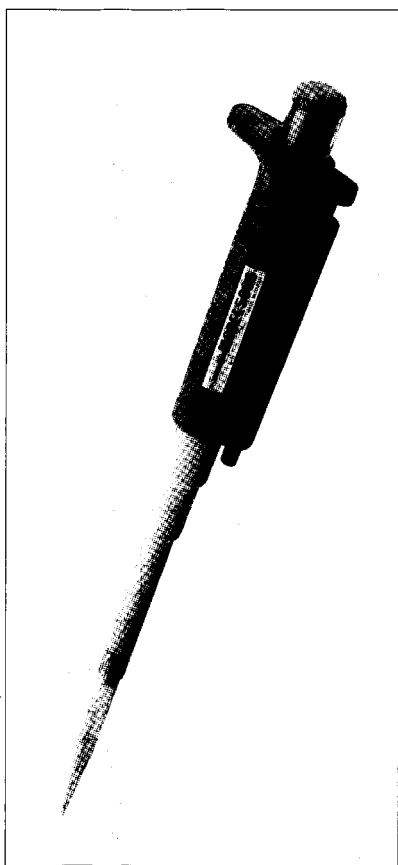


NICHIRYO

MODEL 5000F&V Micro Pipettes



FEATURES

Thumb Plunger – Smooth, effortless movement of the plunger reduces operator fatigue.

Select Volume – Volume change is simply achieved by just turning the thumb knob. The selected volume remains fixed. (Model 5000V)

Tip Ejector Button – Built in tip ejector for the safe disposal of used tips. Button location eliminates the possibility of accidental tip ejection.

Body Design – Lightweight, slender design reduces operator fatigue. Thermal insulation prevents body heat from contributing to measurement error during prolonged handling.

Seal Ring – Teflon® Seal and Rubber-O-Ring eliminate the need for routine maintenance and lubrication.

Tip Ejector Shaft – Non-Metallic Tip Ejector Body permits easy access to the bottom of commonly used test tubes.

Cylinder – Designed to minimize dead air space for increased pipette accuracy.

SPECIFICATIONS

5000V TRIPLE VOLUME

Cat. No.	Volumes	Accuracy	Reproducibility
50V-S	10/20/50 μ l	$<\pm 1.2 \sim <\pm 0.7\%$	$<0.6 \sim <0.3\%$
50V-M	50/100/200 μ l	$<\pm 0.7 \sim <\pm 0.5\%$	$<0.4 \sim <0.3\%$
50V-L	200/500/1000 μ l	$<\pm 0.7 \sim <\pm 0.5\%$	$<0.3 \sim <0.2\%$

5000F FIXED VOLUME (Standard Volume)

Cat. No.	Volume	Accuracy	Reproducibility
50F-5 to 50F-1000	5, 10, 20, 25, 50 to 100, 200, 250, 300, 500 & 1000 μ l	5 μ l : $<\pm 1.5\%$	$<0.5\%$
		10 μ l : $<\pm 1.2\%$	$<0.4\%$
		20 μ l ~ 25 μ l : $<\pm 0.8\%$	$<0.3\%$
		50 μ l ~ 300 μ l : $<\pm 0.6\%$	$<0.3\%$
		500 μ l ~ 1000 μ l : $<\pm 0.5\%$	$<0.2\%$

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OPERATION

1. Select the desired volume on Model 5000V by turning the thumb knob until the desired volume figures on the thumb knob correspond to the arrow mark printed on the top of the pipette handle. (Fig. 1)
2. Place a disposable tip firmly onto the end of the pipette. Depress the thumb knob to the first stop. Dip the tip into the liquid to a depth of 3mm. (Step 1, Fig. 2)
3. Smoothly return the thumb knob to its original position. The liquid will then be drawn into the tip. (Step 2)
4. Touch the tip against the inside wall of the receiving vessel. (Step 3)
5. Depress the thumb knob again to the first stop to expel most of the liquid. Wait one second with the thumb knob held in this position. (Step 4)
6. Depress the thumb knob until it will go no further. This forces out the last remaining liquid from the tip. Keep the thumb knob fully depressed until the tip is removed from the receiving vessel. (Step 5)
7. Remove the used tip from the pipette by depressing the tip ejector knob. (Step 6)

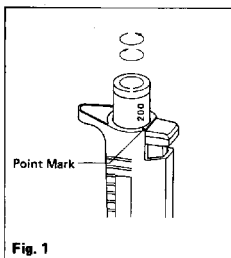


Fig. 1

Note: Depress and release the thumb knob at constant speed to ensure good reproducibility.

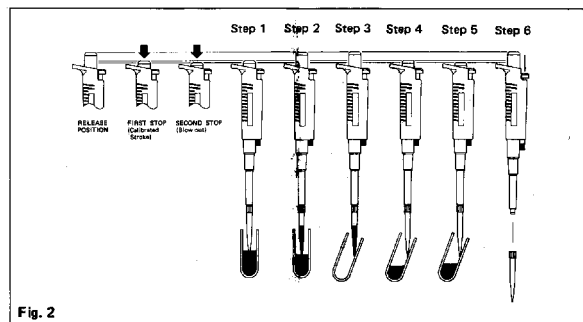


Fig. 2

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AIDS TO REPRODUCIBILITY AND ACCURACY

Listed below are some techniques found to improve sampling precision. READ THIS SECTION CAREFULLY.

1. Try to effect the same speed for both the intake and delivery of all samples. Smooth depression and release of the plunger knob will give the most consistent result. Never allow the plunger to "snap" back. Consistency of technique is a key to precision.
2. Always depress the plunger knob to the proper stop before insertion of the tip into the solution. Depression of the plunger knob after insertion may cause the formation of an air bubble in the tip and result in a filling error.
3. Try to insert the tip to approximately the same depth in the sample each time, never going deeper than 3mm. Hold the instrument as vertically as possible (10° maximum from vertical).
4. When sampling hot or cold material, the tip's temperature should be equalized to that of the solution to prevent contraction or expansion of sample.

SERVICE AND MAINTENANCE INFORMATION

It is recommended that the following servicing procedures be performed at regular intervals. Heavy usage or usage with corrosive fluids will require more frequent servicing. Disassembly (Reference Figure 3 & 4)

1. Turn the screw securing the tip ejector pipe counter clockwise to remove. Gently pull the tip ejector pipe off the end of the tip ejector pipe during this procedure.
2. Unscrew the barrel assembly from the handle and carefully pull directly away from the handle. The plunger assembly and spring can be removed from the pipette. Refer to Figure 4 for the internal configuration of the specific size MODEL 5000 being serviced. Take special care not to bend the piston rod, especially in the smaller volume units.

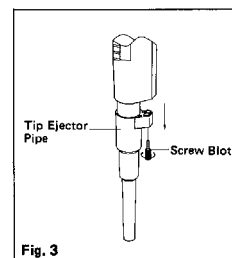


Fig. 3

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3. Replace the O-Ring.
4. Reassemble the unit by reversing the above procedures. Refer to Figure 4 when reassembling to ensure that all parts are placed in the correct position.
5. To reassemble the tip ejector pipe gently push on the tip ejector pipe so that the pipe mates with the handle connection. Turn the screw clockwise to secure.
6. After the above maintenance procedure, should the feeling of a smooth piston stroke seem different than prior to the servicing, immediately disassemble the pipette as in the above procedure and reassemble per the schematics in Figures 3 and 4.
7. After the above maintenance procedure, should the tip ejector knob stroke seem different and lack the smoothness of its normal stroke, immediately disassemble the tip ejector portion of the pipette and reassemble ensuring the spring and spring holder are installed properly.

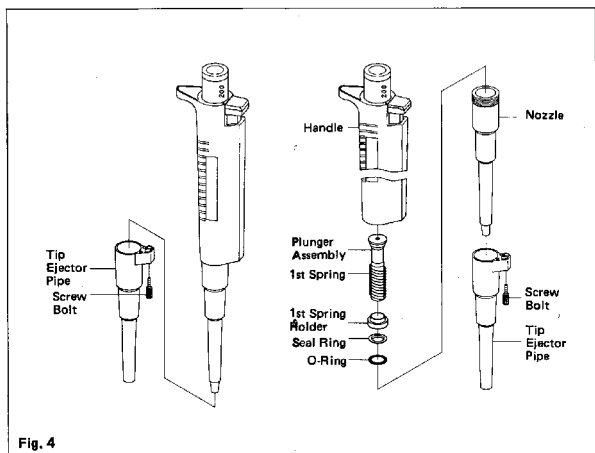


Fig. 4

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Tip

Cat. No.	Capacity	Color	Q'ty/bag (or box)
50T-SS	5 ~ 10 μ l	clear	1000
50T-S	10 ~ 200 μ l	yellow	1000
50T-L	200 ~ 1000 μ l	blue	1000

Only 50T-SS is supplied in a carton box.

Racked Tip

Cat. No.	Capacity	Color	Q'ty/rack
50T-SSR	0.5 ~ 10 μ l	clear	100
50T-SR	10 ~ 200 μ l	yellow	96
50T-LR	200 ~ 1000 μ l	blue	100

Stand

Cat. No.	Description
5000S	Five Model 5000 Series pipettes can be stored, excluding 50DG-5000.

Continuously adjustable volume models are also available.

Model 5000DG Digital Pipette

Cat. No.	Volume Range	Increments
50DG-10	0.5 μ l ~ 10 μ l	0.01 μ l
50DG-50	10 μ l ~ 50 μ l	0.1 μ l
50DG-200	40 μ l ~ 200 μ l	1.0 μ l
50DG-1000	200 μ l ~ 1000 μ l	1.0 μ l
50DG-5000	1000 μ l ~ 5000 μ l	10.0 μ l

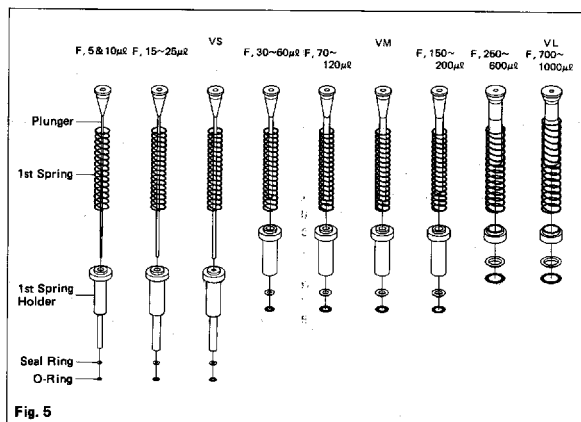


Fig. 5

ORDERING INFORMATION

MODEL 5000F Fixed Volume Pipette

Cat. No.	Volume	Accessories
50F-5 to 50F-1000	5, 10, 20, 25, 50, 100, 200, 250, 300, 500 & 1000 μ l	Three appropriate tips

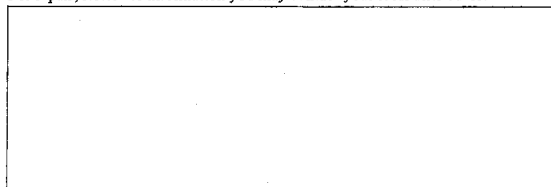
Special volumes are available to order.

MODEL 5000V Triple Volume Pipette

Cat. No.	Volume	Accessories
50V-S	10/20/50 μ l	Three appropriate tips
50V-M	50/100/200 μ l	
50V-L	200/500/1000 μ l	

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For repair, service or information you may contact your local distributor.



MANUFACTURER: **NICHIRYO CO., LTD.**