Compact Design, Small Capacity Fine Fog Nozzles with Spray Control Adaptor

CBIM

Features

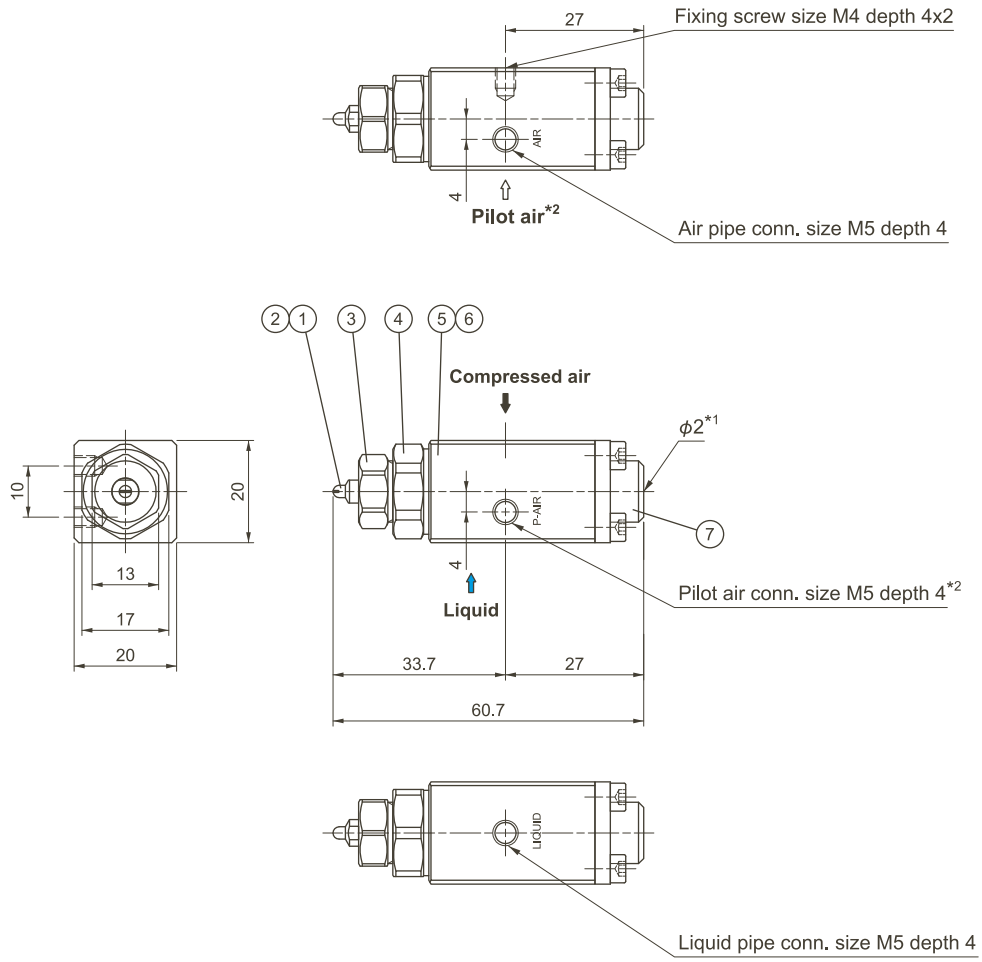
■Compact design, fine fog spray nozzles with spray-control adaptor, which can regulate spray ON/OFF with a built-in piston.

■Available in liquid pressure or liquid siphon feed type, two spray pattern types (flat spray or full cone spray)—14 varieties in total. Wide selection.

■Capable of spraying smallest flow rate among all of our pneumatic spray nozzles.

Structure & Material

■Mass: 125 g



*1) Hole ϕ2 is for air relief.
*2) No pilot air for CSN-type adaptor.

■Components and materials

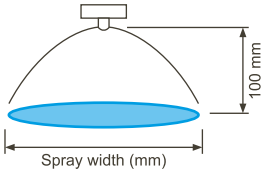
No.	Components	Standard materials
①	Spray tip	S303
②	Core	S303
③	Cap	S303
④	Connector	S303
⑤	Adaptor	S303
⑥	Packing	FKM
⑦	Spring cap	S303

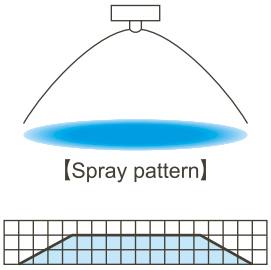
CBIMV (Flat Spray)

Features

- Pneumatic spray nozzle producing fine atomization with a mean droplet diameter of 100 µm or less.*1
- Flat spray pattern.
- Features large turn-down ratio under liquid pressures of 0.1–0.3 MPa.
- Produces two different spray distributions: even spray distribution across the entire spray area (when spraying at a low air-water ratio), or a mountain-shaped distribution having gradually tapered edges (at a high air-water ratio).

*1) Droplet diameter measured by laser Doppler method





Spray angle code *2	Air consumption code	Air pressure (MPa)	Spray capacity (ℓ/hr) & Air consumption (ℓ/min, Normal) Liquid pressure (MPa) 0.1 Liquid	0.1 Air	0.15 Liquid	0.15 Air	0.2 Liquid	0.2 Air	0.25 Liquid	0.25 Air	0.3 Liquid	0.3 Air	Spray width*3 (mm) Liquid press. (MPa) 0.1	0.15	0.25	Mean droplet dia. (µm) Laser Doppler method	Free passage diameter (mm) Spray orifice	Adaptor Liquid	Adaptor Air
110	01	0.2	1.3	6.8	2.8	5.3	—	—	—	—	—	—	280	330	—	20–100	0.2	0.6	0.5
		0.3	0.5	10	1.1	9.5	2.3	8.4	4.0	6.5	—	—	240	250	380				
		0.4	—	—	0.6	12.4	1.1	12	2.2	11	3.3	9.6	—	220	300				
	02	0.2	2.2	14	5.3	11	—	—	—	—	—	—	280	340	—	20–100	0.2	0.9	0.7
		0.3	1.0	20	2.5	19	4.6	17	8.3	12	14.3	7	220	250	420				
		0.4	—	—	1.4	25	2.3	24	4.0	23	6.3	20	—	230	340				
80	005	0.2	0.7	3.4	1.5	2.6	—	—	—	—	—	—	230	260	—	20–100	0.1	0.4	0.3
		0.3	0.25	5.0	0.6	4.7	1.25	4.1	2.0	3.2	—	—	170	200	280				
		0.4	—	—	0.3	6.3	0.55	6.0	1.1	5.5	1.65	4.8	—	160	250				
	01	0.2	1.3	6.8	2.8	5.3	—	—	—	—	—	—	220	250	—	20–100	0.2	0.6	0.5
		0.3	0.5	10	1.1	9.5	2.3	8.4	4.0	6.5	—	—	140	200	250				
		0.4	—	—	0.6	12.4	1.1	12	2.2	11	3.3	9.6	—	140	220				
	02	0.2	2.2	14	5.3	11	—	—	—	—	—	—	200	260	—	20–100	0.3	0.9	0.7
		0.3	1.0	20	2.5	19	4.6	17	8.3	12	14.3	7	170	210	300				
		0.4	—	—	1.4	25	2.3	24	4.0	23	6.3	20	—	200	250				
45	005	0.2	0.7	3.4	1.5	2.6	—	—	—	—	—	—	120	150	—	20–100	0.2	0.4	0.3
		0.3	0.25	5.0	0.6	4.7	1.25	4.1	2.0	3.2	—	—	80	110	150				
		0.4	—	—	0.3	6.3	0.55	6.0	1.1	5.5	1.65	4.8	—	80	140				
	01	0.2	1.3	6.8	2.8	5.3	—	—	—	—	—	—	120	150	—	20–100	0.3	0.6	0.5
		0.3	0.5	10	1.1	9.5	2.3	8.4	4.0	6.5	—	—	80	110	150				
		0.4	—	—	0.6	12.4	1.1	12	2.2	11	3.3	9.6	—	80	140				
	02	0.2	2.2	14	5.3	11	—	—	—	—	—	—	100	130	—	20–100	0.4	0.9	0.7
		0.3	1.0	20	2.5	19	4.6	17	8.3	12	14.3	7	80	110	150				
		0.4	—	—	1.4	25	2.3	24	4.0	23	6.3	20	—	100	130				

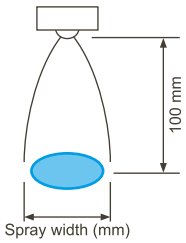
*2) Spray angle measured at compressed air pressure of 0.3 MPa and liquid pressure of 0.1 MPa. *3) Measured at 100 mm from nozzle.

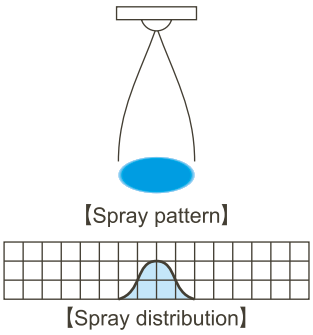
CBIMJ (Full Cone Spray)

Features

- Pneumatic spray nozzle producing fine atomization with a mean droplet diameter of 100 µm or less.*1
- Full cone spray pattern.
- Features large turn-down ratio under liquid pressures of 0.1–0.3 MPa.

*1) Droplet diameter measured by laser Doppler method





Spray angle code *2	Air consumption code	Air pressure (MPa)	Spray capacity (ℓ/hr) & Air consumption (ℓ/min, Normal) Liquid pressure (MPa) 0.1 Liquid	0.1 Air	0.15 Liquid	0.15 Air	0.2 Liquid	0.2 Air	0.25 Liquid	0.25 Air	0.3 Liquid	0.3 Air	Spray width*3 (mm) Liquid press. (MPa) 0.1	0.15	0.25	Mean droplet dia. (µm) Laser Doppler method	Free passage diameter (mm) Spray orifice	Adaptor Liquid	Adaptor Air
20	005	0.2	0.7	3.4	1.5	2.6	—	—	—	—	—	—	25	20	—	20–100	0.7	0.4	0.3
		0.3	0.25	5.0	0.6	4.7	1.25	4.1	2.0	3.2	—	—	30	30	25				
		0.4	—	—	0.3	6.3	0.55	6.0	1.1	5.5	1.65	4.8	—	30	30				
	01	0.2	1.3	6.8	2.8	5.3	—	—	—	—	—	—	25	20	—	20–100	0.8	0.6	0.5
		0.3	0.5	10	1.1	9.5	2.3	8.4	4.0	6.5	—	—	30	30	25				
		0.4	—	—	0.6	12.4	1.1	12	2.2	11	3.3	9.6	—	30	30				
	02	0.2	2.2	14	5.3	11	—	—	—	—	—	—	25	20	—	20–100	1.1	0.9	0.7
		0.3	1.0	20	2.5	19	4.6	17	8.3	12	14.3	7	30	30	25				
		0.4	—	—	1.4	25	2.3	24	4.0	23	6.3	20	—	30	30				

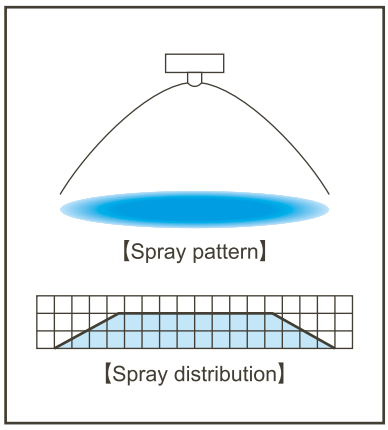
*2) Spray angle measured at compressed air pressure of 0.3 MPa and liquid pressure of 0.1 MPa. *3) Measured at 100 mm from nozzle.

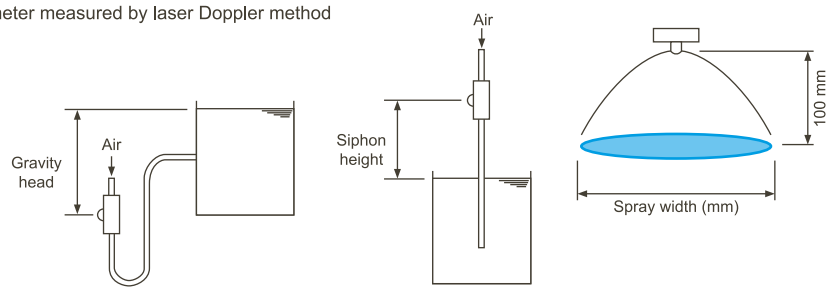
CBIMV-S (Flat Spray)

Features

- Pneumatic spray nozzle producing fine atomization with a mean droplet diameter of 30 μm or less.*1
- Flat spray pattern.
- Liquid siphon feed type (liquid pressure device is not required).
- Even spray distribution across the entire spray area.

*1) Droplet diameter measured by laser Doppler method





Spray angle code *2	Air consumption code	Air pressure (MPa)	Air consumption (ℓ/min, Normal)	Spray capacity (ℓ/hr) Gravity head (mm) +300	+100	Siphon height (mm) -100	-300	-500	Spray width*3 (mm)	Mean droplet diameter (μm) Laser Doppler method	Free passage dia. (mm) Spray orifice	Adaptor Liquid	Adaptor Air
80	005S	0.2	3.75	0.4	0.38	0.36	0.34	0.32	160	20–30	0.2	0.4	0.3
		0.3	5.0	0.29	0.27	0.25	0.23	0.21	165				
		0.4	6.25	0.16	0.15	0.13	0.11	0.1	170				
	01S	0.2	7.5	0.74	0.68	0.65	0.61	0.57	160	20–30	0.2	0.6	0.5
		0.3	10	0.55	0.52	0.5	0.47	0.43	165				
		0.4	12.5	0.38	0.34	0.3	0.27	0.25	170				
	02S	0.2	15	1.4	1.3	1.2	1.2	1.1	160	20–30	0.3	0.9	0.7
		0.3	20	1.1	1.0	1.0	0.9	0.9	165				
		0.4	25	0.7	0.7	0.6	0.6	0.5	170				

*2) Spray angle measured at compressed air pressure of 0.3 MPa and liquid siphon height of 100 mm.
*3) Measured at 100 mm from nozzle and liquid siphon height of 100 mm.

How to order

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

Liquid Pressure Type

<Example> CBIMV 80005 S303 + CSP S303

CBIMV 80 005 S303 + CSP S303

- Nozzle series: ■CBIMV ■CBIMJ
- Spray angle code: ■110 ■80 ■45 ■20
- Air consumption code: ■005 ■01 ■02
- Type of adaptor: ■CSP ■CSN

Liquid Siphon Type

<Example> CBIMV 80005S S303 + CSP S303

CBIMV 80 005S S303 + CSP S303

- Air consumption code: ■005S ■01S ■02S
- Type of adaptor: ■CSP ■CSN

Details of adaptors are shown on page 25.
Adaptor type CSP is used in the same way as SPB. Adaptor type CSN is used in the same way as SNB.

List of Spray Tip Interchangeability

Spray tips with ◎ are interchangeable with each other to change spray angle and spray pattern. See page 41 for SCBIM series.

			Liquid pressure type																												Liquid siphon type				
			BIMV															BIMK				BIMJ									BIMV-S			BIMK-S	
			11002	11004	11075	11015	11022	8002	8004	80075	8015	8022	4502	4504	45075	4515	4522	6004	60075	6015	6022	7004	70075	7015	7022	2002	2004	20075	2015	2022	8002S	8004S	80075S	6004S	60075S
Liquid pressure type	BIMV	11002		×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×
		11004	×		×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×	×
		11075	×	×		×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×
		11015	×	×	×		×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×
		11022	×	×	×	×		×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×
		8002	◎	×	×	×	×		×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×
		8004	×	◎	×	×	×	×		×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×	×
		80075	×	×	◎	×	×	×	×		×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×
		8015	×	×	×	◎	×	×	×	×		×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×
		8022	×	×	×	×	◎	×	×	×	×		×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×
		4502	◎	×	×	×	×	◎	×	×	×	×		×	×	×	×	×	×	×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×
		4504	×	◎	×	×	×	×	◎	×	×	×	×		×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×	×
		45075	×	×	◎	×	×	×	×	◎	×	×	×	×		×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×
		4515	×	×	×	◎	×	×	×	×	◎	×	×	×	×		×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×
		4522	×	×	×	×	◎	×	×	×	×	◎	×	×	×	×		×	×	×	◎	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×
	BIMK	6004	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×		×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×	×
		60075	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×		×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×
		6015	×	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×		×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×
		6022	×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×		×	×	×	◎	×	×	×	×	◎	×	×	×	×	×
	BIMJ	7004	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×		×	×	×	×	◎	×	×	×	×	×	×	×	×
		70075	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×		×	×	×	×	◎	×	×	×	×	×	×	×
		7015	×	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×		×	×	×	×	◎	×	×	×	×	×	×
		7022	×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×		×	×	×	×	◎	×	×	×	×	×
		2002	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×	×	×	×	×	×
		2004	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×		×	×	×	×	×	×	×	×
		20075	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×		×	×	×	×	×	×	×
		2015	×	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×		×	×	×	×	×	×
		2022	×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	◎	×	×	×	◎	×	×	×	×		×	×	×	×	×
Liquid siphon type	BIMV-S	8002S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×
		8004S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	◎	×
		80075S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	◎
	BIMK-S	6004S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	◎	×		×
		60075S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	◎	×	

			Liquid pressure type																							Liquid siphon type						
			CBIMV															CBIMK		CBIMJ						CBIMV-S					CBIMK-S	
			11001	11002	11004	110075	80005	8001	8002	8004	80075	45005	4501	4502	4504	45075	6004	60075	20005	2001	2002	2004	20075	80005S	8001S	8002S	8004S	80075S	6004S	60075S
Liquid pressure type	CBIMV	11001		×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×	×
		11002	×		×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×
		11004	×	×		×	×	×	×	◎	×	×	×	×	◎	×	◎	×	×	×	◎	×	×	×	×	×	×	×	×	×
		110075	×	×	×		×	×	×	×	◎	×	×	×	×	◎	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×
		80005	×	×	×	×		×	×	×	×	◎	×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×	×
		8001	◎	×	×	×	×		×	×	×	×	◎	×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×
		8002	×	◎	×	×	×	×		×	×	×	×	◎	×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×
		8004	×	×	◎	×	×	×	×		×	×	×	×	◎	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×	×
		80075	×	×	×	◎	×	×	×	×		×	×	×	×	◎	×	◎	×	×	×	×	◎	×	×	×	×	×	×	×
		45005	×	×	×	×	◎	×	×	×	×		×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×	×
		4501	◎	×	×	×	×	◎	×	×	×	×		×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×	×
		4502	×	◎	×	×	×	×	◎	×	×	×	×		×	×	×	×	×	×	◎	×	×	×	×	×	×	×	×	×
		4504	×	×	◎	×	×	×	×	◎	×	×	×	×		×	◎	×	×	×	×	◎	×	×	×	×	×	×	×	×
		45075	×	×	×	◎	×	×	×	×	◎	×	×	×	×		×	◎	×	×	×	×	◎	×	×	×	×	×	×	×
	CBIMK	6004	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×		×	×	×	×	◎	×	×	×	×	×	×	×	×
		60075	×	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×		×	×	×	×	◎	×	×	×	×	×	×	×
	CBIMJ	20005	×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×		×	×	×	×	×	×	×	×	×	×	×
		2001	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×		×	×	×	×	×	×	×	×	×	×
		2002	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	×	×	×	×	×		×	×	×	×	×	×	×	×	×
		2004	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	◎	×	×	×	×		×	×	×	×	×	×	×	×
		20075	×	×	×	◎	×	×	×	×	◎	×	×	×	×	◎	×	◎	×	×	×	×		×	×	×	×	×	×	×
Liquid siphon type	CBIMV-S	80005S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×	×	×
		8001S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×	×
		8002S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×
		8004S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	◎	×
		80075S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	◎
	CBIMK-S	6004S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	◎	×	
		60075S	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	◎	

SCBIM series Spray Tip Interchangeability

			Liquid pressure type							Liquid siphon type	
			SCBIMV					SCBIMJ		SCBIMV-S	
			11001	80005	8001	45005	4501	20005	2001	80005S	8001S
Liquid pressure type	SCBIMV	11001		×	◎	×	◎	×	◎	×	×
		80005	×		×	◎	×	◎	×	×	×
		8001	◎	×		×	◎	×	◎	×	×
		45005	×	◎	×		×	◎	×	×	×
		4501	◎	×	◎	×		×	◎	×	×
	SCBIMJ	20005	×	◎	×	◎	×		×	×	×
		2001	◎	×	◎	×	◎	×		×	×
Liquid siphon type	SCBIMV-S	80005S	×	×	×	×	×	×	×		×
		8001S	×	×	×	×	×	×	×	×	

Spray tips with ◎ are interchangeable with each other.

CBIM series Cap Interchangeability

Adaptor type		T*1					CSP/CSN*2		
		005	01	02	04	075	005	01	02
T*1	005		◎	◎	×	×	×	×	×
	01	◎		◎	×	×	×	×	×
	02	◎	◎		×	×	×	×	×
	04	×	×	×		◎	×	×	×
	075	×	×	×	◎		×	×	×
CSP/CSN*2	005	×	×	×	×	×		◎	◎
	01	×	×	×	×	×	◎		◎
	02	×	×	×	×	×	◎	◎	

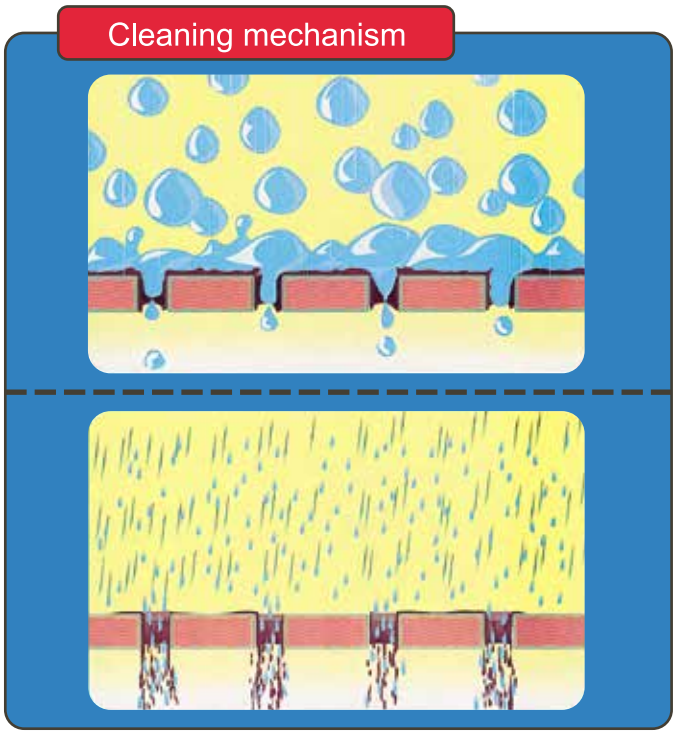
Caps with ◎ are interchangeable with each other.
*1) Air consumption codes available for T-type adaptor are 005, 01, 02, 04, and 075.
*2) Air consumption codes available for CSP- and CSN-type adaptors are 005, 01, and 02 only.

When changing an adaptor type of the existing CBIM nozzle between T, CSP, and CSN types, it is possible to continue to use the same spray tips and core, which are the common parts (the cap is not).

Common applications

■**Paper & Pulp:** Moisture control, spraying mold lubricant, preventing cardboard from curling
■**Plastics:** Spraying anti-electrostatic agent, coating
■**Iron & Steel:** Cooling metal sheets
■**Glass:** Coating and cooling glass sheets
■**Textile:** Moisture control of textile and fiber
■**Printing:** Moisture control of paper after dryer of web offset printing machine
■**Automotives:** Cooling carriages of automobile bodies on the painting lines after oven
■**Food:** Spraying egg yolk, oil, honey, and more

New cleaning method "Fog Cleaning"



■For precise cleaning in cleaning process of photo-processing products

In conventional cleaning methods, large droplets created by hydraulic nozzles are used and cannot clean within fine interstices.
By using air, pneumatic spray nozzles produce very fine droplets for "fog cleaning".

■Features of Fog Cleaning

①Very fine droplets get into interstices and wash out dirt.
②Velocity of cleaning water has been remarkably improved due to compressed air blow, that contributes to maximizing spray impact.
③Compressed air will blow off puddles on surfaces of objects, stopping chemical reactions, and thus, it will get better cleaning effects.