Something Different.
WATSON BIO LAB
MADE IN JAPAN SINCE 1988


Sales agency

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**Manufacturer:** FUKAEKASEI CO., LTD.


*Please see a guarantee card also packaged in the box for information for local sales distributors.


2025.10_NEXTY-AC_EN-ver1.2_DL


# NEXTY

## Single Channel pipette

## Autoclavable

Instruction Manual ver.1.2

# Autoclavable

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## Table of content


1. Safety Instruction and Preventive Action ..... 3
2. Technical Data ..... 4
3. The Outline ..... 5
4. Operation ..... 6
   - 4.1 To set the Volume ..... 6
   - 4.2 Volume indication (Example of each pipette) ..... 6
   - 4.3 Tip ..... 6
   - 4.4 To aspirate ..... 6
   - 4.5 To discharge the sample ..... 7
   - 4.6 For better pipetting precision ..... 7
5. In case accurate calibration of the pipette is required ..... 7
6. Cleaning and Sterilization ..... 8
   - 6.1 Cleaning ..... 8
   - 6.2 Sterilization ..... 8
7. Troubleshooting ..... 9
8. Maintenance ..... 10
   - 8.1 Remove and Setup ..... 10
   - 8.2 Maintenance Parts List ..... 12-15


Thank you very much for purchasing NEXTY Autoclavable pipette.
Please read this instruction manual carefully for proper usage before actual use.



## Introduction:

NEXTY Autoclavable lineup 7 variable-volume models and you can choose the most suitable model from the volume range of 0.2–5,000µL.

## ⚠ Safety Instruction and Preventive Action

- Attach a tip on the pipette before use.
- Do not pipette sample or any substances into the pipette's body.
- Do not lay the pipette while holding sample in the tip to avoid contamination.
- Read pertinent instructions and pay extra caution when handling substances that may be harmful to human health such as biohazardous substances, radioactive substances or toxic substances.
- Check the resistance ability of the tip (Polypropylene), when using organic solvent or highly reactive substances.
- Pay extra attention to the volume of a sample when using a substance that has different physical property from H2O, or high volatility.
- Keep the pipette, tips and samples at the same temperature for precise volume pipetting.
- Do not use acetone or other highly reactive solvent for cleaning the pipette.
- Use WATSON brand tips for accurate pipetting.
- There is a danger of the body being damaged by applying load or giving impact.

## 2. Technical Data

| Model | Button Color | min. scale | Volume | Accuracy µL | Accuracy % | Precision S.D.µL | Precision CV% |
|---|---|---|---|---|---|---|---|
| NEXTY-A2 0.2–2µL | Orange | 0.001µL | 0.2µL | ±0.03 | ±15 | ≤0.016 | ≤8.0 |
| | | | 2µL | ±0.05 | ±2.5 | ≤0.02 | ≤1.0 |
| NEXTY-A10 1–10µL | Pink | 0.01µL | 1µL | ±0.05 | ±5.0 | ≤0.025 | ≤2.5 |
| | | | 10µL | ±0.10 | ±1.0 | ≤0.05 | ≤0.5 |
| NEXTY-A20 2–20µL | Beige | 0.01µL | 2µL | ±0.12 | ±6.0 | ≤0.06 | ≤3.0 |
| | | | 20µL | ±0.20 | ±1.0 | ≤0.10 | ≤0.5 |
| NEXTY-A100 10–100µL | Green | 0.1µL | 10µL | ±0.20 | ±2.0 | ≤0.10 | ≤1.0 |
| | | | 100µL | ±0.80 | ±0.8 | ≤0.30 | ≤0.3 |
| NEXTY-A200 20–200µL | Yellow | 0.1µL | 20µL | ±0.40 | ±2.0 | ≤0.20 | ≤1.0 |
| | | | 200µL | ±1.60 | ±0.8 | ≤0.60 | ≤0.3 |
| NEXTY-A1000 100–1000µL | Blue | 1µL | 100µL | ±2.00 | ±2.0 | ≤0.60 | ≤0.6 |
| | | | 1000µL | ±8.00 | ±0.8 | ≤3.00 | ≤0.3 |
| NEXTY-A5000 500–5000µL | Purple | 5µL | 500µL | ±10.0 | ±2.0 | ≤3.00 | ≤0.6 |
| | | | 5000µL | ±40.0 | ±0.8 | ≤15.0 | ≤0.3 |

### Conditions

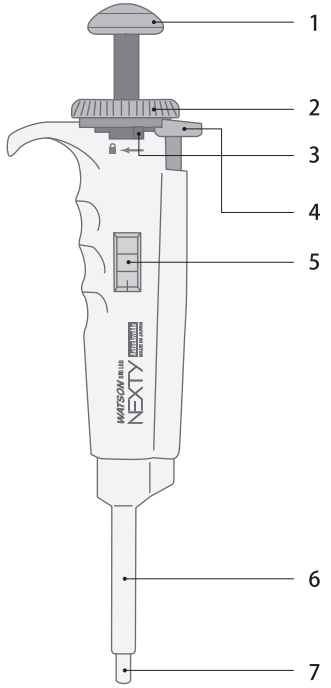
- WATSON BRAND tips are used.
- Measurement : At max. & min. volume capacity.
- Sample & the ambient : Purified water is used, 20–25℃, humidity: Rh50%≤
- Equipment : Gravimetric method by microbalance.



## 3. The Outline

NEXTY is a variable volume micro-pipette applied with a air-cushion plunger stroke system.

**Dwg.1 Description & Name**




### 1. Push Button

Push this button to aspirate, discharge and set the volume of samples to be aspirated. The 1st stroke until the 1st stop is to aspirate the set volume of sample. The last stroke till the end (2nd stop) is to discharge the sample. The sample volume to be aspirated can be set by revolving this button which is directly connected to the plunger.

* When you set capacity, please confirm that 3 lock levers is removed. Parts might be damaged when you turn it with locking.

### 2. Turbo Dial

1 revolution of this button works as 3.5 revolutions of the push button.

This button is useful when making a big volume change.

* When you set capacity, please confirm that 3 lock levers is removed. Parts might be damaged when you turn it with locking.

### 3. Lock Lever

This lever is to lock the dial to prevent the set volume from changing while using the pipette.

### 4. Eject Button

This button is to eject the tip.

### 5. Volume Window

This window shows the volume set by the dial.

### 6. Eject Cone

This eject cone is connected with the eject button and pushes down a tip for ejection.

### 7. Nozzle Cone

A tip is attached on this nozzle cone.

# 4. Operation

### 4.1. To set the volume

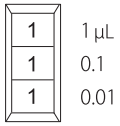
The sample volume to be aspirated can be changed continuously by revolving Push Button (Dwg.1-1) or Turbo Dial (Dwg.1-2) (Shaft positioning system allows the volume to be set in the min. unit. The minimum unit is 1/1,000 of the max. volume capacity.).

* When you turn Push Button or Turbo Dial, please confirm that Lock Levers(Dwg.1-3) is removed. Parts might be damaged when you turn it with locking.

### 4.2 Volume indication (Example of each pipette)

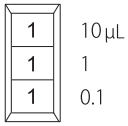
3 digits on the volume window read from the top to bottom.

**NEXTY-A2**



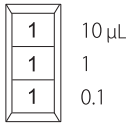

1 µL
0.1
0.01

**NEXTY-A10**



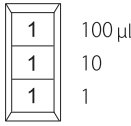

10 µL
1
0.1

**NEXTY-A20**



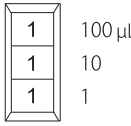

10 µL
1
0.1

**NEXTY-A100**



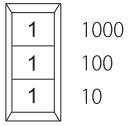

100 µL
10
1

**NEXTY-A200**



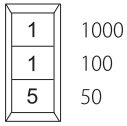

100 µL
10
1

**NEXTY-A1000**




1000 µL
100
10

**NEXTY-A5000**




1000 µL
100
50

### 4.3. Tip

Make sure a tip is attached on the pipette before use.

### 4.4. To aspirate

- Attach a tip suitable for the pipette.
- Press the Push Button slowly to the 1st stop (aspiration stroke).
- Dip the top of the tip by about 3㎜ below the surface of the sample liquid.
- Return the Push Button slowly (Make sure the tip is immersed in the liquid.)
- Withdraw the tip out of the liquid slowly.

### 4.5. To discharge the sample

- Hold the pipette so that the top of the tip diagonally and lightly touches the inner wall of the recipient vessel.
- Press the Push Button slowly to the 1st stop (aspiration stroke) and keep this button's position until the discharge is done.
- Press the Push Button to the 2nd stop (blow-out stroke) to complete the discharge.
- Withdraw the tip along the inner wall of the recipient vessel while keeping the Push Button pressed fully down.
- Release the Push Button slowly to the original position.
- Eject the tip by pushing the Eject Button.

### 4.6. For better pipetting precision

For better pipetting precision, it is recommended to conduct pre-wetting after a new tip is attached where aspirate and discharge are repeated 2-3 times using the actual sample.
Make sure blow-out is conducted after the pre-wetting and the sample inside the tip is completely discharged.

**Pre-wetting is for:**

- Balance pressures of the whole system including tips, pipette, and samples.
- Balance temperatures of tips, pipette, and samples.
- Particular liquids such as serum, surfactant etc. that are easy to wet the tip's material may form a film on the inner wall of the tip. This may cause the discharged sample volume to be reduced. Pre-wetting prevents the reduction of the discharged sample.

# 5. In case accurate calibration of the pipette is required.

Please ask your sales distributor for the calibration as it requires perfectly conditioned room, measurement equipments and techniques based on experience.
We will restore the pipette to the pre-shipment condition and ship it back to you.

## 6. Cleaning and Sterilization

### 6.1. Cleaning

Clean the pipette regularly with household or laboratory cleaning agents. It can also be sterilized by 60% isopropanol when it is necessary.

Wipe the pipette with a cloth wetted with distilled water and dry in the room temperature after cleaning and sterilization.

### 6.2. Sterilization

NEXTY Autoclavable Pipette can be autoclaved entirely (121℃, 20mins.)

**Caution:** - Autoclave the pipette, preventing a load from piling some pipettes or from putting on the pipette with the Nozzle parts down.

- Dry the pipette in the room temperature (50℃ drying machine use is recommended) after Autoclaving.

Use the pipette after its temperature completely cools down.

Droplet remained the inside or use of the pipette before its cool-down leads to inaccurate precision.

**Soon after autoclaving or drying the pipette, it becomes extremely hot.**
**Do not touch the pipette with hands directly to avoid burn.**



## 7. Troubleshooting

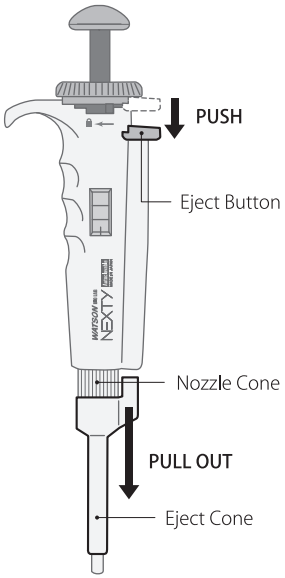
| Trouble | Possible Cause | Solution |
|---|---|---|
| Liquid is left in the tip. | • The inner wall of the tip is dirty.<br>• Water repellency of the tip is low. | • Replace the tip. |
| The liquid falls from the tip's top.<br>The pipetted volume is low. | • Fitting of the tip is loose.<br>• The sample's volatility is very high.<br>• Pipetting too fast.<br>• Withdraw the tip from the sample too quickly.<br>• Air leaks due to dirt on the plunger.<br>• Air leaks due to damage on the plunger.<br>• Air leaks due to damage on O-ring.<br>• Air leaks due to loose fitting of bottom parts. | • Attach the tip tightly.<br>• Avoid using high volatility liquids.<br>• Press the Push Button slowly.<br>• Withdraw the tip slowly from the sample.<br>• Clean the plunger and spread a small amount of grease.<br>• Replace tha plunger and plunger seal and spread a small amount of grease.<br>• Replace the O-ring and spread a small amount of grease.<br>• Tighten the bottom parts by hands. |
| Push Button does not move smoothly. | • The plunger is dirty.<br>• The plunger seal is dirty.<br>• Organic solution or corrosive gas have been pipetted. | • Clean the plunger and spread a small amount of grease.<br>• Replace the plunger seal and spread a small amount of grease.<br>• Remove the bottom parts and ventilate inside to dry. Then clean each component and spread a small amount of grease on movable parts. |
| NEXTY does not aspirate samples. | • The sample has dried and blocks Nozzle Cone. | • Remove the bottom parts and clean with hot water. Then rinse them with distilled water, dry and spread a small amount of grease on the movable parts. |

# 8. Maintenance

## 8.1. Remove and Setup

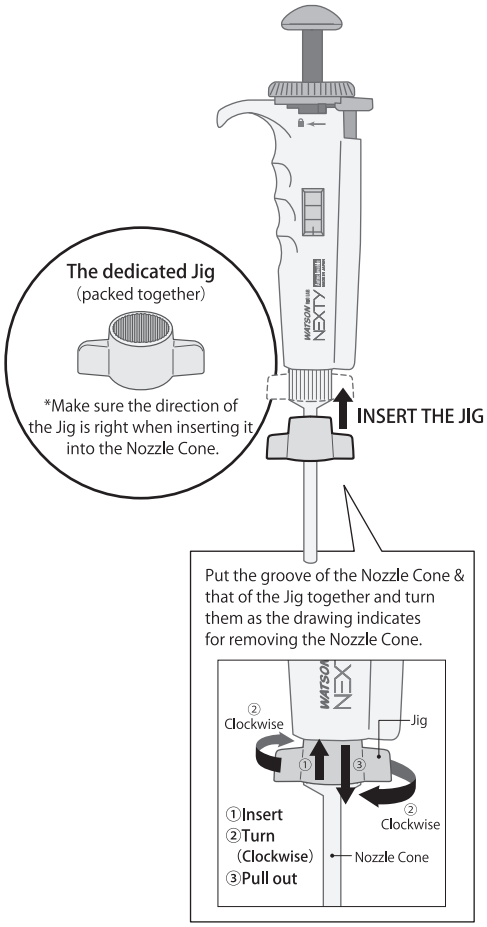
**【Remove bottom parts】**

1. Remove the Eject Cone by pulling it out downward while pressing the Eject Button.



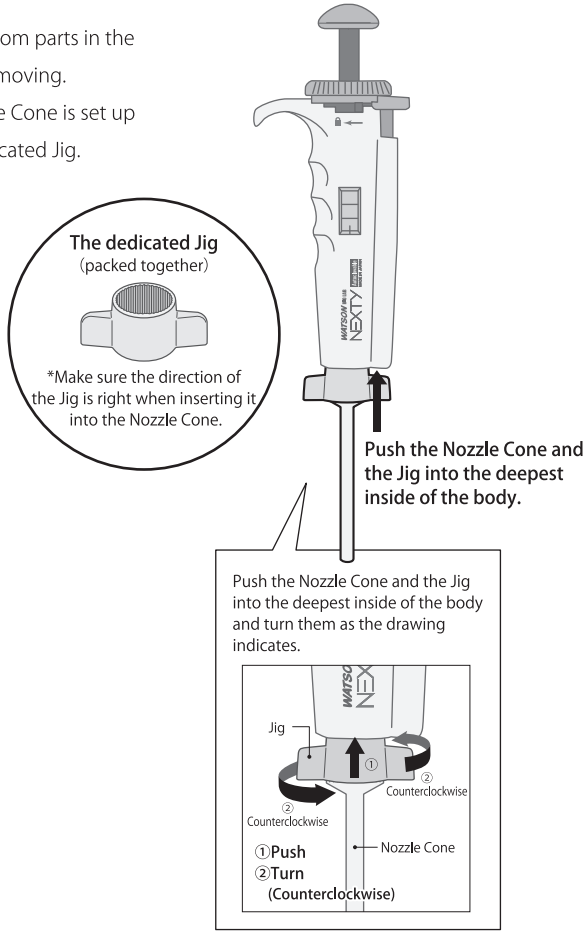

*For NEXTY-A5000,
the Eject Cone is screwed on.
The Nozzle Cone can be removed
and set up without using
the dedicated Jig.

2. Remove the Nozzle Cone with the dedicated Jig while holding the body tightly.
Remove the rest parts after that.




**【Set up bottom parts】**

3. Reassemble the bottom parts in the opposite order of removing.
Make sure the Nozzle Cone is set up tightly with the dedicated Jig.

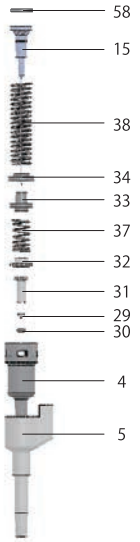



**Additional note:**
- O-ring and Seal ring may come off when removing the Nozzle Cone.
- Make sure that washers are put on in the right direction.
- Make sure the sliding parts are free from dust and spread grease slightly when reassembling.
- Basically, set up with hands and avoid using tools which may damage the body.

## 8.2. Maintenance Parts List

* The pipette has very small parts in it. Make sure not to lose them in maintenance.

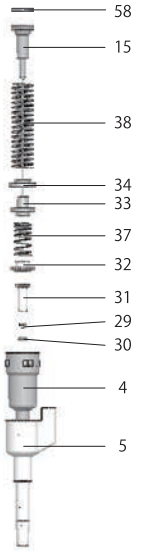
【NEXTY-A2】




■NEXTY-A2

| No. | Name | Part Number |
|---|---|---|
| 4 | Nozzle Cone | A131M1 |
| 5 | Eject Cone | A031M12 |
| 15 | Plunger | A182CM1 |
| 29 | Plunger seal | 330M1 |
| 30 | O ring | 341R1 |
| 31 | Seal cone 1 | A380M123 |
| 32 | Spring washer 1 | A390M1-6 |
| 33 | Spring washer 2 | A402MA |
| 34 | Spring washer 3 | A412MA |
| 37 | Spring 1-1000 | 442R1-6 |
| 38 | Spring 2-280 | 452R1-5 |
| 58 | Plunger Protection Sheet | A630MA |

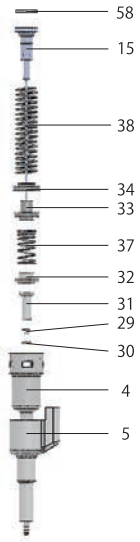
【NEXTY-A10】




■NEXTY-A10

| No. | Name | Part Number |
|---|---|---|
| 4 | Nozzle Cone | A131M2 |
| 5 | Eject Cone | A031M12 |
| 15 | Plunger | A182CM2 |
| 29 | Plunger seal | 330M2 |
| 30 | O ring | 341R2 |
| 31 | Seal cone 1 | A380M123 |
| 32 | Spring washer 1 | A390M1-6 |
| 33 | Spring washer 2 | A402MA |
| 34 | Spring washer 3 | A412MA |
| 37 | Spring 1-1000 | 442R1-6 |
| 38 | Spring 2-280 | 452R1-5 |
| 58 | Plunger Protection Sheet | A630MA |

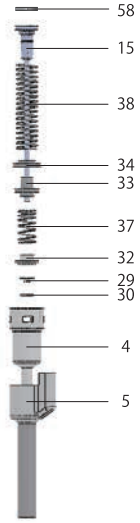
【NEXTY-A20】




■NEXTY-A20

| No. | Name | Part Number |
|---|---|---|
| 4 | Nozzle Cone | A131M3 |
| 5 | Eject Cone | A031M3 |
| 15 | Plunger | A182CM3 |
| 29 | Plunger seal | 330M3 |
| 30 | O ring | 341R3 |
| 31 | Seal cone 1 | A380M123 |
| 32 | Spring washer 1 | A390M1-6 |
| 33 | Spring washer 2 | A402MA |
| 34 | Spring washer 3 | A412MA |
| 37 | Spring 1-1000 | 442R1-6 |
| 38 | Spring 2-280 | 452R1-5 |
| 58 | Plunger Protection Sheet | A630MA |

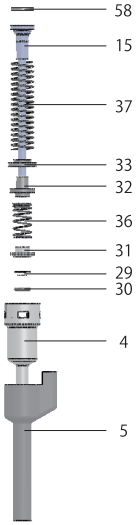
【NEXTY-A100】




■NEXTY-A100

| No. | Name | Part Number |
|---|---|---|
| 4 | Nozzle Cone | A132M4 |
| 5 | Eject Cone | A031M45 |
| 15 | Plunger | A182CM4 |
| 29 | Plunger seal | 330M4 |
| 30 | O ring | 341R4 |
| 32 | Spring washer 1 | A390M1-6 |
| 33 | Spring washer 2 | A402MA |
| 34 | Spring washer 3 | A412MA |
| 37 | Spring 1-1000 | 442R1-6 |
| 38 | Spring 2-280 | 452R1-5 |
| 58 | Plunger Protection Sheet | A630MA |

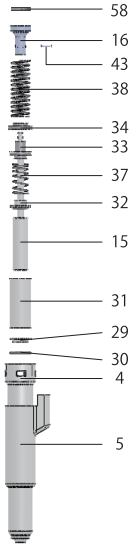
【NEXTY-A200】




■NEXTY-A200

| No. | Name | Part Number |
|---|---|---|
| 4 | Nozzle Cone | A133M5 |
| 5 | Eject Cone | A031M45 |
| 15 | Plunger | A182CM5 |
| 29 | Plunger seal | 332M5 |
| 30 | O ring | 341R5 |
| 31 | Spring washer 1 | A390M1-6 |
| 32 | Spring washer 2 | A402MA |
| 33 | Spring washer 3 | A412MA |
| 36 | Spring 1-1000 | 442R1-6 |
| 37 | Spring 2-280 | 452R1-5 |
| 58 | Plunger Protection Sheet | A630MA |

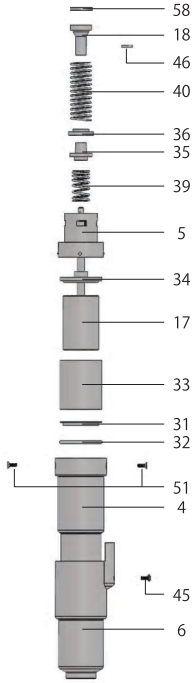
【NEXTY-A1000】




■NEXTY-A1000

| No. | Name | Part Number |
|---|---|---|
| 4 | Nozzle Cone | A131M6 |
| 5 | Eject Cone | A032M6 |
| 15 | Plunger | A182C6 |
| 16 | Plunger joint | A532M67 |
| 29 | Plunger seal | 332M6 |
| 30 | O ring | 341R6 |
| 31 | Seal cone 2 | A350M6 |
| 32 | Spring washer 1 | A390M1-6 |
| 33 | Spring washer 2 | A402MA |
| 34 | Spring washer 3 | A412MA |
| 37 | Spring 1-1000 | 442R1-6 |
| 38 | Spring 2-350 | 452R6 |
| 43 | Knock pin | 561R67 |
| 58 | Plunger Protection Sheet | A630MA |

【NEXTY-A5000】




■NEXTY-A5000

| No. | Name | Part Number |
|---|---|---|
| 4 | Nozzle Cone | A134M7 |
| 5 | Nozzle Cone joint | A142M7 |
| 6 | Eject Cone | A031M7 |
| 17 | Plunger | A182C7 |
| 18 | Plunger joint | A532M67 |
| 31 | Plunger seal | 332M7 |
| 32 | O ring | 341R7 |
| 33 | Seal cone 3 | A361M7 |
| 34 | Seal cone 4 | A371M7 |
| 35 | Spring washer 2 | A402MA |
| 36 | Spring washer 3 | A412MA |
| 39 | Spring 1-1200 | 442R7 |
| 40 | Spring 2-380 | 452R7 |
| 45 | Pan head screw | 500R7 |
| 46 | Knock pin | 561R67 |
| 51 | Tapping screw | 590R7 |
| 58 | Plunger Protection Sheet | A630MA |