CERJET®

NKS110158-7E

Jet Attacker JA2 Series

Rotating Nozzles for 2-Dimensional Cleaning

Instruction Manual

H. Ikeuchi & Co., Ltd.

Preface

Thank you for purchasing the Jet Attacker JA2 Series from H. Ikeuchi & Co., Ltd.
This manual gives detailed instructions for the basic handling, maintenance and cautions of this product.
The JA2 Series comes in two versions, the JA2-2 Series with 2 arms/nozzles and the JA2-4 Series with 4 arms/nozzles. All illustrations only show the JA2-2 Series for your convenience. All instructions are valid for both versions.
Please take note that due to our continuous efforts to improve our products, some 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 carefully and 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/product is firmly installed.

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


CAUTION

Be aware of the nozzle temperature and do not perform maintenance until it has cooled down enough to avoid burns.

1. Suggestions & Cautions

(1) Installing the JA2 Series should be done after the piping system is completely installed and flushed.
- Never install a JA2 Series during installation work of the plant or equipment.
- 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 JA2 Series. Never use pipes that can rust.
- Even new pipes may have chips, seal tape or other debris inside.
  ALWAYS flush the pipe system thoroughly before installing JA2 Series to remove any debris that has collected during the construction and assembly to avoid clogging. This flushing should be done at or near the maximum flow rate to thoroughly clean the system.
- If a JA2 Series is clogged, its performance is impacted. Installing strainers help prevent JA2 Series clogging.
  Regardless of the type of cleaning liquid, whether it is one-time use or recirculated, it should always run through a #50 or finer mesh strainer.

(2) JA2 Series may be heavy and need to be handled carefully.

(3) Screw threads, edges and corners may be sharp. Wearing safety gloves is recommended.

(4) Operate JA2 Series under the specified pressures. If the pressure is not specified, refer to the provided flow-rate diagram.

(5) Avoid damaging or scratching the JA2 Series and pipes. When disassembling a JA2 Series for maintenance, always use a spanner, adjustable wrench, and milling vice.

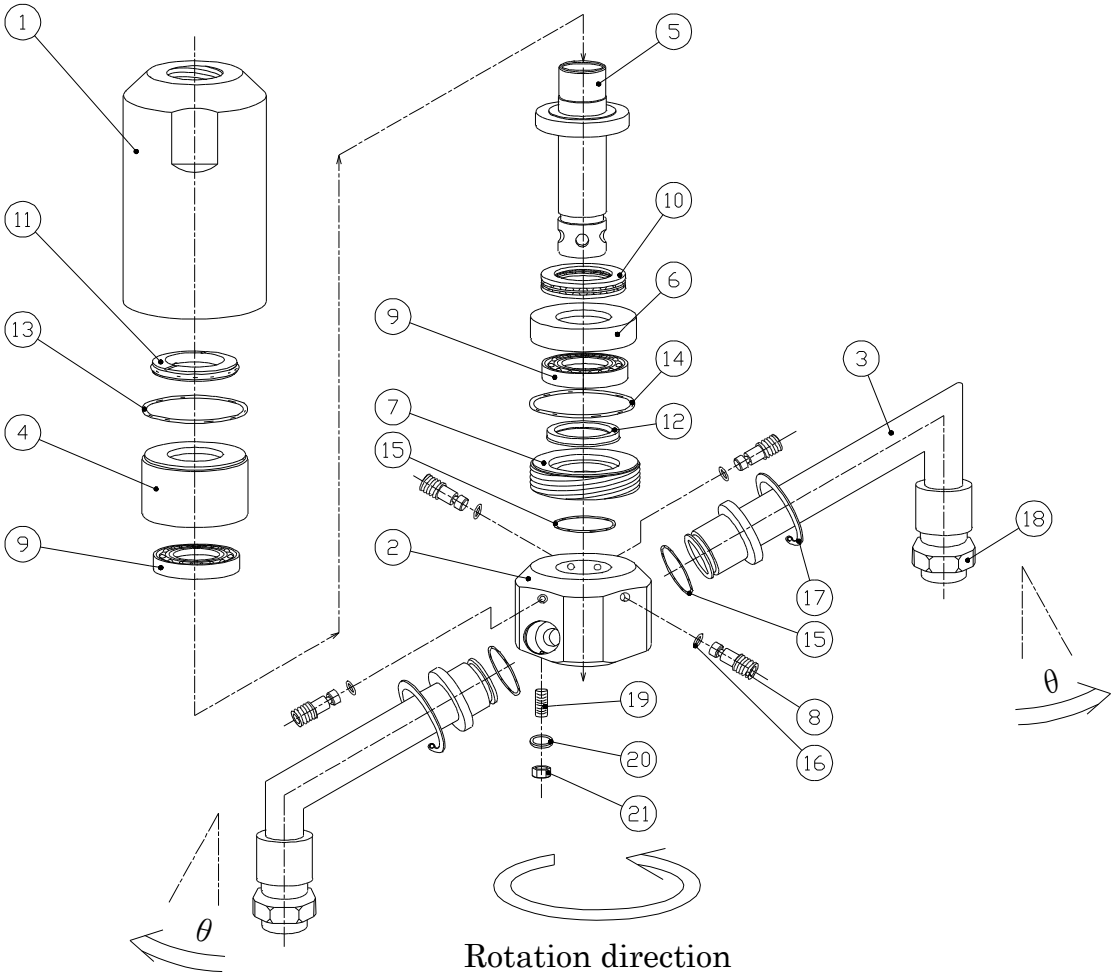
(6) To install JA2 series, use a spanner/wrench on the flat sections of the body casing (part #1) and tighten.

(7) The spray reaction force causes the rotation of the JA2 series. Its direction is determined by the tilting direction of the nozzle offset angle. For more details please see 5. How to adjust the rotation speed on page 6.
The JA2 Series normal rotation is counterclockwise when looking at it from the direction of the liquid inlet. Reversing the direction of rotation could loosen screws and cause JA2 Series to fall off.

(8) Avoid sudden and/or drastic changes in liquid pressure to prevent the water hammer.

2. Components of JA2 Series

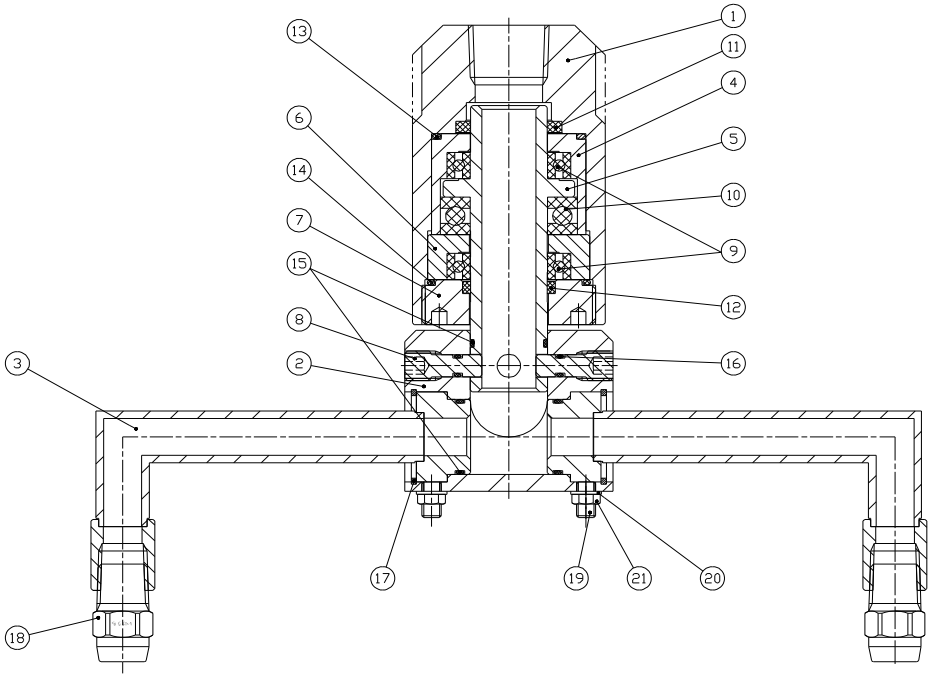
(1) Parts Breakdown



θ: Nozzle offset angle
(See 5. How to adjust the rotation speed on page 6.)

The above diagram is of JA2-2 (JA2 with 2 nozzles).
JA2-4 is equipped with 4 nozzles.

(2) Components and Materials



Part No.	Components	Material	Code No.	Quantity		Remark
				JA2-2	JA2-4	
1	Body casing	S304	#217776	1	1	
2	Nozzle connector	S304	#217777	for JA2-2 (Quatity: 1)		
			#217778	for JA2-4 (Quatity: 1)		
3	Arm (L = 200)	S304	#217786	2	4	
	Arm (L = 300)	S304	#233855	2	4	
4	First bearing box	S304	#217779	1	1	
5	Rotation shaft tube	S304	#221929	1	1	
6	Second bearing box	S304	#217782	1	1	
7	Body mechanism screw	S304	#217784	1	1	
8	Rotation shaft tube screw	S304	#217783	4	4	
9	Radial bearing (6804)	S440C	#218704	2	2	Consumable
10	Thrust bearing (51104)	S440C	#218703	1	1	Consumable
11	High-pressure seal	Special PTFE, FKM	#267331	1	1	Consumable
12	Top seal	Special PTFE, S304	#210048	1	1	Consumable
13	O-ring (S35)	FKM	#217788	1	1	Consumable
14	O-ring (S40)	FKM	#217787	1	1	Consumable
15	O-ring (S18)	FKM	#210804	3	5	Consumable
16	O-ring (S4)	FKM	#217789	4	4	Consumable
17	Snap ring (24)	FKM	#217792	2	4	Consumable
18	Nozzle (1/4")	S303	-	2	4	Consumable
19	Hex socket set screw (M5, L=10)	S304	#190201	2	4	
20	Spring washer (5)	S304	#176559	2	4	
21	Nut (M5)	S304	#217792	2	4	

Note:

(1) Consumables

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

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

For example, S303 stands for stainless steel 303.

(3) Code No. of the arm (part #3) differs depending on its length.

It is recommended to contact IKEUCHI (the manufacturer), to disassemble and reassemble this JA2 Series as it is a difficult task.

3. Disassembly (Please refer to the parts list on previous page)

(1) Loosen the rotation shaft tube screws (part #8) with an Allen wrench (hex wrench) to remove it and pull out the nozzle connector (#2).
(2) Remove the body mechanism screw (#7) by turning it with pliers.
(3) Pull out the rotation shaft tube (#5) from the body casing (#1), and remove the second bearing box (#6), radial bearing (#9), thrust bearing (#10) and top seal (#12).
(4) Pull out the first bearing box (#4) from the body casing (#1), and remove the radial bearing (# 9) and high-pressure seal (#11).
(5) To remove the arm (#3), first loosen the nut (#21) with a spanner/wrench, loosen the hex socket set screw (#19) with an Allen wrench, and remove the snap ring (#17) with pliers. Then pull out the arm (#3) from the nozzle connector (#2).

Note:
(1) Be careful not to lose or damage these small parts.
(2) Avoid damaging or scratching the sealing and sliding surfaces.
(3) Disassembled parts should be kept free from dust and dirt. Do not expose them to physical shocks and/or vibration.

4. Reassembly

(1) After cleaning each parts completely, dry them with compressed air and make sure to visually check the condition of each part to confirm they are not damaged in any way before reassembling them.
(2) Assemble in the reverse order of the above 3. Disassembly.
(3) Rotation speed can be adjusted with the tilt of the nozzle offset angle. Set the offset angle according to your specific requirements and application. For more details please see 5. How to adjust the rotation speed on page 6.

Note:
(1) Remove dust and debris carefully from the sliding surfaces with a brush.
(2) Avoid damaging or scratching the sealing and sliding surfaces.
(3) Screw in the JA2 Series by hand at first, then tighten with a spanner/wrench.

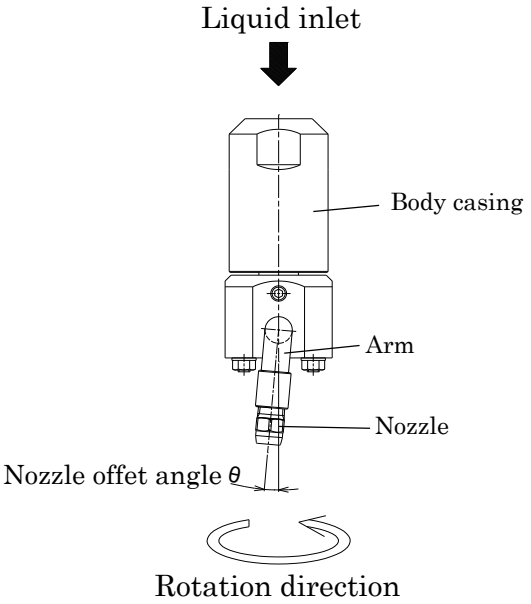
5. How to Adjust the Rotation Speed

The spray reaction force causes the rotation of the JA2 series.

- The tilt direction of the nozzle offset angle θ determines the direction of rotation.
  To ensure the correct counterclockwise rotation, the offset angle should be to the left of center, as shown in the illustration below when looking at the nozzle and arm in a straight line.
  If the offset angle is to the right of center, the arm will rotate clockwise which could lead to loosening of screws for the body casing (part #1) and the JA2 Series may fall off.
- Rotation speed can be adjusted by changing the nozzle offset angle θ.
  Set the rotation speed to 30–60 rpm to prevent damage to the product. Use at higher speeds will reduce the lifespan and lead to breakdowns.

Follow the steps below to adjust the nozzle offset angle θ.

(1) LOOSEN, but do NOT REMOVE the nut (#21) with a spanner/wrench.
(2) LOOSEN, but do NOT REMOVE the hex socket set screw (#19) with an Allen wrench.
(3) Turn the arm (#3) and adjust the nozzle offset angle θ. To increase the rotation speed widen the offset angle θ, and to reduce the speed narrow angle θ.
  - Use a protractor to adjust the angle.
  - Each change should be 5 degrees or less.
  - The offset angle on opposing arms should be the same. (For JA2-2 Series, both arms should have the same offset angle. For the JA2-4 Series, not all 4 offset angles have to be the same, only the ones on opposing arms.)
(4) Tighten the hex socket set screw (#19) with an Allen wrench.
(5) Tighten the nut (#21) with a spanner/wrench.
(6) To set any other nozzles and arms, repeat steps (1) to (5). Ensure that the offset angle for all nozzles are securely in place before applying pressure to start spraying. Check the rotation speed.
  If the rotation speed is too high or too low, stop spraying and repeat steps (1) to (6).



6. Maintenance

(1) Visually inspect the JA2 Series for deformation and distortion.
(2) Manually rotate the arm (part #3) counterclockwise lightly to check the rotation.
(3) If the rotation is not smooth and/or it does not rotate after spraying is initiated, maintenance is required. Contact IKEUCHI or perform maintenance according to 3. Disassembly on page 5.

7. Troubleshooting

Problems	Probable Causes		Solutions
No spray is being created	Control	・ Controller is not switched on. ・ Valves are not opened.	・ Switch it on. ・ Open the valves.
	Nozzle	・ JA2 Series or pipe is clogged. ・ JA2 Series or pipe is clogged due to damage.	・ Check and clean the JA2 Series or pipe. ・ Replace the damaged part.
Liquid leaks	・ Some parts are loose or not tightened.		・ Tighten the connections.
	・ JA2 Series or pipe is cracked. ・ JA2 Series or pipe is corroded.		・ Replace the cracked part. ・ Replace the corroded part.
	・ O-ring/seal is worn.		・ Replace the worn O-ring/seal.
Rotation failure	・ Seal failure due to dust/foreign particles adhered on the sealing surfaces or damaged parts. ・ JA2 Series is clogged. ・ Seal/bearing is worn.		・ Clean the sealing surface and replace the part. ・ Clean the JA2 Series. ・ Replace the worn seal/bearing.
Irregular spray pattern	・ JA2 Series or pipe is clogged. ・ JA2 Series is corroded.		・ Clean the JA2 Series or pipe. ・ Replace the corroded part.

8. Disposal

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

9. Inquiries

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

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
Email: overseas@kirinoikeuchi.co.jp
https://www.kirinoikeuchi.co.jp/eng/