

Instruction Manual

Products: Spray Nozzles

KKBP Series

Thank you for purchasing this product.
Prior to use, read this manual carefully and familiarize yourself with the proper operation of the product for best performance.
H. Ikeuchi & Co., Ltd. takes no responsibility for any accidents and/or injuries resulting from improper handling, installation and/or operation.
After reading, keep this manual handy for quick reference.
Please be aware that due to continuing efforts to improve our products, some details in this manual may differ from the actual product.

H. Ikeuchi & Co., Ltd.

1. Precautions

(1) Installation Instructions

- Be sure to flush the pipes before installing the nozzle to remove any dirt and foreign matter.
- Apply sealant or sealing tape to the nozzle threads.
- Avoid installing the nozzle immediately on or after a bend in the pipe or an elbow. Turbulence may affect the nozzle performance.
- Install the nozzle with a tightening torque of 15 N·m.

(2) Operation

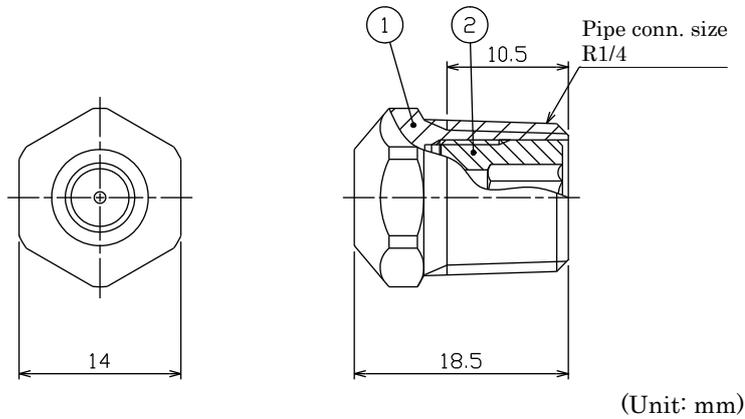
- Start spraying at a water pressure of 0.05–0.1 MPa to avoid water hammer and then gradually increase to operating pressure.
- After spraying chemical solution, spray clean water for a while to clean the nozzle orifice and the inside of the nozzle.
- To prevent the nozzle from clogging, install strainers or use a water treatment system, depending on the water quality.

(3) Handling Instructions

- Do not damage or scratch the nozzle.
- Do not poke the nozzle orifice with nails, metal pins or other hard objects.
- Do not apply any strong force, shock or vibration to the nozzle.
- The maximum operating pressure for the KKBP series is 5.0 MPa. To prevent a water hammer, avoid a sudden increase in liquid pressure.
- Store the nozzle in a clean, dust-free place.

2. Component of Nozzle

(1) Components and Materials



No.	Component	Material*1
1	Nozzle Body	S303*2
2	Whirler	S316L equivalent

*1 In our material code, "S" represents "stainless steel".
For example, S303 stands for stainless steel 303.

*2 Optional material (only available on a made-to-order basis): S316, S316L

3. Disassembly

Disassemble the nozzle in a clean, dust-free environment. Always clean the nozzle surface before disassembly to prevent any dust and dirt from entering the nozzle. Be careful not to lose any parts.

Procedure	Diagram
Remove the whirler (part #2) from the nozzle body (#1) using a hexagon wrench (nominal size 5).	

4. Maintenance

Impurities are most likely to adhere to the orifice of the nozzle tip. Pay special attention to check the condition of this part. Carefully remove any dust and dirt with a brush, toothpick, or bamboo skewer. Clean each part thoroughly from foreign particles to maintain performance.

5. Reassembly

Before assembling, ensure that the sealing surfaces indicated by ☆ in the diagram below are clean and undamaged.

Procedure	Diagram	Caution
Screw the whirler (part #2) into the nozzle body (#1) using a hexagon wrench (nominal size 5).		Tightening torque for whirler (#2) is 15 N·m.

6. Troubleshooting

If there is a problem, please check the following items first. If the problem persists, please replace the nozzle.

Problem	Possible reason	Solution
Nozzle not spraying	Liquid pressure is too low.	Check the pressure in the pipe and apply the proper pressure.
	Nozzle and/or strainer is clogged.	Clean with ultrasonic cleaner and air blower.
Irregular spray pattern	Liquid pressure is too low.	Check the pressure in the pipe and apply the proper pressure.
	Nozzle and/or strainer is clogged.	Clean with ultrasonic cleaner and air blower.
	Spray angle becomes narrow.	Tighten the whirler (#2) firmly.
Straight line spray (not forming a hollow cone spray)	Whirler (#2) is not in place.	Install the whirler (#2) correctly.
Water leakage	Sealant or sealing tape is damaged or worn.	Replace or change the sealant or sealing tape.
	Nozzles are not screwed in tight enough.	Tighten the nozzles properly with a torque wrench.

7. Warranty

There is a one year warranty from the date of our shipment.

Seller shall be responsible for any damage due to design or production and will replace the item free of charge.

Neither this warrant nor any implied warranty applies to damage or harm caused by any or all of the following: 1. Damage due to misapplication and/or misuse, 2. Improper repair and/or modification, 3. Natural disasters, 4. Normal wear-and-tear of consumable parts including clogged nozzles.