RSP-R series

-High-pressure Rotating Pipe Cleaning Nozzles -

Instruction Manual

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Preface

Thank you for purchasing our CERJET® Spray Nozzle from H. Ikeuchi & Co., Ltd. This manual gives detailed instructions for the basic handling, maintenance and cautions of the

CERJET® Spray Nozzle.

Please take note that due to our continuous efforts to improve our products, the details in this manual may differ slightly from the actual product.

After reading, keep this manual handy for quick reference.

Safety Precautions

Prior to use, read this manual to familiarize yourself with the proper operation of the nozzle for best performance.

H. Ikeuchi & Co., Ltd. takes no responsibility for any accidents and/or injuries resulting from improper handling, installation and/or operation.



Wear safety gloves.

UTION The screw threads or sharp edges and corners may cause injury.



Ensure that the nozzle is firmly installed.

Loose screws may cause the nozzle to come off during operation and lead to serious accidents.



Maintenance shall be done after the nozzles are cooled down to avoid risk of burn. The nozzles may have become hot, and may cause burns if touched.



To prevent the water hammer, avoid the sudden increase in spray pressure.

^N The nozzle attached to a hose may move around and injury may result.



Do not stand near or move close to the nozzle and its spray direction in order to avoid any unexpected accidents or injuries.

1. Suggestions & Cautions

- (1) Install the nozzles as the final installation step after all piping installation is completed and the entire piping system is cleaned.
 - Never install a nozzle during installation work of the plant or equipment.
 - Use larger size pipes and valves to prevent the pressure drop.
 - Use new stainless steel pipes. Dust and foreign particles in old pipes may clog the nozzles.
 - Even new pipes may have chips or seal tapes inside.
 Before installing the nozzles, flush the pipes thoroughly to remove any foreign particles inside.
 Flushing should be at or near the maximum flow rate, such that turbulent flow occurs in the piping to promote cleaning.
 - If a nozzle is clogged, the nozzle performance deteriorates. Install strainers to help prevent nozzle clogging.

Liquid should be supplied to a nozzle after it runs through a strainer, regardless of whether the liquid is in a recirculating system or not.

- (2) When installing a nozzle, take sufficient safety precautions and be careful in handling.
- (3) The screw threads, edges and corners may be sharp. Wear safety gloves to protect hands.
- (4) The nozzle operating pressure range is 1–10 MPa.
- (5) Do not damage or scratch the nozzles. When disassembling the nozzles for maintenance, use a spanner, adjustable wrench and milling vice.
- (6) To avoid excessive loads, after ensuring that the valve to start spraying is completely closed, turn on the liquid supply pump. Gradually open the valve to adjust the pressure to the rated pressure. (Excessive loads can cause the nozzle to move around and injury may result.)
- (7) To stop spraying, gradually close the valve. Ensure that the valve is completely closed, then stop the liquid supply pump.

2. Nozzle Components and Spray Direction

(1) Components and materials



No.	Components	Materials
1	Connecting adaptor	Hardened stainless steel
2	Nozzle body (Rotating part)	Hardened stainless steel
3	Cap	Hardened stainless steel

(2) Rotating part assembly and spray direction

Note: When re-assembling the parts, orient the Nozzle body/Rotating part so that the nozzle will spray backward 45° (so that one of the nozzle orifice is directed downward at 45° as shown below).



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3. Disassembly and Cleaning (Please see the "Components" on previous page)

If the nozzle is clogged with foreign matter or it has an improper rotation, follow the steps below to disassemble and clean the nozzle.

Hold the Connecting adaptor (part #1) in a milling vise, unscrew the Cap (#3) with a spanner (grip width of 16 mm), then remove the Nozzle body/Rotating part (#2).

Note:

- (1) Be careful not to damage or lose the parts.
- (2) Be careful not to scratch or damage the sliding surfaces.
- (3) Disassembled parts should be kept free from dust. Do not expose them to physical shocks and/or vibration.

Foreign matter easily adheres to the surface of the insertion part of the Connecting adaptor (#1) and the inner surface of the Nozzle body/Rotating part (#2). Fully clean the parts with compressed air and water to remove any dust and foreign matter.

4. Assembly

Assemble in the reverse order of 3. Disassembly and Cleaning.

Note:

- (1) Before assembly, check that there are no scratches or foreign matter on the sliding surfaces.
- (2) When attaching the Nozzle body/Rotating part (#2) on the Connecting adaptor (#1), be careful of the orientation of the Nozzle body/Rotating part (#2). Make sure that the nozzle will spray 45° backward. (One of the nozzle orifice should be directed downward at 45° as shown on previous page.)
- (3) When attaching the Cap (#3), screw it by hand at first, then tighten it additionally with a spanner (grip width of 16 mm). Recommended tightening torque is 20 N m.
- (4) When attaching the nozzle to a hose, tighten the nozzle with a spanner (grip width of 16 mm) by grasping the flat parts of the Connecting adaptor (#1). Recommended tightening torque is 15-20 N m.

5. Maintenance

- (1) Visually confirm that the nozzle is not distorted or deformed.
- (2) Rotate the nozzle body (rotating part) a few times by hand to check the rotation condition.
- (3) If rotation is not smooth and/or it does not rotate after starting spray, maintenance is required. Perform maintenance as shown in <u>3</u>. Disassembly and Cleaning and check the operation.

6. Troubleshooting

Troubles		Probable causes		Solutions
No spray is being created		Control	• Controller is not switched on.	• Switch it on.
			• Valves are not opened.	• Open the valves.
		Nozzle	• Nozzle or hose is clogged with	• Clean the nozzle or hose.
			foreign matter.	• Replace the damaged part.
			• Nozzle or hose is clogged due to	• Clean them.
			damage.	
Liquid leak		• Some par	ts are loose or not tightened.	• Tighten the connections.
		Nozzle or hose is cracked.		• Replace the cracked part.
		Nozzle or hose is corroded.		\cdot Replace the corroded part.
Irregular spray		Adhesion	of dust/foreign particles on sliding	• Clean the sliding surface.
	Improper	surfaces. • Nozzle is clogged.		
	rotation			• Clean the nozzle.
		• Sliding surface is scratched or damaged.		\cdot Replace the nozzle.
	Irregular	Nozzle or hose is clogged.		• Clean the nozzle or hose.
	spray			
	pattern			

7. Disposal

Disposal should be practiced according to the regulations and codes of local authorities, or ask a disposal professional.

8. Inquiries

For spare parts or any trouble, contact your supplier or the following:

H. IKEUCHI & CO., LTD.

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