

Low Flow Rate Fine Fog Nozzles

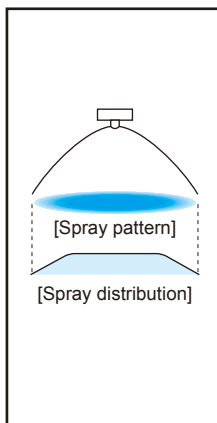
Flat Spray

—Liquid Pressure Type—

BIMV



BIMV with SNB adaptor



■ Flat 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.

■ 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

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

STRUCTURE

■ Four-part structure: Nozzle tip, core, cap, and adaptor.

See pages 26 and 27 for details of adaptors.

■ Materials: S303 (Optional material: S316L)

Adaptors other than T and N types include the parts made of FKM, NBR, and PTFE.

DIMENSIONS

■ See pages 26 and 27 for dimensions and pipe connection sizes of BIM series.

ACCESSORIES

■ Mounting bracket is available as an option. See page 30.

FLOW-RATE DIAGRAMS

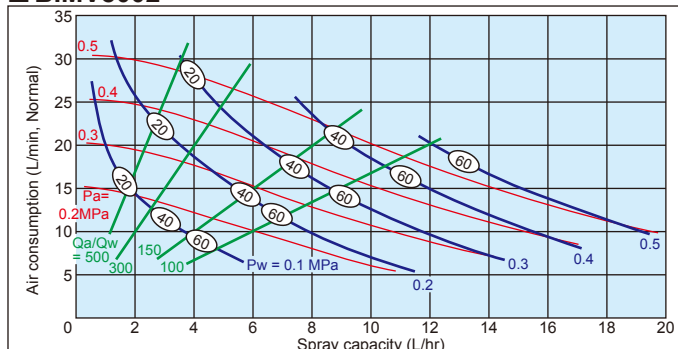
■ How to read the chart

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 applicable to adaptors type T and N only.
5. Flow-rate diagrams for spray angle code of 110 and 45 are available on request.

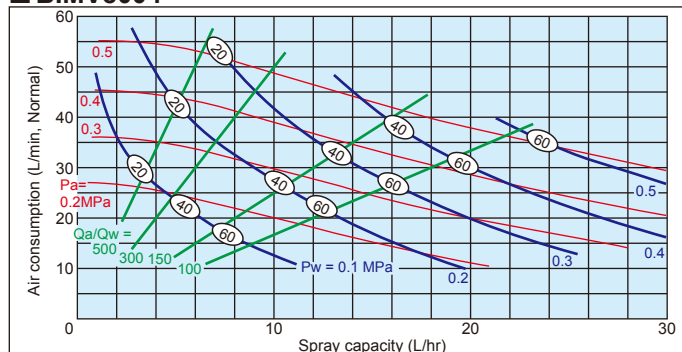


Download 3D CAD models (BIMV with various adaptors)

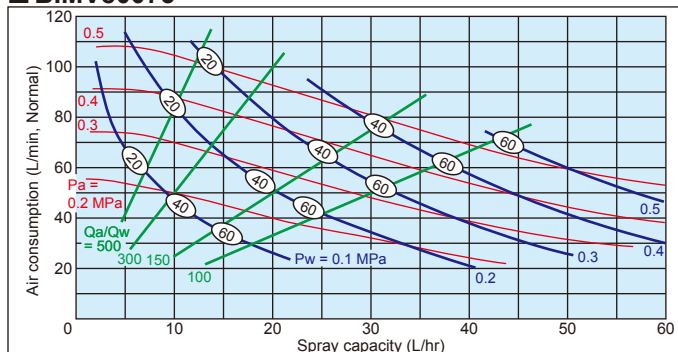
■ BIMV8002



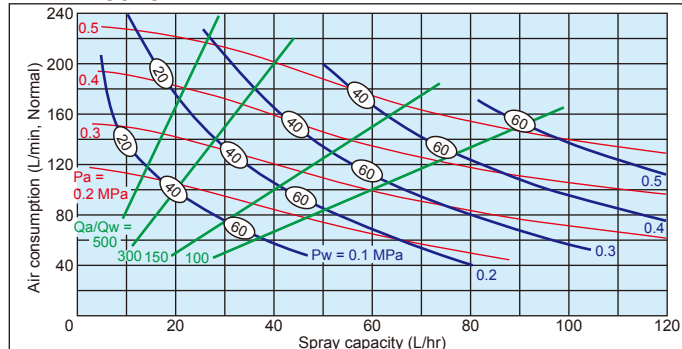
■ BIMV8004



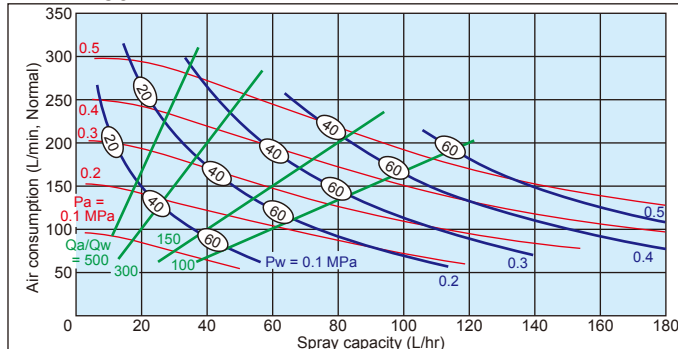
■ BIMV80075

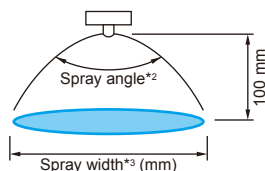


■ BIMV8015



■ BIMV8022





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
110	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					
	04	0.2	4.5	25	9.5	20	17.0	13	—	—	—	—	300	360	—	20–100	0.3	0.9	0.9	
		0.3	2.0	36	4.7	35	8.5	31	13.1	27	19.6	20	230	270	430					
		0.4	—	—	2.8	45	4.8	44	7.7	41	11.4	37	—	250	350					
	075	0.2	8.7	51	18.4	42	33.3	29	—	—	—	—	320	380	—	20–100	0.5	1.2	1.4	
		0.3	4.0	74	8.8	71	15.5	64	24.3	54	38.5	40	240	300	450					
		0.4	—	—	5.6	91	9.1	89	14.8	82	21.8	74	—	270	370					
	15	0.2	16.8	107	34.8	90	64.4	60	—	—	—	—	340	400	—	20–100	0.8	1.8	1.9	
		0.3	8.0	150	17.7	144	30.8	130	50.0	108	74.5	87	270	320	470					
		0.4	—	—	11.2	190	18.3	183	29.1	172	42.9	154	—	280	380					
	22	0.2	22.3	140	45.6	116	92.1	77	—	—	—	—	350	420	—	20–100	0.9	2.1	2.2	
		0.3	11.5	200	23.9	189	41.3	169	68.5	138	107	103	280	330	490					
		0.4	—	—	15.3	245	24.5	238	39.1	220	57.7	198	—	300	400					
80	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					
	04	0.2	4.5	25	9.5	20	17.0	13	—	—	—	—	200	260	—	20–100	0.4	0.9	0.9	
		0.3	2.0	36	4.7	35	8.5	31	13.1	27	19.6	20	170	210	310					
		0.4	—	—	2.8	45	4.8	44	7.7	41	11.4	37	—	200	260					
	075	0.2	8.7	51	18.4	42	33.3	29	—	—	—	—	200	270	—	20–100	0.6	1.2	1.4	
		0.3	4.0	74	8.8	71	15.5	64	24.3	54	38.5	40	170	210	310					
		0.4	—	—	5.6	91	9.1	89	14.8	82	21.8	74	—	200	260					
	15	0.2	16.8	107	34.8	90	64.4	60	—	—	—	—	210	280	—	20–100	0.9	1.8	1.9	
		0.3	8.0	150	17.7	144	30.8	130	50.0	108	74.5	87	180	220	320					
		0.4	—	—	11.2	190	18.3	183	29.1	172	42.9	154	—	200	270					
	22	0.2	22.3	140	45.6	116	92.1	77	—	—	—	—	210	280	—	20–100	1.1	2.1	2.2	
		0.3	11.5	200	23.9	189	41.3	169	68.5	138	107	103	180	220	330					
		0.4	—	—	15.3	245	24.5	238	39.1	220	57.7	198	—	210	280					
45	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					
	04	0.2	4.5	25	9.5	20	17.0	13	—	—	—	—	100	130	—	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	80	110	150					
		0.4	—	—	2.8	45	4.8	44	7.7	41	11.4	37	—	100	130					
	075	0.2	8.7	51	18.4	42	33.3	29	—	—	—	—	100	140	—	20–100	0.9	1.2	1.4	
		0.3	4.0	74	8.8	71	15.5	64	24.3	54	38.5	40	80	110	160					
		0.4	—	—	5.6	91	9.1	89	14.8	82	21.8	74	—	100	140					
	15	0.2	16.8	107	34.8	90	64.4	60	—	—	—	—	110	150	—	20–100	1.2	1.8	1.9	
		0.3	8.0	150	17.7	144	30.8	130	50.0	108	74.5	87	90	120	170					
		0.4	—	—	11.2	190	18.3	183	29.1	172	42.9	154	—	110	150					
	22	0.2	22.3	140	45.6	116	92.1	77	—	—	—	—	110	160	—	20–100	1.6	2.1	2.2	
		0.3	11.5	200	23.9	189	41.3	169	68.5	138	107	103	90	120	180					
		0.4	—	—	15.3	245	24.5	238	39.1	220	57.7	198	—	110	150					

*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.

HOW TO ORDER

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

<Example> BIMV 11002 S303 + N S303

BIMV

110

Spray angle
code■110
■80
■45

02

Air consumption
code■02
■04
■075
■15
■22

S303

Material of
nozzle tip

+

N

Type of adaptor

■N ■T
■NDB ■UNDB
■SNB ■USNB
■SPB ■USPB

S303

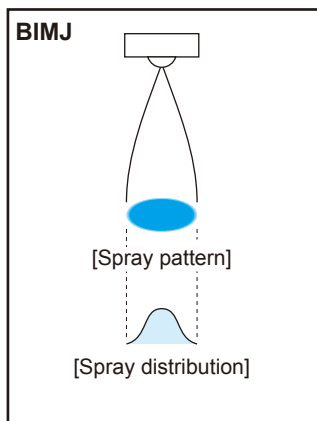
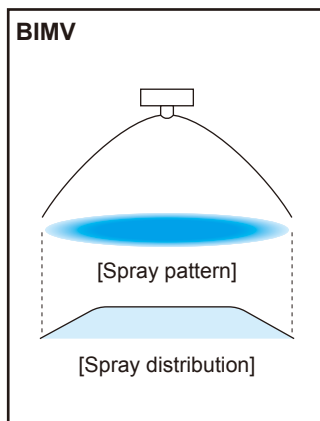
Material of
adaptor

See pages 26 and 27 for details of adaptors.

Low Flow Rate Fine Fog Nozzles

Made of Polypropylene —Liquid Pressure Type—

BIM-PP

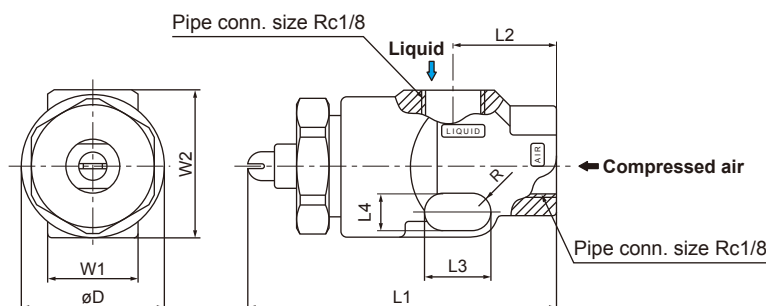


- Excellent chemical resistance with polypropylene construction.
- Two types, BIMV (flat spray pattern) and BIMJ (full cone spray pattern) are available.
- Liquid pressure type with approx. 0.1 to 0.3 MPa.

APPLICATIONS

- Spraying: Deodorant, germicide, disinfectant
- Moisture control: Paper, textile, printing
- Cleaning: Printed circuit boards, electrical components

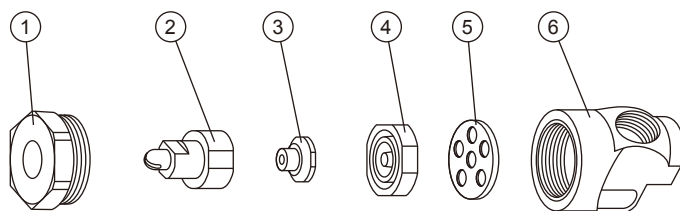
DRAWING



Download
3D CAD models



STRUCTURE



COMPONENTS AND MATERIALS

No.	Components	Standard materials
1	Cap	PP
2	Nozzle tip	PP
3	Core	PP
4	Orifice disc	PP
5	Packing	PTFE
6	Adaptor	PP

DIMENSIONS

Spray pattern type	Nozzle code	Dimensions (mm)								Weight (g)
		L1	L2	L3	L4	W1	W2	øD	R	
Flat spray	BIMV80075	47.5	16	10	5	14	23	22	2.5	10
Full cone spray	BIMJ2004	46.7								

PERFORMANCE DATA

BIMV80075 (Flat spray): See [pages 13 and 14](#) for spray performance details of BIMV80075.

BIMJ2004 (Full cone spray): See [pages 21 and 22](#) for spray performance details of BIMJ2004.

HOW TO ORDER

Please use these product codes to inquire about or order a specific nozzle.

Flat spray type

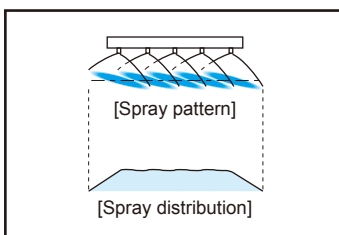
BIMV 80075 PP + TPP-IN

Full cone spray type

BIMJ 2004 PP + TPP-IN

Integrated Spray Header with BIM Fine Fog Nozzles

BIM Header



- Spray header equipped with BIMV series nozzles (liquid pressure type) producing fine atomization with a mean droplet diameter of 100 μm or less.*¹
- Integrates air and water pipes in one rectangular header. Compact and easy to install and maintain.
- Provides a uniform spray distribution across the entire spray area.

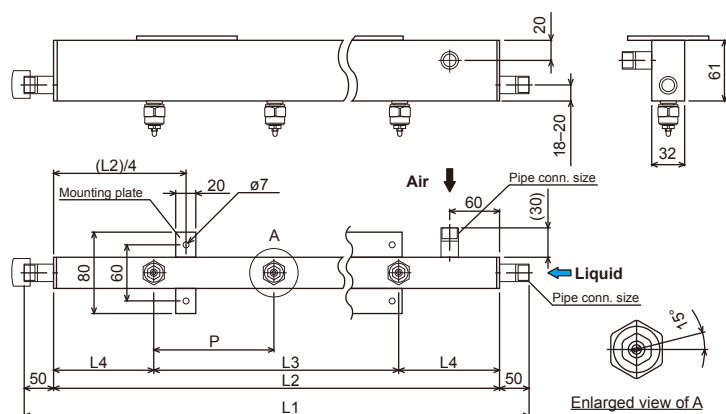
*1) Droplet diameter measured by laser Doppler method

APPLICATIONS

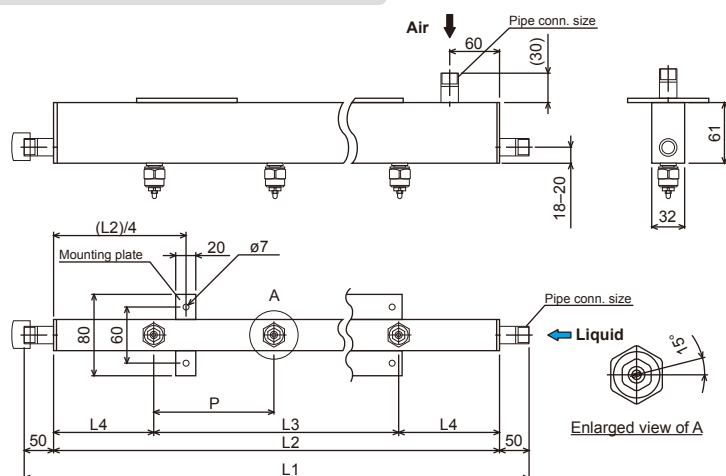
- Spraying: Oil, surface treatment agent
- Cooling: Castings, steel plates, glass plates, plastic film
- Cleaning: Printed circuit boards

DRAWING

Air/Liquid inlet position type [A]



Air/Liquid inlet position type [B]



Mounting plate type [None, F, or S]

None	
F	
S	

F: To install header vertically on wall.
S: To install header parallel to wall.

Unit: mm

DIMENSIONS

Header code		Nozzle spacing P (mm)	Nozzle quantity (Number of BIM nozzles equipped)	Spacing (mm)		Pipe connection size						Material			
Header length L2 (mm)	Total length L1 (mm)					Nozzle code									
						BIMV11002		BIMV11004		BIMV110075					
				L3	L4	Air	Liquid	Air	Liquid	Air	Liquid	Nozzle	Header		
1,000	1,100	100	10	900	50	R3/8	R1/4	R3/8	R1/4	R1/2	R3/8	S303	S304		
		200	5	800	100					R3/8	R1/4				
2,000	2,100	100	20	1,900	50			R3/8	R1/4	R1/2	R3/8			R3/4	R1/2
		200	10	1,800	100					R3/8	R1/4			R1/2	R3/8

PERFORMANCE DATA

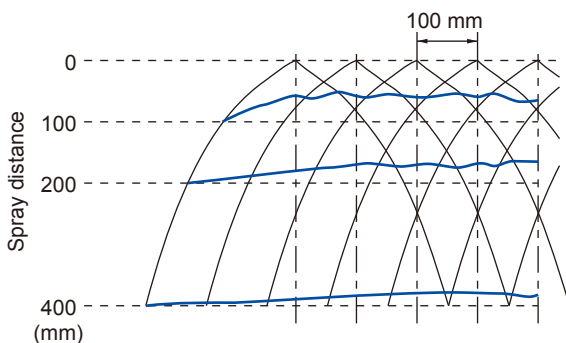
Nozzle code	Nozzle quantity	Air pressure (MPa)	Air consumption (L/min, Normal)	Spray capacity (L/hr) at liquid pressure of 0.1 MPa
BIMV11002	5	0.3	100	5.0
	10		200	10.0
	20		400	20.0
BIMV11004	5	0.3	180	10.0
	10		360	20.0
	20		720	40.0
BIMV110075	5	0.3	370	20.0
	10		740	40.0
	20		1,480	80.0

Note: Total air consumption and spray capacities shown in the above table are calculated from the number of nozzles used, based on each air consumption and spray capacity described on [page 14](#).

SPRAY DISTRIBUTION

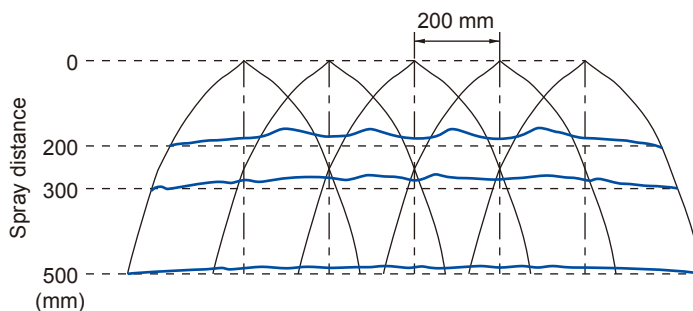
■ BIMV11004S303

Nozzle spacing: 100 mm
Compressed air pressure: 0.3 MPa
Liquid pressure: 0.1 MPa
Offset angle (nozzle tip angle to axis of header): 15°



■ BIMV11004S303

Nozzle spacing: 200 mm
Compressed air pressure: 0.3 MPa
Liquid pressure: 0.1 MPa
Offset angle (nozzle tip angle to axis of header): 15°



HOW TO ORDER

To determine the specifications, specify a nozzle code, nozzle quantity, nozzle spacing, and header length etc., using this coding system. For more details, please request our [inquiry drawing](#).

<Example> BIMV11002S303 + 10 (P100) A1000F (Pre-setting 15°, L=1100)

BIMV11002	S303+	10	(P 100)	A	1000	F	(Pre-setting 15° , L= 1100)
Nozzle code		Nozzle quantity	Nozzle spacing	Inlet position type	Header length	Mounting plate type	Offset angle
■BIMV11002		■5	■100	■A	■1000	■F	■0° (Blank indicates 0°)
■BIMV11004		■10	■200	■B	■2000	■S	■15°
■BIMV110075		■20				■None (Blank indicates "without plate")	■2100

Note: For details of BIMV nozzles, see [pages 13 and 14](#).

Adaptors for BIM Series Fine Fog Nozzles

The following eight types of adaptors are available for BIM series Low Flow Rate Fine Fog Nozzles: BIMV, BIMV-S, BIMK, BIMK-S, and BIMJ, which are introduced on [pages 13 to 22](#).

See [page 27](#) for dimensions and pipe connection sizes of each adaptor.

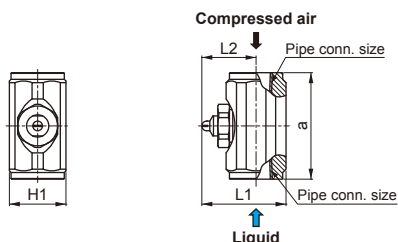
Drawings with parts list (each description and material) are available upon request.

TYPES OF ADAPTORS

Type N

Liquid and air enter into adaptor from both sides.

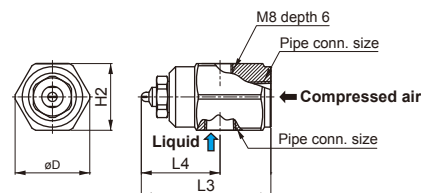
■Material: S303



Type T

Air inlet is on the center line and liquid inlet is on a 90° angle line to the center line. Suitable for use in a small space.

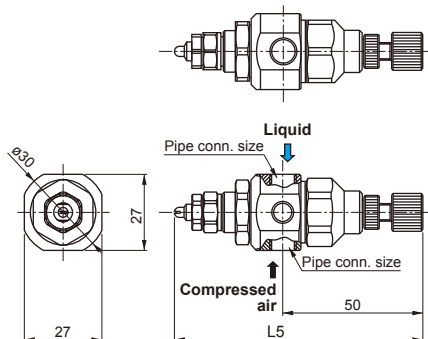
■Material: S303



Type NDB

Needle valve allows for reducing and stopping the spray flow rate.

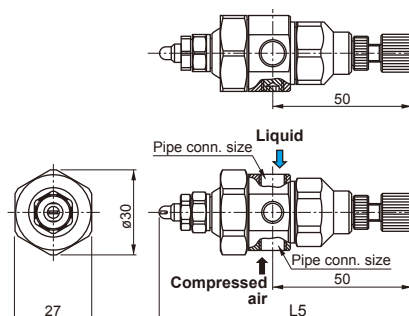
■Material: S303, FKM, PTFE, and NBR



Type UNDB

Besides the features of the NDB-type adaptor, spray direction can be adjusted within +/- 15° by means of a ball joint. It is ideal for fine-tuning of spray direction after pipe assemblies have been completed.

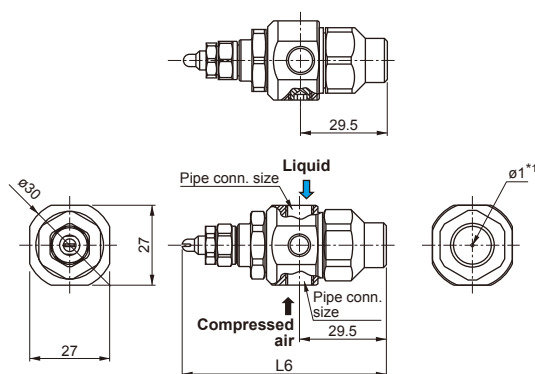
■Material: S303, FKM, PTFE, and NBR



Type SNB

Spray ON/OFF can be regulated by turning compressed air ON/OFF, which actuates an internal piston, to open or close the nozzle. Compressed air pressure over 0.2 MPa starts the spray.

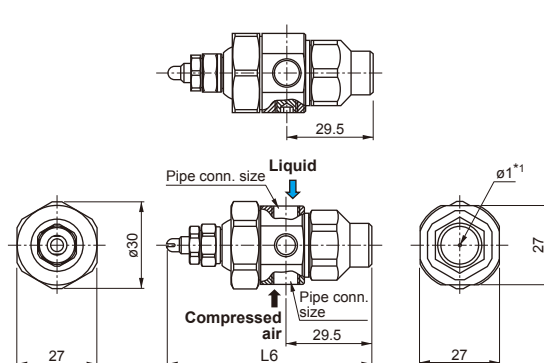
■Material: S303, FKM, PTFE, and NBR



Type USNB

Besides the features of the SNB-type adaptor, spray direction can be adjusted within +/- 15° by means of a ball joint. It is ideal for fine-tuning of spray direction after pipe assemblies have been completed.

■Material: S303, FKM, PTFE, and NBR



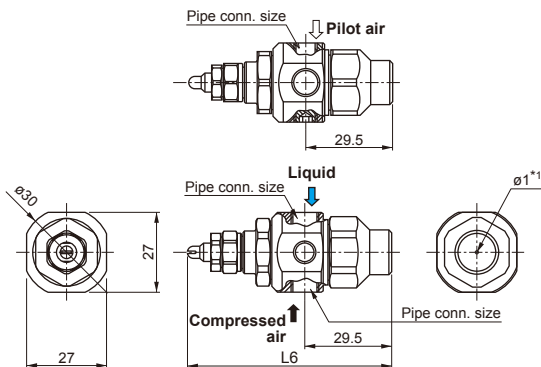
*1) Hole $\phi 1$ is for air relief.

TYPES OF ADAPTORS

Type SPB

Spray ON/OFF can be regulated by switching the pilot air ON/OFF. The pilot air actuates an internal piston to regulate the spray.
(Pilot air pressure more than 0.2 MPa required)
This type of adaptor is suitable for applications to avoid scattering droplets of fog.

■Material: S303, FKM, PTFE, and NBR

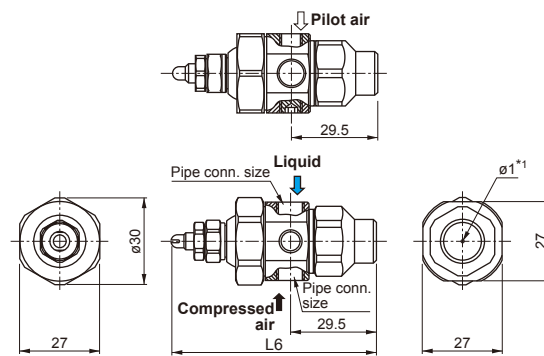


*1) Hole ø1 is for air relief.

Type USPB

Besides the features of the SPB-type adaptor, spray direction can be adjusted within +/- 15° by means of a ball joint.
It is ideal for fine-tuning of spray direction after pipe assemblies have been completed.

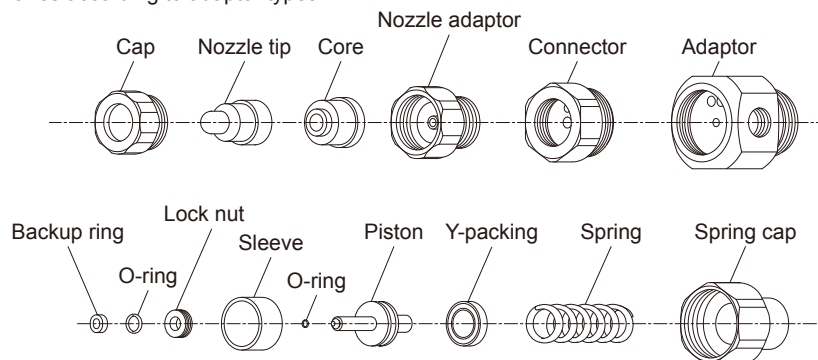
■Material: S303, FKM, PTFE, and NBR



(Unit: mm)

STRUCTURE OF SPB ADAPTOR

This exploded view shows a structure of SPB adaptor as an example.
Structure and components varies according to adaptor types.



CAUTIONS for NDB, UNDB, SNB, USNB, SPB, and USPB Adaptors

Thin-walled nozzle adaptor tends to deform easily if installed directly by itself.

First assemble Core, Nozzle tip, Cap and Nozzle adaptor by hand with light pressure, then attach them to Connector (or UT Ball).
Use a well-fitting hexagon socket wrench instead of a regular spanner (wrench), as a spanner may deform the unit.

PIPE CONNECTION SIZES AND WEIGHT

Adaptor type	Air consumption code	Pipe connection sizes			Weight (g)
		Compressed air	Liquid	Pilot air	
N	02, 04, 075	Rc1/8	Rc1/8		55
	15, 22	Rc1/4	Rc1/4		130
T	02, 04, 075	Rc1/8	Rc1/8		80
	15, 22	Rc1/4	Rc1/4		210
NDB	02, 04, 075	Rc1/8	Rc1/8		172
UNDB	15, 22				193
SNB	02, 04, 075	Rc1/8	Rc1/8		151
USNB	15, 22				172
SPB	02, 04, 075	Rc1/8	Rc1/8	Rc1/8	146
USPB	15, 22				167

DIMENSIONS

Air consumption code	Dimensions (mm)									
	L1	L2	L3	L4	L5	L6	a	H1	H2	øD
02	25.3	16.3	40.8	24.8	87.3	66.8	32	17	21	23.5
04	26.8	17.8	42.3	26.3	88.8	68.3	32	17	21	23.5
075	28.1	19.1	43.6	27.6	90.1	69.6	32	17	21	23.5
15	39.1	26.6	60.1	38.1	97.6	77.1	43	23	29	32.5
22	41.3	28.8	62.3	40.3	99.8	79.3	43	23	29	32.5

How to Use Spray ON/OFF Control Adaptors

■SNB Adaptor (CSN, SN Adaptors)

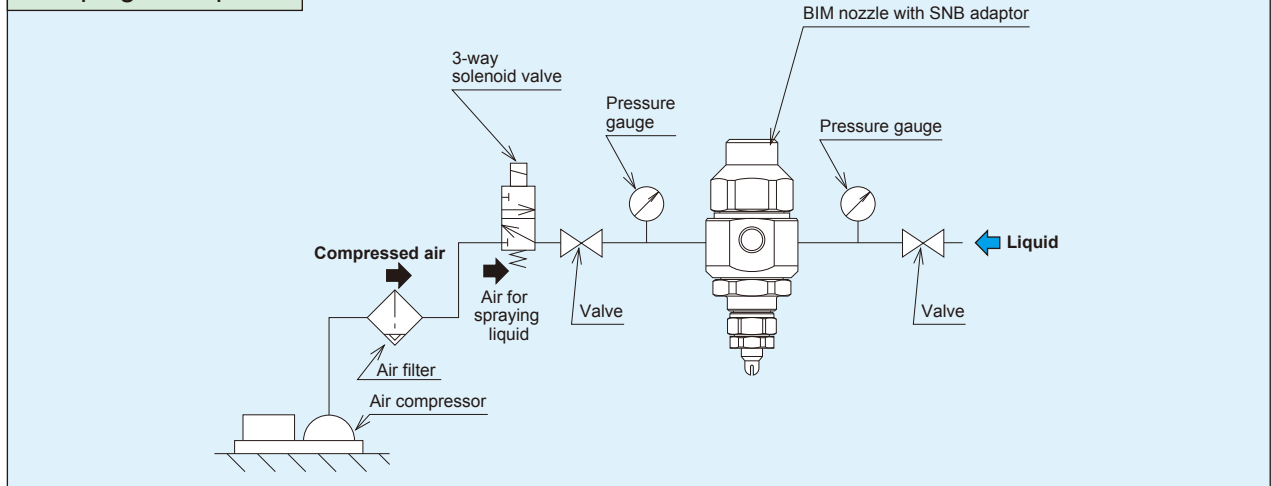
The spray is turned ON/OFF by turning the compressed air ON/OFF.

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.

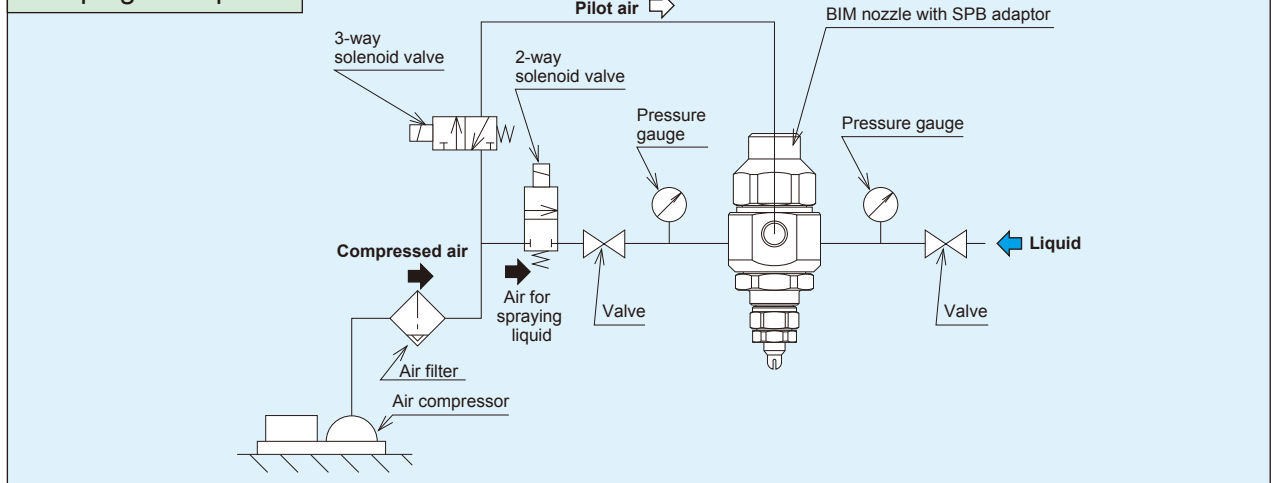
As even low pressure atomizing air can be used, production of a range of fine to coarse fog is possible. Best-suited for when there is concern about scattering droplets.

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



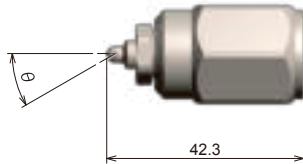
Customized Options (Made-to-order) for BIM Series Fine Fog Nozzles

The BIM Series nozzles can be customized to meet special design requirements.
Please refer to the following examples of tailored options and contact us for further information.

(Unit: mm)

Off-Center Spray Type

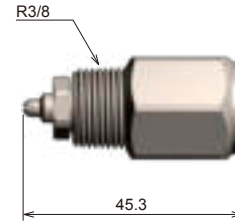
Designed to spray at a specified angle.



Pictured above is a nozzle with a T-type adaptor.
Available in various adaptor types as shown on [pages 26 and 27](#).

Screw-in Type

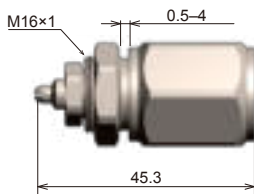
This type, equipped with a threaded adaptor, can be directly screwed into a plate or container with female threads.



Pictured above is a nozzle with a T-type adaptor.
Available in various adaptor types as shown on [pages 26 and 27](#).

Wall Mounting Type

This type can minimize nozzle exposure to the atmosphere inside the equipment or duct.



Pictured above is a nozzle with a T-type adaptor.
Available in various adaptor types as shown on [pages 26 and 27](#).

Hand-tightening Type

Hand-tightening nozzle tip is easy to detach and maintain.



Pictured above is a nozzle with a T-type adaptor.
Available in various adaptor types as shown on [pages 26 and 27](#).

Long Neck Type

Incorporates a pipe to allow spraying at the target at a distance.



Pictured above is a nozzle with a T-type adaptor.
Available in various adaptor types as shown on [pages 26 and 27](#).
Also available for the wall mounting type.
Contact us for customizable length.

90-degree Bend Long-neck Type

Long neck type with a 90-degree angle at the tip.



Pictured above is a nozzle with a T-type adaptor.
Available in various adaptor types as shown on [pages 26 and 27](#).
Also available for the wall mounting type.
Contact us for customizable length.

Spray Direction Adjustable Type (Wall Mounting)

Incorporates a flexible tube to allow versatile adjustment of the spray direction.



Pictured above is wall mounting type with a T-type adaptor.
Available in various adaptor types as shown on [pages 26 and 27](#).

Special Material Nozzles

We offer nozzles made of special materials, such as PP, HTPVC, PTFE, and Titanium, upon request, particularly for applications that require enhanced chemical resistance. Contact us for further information.

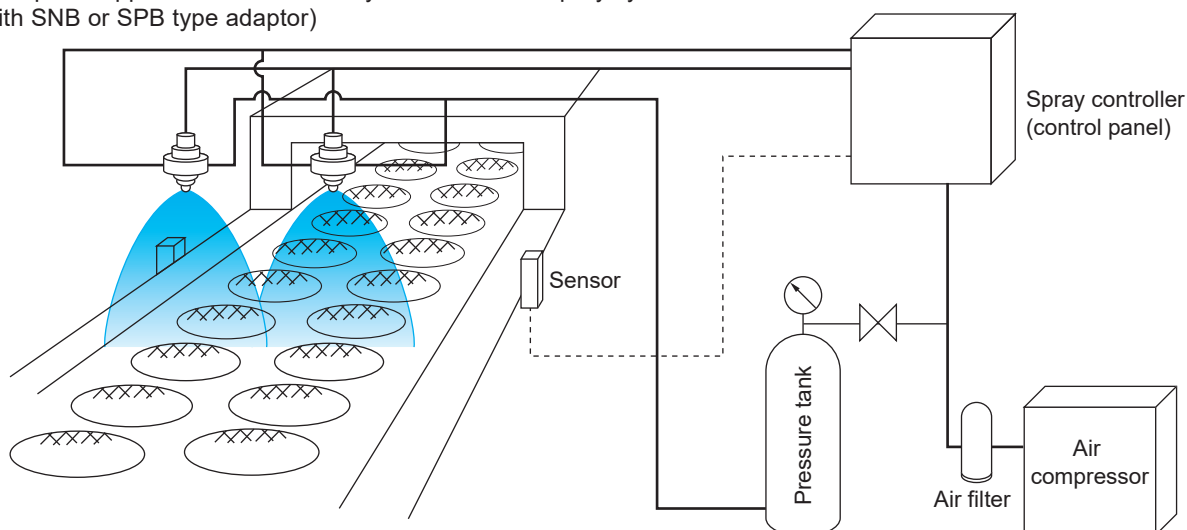


Spray header made of HTPVC

Installation Example and Related Products for BIM Series

Installation Example of BIM Automatic Spray System

■Example of applications controlled by BIM automatic spray system (with SNB or SPB type adaptor)



Related Products

■Mounting Bracket (product code: MBW)

This mounting bracket allows for easy installation of BIM series nozzles to a metal pole/rod in the desired spray direction.

Available in two sizes for pipe diameters of 8 mm and 10 mm.

When ordering, specify **BIM ø8 MBW** for ø8 mounting bracket, or **BIM ø10 MBW** for ø10 mounting bracket.

Available for all adaptor types except N-type adaptor.



Download 3D
CAD models

Mounting
bracket



■Spray Gun Unit with BIM nozzles: BIM-GUN

Liquid siphon type with 250 ml bottle.*
Air capacity adjustability (as standard equipment).

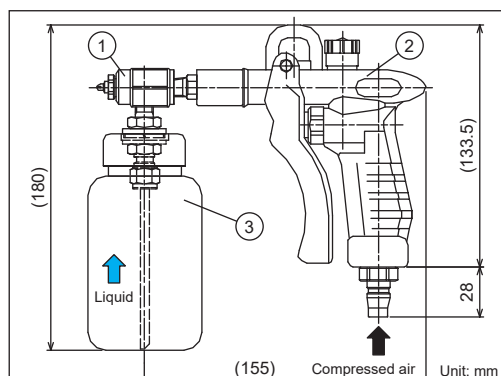
Suitable for chemical spraying, etc.

*500 ml bottle is available as an option.



Pressure gauge kit including pressure reducing valve and two couplers.

Note: When using BIM**04S types, this item is necessary.



Max. operating pressure: 0.5 MPa

Structure: 1) BIM nozzle, 2) Air duster gun, 3) Plastic bottle

Materials: S303, S304, PP, PE, etc.

Liquid contacting parts: PE (bottle) and Stainless steel 303 (nozzle)
Some kinds of chemical may not be suitable for use. (Unit: mm)

HOW TO ORDER

Please use these product codes to inquire about or order a specific BIM-GUN.

(Flat spray) BIMV-S series

BIMV8004SS303+TS303 siphon spray unit (w/ 250 ml bottle)

BIMV80075SS303+TS303 siphon spray unit (w/ 250 ml bottle)

(Hollow cone spray) BIMK-S series

BIMK6004SS303+TS303 siphon spray unit (w/ 250 ml bottle)

BIMK60075SS303+TS303 siphon spray unit (w/ 250 ml bottle)

Approx. spray capacity (for your reference)

●BIMV8004S/BIMK6004S: 30 ml/min ●BIMV80075S/BIMK60075S: 60 ml/min

BIM Series Nozzle Tip Interchangeability

List of Nozzle Tip Interchangeability

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

BIM Series

			Liquid pressure type																								Liquid siphon type									
			BIMV												BIMK				BIMJ								BIMV-S			BIMK-S						
			11002	11004	110075	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																																		
		110075																																		
		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																																				