

Instruction Manual

on

GSIM II series Pneumatic Spray Nozzles

GSIM II series with T-adaptor (GSIM**150II, 220II)

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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 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 optimal performance.

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



CAUTION

Wear safety gloves.

Screw threads, edges and corners may be sharp and could cause injury.



CAUTION

Ensure that the nozzle is firmly installed.

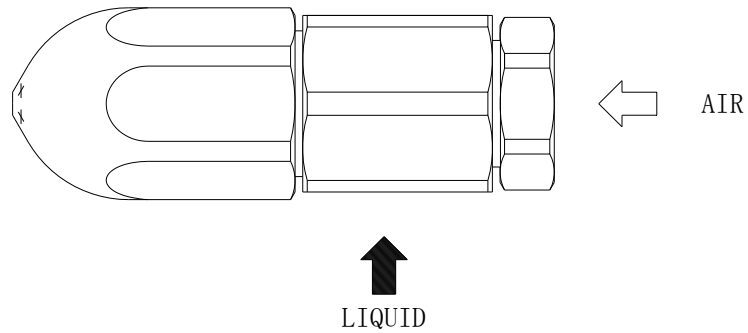
Loose screws may cause the nozzle to come off during operation and lead to serious accidents.

1. Suggestions & Cautions

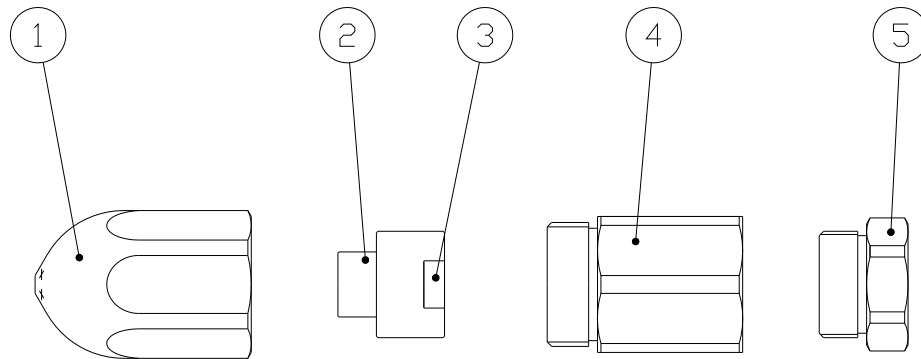
- (1) Avoid prolonged exposure of the nozzle to high temperatures when not in use to prevent corrosion.
- (2) Screw threads, edges and corners may be sharp. Wearing safety gloves is recommended.
- (3) Operate the nozzles under the specified pressures. If the pressure is not specified, refer to the provided flow-rate diagram.
- (4) Avoid damaging or scratching the nozzles and pipes. When replacing a nozzle tip or disassembling for maintenance, always use a spanner/wrench and milling vice. DO NOT use a pipe vice, pipe wrench or pliers.
- (5) Precautions to prevent liquids from back-flowing:
To start operation: Open the air supply first, then the liquid.
To stop operation: Shut off the liquid first, then the air.
- (6) Air and liquid piping
 - Use piping and valves large enough to prevent the pressure from dropping.
 - Use new stainless steel pipes, as dust and debris in old pipes may clog the nozzles. Never use pipes that can rust.
 - Even new pipes may have chips, seal tape or other debris inside. ALWAYS flush pipes thoroughly before installing nozzles to remove any debris that could cause clogging.
 - Install pressure gauges just before the nozzle to adjust air and liquid pressures appropriately. Installation of a valve is also recommended.
 - If a nozzle is clogged, its performance is impacted. Installing strainers help prevent nozzle clogging.
- (7) Prior to shipment all parts are firmly tightened. However, due to temperature changes during transport and especially if the nozzles are exposed to repeated heating and cooling during operation, parts such as screws may loosen and should therefore be inspected regularly. Take special care when screwing in and unscrewing to prevent damage.
Always apply an anti-seizing or sealing agent to the threads before assembly.

2. Components of Nozzle

(1) Nozzle Assembly



(2) Components and Materials



No.	Component	Material	Remark
1	Nozzle Tip	S316L	Consumable
2	Nozzle Core	S316L	Consumable
3	Whirler	S316L equivalent	Consumable
4	Nozzle Adaptor	S303	
5	Air Socket	S303	

Note:

(1) Consumables

The lifetime of a nozzle varies, depending on the operational conditions. If there is a significant change in the nozzle performance, consumable parts, such as the nozzle tip, should be replaced.

(2) Dimensions and materials may differ depending on product codes.

(3) In the material code, "S" represents "stainless steel".

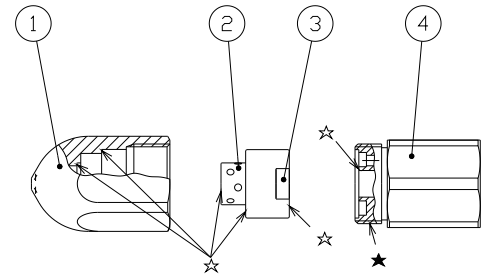
For example, S303 stands for stainless steel 303.

3. Disassembly

(1) Nozzle

Secure the nozzle adaptor (component# 4) with a milling vice and unscrew the nozzle tip (#1) with a spanner to take out the nozzle core (#2).

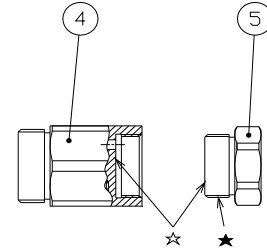
Necessary tools:
Milling vice
Spanner 46 mm



(2) Air Socket

Secure the nozzle adaptor (#4) with a milling vice and unscrew the air socket (#5) with a spanner to remove it.

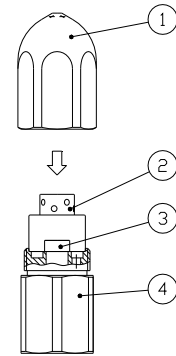
Necessary tools:
Milling vice
Spanner 41 mm



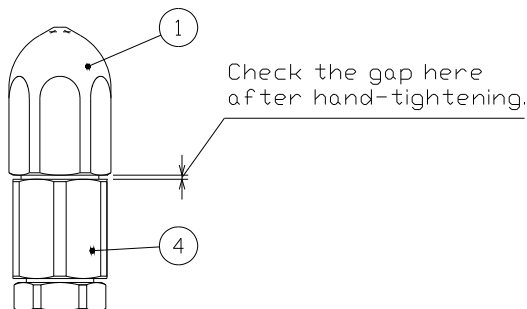
Note: (1) Be careful not to lose or damage these small parts.
(2) The nozzle tip and orifice are the most important and delicate parts. Take extreme care when handling them.

4. Assembly

Assemble in the reverse order of the above 3. Disassembly. Hold the nozzle adaptor (#4) in an upright position and insert the nozzle core (#2) into the groove of the adaptor (#4) as shown in the figure on the right. The nozzle core does NOT fit into the adaptor (#4) if the adaptor is turned sideways. Screw the nozzle tip (#1) onto the adaptor (#4) and hand-tighten. Prior to tightening with a spanner, check the gap between the nozzle tip (#1) and the nozzle adaptor (#4). See the note (4) below.



Note: (1) Before assembly, confirm that the sealing surfaces (indicated by ☆ above) and the orifice are clean and undamaged.
(2) Remove dust and debris carefully from the orifice and sealing surfaces (indicated by ☆ above) with a brush to not damage these important surfaces.
(3) Apply anti-seizing agent on threads (indicated by ★ above).
(4) Measure the gap between the nozzle tip and the nozzle adaptor. If the gap measures +/-0.5 mm or more than the specified value below, the parts are assembled incorrectly or the nozzle core is missing. In this case, disassemble, clean the parts, and then reassemble following the above instructions. Measure the gap again and if the gap is less than +/-0.5 mm of the specified value, tighten everything with a spanner.



Specified value:
2 mm for GSIM**150II or 220II

The gap must be less than +/-0.5 mm of the above value.

5. Maintenance

Check	Item	Check points
Daily	Spray	Have a visual check of the spray pattern.
	Pressure gauges and flow meters	Confirm that the air and liquid pressures and flow rate are correct during operation.
Periodically	Spray	Have a visual check of the spray pattern.
	Appearance	Confirm that there is no corrosion or dust adhesion to the nozzle tip and orifice.
	Connection	Confirm that nozzle tip and nozzle adaptor are connected properly and firmly. Confirm that none of the screws are loose.

6. Troubleshooting

Troubles	Probable Causes		Solutions
No spray is being created	Control	<ul style="list-style-type: none"> • Controller is not switched on. • Valves are not opened. 	<ul style="list-style-type: none"> • Switch it on. • Open the valves.
	Nozzle	<ul style="list-style-type: none"> • Nozzle or pipe is clogged. • Nozzle or pipe is clogged due to damage. • Liquid orifice and/or air orifice is clogged. 	<ul style="list-style-type: none"> • Check and clean the nozzle or pipe. • Replace the damaged part. • Clean them.
Air leaks Liquid leaks	<ul style="list-style-type: none"> • Some parts are loose or not tightened. • Nozzle or pipe is cracked. • Nozzle or pipe is corroded. 		<ul style="list-style-type: none"> • Tighten the connections. • Replace the cracked part. • Replace the corroded part.
Intermittent spray	<ul style="list-style-type: none"> • Seal failure between the nozzle tip, core, and adaptor (air or liquid leaks due to dust/foreign particles adhered on the sealing surface). 		<ul style="list-style-type: none"> • Clean the sealing surface and replace the part.
Irregular spray pattern	<ul style="list-style-type: none"> • Nozzle or pipe is clogged. • Nozzle tip is corroded. • Dust or foreign particles adhered on the orifices 		<ul style="list-style-type: none"> • Clean the nozzle or pipe. • Replace the corroded part. • Clean the parts.

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:



“The Fog Engineers”
H. IKEUCHI & CO., LTD.

Daiichi Kyogyo Bldg., 1-15-15, Awaza, Nishi-ku,
Osaka 550-0011 Japan

Tel: +81-6-6538-4015 Fax: +81-6-6538-4022

e-mail: overseas@kirinoikeuchi.co.jp <http://www.kirinoikeuchi.co.jp/eng/>