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

BIMK-S

Hollow cone spray pneumatic nozzle producing fine atomization with a mean droplet diameter of 30 μm or less.*1

- Liquid siphon feed type (liquid pressure device is not required).
- Spray angle of 60°.

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.
- 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. Figures at foot of each curve indicate gravity head (+) and siphon height (−) in mm.
  3. Figures in ovals ○ indicate Sauter mean diameters (μm) measured by laser Doppler method.
  4. These flow-rate diagrams are applicable to adaptors type T and N only.

<table>
<thead>
<tr>
<th>BIMK6004S</th>
<th>BIMK60075S</th>
</tr>
</thead>
</table>

- See pages 26 and 27 for details of adaptors.

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**APPLICATIONS**

Spraying: Mold release agent, lubricant, deodorant, oil, surface treatment agent, rust preventive, honey, insecticide, aqueous urea

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## PERFORMANCE DATA

<table>
<thead>
<tr>
<th>Spray angle code</th>
<th>Air consumption code</th>
<th>Air pressure (MPa)</th>
<th>Air consumption (L/min, Normal)</th>
<th>Spray capacity (L/hr)</th>
<th>Mean droplet diameter (μm)</th>
<th>Free passage diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gravity head (mm)</td>
<td>Laser Doppler method</td>
<td>Tip orifice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Siphon height (mm)</td>
<td>Adaptor Liquid</td>
<td>Air</td>
</tr>
<tr>
<td>+300</td>
<td>+100</td>
<td>-100</td>
<td>-300</td>
<td>-500</td>
<td>Spray width*2 (mm)</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>04</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>27</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>075</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>56</td>
<td>5.5</td>
</tr>
</tbody>
</table>

*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.

**Example**: BIMK 60075S S303 + N S303

- **BIMK 60 075 S S303 + N S303**
  - BIMK: Spray angle code
  - 60: Air consumption code
  - 075: Siphon type
  - S: Material of nozzle tip
  - S303: Type of adaptor
  - N: Material of adaptor

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 NDB**  
Spray capacity is adjustable with needle valve.  
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 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 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 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 ø1 is for air relief.
Adaptors for BIM series Fine Fog Nozzles

**TYPES OF ADAPTORS**

**Type SPB**

Spray ON/OFF can be regulated by switching the pilot air ON/OFF. The pilot air actsuates 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

**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.

- **Cap**
- **Nozzle tip**
- **Core**
- **Nozzle adaptor**
- **Connector**
- **Adaptor**
- **Backup ring**
- **Lock nut**
- **Sleeve**
- **Piston**
- **O-ring**
- **Y-packing**
- **Spring**
- **Spring cap**

**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**

<table>
<thead>
<tr>
<th>Adaptor type</th>
<th>Air consumption code</th>
<th>Pipe connection sizes</th>
<th>Compressed air</th>
<th>Liquid</th>
<th>Pilot air</th>
<th>Mass (g)</th>
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</thead>
<tbody>
<tr>
<td>N</td>
<td>02, 04, 075</td>
<td>Rc1/8 Rc1/8</td>
<td>Rc1/8</td>
<td>55</td>
<td>130</td>
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<tr>
<td></td>
<td>15, 22</td>
<td>Rc1/4 Rc1/4</td>
<td>193</td>
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<td>172</td>
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<td>02, 04, 075</td>
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<td>Rc1/8</td>
<td>80</td>
<td>193</td>
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<tr>
<td></td>
<td>15, 22</td>
<td>Rc1/4 Rc1/4</td>
<td></td>
<td></td>
<td>172</td>
<td></td>
</tr>
<tr>
<td>SNB</td>
<td>02, 04, 075</td>
<td>Rc1/8 Rc1/8</td>
<td>Rc1/8</td>
<td>151</td>
<td>172</td>
<td></td>
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<tr>
<td></td>
<td>15, 22</td>
<td>Rc1/8 Rc1/8</td>
<td></td>
<td></td>
<td>172</td>
<td></td>
</tr>
<tr>
<td>USNB</td>
<td>02, 04, 075</td>
<td>Rc1/8 Rc1/8</td>
<td>Rc1/8</td>
<td>146</td>
<td>167</td>
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<tr>
<td></td>
<td>15, 22</td>
<td>Rc1/8 Rc1/8</td>
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<td></td>
<td>167</td>
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**DIMENSIONS**

<table>
<thead>
<tr>
<th>Air consumption code</th>
<th>Dimensions (mm)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>L1</td>
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<tr>
<td>02</td>
<td>25.3</td>
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<td>04</td>
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<tr>
<td>15</td>
<td>39.1</td>
</tr>
<tr>
<td>22</td>
<td>41.3</td>
</tr>
</tbody>
</table>
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.

**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.
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.

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

(B)IMV8004SS303+TS303 siphon spray unit (w/ 250 ml bottle)
(B)IMV80075SS303+TS303 siphon spray unit (w/ 250 ml bottle)
(B)IMK6004SS303+TS303 siphon spray unit (w/ 250 ml bottle)
(B)IMK60075SS303+TS303 siphon spray unit (w/ 250 ml bottle)

Approx. spray capacity (for your reference)
BIMV8004S/BIMK6004S: 30 ml/min  BIMV80075S/BIMK60075S: 60 ml/min
**List of Nozzle Tip Interchangeability**

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

### BIM series

<table>
<thead>
<tr>
<th>Liquid pressure type</th>
<th>BIMV</th>
<th>BIMK</th>
<th>BIMJ</th>
<th>BIMV-S</th>
<th>BIMK-S</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Liquid siphon type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>○○○○</td>
<td>○○○○</td>
<td>○○○○</td>
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<tr>
<td>BIMJ</td>
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<td>○○○○</td>
<td>○○○○</td>
<td>○○○○</td>
<td>○○○○</td>
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<tr>
<td>BIMV-S</td>
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<td>○○○○</td>
<td>○○○○</td>
<td>○○○○</td>
<td>○○○○</td>
</tr>
<tr>
<td>BIMK-S</td>
<td>○○○○</td>
<td>○○○○</td>
<td>○○○○</td>
<td>○○○○</td>
<td>○○○○</td>
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