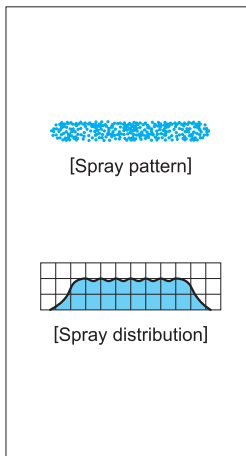
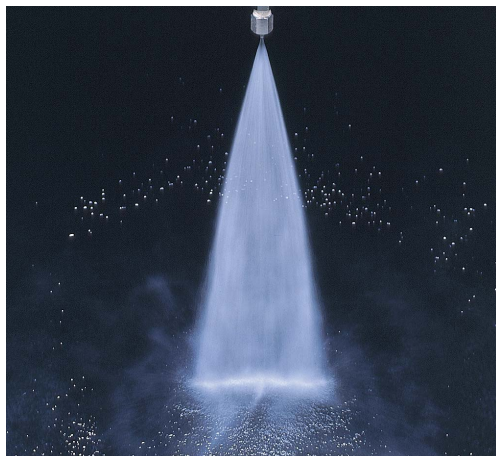


High Pressure Cleaning Even Flat Spray Nozzles

VNP

Flat Spray



[Features]

- Flat spray pattern with uniform distribution throughout pattern area.
- Small 1/8" pipe connection size for high pressure cleaning.

[Standard Pressure]

3 MPa

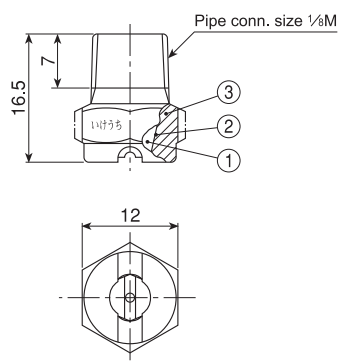
[Applications]

High pressure cleaning:

- Automotives, containers, tanks, wire and felt parts of paper making machines, wire cylinders, filter presses, other industrial cleaning and degreasing

VNP series

VNP series (with ceramic orifice inserted)	
Structure	● Ceramic orifice inserted and adhered into metal body.
Material	● Spray orifice: ceramic ● Metal parts: S303 or B (brass) ● Optional material: S316
Mass	● S303: 7 g ● B (brass): 7.4 g



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

Spray Angle Code	Spray Capacity Code	Pipe Conn. Size	Spray Angle (°)			Spray Capacity (ℓ/min)												Free Pass. Dia. (mm)
			1 MPa	3 MPa	5 MPa	1 MPa	2 MPa	2.5 MPa	3 MPa	3.5 MPa	4 MPa	4.5 MPa	5 MPa	6.5 MPa	8 MPa	10 MPa	15 MPa	
65	1/8M		60	65	65	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	0.7
			49	65	65	2.86	4.04	4.52	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	0.8
			56	65	65	3.22	4.54	5.08	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	0.9
			62	65	65	3.57	5.05	5.65	6.18	6.68	7.14	7.57	7.98	9.10	10.1	11.3	13.8	0.9
			68	65	65	3.93	5.55	6.21	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	1.0
			74	65	65	4.29	6.06	6.78	7.42	8.01	8.56	9.09	9.58	10.9	12.1	13.6	16.6	1.0
			80	65	65	4.65	6.56	7.35	8.04	8.68	9.28	9.85	10.4	11.8	13.1	14.7	18.0	1.0
			87	65	65	5.00	7.07	7.91	8.66	9.35	10.0	10.6	11.2	12.8	14.1	15.8	19.4	1.1
			99	65	65	5.72	8.08	9.04	9.89	10.7	11.4	12.1	12.8	14.6	16.2	18.1	22.1	1.1
			124	65	65	7.15	10.1	11.3	12.4	13.4	14.3	15.2	16.0	18.2	20.2	22.6	27.7	1.3
40	1/8M		35	40	40	1.43	2.02	2.25	2.47	2.67	2.85	3.03	3.19	3.64	4.03	4.51	5.52	0.6
			31	40	40	1.78	2.52	2.82	3.09	3.34	3.57	3.78	3.99	4.55	5.05	5.64	6.91	0.7
			37	40	40	2.14	3.03	3.39	3.71	4.01	4.28	4.54	4.79	5.46	6.06	6.77	8.30	0.7
			43	40	40	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	0.8
			49	40	40	2.86	4.04	4.52	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	1.0
			56	40	40	3.22	4.54	5.08	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	1.0
			62	40	40	3.57	5.05	5.65	6.18	6.68	7.14	7.57	7.98	9.10	10.1	11.3	13.8	1.1
			68	40	40	3.93	5.55	6.21	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	1.1
			74	40	40	4.29	6.06	6.78	7.42	8.01	8.56	9.09	9.58	10.9	12.1	13.6	16.6	1.1
			80	40	40	4.65	6.56	7.35	8.04	8.68	9.28	9.85	10.4	11.8	13.1	14.7	18.0	1.2
30	1/8M		26	30	30	1.43	2.02	2.25	2.47	2.67	2.85	3.03	3.19	3.64	4.03	4.51	5.52	0.6
			31	30	30	1.78	2.52	2.82	3.09	3.34	3.57	3.78	3.99	4.55	5.05	5.64	6.91	0.7
			37	30	30	2.14	3.03	3.39	3.71	4.01	4.28	4.54	4.79	5.46	6.06	6.77	8.30	0.8
			43	30	30	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	0.9
			49	30	30	2.86	4.04	4.52	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	1.0
			56	30	30	3.22	4.54	5.08	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	1.1
			62	30	30	3.57	5.05	5.65	6.18	6.68	7.14	7.57	7.98	9.10	10.1	11.3	13.8	1.1
			68	30	30	3.93	5.55	6.21	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	1.1
			74	30	30	4.29	6.06	6.78	7.42	8.01	8.56	9.09	9.58	10.9	12.1	13.6	16.6	1.2
			80	30	30	4.65	6.56	7.35	8.04	8.68	9.28	9.85	10.4	11.8	13.1	14.7	18.0	1.3
			87	30	30	5.00	7.07	7.91	8.66	9.35	10.0	10.6	11.2	12.8	14.1	15.8	19.4	1.3
			99	30	30	5.72	8.08	9.04	9.89	10.7	11.4	12.1	12.8	14.6	16.2	18.1	22.1	1.5
			124	30	30	7.15	10.1	11.3	12.4	13.4	14.3	15.2	16.0	18.2	20.2	22.6	27.7	1.7

Spray Angle Code	Spray Capacity Code	Pipe Conn. Size	Spray Angle (°)			Spray Capacity (ℓ/min)												Free Pass. Dia. (mm)
			1 MPa	3 MPa	5 MPa	1 MPa	2 MPa	2.5 MPa	3 MPa	3.5 MPa	4 MPa	4.5 MPa	5 MPa	6.5 MPa	8 MPa	10 MPa	15 MPa	
25	25	1/8M	22	25	25	1.43	2.02	2.25	2.47	2.67	2.85	3.03	3.19	3.64	4.03	4.51	5.52	0.7
	31		22	25	25	1.78	2.52	2.82	3.09	3.34	3.57	3.78	3.99	4.55	5.05	5.64	6.91	0.7
	37		22	25	25	2.14	3.03	3.39	3.71	4.01	4.28	4.54	4.79	5.46	6.06	6.77	8.30	0.8
	43		22	25	25	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	0.9
	49		22	25	25	2.86	4.04	4.52	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	1.0
	56		22	25	25	3.22	4.54	5.08	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	1.1
	62		22	25	25	3.57	5.05	5.65	6.18	6.68	7.14	7.57	7.98	9.10	10.1	11.3	13.8	1.1
	68		22	25	25	3.93	5.55	6.21	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	1.2
	74		22	25	25	4.29	6.06	6.78	7.42	8.01	8.56	9.09	9.58	10.9	12.1	13.6	16.6	1.3
	80		22	25	25	4.65	6.56	7.35	8.04	8.68	9.28	9.85	10.4	11.8	13.1	14.7	18.0	1.3
	87		22	25	25	5.00	7.07	7.91	8.66	9.35	10.0	10.6	11.2	12.8	14.1	15.8	19.4	1.4
	99		22	25	25	5.72	8.08	9.04	9.89	10.7	11.4	12.1	12.8	14.6	16.2	18.1	22.1	1.5
	124		22	25	25	7.15	10.1	11.3	12.4	13.4	14.3	15.2	16.0	18.2	20.2	22.6	27.7	1.7
	15		25	1/8M	12	15	15	1.43	2.02	2.25	2.47	2.67	2.85	3.03	3.19	3.64	4.03	4.51
31		12	15		15	1.78	2.52	2.82	3.09	3.34	3.57	3.78	3.99	4.55	5.05	5.64	6.91	0.8
37		12	15		15	2.14	3.03	3.39	3.71	4.01	4.28	4.54	4.79	5.46	6.06	6.77	8.30	0.9
43		12	15		15	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	1.0
49		12	15		15	2.86	4.04	4.52	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	1.1
56		12	15		15	3.22	4.54	5.08	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	1.1
62		12	15		15	3.57	5.05	5.65	6.18	6.68	7.14	7.57	7.98	9.10	10.1	11.3	13.8	1.2
68		12	15		15	3.93	5.55	6.21	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	1.3
74		12	15		15	4.29	6.06	6.78	7.42	8.01	8.56	9.09	9.58	10.9	12.1	13.6	16.6	1.3
80		12	15		15	4.65	6.56	7.35	8.04	8.68	9.28	9.85	10.4	11.8	13.1	14.7	18.0	1.4
87		12	15		15	5.00	7.07	7.91	8.66	9.35	10.0	10.6	11.2	12.8	14.1	15.8	19.4	1.5
93		12	15		15	5.36	7.58	8.48	9.28	10.0	10.7	11.4	12.0	13.7	15.2	17.0	20.8	1.5
99		12	15		15	5.72	8.08	9.04	9.89	10.7	11.4	12.1	12.8	14.6	16.2	18.1	22.1	1.6
111		12	15		15	6.43	9.09	10.2	11.1	12.0	12.9	13.6	14.4	16.4	18.2	20.3	24.9	1.6
124	12	15	15	7.15	10.1	11.3	12.4	13.4	14.3	15.2	16.0	18.2	20.2	22.6	27.7	1.7		

How to order

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

<Example>...1/8MVNP6543S303

1/8MVNP 65 43 S303

	Spray Angle Code	Spray Capacity Code	Material
65	65	25	S303
∫	∫	∫	B
■ 15		■ 124	

[Note] Color of ceramic orifice differs depending on nozzle codes.

When Spray Angle Code is 25 or 15 and Spray Capacity Code is in the range of 43–124, "Brown tip" or "Brown" is indicated after material code.

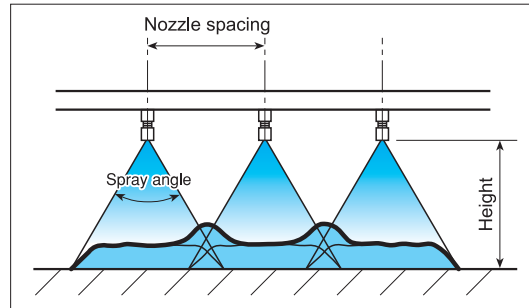
<Example> 1/8MVNP2543S303 (Brown tip)

Effective Use of Even Flat Spray Nozzles

Spray Distribution

Even flat spray nozzles are designed to produce an even spray distribution to even out the cleaning power in the spray width direction and are suitable for cleaning when using one nozzle.

When using even flat spray nozzles in multiple-nozzle arrangements, the overlapping spray distribution may be inferior to that of standard flat spray nozzles.



Tightening Torque

For high-pressure cleaning, highly wear-resistant CERJET® nozzles with ceramic orifice inserted are most suitable. However, if 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.

8 N-m for size 1/8M (stainless steel body and brass body)

15 N-m for size 1/4M (stainless steel body and brass body)

Cleaning Force

The factors for showing cleaning efficiency of a nozzle are complex. To evaluate them, we use the spray impact and the amount of cavitation erosion. At a given liquid pressure, spray capacity and spray distance, the cleaning force of the solid stream jet nozzle is the strongest followed by the flat spray nozzles and the cone spray nozzles.

[Spray Impact]

Nozzle	Spray impact (x $\frac{1}{100}$ N/cm)	
	Max.	Average
1/8 MDSP15104	560	503
1/8 MVNP1580	460	390

■ Pressure: 5 MPa
■ Spray height: 150 mm



[Amount of Cavitation Erosion]

The amount of cavitation erosion is the depth of the depression on a sample piece dug out by flat spray nozzles.

Specifications	1/8 MDSP15104		1/8 MVNP1580	
Pressure (MPa)	5.0	7.0	5.0	7.0
Spray angle (°)	16.0	16.0	16.5	17.0
Spray capacity (ℓ/min)	9.9	11.7	10.1	12.0

