

Instruction Manual

**INVV Series
INJJX Series
INJJX-Y Series
INOVVE Series**



Configurations differ depending on nozzle codes.

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.

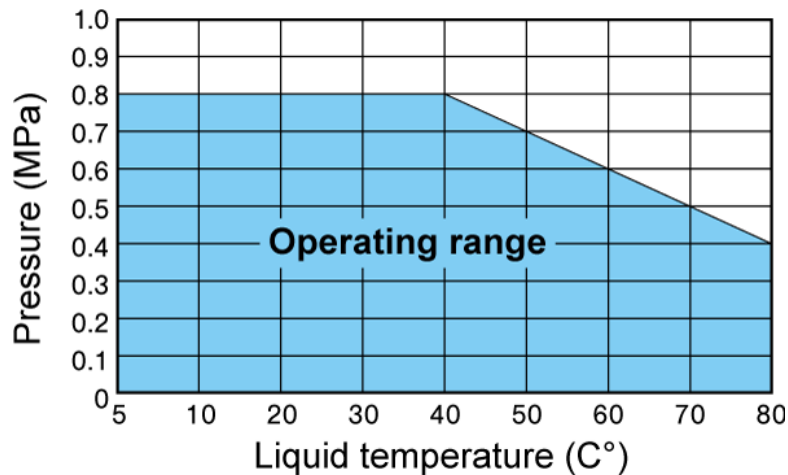
1. Safety Precautions

Prior to use, please read these “Safety Precautions” and use the nozzles properly. Improper use may result in injury and damage to the nozzle.



WARNING

Use the nozzle within the operating range shown below.
The heat resistance and the maximum operating pressure change depending on the temperature and applied pressure.



Maximum pressures at various temperatures



WARNING

Do not use the nozzle in freezing temperatures.



WARNING

For connection, only use screws conforming to the thread specifications of our nozzle.



WARNING

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



WARNING

Do not stand in front of the nozzle or keep your face away from the nozzle to avoid unexpected accidents or injuries.

2. Before Use (Instructions & Cautions)



Flush the pipes to purge foreign particles before installing the nozzle.



Apply sealant or sealing tape on the thread of the nozzle before installation.



Screw in the nozzle by hand.
If a wrench (spanner) is used, tighten lightly with an appropriate wrench (spanner), with a tightening torque of 3–3.5 N m.
Tightening it too much may break the nozzle.



Do not install the nozzle at the immediate rear of a bent pipe or elbow.
Turbulence in the pipe may affect the nozzle performance.



After spraying chemical solution, flush the nozzle orifice and inside of the nozzle with clear water.



To prevent the nozzle from clogging, apply strainers or use a water treatment system, depending on water quality.



Do not scratch the nozzle.
Do not use nails, metal pins or other hard objects to touch or clean the nozzle orifices, which may damage the nozzle.



Do not apply strong force, shock, or vibration to the nozzle.
The plastic nozzle may yield to mechanical shock and must be handled with care.



Store the nozzle in a clean place free from dust.



When spraying liquid other than water, consider the chemical resistance of the nozzle material to the liquid.
See Page 3 for the nozzle materials.



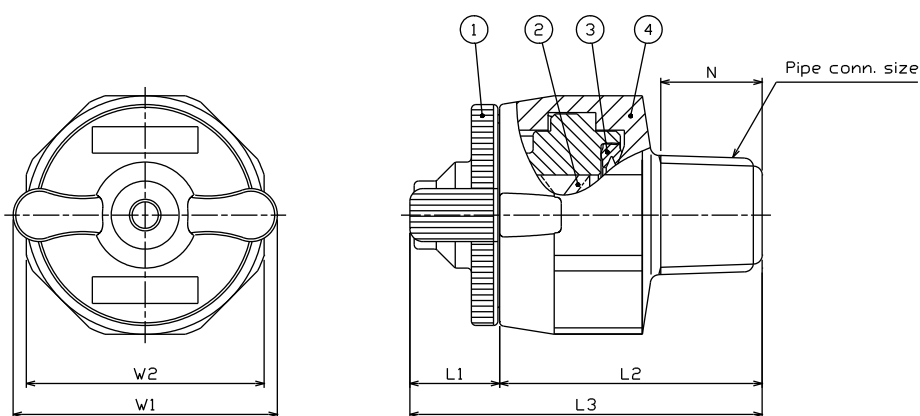
As the nozzle tip is quick-detachable, maintenance is easy.
Before use, fully understand the procedure for how to attach and detach the nozzle tip.



For the INJJX and INJJX-Y series, be careful not to dislodge the internal whirler when applying air or liquid from the nozzle tip.

3. Structure, Material, Dimension, and Weight

(1) Components and Materials



Configurations differ depending on nozzle codes.

No.	Components	Materials	Remarks
1	Nozzle Tip	PP	
2	Whirler	PP	INJJX, INJJX-Y only
3	Packing	FEPM	
4	Adaptor	PP or PPS	

(2) Dimensions and Weight

Pipe Conn. Size	Dimensions (mm)						Weight (g)	
							Adaptor Material	
	L1	L2	L3	W1	W2	N	PP	PPS
R1/8 or 1/8NPT (M)	10	27	37	30	27	8	9	12
R1/4 or 1/4NPT (M)	10	30	40	30	27	11.5	10	13
R3/8 or 3/8NPT (M)	10	30	40	30	27	12	11	14

4. Assembling and Disassembling

(1) Disassembly

- ① Turn the nozzle tip counter-clockwise about 60° (Fig. 1) and detach it from the adaptor.
- ② The packing can easily be removed by inserting a finger, hooking it and pulling it out.
- ③ [For INJJX, INJJX-Y series only]
Remove the whirler by taking a hold of the tab and pulling (Fig. 2). If it is difficult to remove, pull it out while turning the whirler.

(2) Assembly

- ① [For INJJX, INJJX-Y series only] Insert the whirler into the nozzle tip (Fig. 2).
- ② Insert the packing from the edge as shown in the Fig. 3.
- ③ Align the guide of the nozzle tip with the groove in the adaptor, push it in, and turn the nozzle tip clockwise about 60° until it clicks.

Note:

- (1) Be sure the packing is positioned correctly.
Incorrect placement of the packing can cause leakage.
- (2) If the nozzle tip is not twisted on fully, it may fall off.
The tabs of the nozzle tip and the adaptor will align when the tip is attached correctly (Fig 4).

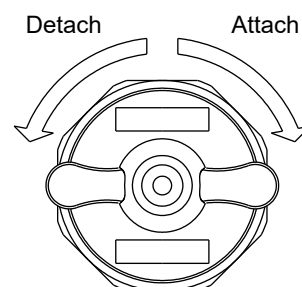


Fig. 1 Turning direction

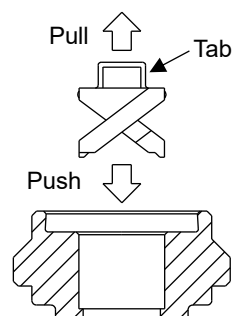


Fig. 2 Insert/Remove whirler
(for INJJX, INJJX-Y series only)

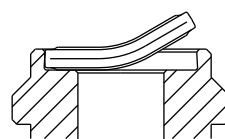


Fig. 3 Insert packing

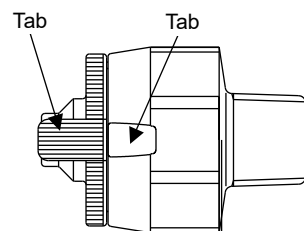


Fig. 4 Assembly Completed
(Tabs aligned)

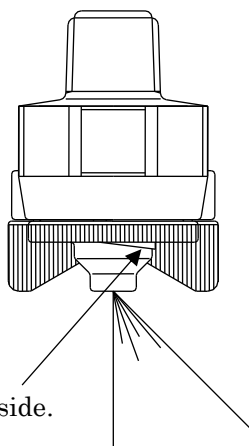
Note: Configurations may differ.

5. Spray Spread Direction (INOVVE Series Only)

INOVVE series generates an off-center flat spray pattern.

The spread direction of the spray can be identified by the slope of the markings on the nozzle tip. The spray spreads towards the higher end of the slope.

Make sure to pay attention to the spray spread direction when installing the nozzle.



The spray spreads to the protruding side.

6. Troubleshooting

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

Trouble	Probable cause	Solution
No spray, or spray pattern irregular.	Liquid pressure is too low.	Check the pressure in the pipe and apply the proper pressure.
	Nozzle tip is clogged.	Clean it and blow off with compressed air. (Ultrasonic cleaning, air blowing*, etc.)
Liquid leaking.	Deterioration of sealant or sealing tape.	Replace or change the sealant or sealing tape.
	Some parts are not firmly screwed in.	Tighten each part properly. (Recommended tightening torque: 3–3.5 N m)
	No packing.	Set the packing.

*Be careful not to dislodge the internal whirler when cleaning the INJJX and INJJX-Y series nozzles with compressed air from the nozzle tip.

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 nozzle tips.