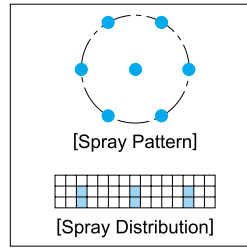
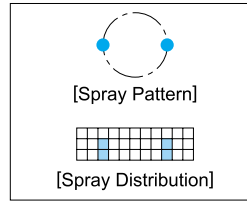
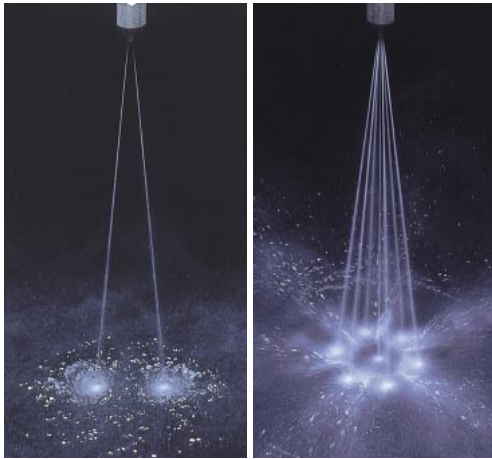


# Multiple-orifice Solid Stream Jet Nozzles

## 2CCP·7CCP / 2CP·7CP



### [Features]

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

### [Standard Pressure]

1MPa

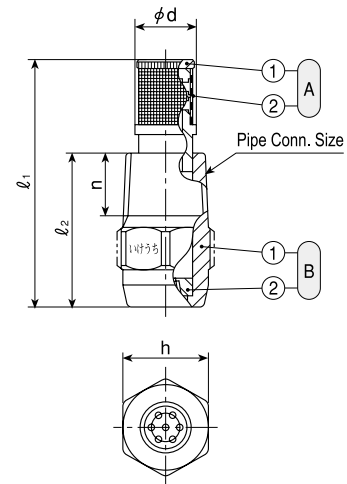
### [Applications]

Cleaning : Wire and felt parts of paper making machines, dandy rolls, machine parts, bottles, vehicles, returnable containers, etc.

Solid Stream

## 2CCP · 7CCP-series

2CCP · 7CCP-series	
Structure	• All-metal, one-piece structure.
Material	• S303 (stainless steel 303) • Optional material : S420J2 (spray orifice only)



Series	Pipe Conn. Size	Dimensions(mm)					SUS	Mass(g)
		l <sub>1</sub>	l <sub>2</sub>	h	n	φ d		
2CCP · 7CCP	1/4M	40	26	14	10.5	10.0	16	

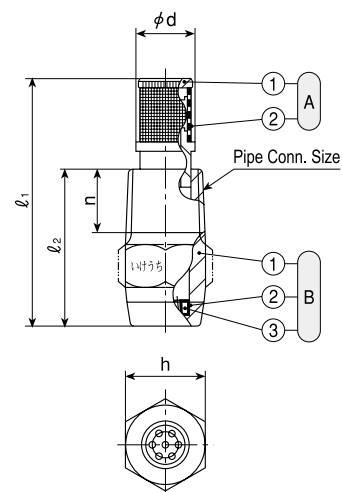
\* For 2CCP·7CCP with strainer, add 2-5g to the above mass.

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

Ⓐ Strainer (① Strainer holder ② Strainer screen)  
Ⓑ Nozzle (① Body ② Spray orifice)

## 2CP · 7CP-series

2CP · 7CP-series (with ceramic orifice inserted)	
Structure	• One-piece structure with ceramic orifice inserted.
Material	• Spray orifice : ceramic • Metal parts : S303 (stainless steel 303)



Series	Pipe Conn. Size	Dimensions(mm)					SUS	Mass(g)
		l <sub>1</sub>	l <sub>2</sub>	h	n	φ d		
2CP · 7CP	1/4M	40	26	14	10.5	10.0	17	

\* For 2CP·7CP with strainer, add 2-5g to the above mass.

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

Ⓐ Strainer (① Strainer holder ② Strainer screen)  
Ⓑ Nozzle (① Body ② Adhesive : Araldite® ③ Ceramic orifice)

# Multiple-orifice Solid Stream Jet Nozzles

## 2CCP • 7CCP / 2CP • 7CP-series

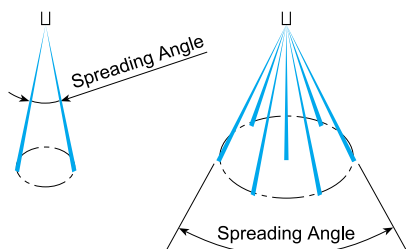
### 2-orifice type

Spreading Angle Code	Spray Capacity Code	Series		Spreading Angle *			Spray Capacity (ℓ/min)							Free Pass. Dia. (mm)	Strainer Mesh Size
		2CCP (All metal)	2CP (Ceramic orifice inserted)	0.5 MPa	1 MPa	2 MPa	0.3 MPa	0.5 MPa	0.7 MPa	1 MPa	1.5 MPa	2 MPa	3 MPa		
25°	09	●	●	25°	25°	25°	0.47	0.61	0.72	0.86	1.05	1.22	1.49	0.5	100
	12	●	●	25°	25°	25°	0.68	0.88	1.04	1.24	1.52	1.75	2.15	0.6	100
	17	●	●	25°	25°	25°	0.92	1.19	1.41	1.68	2.06	2.38	2.91	0.7	50
	22	●	●	25°	25°	25°	1.19	1.54	1.82	2.18	2.67	3.08	3.78	0.8	50
	34	○	○	25°	25°	25°	1.87	2.42	2.86	3.42	4.19	4.84	5.92	1.0	—
15°	09	●	●	15°	15°	15°	0.47	0.61	0.72	0.86	1.05	1.22	1.49	0.5	100
	12	●	●	15°	15°	15°	0.68	0.88	1.04	1.24	1.52	1.75	2.15	0.6	100
	17	●	●	15°	15°	15°	0.92	1.19	1.41	1.68	2.06	2.38	2.91	0.7	50
	22	●	●	15°	15°	15°	1.19	1.54	1.82	2.18	2.67	3.08	3.78	0.8	50
	34	○	○	15°	15°	15°	1.87	2.42	2.86	3.42	4.19	4.84	5.92	1.0	—
10°	09	●	●	10°	10°	10°	0.47	0.61	0.72	0.86	1.05	1.22	1.49	0.5	100
	12	●	●	10°	10°	10°	0.68	0.88	1.04	1.24	1.52	1.75	2.15	0.6	100
	17	●	●	10°	10°	10°	0.92	1.19	1.41	1.68	2.06	2.38	2.91	0.7	50
	22	●	●	10°	10°	10°	1.19	1.54	1.82	2.18	2.67	3.08	3.78	0.8	50
	34	○	○	10°	10°	10°	1.87	2.42	2.86	3.42	4.19	4.84	5.92	1.0	—

### 7-orifice type

Spreading Angle Code	Spray Capacity Code	Series		Spreading Angle *			Spray Capacity (ℓ/min)							Free Pass. Dia. (mm)	Strainer Mesh Size
		7CCP (All metal)	7CP (Ceramic orifice inserted)	0.5 MPa	1 MPa	2 MPa	0.3 MPa	0.5 MPa	0.7 MPa	1 MPa	1.5 MPa	2 MPa	3 MPa		
15°	30	●	●	15°	15°	15°	1.65	2.13	2.52	3.01	3.69	4.26	5.21	0.5	100
	43	●	●	15°	15°	15°	2.38	3.07	3.63	4.34	5.32	6.14	7.52	0.6	100
	59	●	●	15°	15°	15°	3.22	4.16	4.92	5.88	7.20	8.32	10.2	0.7	50
	76	●	●	15°	15°	15°	4.18	5.40	6.38	7.63	9.34	10.8	13.2	0.8	50
	119	○	○	15°	15°	15°	6.52	8.41	9.96	11.9	14.6	16.8	20.6	1.0	—

●.....With strainer    ○.....Without strainer  
 \* [Note] Spreading angle means the angle between solid streams.



### How to order

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

#### ① 2-orifice type

〈Example〉...¼M2CCP2517S303W

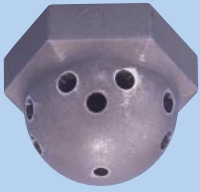

¼M	2CCP	25	17	S303	W
Series	Spreading Angle Code	Spray Capacity Code	Strainer		
2CCP	25°	09	W (with Strainer)		
2CP	15°	∫	— (without Strainer)		
	10°	34			

#### ② 7-orifice type

〈Example〉...¼M7CCP1559S303W

¼M	7CCP	15	59	S303	W
Series	Spray Capacity Code	Strainer			
7CCP	30	W (with Strainer)			
7CP	∫	— (without Strainer)			
	119				

# Nozzles for Special Applications

Series	Appearance	Features	Applications
Surface washing nozzles		<ul style="list-style-type: none"> <li>• Produces solid stream spray from a hemispheric nozzle body in a radial pattern.</li> </ul>	<ul style="list-style-type: none"> <li>• Cleaning filters at water purification plant.</li> </ul>
Setscrew-type solid stream jet nozzles		<ul style="list-style-type: none"> <li>• Compact size (M6 threads) facilitates its mounting into spray blocks.</li> </ul>	<ul style="list-style-type: none"> <li>• Cooling steel rods</li> <li>• Cooling rocks during cutting</li> <li>• Deburring, etc.</li> </ul>

Others

## For Effective Use of Solid Stream Jet Nozzles

### Tightening Torque

For high-pressure cleaning, the highly wear-resistant CERJET® nozzle with inserted ceramic orifices is most suitable. However, if it is screwed too tight, the nozzle body, especially small ones such as 1/8" size, may be damaged, which results in cracking the ceramic orifice. Please apply the recommended torque. Tightening torque should not exceed the following.

For brass body.....1/8M ; 800N-cm, 1/4M ; 1500N-cm

For stainless steel body.....1/8M ; 800N-cm, 1/4M ; 1500N-cm

### Nozzle Reaction Force

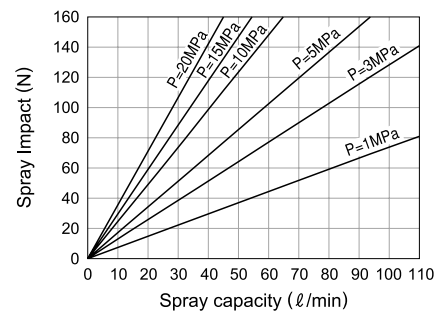
When spraying water under high pressure, the approximate reaction force is calculated by the following formula.

$$F = 0.73 \cdot Q \cdot \sqrt{P}$$

- F ; Reaction force (N)
- Q ; Spray capacity (ℓ/min)
- P ; Pressure (MPa)

### Spray Impact

Spray impact means the force of spray droplets hitting the target surface. The stronger spray impact the nozzle has, the better cleaning effect it achieves.



Variation in spray impact of solid stream jet nozzles (Distance : 200mm)

### Spray Capacity

#### ■ Spray capacity vs. Liquid density

The spray capacities shown in this catalog are based on tap water at room temperature. Theoretically, the spray capacity is inversely proportional to the square root of liquid density. To determine the spray capacity of liquid having density ( $\rho$ ) other than 1 g/cm<sup>3</sup>, multiply the spray capacity by a conversion factor of  $\frac{1}{\sqrt{\rho}}$ .

#### ■ Spray capacity vs. Pressure

In hydraulic spray nozzles, the spray capacity (Q) increases as the pressure (P) increases. Theoretically, the spray capacity is proportional to the square root of the pressure. To determine the spray capacity at a pressure (Px) not shown in the catalog tables, calculate the capacity (Qx) by using the following equation.

$$Q_x = Q \sqrt{\frac{P_x}{P}}$$