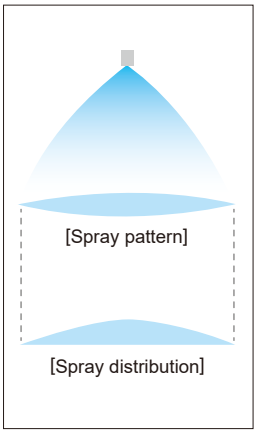
Flat Spray Nozzles with Pilot Air On-Off Control

SO-VV: Made-to-Order

SO-V/SO-VV



- Flat spray pattern with a mountain-shaped spray distribution and gradually tapered edges.
- Features a responsive spray ON/OFF function. Connecting the pilot air allows for quick and precise control of spray activation and deactivation.
- Anti-drip design.

[STANDARD PRESSURE]
0.3 MPa

[APPLICATIONS]
Coating: Release agent, lubricant
Moisture control: Paper

SO-V SERIES (with ceramic orifice)

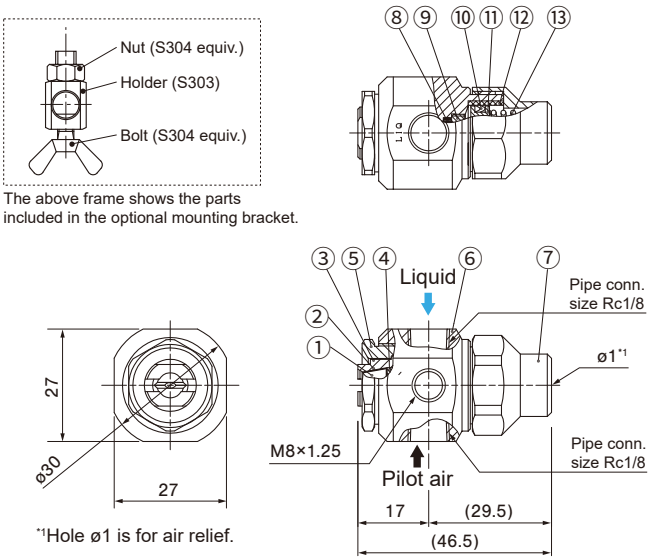
Structure	• Spray ON/OFF can be regulated by switching the pilot air ON/OFF. The pilot air activates an internal piston to regulate the spray.
Material	• Nozzle orifice: ceramic • Metal parts: S303
Weight	• 150 g

Max. operating pressure: 0.5 MPa

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

DRAWING

Unit: mm



①Ceramic orifice ②Adhesive: Araldite® ③Tip retainer ④Packing (PTFE) ⑤Cap ⑥Adaptor ⑦Spring cap ⑧O-ring (FKM) ⑨Lock nut ⑩Y-packing (NBR) ⑪Piston ⑫Sleeve (UHMWPE) ⑬Spring (S304)

SO-VV SERIES Made-to-Order

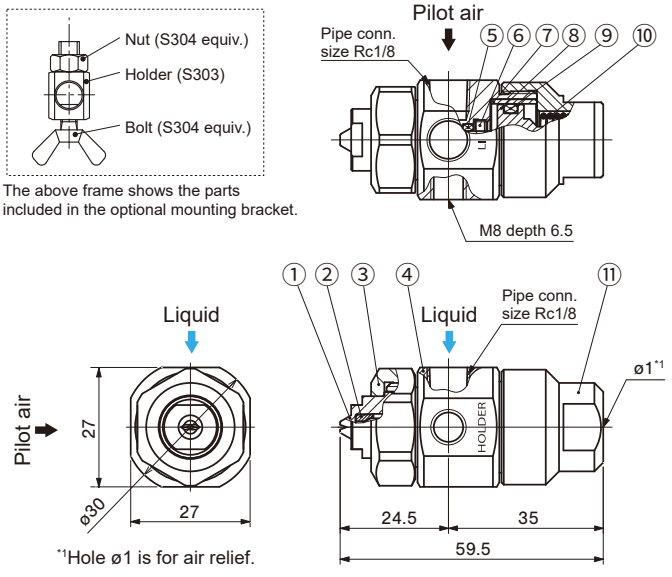
Structure	• Spray ON/OFF can be regulated by switching the pilot air ON/OFF. The pilot air activates an internal piston to regulate the spray.
Material	• S303
Weight	• 170 g

Max. operating pressure: 1.0 MPa

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

DRAWING

Unit: mm



①Nozzle orifice ②Packing (PTFE) ③Cap ④Adaptor ⑤O-ring (FKM) ⑥Lock nut ⑦Sleeve (PTFE) ⑧Piston ⑨Y-packing (NBR) ⑩Spring (S304) ⑪Spring cap

SO-V Series

Spray angle code	Spray capacity code	Spray angle (°)		Spray capacity (L/min)						Mean droplet diameter (μm)	Free passage diameter (mm)
		0.15 MPa	0.3 MPa	0.05 MPa	0.1 MPa	0.15 MPa	0.2 MPa	0.3 MPa	0.5 MPa		
115	03	101	115	–	0.17	0.21	0.24	0.30	0.39	140	0.2
	04	102	115	–	0.23	0.28	0.33	0.40	0.52	≀	0.2
	05	102	115	–	0.29	0.35	0.41	0.50	0.65	160	0.2
	07	103	115	–	0.40	0.49	0.57	0.70	0.90		0.3
	10	103	115	0.41	0.58	0.71	0.82	1.00	1.29	≀	0.4
	15	104	115	0.61	0.87	1.06	1.23	1.50	1.94		0.5
	20	104	115	0.82	1.15	1.41	1.63	2.00	2.58	270	0.6
90	02	76	90	–	0.12	0.14	0.16	0.20	0.26	145	0.2
	03	76	90	–	0.17	0.21	0.24	0.30	0.39	150	0.2
	04	77	90	–	0.23	0.28	0.33	0.40	0.52	≀	0.3
	05	77	90	–	0.29	0.35	0.41	0.50	0.65	170	0.3
	07	78	90	–	0.40	0.49	0.57	0.70	0.90		0.4
	10	78	90	0.41	0.58	0.71	0.82	1.00	1.29	≀	0.5
	15	79	90	0.61	0.87	1.06	1.23	1.50	1.94		0.6
	20	79	90	0.82	1.15	1.41	1.63	2.00	2.58	280	0.8
80	02	67	80	–	0.12	0.14	0.16	0.20	0.26	150	0.2
	03	67	80	–	0.17	0.21	0.24	0.30	0.39	≀	0.2
	04	67	80	–	0.23	0.28	0.33	0.40	0.52		0.3
	05	67	80	–	0.29	0.35	0.41	0.50	0.65	180	0.3
	07	68	80	–	0.40	0.49	0.57	0.70	0.90		0.4
	10	68	80	0.41	0.58	0.71	0.82	1.00	1.29	≀	0.5
	15	69	80	0.61	0.87	1.06	1.23	1.50	1.94		0.7
	20	69	80	0.82	1.15	1.41	1.63	2.00	2.58	290	0.8
65	02	52	65	–	0.12	0.14	0.16	0.20	0.26	155	0.2
	03	52	65	–	0.17	0.21	0.24	0.30	0.39	160	0.2
	04	52	65	–	0.23	0.28	0.33	0.40	0.52	≀	0.3
	05	52	65	–	0.29	0.35	0.41	0.50	0.65	190	0.4
	07	53	65	–	0.40	0.49	0.57	0.70	0.90		0.5
	10	54	65	0.41	0.58	0.71	0.82	1.00	1.29	≀	0.6
	15	54	65	0.61	0.87	1.06	1.23	1.50	1.94		0.8
	20	55	65	0.82	1.15	1.41	1.63	2.00	2.58	310	0.9
50	03	37	50	–	0.17	0.21	0.24	0.30	0.39	180	0.3
	04	37	50	–	0.23	0.28	0.33	0.40	0.52		0.4
	05	38	50	–	0.29	0.35	0.41	0.50	0.65	210	0.4
	07	38	50	–	0.40	0.49	0.57	0.70	0.90		0.5
	10	40	50	0.41	0.58	0.71	0.82	1.00	1.29	≀	0.6
	15	40	50	0.61	0.87	1.06	1.23	1.50	1.94		0.8
	20	41	50	0.82	1.15	1.41	1.63	2.00	2.58	340	1.0
40	05	30	40	–	0.29	0.35	0.41	0.50	0.65	230	0.4
	07	30	40	–	0.40	0.49	0.57	0.70	0.90	≀	0.6
	10	31	40	0.41	0.58	0.71	0.82	1.00	1.29		0.7
	20	32	40	0.82	1.15	1.41	1.63	2.00	2.58	380	1.0
25	05	18	25	–	0.29	0.35	0.41	0.50	0.65	270	0.5
	07	18	25	–	0.40	0.49	0.57	0.70	0.90		0.6
	10	18	25	0.41	0.58	0.71	0.82	1.00	1.29	≀	0.8
	15	19	25	0.61	0.87	1.06	1.23	1.50	1.94	440	1.0
15	05	9	15	–	0.29	0.35	0.41	0.50	0.65	310	0.5
	07	9	15	–	0.40	0.49	0.57	0.70	0.90		0.6
	10	9	15	0.41	0.58	0.71	0.82	1.00	1.29	≀	0.8
	15	10	15	0.61	0.87	1.06	1.23	1.50	1.94	510	1.0

SO-VV Series

Spray angle code	Spray capacity code	Spray angle (°)			Spray capacity (L/min)								Mean droplet diameter (μm)	Free passage diameter (mm)
		0.15 MPa	0.3 MPa	0.7 MPa	0.05 MPa	0.1 MPa	0.15 MPa	0.2 MPa	0.3 MPa	0.5 MPa	0.7 MPa	1 MPa		
115	05	102	115	124	–	0.29	0.35	0.41	0.50	0.65	0.76	0.91	180	0.3
	07	103	115	124	–	0.40	0.49	0.57	0.70	0.90	1.07	1.28	200	0.3
	10	103	115	124	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	220	0.4
90	05	77	90	100	–	0.29	0.35	0.41	0.50	0.65	0.76	0.91	190	0.3
	07	78	90	100	–	0.40	0.49	0.57	0.70	0.90	1.07	1.28	210	0.4
	10	78	90	99	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	230	0.5
80	05	67	80	90	–	0.29	0.35	0.41	0.50	0.65	0.76	0.91	200	0.3
	07	68	80	89	–	0.40	0.49	0.57	0.70	0.90	1.07	1.28	220	0.4
	10	68	80	89	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	240	0.5
65	05	52	65	74	–	0.29	0.35	0.41	0.50	0.65	0.76	0.91	210	0.4
	07	53	65	74	–	0.40	0.49	0.57	0.70	0.90	1.07	1.28	230	0.5
	10	54	65	73	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	250	0.6
50	05	38	50	59	–	0.29	0.35	0.41	0.50	0.65	0.76	0.91	230	0.4
	07	38	50	58	–	0.40	0.49	0.57	0.70	0.90	1.07	1.28	250	0.5
	10	40	50	58	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	270	0.6
40	05	30	40	48	–	0.29	0.35	0.41	0.50	0.65	0.76	0.91	250	0.4
	07	30	40	48	–	0.40	0.49	0.57	0.70	0.90	1.07	1.28	280	0.6
	10	31	40	47	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	300	0.7
25	05	18	25	32	–	0.29	0.35	0.41	0.50	0.65	0.76	0.91	350	0.5
	07	18	25	32	–	0.40	0.49	0.57	0.70	0.90	1.07	1.28	390	0.6
	10	18	25	32	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	420	0.8
15	05	9	15	22	–	0.29	0.35	0.41	0.50	0.65	0.76	0.91	680	0.5
	07	9	15	21	–	0.40	0.49	0.57	0.70	0.90	1.07	1.28	740	0.6
	10	9	15	21	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	820	0.8

Operation Time Chart

The pilot air ON/OFF controls the spray operation.

Pilot air	OFF	ON	OFF	ON	OFF
Liquid	Stop	Spray	Stop	Spray	Stop

Mounting Bracket (Optional)

This mounting bracket allows for easy installation of SO-V/SO-VV series nozzles to a pole in the desired spray direction. Available in two sizes for pole diameters of 8 mm and 10 mm.

When ordering the optional Mounting Bracket, please specify
"BIM ø8 MBW" for ø8 mounting bracket, or
"BIM ø10 MBW" for ø10 mounting bracket.

HOW TO ORDER

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

①Complete Assembly

Example: 1/8 SO-V 11503 S303

1/8*2 | SO-V | 115 | 03 | S303

Series	Spray angle code	Spray capacity code
SO-V SO-VV	115 ⟆ 15	02–20 for **SO-V** 05–10 for **SO-VV**

*2) Indicates Rc1/8 for the liquid and pilot air connection thread size.

②Nozzle Tip Only (with packing)*3

Example: SO-V 11503-TIP S303

SO-V | 115 | 03 | -TIP S303

Series	Spray angle code	Spray capacity code
SO-V SO-VV	115 ⟆ 15	02–20 for **SO-V** 05–10 for **SO-VV**

*3) Includes parts #1–4 (SO-V) and parts #1–2 (SO-VV) as shown in the drawings (p. 46).

The SO-VV series is made-to-order.

ALSO AVAILABLE!

Solid Stream Jet
with ON/OFF Control

SO-CC
SO-CM
SERIES

See page 108 for more details.

⚠ CAUTIONS

- Supply liquid pressure at 0.5 MPa or less for the SO-V series, and 1.0 MPa or less for the SO-VV series.
- Supply pilot air pressure between 0.2 and 0.5 MPa.
- For better shut off and to prevent dripping, purge the air between the solenoid valve and the nozzle when it is shut off, using a 3-way solenoid valve.