

Compact Design Low Flow Rate Fine Fog Nozzles

CBIM



CBIM with T-type adaptor



CBIM with spray control adaptor

- Compact version of BIM series producing fine atomization. Space-saving design.
- Able to provide the lowest spray flow rate among all of our pneumatic spray nozzles.
- Clog-resistant design with a low parts count.
- Some CBIM models are available with a spray control adaptor (type CSP or CSN), which can regulate spray ON/OFF with a built-in piston.

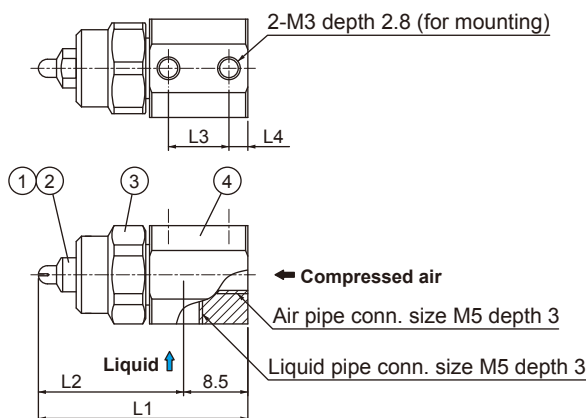
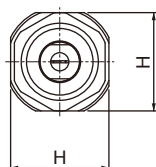
APPLICATIONS

- 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: PC boards, glass tubes (for CBIMV and CBIMV-S only)

DRAWING

Adaptor type T

■ Weight: 22 g

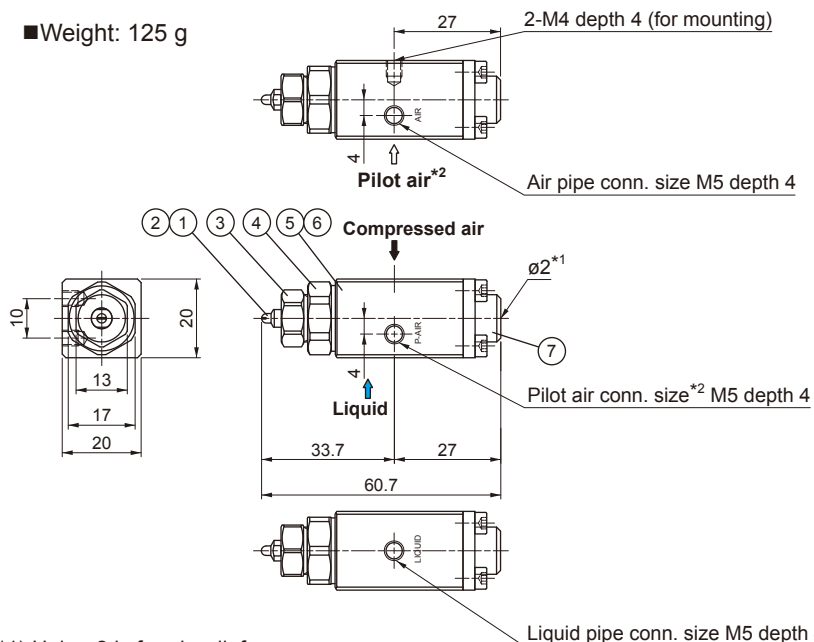


COMPONENTS AND MATERIALS

No.	Components	Standard materials
1	Nozzle tip	S303
2	Core	S303
3	Cap	S303
4	Adaptor	S303

Adaptor type CSN/CSP (Spray control adaptor)

■ Weight: 125 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 $\phi 2$ is for air relief.

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

Unit: mm

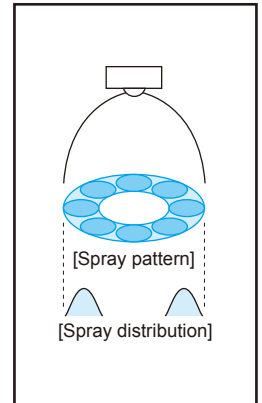
DIMENSIONS

Air consumption code	Dimensions (mm)				
	L1	L2	L3	L4	H
005	27.7	19.2	8	2.5	13
01	27.7	19.2			
02	28.0	19.5			
04	31.3	22.8			
075	32.6	24.1			

CBIMK (Hollow Cone Spray)

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

*1) Droplet diameter measured by laser Doppler method

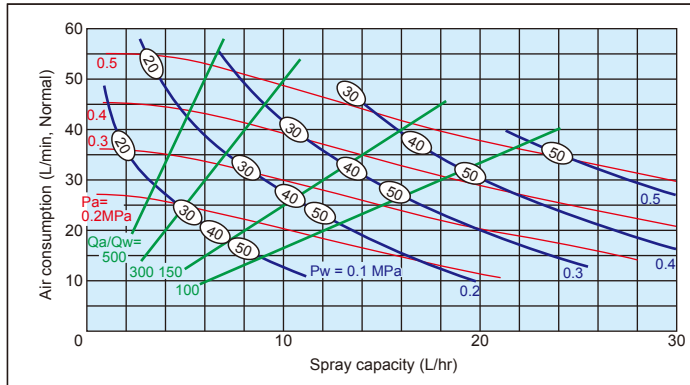


FLOW-RATE DIAGRAMS

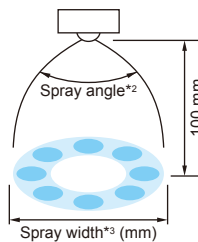
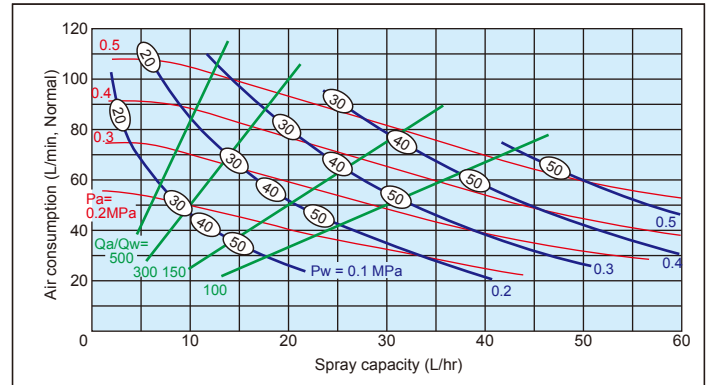
■ How to read the chart

1. The spray capacity shown is for one nozzle.
2. **Red lines** (—) represent compressed air pressures P_a in MPa.
Blue lines (—) represent liquid pressures P_w in MPa.
Green lines (—) represent air-water ratio Q_a/Q_w .
3. Numbers in ovals $\bigcirc$ indicate Sauter mean diameters (μm) measured by laser Doppler method.
4. These flow-rate diagrams are only applicable when using T-type adaptor.

■ CBIMK6004



■ CBIMK60075



PERFORMANCE DATA

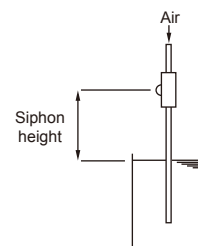
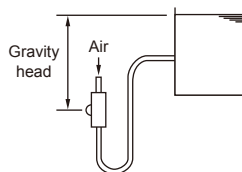
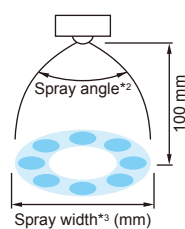
Adaptor type*4		Spray angle code *2	Air consumption code	Air press. (MPa)	Spray capacity (L/hr) & Air consumption (L/min, Normal)										Spray width*3 (mm)			Mean droplet dia. (μm)	Free passage diameter (mm)		
					Liquid pressure (MPa)																
T	CSN CSP				0.1	0.15	0.2	0.25	0.3	Liquid press. (MPa)			Laser Doppler method	Tip orifice	Adaptor						
		Liquid	Air	Air						Liquid	Air	Liquid					Air	0.1	0.15	0.25	
○	—	60	04	0.2	4.5	25	9.5	20	17.0	13	—	—	—	—	140	160	—	20—100	0.5	0.9	0.9
				0.3	2.0	36	4.7	35	8.5	31	13.1	27	19.6	20	130	160	170				
				0.4	—	—	2.8	45	4.8	44	7.7	41	11.4	37	—	150	170				
○	—	60	075	0.2	8.7	51	18.4	42	33.3	29	—	—	—	—	140	170	—	20—100	0.7	1.2	1.4
				0.3	4.0	74	8.8	71	15.5	64	24.3	54	38.5	40	130	160	180				
				0.4	—	—	5.6	91	9.1	89	14.8	82	21.8	74	—	150	170				

*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.

*4) ○ shows the availability of adaptor for each model number.

CBIMK-S (Hollow Cone Spray)



PERFORMANCE DATA

Adaptor type*4		Spray angle code *2	Air con- sump- tion code	Air press. (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)		
T	CSN CSP					Gravity head (mm)		Siphon height (mm)					Tip orifice	Adaptor	
						+300	+100	-100	-300	-500				Liquid	Air
○	—	60	04S	0.2	27	2.8	2.5	2.3	2.2	2.0	120	20—30	0.6	0.9	0.9
				0.3	36	2.4	2.1	2.0	1.9	1.8	120				
				0.4	46	1.9	1.7	1.6	1.5	1.4	120				
○	—		075S	0.2	56	5.5	5.1	4.7	4.3	3.9	120	20—30	0.8	1.2	1.4
				0.3	74	4.7	4.3	4.0	3.7	3.3	120				
				0.4	92	3.5	3.2	2.9	2.7	2.5	120				

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

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

*4) ○ shows the availability of adaptor for each model number.

HOW TO ORDER

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

Liquid Pressure Type

<Example> CBIMV 80005 S303 + CSP S303

CBIMV	80	005	S303	+	CSP	S303
Nozzle series	Spray angle code	Air consumption code*5	Material of nozzle tip		Type of adaptor	Material of adaptor
■CBIMV	■110	■005			■T	
■CBIMK	■80	■01			■CSN	
■CBIMJ	■60	■02			■CSP	
	■45	■04				
	■20	■075				

Liquid Siphon Type

<Example> CBIMV 80005S S303 + CSP S303

CBIMV	80	005S	S303	+	CSP	S303
Nozzle series	Spray angle code	Air consumption code*5	Material of nozzle tip		Type of adaptor	Material of adaptor
■CBIMV	■80	■005S			■T	
■CBIMK	■60	■01S			■CSN	
		■02S			■CSP	
		■04S				
		■075S				

*5) Air consumption codes 04(S) and 075(S) are only available for T-type adaptor.

Adaptor type CSN is used in the same way as SNB. Adaptor type CSP 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)

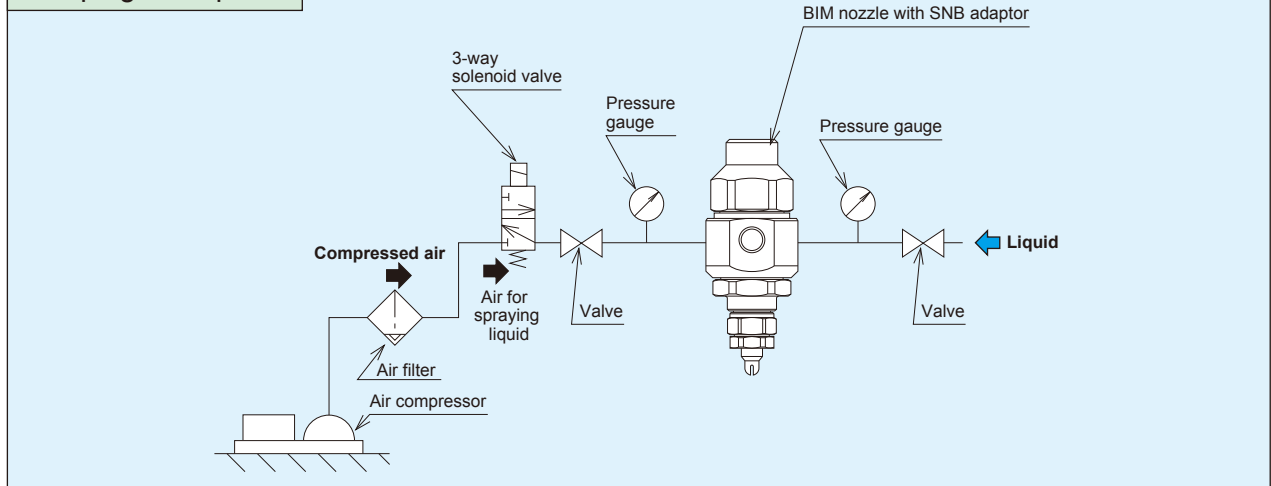
The spray is turned ON/OFF by turning the compressed air ON/OFF.

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.

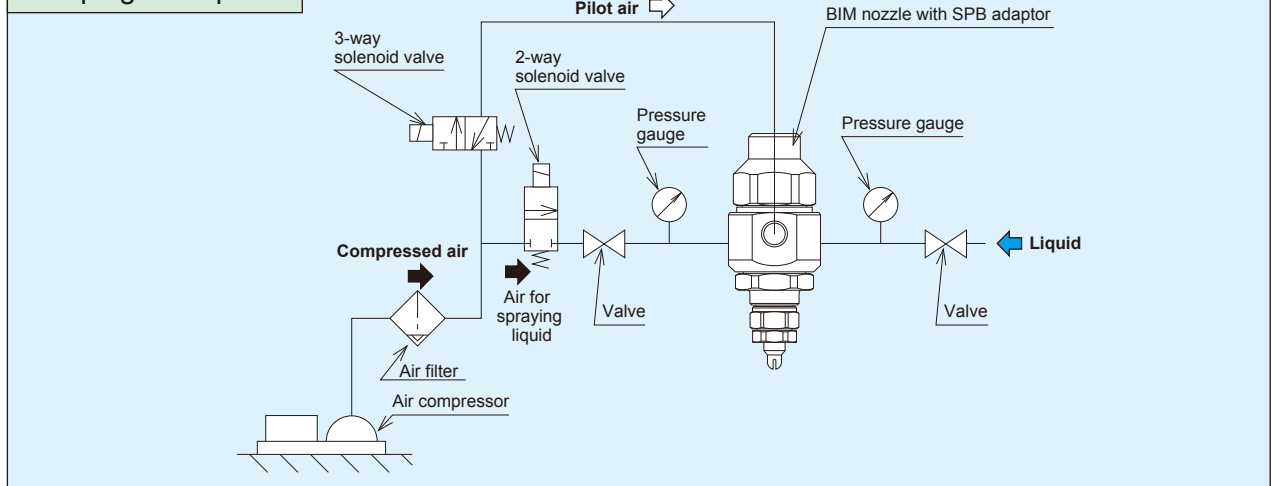
As even low pressure atomizing air can be used, production of a range of fine to coarse fog is possible. Best-suited for when there is concern about scattering droplets.

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																												
	CBIMJ	20005																												
		2001																												
		2002																												
		2004																												
		2007S																												
Liquid siphon type	CBIMV-S	80005S																												
		8001S																												
		8002S																												
		8004S																												
		8007S																												
	CBIMK-S	6004S																												
		6007S																												
	CBIMJ-S	20005S																												
		2001S																												
		2002S																												

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).