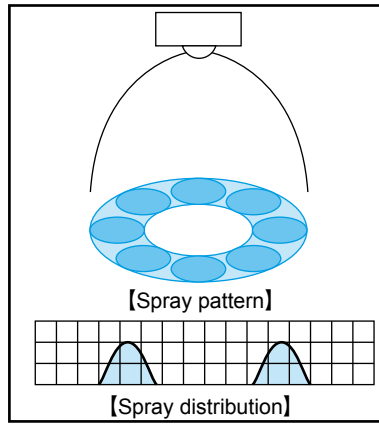


# Low Flow Rate Fine Fog Nozzles Hollow Cone Spray —Liquid Pressure Type—

BIMK



BIMK with T-type adaptor



- Hollow cone spray pneumatic nozzle producing fine atomization with a mean droplet diameter of 100  $\mu\text{m}$  or less.\*1
- Features a large turn-down ratio under the liquid pressures of 0.1–0.3 MPa.
- Spray angle of 60°.

\*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, moldings, automobile bodies, plastic products
- Moisture control: Paper, flue gas, ceramics, concrete

## STRUCTURE

- Comprising four parts: 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.

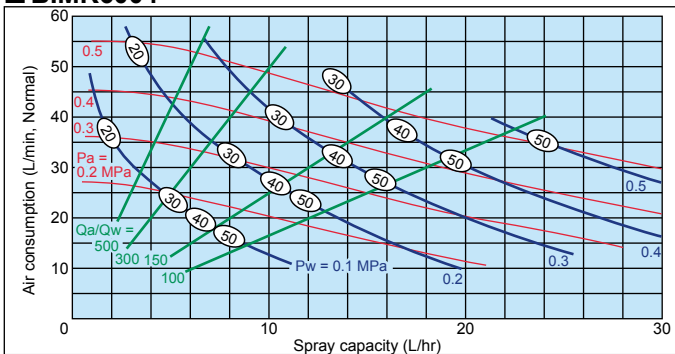
## ACCESSORIES

- Mounting bracket is available as an option. See page 29.

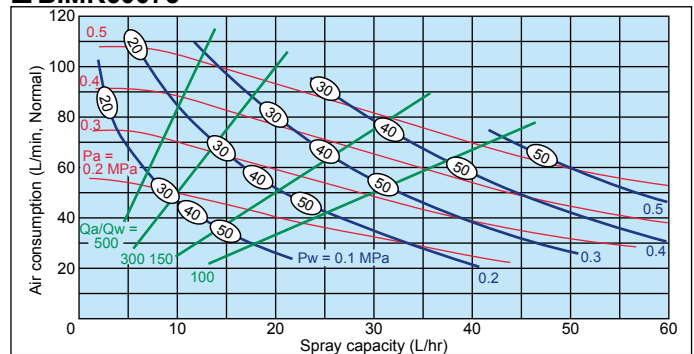
## FLOW-RATE DIAGRAMS

- How to read the chart
- 1. The spray capacity shown is for one nozzle.
- 2. Red lines (—) represent compressed air pressures Pa in MPa. Blue lines (—) represent liquid pressures Pw in MPa. Green lines (—) represent air-water ratio Qa/Qw.
- 3. Figures in ovals  $\circ$  indicate Sauter mean diameters ( $\mu\text{m}$ ) measured by laser Doppler method.
- 4. These flow-rate diagrams are applicable to adaptors type T and N only.

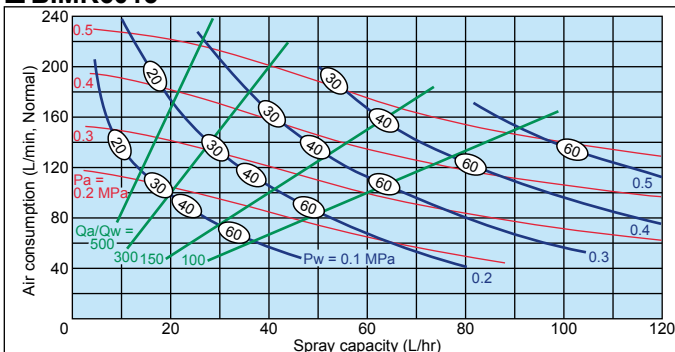
### ■ BIMK6004



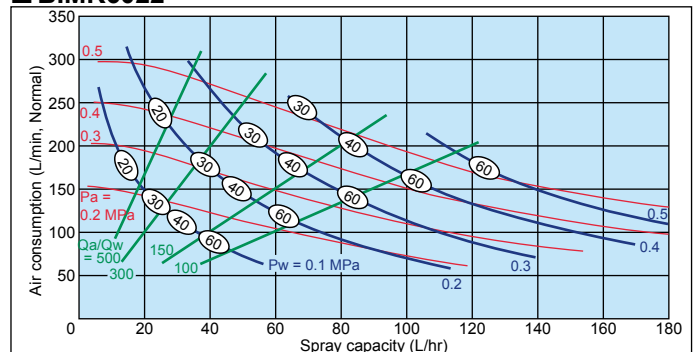
### ■ BIMK60075

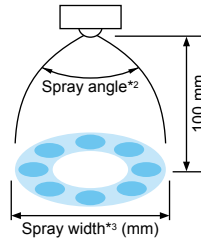


### ■ BIMK6015



### ■ BIMK6022





**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)														Laser Doppler method	Tip orifice	Adaptor		
			0.1		0.15		0.2		0.25		0.3		Liquid press. (MPa)						Liquid	Air	
			Liquid	Air	Liquid	Air	Liquid	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						
	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						
	15	0.2	16.8	107	34.8	90	64.4	60	—	—	—	—	150	170	—	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	140	170	180						
		0.4	—	—	11.2	190	18.3	183	29.1	172	42.9	154	—	160	180						
	22	0.2	22.3	140	45.6	116	92.1	77	—	—	—	—	160	180	—	20–100	1.1	2.1	2.2		
		0.3	11.5	200	23.9	189	41.3	169	68.5	138	107	103	140	170	190						
		0.4	—	—	15.3	245	24.5	238	39.1	220	57.7	198	—	160	180						

\*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.

**HOW TO ORDER**

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

<Example> BIMK 6004 S303 + N S303

BIMK	<u>60</u>	<u>04</u>	<u>S303</u>	+	<u>N</u>	<u>S303</u>
	Spray angle code	Air consumption code	Material of nozzle tip		Type of adaptor	Material of adaptor
		<ul style="list-style-type: none"> <li>■04</li> <li>■075</li> <li>■15</li> <li>■22</li> </ul>			<ul style="list-style-type: none"> <li>■N</li> <li>■NDB</li> <li>■SNB</li> <li>■SPB</li> </ul>	<ul style="list-style-type: none"> <li>■T</li> <li>■UNDB</li> <li>■USNB</li> <li>■USPB</li> </ul>

See pages 26 and 27 for details of adaptors.

# 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](#).

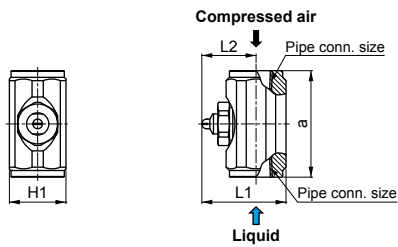
See [page 27](#) for dimensions and pipe connection sizes of each adaptor.

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

## TYPES OF ADAPTORS

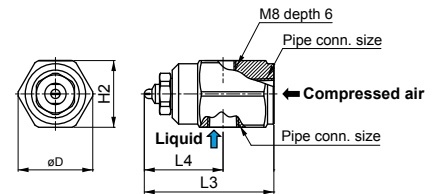
**Type N** Liquid and air enter into adaptor from both sides.

Material: S303



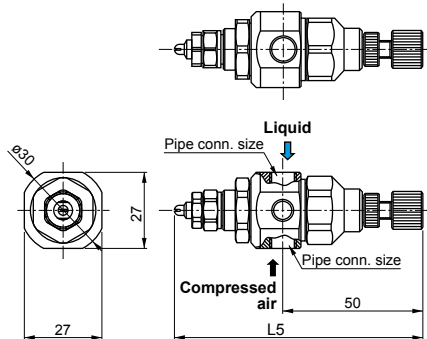
**Type T** Air inlet is on the center line and liquid inlet is on a 90° angle line to the center line. Suitable for use in a small space.

Material: S303



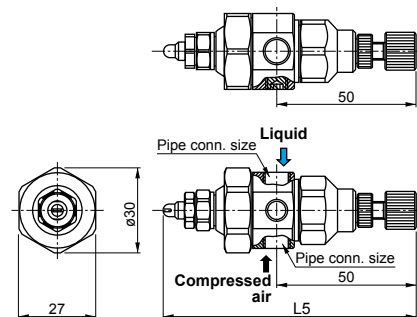
**Type NDB** Spray capacity is adjustable with needle valve.

Material: S303, FKM, PTFE, and NBR



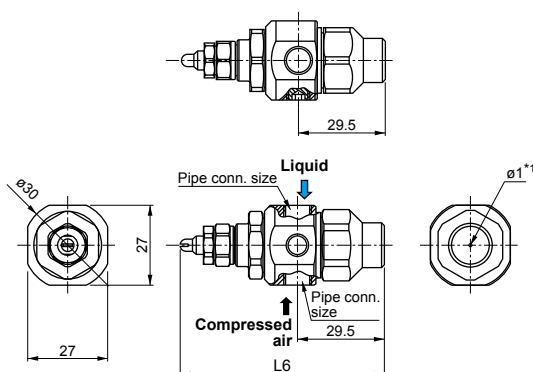
**Type UNDB** Besides the features of the NDB-type adaptor, spray direction can be adjusted within +/- 15° by means of a ball joint. It is ideal for fine-tuning of spray direction after pipe assemblies have been completed.

Material: S303, FKM, PTFE, and NBR



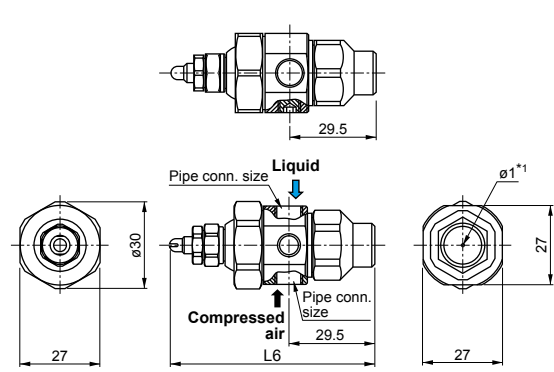
**Type SNB** Spray ON/OFF can be regulated by turning compressed air ON/OFF, which actuates an internal piston, to open or close the nozzle. Compressed air pressure over 0.2 MPa starts the spray.

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



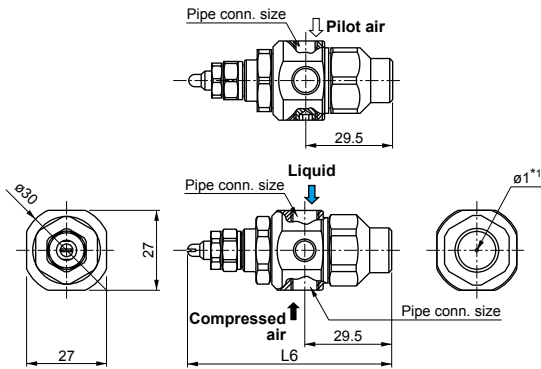
\*1) Hole φ1 is for air relief.

## 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

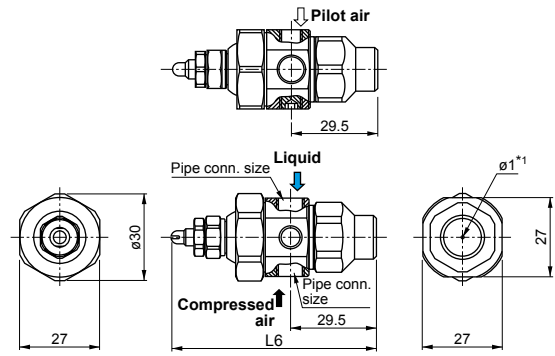


\*1) Hole ø1 is for air relief.

### Type USPB

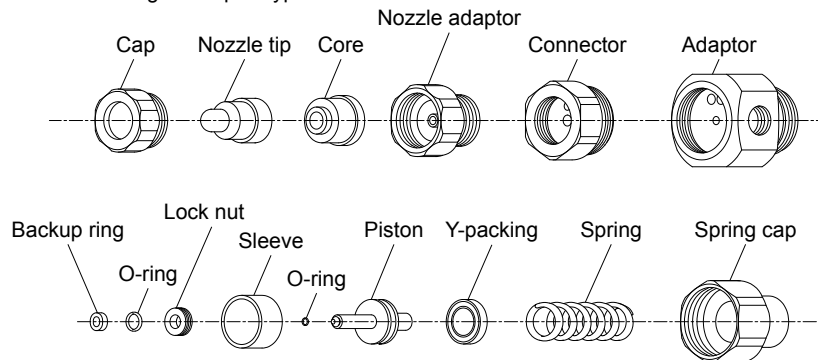
Besides the features of the SPB-type adaptor, spray direction can be adjusted within +/- 15° by means of a ball joint. It is ideal for fine-tuning of spray direction after pipe assemblies have been completed.

Material: S303, FKM, PTFE, and NBR



## 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 MASS

Adaptor type	Air consumption code	Pipe connection sizes			Mass (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**

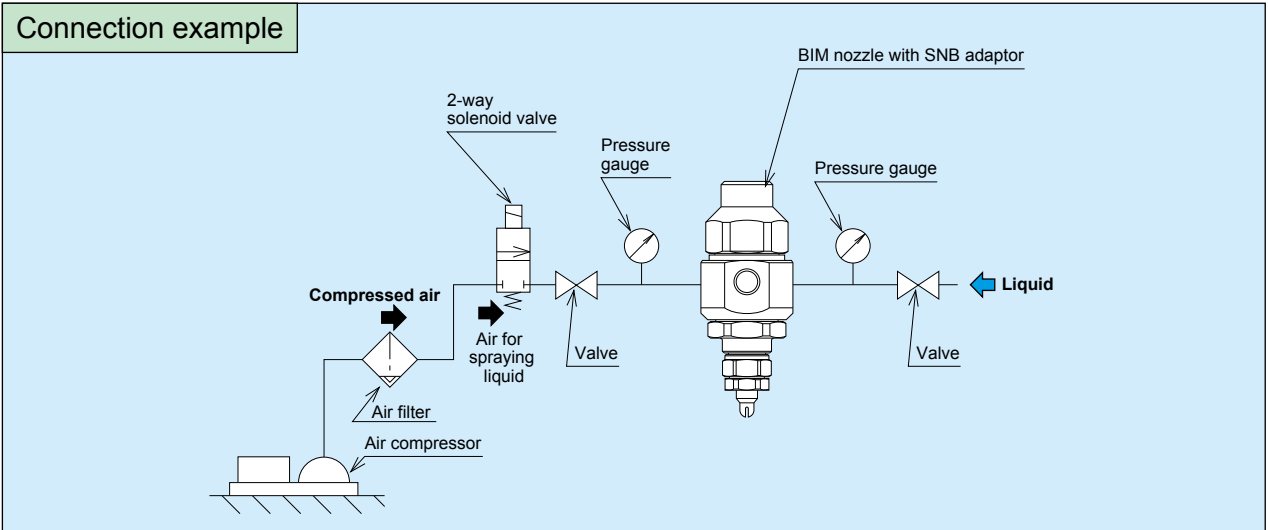
**■SNB adaptor (CSN, SN adaptors)**

Spray ON/OFF can be regulated by turning compressed air ON/OFF.  
 Compressed air pressure must be 0.2 MPa or higher in order to start the spray.  
 Adaptor types **CSN** (see page 30) and **SN** (page 35) are used in the same way.

**Function chart**

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

**Connection example**



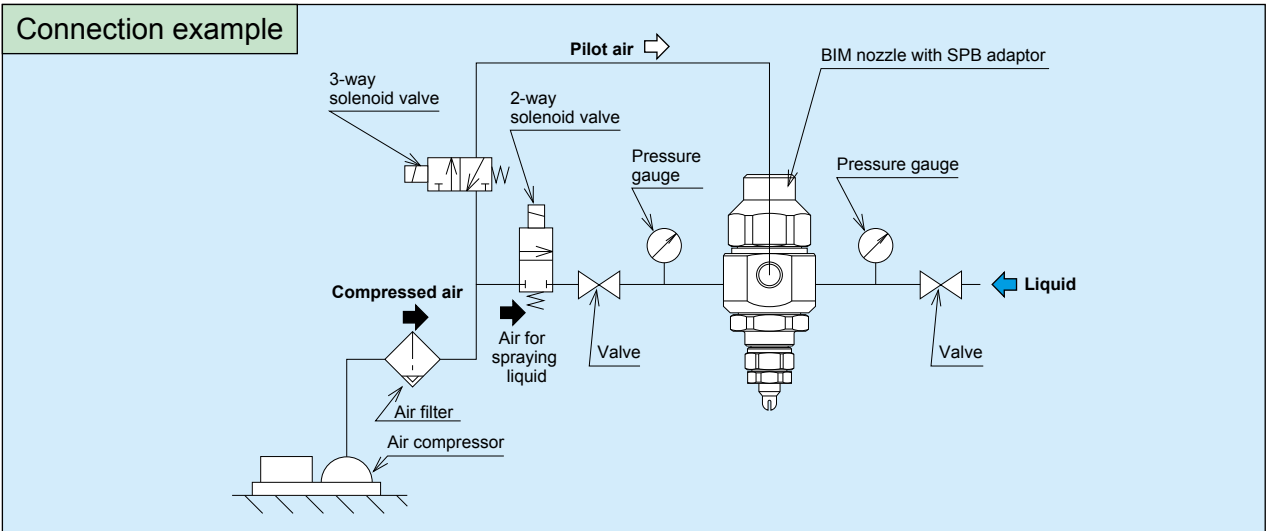
**■SPB adaptor (CSP, SP adaptors)**

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 must be 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 30) and **SP** (page 35) are used in the same way.

**Function chart**

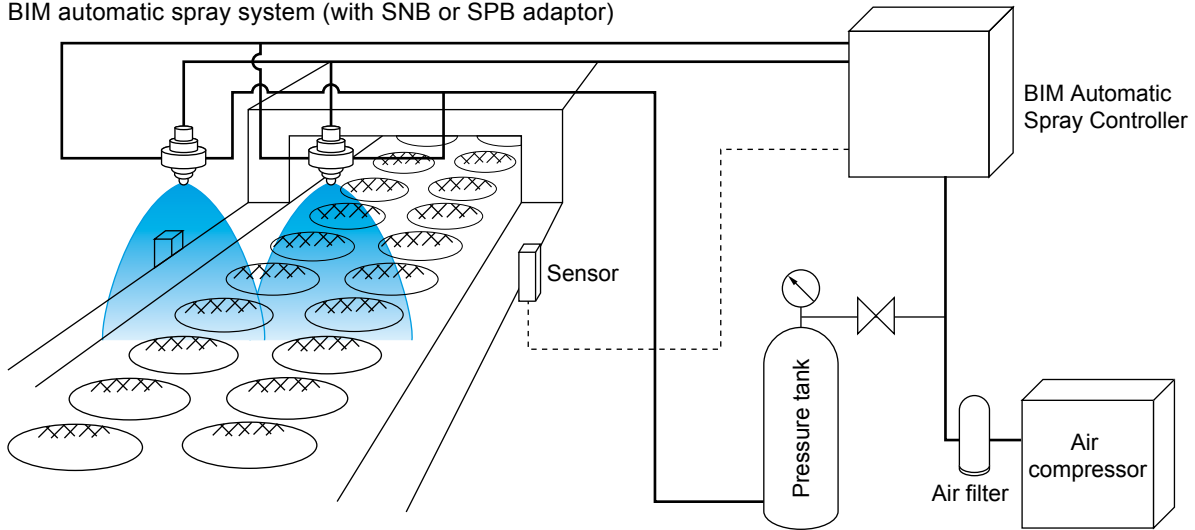
Compressed air	ON	ON	OFF	ON	OFF
Pilot air	OFF	ON	OFF	ON	OFF
Liquid	Stop	Spray	Stop	Spray	Stop

**Connection example**



### Installation Example of BIM Automatic Spray System

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



### Optional/ Related Products

#### ■ Mounting Bracket (product code: MBW)

Mounting bracket enables easy fixing of a nozzle on a pole (metal rod) with desired spray direction.

Available in two size for pipe diameters of 8 mm or 10 mm.

Available for the adaptor types T, NDB, UNDB, SNB, USNB, SPB, and USPB (not available for N-type adaptor).



#### ■ Spray Gun Unit with BIM nozzles: BIM-GUN

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

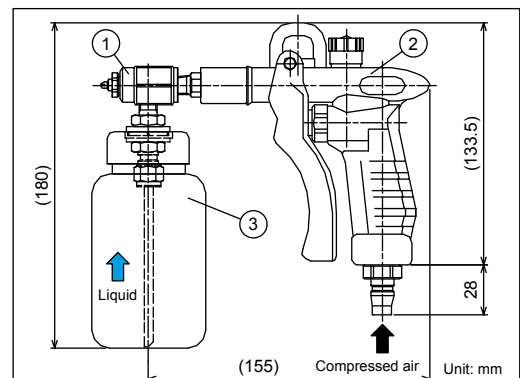
Suitable for chemical spraying, etc.

\*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.

#### HOW TO ORDER

Please inquire or order for a specific BIM-GUN using these product codes.

(Flat spray) BIMV series

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

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

(Hollow cone spray) BIMK 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

