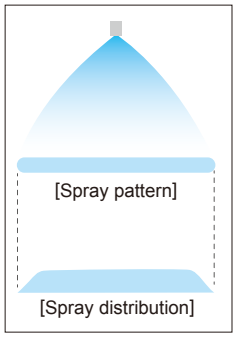
Descaling Nozzles

DSP



- This unique flat spray nozzle is specifically designed for powerful cleaning and descaling. With its thin, razor-sharp spray pattern, the DSP series delivers a high spray impact and provides more powerful cleaning performance than any other flat spray nozzle, given the same spray pressure and flow rate.

[STANDARD PRESSURE]
5.0 MPa

[APPLICATIONS]
High pressure cleaning, descaling, rust-removal, degreasing

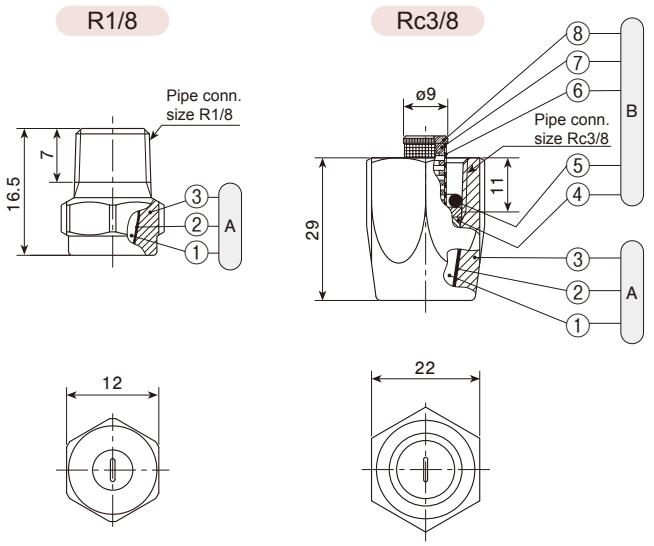
Structure	• One-piece structure with a ceramic orifice insert. • From the inlet to the throat the ceramic orifice is round and then draws together into a rectangular slit towards the outlet.
Material	• Nozzle orifice: ceramic • Metal parts: S303
Weight*1	• R1/8: 7 g • Rc3/8: 52 g

*1) With strainer, add 5 g to the above weight.

[Note] Appearance and dimensions may differ slightly depending on material and nozzle code.

DRAWING

Unit: mm



Ⓐ **Nozzle** (①Ceramic orifice ②Adhesive: Araldite® ③Nozzle body)
Ⓑ **Strainer** (④Packing [PTFE] ⑤O-ring*2 [NBR] ⑥Strainer screen [S316] ⑦Strainer holder ⑧Strainer cap)

*2) This O-ring is to prevent the Packing ④ and Strainer ⑥⑦⑧ from falling out, but is not a seal between nozzle and pipe.

Strainer is optional on some models of Rc3/8 DSP series and can be ordered without it. See table for details. The strainer version is made-to-order.

Spray angle code	Spray capacity code	Pipe conn. size R1/8	Pipe conn. size Rc3/8	Spray angle (°) 3 MPa	5 MPa	10 MPa	Spray capacity (L/min) 3 MPa	3.5 MPa	4 MPa	4.5 MPa	5 MPa	6.5 MPa	8 MPa	10 MPa	15 MPa	20 MPa	Free pass. dia. (mm)
15	56	○		14	15	15	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	11.2	0.4
	64	○		14	15	15	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	12.8	0.4
	72	○		14	15	15	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	14.4	0.4
	80	○		14	15	15	6.18	6.68	7.14	7.57	7.98	9.10	10.1	11.3	13.8	16.0	0.4
	88	○		14	15	15	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	17.6	0.4
	96	○		14	15	15	7.42	8.01	8.56	9.09	9.58	10.9	12.1	13.6	16.6	19.1	0.5
	104	○		14	15	15	8.04	8.68	9.28	9.85	10.4	11.8	13.1	14.7	18.0	20.8	0.5
	112	○		14	15	15	8.66	9.35	10.0	10.6	11.2	12.8	14.1	15.8	19.4	22.4	0.5
	120	○		14	15	15	9.26	10.0	10.7	11.4	12.0	13.7	15.2	17.0	20.8	24.0	0.6
	128	○		14	15	15	9.89	10.7	11.4	12.1	12.8	14.6	16.2	18.1	22.1	25.6	0.6
	144	○		14	15	15	11.1	12.0	12.9	13.6	14.4	16.4	18.2	20.3	24.9	28.8	0.7
	160	○		14	15	15	12.4	13.4	14.3	15.2	16.0	18.2	20.2	22.6	27.7	32.0	0.8

Spray angle code	Spray capacity code	Pipe conn. size		Spray angle (°)			Spray capacity (L/min)										Free pass. dia. (mm)
		R1/8	Rc3/8	3 MPa	5 MPa	10 MPa	3 MPa	3.5 MPa	4 MPa	4.5 MPa	5 MPa	6.5 MPa	8 MPa	10 MPa	15 MPa	20 MPa	
12	83		●*3	11	12	12	6.43	6.94	7.42	7.87	8.30	9.46	10.5	11.7	14.4	16.6	0.4
	103		●*3	11	12	12	7.98	8.62	9.21	9.77	10.3	11.7	13.0	14.6	17.8	20.6	0.4
	148		○	11	12	12	11.5	12.4	13.2	14.0	14.8	16.9	18.7	20.9	25.6	29.6	0.5
	166		○	11	12	12	12.9	13.9	14.8	15.7	16.6	18.9	21.0	23.5	28.8	33.2	0.5
	189		○	11	12	12	14.6	15.8	16.9	17.9	18.9	21.5	23.9	26.7	32.7	37.8	0.6
	224		○	11	12	12	17.4	18.7	20.0	21.3	22.4	25.5	28.2	31.6	38.8	44.7	0.7
	250		○	11	12	12	19.4	20.9	22.4	23.7	25.0	28.5	31.6	35.4	43.3	50.0	0.7
	300		○	11	12	12	23.2	25.1	26.8	28.5	30.0	34.2	37.9	42.4	52.0	60.0	0.9
	332		○	11	12	12	25.7	27.8	29.7	31.5	33.2	37.9	42.0	46.9	57.5	66.4	1.0
	478		○	11	12	12	37.0	40.1	42.8	45.3	47.8	54.5	60.5	67.7	82.8	95.7	1.5
	865		○	11	12	12	67.0	72.5	77.4	82.1	86.5	98.6	110	123	150	173	2.6

●: Available with or without strainer (strainer mesh size #150) ○: Only available without strainer

*3) Made-to-order model

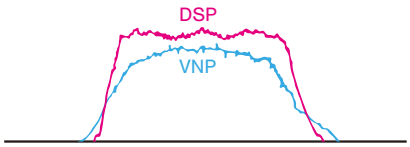
Attention:
Please make sure to only use clean water to prevent the nozzles from clogging.

Cleaning Power

The factors that determine the cleaning power of a nozzle are complex. To evaluate the effectiveness, we use the spray impact and the amount of erosion. In general, with an equal liquid pressure, spray capacity and distance, the solid stream jet nozzle has the strongest cleaning power, followed by the flat spray nozzle and the cone spray nozzle. Below is a comparison between our VNP and DSP flat spray nozzles.

[Spray Impact]

	Spray impact (x $\frac{1}{100}$ N/cm)	
	Max.	Average
1/8M DSP 15104	560	503
1/8M VNP 1580	460	390

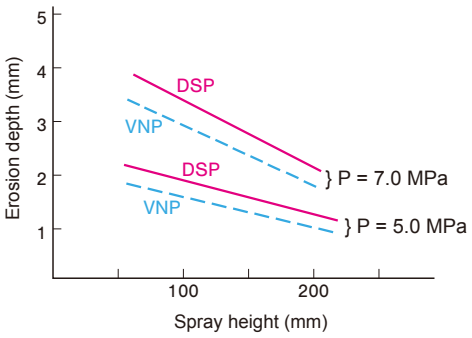


■Pressure: 5.0 MPa
■Spray height: 150 mm

[Amount of Erosion]

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

Specifications	1/8M DSP 15104		1/8M VNP 1580	
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



HOW TO ORDER

To inquire about or order a specific nozzle please refer to this coding system.

Example: 1/8M DSP 1556 BR-S303

1/8M	DSP	15	56	BR-S303	
Pipe conn. size*4		Spray angle code	Spray capacity code	Material	Strainer
1/8M 3/8F		15 12	56 ⟆ 865		W (with strainer) (Blank indicates "without strainer")

*4) "M" indicates male thread ("R" of the ISO standard) and "F" indicates female thread ("Rc" of the ISO standard), e.g. 1/8M = R1/8, 3/8F = Rc3/8.

Rc3/8 DSP with strainer is made-to-order.