated by turning compressed air ON/OFF with controlling
- OBIM nozzles: Ultra compact, 1/4 of BIM nozzle in volume.
- Spraying, cooling, moisture control, washing, etc.
- Medium / Large capacity **GBIM** series

GSIM II series

Impinging-atomization **AKIJet**® series

- Large spray capacity, low air-water ratio.
 Produces fine atomization with multistage atomization mechanism. Gas cooling tower in waste incineration plant.
- Large spray capacity, low air-water ratio. Medium / Large capacity
 - Simple structure, easy maintenance. Gas cooling tower in waste incineration plant.
 - Atomized droplets are impinged against each other at optimum condition, which results in uniform distribution of droplet size.
 - Moisture control, combustion, cooling, etc.

Fog Nozzles

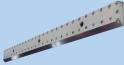




Flat spray VVEA series

- Thin and sharp spray pattern with high impact. Stable spray angle over large turndown ratio.
- Precision cleaning.





PSN series

- Pneumatic slit nozzles providing uniform spray in the total width.
 Achieve higher spray impact by installing closer to the object.
- Glass substrate cleaning, etc.





Flat spray **DOVEA** series



Oval spray **DDA** series



Full cone spray

JJA series

- Secondary cooling nozzles developed to satisfy crucial requirements for spray nozzles in continuous casting processes in steel making. Minimal variation in spray angle, spray distribution and droplet size over a large turndown ratio. A large free passage diameter. DOVEA series for flat spray pattern, DDA for oval spray, JJA for full
- Steel / gas cooling, waste water combustion.

Clog-resistant Nozzles





- Minimal clogging SETO series
- Pneumatic spray nozzle specially designed for spraying viscous liquid. Clog-resistant design. External mixing type that air and liquid are mixed outside nozzle for atomization.
- Spraying viscous liquid (oil, lubricant, etc.) or slurry.

Ultra-Low Pressure Semi-Fine Fog Nozzles



Semi-fine fog LSIM series

- Semi-fine atomization by applying blower air pressure. Saves on installation and running cost due to utilizing blower air for
- Gas cooling, etc.

Steam Driving Nozzles



Steam driving JOKIJet® series

- Atomization by steam instead of compressor air. Drastic saving on running cost.
- Gas cooling, moisture control.

SPRAY NOZZLES HEADER / APPLIED EQUIPMENT

Hydraulic Spray Nozzle Header

BRASIKan® series



a handwheel.



 Spray header with MOMOJet®, purging foreign particles by reducing the pressure. which clears the clog by turning

MOMOJet® Spray Header Multi-hole Parallel Solid Stream



Many spray tips implanted into a flat plate produce a solid stream jet that is parallel.

CVVP Spray Header



Coin-shaped CVVP nozzles set in header without bulge. Space-saving.

Pneumatic Spray Nozzle Header

BIM Spray Header



• Integrated BIM fine fog spray header combining air and water pipes into one rectangular header. Compact and easy installation.

Ring Header



 Ring header equipped with pneumatic nozzles, providing uniform spray from all directions.

VVEA Spray Header



Integrated VVEA high impact spray header combining air and water pipes into one rectangular header. Compact and easy installation.

Related Products Applying Nozzles

LYOHM System for outdoor cooling



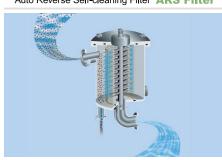
 Low-cost cooling system with Semi Dry Fog®, which provides effective evaporative cooling effect without wetting people.

Fog cooling fan COOLJetter®



Combined unit of a fan and nozzles that can blow Semi Dry Fog® further and broader using fan wind. Ideal for cooling and dust suppression.

Auto Reverse Self-cleaning Filter ARS Filter



 Auto reverse self-cleaning by powerful jet spraying. Water saving and minimal maintenance.

Dry Fog Humidifier AKIMist®"E"



 Compact, high efficiency humidifier that produces a large volume of Dry Fog (non-wetting fog). Energy-saving design

Industrial humidification system AirAKI®



The world's first humidification system that guarantees the target humidity using the highest quality Dry Fog.

Cooling System



 Industrial cooling solution for solid and gas, offered by our "Cooling Division".