LORRIC®

paranoid about performance

Nozzle And Flowmeter Product Catalogue

LORRIC

LORRIC is a Taiwanese manufacturer of industrial nozzles and flow meters established in 1991, and since then has dealt in independent research and development, design, production, marketing, and sales. LORRIC's products are 100% made in Taiwan. The philosophy we believe in, as mentioned below, leads us to design and manufacture supreme products while improving and growing with our clients.

Consistently self-challenging, we settle on only producing the highest quality nozzles through our uncompromising attitude.

At LORRIC, we pride ourselves in creating industry-used high-grade nozzles through our meticulous techniques and exclusive knowledge. Through our craftsmen's vast experience and diligence in understanding our customers' requests, our products' high quality ensures that even under the harshest of environments, they will perform as accurate as ever.

LORRIC wishes to stand together with customers and partners who embrace similar values, and together fashion a network of cooperation and mutual-support.

LORRIC takes to heart its clients' demands for performance, and cautiously tackles every challenge presented. Taking inspiration from whales, who deep down in the wide blue ocean sing their songs to call their peers in an extraordinary frequency of 52 hertz, LORRIC too is looking for clients who embrace similar values, and like-minded global partners. Let us together become a community, and share with the world our values and uncompromising spirit.

LORRIC aims to lead the Taiwanese industry, and stand firmly on the world stage of industrial production.

United Benefit Corp.

Nozzle Contents

Flat Fan Nozzles

LORRIC®
paranoid about performance

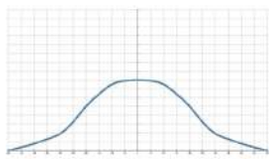
H Single piece flat fan nozzle

PP material:
- Recommended working pressure: 3.0 kgf/cm²
- Flowrate tolerance: ± 10% @ 3.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 10° @ 3.0 ± 0.1 kgf/cm²
- Jet angle tolerance: 3°

Other materials:
- Recommended working pressure: 3.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 3.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 3.0 ± 0.1 kgf/cm²
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

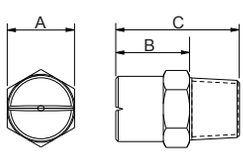


Features

- The spraying type is fan type, and the spray shape is single line and two sides are tapered (tapered edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle.
- Single-piece design, if there is frequent maintenance or replacement requirements, it is recommended to use quick install with multiple pieces nozzles.
- Fan nozzle angle can be 0°~110°, 0° spray angle spray type is straight column, spray Fog shape is a single point, providing the best impact in all nozzle types.
- When the fan nozzle is used in high pressure environment, choose HSS material (hardened stainless steel Steel), can operate under 200Kgf/cm² pressure

Applications

- Cleaning: Vehicles, Containers, Filters, Dust, Gravel, Metals, Metal Parts, Machinery, Steel Plates, Various Containers, High Pressure Cleaning, Wet Processing Display Pane, machine tool cleaning, etc.
- Cooling: gas, tank, machinery, metal, roof etc.
- Dispersion: Humidifying, Chemicals (etching solution, lubricants, insect repellent, etc.), water screens (fire, dust, deodorization etc.).



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)				
		A	B	C		S303	S316	Brass	HSS	PP
Metal	1/8H	12	11	19	1/8M	10.8	10.8	12.5	10.8	-
	1/4H	14	15	26	1/4M	11.5	11.5	14	11.5	-
	3/8H	18	15	30	3/8M	39	44.5	48	44.5	-
Plastic	1/8H	11.8	10.3	19	1/8M	-	-	-	-	1.5
	1/4H	13.7	13.7	25	1/4M	-	-	-	-	2.0
	3/8H	18	18	30	3/8M	-	-	-	-	8.0

Material

- Metal:

Stainless 303, Stainless 316, BRASS, HSS

- Plastic: PP

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) H (Nozzle Series) 01 (Capacity Code) 90 (Spray Angle) S316 (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 0°, 15° 25°, 40°, 50°, 100° and 110° is able to be made to order.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
0°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
15°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
25°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
40°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
50°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
65°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	140	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.4	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.6	100
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.7	100
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.8	50
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.9	50
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	230	0.9	50
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	1.0	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	1.0	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.1	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.1	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.2	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	370	1.6	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	2.0	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.3	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.4	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.5	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.8	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	3.1	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	3.3	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	630	3.9	-
80°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	135	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.6	100
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	220	0.7	50
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	0.7	50
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.9	50
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.9	50
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.0	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.0	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.1	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	340	1.6	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.9	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.1	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.3	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.4	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.8	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	2.5	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	3.1	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	600	3.7	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
90°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	130	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.5	100
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.5	100
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	210	0.5	100
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.6	100
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.8	50
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	330	0.8	50
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	0.8	50
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.0	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.1	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.2	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	1.4	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.6	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	1.8	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.0	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.1	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.3	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	2.5	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	2.7	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	570	3.3	-
100°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
110°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

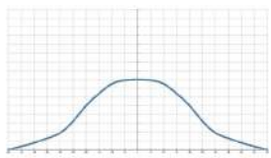
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

VH Single piece high chemical resistance plastic flat fan nozzle

- Recommended working pressure: 3.0 kgf/cm^2
- Flowrate tolerance: ± 5% @ 3.0 ± 0.1 kgf/cm^2
- Angle tolerance: ± 5° @ 3.0 ± 0.1 kgf/cm^2
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

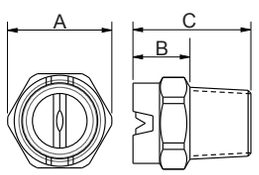


Features

- The spraying type is fan type, and the spray shape is single-line and the two sides are tapered (tapered Edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle.
- One-piece design.
- PVDF is resistant to temperature and corrosive chemical solutions.

Applications

- Cleaning: Vehicles, containers, filters, dust, gravel, metals, metal parts, mechanical, steel plates, various containers, high pressure cleaning, wet processing, display panel, cleaning process for TFT-LCD manufacturing, machinery washing, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals (eg. etching solution, lubricants, insect repellent, etc.), firefighting, dedust, deodorization, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		
PVDF	1/8VH	12	11	19	1/8M	2.2
	1/4VH	15	11	21	1/4M	3.7
	3/8VH	17	12	19	3/8M	14

Material

- Plastic: PVDF

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) VH (Nozzle Series) 03 (Capacity Code) 80 (Spray Angle) PVDF (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 0°, 15° 25°, 40°, 50°, 100° and 110° is

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
0°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
15°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
25°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
40°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
50°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
65°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	140	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.4	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.6	100
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.7	100
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.8	50
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.9	50
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	230	0.9	50
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	1.0	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	1.0	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.1	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.1	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.2	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	370	1.6	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	2.0	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.3	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.4	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.5	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.8	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	3.1	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	3.3	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	630	3.9	-
80°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	135	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.6	100
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	220	0.7	50
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	0.7	50
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.9	50
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.9	50
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.0	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.0	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.1	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	340	1.6	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.9	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.1	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.3	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.4	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.8	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	2.5	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	3.1	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	600	3.7	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
90°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	130	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.5	100
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.5	100
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	210	0.5	100
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.6	100
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.8	50
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	330	0.8	50
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	0.8	50
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.0	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.1	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.2	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	1.4	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.6	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	1.8	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.0	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.1	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.3	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	2.5	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	2.7	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	570	3.3	-
100°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
110°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

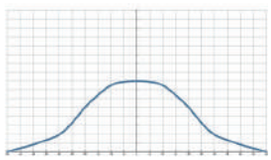
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

V High chemical resistance plastic flat fan nozzle for small flow rate

- Recommended working pressure: 3.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 3.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 3.0 ± 0.1 kgf/cm²
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

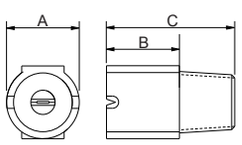


Features

- The spraying type is fan type, and the spray shape is single line. Both sides are tapered (tapered Edge), which presents a bell curve shape flow field distribution with weaker ends at the middle.
- One-piece design.
- For 1 kgf/cm² working pressure, customized design needed.
- PVDF is resistant to temperature and corrosive chemical solutions.

Applications

- Cleaning: Vehicles, containers, filters, dust, gravel, metals, metal parts, mechanical, steel plates, various containers, high pressure cleaning, wet processing, display panel, cleaning process for TFT-LCD manufacturing, machinery washing, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals (eg. etching solution, developer, insect repellent, etc.), firefighting, dedust, deodorization, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		PVDF
Plastic	1/4V	14	14	25	1/4M	4.0

Material

- Plastic: PVDF

How to pleace an order for LORRIC nozzles?

Example: 1/4 BSPT V 2.5 6.5 PVDF

1/4	BSPT	V	2.5	6.5	PVDF
Thread Size	Thread Type	Nozzle Series	Capacity Code	Spray Angle	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 0°, 15° 25°, 40°, 50°, 100° and 110° is able to be made to order.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
0°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
15°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
25°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
40°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
50°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
65°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	140	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.4	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.6	100
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.7	100
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.8	50
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.9	50
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	230	0.9	50
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	1.0	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	1.0	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.1	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.1	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.2	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	370	1.6	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	2.0	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.3	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.4	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.5	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.8	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	3.1	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	3.3	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	630	3.9	-
80°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	135	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.6	100
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	220	0.7	50
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	0.7	50
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.9	50
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.9	50
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.0	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.0	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.1	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	340	1.6	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.9	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.1	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.3	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.4	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.8	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	2.5	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	3.1	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	600	3.7	-

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Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	1.0 kgf/cm²	2.0 kgf/cm²	3.0 kgf/cm²	4.0 kgf/cm²	6.0 kgf/cm²	8.0 kgf/cm²	10.0 kgf/cm²	15.0 kgf/cm²			
90°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	130	0.2	200
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.5	100
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.5	100
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	210	0.5	100
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.6	100
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.8	50
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	330	0.8	50
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	0.8	50
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.0	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.1	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.2	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	1.4	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.6	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	1.8	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.0	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.1	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.3	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	2.5	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	2.7	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	570	3.3	-
100°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-
110°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
	60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-
	80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-
	100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-

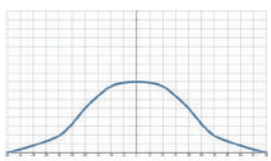
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

CH Easy maintenance metal flat fan nozzle

- Recommended working pressure: 3.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 3.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 3.0 ± 0.1 kgf/cm²
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】



Features

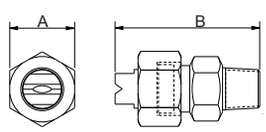
- Spray type is fan type, spray shape is single-lined and tapering on both sides (Tapered Edge), which presents a bell curve shape flow field distribution with weaker ends at the middle.
- Three-piece structure facilitates maintenance cleaning and replacement, and can save the cost of replacing the nozzle head.
- The fan nozzle angle can be 0°~110°, and the 0° spray angle spray pattern is a straight column type. The spray shape is a single point, which provides the best impact force among all nozzle types.

Applications

- Cleaning: Vehicles, Containers, Filters, Dust, Gravel, Metals, Metal Parts, Machinery, Steel Plates, Various Containers, High Pressure cleaning, Wet Processing, Display Pane, machine tool cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals (etching solution,Lubrication fluid, insect repellent fluid, etc.), Water Curtain. (fire protection, dust prevention, deodorization, etc.)

Material

- Metal: Stainless 303, Stainless 316, BRASS



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit(mm)		Thread Type	Weight (g)		
		A	B		S303	S316	Brass
Metal	3/8CH	21	43	3/8M	70	71	77.2

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) CH (Nozzle Series) 05 (Capacity Code) 90 (Spray Angle) S316 (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 0°, 15° 25°, 40°, 50°, 100° and 110° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
0°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
15°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
25°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
40°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
65°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	140	0.2	200
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.4	150
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.6	100
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.7	100
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.8	50
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.9	50
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	230	0.9	50
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	1.0	-
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	1.0	-
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.1	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.1	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.2	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	370	1.6	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	2.0	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.3	-
80°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	135	0.2	200
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.6	100
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	220	0.7	50
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	0.7	50
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.9	50
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.9	50
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.0	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.0	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.1	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	340	1.6	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.9	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.1	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
90°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	130	0.2	200
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.5	100
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.5	100
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	210	0.5	100
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.6	100
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.8	50
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	330	0.8	50
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	0.8	50
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.0	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.1	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.2	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	1.4	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.6	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	1.8	-
100°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
110°	1	0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25	3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-

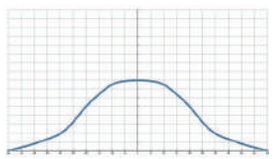
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

PF Low pressure and wide angle plastic flat fan flood nozzle

- Recommended working pressure: 1.5 kgf/cm²
- Flowrate tolerance: ± 10% @ 1.5 ± 0.1 kgf/cm²
- Angle tolerance: ± 10° @ 1.5 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

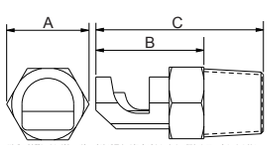


Features

- The spray pattern is fan type, and the spray shape is single-line.
- Low-pressure wide-angle nozzle realizes a large angle coverage under 1.5kgf/cm² pressure, which is lower than standard fan type 3kgf/cm² operating pressure and is more suitable for low-pressure working environment.
- Spray the nozzle at an angle of 75° with respect to the axis of the nozzle. Check that the environment is suitable.
- The hooked nozzle tip is designed to reflect the water into a fan shape nozzle and greaten particle passage to prevent clogging.
- Operation pressure is greater than 4kgf/cm² may cause the liquid to overflow without fogging.

Applications

- Cleaning: Conveyor belt, film, copper, paper, glass,All kinds of plates, filters, dust and debris, machine tool cleaning.
- Cooling: Conveyor belts, tanks, machinery, metal, roofs, etc.
- Dispersion: Humidifying, Chemicals, Water Curtain (fire, dust, deodorization, etc.), defoaming, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)	
		A	B	C		PVDF	PP
Plastic	1/8PF	10	15	23	1/8M	1.6	0.8
	1/4PF	14	17	28	1/4M	4.8	2.4

How to pleace an order for LORRIC nozzles?

Example: 1/8 (Thread Size) BSPT (Thread Type) PF (Nozzle Series) 3 (Capacity Code) PVDF (Material)

※ Standard Pressure: Column in red.

Material

- Plastic: PP, PVDF, UPVC

Spray Angle	Capacity Code	Thread Size		Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.5 kgf/cm²	3 kgf/cm²	4 kgf/cm²	6 kgf/cm²			
-	0.5	V		0.16	0.19	0.23	0.28	0.32	0.36	0.40	0.46	0.56	150	0.5	100
	0.75	V		0.24	0.29	0.34	0.42	0.48	0.54	0.59	0.69	0.84	-	0.7	50
145°	1	V		0.32	0.38	0.46	0.56	0.65	0.72	0.79	0.91	1.12	-	0.8	50
-	1.25	V		0.40	0.48	0.57	0.70	0.81	0.90	0.99	1.14	1.40	-	0.8	50
	1.5	V		0.48	0.57	0.69	0.84	0.97	1.08	1.19	1.37	1.68	-	0.8	50
160°	1.75	V		0.57	0.67	0.80	0.98	1.13	1.27	1.39	1.60	1.96	-	1	-
-	2	V	V	0.65	0.77	0.91	1.12	1.29	1.45	1.58	1.83	2.24	200	1.1	-
	2.5	V	V	0.81	0.96	1.14	1.40	1.62	1.81	1.98	2.29	2.80	-	1.3	-
145°	3	V	V	0.97	1.15	1.37	1.68	1.94	2.17	2.38	2.74	3.36	-	1.4	-
	4	V	V	1.29	1.53	1.83	2.24	2.59	2.89	3.17	3.66	4.48	-	1.7	-
	5	V	V	1.62	1.91	2.29	2.80	3.23	3.61	3.96	4.57	5.60	-	1.7	-
	6	V	V	1.94	2.30	2.74	3.36	3.88	4.34	4.75	5.49	6.72	-	2	-
	7	V	V	2.26	2.68	3.20	3.92	4.53	5.06	5.54	6.40	7.84	350	2.2	-
	7.5	V	V	2.42	2.87	3.43	4.20	4.85	5.42	5.94	6.86	8.40	-	2.3	-
	8	V	V	2.59	3.06	3.66	4.48	5.17	5.78	6.34	7.32	8.96	-	2.4	-
	9	V	V	2.91	3.44	4.12	5.04	5.82	6.51	7.13	8.23	10.08	-	2.5	-
	10	V	V	3.23	3.83	4.57	5.60	6.47	7.23	7.92	9.14	11.20	-	2.6	-
	12.5	V	V	4.04	4.78	5.72	7.00	8.08	9.04	9.90	11.43	14.00	-	2.9	-
	15	V	V	4.85	5.74	6.86	8.40	9.70	10.84	11.88	13.72	16.80	-	3.3	-
	20	V	V	6.47	7.65	9.14	11.20	12.93	14.46	15.84	18.29	22.40	410	3.5	-

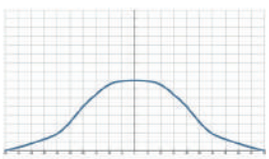
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

F Low pressure and wide angle metal flat fan flood nozzle

- Recommended working pressure: 1.5 kgf/cm²
- Flowrate tolerance: ± 10% @ 1.5 ± 0.1 kgf/cm²
- Angle tolerance: ± 10° @ 1.5 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

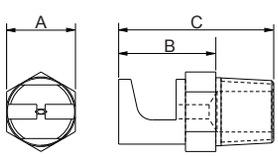


Features

- The spray pattern is fan type and the spray shape is single.
- Low-pressure wide-angle nozzle realizes a large-angle coverage area under 1.5kgf/cm² pressure, which is lower than standard fan type 3kgf/cm² operating pressure, and is more suitable for low-pressure working environment.
- Spray the nozzle at an angle of 75° with respect to the axis of the nozzle. Check that the environment is suitable.
- The hooked nozzle tip is designed to reflect the water into a fan shape nozzle and greaten particle passage to prevent clogging.
- Operation pressure is greater than 4kgf/cm² may cause the liquid to overflow without fogging.

Applications

- Cleaning: Conveyor belt, film, copper thin, paper, glass plate, all kinds of plates, filters, dust and gravel, and machine tool cleaning.
- Cooling: Conveyor belts, tanks, machinery, metal, roofs, etc.
- Dispersion: Humidifying, chemicals, Water Curtain (fire, dust, deodorization), defoaming, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)			
		A	B	C		S303	S316	Brass	PVC
Metal	1/8F	10	15	23	1/8M	7.4	9.2	12.2	-
	1/4F	14	17	28	1/4M	23.8	20.4	21.8	-
	3/8F	17	24	39	3/8M	42.8	43	47	-
Plastic	1/8F	12	18	24	1/8M	-	-	-	1.6
	1/4F	-	-	-	1/4M	-	-	-	3.5
	3/8F	-	-	-	3/8M	-	-	-	8.2

Material

- Metal: Stainless 303, Stainless 316, BRASS

How to pleace an order for LORRIC nozzles?

Example: 1/8 (Thread Size) BSPT (Thread Type) F (Nozzle Series) 3 (Capacity Code) S303 (Material)

※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.5 kgf/cm²	3 kgf/cm²	4 kgf/cm²	6 kgf/cm²			
125°	0.5	V			0.16	0.19	0.23	0.28	0.32	0.36	0.40	0.46	0.56	150	0.5	100
-	0.75	V			0.24	0.29	0.34	0.42	0.48	0.54	0.59	0.69	0.84	-	0.7	50
120°	1	V			0.32	0.38	0.46	0.56	0.65	0.72	0.79	0.91	1.12	-	0.8	50
	1.25	V			0.40	0.48	0.57	0.70	0.81	0.90	0.99	1.14	1.40	-	0.8	50
	1.5	V			0.48	0.57	0.69	0.84	0.97	1.08	1.19	1.37	1.68	-	0.8	50
	1.75	V			0.57	0.67	0.80	0.98	1.13	1.27	1.39	1.60	1.96	-	1	-
-	2	V	V		0.65	0.77	0.91	1.12	1.29	1.45	1.58	1.83	2.24	200	1.1	-
	2.5	V	V		0.81	0.96	1.14	1.40	1.62	1.81	1.98	2.29	2.80	-	1.3	-
	3	V	V		0.97	1.15	1.37	1.68	1.94	2.17	2.38	2.74	3.36	-	1.4	-
	4	V	V		1.29	1.53	1.83	2.24	2.59	2.89	3.17	3.66	4.48	-	1.7	-
170°	5	V	V		1.62	1.91	2.29	2.80	3.23	3.61	3.96	4.57	5.60	-	1.7	-
	6	V	V		1.94	2.30	2.74	3.36	3.88	4.34	4.75	5.49	6.72	-	2	-
	7	V	V		2.26	2.68	3.20	3.92	4.53	5.06	5.54	6.40	7.84	350	2.2	-
-	7.5	V	V		2.42	2.87	3.43	4.20	4.85	5.42	5.94	6.86	8.40	-	2.3	-
	8	V	V		2.59	3.06	3.66	4.48	5.17	5.78	6.34	7.32	8.96	-	2.4	-
	9	V	V		2.91	3.44	4.12	5.04	5.82	6.51	7.13	8.23	10.08	-	2.5	-
160°	10	V	V		3.23	3.83	4.57	5.60	6.47	7.23	7.92	9.14	11.20	-	2.6	-
-	12.5	V	V		4.04	4.78	5.72	7.00	8.08	9.04	9.90	11.43	14.00	-	2.9	-
	15	V	V		4.85	5.74	6.86	8.40	9.70	10.84	11.88	13.72	16.80	-	3.3	-
160°	20	V	V	V	6.47	7.65	9.14	11.20	12.93	14.46	15.84	18.29	22.40	410	3.5	-
-	30			V	9.70	11.48	13.72	16.80	19.40	21.69	23.76	27.43	33.60	600	4.3	-

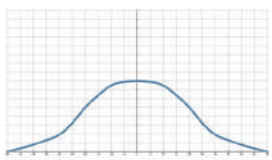
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QFH High impact for cleaning easy connect water curtain nozzle

- Recommended working pressure: 3.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 3.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 3.0 ± 0.1 kgf/cm²
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】



Features

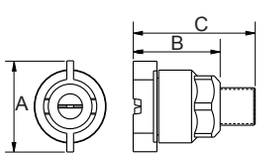
- The spraying type is fan type, and the spray shape is single line and two sides are tapered (tapered edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle. Products with special flow field distribution can be customized.
- Two-piece quick-release design is divided into two parts: the nozzle and the body. It can be installed and removed without any tools. It is convenient for on-site operation. With three positioning buckle points, the nozzle can be accurately screwed in and positioned to avoid loose nozzles and to ensure the quality of production.
- The internal gaskets have different options such as EPDM, Viton and FEPM, which can be adapted to various chemical processes. With a special structural design, the nozzles and the base can be closely fitted to avoid water leakage.
- PVDF is resistant to temperature and corrosive chemical solutions.
- According to the working environment, the body has two choices of thread type and welding type.

Applications

- Cleaning: Vehicles, Containers, Filters, Dust, Gravel, Metals, Metal Parts, Machinery, Steel Plates, Various Containers, High Pressure Cleaning, Wet Processing, Display Pane, machine tool cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals (etching solution,Lubrication fluid, insect repellent fluid, etc.), Water Curtain (fire protection, dust prevention, deodorization, etc.).

Material

- TIP: PVDF
- Oring: EPDM, VITON, FEPM
- Base: PVDF, PP, UPVC



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		
Plastic	1/8QFH	32	28	39	1/8M	17.2
	1/4QFH	32	28	43	1/4M	17.6
	3/8QFH	32	28	43	3/8M	19.3

How to pleace an order for LORRIC nozzles?

Example: 1/8 (Thread Size) BSPT (Thread Type) QFH (Nozzle Series) 02 (Capacity Code) 90 (Spray Angle) PVDF (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 0°, 15° 25°, 40°, 50°, 100° and 110° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
0°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
15°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
25°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
40°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
50°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
65°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.4	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.6	100
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.7	100
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.8	50
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	0.9	50
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	230	0.9	50
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	1.0	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	1.0	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	1.1	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	1.1	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.2	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.3	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.4	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	370	1.6	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	2.0	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	2.3	-
80°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.3	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.4	150
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.4	150
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.6	100
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	220	0.7	50
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	0.7	50
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	0.9	50
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	0.9	50
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	1.0	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	1.0	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.1	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.3	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.4	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	340	1.6	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	1.9	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	2.1	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
90°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.3	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.4	150
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.4	150
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.5	100
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	0.5	100
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	210	0.5	100
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	0.6	100
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	0.8	50
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	330	0.8	50
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	0.8	50
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.0	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.1	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.2	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	1.4	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	1.6	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	1.8	-
100°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
110°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

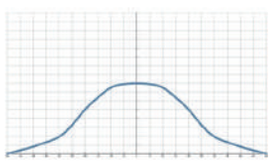
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QFYH High chemical resistance plastic easy install flat fan nozzle

- Recommended working pressure: 3.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 3.0 ± 0.1kgf/cm²
- Angle tolerance: ± 5° @ 3.0 ± 0.1kgf/cm²
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】



Features

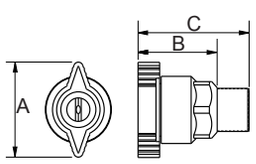
- The spraying type is fan type, and the spray shape is single line and two sides are tapered (tapered edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle. Products with special flow field distribution can be customized.
- Two piece nozzle design which includes nozzle and the body allows quick and accurate installation by hand. It is convenient for on-site management. Nozzle tip is secured into the body and fastened by three buckle points to avoid the nozzle tip loosening and ensure the performance quality.
- The internal gaskets are available in various options such as EPDM, Viton and FEPM, which can be adapted to various chemical processes. The special structural design allows the nozzles and the base to fit closely and avoid water leakage.
- Y-shaped rotary handle design leads to easier dismantling.
- According to the working environment, the body has two choices of thread type and welding type.

Applications

- Cleaning: Vehicles, Containers, Filters, Dust, Gravel, Metals, Metal Parts, Machinery, Steel Plates, Various Containers, etc.
- Cooling: Tank, Machinery, Metal, Roof etc.
- Dispersion: Humidifying, chemicals (eg. etching solution, developer, insect repellent, etc.), firefighting, dedust, deodorization, etc.

Material

- TIP: PP
- Oring: EPDM, VITON, FEPM
- Base: PVDF, PP, UPVC



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)	
		A	B	C		PP	PVDF
Plastic	1/8QFYH	36	28	39	1/8M	9.9	17.7
	1/4QFYH	36	28	43	1/4M	10.1	18.1
	3/8QFYH	36	28	43	3/8M	11.1	19.8

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) QFYH (Nozzle Series) 4 (Capacity Code) 90 (Spray Angle) PP (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 0°, 15° 25°, 40°, 50°, 100° and 110° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
0°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
15°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
25°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
40°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
50°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
65°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.4	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.6	100
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.7	100
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.8	50
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	0.9	50
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	230	0.9	50
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	1.0	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	1.0	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	1.1	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	1.1	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.2	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.3	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.4	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	370	1.6	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	2.0	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	2.3	-
80°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.3	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.4	150
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.4	150
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.6	100
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	220	0.7	50
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	0.7	50
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	0.9	50
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	0.9	50
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	1.0	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	1.0	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.1	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.3	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.4	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	340	1.6	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	1.9	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	2.1	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
90°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.3	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.4	150
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.4	150
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.5	100
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	0.5	100
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	210	0.5	100
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	0.6	100
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	0.8	50
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	330	0.8	50
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	0.8	50
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.0	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.1	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.2	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	1.4	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	1.6	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	1.8	-
100°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
110°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

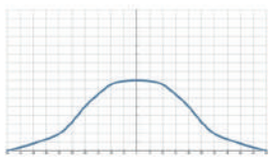
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QSH Plastic easy install flat fan nozzle

- Recommended working pressure: 3.0 kgf/cm²
- Flowrate tolerance: ± 10% @ 3.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 10° @ 3.0 ± 0.1 kgf/cm²
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

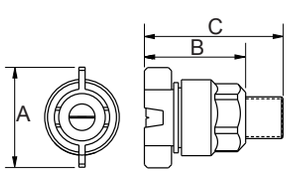


Features

- The spraying type is fan type, and the spray shape is single line and two sides are tapered (tapered edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle.
- Two piece nozzle design which includes nozzle and the body allows quick and accurate installation by hand. It is convenient for on-site management. Nozzle tip is secured into the body and fastened by three buckle points to avoid the nozzle tip loosening and ensure the performance quality.
- The internal gaskets have different options such as EPDM, Viton and FEPM, which can be adapted to various chemical processes. With a special structural design, the nozzles and the base can be closely fitted to avoid water leakage.
- These general-purpose nozzles without guaranteed flow and angle tolerance are not recommended for environments with high accuracy requirements.

Applications

- Cleaning: Vehicles, containers, filters, dust, gravel, metals, metal parts, mechanical, steel plates, various containers, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals (etching solution, developer, insect repellent, etc.), Water Curtain (fire, dust, deodorisation, etc.)
- Printed circuit board: etching process, developing process, washing process.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		
PP	1/4QSH	32	31	44	1/4M	7.9
	3/8QSH	32	31	44	3/8M	12.1

Material

- TIP: PP
- Oring: EPDM, VITON, FEPM
- Base: PP

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) QSH (Nozzle Series) 3 (Capacity Code) 80 (Spray Angle) PP (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 0°, 15° 25°, 40°, 50°, 100° and 110° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
0°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
15°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
25°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
40°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
50°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
65°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.4	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.6	100
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.7	100
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.8	50
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	0.9	50
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	230	0.9	50
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	1.0	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	1.0	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	1.1	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	1.1	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.2	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.3	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.4	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	370	1.6	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	2.0	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	2.3	-
80°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.3	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.4	150
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.4	150
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.6	100
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	220	0.7	50
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	0.7	50
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	0.9	50
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	0.9	50
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	1.0	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	1.0	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.1	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.3	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.4	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	340	1.6	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	1.9	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	2.1	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
90°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	0.3	150
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	0.4	150
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	0.4	150
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	0.5	100
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	0.5	100
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	210	0.5	100
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	0.6	100
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	0.8	50
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	330	0.8	50
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	0.8	50
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	1.0	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	1.1	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	1.2	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	1.4	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	1.6	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	1.8	-
100°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-
110°	2	0.32	0.45	0.55	0.64	0.78	0.90	1.01	1.11	1.28	-	-	-
	2.5	0.40	0.56	0.69	0.80	0.98	1.13	1.26	1.38	1.60	-	-	-
	3	0.48	0.68	0.83	0.96	1.17	1.35	1.51	1.66	1.92	-	-	-
	4	0.64	0.90	1.11	1.28	1.56	1.81	2.02	2.21	2.55	-	-	-
	5	0.80	1.13	1.38	1.60	1.96	2.26	2.52	2.76	3.19	-	-	-
	6	0.96	1.35	1.66	1.92	2.35	2.71	3.03	3.32	3.83	-	-	-
	7	1.12	1.58	1.94	2.23	2.74	3.16	3.53	3.87	4.47	-	-	-
	7.5	1.20	1.69	2.07	2.39	2.93	3.39	3.79	4.15	4.79	-	-	-
	8	1.28	1.81	2.21	2.55	3.13	3.61	4.04	4.42	5.11	-	-	-
	9	1.44	2.03	2.49	2.87	3.52	4.06	4.54	4.98	5.75	-	-	-
	10	1.60	2.26	2.76	3.19	3.91	4.51	5.05	5.53	6.39	-	-	-
	12.5	2.00	2.82	3.46	3.99	4.89	5.64	6.31	6.91	7.98	-	-	-
	15	2.39	3.39	4.15	4.79	5.87	6.77	7.57	8.29	9.58	-	-	-
	20	3.19	4.51	5.53	6.39	7.82	9.03	10.10	11.06	12.77	-	-	-
	25	3.99	5.64	6.91	7.98	9.78	11.29	12.62	13.82	15.96	-	-	-
	30	4.79	6.77	8.29	9.58	11.73	13.54	15.14	16.59	19.16	-	-	-

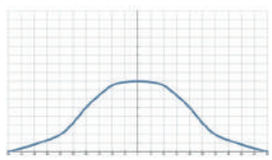
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

DVEH Easy maintenance plastic flat fan nozzle

- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

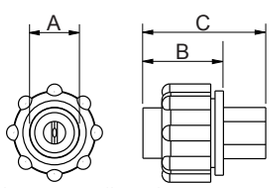


Features

- The spraying type is fan type, and the spray shape is single line and two sides are tapered (tapered edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle.
- Multi-piece structure, easy maintenance, cleaning and replacement, and can save the cost of replacing the nozzle head.
- The special positioning design of the nozzle and base installation ensures that each nozzle can be replaced and returned to the original position.
- No internal gasket design to avoid possible water leakage or contamination of the gasket.
- PVDF is resistant to temperature and corrosive chemical solutions.

Applications

- Cleaning: Vehicles, Containers, Filters, Dust, Gravel, Metals, Metal Parts, Machinery, Steel Plates, Various Containers, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals (eg. etching solution, developer, insect repellent, etc.), firefighting, dedust, deodorization, etc.
- Printed circuit board: etching process, developing process, water washing process.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		
Plastic	DVEH	48	20	31	-	28.2

Material

- Tip: PVDF
- Body: U-PVC
- Clap: PP

How to pleace an order for LORRIC nozzles?

Example: DVEH 26 50 0 PVDF

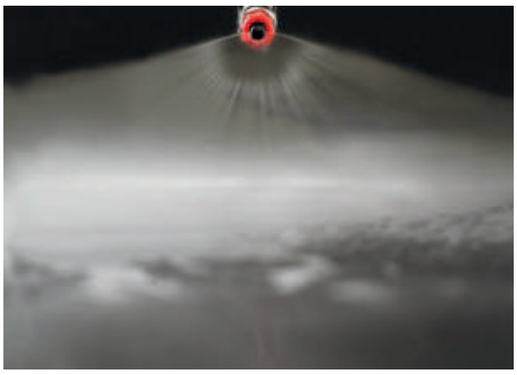
DVEH	26	50	0	PVDF
Nozzle Series	Capacity Code	Spray Angle	Included Angle	Material

※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
50°	15	0.89	1.06	1.30	1.50	1.84	2.12	2.37	2.60	3.00	-	0.9	50
	26	1.54	1.84	2.25	2.60	3.18	3.68	4.11	4.50	5.20	-	1.1	-
80°	12	0.71	0.85	1.04	1.20	1.47	1.70	1.90	2.08	2.40	-	0.7	100

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

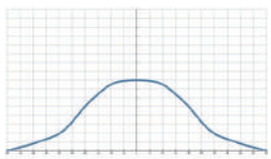
D Industrial Low Pressure Wide Angle Flat Fan Spray Nozzle



- Recommended working pressure: 1.5 kgf/cm²
- Flowrate tolerance: ± 10% @ 1.5 ± 0.1kgf/cm²
- Angle tolerance: ± 10° @ 1.5 ± 0.1kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

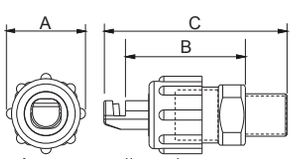


Features

- The spray pattern is fan type, and the spray shape is single-line.
- Low-pressure wide-angle nozzles can achieve large angle coverage under 1.5kgf/cm² pressure. The coverage area is smaller than the standard fan type 3kgf/cm² operating pressure, and is more suitable for low-pressure working environment.
- Spray the nozzle at an angle of 75° with respect to the axis of the nozzle. Check the environment before installation.
- The hooked nozzle tip is designed to reflect the water into a fan shape nozzle and greaten particle passage to prevent clogging.
- Multi-piece structure, easy maintenance, cleaning and replacement, and can save the cost of replacement nozzle head.
- If operation pressure is greater than 4kgf/cm²,May cause the liquid to overflow without fogging.

Applications

- Cleaning: Conveyor belt, film, copper thin, paper, glass plate, all kinds of plates, filters, dust and gravel, and machine tool cleaning.
- Cooling: Conveyor belts, gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals, firefighting, dedust, deodorization, defoaming, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Weight (g)
		A	B	C	
Plastic	1/4 D	55	36	66.5	6.6

Material

- Nozzle: PP

How to pleace an order for LORRIC nozzles?

Example: 1/4" BODY (Thread) D (Series) 0.5 (Capacity Code) Cap (Nut) S (Filter)

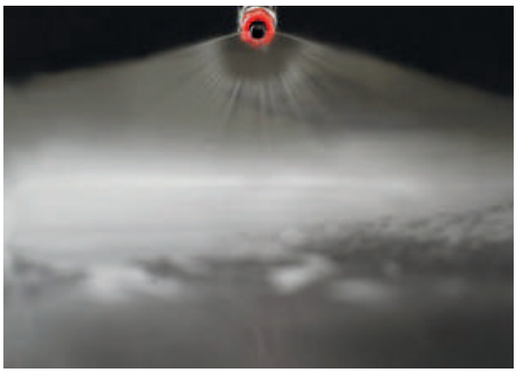
※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	Thread Size	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/4	0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.5 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²			
110°	0.5	v	0.16	0.19	0.23	0.28	0.32	0.36	0.40	0.46	0.51	150	0.5	100
125°	0.75	v	0.24	0.29	0.34	0.42	0.48	0.54	0.59	0.69	0.77	-	0.7	50
120°	1	v	0.32	0.38	0.46	0.56	0.65	0.72	0.79	0.91	1.02	-	0.8	50
130°	1.5	v	0.48	0.57	0.69	0.84	0.97	1.08	1.19	1.37	1.53	-	0.8	50
145°	2	v	0.65	0.77	0.91	1.12	1.29	1.45	1.58	1.83	2.04	200	1.1	-
	3	v	0.97	1.15	1.37	1.68	1.94	2.17	2.38	2.74	3.07	-	1.4	-
170°	5	v	1.62	1.91	2.29	2.80	3.23	3.61	3.96	4.57	5.11	-	1.7	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

D Clamp

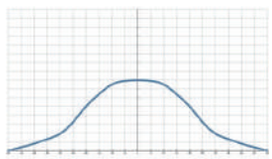
Easy maintenance low pressure and wide angle flat fan nozzle with pipe clamp



- Recommended working pressure: 1.5 kgf/cm^2
- Flowrate tolerance: ± 10% @ 1.5 ± 0.1kgf/cm^2
- Angle tolerance: ± 10° @ 1.5 ± 0.1kgf/cm^2

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

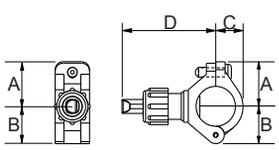


Features

- The spray pattern is fan type, and the spray shape is single-line.
- Low-pressure wide-angle nozzles can achieve large angle coverage under 1.5kgf/cm² pressure. The coverage area is smaller than the standard fan type 3kgf/cm² operating pressure, and is more suitable for low-pressure working environment.
- Spray the nozzle at an angle of 75° with respect to the axis of the nozzle. Check the environment before installation.
- The hooked nozzle tip is designed to reflect the water into a fan shape nozzle and greaten particle passage to prevent clogging.
- Multi-piece structure, easy maintenance, cleaning and replacement, and can save the cost of replacement nozzle head.
- size:
  -Spec of drilling installation hole: 8.35~9m/m
  -Size of Pipe clamp:3/4"(OD26 +/-0.2mm),1"(OD34+/-0.3mm)
- If operation pressure is greater than 4kgf/cm²,May cause the liquid to overflow without fogging.

Applications

- Cleaning: Conveyor belt, film, copper thin, paper, glass plate, all kinds of plates, filters, dust and gravel, and machine tool cleaning.
- Cooling: Conveyor belts, gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals, firefighting, dedust, deodorization, defoaming, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)				Pipe Type	Weight (g)
		A	B	C	D		
Plastic	3/4 D Clamp	23	28	18	64	3/4M	23.6
	1 D Clamp	28.5	33	23.5	64	1M	28

Material

- TIP: PP
- Clamp: Strengthened Fiberglass PP (FRPP)

How to pleace an order for LORRIC nozzles?

Example: 3/4 Clamp D 0.5 Cap S

3/4	Clamp	D 0.5	Cap	S
Clamp Size	Nozzle Series	Capacity Code	Nut	Filter

※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	Clamp Size		Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1	3/4	0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.5 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²			
110°	0.5	v	v	0.16	0.19	0.23	0.28	0.32	0.36	0.40	0.46	0.51	150	0.5	100
125°	0.75	v	v	0.24	0.29	0.34	0.42	0.48	0.54	0.59	0.69	0.77	-	0.7	50
120°	1	v	v	0.32	0.38	0.46	0.56	0.65	0.72	0.79	0.91	1.02	-	0.8	50
130°	1.5	v	v	0.48	0.57	0.69	0.84	0.97	1.08	1.19	1.37	1.53	-	0.8	50
145°	2	v	v	0.65	0.77	0.91	1.12	1.29	1.45	1.58	1.83	2.04	200	1.1	-
	3	v	v	0.97	1.15	1.37	1.68	1.94	2.17	2.38	2.74	3.07	-	1.4	-
170°	5	v	v	1.62	1.91	2.29	2.80	3.23	3.61	3.96	4.57	5.11	-	1.7	-

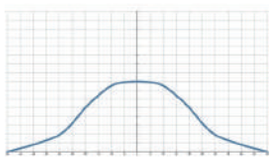
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

KAD Flat fan nozzle

- Recommended working pressure: 3.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 3.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 3.0 ± 0.1 kgf/cm²
- Jet angle tolerance: 3°

【 Top view of nozzle spray pattern 】

【 Flow distribution 】



Features

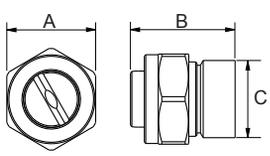
- The spraying type is fan type, and the spray shape is single line and two sides are tapered (tapered edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle.
- Three-piece structure facilitates maintenance cleaning and replacement, and can save the cost of replacing the nozzle head. The base must be connected to the pipeline by welding. Please confirm that the installation environment meets the requirements.
- The special positioning design of the nozzle and base installation ensures that each spray replacement can be returned to the original positioning.

Applications

- Cleaning: Vehicles, containers, filters, dust, gravel, metals, metal parts, mechanical, steel plates, various containers, high Pressure cleaning, wet processing, display panel, machinery washing, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals (etching solution, developer, insect repellent, etc.), Water Curtain (fire, dust, deodorant, etc.).

Material

- Metal: Stainless 303, Stainless 316, BRASS



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)		
		A	B	C		S303	S316	Brass
Metal	KAD	32	38	27.5	-	162	165	180

How to pleace an order for LORRIC nozzles?

Example: KAD 40 65 S316

Nozzle Series	Capacity Code	Spray Angle	Material

※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²	6 kgf/cm²	8 kgf/cm²			
65°	40	7.55	9.03	11.06	12.77	15.64	18.06	20.19	22.12	25.54	-	2.5	-
50°	50	9.44	11.29	13.82	15.96	19.55	22.57	25.24	27.65	31.93	-	2.8	-

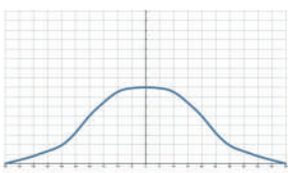
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

HB Angle adjustable and easy install flat fan nozzle with pipe clamp

- Recommended working pressure: 1.0 kgf/cm²
- Flowrate tolerance: ± 10% @ 1.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 10° @ 1.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

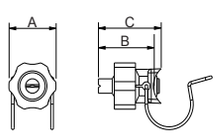


Features

- The spraying type is fan type, and the spray shape is single line and two sides are tapered (tapered edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle.
- Unique pipe clamp design allows to be installed by drilling in the pipeline without any tools.
- Three-piece structure design, divided into nozzle part (HB), base part (EB) and nuts, which facilitates maintenance cleaning and replacement, and can save the cost of replacing the nozzle head.
- Double gasket seal design, between the nozzle and the base, and between the base and the pipeline, are sealed by NBR gasket to ensure no water leakage.
- The nozzle part is designed as a sphere, and the nozzle axis is anisotropically adjusted by 50°.
- Spec of drilling installation hole:
  - Ø 15 (14.3~15mm) - Ø 17 (16.4~17mm)
  - Ø 20 (19.0~20mm)8.35 ～ 9m/m
- Size of Pipe clamp:
  - 1" (OD34 +/-0.3mm) - 1-1/4" (OD42+/-0.3mm)
  - 1-1/2" (OD48 +/-0.4mm)
- If there is any other spray type or material request, please choose TB adapter (with choices of 1/4" and 3/8" internal threads) and general fan or cone nozzles with optional materials.

Applications

- Cleaning: Pretreatment for painting in automotive and home appliance manufacturing industries.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		
Plastic	HB	52	62	70	-	62.5

Material

- TIP: PP
- Clamp, nut: Strengthened Fiberglass PP(FRPP)
- Pipe clamp: Stainless 316
- Sealing ring: NBR

How to pleace an order for LORRIC nozzles?

Example: 1" (Pipe Size) EB15 + HB (Drilling Hole / Nozzle Series) 10 (Capacity Code) 65 (Spray Angle) PP (Material)

※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	HB Color	Capacity at Pressure								
			0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.5 kgf/cm²	3 kgf/cm²	3.5 kgf/cm²	4 kgf/cm²
65°	10	Sky Blue	1.60	1.89	2.26	2.77	3.20	3.57	3.91	4.23	4.52
	20	Red	3.20	3.78	4.52	5.54	6.39	7.15	7.83	8.46	9.04
	30	Orange	4.79	5.66	6.77	8.29	9.57	10.70	11.73	12.67	13.54
	35	Black	5.59	6.61	7.90	9.68	11.17	12.49	13.68	14.78	15.80
	40	Yellow	6.39	7.56	9.03	11.06	12.77	14.28	15.64	16.89	18.06
	50	Blue	7.98	9.45	11.29	13.83	15.97	17.85	19.55	21.12	22.58
	60	Green	9.58	11.34	13.55	16.60	19.16	21.42	23.47	25.35	27.10
80°	10	Sky Blue	1.60	1.89	2.26	2.77	3.20	3.57	3.91	4.23	4.52
	20	Red	3.20	3.78	4.52	5.54	6.39	7.15	7.83	8.46	9.04
	30	Orange	4.79	5.66	6.77	8.29	9.57	10.70	11.73	12.67	13.54
	35	Black	5.59	6.61	7.90	9.68	11.17	12.49	13.68	14.78	15.80
	40	Yellow	6.39	7.56	9.03	11.06	12.77	14.28	15.64	16.89	18.06
	50	Blue	7.98	9.45	11.29	13.83	15.97	17.85	19.55	21.12	22.58
	60	Green	9.58	11.34	13.55	16.60	19.16	21.42	23.47	25.35	27.10

※ For MPa / bar / psi units, please refer to ⊏ .

Full Cone Nozzles

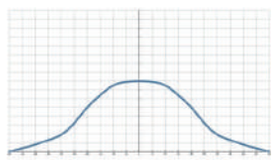
LORRIC®
paranoid about performance

KP M Metal clog-resistant full cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【Top view of nozzle spray pattern】

【Flow distribution】

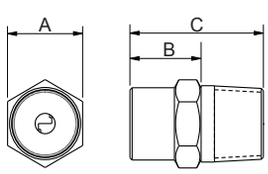


Features

- Full cone spray.
- Unibody design allows for secure and easy installation,and X-shaped core provides minimal clogging.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: humidifying, chemicals, firefighting, dust suppression, aeration, defoaming, sewage treatment.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight(g)		
		A	B	C		S303	S316	Brass
Metal	1/8KP (M)	12	12	19	1/8M	15	15.5	16.9
	1/4KP (M)	14	11-15	22-26	1/4M	18	18.5	19
	3/8KP (M)	18	15	30	3/8M	28.5	29	32

Material

- Metal: Stainless 303, Stainless 316, BRASS

How to pleace an order for LORRIC nozzles?

Example: 1/8 BSPT KP 020 S303

1/8	BSPT	KP	020	S303
Thread Size	Thread Type	Nozzle Series	Capacity Code	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.7	100
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	≀	1	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.3	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.4	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22		1.5	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	≀	1.6	-
≀	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95		1.7	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	400	1.7	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43		1.7	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17		1.9	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	≀	1.9	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39		2	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86		2.1	-
95°	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	640	2.5	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
90°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.77	-	-	-
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.15	-	-	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.53	-	-	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.91	-	-	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.3	-	-	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.68	-	-	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	11.06	-	-	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.93	-	-	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.59	-	-	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.36	-	-	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	22.12	-	-	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.65	-	-	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	33.19	-	-	-
	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.72	-	-	-
120°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.77	-	-	-
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.15	-	-	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.53	-	-	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.91	-	-	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.3	-	-	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.68	-	-	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	11.06	-	-	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.93	-	-	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.59	-	-	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.36	-	-	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	22.12	-	-	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.65	-	-	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	33.19	-	-	-
	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.72	-	-	-

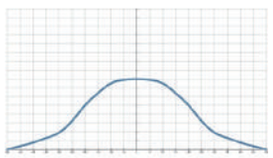
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

KP P Plastic clog-resistant full cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

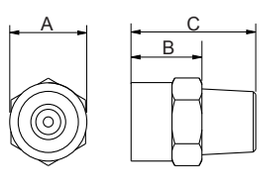


Features

- Full cone spray.
- Unibody design allows for secure and easy installation,and X-shaped core provides minimal clogging.
- PVDF is resistant to temperature and corrosive chemical solutions.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: humidifying, chemicals, firefighting, dust suppression, aeration, defoaming, sewage treatment.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		
Plastic	1/8KP (P)	12	10	19	1/8M	1.0
	1/4KP (P)	15	11	21	1/4M	5.0
	3/8KP (P)	17	13	25	3/8M	5.5

Material

- Nozzle: PVDF
- CORE: PVDF, PP, UPVC

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) KP (Nozzle Series) 050 (Capacity Code) PVDF (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.7	100
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11		1	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.3	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.4	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22		1.5	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	≀	1.6	-
≀	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95		1.7	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	400	1.7	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43		1.7	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17		1.9	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	≀	1.9	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39		2	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86		2.1	-
95°	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	640	2.5	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
90°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	-	-	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95	-	-	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43	-	-	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17	-	-	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	-	-	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39	-	-	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86	-	-	-
	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	-	-	-
120°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	-	-	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95	-	-	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43	-	-	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17	-	-	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	-	-	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39	-	-	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86	-	-	-
	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	-	-	-

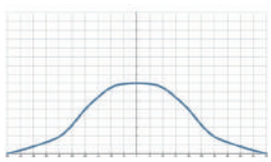
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

KH Plastic clog-resistant full cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 10% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 10° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

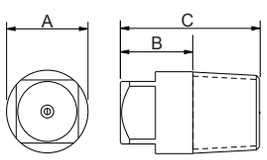


Features

- Full cone spray.
- Unibody design allows for secure and easy installation,and X-shaped core provides minimal clogging.
- One piece body with removable core for easy cleaning and maintenance.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: humidifying, chemicals, firefighting, dust suppression, aeration, defoaming, sewage treatment.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		PP
PP	1/8KH	12	10	19	1/8M	1.0
	1/4KH	15	11	21	1/4M	1.8
	3/8KH	16	13	25	3/8M	3.0

Material

- Nozzle: PP
- Core: PP, Strengthened Fiberglass PP(FRPP)

How to pleace an order for LORRIC nozzles?

Example: 1/4 BSPT KH 025 PP

1/4	BSPT	KH	025	PP
Thread Size	Thread Type	Nozzle Series	Capacity Code	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.7	100
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	≀	1	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.3	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.4	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22		1.5	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	≀	1.6	-
≀	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95		1.7	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	400	1.7	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43		1.7	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17		1.9	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	≀	1.9	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39		2	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86		2.1	-
95°	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	640	2.5	-

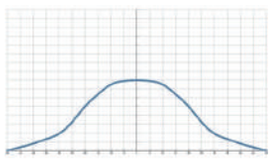
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QSF Plastic clog-resistant easy install full cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 10% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 10° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

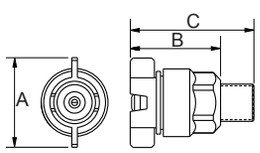


Features

- Full cone spray.
- Unibody design allows for secure and easy installation, and X-shaped core provides minimal clogging. It is often used in etching and developing processes for semiconductors and printed circuit boards that require extremely high spray uniformity.
- Two piece nozzle design which includes nozzle and the base allows quick and accurate installation by hand. It is convenient for on-site management. Nozzle tip is secured into the base and fastened by three buckle points to avoid the nozzle tip loosening and ensure the performance quality.
- The internal gaskets are available in various options such as EPDM, Viton and FEPM, which can be adapted to various types of chemicals. With special structural design, the nozzles can be closely attached to the base to avoid water leakage.
- These general-purpose nozzles without guaranteed flow and angle tolerance are not recommended for environments with high accuracy requirements.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals, dust suppression.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		
Plastic	1/4QSF	31	31	44	1/4M	10.4
	3/8QSF	31	31	44	3/8M	14.6

Material

- TIP: PP
- Core: PP
- Oring: EPDM, VITON, FEPM
- Base: PP

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) QSF (Nozzle Series) 025 (Capacity Code) PP (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	025	1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.4	-
	030	1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22		1.5	-
	035	2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	≀	1.6	-
≀	040	2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95		1.7	-
	045	2.66	3.18	3.90	4.50	6.36	7.79	9.00	10.06	12.32	400	1.7	-
	050	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69		1.7	-
90°	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06	≀	1.7	-

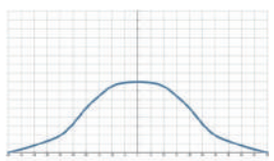
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QFF Plastic clog-resistant easy install full cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

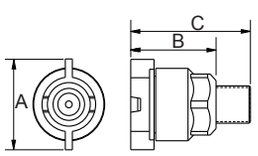


Features

- Full cone spray.
- Unibody design allows for secure and easy installation, and X-shaped core provides minimal clogging. It is often used in etching and developing processes for semiconductors and printed circuit boards that require high spray uniformity.
- Two piece nozzle design which includes nozzle and the base allows quick and accurate installation by hand. It is convenient for on-site management. Nozzle tip is secured into the base and fastened by three buckle points to avoid the nozzle tip loosening and ensure the performance quality.
- Internal gaskets are available in various options such as EPDM, Viton, and FEPM, which can be adapted to various types of chemical processes. The special structural design allows the nozzles to closely contact the base to prevent water leakage.
- According to the working environment, the base has two choices of thread type and welding type.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals, dust suppression.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		PVDF
Plastic	1/8QFF	32	28	39	1/8M	17.5
	1/4QFF	32	28	43	1/4M	17.9
	3/8QFF	32	28	43	3/8M	19.6

Material

- TIP: PVDF
- Core: PP, PVDF
- Oring: EPDM, VITON, FEPM
- Base: PVDF, PP, U-PVC

How to pleace an order for LORRIC nozzles?

Example: 1/4 BSPT QFF 030 PVDF

1/4	BSPT	QFF	030	PVDF
Thread Size	Thread Type	Nozzle Series	Capacity Code	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	010	0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.7	100
	015	0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11		1	-
	020	1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.3	-
	025	1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.4	-
	030	1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22		1.5	-
	035	2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59		1.6	-
	040	2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95		1.7	-
	045	2.66	3.18	3.90	4.50	6.36	7.79	9.00	10.06	12.32	400	1.7	-
	050	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69		1.7	-
90°	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06		1.7	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
90°	010	0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
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	045	2.66	3.18	3.90	4.50	6.36	7.79	9.00	10.06	12.32	-	-	-
	050	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06	-	-	-
120°	010	0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
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	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06	-	-	-

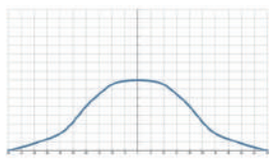
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QFMF Plastic easy install full cone nozzle for precise distribution

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

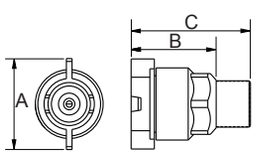


Features

- Full cone spray.
- Adopts a Holeless multi-slotted core, possess a more uniform impact than other standard solid cone nozzles of the same type.
- Two piece nozzle design which includes nozzle and the base allows quick and accurate installation by hand. It is convenient for on-site management. Nozzle tip is secured into the base and fastened by three buckle points to avoid the nozzle tip loosening and ensure the performance quality.
- The internal gaskets are available in various options such as EPDM, Viton and FEPM, which can be adapted to various types of chemicals. With special structural design, the nozzles can be closely attached to the base to avoid water leakage.
- According to the working environment, the base has two choices of thread type and welding type..

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, Dust Suppression.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		PVDF
PVDF	1/8QFMF	32	28	39	1/8M	17.2
	1/4QFMF	32	28	43	1/4M	17.6
	3/8QFMF	32	28	43	3/8M	19.3

Material

- TIP: PVDF
- Core: PVC, PEEK
- Oring: EPDM, VITON, FEPM
- Base: PVDF, PP, U-PVC

How to pleace an order for LORRIC nozzles?

Example: 1/4 BSPT QFMF 030 PVDF

Thread Size	Thread Type	Nozzle Series	Capacity Code	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	010	0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.5	100
	015	0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	〃	0.8	50
	020	1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.1	-
	025	1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.2	-
〃	030	1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	〃	1.3	-
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90°	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06		1.5	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
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	015	0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
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	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06	-	-	-

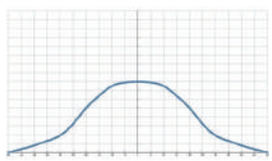
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QFYF Plastic clog-resistant easy install full cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

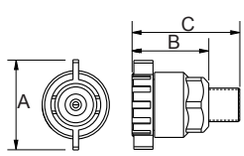


Features

- Full cone spray.
- Unibody design allows for secure and easy installation, and X-shaped core provides minimal clogging. It is often used in etching and developing processes for semiconductors and printed circuit boards that require extremely high spray uniformity.
- Two piece nozzle design which includes nozzle and the base allows quick and accurate installation by hand. It is convenient for on-site management. Nozzle tip is secured into the base and fastened by three buckle points to avoid the nozzle tip loosening and ensure the performance quality.
- Internal gaskets are available in various options such as EPDM, Viton, and FEPM, which can be adapted to various types of chemical processes. The special structural design allows the nozzles to closely contact the base to prevent water leakage.
- Y-shaped rotary handle design leads to easier dismantling.
- According to the working environment, the base has two choices of thread type and welding type.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals, dust suppression



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)	
		A	B	C		PP	PVDF
Plastic	1/8QFYF	35	28	39	1/8M	10.7	18.7
	1/4QFYF	35	28	43	1/4M	10.9	19.1
	3/8QFYF	35	28	43	3/8M	11.9	20.8

Material

- TIP: PP, PVDF
- Core: PP
- Oring: EPDM, VITON, FEPM
- Base: PVDF, PP, U-PVC

How to pleace an order for LORRIC nozzles?

Example: 1/4 BSPT QFYF 030 PP

Thread Size	Thread Type	Nozzle Series	Capacity Code	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	010	0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.7	100
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	020	1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.3	-
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Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
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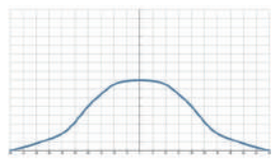
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QFYMF Plastic easy install full cone nozzle for precise distribution

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】



Features

- Full cone spray.
- Adopts a holeless multi-slotted core, possessing a more uniform impact than other standard solid cone nozzles of the same type. It is often used in semiconductor and printed circuit board etching and developing processes where spraying uniformity is extremely demanding.
- Two piece nozzle design which includes nozzle and the base allows quick and accurate installation by hand. It is convenient for on-site management. Nozzle tip is secured into the base and fastened by three buckle points to avoid the nozzle tip loosening and ensure the performance quality.
- Internal gaskets are available in various options such as EPDM, Viton, and FEPM, which can be adapted to various types of chemical processes. The special structural design allows the nozzles to closely contact the base to prevent water leakage.
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Applications

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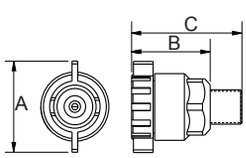


Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)	
		A	B	C		PP	PVDF
Plastic	1/8QFYMF	35	28	39	1/8M	10.7	18.7
	1/4QFYMF	35	28	43	1/4M	10.9	19.1
	3/8QFYMF	35	28	43	3/8M	11.9	20.8

Material

- TIP: PP, PVDF
- Core: PVC, PEEK
- Oring: EPDM, VITON, FEPM
- Base: PVDF, PP, U-PVC

How to pleace an order for LORRIC nozzles?

Example: 1/4 BSPT QFYMF 010 PP

Thread Size	Thread Type	Nozzle Series	Capacity Code	Material
1/4	BSPT	QFYMF	010	PP

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
50°	010	0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.5	100
	015	0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	≀	0.8	50
	020	1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.1	-
	025	1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.2	-
≀	030	1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	≀	1.3	-
	035	2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59		1.4	-
	040	2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95		1.5	-
	045	2.66	3.18	3.90	4.50	6.36	7.79	9.00	10.06	12.32	400	1.5	-
	050	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69		1.5	-
90°	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06		1.5	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
90°	010	0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
	035	2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	-	-	-
	040	2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95	-	-	-
	045	2.66	3.18	3.90	4.50	6.36	7.79	9.00	10.06	12.32	-	-	-
	050	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06	-	-	-
120°	010	0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
	035	2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	-	-	-
	040	2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95	-	-	-
	045	2.66	3.18	3.90	4.50	6.36	7.79	9.00	10.06	12.32	-	-	-
	050	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	055	3.25	3.89	4.76	5.50	7.78	9.53	11.00	12.30	15.06	-	-	-

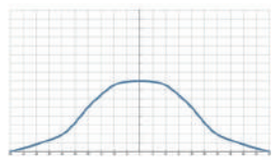
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QT Plastic full cone nozzle with pipe clamp

- Recommended working pressure: 2.0 kgf/cm^2
- Flowrate tolerance: ± 10% @ 2.0 ± 0.1 kgf/cm^2
- Angle tolerance: ± 10° @ 2.0 ± 0.1 kgf/cm^2
- Size:
  Drilling hole size: Ø 20 (19.0~20m/m)
  Fits pipe size: 1-1/4, 1-1/2O

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

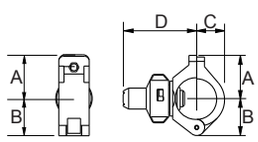


Features

- Full cone spray.
- The two-piece combination design is divided into a nozzle and a base. The nozzle part can be fixed to the base without fixing the nut. The base has a special pipe clamp design. It is only necessary to drill a hole in the water outlet pipe, and then lock it with iron screw. The nozzle is fixed on the pipe. This nozzle is commonly used in the pre-painting and continuous casting machine cooling process.
- Size:
  - Drilling hole size for pipe clamp: Ø 20 (19.0~20m/m)
  - Fits pipe size: 1-1/4"(OD42 +/-0.3mm),
    1-1/2"(OD48 +/-0.4mm)

Applications

- Cleaning: Dust, cleaning device, etc.
- Dispersion: Humidifying, fire fighting, and dust suppression.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)				Thread Type	Weight (g)
		A	B	C	D		PP
Plastic	1-1/4QT	42	50	31	85	1-1/4M	105.4
	1-1/2QT	42	50	31	85	1-1/2M	100.5

Material

- TIP,Clamp: Strengthened Fiberglass PP(FRPP)
- Oring: NBR

How to pleace an order for LORRIC nozzles?

Example: 1-1/4 QT 82 FRPP

1-1/4	QT	82	FRPP
Pipe Size	Nozzle Series	Capacity Code	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Clamp Size		Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1-1/4	1-1/2	0.5 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.5 kgf/cm²	3 kgf/cm²	3.5 kgf/cm²	4 kgf/cm²	5 kgf/cm²			
60°	82	v	v	15.0	21.2	26.0	30.0	33.5	36.7	39.7	42.4	47.4	700	3.2	-

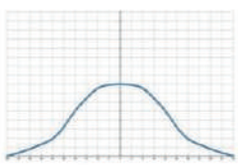
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

KD/KDMF Plastic full cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

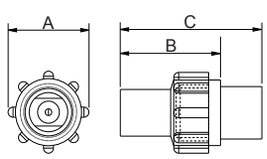


Features

- Full cone spray.
- KDMF adopts a holeless multi-slotted core, possessing a more uniform impact than other standard solid cone nozzles of the same type. It is often used in semiconductor and printed circuit board etching and developing processes where spraying uniformity is extremely demanding.
- KD adopts an X-shaped core, increasing the passage diameter of foreign objects and reduce blockage. It is often used in etching and developing processes for semiconductors and printed circuit boards that require extremely high spray uniformity.
- Two piece nozzle design which includes nozzle and the base allows quick and accurate installation by hand. No rubber Orings are used, and there is no problem of Oring aging, which can extend the service life.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Conveyor belts, gas, tank, machinery, metal, roof, etc.
- Dispersion: Humidifying, chemicals, dust suppression.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		
Plastic	KDMF	31	40.4	57	-	25

Material

- TIP: PVDF
- Base: PVC
- Core: PVC (KDMF), PVDF (KD)

How to pleace an order for LORRIC nozzles?

Example: KDMF 42 45 PVDF

Nozzle Series	Capacity Code	Spray Angle	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
45°	42 (KDMF)	2.48	2.97	3.64	4.20	5.94	7.27	8.40	9.39	11.50	-	1.5	-
58°	13 (KD)	3.14	3.75	4.59	5.30	7.50	9.18	10.60	11.85	14.51	420	1.5	-
45°	65 (KDMF)	3.85	4.60	5.63	6.50	9.19	11.26	13.00	14.53	17.80	-	1.5	-

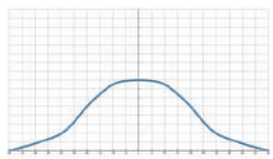
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

KPMF M Metal full cone nozzle for precise distribution

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【Top view of nozzle spray pattern】

【Flow distribution】

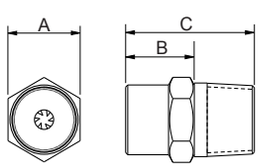


Features

- Full cone spray.
- Adopts a Holeless multi-slotted core, possess a more uniform impact than other standard solid cone nozzles of the same type.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, etc.
- Dispersion: Humidifying, chemicals, firefighting, dust suppression, aeration, defoaming, sewage treatment.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)		
		A	B	C		S303	S316	Brass
Metal	1/8KPMF(M)	12	12	19	1/8M	10	10.3	11.2
	1/4KPMF(M)	14	15	26	1/4M	20	20	19
	3/8KPMF(M)	18	15	30	3/8M	33	34	37

Material

- Metal: Stainless 303, Stainless 316, BRASS

How to pleace an order for LORRIC nozzles?

Example: 1/4 BSPT KPMF 030 S316

1/4	BSPT	KPMF	030	S316
Thread Size	Thread Type	Nozzle Series	Capacity Code	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
60°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.5	100
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11		0.8	50
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.1	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.2	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22		1.3	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59		1.4	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95		1.5	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	400	1.5	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43		1.5	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17		1.7	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91		1.7	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39		1.8	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86		1.9	-
90°	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	640	2.3	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
90°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	-	-	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95	-	-	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43	-	-	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17	-	-	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	-	-	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39	-	-	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86	-	-	-
	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	-	-	-
120°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	-	-	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95	-	-	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43	-	-	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17	-	-	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	-	-	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39	-	-	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86	-	-	-
	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	-	-	-

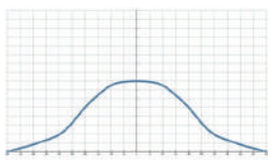
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

KPMF P Plastic full cone nozzle for precise distribution

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

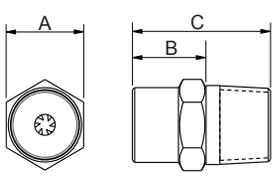


Features

- Full cone spray.
- Adopts a Holeless multi-slotted core, possess a more uniform impact than other standard solid cone nozzles of the same type. Due to the high spray uniformity, chemical dispersion processes commonly used in semiconductors and printed circuit boards, such as etching processes.
- PVDF is resistant to temperature and corrosive chemical solutions.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaning device, tank cleaning, etc.
- Cooling: Gas, tank, machinery, metal, etc.
- Dispersion: Humidifying, Chemicals, Firefighting, Dust suppression, Deodorization, Defoaming, Sewage treatment, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Thread Type	Weight (g)
		A	B	C		PVDF
Plastic	1/8KPMF (P)	12	10	19	1/8M	1.5
	1/4KPMF (P)	15	11	21	1/4M	3.8
	3/8KPMF (P)	17	13	25	3/8M	6

Material

- Nozzle: PVDF
- Core: PVC, PEEK

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) KPMF (Nozzle Series) 025 (Capacity Code) PVDF (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
60°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	230	0.5	100
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11		0.8	50
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	270	1.1	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85		1.2	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22		1.3	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59		1.4	-
≀	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95		1.5	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	400	1.5	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43		1.5	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17		1.7	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91		1.7	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39		1.8	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86		1.9	-
90°	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	640	2.3	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
90°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	-	-	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95	-	-	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43	-	-	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17	-	-	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	-	-	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39	-	-	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86	-	-	-
	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	-	-	-
120°	010	V	V		0.59	0.71	0.87	1.00	1.41	1.73	2.00	2.24	2.74	-	-	-
	015	V	V		0.89	1.06	1.30	1.50	2.12	2.60	3.00	3.35	4.11	-	-	-
	020	V	V		1.18	1.41	1.73	2.00	2.83	3.46	4.00	4.47	5.48	-	-	-
	025	V	V		1.48	1.77	2.17	2.50	3.54	4.33	5.00	5.59	6.85	-	-	-
	030	V	V		1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	-	-	-
	035	V	V		2.07	2.47	3.03	3.50	4.95	6.06	7.00	7.83	9.59	-	-	-
	040	V	V		2.37	2.83	3.46	4.00	5.66	6.93	8.00	8.94	10.95	-	-	-
	050		V	V	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69	-	-	-
	060		V	V	3.55	4.24	5.20	6.00	8.49	10.39	12.00	13.42	16.43	-	-	-
	070		V	V	4.14	4.95	6.06	7.00	9.90	12.12	14.00	15.65	19.17	-	-	-
	080		V	V	4.73	5.66	6.93	8.00	11.31	13.86	16.00	17.89	21.91	-	-	-
	100			V	5.92	7.07	8.66	10.00	14.14	17.32	20.00	22.36	27.39	-	-	-
	120			V	7.10	8.49	10.39	12.00	16.97	20.78	24.00	26.83	32.86	-	-	-
	140			V	8.28	9.90	12.12	14.00	19.80	24.25	28.00	31.30	38.34	-	-	-

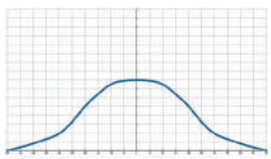
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

KJ Female thread metal full cone nozzle

- Recommended working pressure: 2.8 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.8 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.8 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

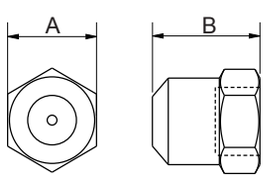


Features

- Full cone spray.
- Adopts a Holeless multi-slotted core, possess a more uniform impact than other standard solid cone nozzles of the same type. It is often used in the iron and steel industry where cooling homogeneity is extremely demanding. e.g. Steel bloom cooling and iron and steel continuous casting process.
- Hexagonal body, convenient installation; single-piece design, the multi-slotted core is embedded and compressed into the body to avoid losing performance from thermal expansion and shrinkage.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaners, etc.
- Cooling: Gas, tank, machinery, metal, etc.
- Dispersion: Humidifying, fire fighting, and dust suppression.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)		Thread Type	Weight (g)		
		A	B		S303	S316	Brass
Metal	3/8KJ	22	27	3/8F	50.4	50	51.8

Material

- Metal: Stainless 303, Stainless 316, BRASS

How to pleace an order for LORRIC nozzles?

Example: 3/8 (Thread Size) KJ (Nozzle Serise) 70 (Capacity Code) 68 (Spray Angle) BRASS (Material) PF Female Thread (Thread Type)

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.8 kgf/cm²	4 kgf/cm²	6 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
68°	70	3.50	4.19	5.13	5.92	7.00	8.37	10.25	13.24	16.21	-	1.9	-

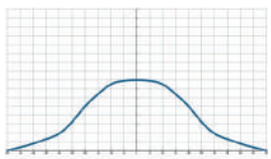
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

KG Metal full cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

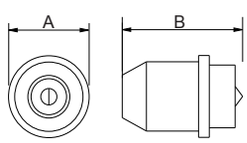


Features

- Full cone spray.
- Unibody design allows for secure and easy installation,and X-shaped core provides minimal clogging.

Applications

- Cleaning: Gas, exhaust gas, dust, cleaners, etc.
- Cooling: Gas, tank, machinery, metal, etc.
- Dispersion: Humidifying, fire fighting, and dust suppression.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)		Thread Type	Weight (g)		
		A	B		S303	S316	Brass
Metal	1/8KG	21	45	1/8M	10.4	10.6	11.5
	1/4KG	21	47	1/4M			
	3/8KG	21	47	3/8M			

Material

- Metal: Stainless 303, Stainless 316, BRASS

How to pleace an order for LORRIC nozzles?

Example: KG 10 BRASS

Nozzle Series	Capacity Code	Material

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.5 kgf/cm²	3 kgf/cm²	5 kgf/cm²	10 kgf/cm²			
70°	10	3.10	3.67	4.38	5.37	6.20	6.93	7.59	9.80	13.86	-	1.7	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Hollow Cone Nozzles

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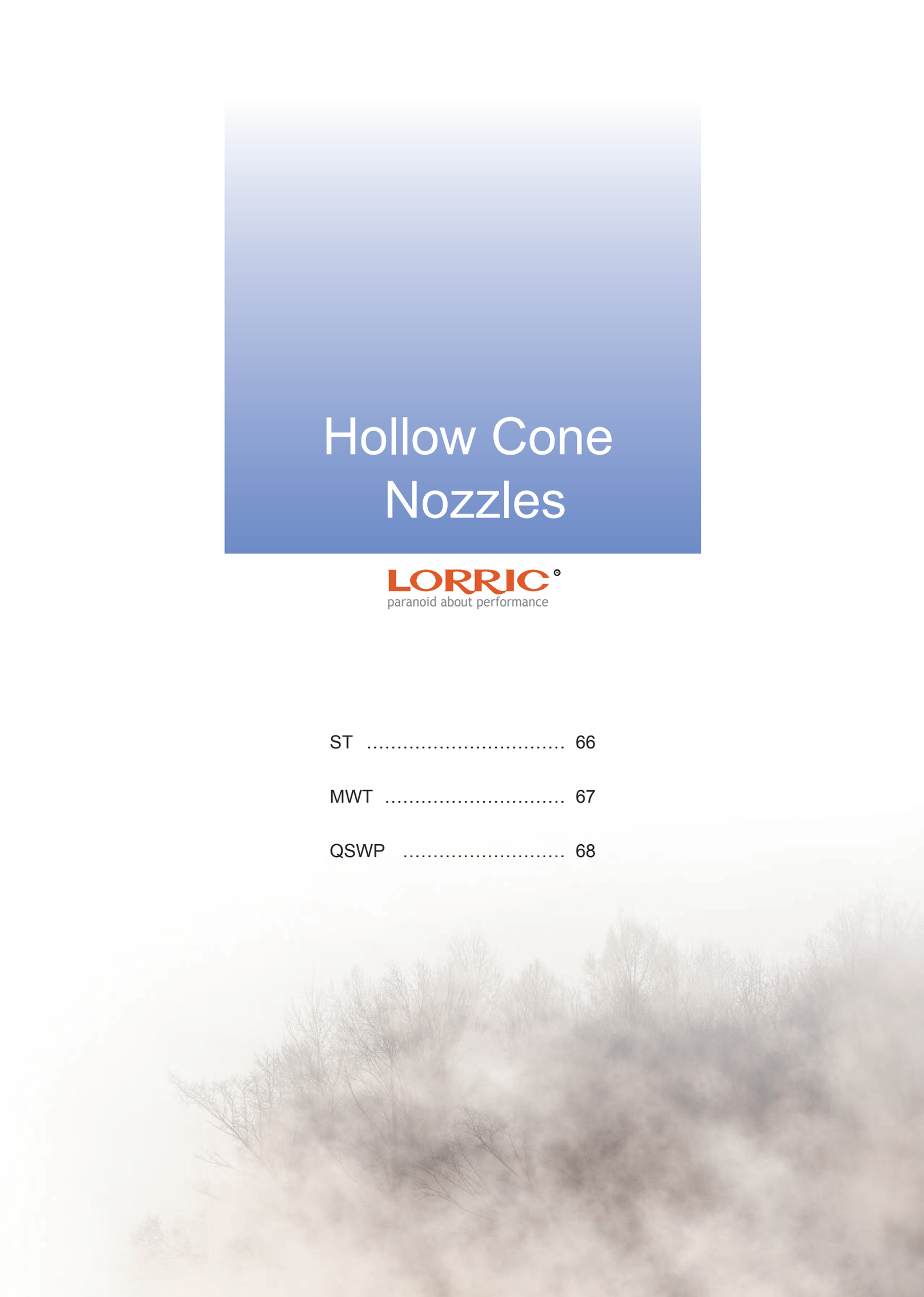
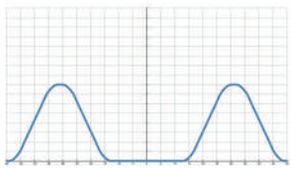


ST Plastic hollow cone nozzle for cooling

- Recommended working pressure: 0.1 kgf/cm²
- Flowrate tolerance: ± 10% @ 0.1 ± 0.05 kgf/cm²

【Top view of nozzle spray pattern】

【Flow distribution】

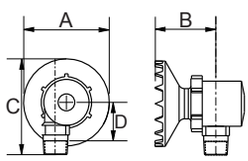


Features

- Spray patterns: Hollow Cone. Spray shape is circular (Circular Impact).
- Shark teeth design provides more liquid surface for better cooling performance. No complicated structure in the nozzle flow path provides the maximum free passage of 40mm which effectively avoids clogging.
- Two piece nozzle design enables easy cleaning and installation.
- The minimum operating pressure can be reduced to 0.05kgf/cm².

Applications

- Cleaning: Gas, cleaning, etc.
- Cooling: Gas, liquid cooling, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)				Thread Type	Weight (g)
		A	B	C	D		FRPP
Plastic	1-1/2ST	165	175	119	26	1-1/2M	376

Material

- Strengthened Fiberglass PP(FRPP)

How to pleace an order for LORRIC nozzles?

Example: 1-1/2 BSPT ST 120 - FRPP

1-1/2	BSPT	ST	120	-	FRPP
Thread Size	Thread Type	Capacity Code	Capacity Code	Spray Angle	Material

※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	Thread Size	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1-1/2	0.05 kgf/cm²	0.07 kgf/cm²	0.1 kgf/cm²	0.2 kgf/cm²	0.3 kgf/cm²	0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	2 kgf/cm²			
-	120	v	84.85	100	120	169	207	268	317	379	536	-	-	-
	122	v	86.3	102	122	172	211	272	322	385	545	-	-	-
	147	v	104	122	147	207	254	328	388	464	657	-	-	-

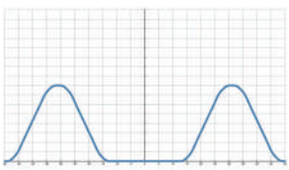
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

MWT Metal hollow cone nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

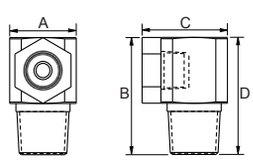


Features

- Spray patterns: Hollow Cone. The shape of the spray is circular (circular Impact).
- The nozzle flow path has no complicated structure and effectively prevents foreign matter from being blocked.
- Two piece nozzle design enables easy clean and installation.
- The direction of the spray is 90 degrees to the mounting direction. Please confirm that the installation environment meets the requirements.
- Under the same test conditions, the hollow cone spray has the smallest particle size, so it is commonly used in gas scrubbing and dust suppression applications.

Applications

- Cleaning: Gas cleaning etc.
- Cooling: Gas, liquid, air conditioning, machinery, metal, plastic molding cooling process.
- Dispersion: Humidifying, aeration, firefighting, dedusting, deodorization, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)				Thread Type	Weight (g)	
		A	B	C	D		S303	S316
Plastic	1/8MWT	13	22	15	16	1/8M	-	-
	1/4MWT	16	29	18	21	1/4M	39	39.5
	3/8MWT	19	35	20	24	3/8M	-	-

Material

- Metal: Stainless 303, Stainless 316

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) MWT (Capacity Code) 5 (Capacity Code) S316 (Material)

※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	4 kgf/cm²	6 kgf/cm²	8 kgf/cm²	10 kgf/cm²	15 kgf/cm²			
60°	3	1.77	2.12	2.60	3.00	4.24	5.20	6.00	6.71	8.22	230	3	-
	5	2.96	3.54	4.33	5.00	7.07	8.66	10.00	11.18	13.69		4	-

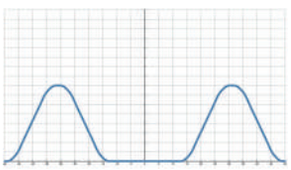
※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

QSWP Plastic hollow cone nozzle with pipe clamp

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 10% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 10° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

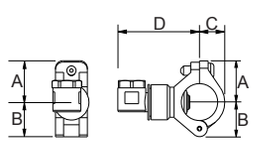
【 Flow distribution 】



- Spray patterns: Hollow Cone. The shape of the spray is circular.
- The nozzle flow path has no complicated structure which effectively avoids clogging.
- Multi-piece design, the nozzle part adopts a two-piece structure. The nozzle part can be disassembled to facilitate maintenance, cleaning and replacement; the nozzle part and the base buckle are positioned by the clamp, and the installation can be completed with bare hands without tools.
- The spray direction is 90 degrees to the installation direction. Please make sure that the installation environment meets the requirements (The base is shared with the QSH and QSF nozzles. If the spray direction is limited, QSH can be used with the QSF nozzle head)
- Under the same test conditions, the hollow cone spray has the smallest particle size, so that it is commonly applicable in gas washing and dust suppression.
- Size:
  - Drilling hole size for pipe clamp: 9.8~10m/m
  - Fits pipe size: 3/4"(OD26 +/-0.2mm),
    1"(OD34 +/-0.3mm)

Applications

- Cleaning: Gas, cleaning, etc.
- Cooling: Gas, liquid, air conditioning, machinery, metal, plastic molding cooling process.
- Dispersion: Humidifying, aeration, firefighting, dedust, deodorization, etc.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)				Thread Type	Weight (g)
		A	B	C	D		
Plastic	3/4QSWP	24	27	14	60	3/4M	27
	1 QSWP	28	33	22	62	1	30.5

Material

- Nozzle: PP
- Clamp: Strengthened Fiberglass PP(FRPP)

How to pleace an order for LORRIC nozzles?

Example: 3/4" QS Clamp (Pipe Size) | QSWP | 6 (Capacity Code) | PP (Material)

※ Standard Pressure: Column in red.
※ This product for spray angle 90° and 120° is able to be made to order.

Spray Angle	Capacity Code	Clamp Size		Capacity at Pressure									Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		3/4	1	0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	2.5 kgf/cm²	3 kgf/cm²	4 kgf/cm²	6 kgf/cm²			
90°	6	v	v	1.00	1.18	1.41	1.73	2.00	2.24	2.45	2.83	3.46	220	2.2	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Others Nozzles

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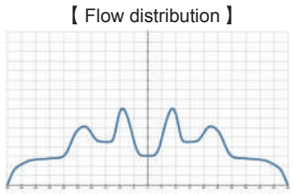
SPP Spiral Nozzle

- Recommended working pressure: 2.0 kgf/cm²
- Flowrate tolerance: ± 5% @ 2.0 ± 0.1 kgf/cm²
- Angle tolerance: ± 5° @ 2.0 ± 0.1 kgf/cm²

【 Top view of nozzle spray pattern 】

【 Flow distribution 】

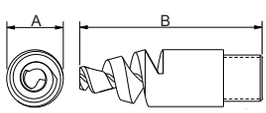


Features

- Spray patterns: Full Cone. Spray shape is multi-layered concentric circles.
- Unibody design with no internal parts. To compare with general full cone nozzles, It has a larger minimum free passage for effectively avoiding clogging.
- The spray angle is from 120° to 170°. This large spray angle design provides larger coverage than general fan and full cone nozzles.
- It is possible to work when under 0.5kgf/cm².

Applications

- Cleaning: scrubber, off-gas treatment, etc.
- Cooling: cooling tower, etc.
- Dispersion: firefighting.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)		Thread Type	Weight (g)	
		A	B		PVC	PEEK
Plastic	1/4SPP	52	16	1/4M	6.5	6.5
	3/8SPP	61	20	3/8M	16	16
	1/2SPP	77	22	1/2M	13	13
	3/4SPP	90	28	3/4M	30	30

Material

- Nozzle: U-PVC, PEEK

How to pleace an order for LORRIC nozzles?

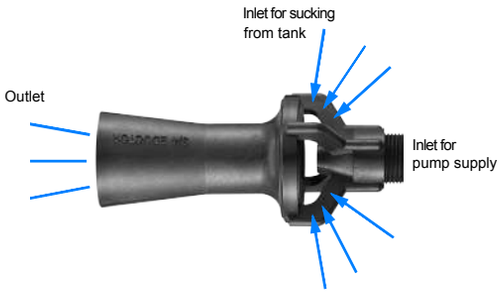
Example: 1/4 (Thread Size) BSPT (Thread Type) SPP (Capacity Code) 4.5 (Capacity Code) 120 (Spray Angle) UPVC (Material)

※ Standard Pressure: Column in red.

Spray Angle	Capacity Code	Thread Size				Capacity at Pressure							Min. Free Passage (mm)	Eq. Orifice (mm)	Average particle size (um)	Filter mesh
		1/4	3/8	1/2	3/4	0.5 kgf/cm²	0.7 kgf/cm²	1 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²	5 kgf/cm²				
120°	4.5	v				2.25	2.66	3.18	4.50	5.51	6.36	7.12	1.55	2.38	228	-
	12.8	v				6.40	7.57	9.05	12.8	15.68	18.10	20.24	2.53	3.97	-	-
170°	52.7		v			26.4	31.2	37.3	52.7	64.5	74.5	83.3	3.00	7.94	380	-
	105			v		52.5	62.1	74.2	105	129	148	166	4.75	11.1	388	-
	134				v	67.0	79.3	94.8	134	164	190	212	4.75	12.7	416	-

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

ED Eductor nozzle for mixing



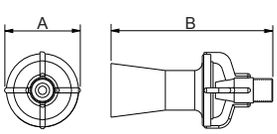
- Recommended working pressure: 0.5 kgf/cm^2
- Flowrate tolerance: ± 10% @ 0.5 ± 0.1 kgf/cm^2

Features

- Used for liquid stirring under the liquid surface. Specially designed nozzle that creates a stirring and circulating effect. This nozzle can mix chemicals, direct the suspended substances to a filter and prevent precipitation.
- Energy-efficiency of liquid stirring: the eductor nozzles are designed to suck and spray liquid through the amplified nozzle tube to increase liquid flow rate up to 4 times which provides more efficient stirring than aeration or robot arms (Quantity supplied+Intake=Total Flow).
- Single piece structure and hand installable without any tools.

Applications

- Cleaning: scrubber, off-gas treatment, etc.
- Cooling: cooling tower, etc.
- Dispersion: firefighting.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)		Thread Type	Weight (g)	
		A	B		S316	FRPP
Metal	3/8ED	54	116	3/8M	274	-
Plastic	3/8ED	54	116	3/8M	-	34
	3/4ED	74	159	3/4M	-	84.6

Material

- Strengthened Fiberglass PP(FRPP)
- Stainless 316 (Only 3/8")

How to pleace an order for LORRIC nozzles?

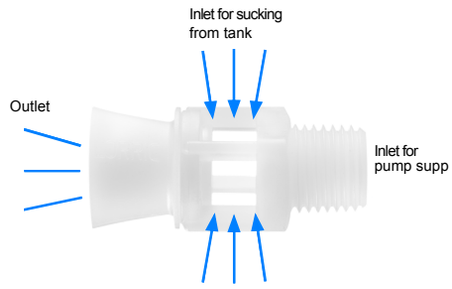
Example: 3/8 (Thread Size) BSPT (Thread Type) ED (Capacity Code) 152 (Capacity Code) - (Spray Angle) FRPP (Material)

※ Standard Pressure: Column in red.

Thread Size	Capacity Code	Magnification	Definition of flow	Capacity at Pressure								
				0.1 kgf/cm²	0.25 kgf/cm²	0.5 kgf/cm²	0.75 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²
3/8	63	5.0	Quantity supplied	5.59	8.84	12.50	15.31	17.68	21.65	25.00	30.62	35.36
			Intake	22.36	35.36	50.01	61.25	70.72	86.61	100.01	122.49	141.44
			Total Flow	27.95	44.20	62.51	76.56	88.40	108.27	125.02	153.11	176.80
	152		Quantity supplied	10.87	17.18	24.30	29.76	34.36	42.08	48.59	59.51	68.72
			Intake	43.46	68.72	97.18	119.03	137.44	168.33	194.37	238.05	274.88
			Total Flow	54.33	85.90	121.48	148.78	171.80	210.41	242.96	297.57	343.60
3/4	-	5.0	Quantity supplied	19.57	30.94	43.75	53.58	61.87	75.77	87.50	107.16	123.74
			Intake	78.26	123.74	174.99	214.32	247.48	303.10	349.99	428.65	494.96
			Total Flow	97.83	154.68	218.74	267.90	309.35	378.87	437.49	535.81	618.70

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

Mini ED Small eductor nozzle for mixing and plating



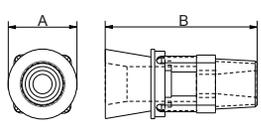
- Recommended working pressure: 0.5 kgf/cm^2
- Flowrate tolerance: ± 10% @ 0.5 ± 0.1 kgf/cm^2

Features

- Used for liquid stirring under the liquid surface. Specially designed nozzle that creates a stirring and circulating effect. This nozzle can mix chemicals, direct the suspended substances to a filter and prevent precipitation.
- Energy-efficiency of liquid stirring: the eductor nozzles are designed to suck and spray liquid through the amplified nozzle tube to increase liquid flow rate up to 4 times which provides more efficient stirring than aeration or robot arms (Quantity supplied+Intake=Total Flow).
- Single piece structure and hand installable without any tools.

Applications

- Cleaning: scrubber, off-gas treatment, etc.
- Cooling: cooling tower, etc.
- Dispersion: firefighting.



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)				Thread Type	Weight (g)
		A	B	C	D		
Plastic	1/4EDMINI	40	30	18	20	1/4M	3.5

Material

- PP

How to pleace an order for LORRIC nozzles?

Example: 1/4 (Thread Size) BSPT (Thread Type) ED (Capacity Code) 3 (Capacity Code) - (Spray Angle) PP (Material)

※ Standard Pressure: Column in red.

Capacity Code	Magnification	Definition of flow	Capacity at Pressure								
			0.1 kgf/cm²	0.25 kgf/cm²	0.5 kgf/cm²	0.75 kgf/cm²	1 kgf/cm²	1.5 kgf/cm²	2 kgf/cm²	3 kgf/cm²	4 kgf/cm²
3	2.4	Quantity supplied	1.36	2.14	3.03	3.71	4.29	5.25	6.06	7.42	8.57
		Intake	1.88	2.97	4.20	5.14	5.94	7.27	8.40	10.3	11.9
		Total Flow	3.23	5.11	7.23	8.85	10.2	12.5	14.5	17.7	20.4
9	1.6	Quantity supplied	4.02	6.36	9.00	11.0	12.7	15.6	18.0	22.0	25.5
		Intake	2.41	3.82	5.40	6.61	7.64	9.35	10.8	13.2	15.3
		Total Flow	6.44	10.2	14.4	17.6	20.4	24.9	28.8	35.3	40.7

※ For MPa / bar / psi units, please refer to https://www.lorric.com/.

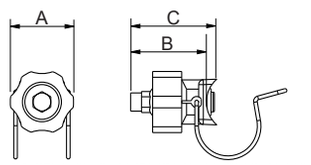
BB Angle adjustable and easy install stopper nozzle with pipe clamp

Features

- Female nut for fixing nozzle is easy to loosen for adjusting nozzle angle.
- Amazingly easy to drill a hole instead of threading onto a pipe and fix it on with our exclusive pipe clamp without any tool.
- For stopping spaying, if one or a few of the holes on pipe need to be stopped.
- The size for drilling the installation hole:
  - Ø 15 (14.3~15mm) - Ø 17 (16.4~17mm)
  - Ø 20 (19.0~20mm)8.35~9m/m
- Size of clamp:
  - 1" (OD34 +/-0.3mm) - 1-1/4" (OD42+/-0.3mm)
  - 1-1/2" (OD48 +/-0.4mm)

Applications

- Coating
- Cleaning



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Pipe Size	Weight (g)
		A	B	C		
Plastic	BB	52	64	72	-	63.2

Material

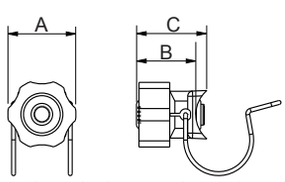
- Nozzle part: PP
- Nut: Strengthened Fiberglass PP(FRPP)
- Pipe clamp: Stainless 316
- Sealing ring: NBR

TB Angle adjustable and easy install nozzle thread adapter with pipe clamp

- Female nut for fixing nozzle is easy to loosen for adjusting nozzle angle.
- A mazingly easy to drill a hole instead of threading onto a pipe and fix it on with our exclusive pipe clamp without any tool.
- This accessory is available with a 1/4'' or 3/8'' PT female thread for flexible use with other kind of nozzles.
- The size for drilling the installation hole:
  - Ø 15 (14.3~15mm) - Ø 17 (16.4~17mm)
  - Ø 20 (19.0~20mm)
- Size of clamp:
  - 1" (OD34 +/-0.3mm) - 1-1/4" (OD42+/-0.3mm)
  - 1-1/2" (OD48 +/-0.4mm)

Applications

- Coating
- Cleaning



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)			Pipe Size	Weight (g)
		A	B	C		
Plastic	TB	52	48	56	-	64

Material

- Nozzle part: Strengthened Fiberglass PP(FRPP)
- Nut: Strengthened Fiberglass PP(FRPP)
- Pipe clamp: Stainless 316
- Sealing ring: NBR

Nozzle Accessories

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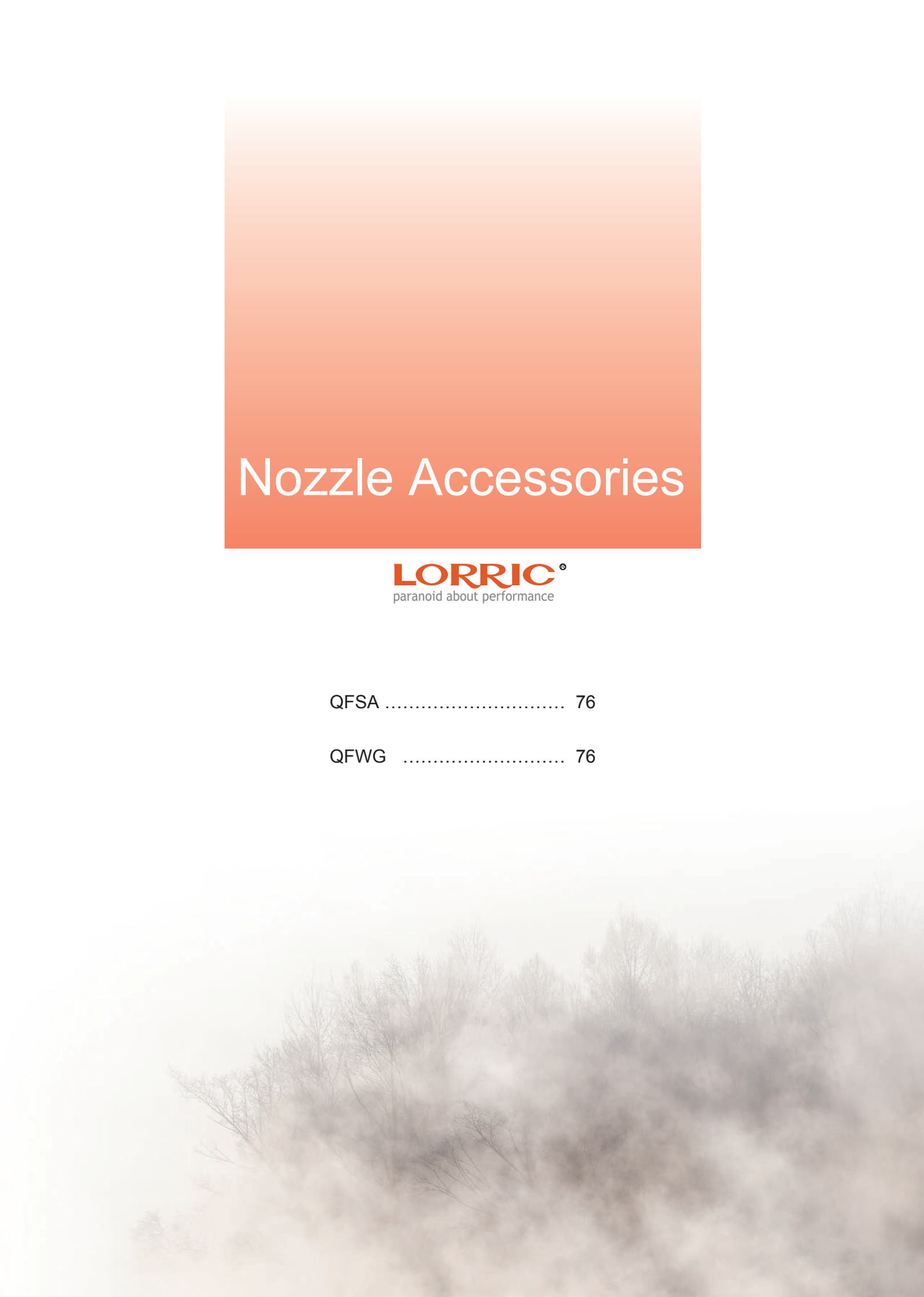


QFSA QF body for 3/4 inch PVC pipe

Features

- Joint by PVC welding.
- To save time for repositioning when maintaining nozzles, and this way of installation is stronger than threads.
- Especially well applicable in manufacturing processes with periodical maintenance such as PCB wet process.

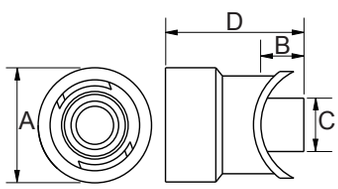
v

Applications

- PCB Wet Processing

Material

- Body: U-PVC
- Oring: EPDM, VITON, VITON-F



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)				Thread Type	Weight (g)
		A	B	C	D		PVC
Plastic	QFSA	26	10	12	31	-	8.6

QFWG QF body for welding

Features

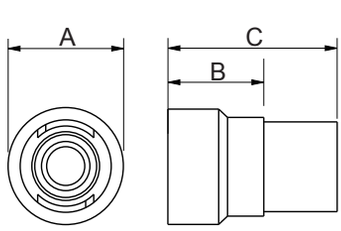
- Joint by PVC welding.
- To save time for repositioning when maintaining nozzles, and this way of installation is stronger than threads.
- Especially well applicable for horizontal installation such as PCB spray plate.
- Can be used with QF series nozzles.vvv

Applications

- Horizontal installation such as PCB spray plate.

Material

- Body: U-PVC
- Oring: EPDM, VITON, VITON-F



Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serise	Unit (mm)				Thread Type	Weight (g)
		A	B	C	D		PVC
Plastic	QFWG	26	17	38	20	-	12

Why LORRIC

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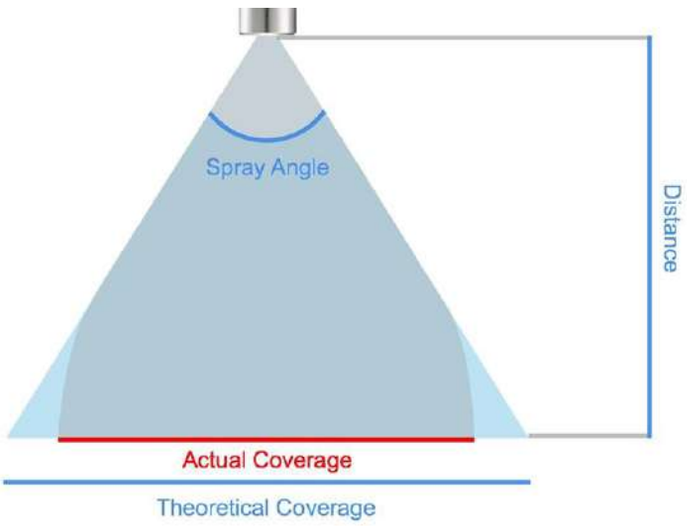
Flat fan nozzle's estimated spray coverage



Flat fan nozzle spray coverage is affected by a myriad of factors, such as gravity, acceleration and air resistance. That combined with the technical specifications of the nozzles themselves which dictate spray pressure and viscosity, thus further influencing spray coverage, all lead to the fact that there's no way to predict nozzle spray coverage in a completely accurate manner. Thus, the following information is a theoretical estimation, prior to the influence of external factors. For further information regarding more practical spray coverage, be sure to contact our sales rep.

Spray Angle (°)	Theoretical Coverage (mm)					
Spray Distance(mm)	65	80	90	100	120	170
30	38	50	60	72	104	686
40	51	67	80	95	139	914
50	64	84	100	119	173	1143
60	76	101	120	143	208	1372
70	89	117	140	167	242	1600
80	102	134	160	191	277	1829
90	115	151	180	215	312	2057
100	127	168	200	238	346	2286
110	140	185	220	262	381	2515
120	153	201	240	286	416	2743
130	166	218	260	310	450	2972
140	178	235	280	334	485	3200
150	191	252	300	358	520	3429
200	255	336	400	477	693	4572
250	319	420	500	596	866	5715
300	382	503	600	715	1039	6858
350	446	587	700	834	1212	8001
400	510	671	800	953	1386	9144
450	573	755	900	1073	1559	1028
500	637	839	1000	1192	1732	1143
550	701	923	1100	1311	1905	1257
600	764	1007	1200	1430	2078	1371
650	828	1091	1300	1549	2252	1485
700	892	1175	1400	1668	2425	1600
750	956	1259	1500	1788	2598	1714
800	1019	1343	1600	1907	2771	1828
850	1083	1426	1700	2026	2944	1943
900	1147	1510	1800	2145	3118	2057
950	1210	1594	1900	2264	3291	2171
1000	1274	1678	2000	2384	3464	2286

Measurement in millimeters

Spray Angle (°)	Theoretical Coverage (inch)						
Spray Distance(inch)	40	65	80	90	100	120	170
1.0	0.7	1.3	1.7	2.0	2.4	3.5	23
1.5	1.1	1.9	2.5	3.0	3.6	5.2	34
2.0	1.5	2.5	4.2	4.0	6.0	8.7	57
2.5	1.8	3.2	5.0	5.0	7.2	10	69
3.0	2.2	3.8	5.0	6.0	7.2	10	69
3.5	2.5	4.5	5.9	7.0	8.3	12	80
4.0	2.9	5.1	6.7	8.0	10	14	91
4.5	3.3	5.7	7.6	9.0	11	16	103
5	3.6	6.4	8.4	10	12	17	114
6	4.4	7.6	10	12	14	21	137
7	5.1	8.9	12	14	17	24	160
8	5.8	10	13	16	19	28	183
9	6.6	11	15	18	21	31	206
10	7.3	13	17	20	24	35	229
11	8.0	14	18	22	26	38	251
12	8.7	15	20	24	29	42	274
14	10	18	23	26	33	48	320
16	12	20	27	28	38	55	366
18	13	23	30	32	43	62	411
20	15	25	34	36	48	69	457
22	16	28	37	40	52	76	503
24	17	31	40	44	57	83	549
26	19	33	44	48	62	90	594
28	20	36	47	52	67	97	640
30	22	38	50	56	72	104	686
32	23	41	54	60	76	111	732
34	25	43	57	64	81	118	777
36	26	46	60	60	86	125	823

Measurement in inches

Immediately understanding how to read “Flow Rate”

Immediately understanding how to read “Flow Rate”

Unit: LPM (L/min)

Features:

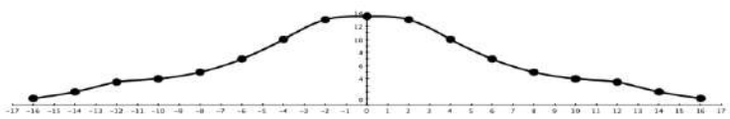
• Greater the pressure, greater the flow rate.

• Flow rate and pressure are not linear relationship.

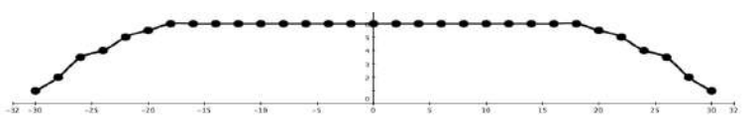
• For example, the flow rate of a nozzle under 8kg/cm2 pressure is not double when it is under ekg/cm2 pressure.

Distribution

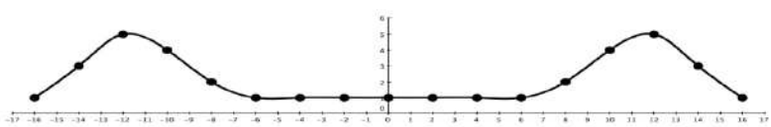
Mountain Shape



Tableland Shape



Donut Shape



What else you must know about flow rate?

1.Distribution of flow rate often varies by variety of pressure.

2.Distribution shapes are for reference, they may be vary during operating.

3.Distribution will be effected by flow angle and flow rate.

Comparison of particle size of 3 common kinds of nozzles

The average particle size of 3 common kinds of spray shape

Following, LORRIC use laser diffraction particle size analyzer to get the particle sizes of 3 different kinds of nozzle which is under 2kg pressure and 2Lpm flow rate.

Various nozzles	Average spray particle size	Comparison of particle size
Cone shape	274um	Coarse
Fan shape	234um	Fine
Hollow Cone	221um	Finest

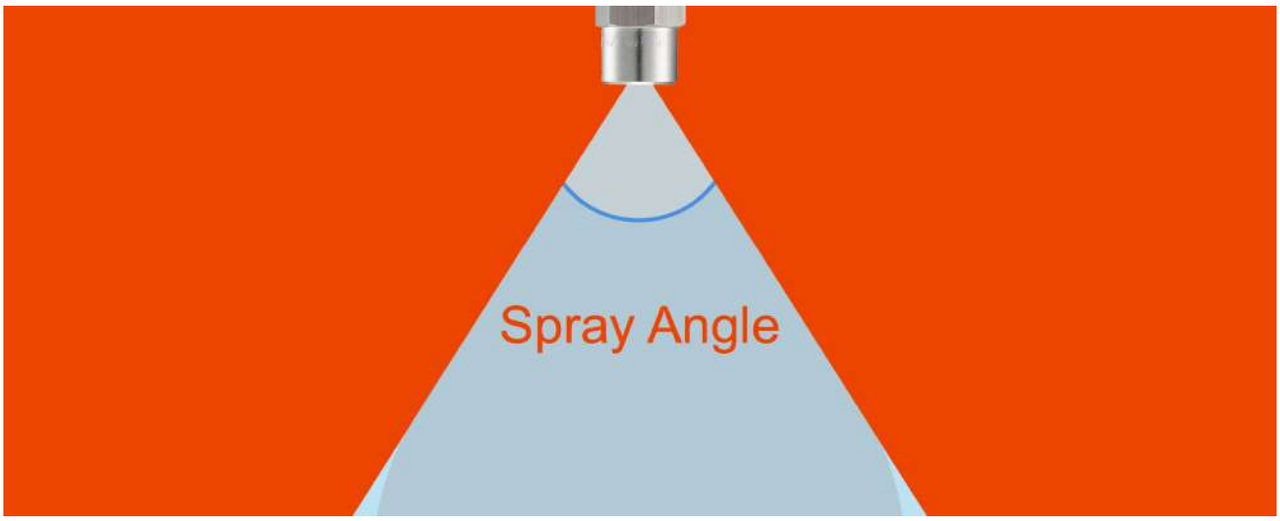
Features of particle size

• Smaller the flow rate, finer the particle size.

• Greater the pressure, finer the particle size.

• Particle size will be varied by nozzles with different structure.

3 facts you must know about “spray angle”

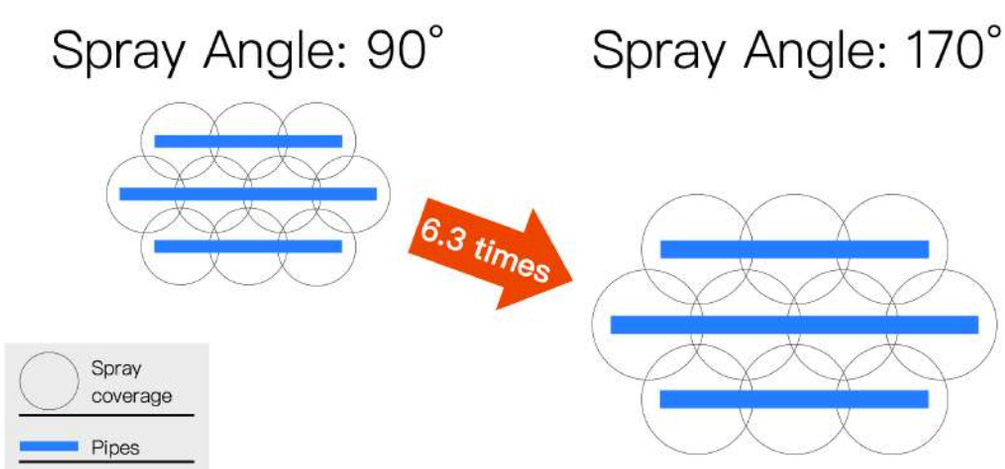


① Easy understanding “spray angle” by 5 sentences

The definition of “Spray angle ” is the angle of spray shape. (please refer to schematic diagram)
We lists following 5 easy sentences for you to quick understand what is “spray angle”

- Unit: degree
- Spray angle is the index for simplifying spray coverage.
- Spray is not able to travel in tangential direction which is caused by the effects of gravitational acceleration and air resistance.
- Spray angle and pressure is inevitable relationship.

② Spray angle and coverage



Theoretical spray coverage under 300mm spray distance

- 90°Spray angle: The spray distance is 60cm, and the spray coverage is 0.28m^2/per nozzle.
- 170°Spray angle: The spray distance is 150cm, and the spray coverage is 1.76m^2/per nozzle. (about 6.3 times)

③ 3 key “distance” decision making points to choose spray angle of nozzles

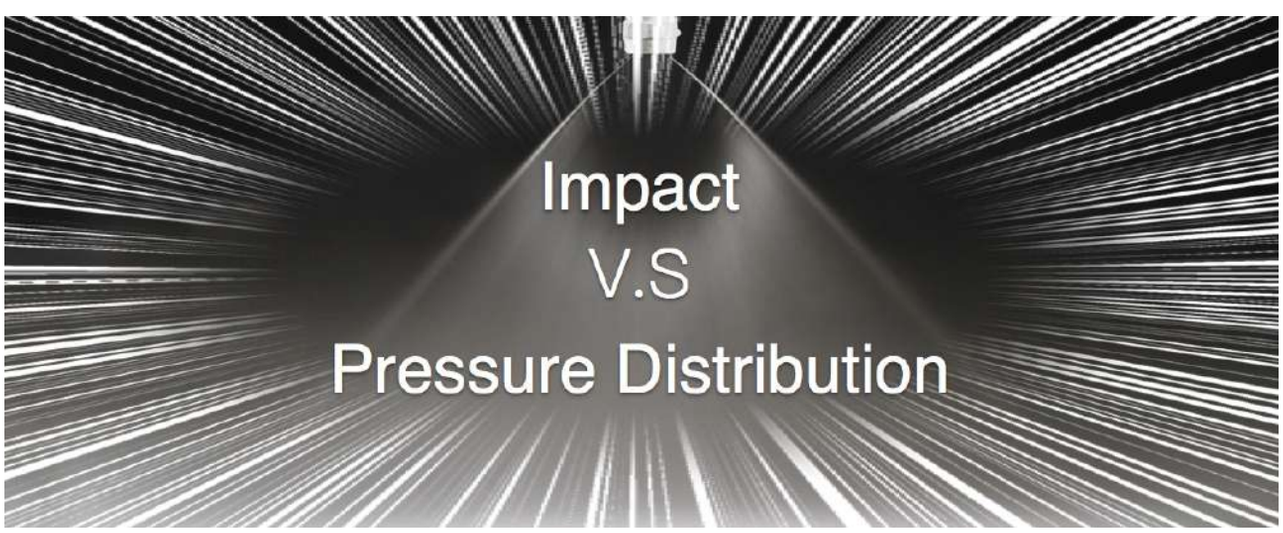
It is able to find out the spray angle you need for choosing nozzles by following 3 kinds of “distance” with 2 charts, The measurement of theoretical coverage by spray distance for flat fan nozzle, The measurement of theoretical coverage by spray distance for full cone nozzle

• Distance btween nozzle and spray target

• Distance between beside nozzles

• Distance between pipes: Besides fan nozzles, this is very important factor to choose the spray angle of cone nozzles, hollow cone nozzles, and spiral nozzles.

Impact vs pressure distribution



• Impact is total force

- Which is proportional to flow rate.
- Which is proportional to the square root of pressure.

• The definition of pressure distribution is the pressure which is sprayed to every part of workpiece by nozzles.

- Variation of impact will effect pressure distribution.
- The result of pressure distribution will be effected by spray shape and coverage volume.
- Pressure distribution is related to spray flow rate and effected by the design of flow distribution.
- As there is so many variables, there is no any simple formula to receive pressure distribution of various nozzles.

Flowmeter

Contents

LORRIC

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LORRIC Patented Dual-indicator Flow Meter Introduce

LORRIC F101

The smallest LORRIC variable area flowmeter. Can be installed into small spaces to help reduce costs and reduce size of equipment.

- Adaptor Size: 1/2"
- Body Height: 168mm
- Scale Range: 0.2-2 ～ 2-20L/min

LORRIC F201

F201 is the standard model of LORRIC variable area flowmeters. Optional Hastelloy C float material which is applicable for any fluid.

- Adaptor Size: 3/4", 1/2"
- Body Height: 192mm
- Scale Range: 1-10 ～ 5-50L/min

LORRIC F301

F301 is a larger model than the F201 flowmeter. Optional Hastelloy C float material which is applicable for any fluid.

- Adaptor Size: 3/4", 1"
- Body Height: 270mm
- Scale Range: 2-20 ～ 10-100L/min

Patented dual-indicator

Design for easy and clear flow range management.

Various material options for each part

For example, options for the body material could be PC or PSU.

Easy measurement for solvents and dark liquid

Customized scales for different solvents are available for F45-Magnetic.

LORRIC F32B

Designed for use with highly corrosive solutions. The inductor can be connected to instruments or computers and is often used as part of the control or alarm system.

- Adaptor Size: 1/2", 3/4", 1"
- Body Height: 195mm
- Scale Range: 9-18 ～ 45-90L/min

LORRIC F45

Adaptor size is 1 to 2 inches which is applicable to major equipments. Magnetic indicator is optional.

- Adaptor Size: 1-1/2", 2"
- Body Height: 346mm
- Scale Range: 10-100 ～ 100-600L/min

LORRIC F46

Adaptor size is 1 to 2 inches for large pipes with highly corrosive solutions.

- Adaptor Size: 1-1/2", 2"
- Body Height: 346mm
- Scale Range: 20-100 ～ 35-250L/min

LORRIC Patented Dual-indicator Flow Meter Specs Form【Liquid】

Specs	Body Material	Scale Range (L/min)	Float&Pointer		O-ring	Union Nuts Materia	Guide Rod Bottom Materia	Adaptor Size	Adaptor Materia			
			stainless steel 0001～0030	Hastelloy 0001～0027					Male/ Female Thread	Welding Type	Butt-fusion adaptor	Panel Elbow / Flange
F101	PC (polycar-bonate) PSU (polyulf-one)	0.2-2	S316 Float / Pointer	Hastelloy C Float and Ti Pointer or Hastelloy C Pointer	Standard EPDM or VITON	UPVC / Aluminum	PP Guide Rod Bottom	1/2"	Standard UPVC or PVDF (Optional)	UPVC	PP	Panel Elbow Male Thread UPVC
		0.5-5										
		1-10										
		1.5-15										
		2-20										
F201		1-10				UPVC		Standard 3/4" or 1/2"	Standard UPVC or PP (Optional)			Panel Elbow Male Thread UPVC
		1.5-15										
		2-20										
		3-30										
		4-40										
		5-50										
F301	PSU (polyulf-one)	2-20						Standard 1/2" or 1" or 3/4"				
		3-30										
		5-50										
		8-80										
		10-100										
F45		10-100						1-1/2" or 2"				Flange UPVC 2"
		15-150										
		20-200										
		25-250										
		30-300										
		50-450										
		100-600										
F45M		50-300		No								
		50-450										
		100-600										
F22		0.3-4	PVC Float					Standard 3/4" or 1/2"				No
		0.5-5	PVDF Float									
		80-800L/h										
		0.8-8	Teflone Float									
		1-10										
		80-800L/h										

【 Order Example 】

The form at the bottom of page 5 is an example for placing orders or for requesting samples. Please fill up the products information as shown in the example and send to us by FAX or email. We are looking forward to your inquiry.

Specs	Body Material	Scale Range (L/min)	Float&Pointer		O-ring	Union Nuts Materia	Guide Rod Bottom Materia	Adaptor Size	Adaptor Materia			
			stainless steel 0001～0030	Hastelloy 0001～0027					Male/ Female Thread	Welding Type	Butt-fusion adaptor	Panel Elbow / Flange
F32B	PSU (polyulf-one)	9-18	PVC or PP or PVDF or Teflone Float		Standard EPDM or VITON (Optional)	UPVC	PP Guide Rod Bottom	Standard 1/2" or 1" or 3/4"	Standard UPVC or PP	UPVC	PP	No
		16-32										
		30-60										
		45-90										
F34		2-20	PVDF or PP Float									
		3-30										
		5-50										
		6-60										
		8-80										
		10-100										
F311		23-80	S316									
		20-100										
F46		20-100	Teflone Float					Standard 1"-1/2" or 2"				
		30-150	PP Float									
		35-200										
		35-250										

LORRIC Patented Dual-indicator Flow Meter Specs Form【Gas】

Specs	Body Material	Scale Range L/min	Float	Guide Rod	**O-ring**	Union Nuts Materia	Guide Rod Bottom Materia	Adaptor Size	Adaptor Materia			
									Male/ Female Thread	Welding Type	Butt-fusion adaptor	Panel Elbow
F201A	PSU (polyulf-one)	3.0-30	PVC	Standard S316 or Hastelloy C	Standard EPDM or VITON (Optional)	UPVC	PP	Standard 3/4" or 1/2"	Standard UPVC or PP	UPVC	PP	Panel Elbow UPVC or Male Thread
		5.0-50										
		10-100										
		35-350	S316 or Ti									
		50-500										
		100-1000										
F301A		40-400	PVC					Standard 1/2" or 1" or 3/4"				Panel Elbow UPVC
		50-500										
		70-700										
		100-1000	S316 or Ti									

Order Example:

F1002	F101	PC	20	Stainless steel Float	**EPDM**	**UPVC**	**PSU**	1/2" 内牙	Panel Elbow UPVC	

Liquid Flowmeter

LORRIC
paranoid about performance

F22Series - 192mm middle size pipe size 1/2"-3/4" F22 series

Product Features · Use

- Designed for use with highly corrosive solutions.
- Equipped with an inductor, which confirms the pipeline's current capacity by means of detecting the floating migration. The inductor can be connected instruments or computers and is often used as part of the control or alarm system.
- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.
- Each batch of flow meters will be calibrated before delivery for our best precision guarantee.

Standard Specs

- Model: F22PSU, F22 w/ Inductor PSU
- Adaptor Size: 1/2", 3/4"
- Applicable Fluid: Liquid (Highly corrosive)
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
- Working Pressure: 6.0kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

  Body - PSU
  Float - PP, PVDF, Telfone, PVC
  Guide Rod - No
  Guide Rod Bottom - PP
  Adaptor - Welding Type: UPVC
  Male, Female Thread: UPVC, PP
  Butt-fusion Adaptor: PP
  Union Nuts - UPVC
  O-ring- EPDM, VITON

- Adaptor Material

  Welding Type, Male Thread, Female Thread, Butt-fusion Adaptor

※BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range※	Standard gravity
F22-3LPM PVC float	0.3-3.0 L/min	1.0
F22-5LPM PVDF float	0.5-5.0 L/min	1.0
F22-8LPM Teflon float	0.8-8.0 L/min	1.0
F22-10LPM Teflon float	1.0-10 L/min	1.0
F22-500LPH Teflon float	50-500 L/h	1.0
F22-800LPH PVDF float	80-800 L/h	1.0
F22 w/ inductor-6LPM PP float	0.5-6.0 L/min	1.0
F22 w/ inductor-11LPM PVDF float	1.0-11 L/min	1.0

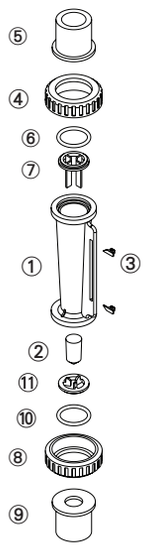
※ Liquid flow meters are calibrated for 20°C water.

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials	
	～ 50℃	～ 60℃
Welding Type	UPVC	-
Male / Female Thread	UPVC	PP
Butt-fusion Adaptor	PP	PP
Panel Elbow Male Thread	UPVC	-

※ When maximum working temperature is over 50°C, the material for union nuts/ guide rod bottom and O-ring have to be PSU and VITON.

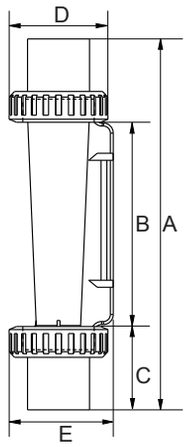
Parts Material



No.	Series	Material (Main material)※ 1			
		1	2	3	4
1	Body	PSU	PSU	PSU	PSU
2	Float	PP/ PVDF / Teflon	PP/ PVDF / Teflon	PP/ PVDF / Teflon	PP/ PVDF / Teflon
3	Guide Rod	ABS	ABS	ABS	ABS
4,8	Pointer	UPVC	UPVC	UPVC	PSU
5,9	Adaptor	UPVC	UPVC	PP※ 2	PSU※ 3
6,10	O-ring	EPDM	VITON	VITON	VITON
7,11	Guide Rod Bottom	PP	PP	PP	PP

※ 1.Material for different parts is optional for each flowmeter.
※ 2.For thread and welding adaptor only.
※ 3.For thread adaptor only.

Parts Size



Adaptor Spec	A	B	C	D	E
3/4"Female Thread	191	104	43.5	51	54
3/4"Male Thread	188	104	42	51	54
3/4"CNS	194	104	45	51	54
3/4"ASTM	195	104	45.5	51	54
3/4"JIS	194	104	45	51	54
3/4"DIN	194	104	45	51	54
1/2"Male Thread	182	104	39	51	54
1/2"Female Thread	191	104	43.5	51	54
1/2"CNS	184	104	40	51	54
1/2"ASTM	184	104	40	51	54
1/2"JIS	183	104	39.5	51	54
1/2"DIN	187	104	41.5	51	54
PP OD20 ID15.3	184	104	40	51	54

Unit: mm

Specification inquiry (F22)

※ Contact us with below information.

- Fluid - _____
- Specific gravity - ☐Standard-1.0 ☐Other_____
- Pressure - ☐Standard-6.0kg/cm² ☐Other___kg/cm²
- Temperature - ☐Normal temperature ☐Other___˚C
- Scale Range -_____ L/min ～_____ L/min
- Adaptor Size - ☐3/4" JIS
  ☐Other_____
- Adaptor Material
  ☐Welding Type ☐Male Thread
  ☐Female Thread ☐Butt-fusion Adaptor
  ☐Panel Elbow Thread ☐Other _____
- Inductor - ☐Yes ☐No
- Other - _____

LORRIC

F32BSeries - 195mm middle size pipe size 1/2"-1" F32B series

Product Features · Use

- Designed for use with highly corrosive solutions.
- Equipped with an inductor, which confirms the pipeline's current capacity by means of detecting the floating migration. The inductor can be connected instruments or computers and is often used as part of the control or alarm system.
- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.
- Each batch of flow meters will be calibrated before delivery for our best precision guarantee.

Standard Specs

- Model: F32B PSU, F32B w/ Inductor PSU
- Adaptor Size: 1/2", 3/4", 1"
- Applicable Fluid: Liquid (Highly corrosive)
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
- Working Pressure: 6.0 kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

  Body - PSU
  Float - PP
  Guide Rod - None
  Guide Rod Bottom - PP
  Adaptor - Welding Type: UPVC
  Male, Female Thread: UPVC, PP
  Butt-fusion Adaptor: PP
  Union Nuts - UPVC
  O-ring - EPDM, VITON
- Adaptor Material

  Welding Type, Male Thread, Female Thread, Butt-fusion Adaptor

※ BSPT is standard thread type. NPT is available for custom

Scale Range

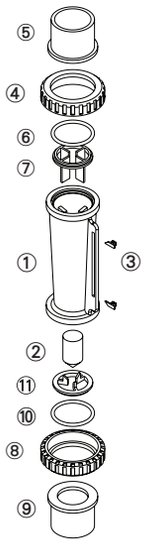
Product Code	Scale Range※	Standard gravity
F32B - 18LPM	9.0-18 L/min	1.0
F32B - 32LPM	16-32 L/min	1.0
F32B - 60LPM	30-60 L/min	1.0
F32B - 90LPM	45-90 L/min	1.0

※ Liquid flow meters are calibrated for 20°C water.

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials	
	～ 50℃	～ 60℃
Welding Type	UPVC	-
Male / Female Thread	UPVC	PP
Butt-fusion Adaptor	PP	PP
Panel Elbow Male Thread	UPVC	-

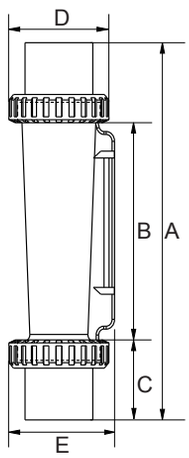
Parts Material



No.	Series	Material (Main material)※ 1			
		1	2	3	4
1	Body	PSU	PSU	PSU	PSU
2	Float	PP	PP	PP	PP
3	Guide Rod	ABS	ABS	ABS	ABS
4,8	Pointer	UPVC	UPVC	UPVC	UPVC
5,9	Adaptor	UPVC	UPVC	PP※ 2	PSU※ 3
6,10	O-ring	EPDM	VITON	VITON	VITON
7,11	Guide Rod Bottom	PP	PP	PP	PP

※ 1.Material for different parts is optional for each flowmeter.
※ 2.For thread and welding adaptor only.
※ 3.For thread adaptor only.

Parts Size



Adaptor Spec	A	B	C	D	E
1"Male Thread	210	111	49.5	60	64
1"Female Thread	210	111	49.5	60	64
1"CNS	197	111	43	60	64
1"ASTM	197	111	43	60	64
1"JIS	195	111	42	60	64
3/4"Male Thread	196	111	42.5	60	64
3/4"Female Thread	211	111	50	60	64
3/4"CNS	199	111	44	60	64
3/4"ASTM	193	111	41	60	64
3/4"JIS	200	111	44.5	60	64
3/4"DIN	199	111	44	60	64
3/4"DIN Thickness Of Pipe Wall	195	111	42	60	64
1/2"JIS MIN	192	111	40.5	60	64
1/2"ASTM	191	111	40	60	64
1/2"JIS	190	111	39.5	60	64
1/2"DIN	189	171	39	60	64
PP OD40.4 ID34	197	111	43	60	64
PP OD33 ID25.2	193	111	41	60	64

Unit: mm

Specification inquiry (F32B)

※ Contact us with below information.

- Fluid - _____
- Specific gravity - ☐Standard-1.0 ☐Other _____
- Pressure - ☐Standard-6.0kg/cm² ☐Other__ kg/cm²
- Temperature - ☐Normal temperature ☐Other___ ˚C
- Scale Range -_____ L/min ～ _____ L/min
- Adaptor Size - ☐1" JIS
  ☐Other _____
- Adaptor Material
  ☐Welding Type ☐Male Thread
  ☐Female Thread ☐Butt-fusion Adaptor
  ☐Other _____
- Inductor - ☐Yes ☐No
- Other - _____

LORRIC

F34Series - 270mm large size pipe size 1/2"-1"

F34 series

Product Features · Use

- Designed for use with highly corrosive solutions.
- Equipped with an inductor, which confirms the pipeline's current capacity by means of detecting the floating migration. The inductor can be connected instruments or computers and is often used as part of the control or alarm system.
- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.
- Each batch of flow meters will be calibrated before delivery for our best precision guarantee.

Standard Specs

- Model: F34 PSU, F34 w/ Inductor PSU
- Adaptor Size: 1/2", 3/4", 1"
- Applicable Fluid: Liquid (Highly corrosive)
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
- Working Pressure: 6.0 kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

  Body - PSU
  Float - PP
  Guide Rod - No
  Guide Rod Bottom - PP
  Adaptor - Welding Type: UPVC
  Male, Female Thread: UPVC, PP
  Butt-fusion Adaptor: PP
  Union Nuts - UPVC
  O-ring - EPDM, VITON

- Adaptor Material

  Welding Type, Male Thread, Female Thread, Butt-fusion Adaptor

※ BSPT is standard thread type. NPT is available for custom

Scale Range

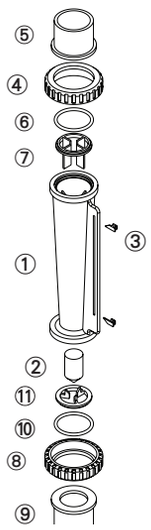
Product Code	Scale Range※	Standard gravity
F34 - 20LPM	2.0-20 L/min	1.0
F34 - 30LPM	3.0-30 L/min	1.0
F34 - 50LPM	5.0-50 L/min	1.0
F34 - 60LPM	6.0-60 L/min	1.0
F34 - 80LPM	8.0-80 L/min	1.0
F34 - 100LPM	10-100 L/min	1.0
F34 w/ Inductor - 20LPM	2.0-20 L/min	1.0
F34 w/ Inductor - 30LPM	3.0-30 L/min	1.0
F34 w/ Inductor - 60LPM	6.0-60 L/min	1.0
F34 w/ Inductor - 100LPM	10-100 L/min	1.0※2

※ Liquid flow meters are calibrated for 20°C water.
※ Please contact our sales before ordering F34 w/ Inductor - 100LPM (unstandardized items.)

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials	
	～ 50℃	～ 60℃
Welding Type	UPVC	-
Male / Female Thread	UPVC	PP
Butt-fusion Adaptor	PP	PP
Panel Elbow Male Thread	UPVC	-

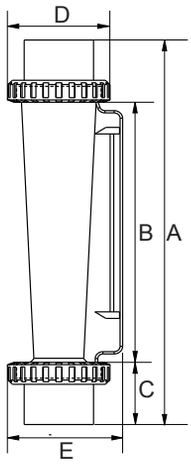
Parts Material



No.	Series	Material (Main material)※ 1			
		1	2	3	4
1	Body	PSU	PSU	PSU	PSU
2	Float	PP	PP	PP	PP
3	Guide Rod	ABS	ABS	ABS	ABS
4,8	Pointer	UPVC	UPVC	UPVC	UPVC
5,9	Adaptor	UPVC	UPVC	PP※ 2	PSU※ 3
6,10	O-ring	EPDM	VITON	VITON	VITON

※ 1.Material for different parts is optional for each flowmeter.
※ 2.For thread and welding adaptor only.
※ 3.For thread adaptor only.

Parts Size



Adaptor Spec	A	B	C	D	E
1"Male Thread	270	171	49.5	60	68
1"Female Thread	270	171	49.5	60	68
1"CNS	257	171	43	60	68
1"ASTM	257	171	43	60	68
1"JIS	255	171	42	60	68
3/4"Male Thread	256	171	42.5	60	68
3/4"Female Thread	271	171	50	60	68
3/4"CNS	259	171	44	60	68
3/4"ASTM	253	171	41	60	68
3/4"JIS	260	171	44.5	60	68
3/4"DIN	259	171	44	60	68
3/4"DIN Thickness Of Pipe Wall	255	171	42	60	68
3/4"JIS MAX	252	171	40.5	60	68
1/2"ASTM	251	171	40	60	68
1/2"JIS	249	171	39	60	68
1/2"DIN	249	171	39	60	68
PP OD40.4 ID34	257	171	43	60	68
PP OD33 ID25.2	253	171	41	60	68

Unit: mm

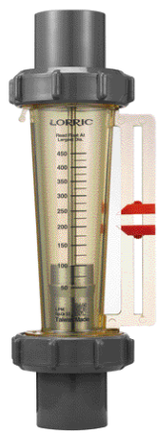
Specification inquiry (F34)

※ Contact us with below information.

- Fluid - _____
- Specific gravity - ☐Standard-1.0 ☐Other_____
- Pressure - ☐Standard-6.0kg/cm² ☐Other___kg/cm²
- Temperature - ☐Normal temperature ☐Other___℃
- Scale Range - _____L/min ～ _____ L/min
- Adaptor Size - ☐1" JIS
  ☐Other _____
- Adaptor Material
  ☐Welding Type ☐Male Thread
  ☐Female Thread ☐Butt-fusion Adaptor
  ☐Panel Elbow Thread ☐Other _____
- Inductor - ☐Yes ☐No
- Other - _____

LORRIC

F45Series - 346mm large size pipe size 1-1/2"-2" F45 series



Product Features · Use

- The flange flow meter is equipped with four stainless steel poles on four sides and uses flange adaptor. This flow meter is robust, highly secure and ideal for high pressure conditions. This flow meter's lifetime is usually longer than ordinary flow meters.
- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.
- Each batch of flow meters will be calibrated before delivery for our best precision guarantee.
- Hastelloy float is available for corrosive environment.

Standard Specs

- Model: F45PSU, F45H PSU
- Adaptor Size: 1-1/2", 2"
- Applicable Fluid: Liquid
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
- Working Pressure: 6.0 kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

Body - PSU
Float - Stainless 316, Hastelloy C
Guide Rod - Stainless 316, Ti, Hastelloy C
Guide Rod Bottom - PP
Adaptor - Welding Type: UPVC
Male, Female Thread: UPVC, PP
Butt-fusion Adaptor: PP
Flange: UPVC
Union Nuts - UPVC
O-ring - EPDM, VITON
Iron pillar (Flange type only) - Stainless 316

- Adaptor Material

Welding Type, Male Thread, Female Thread,
Butt-fusion Adaptor, Flange

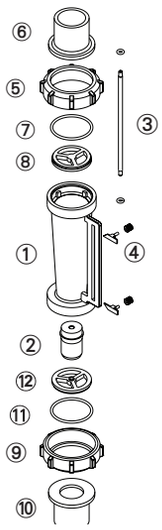
※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range※	Standard gravity
F45(PSU,H PSU) - 100LPM	10-100 L/min	1.0
F45(PSU,H PSU) - 150LPM	15-150 L/min	1.0
F45(PSU,H PSU) - 200LPM	20-200 L/min	1.0
F45(PSU,H PSU) - 250LPM	25-250 L/min	1.0
F45(PSU,H PSU) - 300LPM	30-300 L/min	1.0
F45(PSU,H PSU) - 450LPM	50-450 L/min	1.0
F45(PSU,H PSU) - 600LPM	100-600 L/min	1.0

※ Liquid flow meters are calibrated for 20°C water.
※ F45 PC product has ceased production.

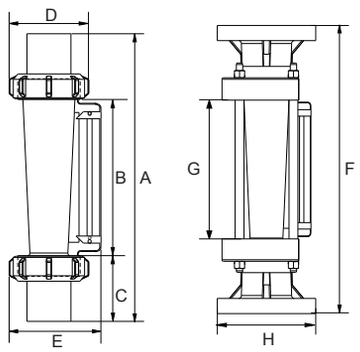
Parts Material



No.	Series	Material (Main material)※1		
		1	2	3
1	Body	PSU	PSU	PSU
2	Float	S316	Hastelloy C	Hastelloy C
3	Guide Rod	S316	Ti	Hastelloy C
4	Pointer	ABS	ABS	ABS
5,9	Union Nuts	UPVC	UPVC	UPVC
6,10	Adaptor	UPVC	UPVC	PSU※2
7,11	O-ring	VITON	VITON	VITON
8,12	Guide Rod Bottom	PP	PP	PP

※ 1.Material for different parts is optional for each flowmeter.
※ 2.For thread adaptor only. ※ 3.F45 PC product has ceased production.

Parts Size



Adaptor Spec	A / F※	B / G※	C / H※	D	E
1-1/2"Female Thread	346	187	79.5	109	127
1-1/2"CNS	347	187	80	109	127
1-1/2"ASTM	347	187	80	109	127
1-1/2"JIS	345	187	79	109	127
2"Male Thread	345	187	79	109	127
2"Female Thread	345	187	79	109	127
2"CNS	357	187	85	109	127
2"ASTM	345	187	79	109	127
2"JIS	357	187	85	109	127
PP OD72.7 ID60.1	305	187	59	109	127
PP OD60 ID48.9	345	187	79	109	127
Flange 2"	390	187	155	-	-

※ Size of flange type Unit: mm

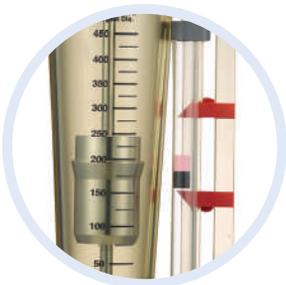
Specification inquiry (F45)

※ Contact us with below information.

- Fluid - ☐Water ☐Other_____
- Specific gravity - ☐Standard-1.0 ☐Other_____
- Pressure - ☐Standard-6.0kg/cm² ☐Other__ kg/cm²
- Temperature - ☐Normal temperature ☐Other___ ˚C
- Scale Range -_____ L/min ～_____ L/min
- Adaptor Size - ☐1"-1/2" ☐2"
  ☐Other_____
- Adaptor Material
  ☐Welding Type ☐Male Thread
  ☐Female Thread ☐Butt-fusion Adaptor
  ☐Panel Elbow Thread ☐Other_____
- Material
  ☐ 1 Body PSU
  ☐ 2 Body PSU Hastelloy C FloaT, Ti Guide Rod
  ☐ 3 Body PSU Hastelloy C Float & Guide Rod
  ☐ 4 Other
  Specs besides above listed information_____

LORRIC

F45Magnetic - Magnetic Duel-Indicator pipe size 1-1/2" F45M



Product Features · Use

- Ideal for dark color and or solutions that easily precipitate.
- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.
- Each batch of flow meters will be calibrated before delivery for our best precision guarantee.

Standard Specs

- Model: F45M PSU, F45MH PSU
- Adaptor Size: 1-1/2", 2"
- Applicable Fluid: Liquid (Dark liquid)
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard)
- Working Pressure: 6.0 kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

  Body - PSU
  Float - Stainless 316, Hastelloy C
  Guide Rod - Stainless 316, Ti, Hastelloy C
  Guide Rod Bottom - PP
  Adaptor - Welding Type: UPVC
  Male, Female Thread: UPVC, PP
  Butt-fusion Adaptor: PP
  Union Nuts - UPVC
  O-ring - EPDM, VITON
  Iron pillar (Flange type only) - Stainless 316, 304, 420

- Adaptor Material

  Welding Type, Male Thread, Female Thread,
  Butt-fusion Adaptor, Flange

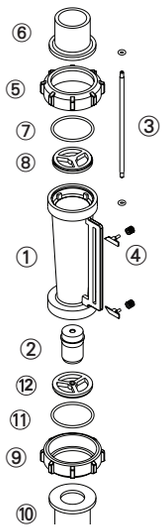
※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range※	Standard gravity
F45M PSU - 300LPM	50-300 L/min	1.0
F45M PSU - 450LPM	50-450 L/min	1.0
F45M PSU - 600LPM	100-600 L/min	1.0

※ Liquid flow meters are calibrated for 20°C water.

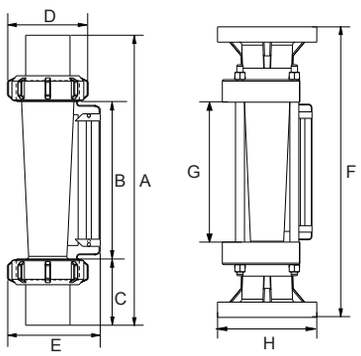
Parts Material



No.	Series	Material (Main material)※			
		1	2	3	4
1	Body	PSU	PSU	PSU	PSU
2	Float	S316	S316	S316	S316
3	Guide Rod	S316	S316	S316	S316
4	Pointer	ABS	ABS	ABS	ABS
5,9	Union Nuts	UPVC	UPVC	UPVC	UPVC
6,10	Adaptor	UPVC	UPVC	Flange UPVC	Male / Female Thread PSU
7,11	O-ring	VITON	EPDM	VITON	VITON
8,12	Guide Rod Bottom	PP	PP	PP	PP

※ Material for different parts is optional for each flowmeter.

Parts Size



Adaptor Spec	A / F※	B / G※	C / H※	D	E
1-1/2"Female Thread	346	187	79.5	109	127
1-1/2"CNS	347	187	80	109	127
1-1/2"ASTM	347	187	80	109	127
1-1/2"JIS	345	187	79	109	127
2"Male Thread	345	187	79	109	127
2"Female Thread	345	187	79	109	127
2"CNS	357	187	85	109	127
2"ASTM	345	187	79	109	127
2"JIS	357	187	85	109	127
PP OD72.7 ID60.1	305	187	59	109	127
PP OD60 ID48.9	345	187	79	109	127
Flange 2"	390	187	155	-	-

※ Size of flange type

Unit: mm

Specification inquiry (F45M PSU)

※ Contact us with below information.

- Fluid - ☐Water ☐Other_____
- Specific gravity - ☐Standard-1.0 ☐Other_____
- Pressure - ☐Standard-6.0kg/cm² ☐Other___kg/cm²
- Temperature - ☐Normal temperature ☐Other___˚C
- Scale Range - _____ L/min ～_____L/min
- Adaptor Size - ☐1"-1/2" ☐2"
  ☐Other_____
- Adaptor Material
  ☐Welding Type ☐Male Thread
  ☐Female Thread ☐Butt-fusion Adaptor
  ☐Panel Elbow Thread ☐Other _____
- Material
  ☐ 1 UPVC ☐ 2 EPDM O-ring
  ☐ 3 UPVC Flange
  ☐ 4 PSU Male / Female Thread
  ☐ 5 Other
  Specs besides above listed information_____

LORRIC

F46Series - 346mm large size pipe size 1-1/2"-2" F46 series

Product Features · Use

- Designed for use with highly corrosive solutions.
- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.
- Each batch of flow meters will be calibrated before delivery for our best precision guarantee.

Standard Specs

- Model: F46PSU
- Adaptor Size: 1-1/2", 2"
- Applicable Fluid: Liquid (Highly corrosive)
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard)
- Working Pressure: 6.0 kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

  Body - PSU
  Float - PP, Teflon, PVDF
  Guide Rod - None
  Guide Rod Bottom - PP
  Adaptor - Welding Type: UPVC
  Male, Female Thread: UPVC, PP
  Butt-fusion Adaptor: PP
  Union Nuts - UPVC
  O-ring - EPDM, VITON

- Adaptor Material

  Welding Type, Male Thread, Female Thread,
  Butt-fusion Adaptor

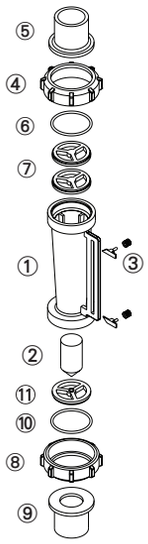
※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range※	Standard gravity
F46PSU - 100LPM Telfon float	20-100 L/min	1.0
F46PSU - 150LPM PVDF float	30-150 L/min	1.0
F46PSU - 200LPM PP float	35-200 L/min	1.0
F46PSU - 250LPM PP float	35-250 L/min	1.0

※ Liquid flow meters are calibrated for 20°C water.

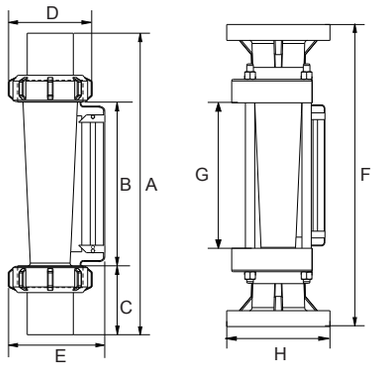
Parts Material



No.	Series	Material (Main material)※1			
		1	2	3	4
1	Body	PSU	PSU	PSU	PSU
2	Float	Teflon	PP	PP	PP
3	Guide Rod	ABS	ABS	ABS	ABS
4,8	Pointer	UPVC	UPVC	UPVC	UPVC
5,9	Adaptor	UPVC	UPVC	UPVC	PSU※2
6,10	O-ring	VITON	EPDM	VITON	VITON
7,11	Guide Rod Bottom	PP	PP	PP	PP

※ 1.Material for different parts is optional for each flowmeter.
※ 2.For thread adaptor only.

Parts Size



Adaptor Spec	A / F※	B / G※	C / H※	D	E
1-1/2"Female Thread	346	187	79.5	109	127
1-1/2"CNS	347	187	80	109	127
1-1/2"ASTM	347	187	80	109	127
1-1/2"JIS	345	187	79	109	127
2"Male Thread	345	187	79	109	127
2"Female Thread	345	187	79	109	127
2"CNS	357	187	85	109	127
2"ASTM	345	187	79	109	127
2"JIS	357	187	85	109	127
PP OD72.7 ID60.1	305	187	59	109	127
PP OD60 ID48.9	345	187	79	109	127
Flange 2"	390	187	155	-	-

※ Size of flange type

Unit: mm

Specification inquiry (F46)

※ Contact us with below information.

- Fluid - ☐Water ☐Other_____
- Specific gravity - ☐Standard-1.0 ☐Other_____
- Pressure - ☐Standard-6.0kg/cm² ☐Other___kg/cm²
- Temperature - ☐Normal temperature ☐Other___˚C
- Scale Range -_____ L/min ～_____ L/min
- Adaptor Size - ☐1"-1/2" ☐2"
  ☐Other_____

- Adaptor Material
  ☐Welding Type ☐Male Thread
  ☐Female Thread ☐Butt-fusion Adaptor
  ☐Panel Elbow Thread ☐Other_____
- Material
  ☐ 1 Teflon float ☐ 2 PP float
  ☐ 3 PP float VITON O-ring
  ☐ 4 PP float PSU adaptor
  ☐ 5 Other
  Specs besides above listed information _____

LORRIC

F101- New 168mm middle size pipe size 1/2"

F101 series

Product Features · Use

- 4 design innovations to improve usability:

New body design: Decreases the vibration when working which stabilises flow distribution./ New indicator design: Easily adjustable and positionable./ Thickened threads for caps: Caps are easy to be locked even under bad concentricity./ Models with and without guide rods are able to share the same adaptors.

- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.

Standard Specs

- Model: F101PC, F101PSU, F101H PSU
- Adaptor Size: 1/2"
- Applicable Fluid: Liquid
- Flow direction: From the bottom up
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
  70˚C(PVDF adaptor)
- Working Pressure: 5.0 kg/cm² MAX
- Full Scale Accuracy: ±5% F.S.
- Product Material

  Body - PC, PSU
  Float - Stainless 316, Hastelloy C
  Guide Rod - Stainless 316, Ti, Hastelloy C
  Guide Rod Bottom - PP, Strengthened Fiberglass (FRPP)
  Adaptor - Welding Type: UPVC
  Male, Female Thread: UPVC, PVDF
  Butt-fusion Adaptor: PP
  Union Nuts - UPVC, Aluminum
  O-ring - EPDM, VITON

- Adaptor Material

  Welding Type, Male Thread, Female Thread, Butt-fusion Adaptor

※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range※1※2 (L/min)
F101-2LPM	0.2-2.0 / S, H Teflon※3
F101-4LPM	0.4-4.0 / S, H
F101-5LPM	0.5-5.0 / S, H
F101-10LPM	1.0-10 / S, H
F101-15LPM	1.5-15 / S, H
F101-20LPM	2.0-20 / S, H

※ 1.Liquid flow meters are calibrated for 20°C water.
※ 2." / "float material, S- Stainless 316, H- Hastello C.

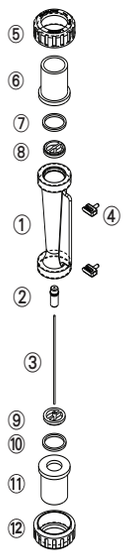
※ Please contact our sales before ordering F101-2LPM (unstandardized items.)

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials		
	～ 50℃	～ 60℃	～ 70℃
Welding Type	UPVC	-	-
Male / Female Thread	UPVC	-	PVDF
Butt-fusion Adaptor	-	PP	-

※ When maximum working temperature is over 50°C, the material for guide rod bottom and union nuts have to be PSU and aluminium.

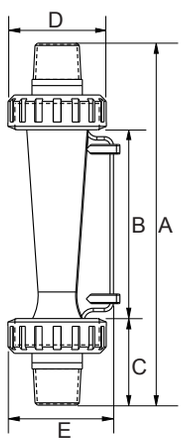
Parts Material



No.	Series	Material (Main material)※			
		1	2	3	4
1	Body	PC	PC	PSU	PSU
2	Float	S316	S316	Hastelloy C	Hastelloy C
3	Guide Rod	S316	S316	Ti	Hastelloy C
4	Pointer	PP	PP	PP	PP
5,12	Union Nuts	UPVC	UPVC	UPVC	Aluminum
6,11	Adaptor	UPVC	UPVC	UPVC	UPVC
7,10	O-ring	EPDM	VITON	VITON	VITON

※ Material for different parts is optional for each flowmeter.

Parts Size



Adaptor Spec	A	B	C	D	E
1/2" Male Thread	164	85	39.5	43	49.5
1/2" Female Thread	166	85	40.5	43	49.5
1/2"CNS	166	85	40.5	43	49.5
1/2"ASTM	166	85	40.5	43	49.5
1/2"JIS	166	85	40.5	43	49.5
1/2" PVDF Female Thread	166	85	40.5	43	49.5

Unit: mm

Specification inquiry (F101)

※ Contact us with below information.

- Fluid - ☐Water ☐Other _____
- Specific gravity - ☐Standard-1.0 ☐Other _____
- Pressure - ☐Standard-5.0kg/cm² ☐Other ___ kg/cm²
- Temperature - ☐Normal temperature ☐Other ___ ˚C
- Scale Range - _____ L/min ~ _____ L/min
- Adaptor Size - ☐3/4" JIS ☐Other _____
- Adaptor Material - ☐Welding Type ☐Male Thread ☐Female Thread ☐Butt-fusion Adaptor ☐Other _____
- Material
  - ☐ 1 Body PC ☐ 2 Body PSU
  - ☐ 3 Body PSU Hastelloy C FloaT, Ti Guide Rod
  - ☐ 4 Body PSU Hastelloy C Float & Guide Rod Adaptor PSU (for high working temperature)
  - ☐ 5 Other Specs besides above listed information _____

LORRIC

F201- New 192mm middle size pipe size1/2"-3/4" F201 series

Product Features · Use

- 4 design innovations to improve usability:

New body design: Decreases the vibration when working which stabilises flow distribution./ New indicator design: Easily adjustable and positionable./ Thickened threads for caps: Caps are easy to be locked even under bad concentricity./ Models with and without guide rods are able to share the same adaptors.

- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.

Standard Specs

- Model: F201PC, F201PSU, F201H PSU
- Adaptor Size: 1/2", 3/4"
- Applicable Fluid: Liquid
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
- Working Pressure: 5.0kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

Body - PC, PSU
Float - Stainless 316, Hastelloy C
Guide Rod - Stainless 316, Ti, Hastelloy C
Guide Rod Bottom - PP
Adaptor - Welding Type: UPVC
Male, Female Thread: UPVC, PP
Butt-fusion Adaptor: PP
Union Nuts - UPVC, Aluminum
O-ring - EPDM, VITON

- Adaptor Material

Welding Type, Male Thread, Female Thread, Butt-fusion Adaptor

※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range ※1※2 (L/min)
F201-10LPM	1.0-10 / S, H
F201-15LPM	1.5-15 / S, H
F201-20LPM	2.0-20 / S, H
F201-30LPM	3.0-30 / S, H
F201-40LPM	4.0-40 / S, H
F201-50LPM	5.0-50 / S, H

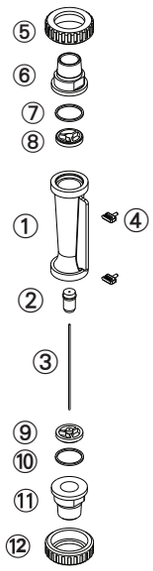
※ 1.Liquid flow meters are calibrated for 20°C water.
※ 2." / "float material, S- Stainless 316, H- Hastelloy C.

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials		
	～ 50℃	～ 60℃	～ 100℃
Welding Type	UPVC	-	-
Male / Female Thread	UPVC	PP	-
Butt-fusion Adaptor	-	PP	-

※ When maximum working temperature is over 50°C, the material for guide rod bottom and union nuts have to be PSU and aluminium.

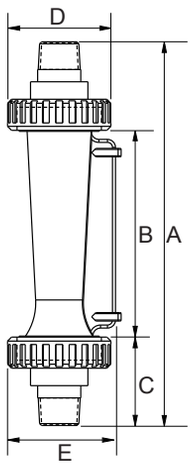
Parts Material



No.	Series	Material (Main material)※			
		1	2	3	4
1	Body	PC	PSU	PSU	PSU
2	Float	S316	S316	Hastelloy C	PVC
3	Guide Rod	S316	S316	Ti	Hastelloy C
4	Pointer	PP	PP	PP	PP
5,12	Union Nuts	UPVC	UPVC	UPVC	UPVC
6,11	Adaptor	UPVC	UPVC	UPVC	UPVC
7,10	O-ring	EPDM	VITON	VITON	VITON
8,9	Guide Rod Bottom	PP	PP	PP	PP

※ Material for different parts is optional for each flowmeter.

Parts Size



Adaptor Spec	A	B	C	D	E
3/4"Male Thread	192	102	45	51	56
3/4"CNS	194	102	46	51	56
3/4"ASTM	195	102	46.5	51	56
3/4"JIS	194	102	46	51	56
3/4"DIN	195	102	46.5	51	56
1/2"Male Thread	182	102	40	51	56
1/2"Female Thread	192	102	45	51	56
1/2" PP Female Thread	192	102	45	51	56
1/2"CNS	184	102	41	51	56
1/2"ASTM	184	102	41	51	56
1/2"JIS	184	102	41	51	56
1/2"DIN	187	102	42.5	51	56
PP OD20 ID15.3	192	102	41	51	56.5

Unit: mm

Specification inquiry (F201)

※ Contact us with below information.

- Fluid - ☐Water ☐Other _____
- Specific gravity - ☐Standard-1.0 ☐Other _____
- Pressure - ☐Standard-5.0kg/cm² ☐Other ___ kg/cm²
- Temperature - ☐Normal temperature ☐Other ___ ˚C
- Scale Range - _____ L/min ~ _____ L/min
- Adaptor Size - ☐3/4" JIS ☐Other _____
- Adaptor Material - ☐Welding Type ☐Male Thread ☐Female Thread ☐Butt-fusion Adaptor ☐Other _____
- Material
  - ☐ 1 Body PC ☐ 2 Body PSU
  - ☐ 3 Body PSU Hastelloy C FloaT, Ti Guide Rod
  - ☐ 4 Body PSU Hastelloy C Float & Guide Rod
- Other

  Specs besides above listed information _____

LORRIC

F301- New 270mm large size pipe size 3/4"-1"

F301 series

Product Features · Use

- 4 design innovations to improve usability:

New body design: Decreases the vibration when working which stabilises flow distribution./ New indicator design: Easily adjustable and positionable./ Thickened threads for caps: Caps are easy to be locked even under bad concentricity./ Models with and without guide rods are able to share the same adaptors.

- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.

Standard Specs

- Model: F301PSU, F301H PSU
- Adaptor Size: 3/4", 1"
- Applicable Fluid: Liquid
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
- Working Pressure: 5.0 kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

  Body - PSU, PC
  Float - Stainless 316, Hastelloy C
  Guide Rod - Stainless 316, Hastelloy C
  Guide Rod Bottom - PP
  Adaptor - Welding Type: UPVC
  Male, Female Thread: UPVC, PP
  Butt-fusion Adaptor: PP
  Union Nuts - UPVC, Aluminum
  O-ring - EPDM, VITON

- Adaptor Material

  Welding Type, Male Thread, Female Thread, Butt-fusion Adaptor

※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range ※1 ※2 (L/min)
F301 - 20LPM	2.0-20 / S, H
F301 - 30LPM	3.0-30 / S, H
F301 - 50LPM	5.0-50 / S, H
F301 - 80LPM	8.0-80 / S, H
F301 - 100LPM	10-100 / S, H

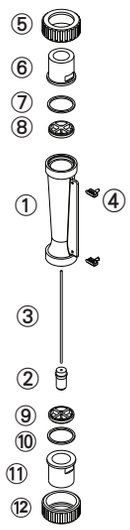
※ 1.Liquid flow meters are calibrated for 20°C water.
※ 2." / "float material, S- Stainless 316, H- Hastelloy C.

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials		
	～ 50℃	～ 60℃	～ 100℃
Welding Type	UPVC	-	-
Male / Female Thread	UPVC	PP	-
Butt-fusion Adaptor	-	PP	-

※ When maximum working temperature is over 50°C, the material for guide rod bottom and union nuts have to be PSU and aluminium.
※ If the maximum working temperature requirement of the adapter is over 60°C, please contact LORRIC directly.

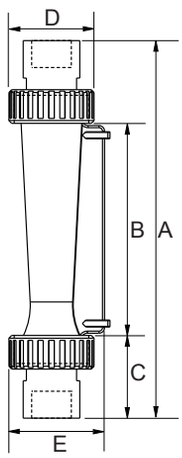
Parts Material



No.	Series	Material (Main material)※			
		1	2	3	4
1	Body	PSU	PSU	PSU	PSU
2	Float	S316	S316	Hastelloy C	PVC
3	Guide Rod	S316	S316	Ti	Hastelloy C
4	Pointer	PP	PP	PP	PP
5,12	Union Nuts	UPVC	UPVC	UPVC	UPVC
6,11	Adaptor	UPVC	UPVC	UPVC	UPVC
7,10	O-ring	EPDM	VITON	VITON	VITON
8,9	Guide Rod Bottom	PP	PP	PP	PP

※ Material for different parts is optional for each flowmeter.

Parts Size



Adaptor Spec	A	B	C	D	E
1"Male Thread	270	153	58.5	61	69
1"Female Thread	270	153	58.5	61	69
1"CNS	257	153	52	61	69
1"ASTM	257	153	52	61	69
1"JIS	255	153	51	61	69
3/4"Male Thread	256	153	51.5	61	69
3/4"Female Thread	272	153	59.5	61	69
3/4"CNS	260	153	53.5	61	69
3/4"ASTM	254	153	50.5	61	69
3/4"JIS	260	153	53.5	61	69
3/4"DIN	254	153	53.5	61	69
3/4"DIN Thick pipe wall	254	153	51.5	61	69
3/4"JIS MIN	254	153	49.5	61	69
1/2"ASTM	252	153	49.5	61	69
1/2"JIS	250	153	48.5	61	69
1/2"DIN	250	153	48.5	61	69
PP OD33 ID25.2	254	153	50.5	61	69

Unit: mm

Specification inquiry (F301)

※ Contact us with below information.

- Fluid - ☐Water ☐Other _____
- Specific gravity - ☐Standard-1.0 ☐Other _____
- Pressure - ☐Standard-5.0kg/cm² ☐Other___kg/cm²
- Temperature - ☐Normal temperature ☐Other ___˚C
- Scale Range - _____ L/min ~ _____ L/min
- Adaptor Size - ☐1" JIS ☐Other _____
- Adaptor Material - ☐Welding Type ☐Male Thread ☐Female Thread ☐Butt-fusion Adaptor ☐Other _____
- Material
  - ☐ 1 Body PC ☐ 2 Body PSU
  - ☐ 3 Body PSU Hastelloy C FloaT, Ti Guide Rod
  - ☐ 4 Body PSU Hastelloy C Float & Guide Rod Adaptor PSU (for high working temperature)
  - ☐ 5 Other Specs besides above listed information _____

LORRIC

F311- New 195mm middle size pipe size 1/2"-1"

F311 series

Product Features · Use

- 4 design innovations to improve usability:

New body design: Decreases the vibration when working which stabilises flow distribution./ New indicator design: Easily adjustable and positionable./ Thickened threads for caps: Caps are easy to be locked even under bad concentricity./ Models with and without guide rods are able to share the same adaptors.

- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.

Standard Specs

- Model: F311 PSU
- Adaptor Size: 1/2", 3/4", 1"
- Applicable Fluid: Liquid
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
- Working Pressure: 5.0 kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

Body - PSU
Float - Stainless 316, Hastelloy C
Guide Rod - Stainless 316
Guide Rod Bottom - PP
Adaptor - Welding Type: UPVC
Male, Female Thread: UPVC, PP
Butt-fusion Adaptor: PP
Union Nuts - UPVC
O-ring - EPDM, VITON

- Adaptor Material

Welding Type, Male Thread, Female Thread,
Butt-fusion Adaptor

※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

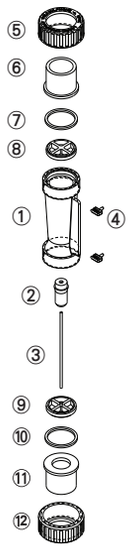
Product Code	Scale Range※ 1 ※ 2 (L/min)
F311 - 80LPM	23-80 / S
F311 - 100LPM	20-100 / S

※ 1.Liquid flow meters are calibrated for 20°C water.
※ 2." / "float material, S- Stainless 316.

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials	
	～ 50℃	～ 60℃
Welding Type	UPVC	-
Male / Female Thread	UPVC	PP
Butt-fusion Adaptor	PP	PP

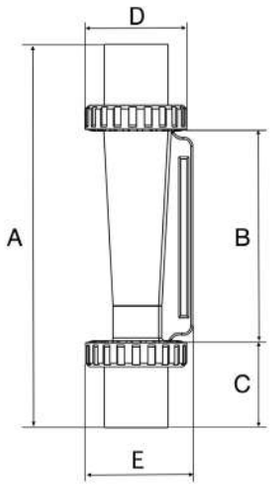
Parts Material



No.	Series	Material (Main material)※1			
		1	2	3	4
1	Body	PSU	PSU	PSU	PSU
2	Float	S316	S316	S316	S316
3	Guide Rod	S316	S316	S316	S316
4	Pointer	PP	PP	PP	PP
5,12	Union Nuts	UPVC	UPVC	UPVC	UPVC
6,11	Adaptor	UPVC	UPVC	PP※2	PP※2
7,10	O-ring	EPDM	VITON	VITON	VITON
8,9	Guide Rod Bottom	PP	PP	PP	PP

※ 1.Material for different parts is optional for each flowmeter.
※ 2.For thread and welding adaptor only.

Parts Size



Adaptor Spec	A	B	C	D	E
1"Male Thread	211	93	59	61	67
1"Female Thread	210	93	58.5	61	67
1"CNS	197	93	52	61	67
1"ASTM	197	93	52	61	67
1"JIS	196	93	51.5	61	67
3/4"Male Thread	197	93	52	61	67
3/4"Female Thread	212	93	59.5	61	67
3/4"CNS	200	93	53.5	61	67
3/4"ASTM	192	93	41	61	67
3/4"JIS	200	93	53.5	61	67
3/4"DIN	200	93	53.5	61	67
3/4"DIN Thick pipe wall	196	93	42	61	67
3/4"JIS MIN	193	93	50	61	67
1/2"ASTM	192	93	49.5	61	67
1/2"JIS	190	93	48.5	61	67
1/2"DIN	190	93	48.5	61	67
PP OD33 ID25.2	194	93	50.5	61	67

Unit: mm

Specification inquiry (F311)

※ Contact us with below information.

- Fluid - ☐Water ☐Other_____
- Specific gravity - ☐Standard-1.0 ☐Other_____
- Pressure - ☐Standard-5.0kg/cm² ☐Other__ kg/cm²
- Temperature - ☐Normal temperature ☐Other___℃
- Scale Range -_____ L/min ～_____ L/min
- Adaptor Size - ☐1" JIS
  ☐Other_____
- Adaptor Material
  ☐Welding Type ☐Male Thread
  ☐Female Thread ☐Butt-fusion Adaptor
  ☐Other_____
- Inductor - ☐Yes ☐No
- Other - _____

LORRIC

FU-TX310 Clamp-on Ultrasonic Flowmeter

FU-TX 310

Product Features · Use

- Pipe installation - No downtime / No pipe cut / No water leakage / No blocking

Maintenance at any time, greatly reducing installation and maintenance costs. No damage, no blockage, no leakage or pressure problems.

- Universal power adapter attached to the device can be directly connected to the general power supply, plug and play.
- Easy to install. For bidirectional flow measurement, no need to consider liquid flow during installation. Patented trigger technology increases ability of anti-interference.Optional water-resistant probes.
- Patented guide rails for probes provide quick install, precise positioning and long-term stable measurement.

Conveniently Attach Probe To Pipe

No downtime • Avoid cutting pipes
No leaks • No blockages

Installing our Ultrasonic flowmeter means that maintenance can be done at any time. It dramatically reduces installation and maintenance costs as the pipe can remain as it is. This means no damage to the tube and saves you from causing leakage and pressure problems.

Patented Design Probe Buckle (Sell with FU-TX 310, do not sell separately.)

1. Plastic Guide Rails

- According to the size of probes, plastic buckle will be applicable for 2''~16'' pipes.
- LORRIC plastic guide rails are designed to increase convenience and reliability of probes installation. It solves the problem of probe displacement caused by temperature and vibration, and prevents the probes from the impact of being installed inappropriately during maintenance.
- Patent guide rails help probes be perfectly installed onto pipes. As a result, the measurements are more stable and more accurate.
- The only all plastic guide rails in the market are suitable for measuring chemicals in electrics, chemical, semiconductor, and environmental industries.

The product does not contain a transparent tube

2. Metal Guide Rails

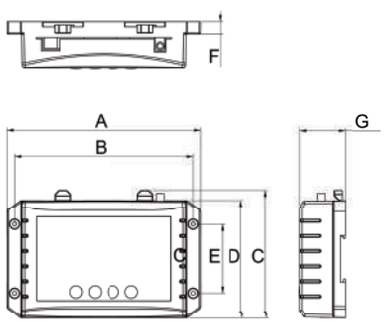
- LORRIC redesigned the whole workflow of ultrasonic probe installation. The goal was to make it so easy, it can be installed even with only one worker. After countless effort and field test, LORRIC finally realized it with our patented guide rails. With it our users can easily install probes even in a confined space. In addition, users have more flexibility selecting an installation location.
- Patent metal guide rails are designed to work with our medium size probe TM1(2 to 8 inch pipe) and large size probe TL1(8 to 16 inch pipe). Just like our plastic guide rails, LORRIC's guide rails provide long-term stability, prevent long term wear and tear due to temperature and vibration.
- LORRIC guide rails are applicable for installing probes on the same or opposite sides.
- Please use 8mm wrench or hex socket nut driver to quickly tighten the hose clamp.

Standard Specs

Installation method	Tube clamps
Measurement principle	Time differential
Flow rate range	± 0.1 ~ 20 m / s
Measurement accuracy	<±2 %
Response time	<1 second
Resolution	0.0001 m/s
Wired communication	Analog output 4-20 mA Modbus RS485 Two-line NPN
Probe-to-host distance	TM-1: 10 meters (Up to 20 meters) TS-2: 10 meters
Temperature measurement	Two sets of external PT1000
Temperature range	-100 ~ 300 ° C with 0.1 ° C resolution
Device working temperature	-10~60°C
Applicable fluid	Clean water, oil or chemical with minor impurities
Wall temperature	Standard probe: 0~80°C High temperature probe: 0~150°C

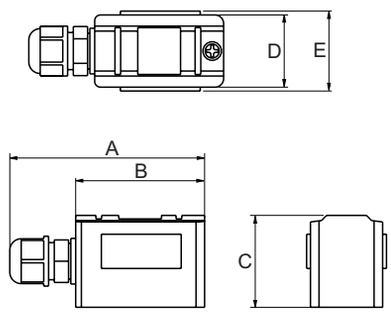
Power consumption	< 2W
Transient flow	Instantaneous flow, flow velocity, time differential display
Cumulative flow	Positive and negative cumulative, net flow display
Units	Metric or English units
Display	128 x 64 LCD backlight display
Operation button	4 touch button
Security	Keyboard lock, power-loss data protection
Shell	ABS plastic, 145 x 90 x 45 mm
Power	9~30VDC 100-240 50 / 60Hz AC transformer
Applicable pipe material	Cast iron, carbon steel, stainless steel, PVC pipe and other
Applicable pipe diameter (mm)	TM-1 DN50-250 (2"~10") TS-2 DN20-50 (¾" to 2")
Probe waterproof rating	General probe IP61 Glue probe IP65 Waterproof resistance probe IP68

Size



A	B	C	D	E	F	G
149.5	137.8	98.3	90.5	52.4	9.5	34.9

Unit：mm



A	B	C	D	E
68.3	45.2	32.2	25.3	42.6

Unit：mm

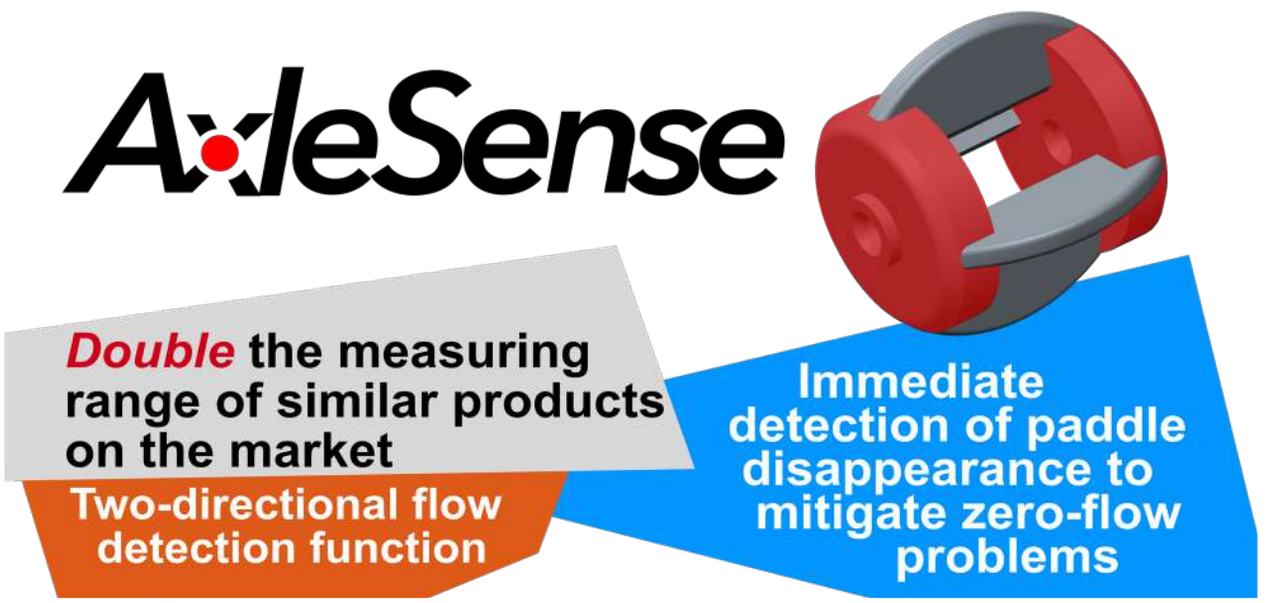
Compare with other measurement principles on the market

	Variable area flowmeter	Paddle wheel flowmeters	LORRIC's Paddle wheel flowmeter	Electromagnetic flowmeter	Ultrasonic flowmeters
Pipeline loss	Low	Low	Low	No	No
Non-invasive install	No	No	No	No	Yes
Precision	Middle	Middle	Middle	High	High
Bidirectional flow detectable	No	No	Yes	Yes	Yes
Blockages	Possible	Possible	Possible	Not possible	Not possible
Applicable fluid	Air / Liquid	Liquid	Liquid	Conductive liquid	Liquid
Cost	Lowest-costs in small diameter pipe, cost increases with pipe diameter	Low-costs, cost increases with pipe diameter	Low-costs, cost increases with pipe diameter	High-costs, cost increases with pipe diameter	Middle-costs Cost does not increase with pipe diameter

FP-AS510 Paddle Wheel Flowmeter

FP-AS510

Product Features



●LORRIC exclusive patent - The AxleSense Technology

- A wider flowrate detection range (0.15 m/s~10m/s)-- LORRIC's patented AxleSense technology shifts the direction of flowrate detection, which means that even under low flow speeds, any paddle movement will be accurately sensed, as well as maintaining a low margin of error for flowrate monitoring.
- Actively detects any paddle abnormalities and offers clear information for the on-site manager to see, and will not simply display a passive "zero-flow" notice.
- Bidirectional flow detection - AxleSense uses the paddle's direction to detect the flow's fundamentals, while at the same time supplies direct information about the flow direction inside the pipelines. This in conjunction with integration with the factory's management system, makes on-site management more convenient.

●Exclusive LCD/LED double screen design, double screen monitoring which makes work equivalent to 1+1>2

- Double screen display: LED-5 digits LED/LCD 16x3 LCD backlight display
- Large bright LED digits display screen for flow observation: LED's brightness is best suited for long-distance monitoring.
- LCD screen best suited for the display of more complex text-based details

●Green, orange and red indicator lights: Red – Major abnormality; Green – Normal operation; Orange – Non-urgent data display.

●Daily Accumulation of positive/negative/net flow volume in the past 14 days.

●The screen can change direction according to the pipes' alignment.

■Comparison with flowmeters with other various principles

	Variable area flowmeter	Paddle wheel flowmeters	LORRIC's Paddle wheel flowmeter	Electromagnetic flowmeter	Ultrasonic flowmeters
Pipeline loss	Low	Low	Low	No	No
Non-invasive install	No	No	No	No	Yes
Precision	Middle	Middle	Middle	High	High
Bidirectional flow detectable	No	No	Yes	Yes	Yes
Blockages	Possible	Possible	Possible	Not possible	Not possible
Applicable fluid	Air / Liquid	Liquid	Liquid	Conductive liquid	Liquid
Cost	Lowest-costs in small diameter pipe, cost increases with pipe diameter	Low-costs, cost increases with pipe diameter	Low-costs, cost increases with pipe diameter	High-costs, cost increases with pipe diameter	Middle-costs Cost does not increase with pipe diameter

Specifications

Mechanism Specs		Measurement Specs	
Installation method	in-line (Pipe segment)	Applicable fluid maximum dynamic viscosity	300cSt***
Fluid in pipes temperature	UPVC: 0~50 °C (32~122°F), For higher temperature, please use PPH or PVDF or 316L Stainless Steel*	Applicable fluid	Clear, oil or chemicals with less impurities (<1%)
Device working environment temperature	-10~60°C (14~140°F)	Linearity	± 0.5 % FS (>0.3m/s)
Union Adaptor Types	UPVC Gluing adapter(ASTM, JIS, DIN) UPVC internal and external thread adapter (BSPT and NPT), PPH / PVDH insertion welding fitting, UPVC / PPH / PVDF Spigot (See order example below for details)	Reproducibility	± 0.4 %
		OR tolerance	± 2.5 % OR
T-connector diameter	DN15-65 (½" to 2-1/2")	Measuring principle	Paddle wheel
Paddle material	PVDF with embedded magnet + ceramic bearing and shaft		
T-connector material	UPVC / PPH / PVDF (Made to order)/ 316L Stainless Steel*	Flow rate range	±0.3 ~10 m/s Can extend to ±0.15 ~10 m/s****
Power supply	DC 12V to 36V 100mA	Transient data	Instantaneous flow velocity and flow volume
Response time	< 0.5 or 1 second		

User Interface			
Language	English, Traditional Chinese, Simple Chinese (Others customizable)	Operation buttons	4 Key touch buttons
Unit	Metric : Litre, cubic meters, meters Time : second, minute, hour, day Imperial : foot, cubic foot, Uk gallon, US gallon	Wired communication	Self-powered Analog output 4-20mA (Device after HW1.3) Modbus RTU RS485 Two-line OCT switch signal (ship with 2 meter cable)
Display	Double screen display :Large 5-Digit LED, 16x3 3-Color Backlight LCD display	Calendar function battery	CR2032
Display digits	LCD 5 Digits (4 digits when negative value) LCD 10 Digits (Not including sign and decimal point)		

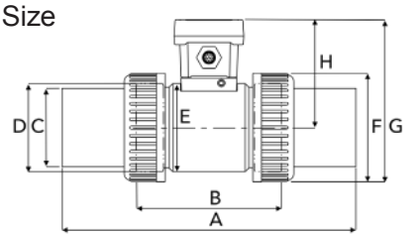
* 316L Stainless Steel: ETA end of 2021.

** IP65: The IP Code, International Protection Marking, IEC standard 60529, sometimes interpreted as Ingress Protection Marking, classifies and rates the degree of protection provided by mechanical casings and electrical enclosures against intrusion, dust, accidental contact, and water. The first digit indicates the level of protection that the enclosure provides against access to hazardous parts (e.g., electrical conductors, moving parts) and the ingress of solid foreign objects. The second digit indicates the level of protection that the enclosure provides against harmful ingress of water.6 stands for dust tight: No ingress of dust; complete protection against contact (dust tight). A vacuum must be applied. Test duration of up to 8 hours based on air flow.5 stands for water jets: Water projected by a nozzle (6.3 mm) against enclosure from any direction shall have no harmful effects.

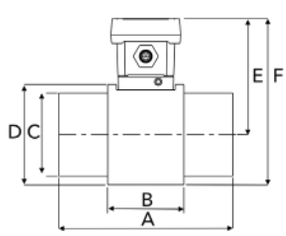
*** The device is calibrated with normal temperature water. Fluids with different viscosities may have different results, and may also change the minimum and maximum flow velocity.

**** The flow velocity range may be slightly different due to factors such as piping diameter and fluid coefficient.

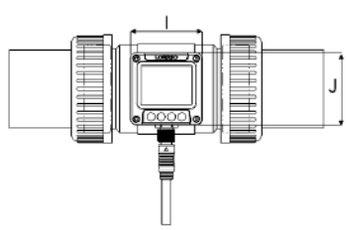
Size



Union pipe



Spigot pipe



Device

UPVC pipe - union diameter size(mm)								
	A	B	C	D	E	F	G	H
¾"	168	100	32.6	41.9	60	50.5	115.7	85.7
1"	168	100	40.6	50	60	60	115.7	85.7
1¼"	210	114	50.2	59.6	65	75.6	127	89.2
1½"	218	120	56	65.7	70	83	134	92.5
2"	269.5	133.3	72	81	81	99.7	148.8	99

UPVC pipe - spigot pipe diameter size(mm)						
	A	B	C	D	E	F
2½"	160	70	76	92	106.5	152.5

Device size(mm)	
I	J
63	63

Order example

• Paddle wheel flowmeter contains: Device, Paddle set, T-connector. Users need to check the material and size of the T-connector and paddle set.

• Please refer to following order example for placing order to LORRIC.

• T-connector + paddle set (T-connector is generally shipped with a paddle set.)

T-connector + paddle set : FP-P065CSAV

Paddle wheel flowmeter	T-connector	T-connector size	Material	T-connector fitting	Fitting spec	O-ring material
FP	P	065	C	S	6	V
		016: 1/2" pipe	C: U-PVC	S: Spigot fitting	T: Taiwan CNS	E: EPDM
		020: 3/4" pipe	P: PPH	U: Union + fitting	A: ANSI/ASTM	V: VITON
		025: 1" pipe	F: PVDF	F: Flange fitting	N: GB	A: FEPM
		032: 1-1/4" pipe	S: 316L Stainless Steel*		J: JIS	
		040: 1-1/2" pipe			E: DIN	
		050: 2" pipe			F: BSPT Female Thread	
		065: 2-1/2" pipe			M: BSPT Male Thread	
					R: NPT Female Thread	
					Q: NPT Male Thread	
					6: ISO 15494(PPH) / ISO 10931(PVDF) — Insertion welding fitting (Default)	
					5: ISO 15494 SDR11(PPH) / ISO 10931 SDR21(PVDF) — Butt welding fitting (Made to order)	

PVC

* The common specifications are listed above, please contact our sales for delivery and inventory.

*316L Stainless Steel (ETA 2021)

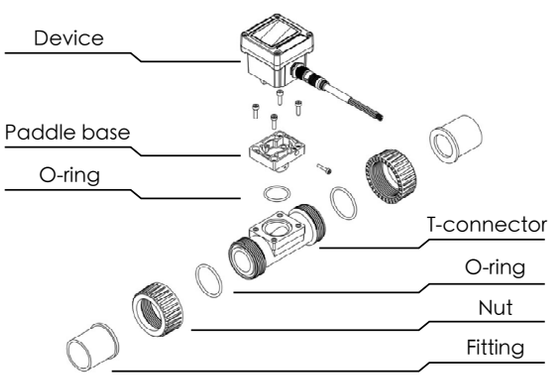
• Paddle set (Please refer to following order example when you order paddle set separately.)

Paddle set : FP-W010CFV

Paddle wheel flowmeter	Paddle base	Paddle base material	Paddle material	O-ring material
FP	W010	C	F	V
		C: U-PVC	F: PVDF	E: EPDM
		P: **FRPPH**		V: VITON
		F: PVDF		A: FEPM
		S: 316L Stainless Steel*		

*316L Stainless Steel (ETA end of 2021)

• Paddle wheel flowmeter exploded views



*Safety instructions:
1. After the warranty, the electronic components of the product will age due to time and operating environment. Under long-term use, please replace the new product according to the condition of the product.
2. Do not operate the product under an Orange or Red LCD Backlight for a long time. Product damage and related losses may occur.

*CONDITIONS: Equipment sold by LORRIC is not intended to be used, nor shall it be used:
(1) As a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) In medical applications or used on humans. Should any product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, LORRIC assumes no responsibility as set forth in our basic WARRANTY/ DISCLAIMER language, and, additionally, purchaser will indemnify LORRIC and hold LORRIC harmless from any liability or damage whatsoever arising out of the use of the product(s) in such a manner.

*DISCLAIMER: Please be aware that magnetic fields or residual magnetism may cause interference to the flowmeter which may result in damage if they are used near the installation site. The purchaser must determine the applicability of the product for its desired use and assumes all risks in connection therewith. LORRIC assumes no responsibility or liability for any omissions or errors in connection with the use of its products.
The alarm used to detect paddle damage or loss is intended to assist on-site operators to find out what is causing equipment abnormalities. Because there are a myriad of variables involved with on-site operation and magnetic fields that come from other equipment, the alarm function is liable to fail. Please do not take the alarm function as a single source for monitoring your flow system. Please contact LORRIC for advanced help.

Pipe model

Phase 1 (specs in black)：already available for purchase
Phase 2 (specs in red)：will be available for purchase by the end of January
Phase 3 (specs in blue)：will be available for purchase by the end of March

Pipe Size	Pipe Spec	Serial Number	Description
3/4"	JIS	FP-P020CUJV	3/4" UPVC T-connector,3/4" JIS Welding fitting,Viton oring + FP-W010CFV
		FP-P020CUJE	3/4" UPVC T-connector,3/4" JIS Welding fitting,EPDM oring + FP-W010CFE
	ANSI/ASTM	FP-P020CUAV	3/4" UPVC T-connector,3/4" ANSI/ASTM Welding fitting,Viton oring + FP-W010CFV
		FP-P020CUAE	3/4" UPVC T-connector,3/4" ANSI/ASTM Welding fitting,EPDM oring + FP-W010CFE
	DIN	FP-P020CUEV	3/4" UPVC T-connector,3/4" DIN Welding fitting,Viton oring + FP-W010CFV
		FP-P020CUEE	3/4" UPVC T-connector,3/4" DIN Welding fitting,EPDM oring + FP-W010CFE
	CNS	FP-P020CUTV	3/4" UPVC T-connector,3/4" CNS Welding fitting,Viton oring + FP-W010CFV
		FP-P020CUTE	3/4" UPVC T-connector,3/4" CNS Welding fitting,EPDM oring + FP-W010CFE
	GB	FP-P020CUNV	3/4" UPVC T-connector,3/4" GB Welding fitting,Viton oring + FP-W010CFV
		FP-P020CUNE	3/4" UPVC T-connector,3/4" GB Welding fitting,EPDM oring + FP-W010CFE
	BSPT Female Thread	FP-P020CUFV	3/4" UPVC T-connector,3/4" female thread fitting,Viton oring + FP-W010CFV
		FP-P020CUFE	3/4" UPVC T-connector,3/4" female thread fitting,EPDM oring + FP-W010CFE
	BSPT Male Thread	FP-P020CUMV	3/4" UPVC T-connector,3/4" male thread fitting,Viton oring + FP-W010CFV
		FP-P020CUME	3/4" UPVC T-connector,3/4" male thread fitting,EPDM oring + FP-W010CFE
	NPT Female Thread	FP-P020CURV	3/4" UPVC T-connector,3/4" NPT female thread fitting,Viton oring + FP-W010CFV
		FP-P020CURE	3/4" UPVC T-connector,3/4" NPT female thread fitting,EPDM oring + FP-W010CFE
	NPT Male Thread	FP-P020CUQV	3/4" UPVC T-connector,3/4" NPT male thread fitting,Viton oring + FP-W010CFV
		FP-P020CUQE	3/4" UPVC T-connector,3/4" NPT male thread fitting,EPDM oring + FP-W010CFE
1"	JIS	FP-P025CUJV	1" UUPVC T-connector,1" JIS Welding fitting,Viton oring + FP-W010CFV
		FP-P025CUJE	1" UPVC T-connector,1" JIS Welding fitting,EPDM oring + FP-W010CFE
	ANSI/ASTM	FP-P025CUAV	1" UPVC T-connector,1" ANSI/ASTM Welding fitting,Viton oring + FP-W010CFV
		FP-P025CUAE	1" UPVC T-connector,1" ANSI/ASTM Welding fitting,EPDM oring + FP-W010CFE
	DIN	FP-P025CUEV	1" UPVC T-connector,1" DIN Welding fitting,Viton oring + FP-W010CFV
		FP-P025CUEE	1" UPVC T-connector,1" DIN Welding fitting,EPDM oring + FP-W010CFE
	BSPT Female Thread	FP-P025CUFV	1" UPVC T-connector,1" female thread fitting,Viton oring + FP-W010CFV
		FP-P025CUFE	1" UPVC T-connector,1" female thread fitting,EPDM oring + FP-W010CFE
	BSPT Male Thread	FP-P025CUMV	1" UPVC T-connector,1" male thread fitting,Viton oring + FP-W010CFV
		FP-P025CUME	1" UPVC T-connector,1" male thread fitting,EPDM oring + FP-W010CFE
	NPT Female Thread	FP-P025CURV	1" UPVC T-connector,1" NPT female thread fitting,Viton oring + FP-W010CFV
		FP-P025CURE	1" UPVC T-connector,1" NPT female thread fitting,EPDM oring + FP-W010CFE
	NPT Male Thread	FP-P025CUQV	1" UPVC T-connector,1" NPT male thread fitting,Viton oring + FP-W010CFV
		FP-P025CUQE	1" UPVC T-connector,1" NPT male thread fitting,EPDM oring + FP-W010CFE
1-1/4"	JIS	FP-P032CUJV	1-1/4" UPVC T-connector,1-1/4" JIS Welding fitting,Viton oring + FP-W010CFV
		FP-P032CUJE	1-1/4" UPVC T-connector,1-1/4" JIS Welding fitting,EPDM oring + FP-W010CFE
	ANSI/ASTM	FP-P032CUAV	1-1/4" UPVC T-connector,1-1/4" ANSI/ASTM Welding fitting,Viton oring + FP-W010CFV
		FP-P032CUAE	1-1/4" UPVC T-connector,1-1/4" ANSI/ASTM Welding fitting,EPDM oring + FP-W010CFE
	DIN	FP-P032CUEV	1-1/4" UPVC T-connector,1-1/4" DIN Welding fitting,Viton oring + FP-W010CFV
		FP-P032CUEE	1-1/4" UPVC T-connector,1-1/4" DIN Welding fitting,EPDM oring + FP-W010CFE
	BSPT Female Thread	FP-P032CUFV	1-1/4" UPVC T-connector,1-1/4" female thread fitting,Viton oring + FP-W010CFV
		FP-P032CUFE	1-1/4" UPVC T-connector,1-1/4" female thread fitting,EPDM oring + FP-W010CFE
	BSPT Male Thread	FP-P032CUMV	1-1/4" UPVC T-connector,1-1/4" male thread fitting,Viton oring + FP-W010CFV
		FP-P032CUME	1-1/4" UPVC T-connector,1-1/4" male thread fitting,EPDM oring + FP-W010CFE
	NPT Female Thread	FP-P032CURV	1-1/4" UPVC T-connector,1-1/4" NPT female thread fitting,Viton oring + FP-W010CFV
		FP-P032CURE	1-1/4" UPVC T-connector,1-1/4" NPT female thread fitting,EPDM oring + FP-W010CFE
	NPT Male Thread	FP-P032CUQV	1-1/4" UPVC T-connector,1-1/4" NPT male thread fitting,Viton oring + FP-W010CFV
		FP-P032CUQE	1-1/4" UPVC T-connector,1-1/4" NPT male thread fitting,EPDM oring + FP-W010CFE

Pipe model

Pipe Size	Pipe Spec	Serial Number	Description
1-1/2"	JIS	FP-P040CUJV	1-1/2" UPVC T-connector,1-1/2" JIS Welding fitting,Viton oring + FP-W010CFV
		FP-P040CUJE	1-1/2" UPVC T-connector,1-1/2" JIS Welding fitting,EPDM oring + FP-W010CFE
	ANSI/ASTM	FP-P040CUAV	1-1/2" UPVC T-connector,1-1/2" ANSI/ASTM Welding fitting,Viton oring + FP-W010CFV
		FP-P040CUAE	1-1/2" UPVC T-connector,1-1/2" ANSI/ASTM Welding fitting,EPDM oring + FP-W010CFE
	DIN	FP-P040CUEV	1-1/2" UPVC T-connector,1-1/2" DIN Welding fitting,Viton oring + FP-W010CFV
		FP-P040CUEE	1-1/2" UPVC T-connector,1-1/2" DIN Welding fitting,EPDM oring + FP-W010CFE
	CNS	FP-P040CUTV	1-1/2" UPVC T-connector,1-1/2" CNS Welding fitting,Viton oring + FP-W010CFV
		FP-P040CUTE	1-1/2" UPVC T-connector,1-1/2" CNS Welding fitting,EPDM oring + FP-W010CFE
	BSPT Female Thread	FP-P040CUFV	1-1/2" UPVC T-connector,1-1/2" female thread fitting,Viton oring + FP-W010CFV
		FP-P040CUFE	1-1/2" UPVC T-connector,1-1/2" female thread fitting,EPDM oring + FP-W010CFE
	BSPT Male Thread	FP-P040CUMV	1-1/2" UPVC T-connector,1-1/2" male thread fitting,Viton oring + FP-W010CFV
		FP-P040CUME	1-1/2" UPVC T-connector,1-1/2" male thread fitting,EPDM oring + FP-W010CFE
	NPT Female Thread	FP-P040CURV	1-1/2" UPVC T-connector,1-1/2" NPT female thread fitting,Viton oring + FP-W010CFV
		FP-P040CURE	1-1/2" UPVC T-connector,1-1/2" NPT female thread fitting,EPDM oring + FP-W010CFE
	NPT Male Thread	FP-P040CUQV	1-1/2" UPVC T-connector,1-1/2" NPT male thread fitting,Viton oring + FP-W010CFV
		FP-P040CUQE	1-1/2" UPVC T-connector,1-1/2" NPT male thread fitting,EPDM oring + FP-W010CFE
2"	JIS	FP-P050CUJV	2" UPVC T-connector,2" JIS Welding fitting,Viton oring + FP-W010CFV
		FP-P050CUJE	2" UPVC T-connector,2" JIS Welding fitting,EPDM oring + FP-W010CFE
	ANSI/ASTM	FP-P050CUAV	2" UPVC T-connector,2" ANSI/ASTM Welding fitting,Viton oring + FP-W010CFV
		FP-P050CUAE	2" UPVC T-connector,2" ANSI/ASTM Welding fitting,EPDM oring + FP-W010CFE
	DIN	FP-P050CUEV	2" UPVC T-connector,2" DIN Welding fitting,Viton oring + FP-W010CFV
		FP-P050CUEE	2" UPVC T-connector,2" DIN Welding fitting,EPDM oring + FP-W010CFE
	CNS	FP-P050CUTV	2" UPVC T-connector,2" CNS Welding fitting,Viton oring + FP-W010CFV
		FP-P050CUTE	2" UPVC T-connector,2" CNS Welding fitting,EPDM oring + FP-W010CFE
	JIS Flange	FP-P050CFJP	2" UPVC JIS T-connector,Flange fitting + FP-W010CFV
	BSPT Female Thread	FP-P050CUFV	2" UPVC T-connector,2" female thread fitting,Viton oring + FP-W010CFV
		FP-P050CUFE	2" UPVC T-connector,2" female thread fitting,EPDM oring + FP-W010CFE
	BSPT Male Thread	FP-P050CUMV	2" UPVC T-connector,2" male thread fitting,Viton oring + FP-W010CFV
		FP-P050CUME	2" UPVC T-connector,2" male thread fitting,EPDM oring + FP-W010CFE
	NPT Female Thread	FP-P050CURV	2" UPVC T-connector,2" NPT female thread fitting,Viton oring + FP-W010CFV
		FP-P050CURE	2" UPVC T-connector,2" NPT female thread fitting,EPDM oring + FP-W010CFE
	NPT Male Thread	FP-P050CUQV	2" UPVC T-connector,2" NPT male thread fitting,Viton oring + FP-W010CFV
		FP-P050CUQE	2" UPVC T-connector,2" NPT male thread fitting,EPDM oring + FP-W010CFE
2-1/2"	Spigot ANSI/ASTM	FP-P065CSAV	2-1/2" UPVC ANSI/ASTM T-connector,Spigot fitting + FP-W010CFV (Viton oring)
		FP-P065CSAE	2-1/2" UPVC ANSI/ASTM T-connector,Spigot fitting + FP-W010CFE (EPDM oring)
	Spigot GB	FP-P065CSNV	2-1/2" UPVC GB T-connector,Spigot fitting + FP-W010CFV (Viton oring)
		FP-P065CSNE	2-1/2" UPVC GB T-connector,Spigot fitting + FP-W010CFE (EPDM oring)
	Spigot JIS	FP-P065CSJV	2-1/2" UPVC JIS T-connector,Spigot fitting + FP-W010CFV (Viton oring)
		FP-P065CSJE	2-1/2" UPVC JIS T-connector,Spigot fitting + FP-W010CFE (EPDM oring)
	Spigot DIN	FP-P065CSEV	2-1/2" UPVC DIN T-connector,Spigot fitting + FP-W010CFV (Viton oring)
		FP-P065CSEE	2-1/2" UPVC DIN T-connector,Spigot fitting + FP-W010CFE (EPDM oring)
	Spigot CNS	FP-P065CSTV	2-1/2" UPVC CNS T-connector,Spigot fitting + FP-W010CFV (Viton oring)
		FP-P065CSTE	2-1/2" UPVC CNS T-connector,Spigot fitting + FP-W010CFE (EPDM oring)

Gas Flowmeter

LORRIC
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LORRIC

F201A- New 192mm middle size pipe size1/2"-3/4" F201A series

Product Features · Use

- 4 design innovations to improve usability:

New body design: Decreases the vibration when working which stabilises flow distribution./ New indicator design: Easily adjustable and positionable./ Thickened threads for caps: Caps are easy to be locked even under bad concentricity./ Models with and without guide rods are able to share the same adaptors.

- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.

Standard Specs

- Model: F201APSU, F201AH PSU
- Adaptor Size: 1/2", 3/4"
- Applicable Fluid: Gas
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
- Working Pressure: 5.0kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

Body - PSU
Float - Stainless 316, Hastelloy C, PVC
Guide Rod - Stainless 316, Ti, Hastelloy C
Guide Rod Bottom - PP
Adaptor - Welding Type: UPVC
Male, Female Thread: UPVC, PP
Butt-fusion Adaptor: PP
Union Nuts - UPVC
O-ring - EPDM, VITON

- Adaptor Material

Welding Type, Male Thread, Female Thread, Butt-fusion Adaptor

※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range ※1※2 (NLPM)
F201A-30NLPM	3.0-30 / P
F201A-50NLPM	5.0-50 / P
F201A-100NLPM	10-100 / P
F201A-350NLPM	35-350 / S, H
F201A-500NLPM	50-500 / S, H
F201A-1000NLPM	100-1000 / S, H

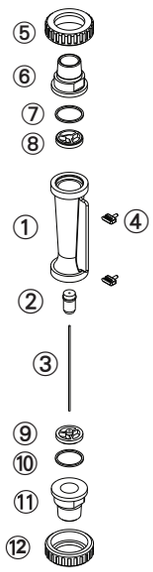
※ 1.Gas flow meters are calibrate for normal condition. (0°C , 1 atm)
※ 2." / "float material, S- Stainless 316, P- PVC, H- Hastelloy C.

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials		
	～ 50℃	～ 60℃	～ 100℃
Welding Type	UPVC	-	-
Male / Female Thread	UPVC	PP	-
Butt-fusion Adaptor	-	PP	-

※ When maximum working temperature is over 50°C, the material for guide rod bottom and union nuts have to be PSU and aluminium.
※ If the maximum working temperature requirement of the adapter is over 60°C, please contact LORRIC directly.

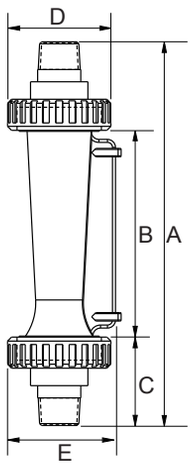
Parts Material



No.	Series	Material (Main material)※			
		1	2	3	4
1	Body	PC	PSU	PSU	PSU
2	Float	S316	S316	Hastelloy C	PVC
3	Guide Rod	S316	S316	Ti	Hastelloy C
4	Pointer	PP	PP	PP	PP
5,12	Union Nuts	UPVC	UPVC	UPVC	UPVC
6,11	Adaptor	UPVC	UPVC	UPVC	UPVC
7,10	O-ring	EPDM	VITON	VITON	VITON
8,9	Guide Rod Bottom	PP	PP	PP	PP

※ Material for different parts is optional for each flowmeter.

Parts Size



Adaptor Spec	A	B	C	D	E
3/4"Male Thread	192	102	45	51	56
3/4"CNS	194	102	46	51	56
3/4"ASTM	195	102	46.5	51	56
3/4"JIS	194	102	46	51	56
3/4"DIN	195	102	46.5	51	56
1/2"Male Thread	182	102	40	51	56
1/2"Female Thread	192	102	45	51	56
1/2" PP Female Thread	192	102	45	51	56
1/2"CNS	184	102	41	51	56
1/2"ASTM	184	102	41	51	56
1/2"JIS	184	102	41	51	56
1/2"DIN	187	102	42.5	51	56
PP OD20 ID15.3	192	102	41	51	56.5

Unit: mm

Specification inquiry (F201A)

※ Contact us with below information.

- Fluid - ☐Gas ☐Other_____
- Specific gravity - ☐Standard-1.0 ☐Other_____
- Pressure - ☐Standard-5.0kg/cm² ☐Other___kg/cm²
- Temperature - ☐Normal temperature ☐Other___˚C
- Scale Range - _____ L/min ~ _____ L/min
- Adaptor Size - ☐3/4" JIS ☐Other_____
- Adaptor Material - ☐Welding Type ☐Male Thread ☐Female Thread ☐Butt-fusion Adaptor ☐Other_____
- Material
  - ☐ 1 Body PC ☐ 2 Body PSU
  - ☐ 3 Body PSU Hastelloy C FloaT, Ti Guide Rod
  - ☐ 4 Body PSU Hastelloy C Float & Guide Rod
- Other

  Specs besides above listed information _____

LORRIC

F301A- New 270mm large size pipe size 3/4"-1" F301A series

Product Features · Use

- 4 design innovations to improve usability:

New body design: Decreases the vibration when working which stabilises flow distribution./ New indicator design: Easily adjustable and positionable./ Thickened threads for caps: Caps are easy to be locked even under bad concentricity./ Models with and without guide rods are able to share the same adaptors.

- Patented dual-indicator design for easy and clear flow range management.
- Laser engraved degree scales provide better readability and longer life.
- Available in customizable units, temperature, and molecular weight.

Standard Specs

- Model: F301A PSU, F301AH PSU
- Adaptor Size: 3/4", 1"
- Applicable Fluid: Gas
- Flow direction: From the bottom up
- Engraved degree scales: Laser engraved degree scales
- Fluid Temperature: 50˚C (Standard: UPVC adaptor)
  60˚C (PP adaptor)
- Working Pressure: 5.0 kg/cm²
- Full Scale Accuracy: ±5% F.S.
- Product Material

Body - PSU
Float - Stainless 316, Hastelloy C, PVC
Guide Rod - Stainless 316, Hastelloy C
Guide Rod Bottom - PP
Adaptor - Welding Type: UPVC
Male, Female Thread: UPVC, PP
Butt-fusion Adaptor: PP
Union Nuts - UPVC, Aluminum
O-ring - EPDM, VITON

- Adaptor Material

Welding Type, Male Thread, Female Thread, Butt-fusion Adaptor

※ BSPT is standard thread type. NPT is available for custom order.

Scale Range

Product Code	Scale Range ※1 ※2 (NLPM)
F301A - 400NLPM	40-400 / P
F301A - 500NLPM	50-500 / P
F301A - 700NLPM	70-700 / P
F301A - 1000NLPM	100-1000 / S, H

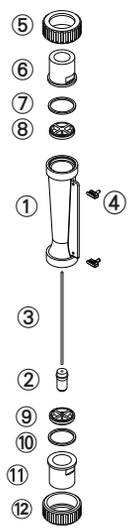
※ 1.Gas flow meters are calibrate for normal condition. (0°C , 1 atm)
※ 2." / "float material, S- Stainless 316, P- PVC, H- Hastelloy C.

Maximum working temperature for different adaptor materials

Adaptor Types	Maximum working temperature materials		
	～ 50℃	～ 60℃	～ 100℃
Welding Type	UPVC	-	-
Male / Female Thread	UPVC	PP	-
Butt-fusion Adaptor	-	PP	-

※ When maximum working temperature is over 50°C, the material for guide rod bottom and union nuts have to be PSU and aluminium.
※ If the maximum working temperature requirement of the adapter is over 60°C, please contact LORRIC directly.

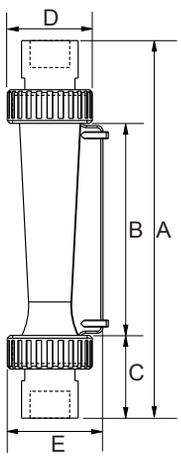
Parts Material



No.	Series	Material (Main material)※			
		1	2	3	4
1	Body	PSU	PSU	PSU	PSU
2	Float	S316	S316	Hastelloy C	PVC
3	Guide Rod	S316	S316	Ti	Hastelloy C
4	Pointer	PP	PP	PP	PP
5,12	Union Nuts	UPVC	UPVC	UPVC	UPVC
6,11	Adaptor	UPVC	UPVC	UPVC	UPVC
7,10	O-ring	EPDM	VITON	VITON	VITON
8,9	Guide Rod Bottom	PP	PP	PP	PP

※ Material for different parts is optional for each flowmeter.

Parts Size



Adaptor Spec	A	B	C	D	E
1"Male Thread	270	153	58.5	61	69
1"Female Thread	270	153	58.5	61	69
1"CNS	257	153	52	61	69
1"ASTM	257	153	52	61	69
1"JIS	255	153	51	61	69
3/4"Male Thread	256	153	51.5	61	69
3/4"Female Thread	272	153	59.5	61	69
3/4"CNS	260	153	53.5	61	69
3/4"ASTM	254	153	50.5	61	69
3/4"JIS	260	153	53.5	61	69
3/4"DIN	254	153	53.5	61	69
3/4"DIN Thick pipe wall	254	153	51.5	61	69
3/4"JIS MIN	254	153	49.5	61	69
1/2"ASTM	252	153	49.5	61	69
1/2"JIS	250	153	48.5	61	69
1/2"DIN	250	153	48.5	61	69
PP OD33 ID25.2	254	153	50.5	61	69

Unit: mm

Specification inquiry (F301A)

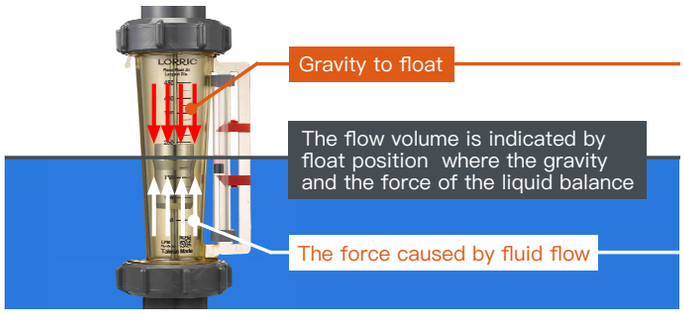
※ Contact us with below information.

- Fluid - ☐Gas ☐Other_____
- Specific gravity - ☐Standard-1.0 ☐Other_____
- Pressure - ☐Standard-5.0kg/cm² ☐Other___kg/cm²
- Temperature - ☐Normal temperature ☐Other___˚C
- Scale Range - _____ L/min ~ _____ L/min
- Adaptor Size - ☐1" JIS ☐Other_____
- Adaptor Material - ☐Welding Type ☐Male Thread ☐Female Thread ☐Butt-fusion Adaptor ☐Other_____
- Material
  - ☐ 1 Body PC ☐ 2 Body PSU
  - ☐ 3 Body PSU Hastelloy C FloaT, Ti Guide Rod
  - ☐ 4 Body PSU Hastelloy C Float & Guide Rod Adaptor PSU (for high working temperature)
  - ☐ 5 Other Specs besides above listed information _____

Why LORRIC

LORRIC®
paranoid about performance

Introduction of Variable Area Flow Meters

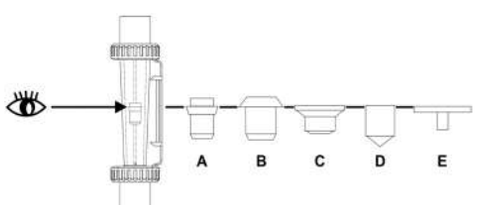


The Operation Principle

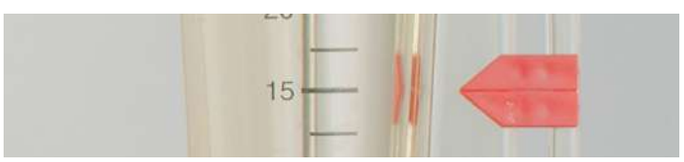
1. The operating principle behind the variable area flowmeters are as below:
- The variation of cross-sectional area by fluid flow.
- A balance struck between buoyancy of float, pulling and thrust of liquid, and gravity.
2. The variable area flow meters should be installed vertically.
3. Because of buoyancy, the force of the liquid and the float material should be considered.
4. The machining quality and float design will affect balance position.
5. There is an accuracy difference between the variable area flow meter with and without the guide rod. The model with a guide rod is more accurate because the guide rod makes the float always stay in the axis of the flow meter. In contrast, the float without the guide rod will shift off-axis which could impact flow rate accuracy. Therefore, the accuracy in-part is dependent on the guide rod.
6. Low price, no brand flow meters or product knock-offs have crooked guide rod problems because of bad design and machining. It results in inaccurate flow rates.
7. The body of LORRIC variable area flow meters are made by injection molding with polymer which features high accuracy and low tolerance. In stark contrast to glass material.
8. Each of LORRIC's variable area flow meters is made through delicate machining with careful adjustments to detail. Our variable area flow meter is also customizable for certain specs depending on clients needs.
9. If there is no obvious damage to the flow meter, any abnormality, such as drastic shifting of the float or unstable flow rates could be caused by piping issues.

How to Receive Flow Rate Data by Reading the Float

The image on the right illustrates several different types of float; please refer to the explanation below for the correct manner of reading flowrate.
1. The arrow in the illustration directs to the exact point through which to read the flowrate; the eye needs to be parallel to that point.
2. According to the above illustration, identify the type of float that you purchased, and then refer to the bottom table for the correct reading point.
3. The flowrate reading table according to float type:



Float	Way of reading
A	Read Float at the Largest Diameter
B	
C	Read Float at the Top
D	
E	



Patented Dual-indicator Helps to Easily Define Flow Rate Range

As a result of customers feedback, we improved the way to read the flow rate through a patented dual-indicator system. In contrast, to the more common "sticker" system which could easily peel off over time. Simply adjusting the indicators could help users clearly observe and define the flow range appropriate in their case. This small adjustment does not affect the convenience and accuracy of the flowmeter.

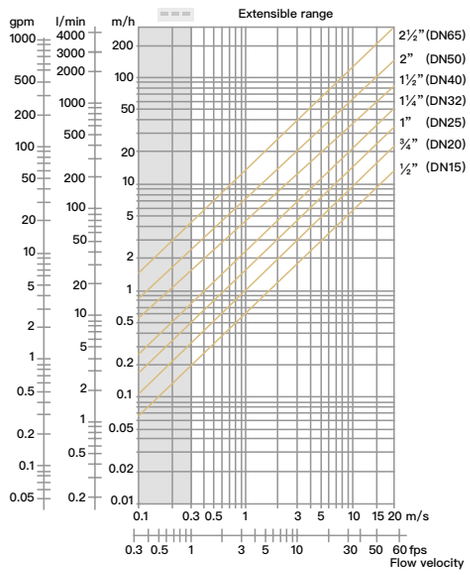
Some Points You Need To Know About Variable Area Flow Meters

- Each batch of floats could potentially weigh differently. We calibrate every batch of flowmeters to reach as high accuracy as possible.
- The float and flow meter body should always be replaced at the same time to maintain accuracy.
- Every type of fluid has its own characteristics LORRIC is able to customize every flow meter according to the components of the fluid the client is using.

Relationship between flow rate, flow speed, and pipe diameter.

In order to choose the best flow meter, you have to evaluate flow rate, flow velocity, and pipe diameter data. But with only ⅔ of the necessary data you can still figure out the last ⅓ using the chart below. For example, if you know flow rate and pipe size, the chart can guide you to calculate the flow velocity.

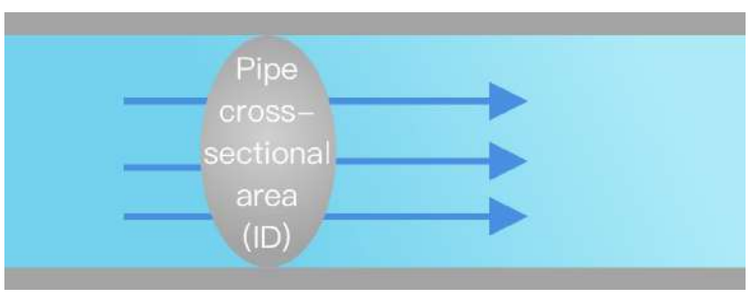
However, it is not uncommon for most users to not have all the data points necessary. LORRIC's engineering team created this article to help users obtain all the right data points. Through formulas and explanations provided, users can learn how to calculate this data. As a result, users can use the relevant data to select the best flow meter.



LPM	Pipe size	1/2" pipe	3/4'' pipe	1" pipe	1-1/4" pipe	1-1/2" pipe	2" pipe	2-1/2" pipe
	Caliber (mm)	16	20	25	31	40	51	68
flow velocity (m/s)	0.1	1.2	1.9	2.9	4.5	7.5	12.3	21.8
	0.15	1.8	2.8	4.4	6.8	11.3	18.4	32.7
	0.2	2.4	3.8	5.9	9.1	15.1	24.5	43.6
	0.3	3.6	5.7	8.8	13.6	22.6	36.8	65.4
	0.5	6.0	9.4	14.7	22.6	37.7	61.3	109.0
	1	12.1	18.8	29.5	45.3	75.4	122.6	217.9
	2	24.1	37.7	58.9	90.6	150.8	245.1	435.8
	3	36.2	56.5	88.4	135.9	226.2	367.7	653.7
	4	48.3	75.4	117.8	181.1	301.6	490.3	871.6
	5	60.3	94.2	147.3	226.4	377.0	612.8	1089.5
	6	72.4	113.1	176.7	271.7	452.4	735.4	1307.4
	7	84.4	131.9	206.2	317.0	527.8	858.0	1525.3
	8	96.5	150.8	235.6	362.3	603.2	980.6	1743.2
	9	108.6	169.6	265.1	407.6	678.6	1103.1	1961.1
	10	120.6	188.5	294.5	452.9	754.0	1225.7	2179.0
	15	181.0	282.7	441.8	679.3	1131.0	1838.5	3268.5
	20	241.3	377.0	589.0	905.7	1508.0	2451.4	4358.0

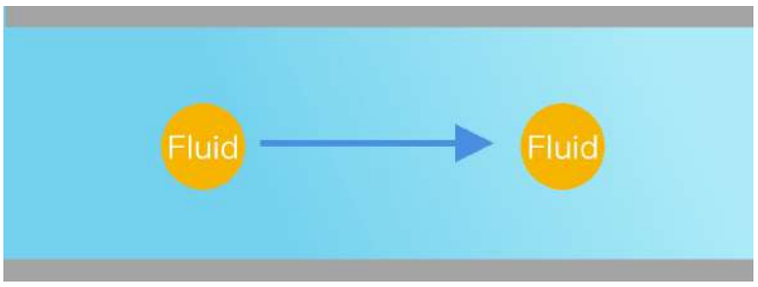
GPM	Pipe size	1/2" pipe	3/4'' pipe	1" pipe	1-1/4" pipe	1-1/2" pipe	2" pipe	2-1/2" pipe
	Caliber (inch)	0.622	0.824	1.049	1.38	1.61	2.067	2.677
flow velocity (ft/s)	0.3	0.28	0.50	0.81	1.40	1.90	3.14	5.26
	0.5	0.47	0.83	1.35	2.33	3.17	5.23	8.77
	0.7	0.66	1.16	1.89	3.26	4.44	7.32	12.28
	1	0.95	1.66	2.69	4.66	6.35	10.46	17.54
	2	1.89	3.32	5.39	9.32	12.69	20.92	35.09
	3	2.84	4.99	8.08	13.99	19.04	31.38	52.63
	5	4.74	8.31	13.47	23.31	31.73	52.30	87.72
	7	6.63	11.63	18.86	32.63	44.42	73.21	122.80
	10	9.47	16.62	26.94	46.62	63.45	104.59	175.43
	13	12.31	21.61	35.02	60.61	82.49	135.97	228.06
	17	16.10	28.26	45.79	79.25	107.87	177.80	298.23
	20	18.94	33.24	53.88	93.24	126.91	209.18	350.86
	25	23.68	41.55	67.34	116.55	158.64	261.48	438.58
	30	28.41	49.86	80.81	139.86	190.36	313.77	526.29
	45	42.62	74.80	121.22	209.79	285.55	470.66	789.44
	60	56.83	99.73	161.63	279.72	380.73	627.54	1052.59
	20	241.3	377.0	589.0	905.7	1508.0	2451.4	4358.0

With the below formula, we can understand the relationship between flow rate, flow velocity, and pipe diameter.
Flow rate = Pipe cross-sectional area X Flow speed
Pipe cross-sectional area = ID² / 4 *π (ID stands for pipe inner diameter, π stands for Pi which is 3.14)



The unit of flow rate：Taiwan、Japan、Other countries：l/min (LPM)：North America：gal/min (GPM)

Speaking of flow velocity, flow velocity is the speed of fluid flow, which is the distance the fluid moves in a unit time duration.



Below is an example to explain the formula to calculate the flow rate.
How much is the flow rate when the fluid flows in a 2” pipe within 1 m/s flow speed?
The inner diameter of a 2” pipe is 51mm. Flow speed is 1 m/s. The below formula shows the way to obtain flow rate with these 2 data points.
0.051^2 / 4*3.1415*1= 0.0020427604 m^3/s ($1m^3$=1000L, LPM stands for liters per minute.)
= 0.0020427604*1000*60 L/min(LPM)
= 122.565624 L/min(LPM)

Pay attention to the following matters

1. Consistent Flow: Flow rate should be consistent throughout the pipe as long as there are no leaks or forks. Therefore, the flow meter should be installed where there is a stable flow stream locations.
2. At any given flow rate, flow velocity is inversely proportional to the t cross sectional area of the pipe. Smaller pipes will lead to higher flow speeds; larger pipes, will lead to slower flow speeds. Therefore, we do not suggest you use a small flow meter on a large pipe. It will be a waste of energy and the flow speed will be too fast to measure the flow rate.
3. Even for the same pipe size, the inner diameter will be different between US and Japan standard pipe. DN is defined as the outer diameter of a standard pipe. ID could be estimated as the inner diameter of a standard pipe.
4. If necessary, make any metric or imperial conversions when calculating. For example, 1000ml= 1l, 1mm= 0.001m.

Relationship between flowmeter, measuring range, and linearity

Turndown Ratio: The ratio of maximum measure capacity to minimum measure capacity.

Below is the measuring range of various flowmeters:
Variable area flowmeter (Rotameter): 0.05~3.5 m/s
Other brand paddle wheel flowmeter: 0.3~10 m/s
LORRIC AxleSense paddle wheel flowmeter: 0.15~10 m/s
Ultrasonic flowmeter: 0.1~20 m/s

Each flow measuring principle has its own physical limitation, which leads to different measurement ranges. Thus, users are recommended to select a suitable flowmeter based on their required measuring range and environment. Under a wider measuring range 0.3 ~ 10 m/s, the best linearity of all paddle wheel flow meters in the market is 0.5% FS (Full-scale error). If narrower measuring range is acceptable, the user can have better linearity in a smaller measuring range.

If users need higher precision in a smaller measuring range LORRIC recommends asking a system engineer for calibration services to reach a higher level of accuracy.

How to choose an installation location of the paddle wheel flowmeter?

Factors that could affect accurate flow meter measurement, but not limited to impurities, pressure, water volume and bubbles. To avoid this, Lorric recommends to carefully choose a suitable installation location. Please see below for a simple guideline on how to correctly install a flowmeter either vertically or horizontally. Through Lorric's decades of on-site experience, we will provide recommendations to increase the accuracy of your flowmeter.

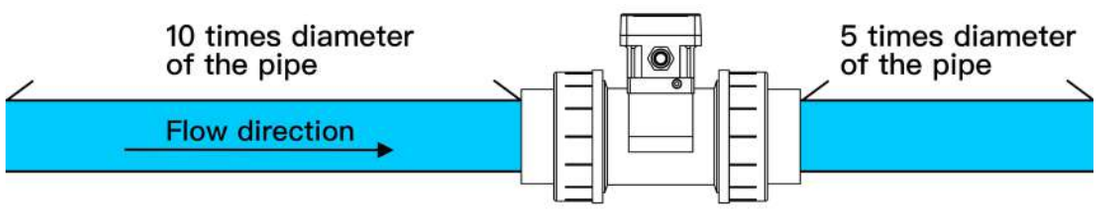
Stable flow field makes best accuracy of flow measurement.

The initial flow will be a mixture of dual flow directions which inevitably leads to unstable flow speeds. At this point, measuring flowrate is unpredictable and difficult. Needless to say, inaccurate. However, accurate flow measurement is attainable with a fully developed and stabilized flow.

Tips for installing a paddlewheel flowmeter correctly.

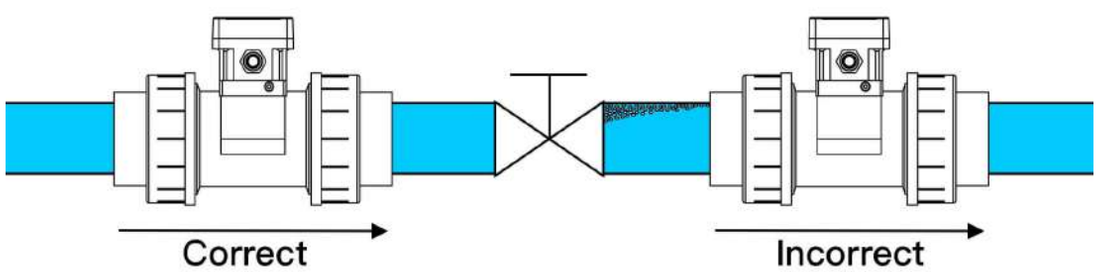
1. There should be at least 10D (10x the inside diameter of the pipe) of straight pipe in front of the flowmeter and 5D of straight pipe behind the flowmeter to stabilize flow.

During flow movement, where the liquid is coming from means the front and where it's moving to means the back. Generally, it is recommended that the flowmeter be installed at a position 10D (10x inside diameter of the pipe) at the front and 5D at the back (as shown in the figure below). If the inside of the pipe diameter is unknown, the outside of the diameter can be used.



2. Install the paddlewheel flowmeter before the valve.

The flow meter should be installed upstream of valve, so the fluid will fully develop. This recommendation is also applicable to other piping components that may affect the flow field.



3. Filters Installed Before and After the Flow Meter

For longer service life and better measurement accuracy for the paddlewheel flow meter, we suggest setting filters or related technology before or after the flowmeter. The filter installed before the flow meter can filter impurities or foreign objects from sticking on the blades that make it unable to rotate. The filter installed after the flowmeter can prevent downstream equipment (ex: pump) from being damaged by any falling parts. Lorric's paddlewheel flow meter equipped with patented axlesense technology, can detect paddle disappearance by displaying a warning signal (flashing bright red light) on the operational screen.

LORRIC paddle wheel flow meter equipped with the patented axlesense design, when paddle disappears, it can detect give the corresponding warning, so the better field management can be realized.

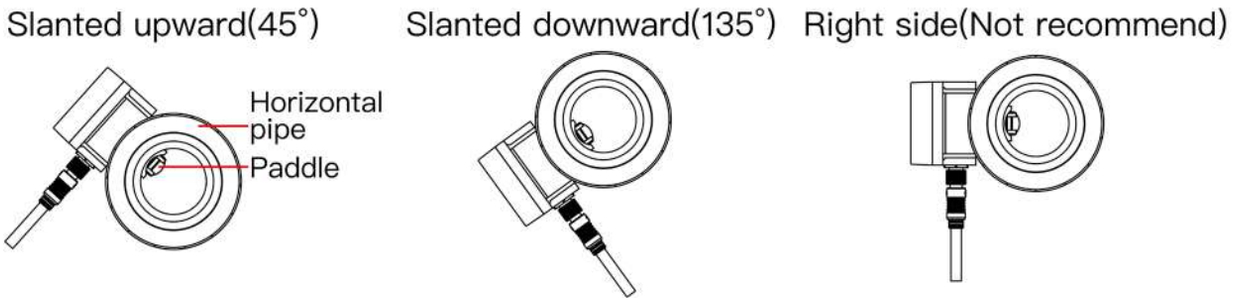
*DISCLAIMER: Please be aware that magnetic fields or residual magnetism may cause interference to the flowmeter which may result in damage if they are used near the installation site. The purchaser must determine the applicability of the product for its desired use and assumes all risks in connection therewith. LORRIC assumes no responsibility or liability for any omissions or errors in connection with the use of its products.

The alarm used to detect paddle damage or loss is intended to assist on-site operators to find out what is causing equipment abnormalities. Because there are a myriad of variables involved with on-site operation and magnetic fields that come from other equipment, the alarm function is liable to fail. Please do not take the alarm function as a single source for monitoring your flow system. Please contact LORRIC for advanced help.

Please note: If the flow field has high levels of instability, a straight pipe with 20D (20x the inside of diameter of the pipe) may be required, or a rectifier may be installed in the pipe. This will give the fluid more time to fully develop.

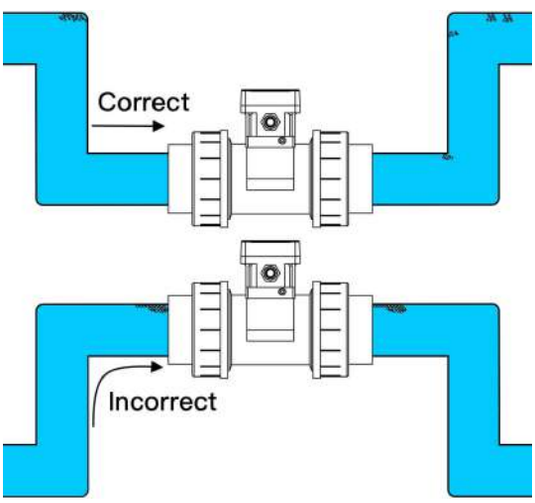
4. Install paddle wheel flowmeter at the pipe which is inclined with horizontal pipe for 45°or 135°.

If the paddlewheel flowmeter is installed on top of the high place of the pipeline where air bubbles might form. The air bubbles could get stuck between the paddles which makes it difficult to measure. Also, if the flowmeter is installed right below the pipeline impurities and precipitation could get stuck between the paddles. This could make it difficult to rotate the paddles. In addition, installing at the right side of the pipeline is not recommended. It may cause wear-and-tear caused by high speeds to the ceramic part of the paddle. We highly recommend installing the paddle wheel flowmeter inclined at 45°or 135°on a horizontal pipe. It is the ideal location for accurate measurement.



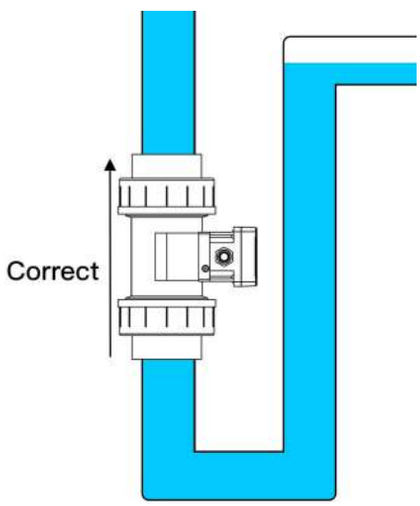
5. Install paddle wheel flowmeter at the location where the pipe is filled with liquid. The most recommended location is the lower place of concave pipeline.

(1) Horizontal pipe: As you can see the image below, air bubbles stay on the top of higher place of pipeline. However, if with not enough pressure, water stage become lower, and the pipe is not easy to be filled with liquid. However, at this time, if the installation location is at the lower place of concave pipeline which is filled with liquid for sure, the measurement will works as expected definitely.



(2) Vertical pipe: LORRIC recommend to install paddle wheel flowmeter on the vertical pipe with liquid flowing to upstream.

If the fluid flows from top to bottom in a pipe, the fluid will flow in a free falling pattern, leads to a noncontinuous vertical flow. In this position the flow is not stable and flow volume measured is not accurate. On the contrary, if the fluid flows from bottom to top in a pipe. With the help of gravity, the flow rate will remain relatively stable. Therefore, the measurement is more accurate.



LORRIC
United Benefit Corp.

8F., No.3, Lane 83, Sec. 1, Guangfu Rd.,
Sanchong Dist. New Taipei City
TEL：+886-2-8511-2135
FAX：+886-2-8511-2097
E-mail：sales@lorric.com
www.lorric.com

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