

Ultra-Compact Design, Low Flow Rate Fine Fog Nozzles with Spray Control Adaptor

SCBIM



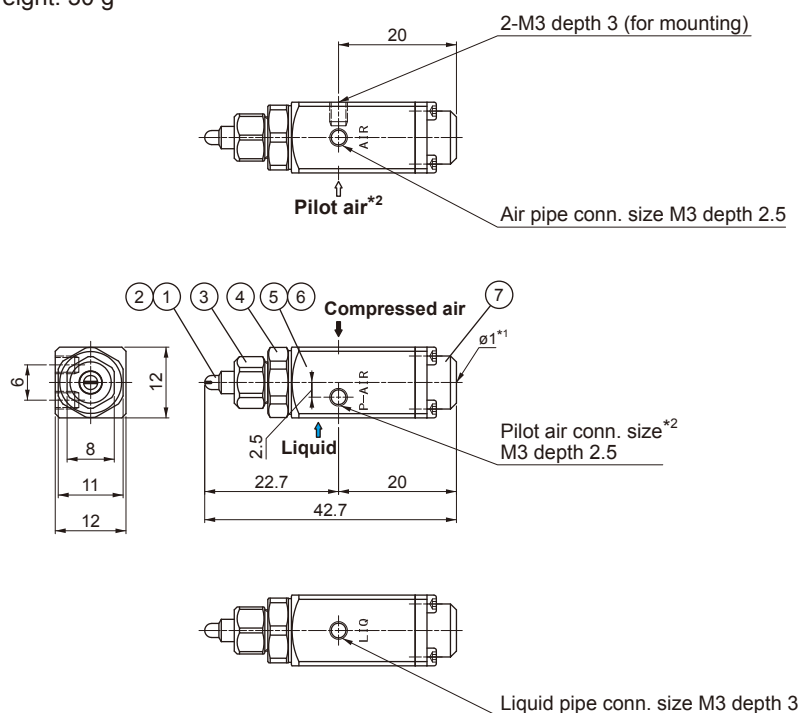
- Further miniaturized version of CBIM series producing fine atomization.
All SCBIM models come with a spray ON/OFF control adaptor.
- Available in liquid pressure or liquid siphon feed type, two spray pattern types (flat spray or full cone spray)—nine varieties in total.
- Able to provide the lowest flow rate among all of our pneumatic spray nozzles.

APPLICATIONS

- Spraying: Mold release agent, lubricant, deodorant, oil, surface treatment agent, rust preventive, honey, insecticide, aqueous urea
- Cooling: Dies, gas, glass, steel plates, steel pieces, castings, automobile bodies, plastic products
- Moisture control: Paper, flue gas, ceramics, concrete
- Cleaning: Printed circuit boards, glass tubes (for SCBIMV and SCBIMV-S only)

DRAWING

■ Weight: 30 g



COMPONENTS AND MATERIALS

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

*1) Hole $\phi 1$ is for air relief.

*2) No pilot air for SN-type adaptor.

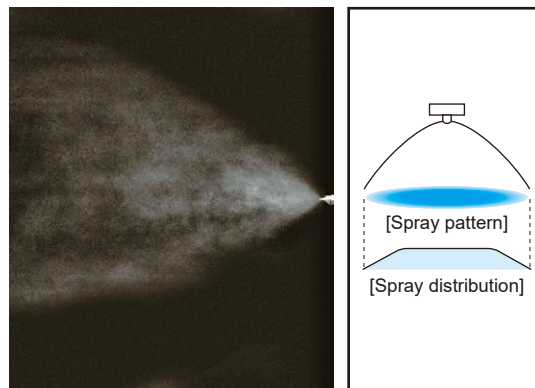
Unit: mm

SCBIM

SCBIMV (Flat Spray)

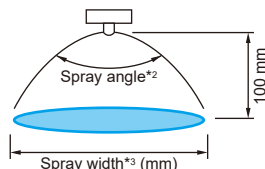
- Pneumatic spray nozzle producing fine atomization with a mean droplet diameter of 100 µm or less.*¹
- Flat spray pattern.
- Features large turn-down ratio under liquid pressures of 0.1–0.3 MPa.
- The spray distribution varies depending on the air-water ratio.
At a low air-water ratio, the distribution takes a mountain shape, and it shifts to even, as the air-water ratio increases.

*1) Droplet diameter measured by laser Doppler method



FLOW-RATE DIAGRAMS

See the flow-rate diagrams for CBIMV on [page 32](#).



PERFORMANCE DATA

Spray angle code *2	Air consumption code	Air pressure (MPa)	Spray capacity (L/hr) & Air consumption (L/min, Normal)										Spray width*3 (mm)			Mean droplet dia. (µm)	Free passage diameter (mm)		
			Liquid pressure (MPa)																
			0.1		0.15		0.2		0.25		0.3		Liquid press. (MPa)			Laser Doppler method	Tip orifice	Adaptor	
			Liquid	Air	Liquid	Air	Liquid	Air	Liquid	Air	Liquid	Air						Liquid	Air
0.1	0.15	0.2	0.25	0.3	0.1	0.15	0.25												
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				
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				
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	—	70	120				

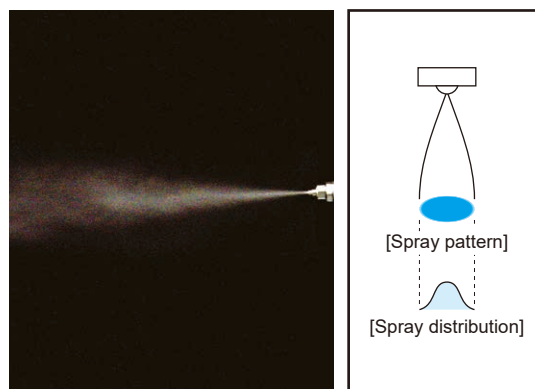
*2) Spray angle measured at compressed air pressure of 0.3 MPa and liquid pressure of 0.1 MPa.

*3) Measured at spray distance of 100 mm from nozzle.

SCBIMJ (Full Cone Spray)

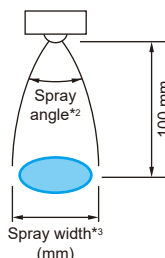
- Pneumatic spray nozzle producing fine atomization with a mean droplet diameter of 100 µm or less.*¹
- Full cone spray pattern.
- Features large turn-down ratio under liquid pressures of 0.1–0.3 MPa.

*1) Droplet diameter measured by laser Doppler method



FLOW-RATE DIAGRAMS

See the flow-rate diagrams for CBIMJ on [page 35](#).



PERFORMANCE DATA

Spray angle code *2	Air consumption code	Air pressure (MPa)	Spray capacity (L/hr) & Air consumption (L/min, Normal)										Spray width*3 (mm)			Mean droplet dia. (µm)	Free passage diameter (mm)			
			Liquid pressure (MPa)																	
			0.1		0.15		0.2		0.25		0.3		Liquid press. (MPa)				Laser Doppler method	Tip orifice	Adaptor	
			Liquid	Air	Liquid	Air	Liquid	Air	Liquid	Air	Liquid	Air	0.1	0.15	0.25				Liquid	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					

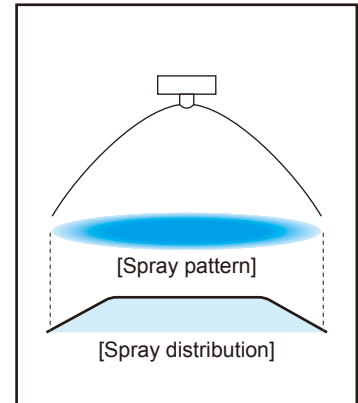
*2) Spray angle measured at compressed air pressure of 0.3 MPa and liquid pressure of 0.1 MPa.

*3) Measured at spray distance of 100 mm from nozzle.

SCBIMV-S (Flat Spray)

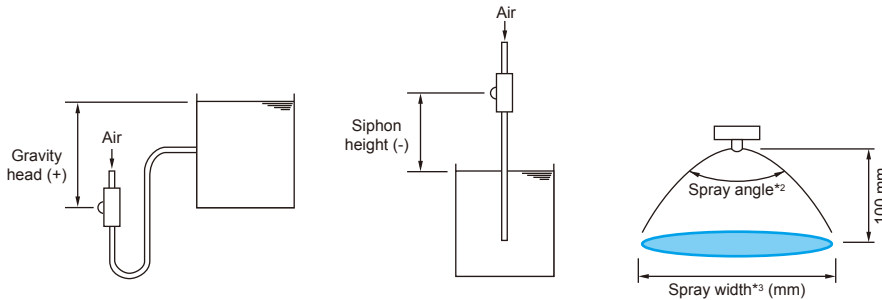
- Pneumatic spray nozzle producing fine atomization with a mean droplet diameter of 30 µm or less.*1
- Flat spray pattern.
- Liquid siphon feed type (liquid pressure device is not required).
- Even spray distribution across the entire spray area.

*1) Droplet diameter measured by laser Doppler method



FLOW-RATE DIAGRAMS

See the flow-rate diagrams for CBIMV-S on [page 37](#).



PERFORMANCE DATA

Spray angle code *2	Air consumption code	Air pressure (MPa)	Air consumption (L/min, Normal)	Spray capacity (L/hr)					Spray width*3 (mm)	Mean droplet diameter (μm) Laser Doppler method	Free passage dia. (mm)		
				Gravity head (mm)		Siphon height (mm)					Tip orifice	Adaptor	
				+300	+100	-100	-300	-500				Liquid	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				

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

*3) Measure at spray distance of 100 mm from nozzle and liquid siphon height of 100 mm.

HOW TO ORDER

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

Liquid Pressure Type

<Example> SCBIMV 80005 S303 + SP S303

SCBIMV	80	005	S303	+	SP	S303
Nozzle series	Spray angle code	Air consumption code	Material of nozzle tip		Type of adaptor	Material of adaptor
■ SCBIMV	■ 110	■ 005			■ SN	
■ SCBIMJ	■ 80	■ 01			■ SP	
	■ 45					
	■ 20					

Liquid Siphon Type

<Example> SCBIMV 80005S S303 + SP S303

SCBIMV	80	005S	S303	+	SP	S303
Nozzle series	Spray angle code	Air consumption code	Material of nozzle tip		Type of adaptor	Material of adaptor
		■ 005S			■ SN	
		■ 01S			■ SP	

Adaptor type SN is used in the same way as SNB. Adaptor type SP is used in the same way as SPB. See [page 28](#) for details.

How to Use Spray ON/OFF Control Adaptors

■SNB Adaptor (CSN, SN Adaptors)

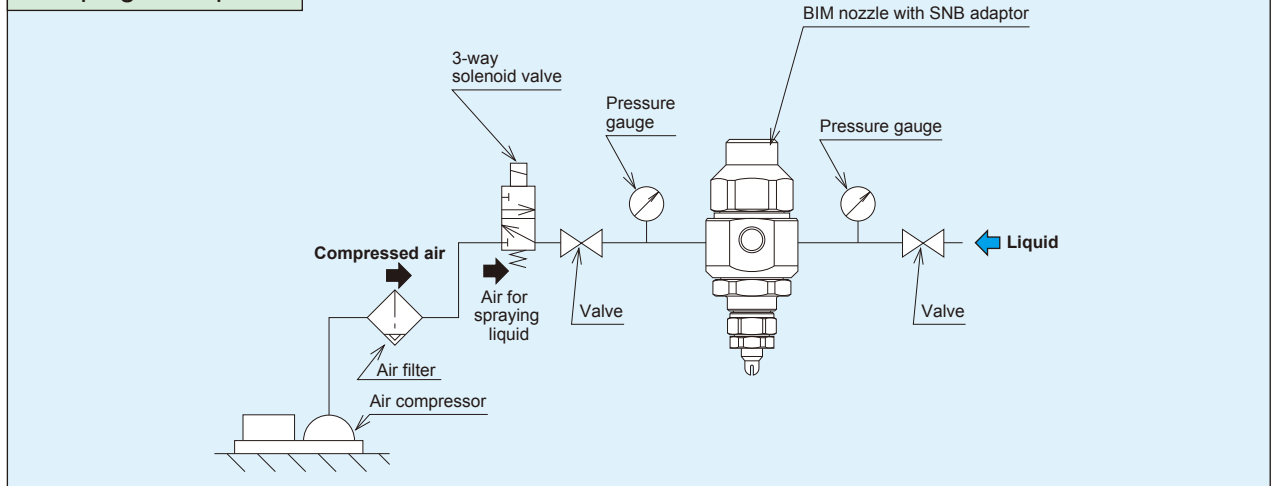
The spray is turned ON/OFF by turning the compressed air ON/OFF.

Use with compressed air pressure of 0.2 MPa or higher.
Adaptor types **CSN** (see page 31) and **SN** (page 40) are used in the same way.

Operation Timing Diagram

Compressed air	OFF	ON	OFF	ON	OFF
Liquid	Stop	Spray	Stop	Spray	Stop

Piping example



■SPB Adaptor (CSP, SP Adaptors)

This type has a built-in shutoff piston that operates on pilot air pressure. The spray is turned ON/OFF by turning the pilot air ON/OFF. Use with pilot air pressure of 0.2 MPa or higher.

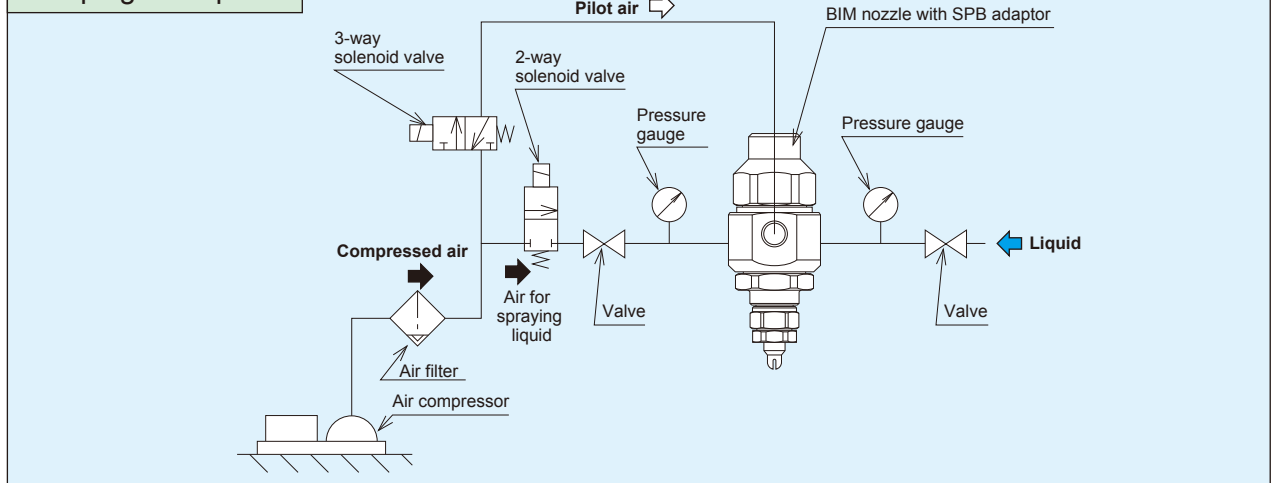
As even low pressure atomizing air can be used, production of a range of fine to coarse fog is possible. Best-suited for when there is concern about scattering droplets.

Adaptor types **CSP** (see page 31) and **SP** (page 40) are used in the same way.

Operation Timing Diagram

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

Piping example



List of Nozzle Tip Interchangeability

Nozzle tips with ○ are interchangeable with each other to change spray angle and spray pattern.

CBIM Series

			Liquid pressure type															Liquid siphon type												
			CBIMV										CBIMK		CBIMJ			CBIMV-S					CBIMK-S							
			11001	11002	11004	11007S	80005	8001	8002	8004	8007S	45005	4501	4502	4504	4507S	6004	6007S	20005	2001	2002	2004	2007S	80005S	8001S	8002S	8004S	8007S	6004S	6007S
Liquid pressure type	CBIMV	11001																												
		11002																												
		11004																												
		11007S																												
		80005																												
		8001																												
		8002																												
		8004																												
		8007S																												
		45005																												
	4501																													
	4502																													
	4504																													
	4507S																													
	CBIMK	6004																												
		6007S																												
		20005																												
		2001																												
	CBIMJ	2002																												
		2004																												
2007S																														
80005S																														
8001S																														
Liquid siphon type	CBIMV-S	8002S																												
		8004S																												
		8007S																												
		6004S																												
		6007S																												
	CBIMK-S	8004S																												
		6004S																												
		6007S																												
		80005S																												
		8001S																												

SCBIM Series

			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	—	—	—	—	—	—	—	—	

CBIM Series Cap Interchangeability

Caps with ○ are interchangeable with each other.

Adaptor type		T					CSN/CSP		
		005	01	02	04	075	005	01	02
T	005	—	○	○	—	—	—	—	—
	01	○	—	○	—	—	—	—	—
	02	○	○	—	—	—	—	—	—
	04	—	—	—	○	—	—	—	—
	075	—	—	—	—	○	—	—	—
CSN/CSP	005	—	—	—	—	—	○	○	○
	01	—	—	—	—	—	○	—	○
	02	—	—	—	—	—	○	○	—

Note:

- 1) Air consumption codes available for T-type adaptor are 005, 01, 02, 04, and 075.
- 2) Air consumption codes available for CSN- and CSP-type adaptors are 005, 01, and 02 only.

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