

AUTOMATIC PIPETTE

OPERATION MANUAL

- Fixed volume "G" series
- Variable volume "H" & "U" & "P" & "A" series
- Multi-channel "P" series

PLEASE READ THIS OPERATION MANUAL CAREFULLY BEFORE USE



Table of contents

- Brief introduction 2
- Performance & Characters 2
- Function introduction 3-8
- Usage 9-11
- Technical data "G" series 12
- Technical data "H" series 13
- Technical data "U" series 14
- Technical data "P" series 15
- Technical data "A" series 16
- Technical data Multi-channel "P" series 17
- Number display settings for adjustment volume "H"&"U"&"P"..... 17
- Number display settings for adjustment volume "A" 18
- "H"&"U" series volume adjustment method 18
- "P" series volume adjustment method 19
- "A" series volume adjustment method 19
- Calibration method "G"&"H" &"U"&"P" 20
- Calibration method "A"..... 21
- Remarks 22

Brief introduction

Thank you very much for selecting and using our Automatic Pipettes. We would try our best to give you satisfied service.

Our Automatic Pipettes are speciously, comfortable hand feeling with novel designed structure, high precision, light weight, fine repeatability, direct reading, easy operation and long life. They are widely used in medical, chemical, scientific research department and schools, etc.

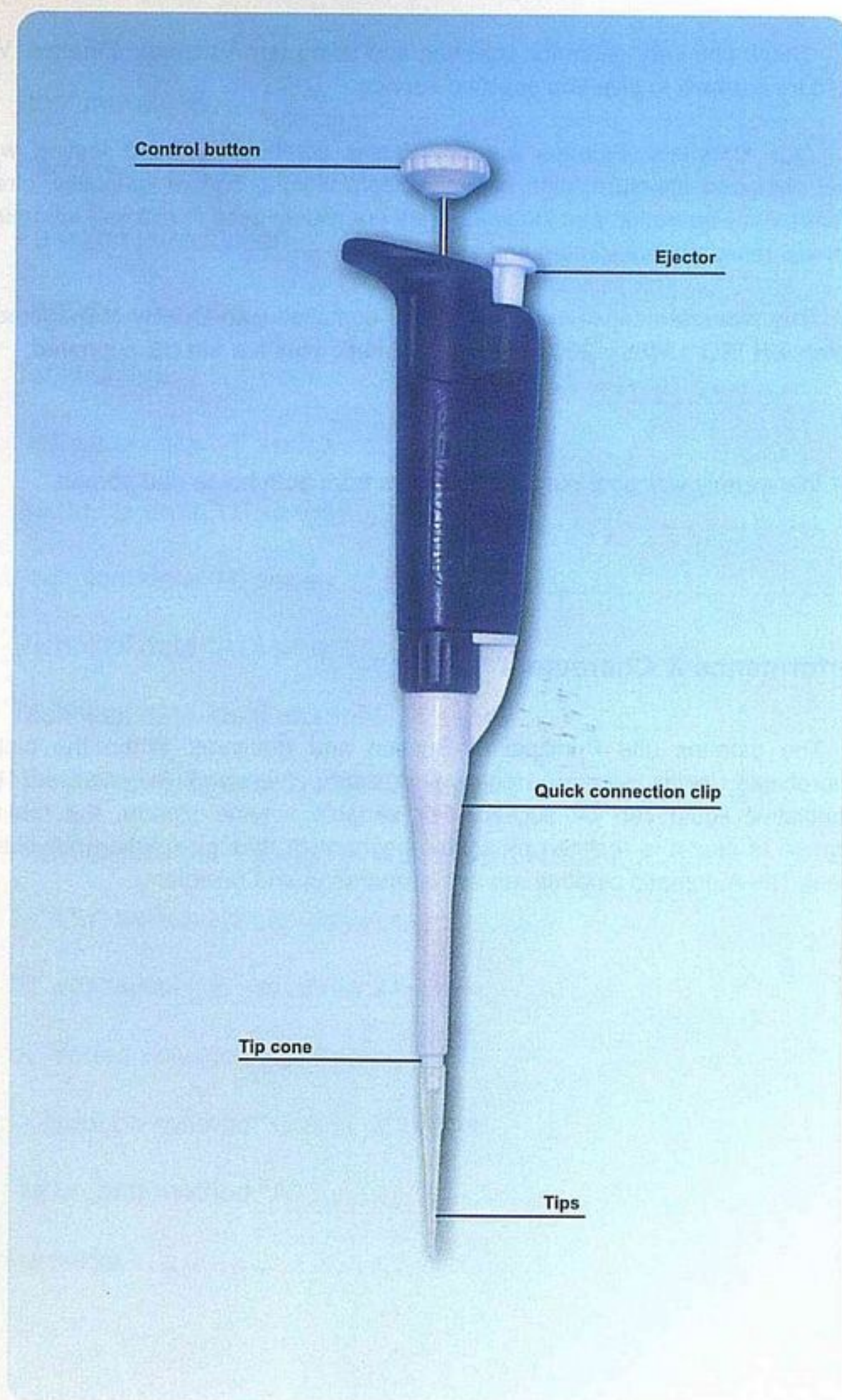
The management of our Company is complied with Quality Management System EN ISO 13485 : 2003 and all Automatic pipettes are CE approved.

We warmly welcome customers' orders from both home and abroad.

Performance & Characters

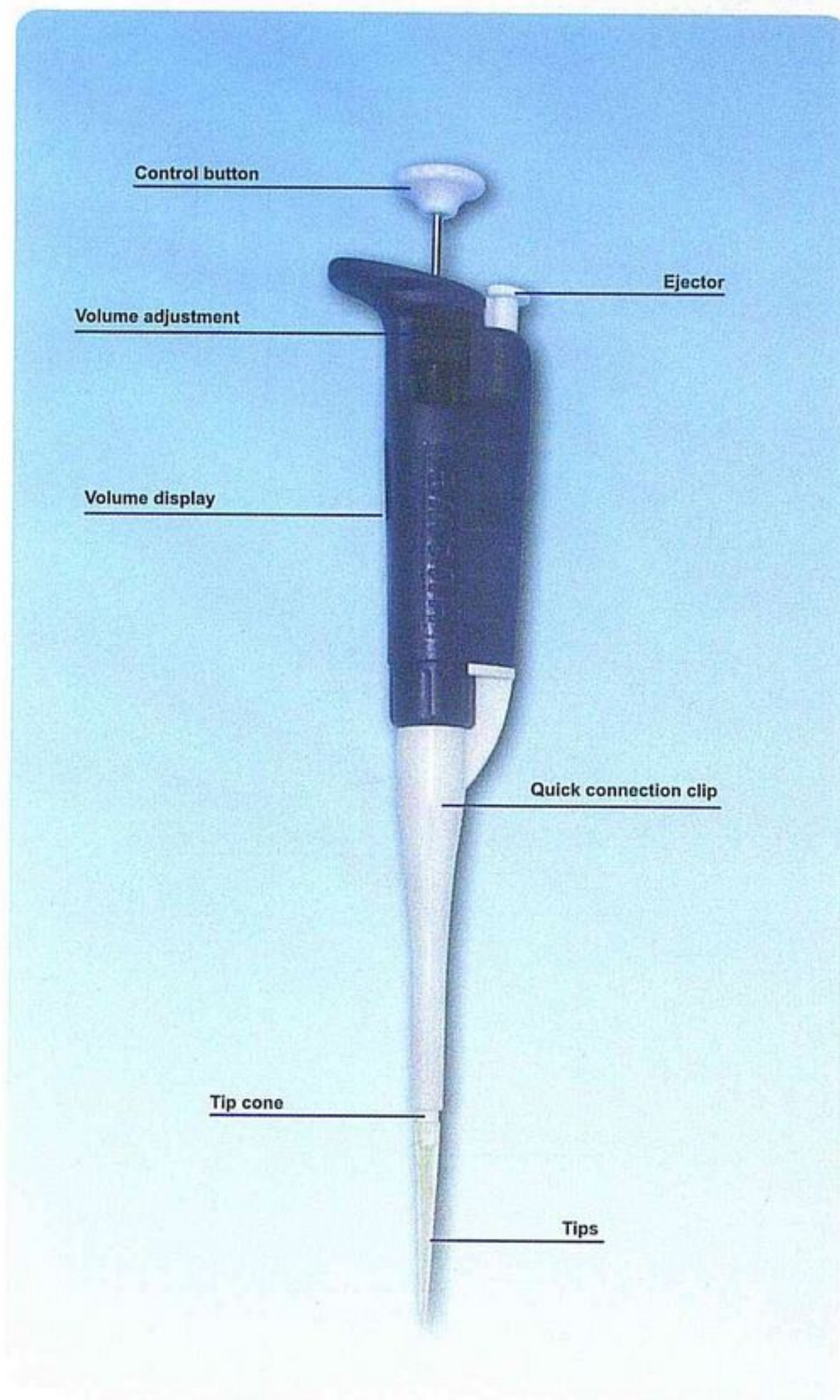
The pipettes use Principal of Suction and drainage. When the piston reciprocates in its sleeve, negative pressure (vacuum) is occurred, the quantitative liquid can be sucked. For variable volume pipette, the moving distance of piston is realized by screw mechanism through rotating adjustable wheel. The Automatic pipettes are easily operating and reliable.

"G" Function introduction



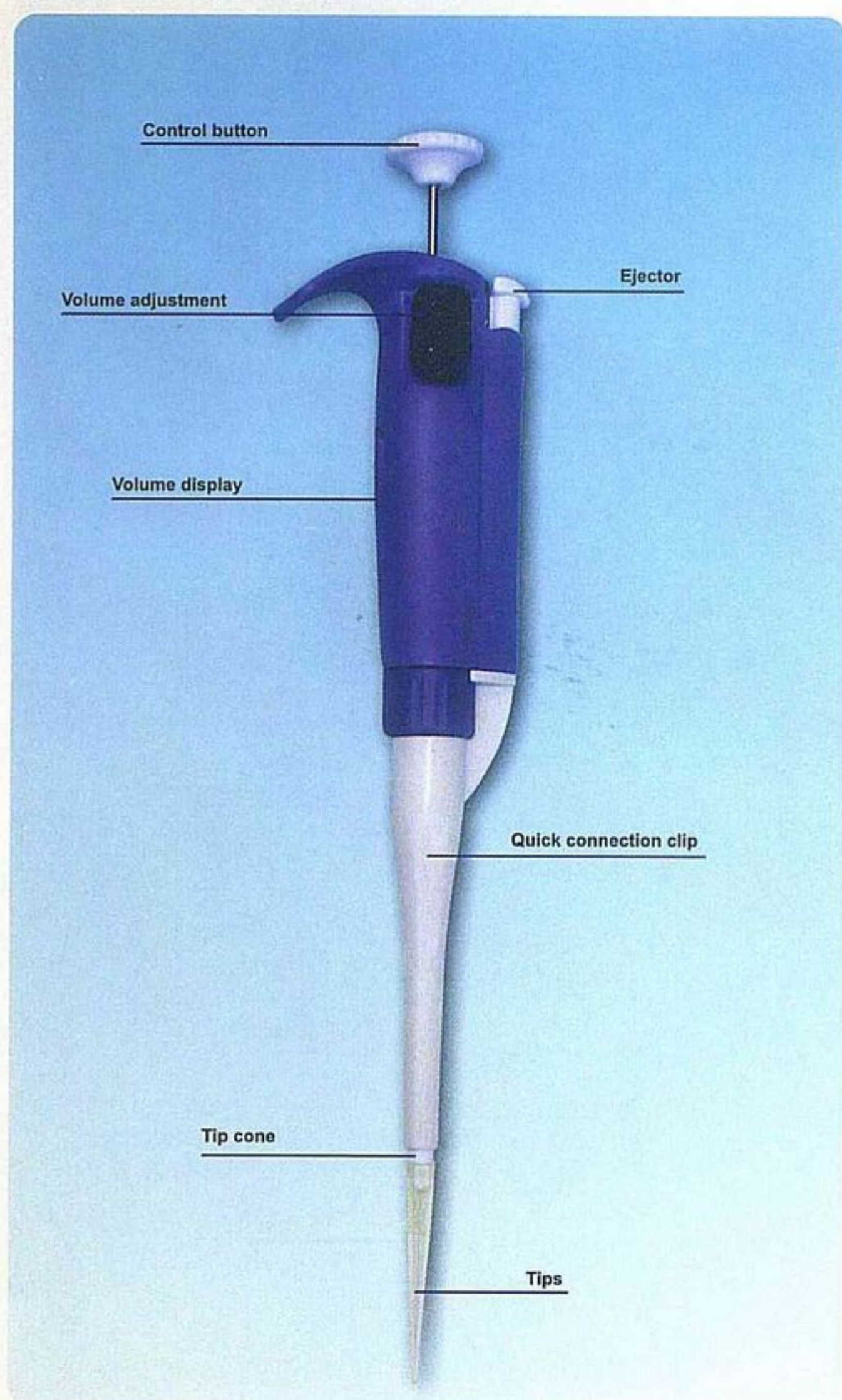
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"H" Function introduction



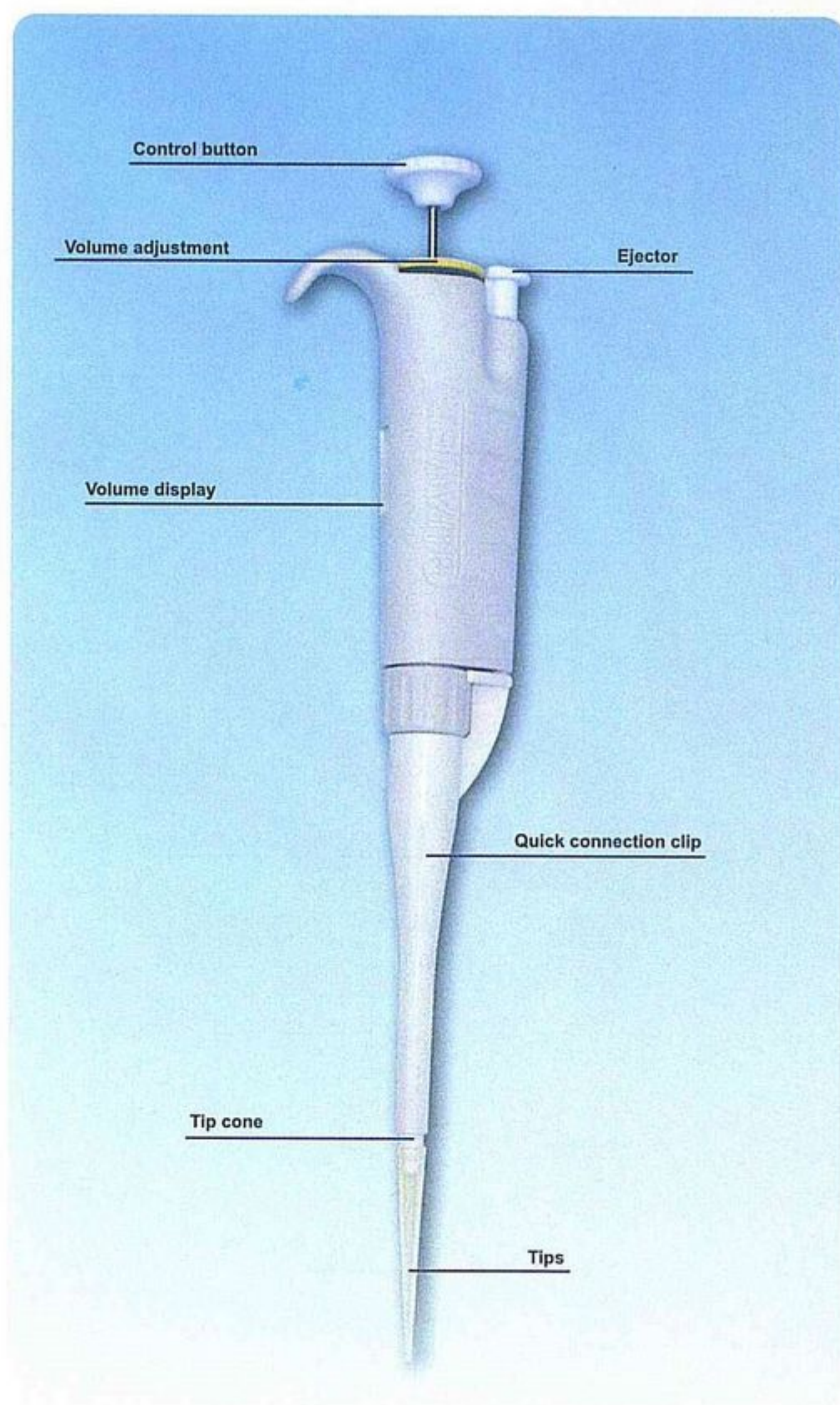
4

“U” Function introduction



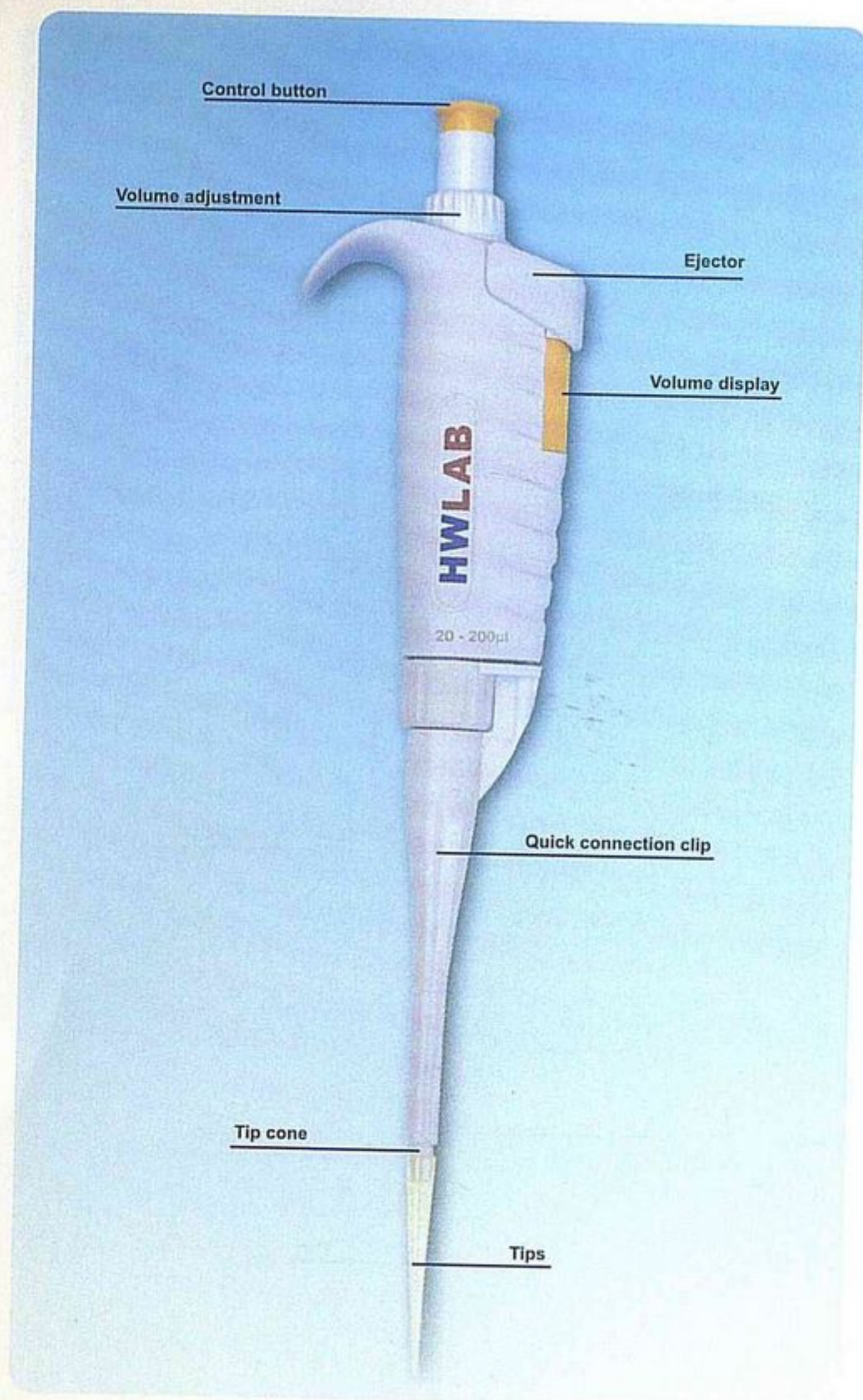
5

“P” Function introduction



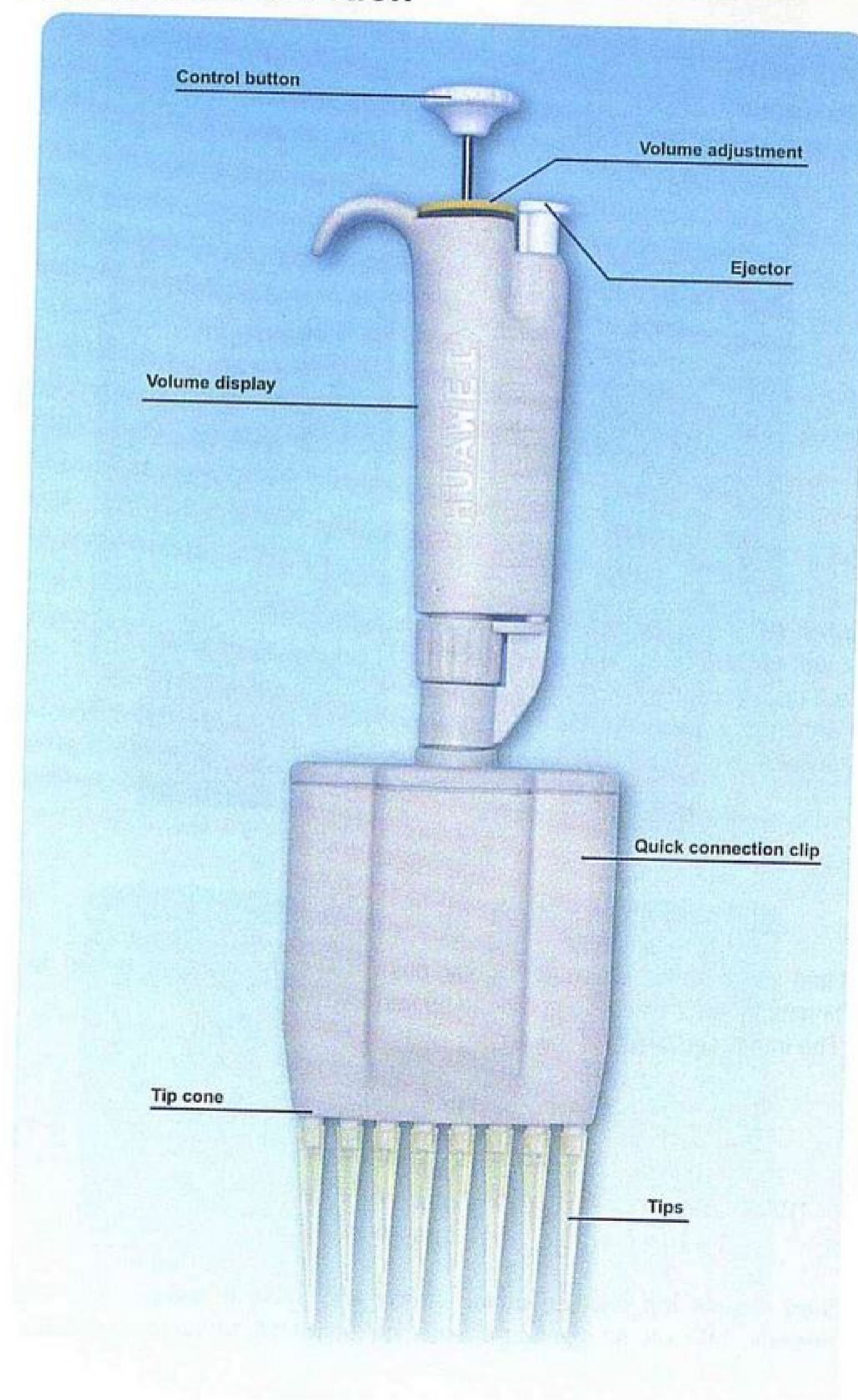
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"A" Function introduction



7

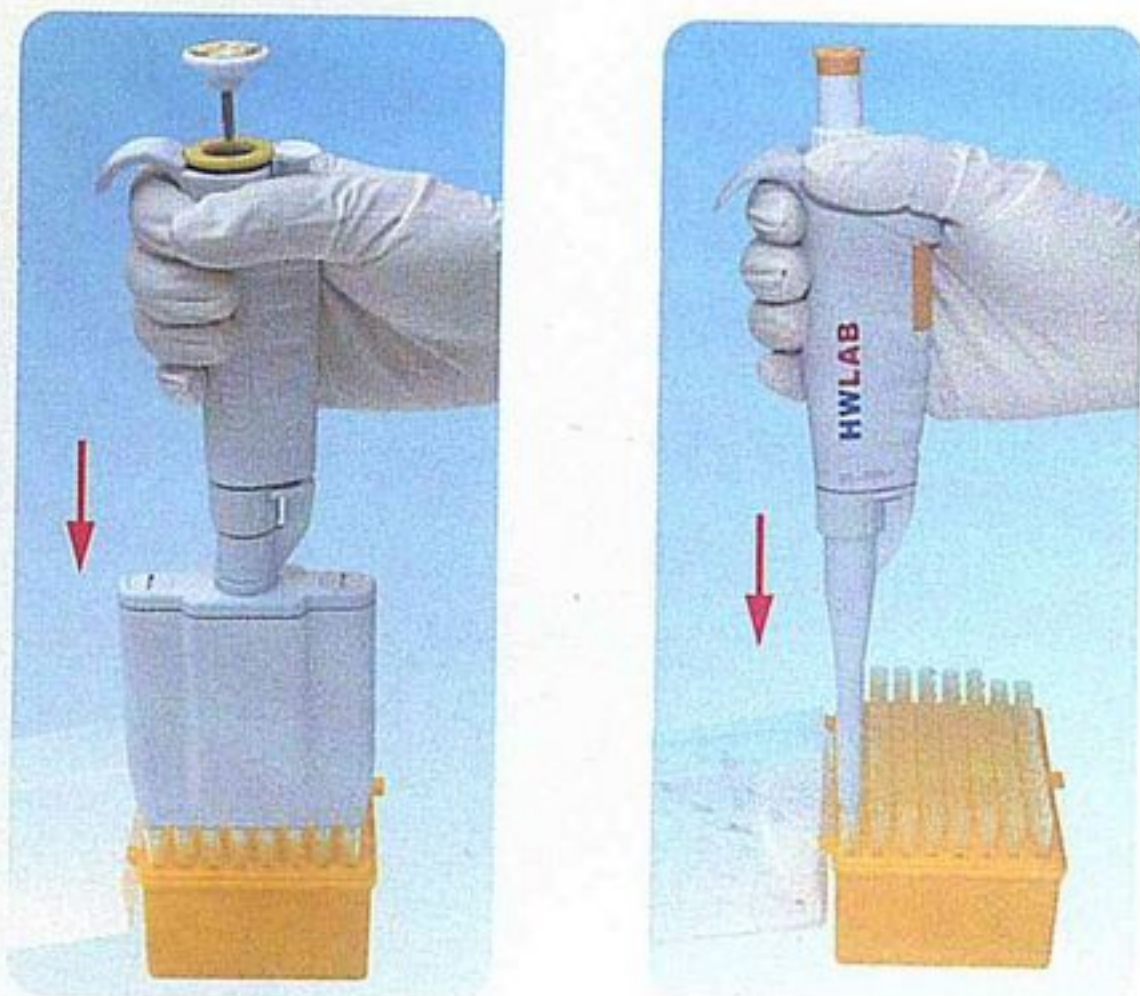
Multichannel Pipette Function introduction



8

Usage

1. Secure the suction tip to the top of suction tube without spacing. If handling by single hand, you should use Tip box with 96 cavities.

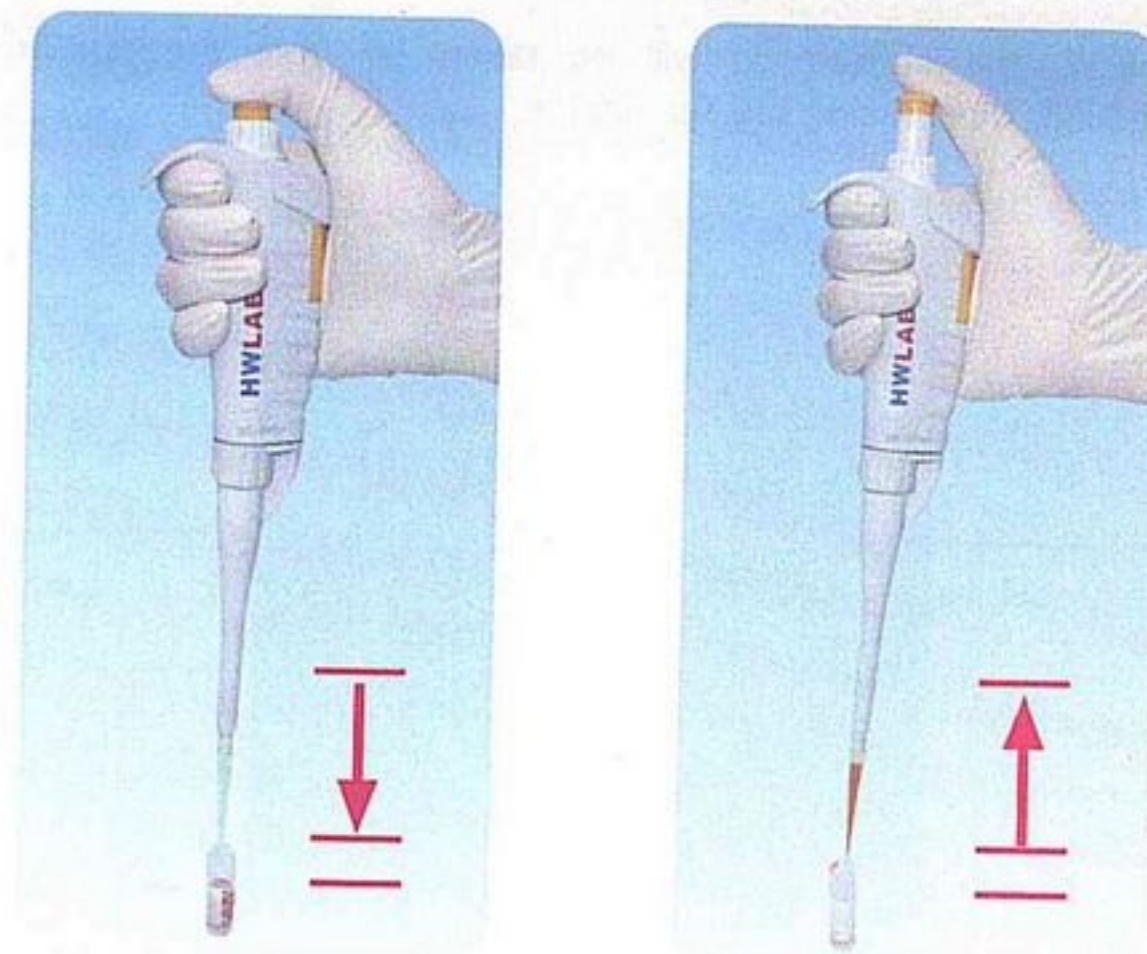


2. Hold the pipette vertically, slightly push down the pushing button to the first stop, then immerse the pipette tip into solution.

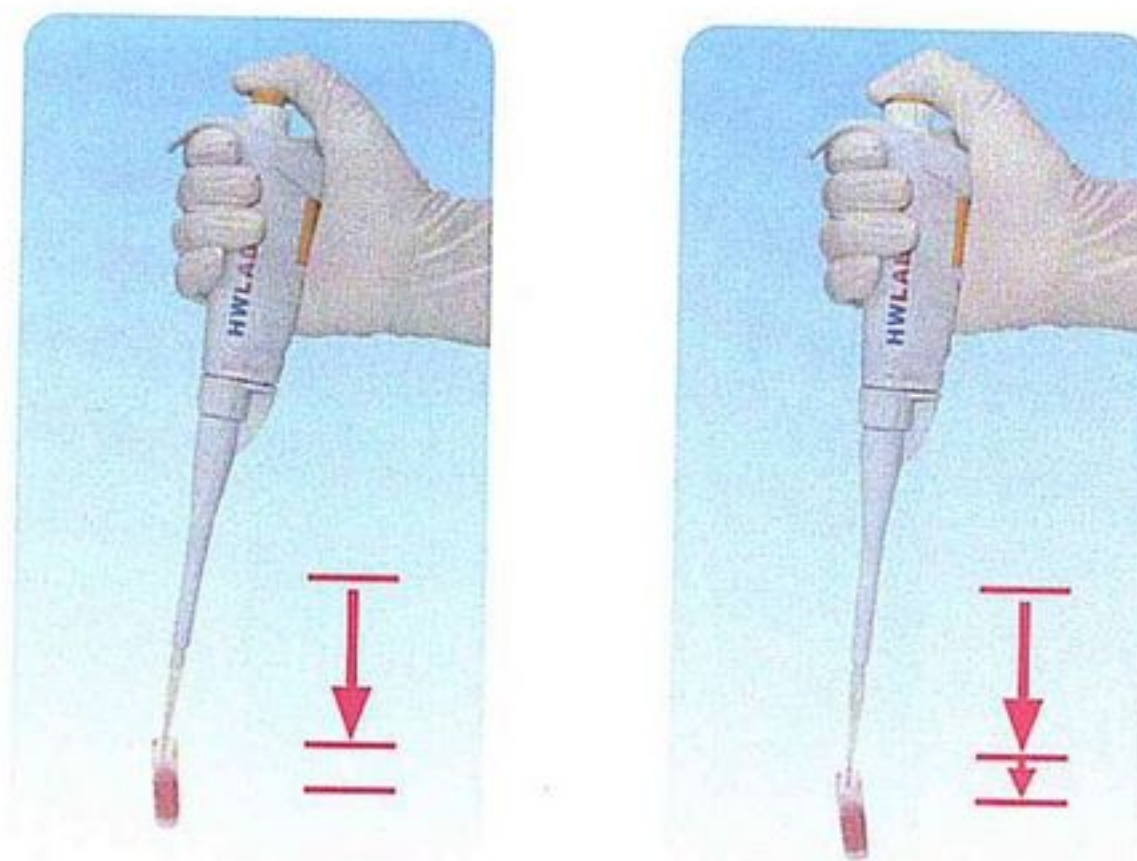
The immersed depth of the tip is --

0.20 – 10 µl	≤	1 mm
20 – 100 µl	≤	2-3 mm
200 – 1000 µl	≤	2-4 mm
1000 – 5000 µl	≤	3-6 mm
1 – 10 ml	≤	5-7 mm

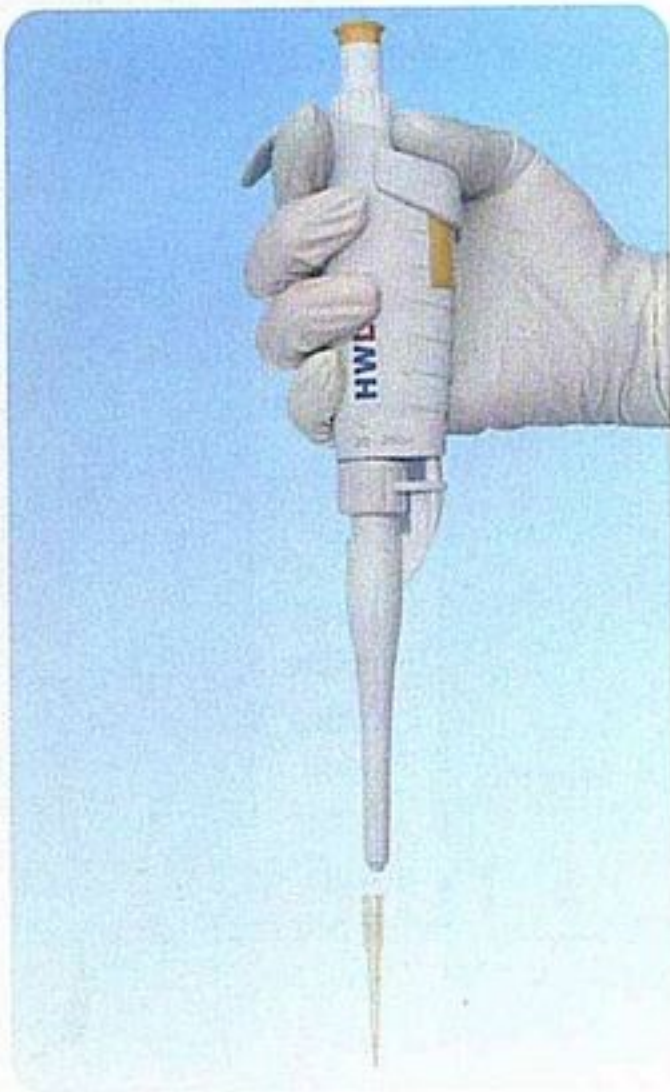
then release the pushing button slowly and make it revert to the original position. Take off the pipette from the liquid after a interval 2 - 3 seconds.



3. Place the suction tip of the pipette into the container, and make the tip touch the inner wall of the container. Depress the pushing button to the first stop and further more to the end to discharge the solution completely from the tip. Move the tip up and down along with the inner wall of the container for several times before takeoff the pipette. After that, you can release the pushing button and take the pipette away



4. After work, the suction tip will be taken off from the suction tube automatically by pressing the Tip ejector.



Technical data

Variable volume “G” series
(Accuracy & Repeatability value should be tested six times)

Type	Model	Nominal Volume μl	Tolerance allowed %	Repeatatability %
Fixed volume	G5	5	±1. 5	≤0. 60
	G10	10	±1. 0	≤0. 40
	G20	20	±1. 0	≤0. 30
	G25	25	±1. 0	≤0. 30
	G50	50	±0. 8	≤0. 30
	G100	100	±0. 8	≤0. 20
	G200	200	±0. 8	≤0. 20
	G500	500	±0. 8	≤0. 20
	G1000	1000	±0. 8	≤0. 20
	G5000	5000	±0. 6	≤0. 20
	G10ml	10ml	±0. 6	≤0. 20

Technical data

Variable volume "H" series

(Accuracy & Repeatability value should be tested six times)

Type	Model	Nominal Volume μ l	Tolerance allowed %	Repeatability %
Adjustable volume	H2	0.2	± 15.0	≤ 8.00
		1	± 2.5	≤ 2.00
		2	± 1.8	≤ 1.00
	H10	1	± 3.0	≤ 1.50
		5	± 2.0	≤ 0.80
		10	± 1.2	≤ 0.50
	H20	2	± 6.0	≤ 2.00
		10	± 1.5	≤ 0.60
		20	± 1.2	≤ 0.40
	H50	5	± 2.0	≤ 1.50
		20	± 1.2	≤ 0.70
		50	± 1.0	≤ 0.50
	H100	10	± 3.0	≤ 1.00
		50	± 1.0	≤ 0.30
		100	± 0.8	≤ 0.20
	H200	20	± 2.0	≤ 0.60
		100	± 0.8	≤ 0.30
		200	± 0.8	≤ 0.20
	H1000	100	± 1.8	≤ 0.40
		500	± 0.8	≤ 0.30
		1000	± 0.8	≤ 0.20
	H5000	1000	± 2.5	≤ 0.40
		2000	± 0.8	≤ 0.30
		5000	± 0.7	≤ 0.20
	H10ml	1 ml	± 3.0	≤ 0.80
		5 ml	± 0.8	≤ 0.30
		10 ml	± 0.7	≤ 0.20

Technical data

Variable volume "U" series

(Accuracy & Repeatability value should be tested six times)

Type	Model	Nominal Volume μ l	Tolerance allowed %	Repeatability %
Adjustable volume	U2	0.2	± 12.0	≤ 6.00
		1	± 2.5	≤ 2.50
		2	± 1.8	≤ 0.70
	U10	1	± 3.0	≤ 1.50
		5	± 1.5	≤ 0.60
		10	± 1.0	≤ 0.40
	U20	2	± 3.0	≤ 1.50
		10	± 1.0	≤ 0.50
		20	± 1.0	≤ 0.30
	U50	5	± 2.0	≤ 1.50
		20	± 1.2	≤ 0.40
		50	± 1.0	≤ 0.20
	U100	10	± 3.0	≤ 1.00
		50	± 1.0	≤ 0.30
		100	± 0.8	≤ 0.15
	U200	20	± 2.0	≤ 0.50
		100	± 0.8	≤ 0.30
		200	± 0.8	≤ 0.15
	U1000	100	± 1.5	≤ 0.30
		500	± 0.8	≤ 0.30
		1000	± 0.8	≤ 0.15
	U5000	1000	± 2.0	≤ 0.30
		2000	± 0.8	≤ 0.25
		5000	± 0.7	≤ 0.15
	U10ml	1ml	± 3.0	≤ 0.30
		5ml	± 0.8	≤ 0.20
		10ml	± 0.7	≤ 0.15

Technical data

Variable volume “P” series

(Accuracy & Repeatability value should be tested six times)

Type	Model	Nominal Volume μl	Tolerance dllowed %	Repeatatablility %
Adjustable volume	P2	0.2 1 2	±12 ±2.5 ±1.5	≤6.00 ≤2.00 ≤0.70
	P10	1 5 10	±2.5 ±1.5 ±1.0	≤1.25 ≤0.60 ≤0.40
	P20	2 10 20	±5.0 ±1.0 ±1.0	≤1.50 ≤0.50 ≤0.30
	P50	5 20 50	±2.0 ±1.2 ±1.0	≤1.50 ≤0.40 ≤0.20
	P100	10 50 100	±2.0 ±0.8 ±0.8	≤0.60 ≤0.24 ≤0.15
	P200	20 100 200	±1.5 ±0.8 ±0.8	≤0.50 ≤0.25 ≤0.15
	P1000	100 500 1000	±1.8 ±0.8 ±0.8	≤0.40 ≤0.25 ≤0.15
	P5000	1000 2000 5000	±2.0 ±0.8 ±0.6	≤0.30 ≤0.25 ≤0.16
	P10ml	1 ml 5 ml 10 ml	±2.5 ±0.8 ±0.6	≤0.60 ≤0.20 ≤0.16

Technical data

Variable volume “A” series

(Accuracy & Repeatability value should be tested six times)

Type	Model	Nominal Volume μl	Tolerance dllowed %	Repeatatablility %
Adjustable volume	A2	0.2 1 2	±10 ±2.5 ±1.5	≤6.00 ≤2.00 ≤0.70
	A10	1 5 10	±2.5 ±1.5 ±1.0	≤1.25 ≤0.60 ≤0.40
	A20	2 10 20	±5.0 ±1.0 ±1.0	≤1.50 ≤0.50 ≤0.30
	A50	5 20 50	±2.0 ±1.2 ±1.0	≤1.50 ≤0.40 ≤0.20
	A100	10 50 100	±2.0 ±0.8 ±0.8	≤0.60 ≤0.24 ≤0.15
	A200	20 100 200	±1.5 ±0.8 ±0.6	≤0.50 ≤0.25 ≤0.15
	A1000	100 500 1000	±1.8 ±0.8 ±0.6	≤0.40 ≤0.25 ≤0.15
	A5000	1000 2000 5000	±2.0 ±0.8 ±0.6	≤0.30 ≤0.25 ≤0.16
	A10ml	1 ml 5 ml 10 ml	±2.5 ±0.8 ±0.6	≤0.60 ≤0.20 ≤0.16

Technical data Multi-channel “P” series

Type	Model	Volume (μl)	Accuracy (%)	Precision (%)
Adjustable volume	P8X20 P12X20	2	± 6.0	≤ 2.00
		10	± 1.5	≤ 0.60
		20	± 1.2	≤ 0.40
	P8X50 P12X50	5	± 3.0	≤ 1.50
		20	± 1.5	≤ 0.60
		50	± 1.2	≤ 0.40
	P8X200 P12X200	20	± 2.5	≤ 0.60
		100	± 1.2	≤ 0.30
		200	± 1.0	≤ 0.20

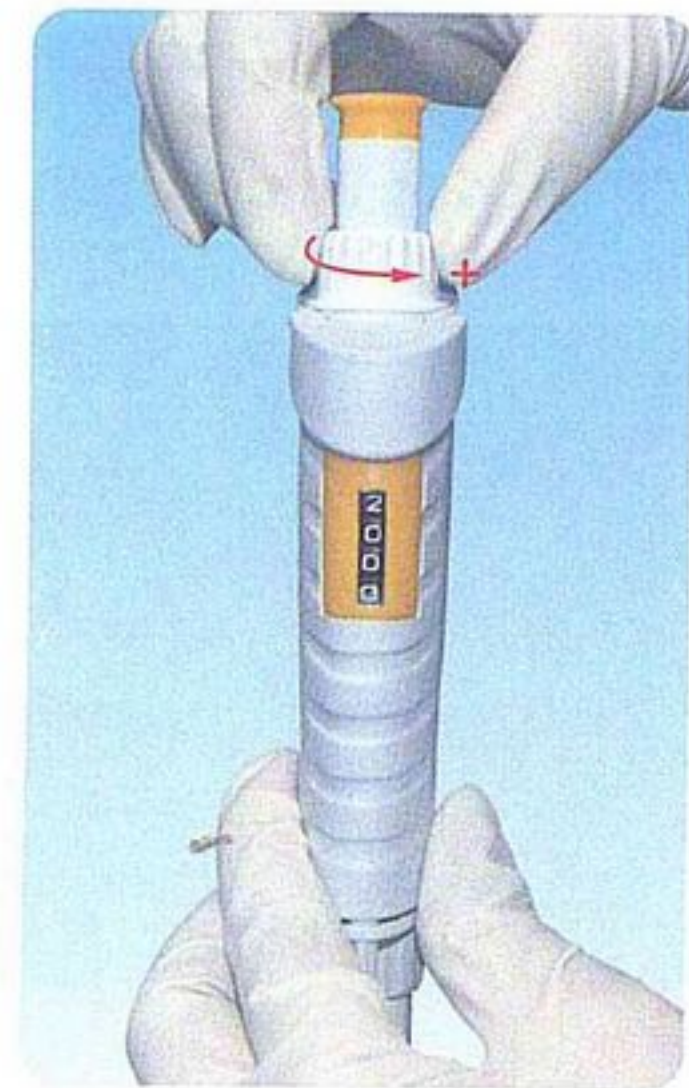
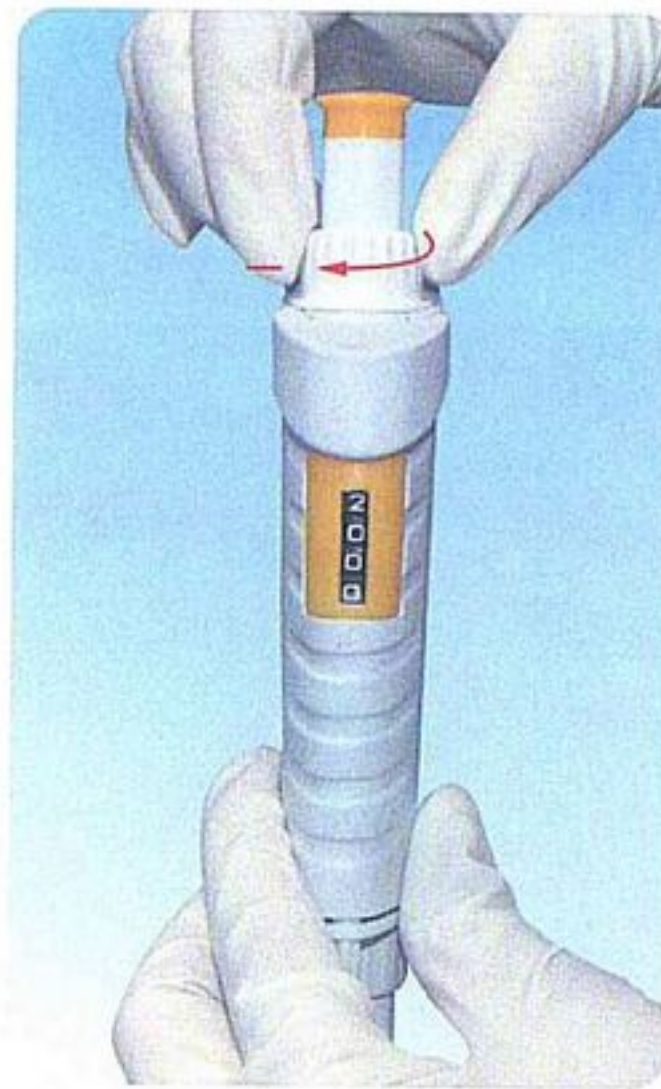
Number display settings for adjusting volume “H”&“U”&“P”

H2 U2 P2	H10 U10 P10	H20 U20 P20	H50 U50 P50	H100 U100 P100
1	0	1	0	0
2	7	2	5	7
5	5	5	0	5
1.25μl	7.5μl	12.5μl	50μl	75μl
H200 U200 P200	H1000 U1000 P1000	H5000 U5000 P5000	H10ml U10ml P10ml	
1	0	0	0	
2	7	2	7	
5	5	5	5	
125μl	750μl	2500μl	7.5ml	

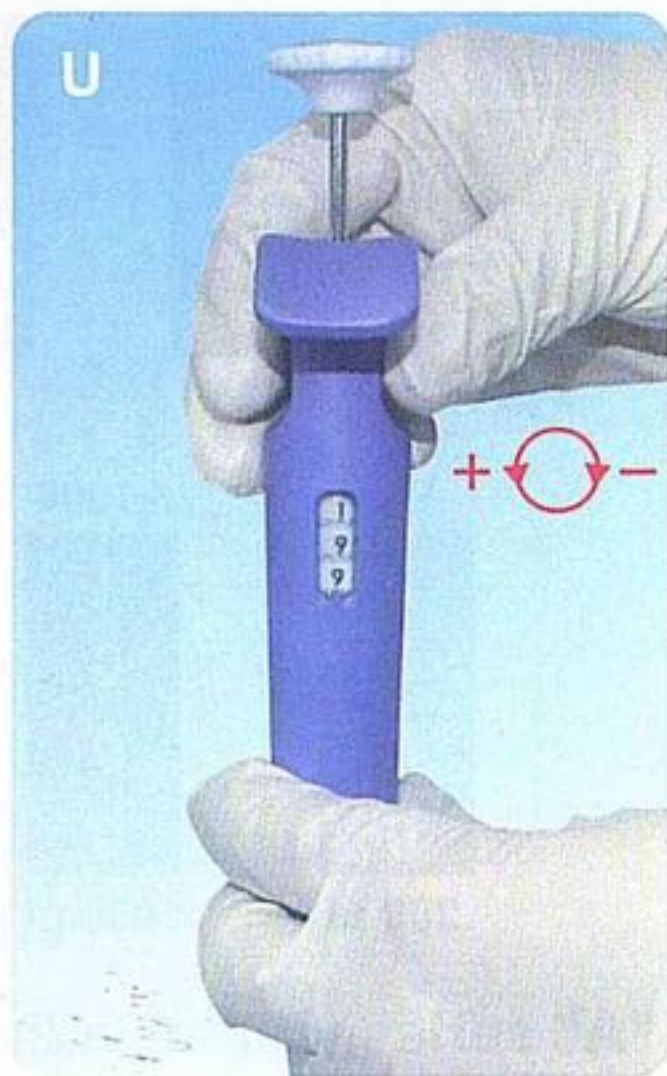
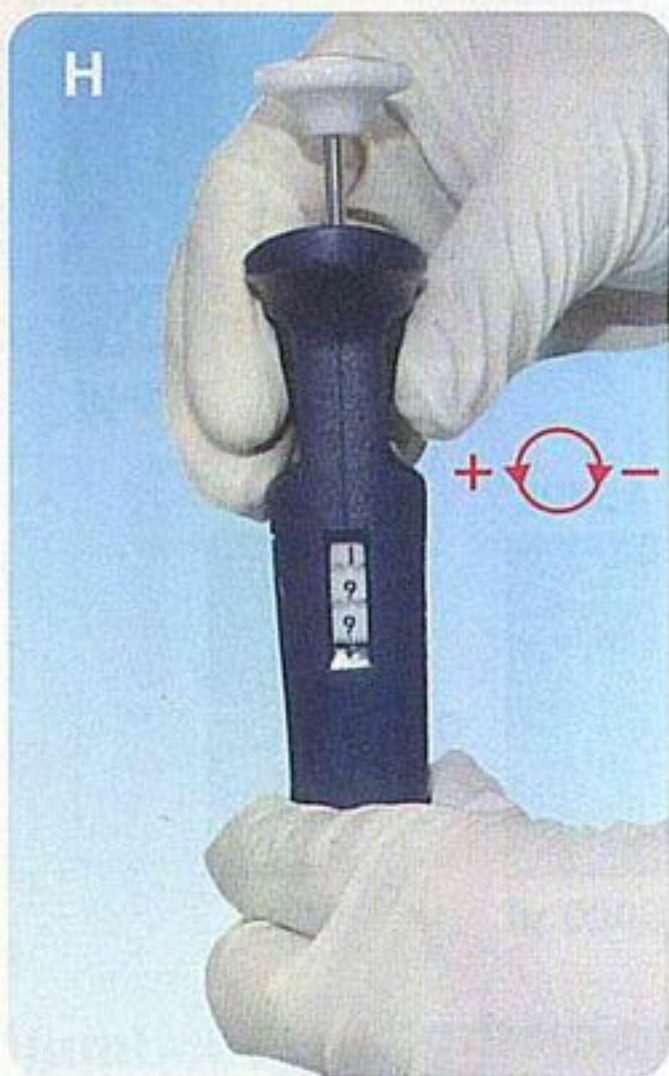
Number display settings for adjusting volume “A”

A2	A10	A20	A50	A100
2	1	2	5	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2 μl	10 μl	20 μl	50 μl	100 μl
A200	A1000	A5000	A10ml	
2	1	5	1	
0	0	0	0	
0	0	0	0	
0	0	0	0	
200 μl	1000 μl	5000 μl	10ml	

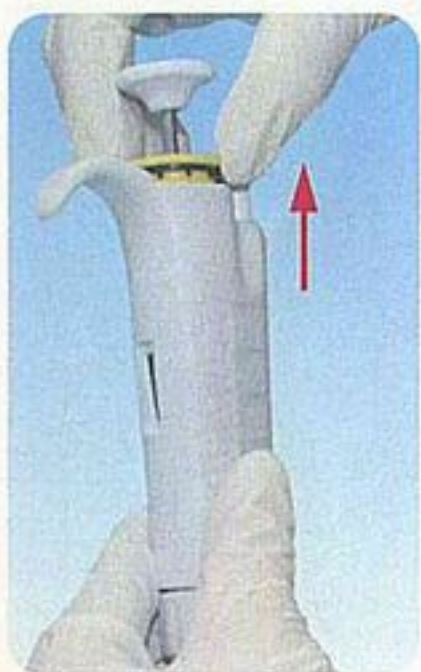
“A” series volume adjusting method



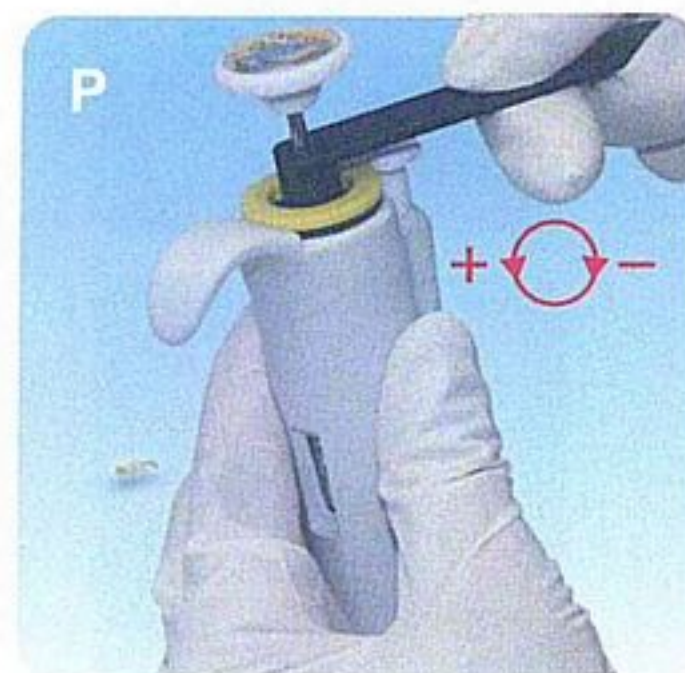
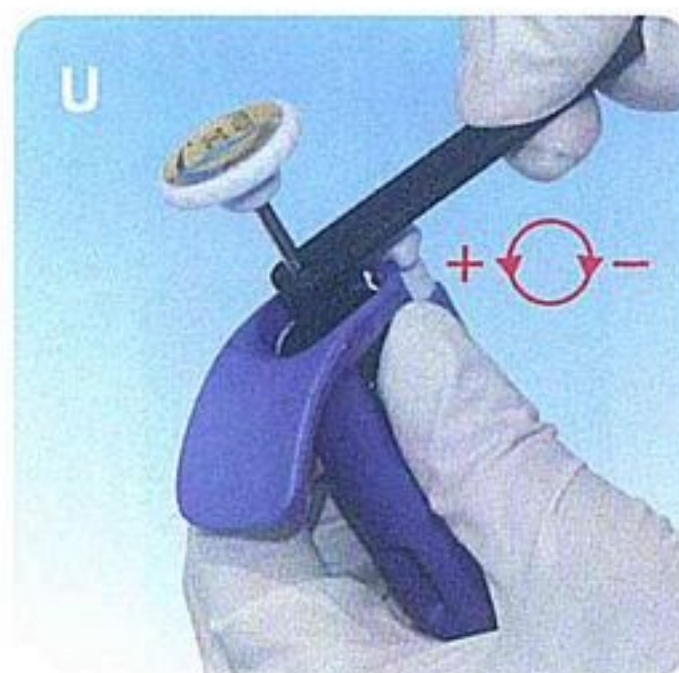
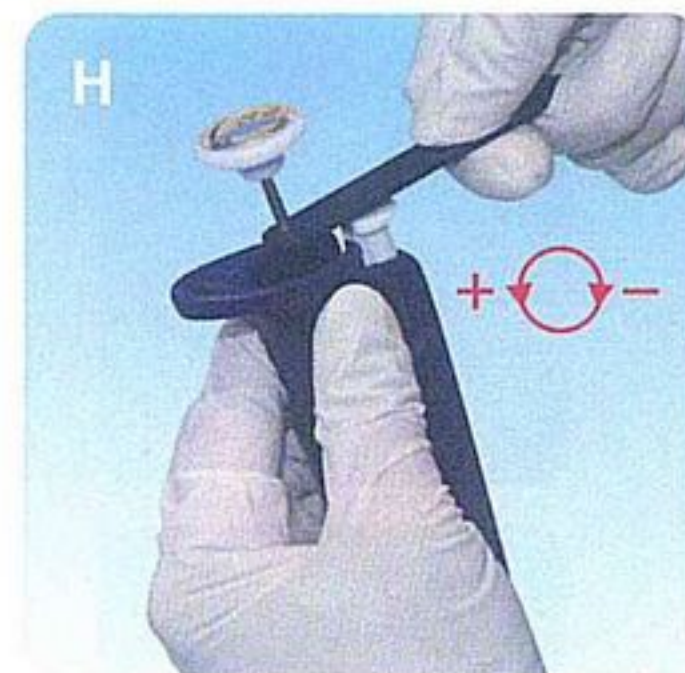
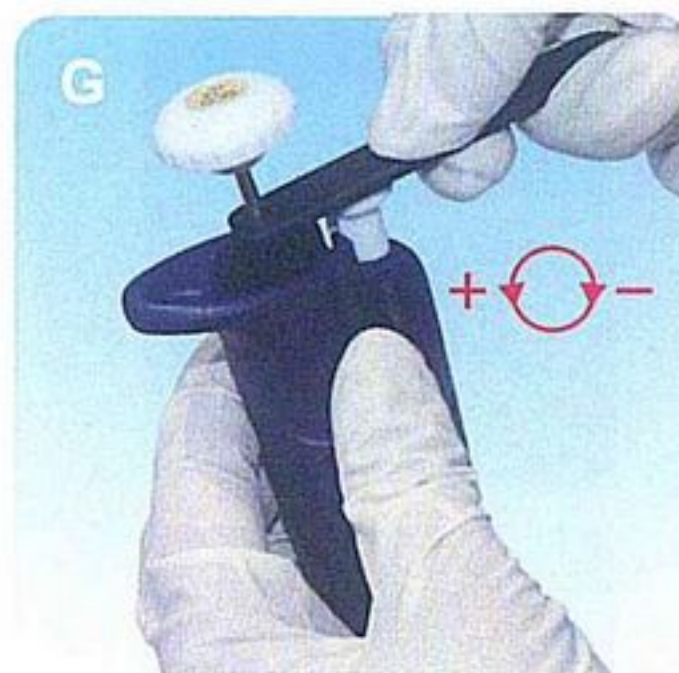
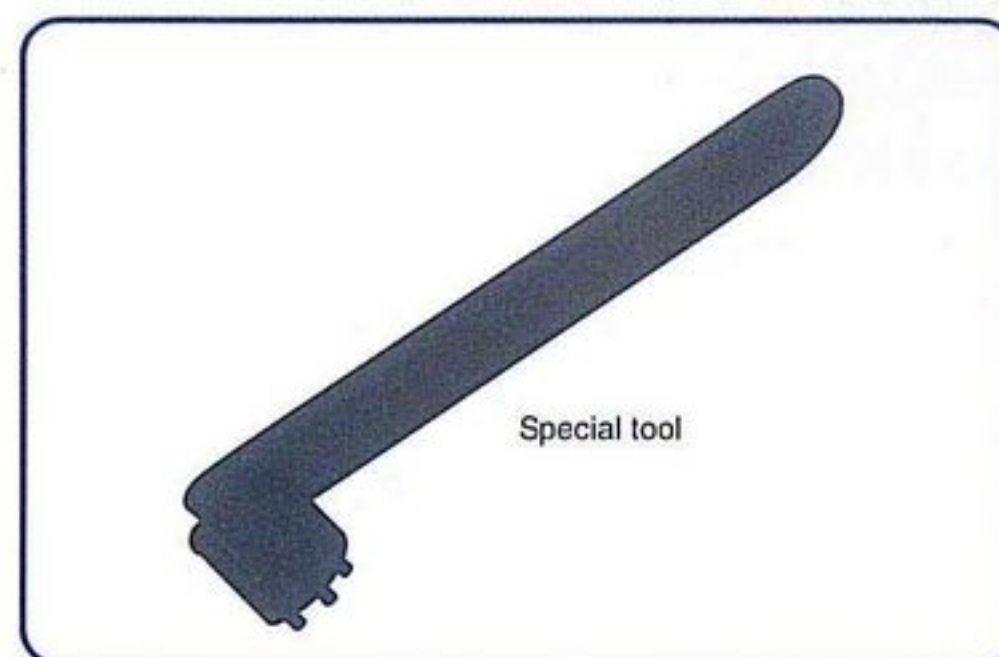
"H" & "U" series volume adjusting method



"P" series volume adjusting method



Calibration method



Calibration method of micropipette "A" series

1. Depress the ejector button to the stop, don't release (Picture 1).
2. Use sharp tool to turn the white plastic part left (Picture 2), after that, push down and turn left, embedding the white plastic part in slot (Picture 3).
3. Press the volume adjustment that is kept consistent between weight and volume (Picture 4).
4. Turn right, push up and turn the white plastic part left in slot (Picture 5).



Remarks:

1. Pipette is a precision instrument, you should adjust the number wheel to the volume required first before operation.
2. In order to obtain the high precision, please immerse the tips before sucking the solution, this will eliminate the tolerance.
3. Disassembly of Automatic pipette is prohibited.
4. "P" series pipette must be re-calibrated after it is autoclaved under 121 °C. This pipette can be autoclaved not more than 6 times.
5. Working ambient temperature : 20 °C ± 5 °C