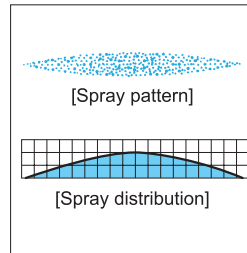


Three-piece Structure Standard Flat Spray Nozzles

VV/V

Flat Spray



[Features]

- Flat spray pattern with a mountain-shaped spray distribution having gradually tapered edges.
- Tapered edges overlap to provide uniformity of spray distribution in multiple-nozzle arrangements.

[Standard pressure]

0.3 MPa

[Applications]

Cleaning: Automotives, containers, films, felts, filters, screens, bottles, crushed stones, earth and sand, metal parts, machines, steel plates and pieces

Spraying: Etchants, oils, lubricants, glues, solutions, insecticides, herbicides

Cooling: Gas, smokes, heat exchangers, tanks, steels, roofs

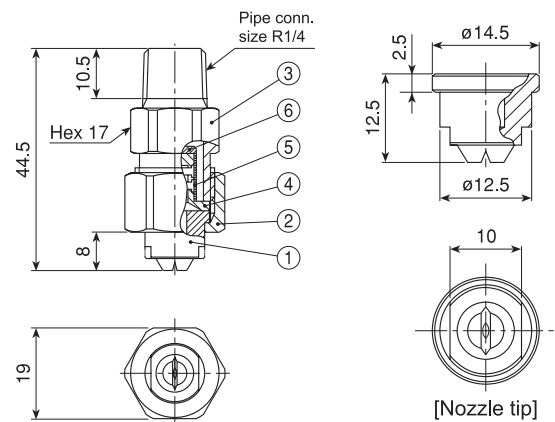
Water screen: Fire protection, heat protection, dust suppression, deodorization

VV series

	VV series
Structure	• Made of metal, three-piece structure. • Comprises three parts: Nozzle tip, cap, and adaptor. Worn-out nozzle tip can be replaced separately. • Small spray capacity models come with or without a removable strainer.
Material	• S303 or B (brass) • Optional material: S316 or others
Mass	• Complete assemblies* S303: 56 g, B (brass): 60 g • Nozzle tip S303: 13 g, B (brass): 14 g

*When with a strainer, add 2–5 g to the above mass and 2 mm to the total length.

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



Ⓐ Nozzle (① Nozzle tip ② Cap ③ Adaptor)

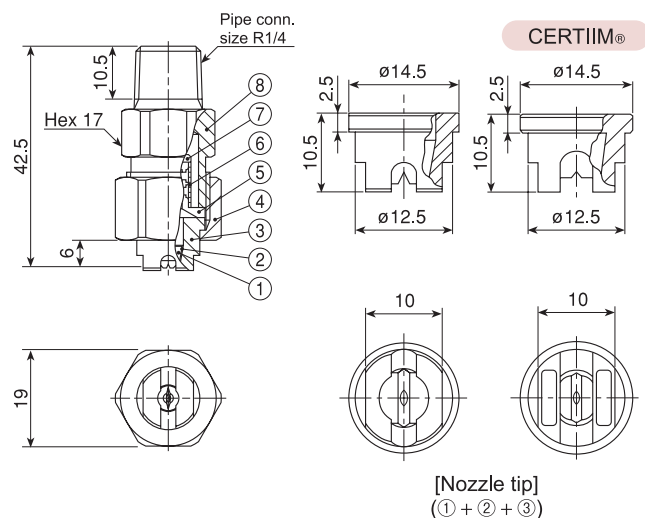
Ⓑ Strainer (④ Strainer holder ⑤ Strainer screen [S316] ⑥ Strainer cap)

V series

	V series (with ceramic orifice inserted)
Structure	• Three-piece structure with ceramic orifice inserted. • Comprises three parts: Nozzle tip, cap, and adaptor. Worn-out nozzle tip can be replaced separately. • Small spray capacity models come with or without a removable strainer. • CERTIIM® is one-shot injection molded nozzle tip created by molding the precision-made ceramic orifice into a plastic retainer.
Material	• Nozzle orifice: ceramic • Tip retainer: S303, B (brass), or PVDF • Cap, Adaptor, and Strainer: S303 or B (brass) • Optional material: S316 or others
Mass	• Complete assemblies* S303: 49 g, B (brass): 53 g • Nozzle tip S303: 6.5 g, B (brass): 7 g CERTIIM®: 2 g

*When with a strainer, add 2–5 g to the above mass and 2 mm to the total length.

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



Ⓐ Nozzle (① Ceramic orifice ② Adhesive: Araldite® ③ Tip retainer ④ Cap ⑧ Adaptor)

Ⓑ Strainer (⑤ Strainer holder ⑥ Strainer screen [S316] ⑦ Strainer cap)

Three-piece Structure Standard Flat Spray Nozzles

VV/V series

Flat Spray

Spray angle code	Spray capacity code	VV		V	Spray angle (°)			Spray capacity (ℓ/min)								Mean drop. dia. (μm)	Free pass. dia. (mm)	Strainer mesh size		
		All metal		Metal	CER-TIIM®	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	2 MPa
115	03			●	○	101	115	124	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	140	0.2	200
	04			●	○	102	115	124	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	150	0.2	200
	05	●		●	○	102	115	124	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	160	0.3	150
	07	●		●	○	103	115	124	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	170	0.3	150
	10	●		●	○	103	115	124	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	180	0.4	150
	15	●		●	○	104	115	123	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	200	0.5	100
	20	●		●	○	104	115	123	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	270	0.6	100
	30	●		●	○	105	115	122	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	300	0.8	50
	40	●		●	○	106	115	122	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	340	0.8	50
	60	○				107	115	121	2.45	3.46	4.24	4.90	6.00	7.75	9.17	11.0	15.5	400	1.0	—
	80	○				107	115	121	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	450	1.2	—
100	○				107	115	120	4.08	5.77	7.07	8.17	10.0	12.9	15.3	18.3	25.8	500	1.4	—	
200	○				109	115	120	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	510	2.4	—	
90	02			●	○	76	90	100	—	0.12	0.14	0.16	0.20	0.26	0.31	0.37	0.52	145	0.2	200
	03			●	○	76	90	100	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	150	0.2	200
	04			●	○	77	90	100	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	160	0.3	150
	05	●		●	○	77	90	100	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	170	0.3	150
	07	●		●	○	78	90	100	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	180	0.4	150
	10	●		●	○	78	90	99	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	190	0.5	100
	15	●		●	○	79	90	99	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	200	0.6	100
	20	●		●	○	79	90	98	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	250	0.7	50
	30	●		●	○	80	90	97	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	280	0.9	50
	40	○		○	○	81	90	97	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	300	1.1	—
	50	○		○	○	81	90	97	2.04	2.89	3.54	4.08	5.00	6.46	7.64	9.13	12.9	340	1.2	—
	60	○		○	○	82	90	96	2.45	3.46	4.24	4.90	6.00	7.75	9.17	11.0	15.5	380	1.3	—
	80	○		○	○	82	90	96	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	420	1.5	—
	100	○		○	○	82	90	96	4.08	5.77	7.07	8.17	10.0	12.9	15.3	18.3	25.8	480	1.8	—
120	○		○	○	83	90	95	4.90	6.93	8.49	9.80	12.0	15.5	18.3	21.9	31.0	500	1.9	—	
140	○		○	○	83	90	95	5.72	8.08	9.90	11.4	14.0	18.1	21.4	25.6	36.1	550	2.1	—	
170	○		○	○	83	90	95	6.94	9.82	12.0	13.9	17.0	22.0	26.0	31.1	43.9	600	2.3	—	
200	○		○	○	84	90	95	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	540	2.4	—	
80	02			●	○	67	80	90	—	0.12	0.14	0.16	0.20	0.26	0.31	0.37	0.52	150	0.2	200
	03			●	○	67	80	90	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	160	0.3	150
	04			●	○	67	80	90	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	170	0.3	150
	05	●		●	○	67	80	90	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	180	0.3	150
	07	●		●	○	68	80	89	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	190	0.4	150
	10	●		●	○	68	80	89	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	200	0.5	100
	15	●		●	○	69	80	88	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	210	0.7	50
	20	●		●	○	69	80	88	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	220	0.8	50
	30	○		○	○	70	80	87	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	250	1.0	—
	40	○		○	○	71	80	87	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	280	1.2	—
	50	○		○	○	71	80	86	2.04	2.89	3.54	4.08	5.00	6.46	7.64	9.13	12.9	300	1.4	—
	60	○		○	○	72	80	86	2.45	3.46	4.24	4.90	6.00	7.75	9.17	11.0	15.5	320	1.5	—
	80	○		○	○	72	80	86	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	350	1.7	—
	100	○		○	○	72	80	85	4.08	5.77	7.07	8.17	10.0	12.9	15.3	18.3	25.8	400	2.0	—
120	○		○	○	73	80	85	4.90	6.93	8.49	9.80	12.0	15.5	18.3	21.9	31.0	450	2.3	—	
200	○		○	○	74	80	85	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	550	2.8	—	
65	02			●	○	52	65	75	—	0.12	0.14	0.16	0.20	0.26	0.31	0.37	0.52	155	0.2	200
	03			●	○	52	65	75	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	160	0.3	150
	04			●	○	52	65	75	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	170	0.3	150
	05	●		●	○	52	65	74	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	180	0.4	150
	07	●		●	○	53	65	74	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	190	0.5	100
	10	●		●	○	54	65	73	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	200	0.6	100
	15	●		●	○	54	65	73	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	210	0.8	50
	20	●		●	○	55	65	72	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	220	0.9	50
	30	○		○	○	56	65	72	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	250	1.1	—
	40	○		○	○	56	65	71	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	280	1.3	—
	50	○		○	○	57	65	71	2.04	2.89	3.54	4.08	5.00	6.46	7.64	9.13	12.9	300	1.5	—
	60	○		○	○	57	65	71	2.45	3.46	4.24	4.90	6.00	7.75	9.17	11.0	15.5	320	1.6	—
	80	○		○	○	58	65	71	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	350	1.9	—
	100	○		○	○	58	65	70	4.08	5.77	7.07	8.17	10.0	12.9	15.3	18.3	25.8	400	2.1	—
120	○		○	○	58	65	70	4.90	6.93	8.49	9.80	12.0	15.5	18.3	21.9	31.0	450	2.3	—	
140	○		○	○	59	65	69	5.72	8.08	9.90	11.4	14.0	18.1	21.4	25.6	36.1	500	2.5	—	
170	○		○	○	59	65	69	6.94	9.82	12.0	13.9	17.0	22.0	26.0	31.1	43.9	550	2.8	—	
200	○		○	○	59	65	69	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	580	3.0	—	
50	03			●	○	37	50	60	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	180	0.3	150
	04			●	○	37	50	60	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	190	0.4	150
	05	●		●	○	38	50	59	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	200	0.4	150
	07	●		●	○	38	50	58	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	210	0.5	100
	10	●		●	○	40	50	58	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	220	0.6	100
	15	●		●	○	40	50	57	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	230	0.8	50
	20	○		○	○	41	50	57	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	240	1.0	—
	30	○		○	○	42	50	56	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	250		

●: Available with/without strainer ○: Available without strainer

Three-piece Structure Standard Flat Spray Nozzles

VV/V series

Flat Spray

Spray angle code	Spray capacity code	VV	V		Spray angle (°)			Spray capacity (ℓ/min)									Mean drop. dia. (μm)	Free pass. dia. (mm)	Strainer mesh size
		All metal	Metal	CER-TIIM®	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	2 MPa			
40	05	●			30	40	48	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	230	0.4	150
	07	●			30	40	48	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	}	0.5	100
	10	●			31	40	47	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58		0.7	50
	20	○			32	40	46	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	380	1.0	—
	30	○			33	40	46	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	}	1.3	—
	40	○			33	40	45	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3		1.5	—
	80	○			34	40	44	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	}	2.1	—
	120	○			35	40	44	4.90	6.93	8.49	9.80	12.0	15.5	18.3	21.9	31.0		2.8	—
200	○			35	40	43	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	710	3.5	—	
25	05	●			18	25	32	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	270	0.5	100
	07	●			18	25	32	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	}	0.6	100
	10	●			18	25	32	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58		0.8	50
	15	○			19	25	31	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	}	1.0	—
	30	○			19	25	30	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75		1.4	—
	40	○			19	25	30	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	}	1.7	—
	80	○			20	25	29	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6		2.3	—
	200	○			21	25	27	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	850	3.9	—
15	05	●			9	15	22	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	310	0.5	100
	07	●			9	15	21	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	}	0.7	50
	10	●			9	15	21	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58		0.8	50
	15	○			10	15	20	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	}	1.0	—
	30	○			10	15	19	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75		510	1.5
	40	○			10	15	19	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	}	1.7	—
	80	○			11	15	18	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6		2.4	—
	200	○			11	15	17	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	1,000	4.0	—

●: Available with/without strainer ○: Available without strainer

How to order

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

① Complete assemblies

〈Example〉 1/4M VV 11505 S303W

1/4M	VV	115	05	S303	W
Series	Spray angle code	Spray capacity code	Material	Strainer	
VV	115	02	S303	W (with strainer)	
V	∫	∫	B	(Blank denotes "without strainer")	
	15	200			

② Nozzle tip only

〈Example〉 1/4 VV 11505 S303

1/4	VV	115	05	S303
Series	Spray angle code	Spray capacity code	Material	
VV	115	02	S303	
V	∫	∫	B	
	15	200	TPVDF*	

*TPVDF is only for V series (PVDF nozzle tip with ceramic orifice).