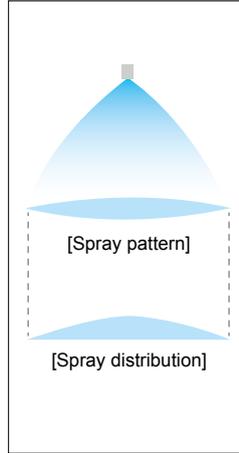


# High-Frequency Pulse Spraying Solenoid-Controlled Flat Spray Nozzles

Made-to-Order

## SD-VV/SD-V

Flat Spray



- Controls the spray ON/OFF with electrical signal ON/OFF. Intermittent spray with min. 0.05 sec/shot and as little as 0.17 cc/shot is possible.
- Ideal for applying a small amount of coating or marking with minimal splatter, saving liquid used.
- Changing the spray ON/OFF time setting can adjust the spray flow rate while maintaining the spray pattern and droplet size.

**[STANDARD PRESSURE]**  
0.3 MPa

**[APPLICATIONS]**

- Coating: Water, oil, lubricant, insecticide, herbicide, aqueous solution
- Moisture control: Paper, food
- Cooling: glass plate

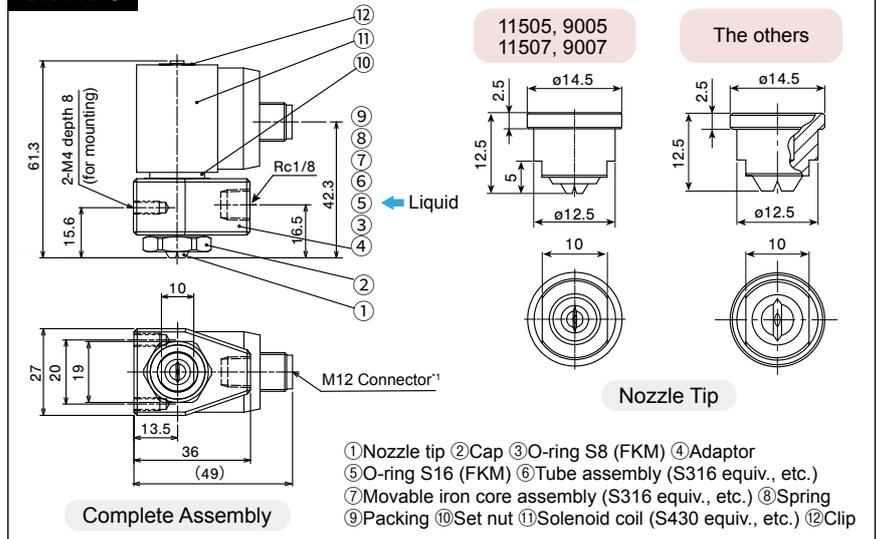
### SD-VV SERIES

Structure	<ul style="list-style-type: none"> <li>• Includes a nozzle tip, cap, and adaptor-solenoid section. Nozzle tips can be replaced for wear or changed to achieve a different spray capacity and angle.</li> </ul>
Material	<ul style="list-style-type: none"> <li>• Nozzle tip: S303</li> <li>• Cap, Adaptor: S304</li> <li>• Solenoid section: Various materials</li> </ul>
Weight	<ul style="list-style-type: none"> <li>• Complete assembly: 220 g</li> <li>• Nozzle tip: 10 g</li> </ul>

Max. temperature: 60°C  
Protection Structure IP67  
SD-VV: The materials used in the parts that come into contact with liquids comply with the Food Sanitation Law in Japan.

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

### DRAWING



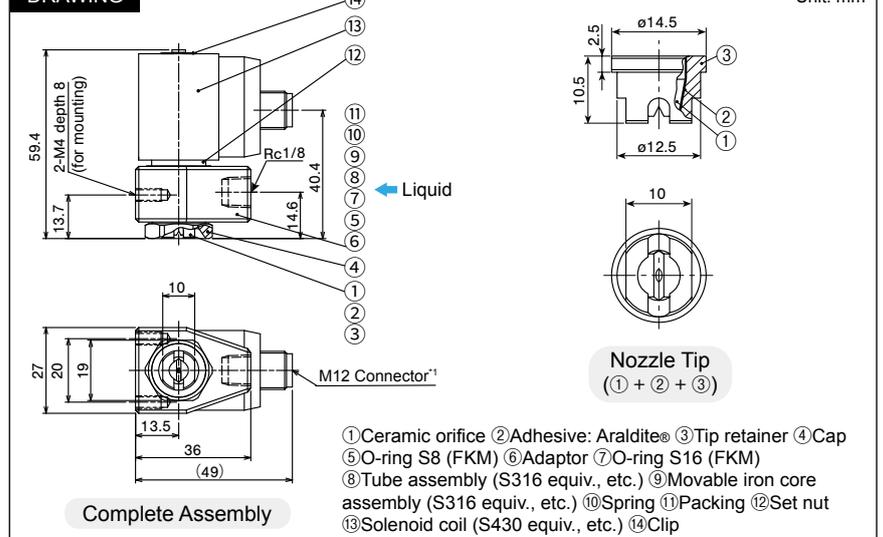
### SD-V SERIES (with ceramic orifice)

Structure	<ul style="list-style-type: none"> <li>• Has a ceramic orifice in the nozzle tip.</li> <li>• Includes a nozzle tip, cap, and adaptor-solenoid section. Nozzle tips can be replaced for wear or changed to achieve a different spray capacity and angle.</li> </ul>
Material	<ul style="list-style-type: none"> <li>• Nozzle tip: S303 with ceramic orifice</li> <li>• Cap, Adaptor: S304</li> <li>• Solenoid section: Various materials</li> </ul>
Weight	<ul style="list-style-type: none"> <li>• Complete assembly: 220 g</li> <li>• Nozzle tip: 6.6 g</li> </ul>

Max. temperature: 60°C  
Protection Structure IP67

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

### DRAWING



### Solenoid Specifications (for SD-VV and SD-V Series)

#### Valve

Valve structure	Direct acting poppet
Orifice diameter	ø1.6 mm
Pressure resistance	2.0 MPa
Max. operating pressure difference	0.9 MPa
Ambient temperature	-20~60°C
Operating fluid temperature (water)	1~60°C
Operating fluid temperature (oil)	-5~60°C (w/ dynamic viscosity of 50mm <sup>2</sup> /s or less)
Materials	Body: Stainless steel, Seal: FKM
Protection structure	IP67

#### Coil

Rated voltage	24 VDC
Allowable voltage fluctuation	±10% of rated voltage
Allowable leakage voltage	Less than 2% of rated voltage
Electrical circuit	N.C.
Temperature rise value	65°C
Power consumption	4W

Spray angle code	Spray capacity code	SD-VV	SD-V	Spray angle (°)			Spray capacity (L/min) <sup>2</sup>							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			0.9 MPa
115	03		○	100	114	124	—	0.17	0.21	0.24	0.29	0.38	0.45	0.51	160	0.2
	04		○	100	114	124	—	0.22	0.28	0.32	0.39	0.50	0.59	0.67	}	0.2
	05	○		101	114	124	—	0.28	0.34	0.39	0.48	0.62	0.74	0.84	180	0.3
	07	○		101	113	124	—	0.38	0.47	0.54	0.67	0.86	1.02	1.15	}	0.3
	10	○		101	112	123	0.38	0.54	0.66	0.76	0.93	1.20	1.42	1.61	}	0.4
	15	○		101	111	122	0.54	0.77	0.94	1.08	1.33	1.71	2.02	2.30	250	0.5
90	02		○	74	89	100	—	0.11	0.14	0.16	0.20	0.25	0.30	0.34	150	0.2
	03		○	74	89	100	—	0.17	0.21	0.24	0.29	0.38	0.45	0.51	170	0.2
	04		○	75	89	100	—	0.22	0.28	0.32	0.39	0.50	0.59	0.67	}	0.3
	05	○		76	89	99	—	0.28	0.34	0.39	0.48	0.62	0.74	0.84	190	0.3
	07	○		76	88	99	—	0.38	0.47	0.54	0.67	0.86	1.02	1.15	}	0.3
	10	○		76	87	98	0.41	0.54	0.66	0.76	0.93	1.20	1.42	1.61	}	0.4
80	02		○	65	79	90	—	0.11	0.14	0.16	0.20	0.25	0.30	0.34	160	0.2
	03		○	65	79	90	—	0.17	0.21	0.24	0.29	0.38	0.45	0.51	170	0.3
	04		○	65	79	90	—	0.22	0.28	0.32	0.39	0.50	0.59	0.67	}	0.3
	05	○		66	78	89	—	0.28	0.34	0.39	0.48	0.62	0.74	0.84	200	0.3
	07	○		66	78	88	—	0.38	0.47	0.54	0.67	0.86	1.02	1.15	}	0.4
	10	○		66	77	88	0.41	0.54	0.66	0.76	0.93	1.20	1.42	1.61	}	0.5
65	02		○	51	64	75	—	0.11	0.14	0.16	0.20	0.25	0.30	0.34	160	0.2
	03		○	51	64	75	—	0.17	0.21	0.24	0.29	0.38	0.45	0.51	180	0.3
	04		○	50	64	75	—	0.22	0.28	0.32	0.39	0.50	0.59	0.67	}	0.3
	05	○		51	64	74	—	0.28	0.34	0.39	0.48	0.62	0.74	0.84	210	0.4
	07	○		51	63	73	—	0.38	0.47	0.54	0.67	0.86	1.02	1.15	}	0.5
	10	○		52	62	72	0.41	0.54	0.66	0.76	0.93	1.20	1.42	1.61	}	0.5
50	03		○	36	49	60	—	0.17	0.21	0.24	0.29	0.38	0.45	0.51	200	0.3
	04		○	36	49	60	—	0.22	0.28	0.32	0.39	0.50	0.59	0.67	}	0.4
	05	○		37	48	59	—	0.28	0.34	0.39	0.48	0.62	0.74	0.84	230	0.4
	07	○		37	48	58	—	0.38	0.47	0.54	0.67	0.86	1.02	1.15	}	0.5
	10	○		38	48	57	0.38	0.54	0.66	0.76	0.93	1.20	1.42	1.61	}	0.5
	15	○		37	47	56	0.54	0.77	0.94	1.08	1.33	1.71	2.02	2.30	320	0.5
40	05	○		29	39	48	—	0.28	0.34	0.39	0.48	0.62	0.74	0.84	250	0.4
	07	○		29	38	48	—	0.38	0.47	0.54	0.67	0.86	1.02	1.15	}	0.5
	10	○		29	38	46	0.38	0.54	0.66	0.76	0.93	1.20	1.42	1.61	310	0.5
25	05	○		17	24	32	—	0.28	0.34	0.39	0.48	0.62	0.74	0.84	290	0.5
	07	○		17	24	32	—	0.38	0.47	0.54	0.67	0.86	1.02	1.15	}	0.5
	10	○		17	23	31	0.38	0.54	0.66	0.76	0.93	1.20	1.42	1.61	}	0.5
	15	○		17	22	30	0.54	0.77	0.94	1.08	1.33	1.71	2.02	2.30	460	0.5
15	05	○		8	14	22	—	0.28	0.34	0.39	0.48	0.62	0.74	0.84	340	0.5
	07	○		8	14	21	—	0.38	0.47	0.54	0.67	0.86	1.02	1.15	}	0.5
	10	○		8	13	20	0.38	0.54	0.66	0.76	0.93	1.20	1.42	1.61	}	0.5
	15	○		8	13	19	0.54	0.77	0.94	1.08	1.33	1.71	2.02	2.30	540	0.5

\*2) These values are for continuous spraying.

### Operation Time Chart

The electrical signal ON/OFF controls the spraying.

Electrical signal	OFF	ON	OFF	ON	OFF
Liquid	Stop	Spray	Stop	Spray	Stop

ALSO AVAILABLE!

Solenoid-Controlled  
Solid Stream Jet

## SD-CC SERIES

See page 106 of this catalog.

### HOW TO ORDER

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

These nozzle series are made-to-order.

#### ① Complete Assembly

Example: VV 11505 S303 + SD S304

VV	115	05	S303 + SD S304
Series	Spray angle code	Spray capacity code	Nozzle tip Material
■ VV	■ 115	■ 05–15 for SD-VV	
■ V	■ }	■ 02–04 for SD-V	
	■ 15		

#### ② Nozzle Tip Only

Example: 1/4 VV 11505 -SD S303

1/4	VV	115	05	- SD S303
	Series	Spray angle code	Spray capacity code	
	■ VV	■ 115	■ 05–15 for SD-VV	
	■ V <sup>3</sup>	■ }	■ 02–04 for SD-V	
		■ 15		

\*3) For the SD-V Series, omit "-SD" from the nozzle tip product name.