ACCUPENSER JR.®

User Manual

●Thank you very much for your purchase.

● Please read this instruction manual carefully before use to ensure proper operation.

FUTURE LIFESCIENCE PARTNER
NICHIRYO

For your safety and to prevent potential injury or property damage, please read this instruction manual thoroughly and make sure you fully understand the instructions before using the product.

Warnings and Cautions

1	Make sure to firmly insert the tubes, nozzles, and other components all the way in. Failure to do so may cause liquid to scatter or leak.
2	Depending on the liquid used, there is a possibility of coagulation inside the tube. Please clean the tube thoroughly after use. Failure to do so may cause liquid to scatter, which could result in accidents.
3	Tubes may harden or deteriorate depending on the frequency and conditions of use. Please replace them promptly to ensure safe operation. Failure to do so may result in liquid scattering, which could cause accidents or contamination.
4	Do not autoclave bottles while they contain liquid. Doing so may result in accidents such as breakage, leakage, or pressure-related hazards.
5	Perform dispensing at a consistent speed and avoid rough handling to prevent splashing. Also, do not bring your face close to the nozzle or other parts during operation. Failure to follow these precautions may result in accidents.
6	After using liquids that are highly curable or crystalline, thoroughly clean the unit. Failure to do so may result in clogging of the flow path, which can cause damage to the main unit or lead to accidents.
7	Handle glass nozzles and other parts with extreme care when replacing them. Failure to do so may result in accidents.
8	If the plunger becomes stuck inside the cylinder, do not attempt to forcefully remove it, as this may cause damage and lead to accidents. In such cases, please send the unit in for repair.
9	Handle glass products (main unit, bottles, etc.) with care.
10	The bottle cap is made of PPS. When using strong acids or strong alkalis, take care to prevent the liquid from contacting the bottle cap. Also, do not store liquids in the bottle for extended periods. Failure to do so may cause deterioration of the bottle cap due to the liquid or its vapors, which can lead to accidents.
11	Do not lift or carry the product by holding the plunger head. Failure to do so may result in damage to the plunger or cause accidents.
12	Long-term storage of alkaline solutions may cause the bottle to corrode. Avoid long-term storage and always clean the bottle after use. Failure to do so may result in damage or accidents.
13	When used in accordance with this instruction manual, the materials that come into direct contact with reagents are borosilicate glass, fluoropolymer (PTFE), and silicone. If you are using a silicone tube with a nozzle tip, please note that organic solvents such as benzene or toluene, as well as strong acids, must not be used. If you have any questions regarding solvent compatibility, please contact us.
14	When using saline solution, please note that it may cause the inner contact surfaces of the bottle to peel.

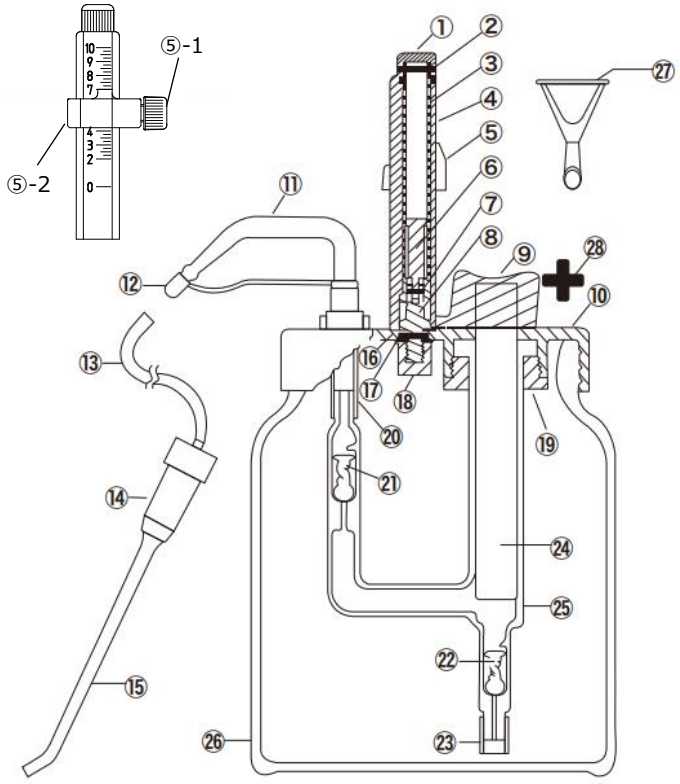
If you have any questions before or during use, please contact us.

Features

The dispenser's key component is the valve. This unit uses a patented screw valve (PAT No. 762891), which ensures smooth operation, allowing for fast, accurate, and highly repeatable dispensing. It also makes degassing easy and prevents the buildup of debris or air bubbles.

- The scale post can be folded down while keeping the scale setting, making it very convenient for storage in a refrigerator. (Total height: 16.5 cm)
- The delicate glass parts are safely protected by the bottle.
- Parts can be easily disassembled and replaced.
- All liquid-contacting components are made of materials with excellent chemical resistance, such as borosilicate glass, hard glass, and fluor resin. The dispensing tube consists of hard glass and silicone. For strong acids and organic solvents, an optional PTFE (fluor resin) tube set with dispensing tip is available.
  By using the included funnel, liquid can be refilled while keeping the unit set in place.
- By using the included silicone tube with a nozzle tip, dispensing can be performed without moving the main unit or receiver.
- The Accupenser JR. comes in four sizes: 1 mL, 2 mL, 5 mL, and 10 mL. The minimum graduations are as follows:
  1mL……0.05mL
  2mL……0.1mL
  5mL……0.1mL
  10mL……0.25mL
- The product can be autoclaved using steam sterilization at 121° C for 20 minutes.
- Accuracy (systematic error): ±1.0%
  Precision (random error): ≤0.1%

④Front view of Scale post



(Component Names)

(1) Post knob (PP)
(2) Post knob screw (Chrome plated brass)
(3) Post holder assembly (Chrome plated brass)
(4) Scale post (PC)
(5) Stopper set (PEEK)
(5)-1 Stopper
(5)-2 Pointer flange
(6) Operating rod (Chrome plated brass)
(7) Spring pin (SUS304)
(8) Screw (Chrome plated brass)
(9) Plunger head (Borosilicate glass, Glass & PP)
(10) Bottle cap (PPS)
(11) Dispense nozzle (Borosilicate glass)
(12) Dispense nozzle cap (PP)
(13) Silicon tube
(14) Tip holder (PP)
(15) Glass tip (Glass)
(16) Spring pin (SUS304)
(17) Washer (PTFE)
(18) Lock nut for post holder (PTFE)
(19) Lock nut for barrel assembly
(20) Barrel/nozzle joint tube (PTFE)
(21) Upper screw valve (Glass)
(22) Bottom screw valve (Glass)
(23) Inlet tube (PTFE)
(24) Plunger (Glass)
(25) Barrel assembly (Borosilicate glass)
(26) Amber bottle (Borosilicate glass)
(27) Filling funnel (PP)
(28) Cap

How to Use

1. Pour the liquid to be used into the bottle.
2. Set the top of the pointer flange with the graduation line on the scale post and secure it with the stopper depending on the volume to be dispensed.
3. Place a receiver under the dispense nozzle, and move the plunger head up and down 2-3 times to remove air bubbles inside the cylinder.(Alternatively, attach the included dispensing tube with tip to the dispense nozzle and insert the tip into the inlet of filling funnel. This allows bubbles to be removed and the liquid to return to the bottle, minimizing waste.)
4. Slowly pull up the plunger head until it stops.
5. Slowly push down the plunger head until it stops; the volume set in step 2 will be dispensed from the dispense nozzle.
6. By simply repeating the operations in steps 4 and 5, accurate and precise volumes can be dispensed.
7. If the dispense nozzle cannot reach the receiver, connect and use the included silicone tube set to the dispense nozzle tip.
8. For use with organic solvents, strong acids, etc., use the optional PTFE extension dispensing tube set.
9. When storing in a refrigerator, fold down the scale post. This can be easily done by turning the post knob 2-3 times to the left.

Caution

1. Operate the plunger head gently and at a consistent speed to ensure reproducible results.
2. Always thoroughly clean after use. Leaving liquids prone to crystallization inside may cause the plunger to seize.
3. When using the silicone or PTFE extension dispensing tube set, ensure the glass tip does not fall below the liquid level in the bottle. Otherwise, siphoning may occur, causing unstable dispensing or dripping.
4. For instructions on replacing the dispense nozzle with PTFE tube, please refer to the back of this manual.

Disassembly

1. Remove the bottle cap from the bottle.
2. Loosen the stopper and remove the pointer flange.
3. Pull up the plunger head and remove the plunger.
4. Turn the lock nut to the left and remove the barrel assembly from the cap.
5. Turn the Lock nut for post holder to the left and remove the scale post.
6. For instructions on removing the dispense nozzle, please refer to the back of this manual.
7. If any issues occur after disassembly, assembly, or part replacement, please contact us.

Assembly can be performed by reversing the disassembly steps. Ensure that all screws are securely tightened during assembly.

Cleaning and Storage

1. Clean the unit by moving the plunger head up and down several times using a commercially available cleaning solution. Rinse thoroughly with warm water afterwards.
2. When autoclaving, all parts except the glass components are made of heat-resistant resin; do not exceed 121° C. After sterilization, allow the unit to cool completely and check that all screws are properly tightened before use.

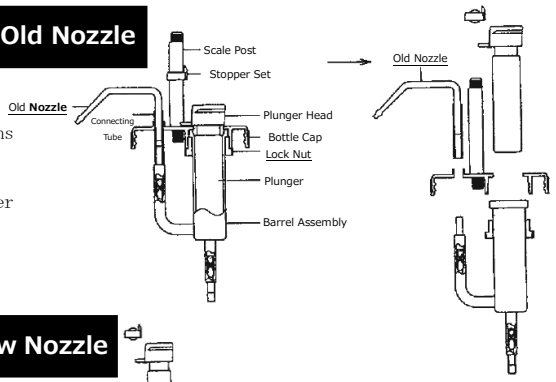
Type / Capacity	1mL	2mL	5mL	10mL
Minimum graduation	0.05mL	0.1mL		0.25mL
Bottle capacity	250mL		500mL	1000mL
Bottle cap size	Small		Large	

(Standard Accessories)
Silicone tube set with tip … 1 set
Filling funnel … 1 piece

● The screw openings are the same for both 500 mL and 1L bottles, allowing them to be freely interchanged.

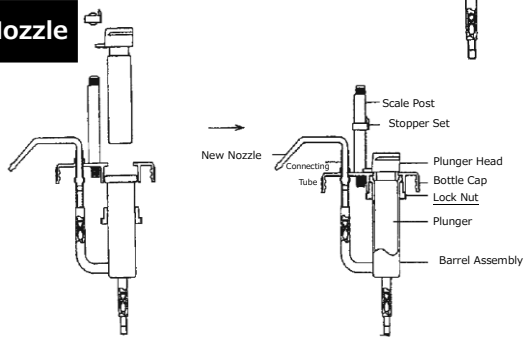
■How to Replace the Old Nozzle with the New Nozzle (with Connecting Tube)

A. Disassembly Diagram of the Old Nozzle



Note: The disassembly procedure A explains how to remove the old nozzle. If you are already using the new nozzle, please refer to the disassembly procedure for the new nozzle when removing it.

B. Insertion Diagram of the New Nozzle



New Nozzle: The new nozzle features a shape that prevents it from coming off during dispensing (the insertion part is slightly expanded).

Steps to Disassemble the Old Nozzle

1.Turn the screw on the stopper set counterclockwise to loosen it, then pull it out from the scale post.

2. Hold the plunger head and carefully pull the plunger out from the barrel assembly.

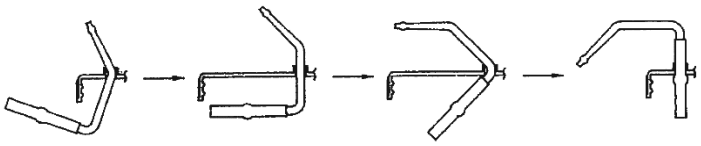
3.Remove the old nozzle by gently twisting and pulling it out, holding the connecting tube.

4.Use pliers or another suitable tool to unscrew the lock nut to the left and detach the barrel assembly. (Note: The barrel assembly must be removed in order to install the new nozzle.)

How to Disassemble and Assemble the New Nozzle (with Fluor resin Tube)

1. If you're removing the new nozzle (for those already using it), first take off the stopper set and plunger. Then, turn the lock nut counterclockwise to loosen it. While following the curve of the nozzle, remove the barrel assembly from the bottle cap. Slowly pull the nozzle downward, adjusting the angle as needed, reversing the steps shown in “B. New Nozzle Insertion Diagram.” Make sure to remember the insertion angle for reassembly.
2. When removing the nozzle from the barrel assembly, hold the connection tube and the barrel with both hands. Gently twist the barrel assembly side while pulling it out. Forcing the nozzle may damage it or cause injury from broken parts. Use the same steps in reverse when inserting the nozzle.
3. After replacing the nozzle, insert it into the bottle cap. Be careful with the insertion angle and push it in gently.
4. Turn the lock nut clockwise to fix the barrel assembly to the cap.

C. New Nozzle Replacement Assembly Diagram



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●For inquiries, please use the contact form on our website or send us an email.