Pipe Cleaning Nozzles

Made-to-Order
RSP

- A pipe cleaning nozzle with powerful jets in various directions—forward, sideways, and diagonally—that self-propels through the pipe using reactive force.
- High impact jets effectively remove scale and debris from inside the pipes.

[STANDARD PRESSURE]
Not specified, the RSP series is a made-to-order nozzle.

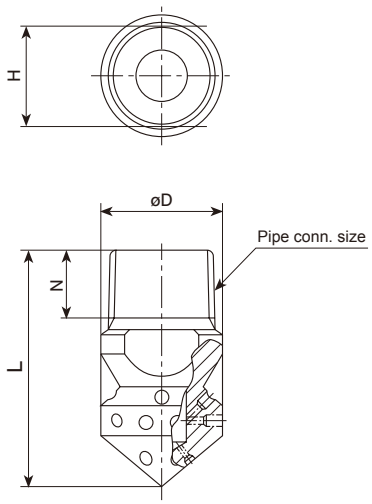
[APPLICATIONS]
Cleaning the inside of pipes, water and sewage drains, tubes of heat exchangers and cooling machines
Removing scale and rust

Structure	• One-piece structure, made of metal.
Material	• S303 SPECIAL ORDER MATERIAL: S420J2

Pipe conn. size	Dimensions (mm)				Weight (g)
	L	H	øD	N	
R1/8	26	10.5	12	7	14
R1/4	34	14	17	9	30
R3/8	38	16	19	11	48
R1/2	42	22	25	14	88

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

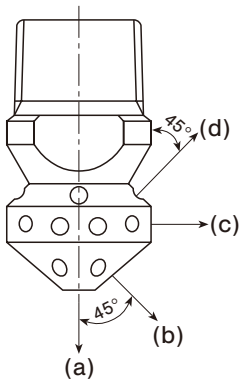
DRAWING



Solid Stream

HOW TO ORDER

The RSP series is made-to-order. Please select pipe connection size, orifice diameter, and the number of orifices for each direction according to **HOW TO SELECT RSP SERIES** on the next page.



Example: 1/2M RSP 0.6 + 0.6×3 / 0.6×4 + 0.6×4 S303

1/2M	RSP	0.6	+	0.6×3	/	0.6×4	+	0.6×4	S303
Pipe conn. size*		A	+	B × N_1	/	C × N_2	+	D × N_3	Material

- 1/8M
- 1/4M
- 3/8M
- 1/2M

A: Orifice diameter for directions (a)
B: Orifice diameter for directions (b)
C: Orifice diameter for directions (c)
D: Orifice diameter for directions (d)
N_1–N_3: Number of orifices for each direction

[Note] To indicate that there are no orifices in a certain direction, use "0".

For example, if there are 6 orifices of diameter 0.7 mm for direction (d) only, the nozzle description would be:
1/8M RSP 0 + 0 / 0 + 0.7×6 S303

*"M" indicates male thread ("R" of the ISO standard), e.g. 1/8M = R1/8.

HOW TO SELECT RSP SERIES

1. Pipe connection size

Refer to the table to select the pipe connection size suitable for the spray capacity required.

Pipe conn. size	Max. spray capacity by pipe connection size (L/min)								
	1 MPa	3 MPa	5 MPa	7 MPa	10 MPa	15 MPa	20 MPa	25 MPa	30 MPa
R1/8	14	24	31	37	44	54	62	70	76
R1/4	56	96	124	147	176	216	249	278	305
R3/8	56	96	124	147	176	216	249	278	305
R1/2	61	105	135	160	191	234	270	302	331

2. Orifice diameter and the number of orifices

Refer to the table to select the orifice diameter and the number of orifices required.

Orifice diameter (mm)	Spray capacity per one orifice (L/min)								
	1 MPa	3 MPa	5 MPa	7 MPa	10 MPa	15 MPa	20 MPa	25 MPa	30 MPa
0.6	0.4	0.7	0.9	1.1	1.3	1.6	1.9	2.1	2.3
0.7	0.6	1.0	1.3	1.5	1.8	2.2	2.5	2.8	3.1
0.8	0.7	1.3	1.7	2.0	2.3	2.9	3.3	3.7	4.1
0.9	0.9	1.6	2.1	2.5	3.0	3.6	4.2	4.7	5.1
1.0	1.2	2.0	2.6	3.1	3.7	4.5	5.2	5.8	6.4
1.2	1.7	2.9	3.7	4.4	5.3	6.5	7.5	8.3	9.1
1.5	2.6	4.5	5.8	6.9	8.2	10.1	11.7	13.0	14.3
2.0	4.6	8.0	10.4	12.3	14.7	18.0	20.7	23.2	25.4

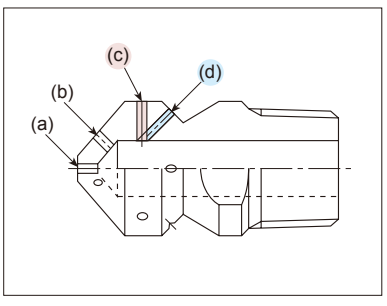
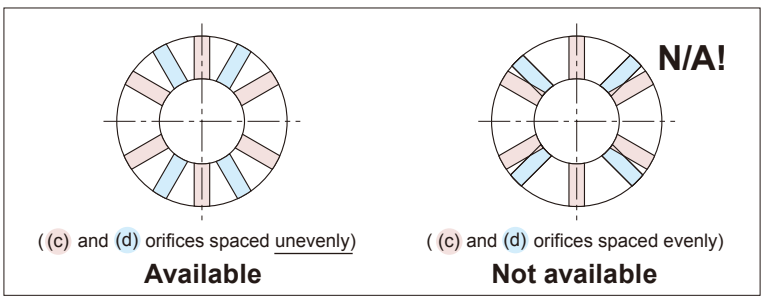
3. Spray direction and the number of orifices in each direction

Refer to the table and specify the desired number of orifices in each direction (b), (c), and (d).

Pipe conn. size	Max. number of orifices in the direction of (b), [(c)+(d)] (see Remarks)							
	ø0.6	ø0.7	ø0.8	ø0.9	ø1.0	ø1.2	ø1.5	ø2.0
R1/8	6	6	6	6	6	4	–	–
R1/4	10	10	10	10	10	8	8	–
R3/8	10	10	10	10	10	8	8	6
R1/2	12	10	10	10	10	8	8	6

Remarks

- The number of orifices in direction (b), referred to as N_1 on the previous page, should not exceed the value in the above table.
- The total number of orifices in directions (c) + (d) should not exceed the value in the above table.
- Odd numbers, except three (3), are not recommended. Seven (7) is not acceptable.
- The numbers of orifices for (c) and (d), referred to respectively as N_2 and N_3 on the previous page, should be the same or one should be a multiple number of the other.
  For any other combinations, please contact us.

Note

Should the numbers for (c) and (d) be 6 and 4, it is possible to make, but orifices for (c) and (d) are not evenly spaced. Please refer to the sketch below.