



P.I.P. Single Channel  
Fixed Volume Pipettes  
Operating Manual



[www.medpip.com](http://www.medpip.com)

# PIPETTE

Single Channel  
Fixed Volume Pipettes

# POLE IDEAL PARS



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Pole Ideal Pars Co.

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National Health, Not Only Our Job  
But Also, Our Mission



Pole Ideal Pars (P.I.P) is a manufacturing company, providing products that are designed to promote innovation and improve productivity, thanks to the expertise and long-time experience.

We benefit from skilled and dedicated employees with great passion who played a significant role in research and development of new products, strict quality control, and improving customer satisfaction.

We take pride in our products' quality while continuously focusing on:

Innovation, Precision, Quality

## A Good Beginning Makes a Good Ending

P.I.P. pipettes are designed to deliver superior performance and accuracy year after year. The high quality and long-term reliability of P.I.P. pipettes are highly based upon the design, the quality of components and the entire controlled production process. The specifications of this ergonomic and well-designed pipette meet ISO 8655.

## We Offer Complete Sales Support to Our Customers

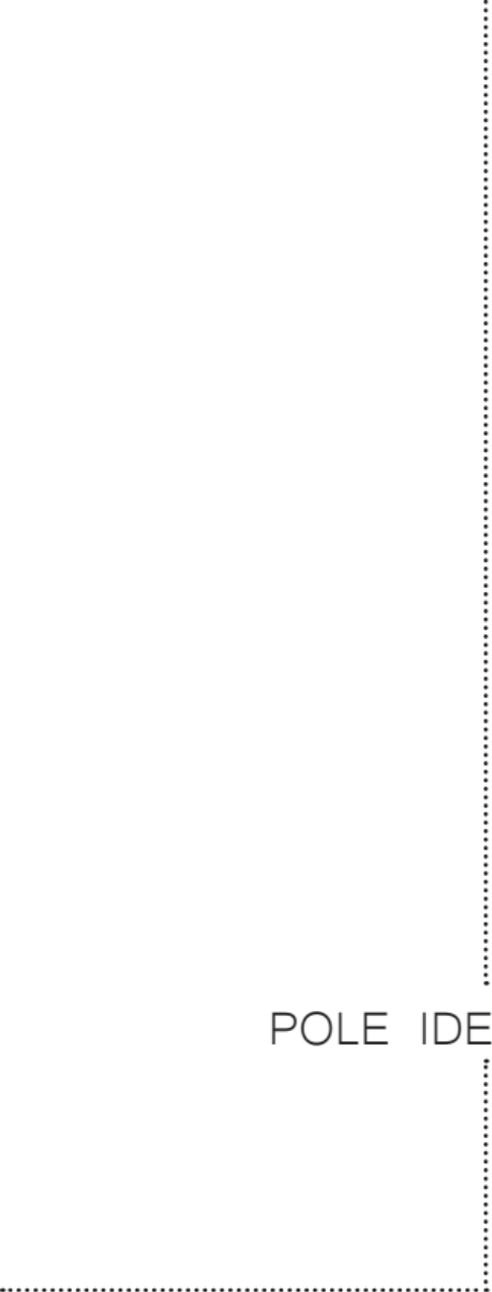
P.I.P. commitment to customers extends beyond the supply of products. The service and support team is organized to ensure customer satisfaction. Therefore, our experienced managers, personnel and experts will assist you with any problems and provide after-sale and routine services for P.I.P. pipettes.





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POLE IDEAL PARS

# 1. Introduction

- Read this Operating Manual completely before using P.I.P pipettes for the first time.
- This Operating Manual contains all the information required for pipette maintenance, service intervals, decontamination, etc. So, keep it safe and handy.
- Enclose this Operating Manual when transferring the pipette to third parties.
- Pole Ideal Pars Co. takes no responsibility for any damages arising from not following the instructions of this Operating Manual.

**Register your pipette via [www.medpip.com](http://www.medpip.com) to benefit your warranty period.**

## 1-1. How to Register

There are two steps to register your pipette:

1. Visit [my.medpip.com/en](http://my.medpip.com/en)
2. Use the pipette Serial Number to register your device. (see page 27)

## 1-2. Symbols

▲: Caution

▶: Important points

## 1-3. Delivery Package

Each P.I.P. pipette box contains the following objects:

Table 1. P.I.P. Pipette Delivery Package

Product	Qty.
Pipette	1
Operating Manual	1
P.I.P. Certificate	1
Spare O-ring	5
Guarantee Card	1
Mini Brochure	1

## 2. P.I.P. Pipette Description

### 2- 1. P.I.P. Pipette Overview



Figure 1. P.I.P. Pipette Overview

## 2-2. Features

P.I.P. pipettes offer maximum reliability and comfort for applications where accuracy and precision are essential. Built with unique features such as:

### 2-2-1. Pipetting System

- Metal pipette parts, such as the tip cones, prevent breakage resulting from accidental dropping and offer superior durability of the pipette.
- The leak-tight O-rings prevent leakage and provide precise results.



Figure 2. Metal Pipetting System

### 2-2-2. Push Button

- This ergonomic and accurate pipette has a unique design with detachable push button. In the case a user switch to the left hand, the push button simply can be taken out and turned in order to have a left-hand pipette with a noticeable nominal volume on the push button.
- The soft-touch push button of P.I.P. pipettes causes smooth pipetting and reduces hand stress.
- Color-coded cap is designed for easy volume identification.

### 2-2-3. Tip ejector Button

Separate tip ejector button with curved shape reduces hand motion.



Figure 3. Buttons

## 2-2-4. Body

- High-Quality and robust body of P.I.P pipette protects internal components from damage if dropped.
- Lightweight and ergonomic body of the P.I.P pipette with balanced weight distribution offers greatest comfort for extended pipetting periods.
- P.I.P pipettes are resistant to UV radiation and common laboratory chemicals, organic solvents and detergents.
- Ergonomic finger hook for comfortable handling reduces hand stress.
- P.I.P. Pipette is a fully autoclavable lab pipette (except for the detachable push button) and requires no disassembly before autoclaving. Just simply take off the push button and put the pipette in an autoclave.

Note: It must not exceed 121 °C and a period of 20 minutes. (see page 23)



Figure 4. Robust and Lightweight Body

- All P.I.P pipettes have been engraved with a serial number on the body of the pipette which can be used for registration, service and repair. (see page 27)

**Pipette registration via [my.medpip.com/en](https://my.medpip.com/en) guarantees you excellent after-sale services.**  
(see page 6)

## 2-3. Working Principles

P.I.P pipette operates according to air cushion principles (air displacement pipettes). There is always a cushion of air (dead volume) between the piston and the liquid. When the push button is pressed down, the piston inside the instrument moves down to let air out. Air is displaced by the piston. The volume of air displaced is equivalent to the volume of liquid aspirated. P.I.P pipettes are highly accurate for most pipetting applications.

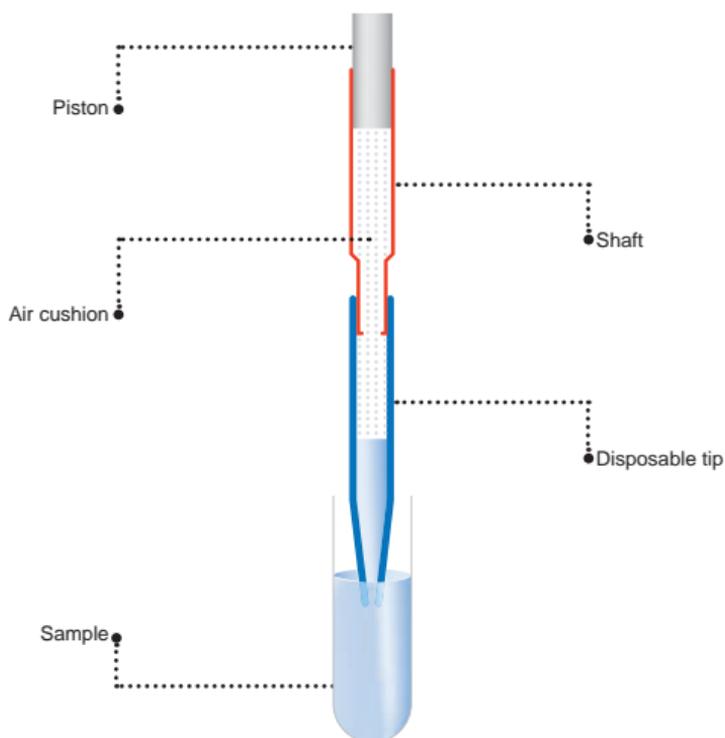


Figure 5. Pipetting System

### 3. Pipetting Techniques

In order to pipette different samples by P.I.P pipettes, 2 main pipetting techniques can be used:

1. Forward Pipetting Mode.
2. Reverse Pipetting Mode.

► Use Forward Pipetting Mode for aqueous solutions.

► Use Reverse Pipetting Mode for volatile and viscous samples.

Refer to table 2 for Proper Pipetting Techniques.

Table 2. Pipetting Techniques with P.I.P. Pipettes

Solution / Compound	Examples	Pipetting Technique	Comments
Aqueous Solution	<ul style="list-style-type: none"> <li>• Buffers</li> <li>• Diluted Salt Solutions</li> </ul>	Forward Pipetting	—
Viscous Solution	<ul style="list-style-type: none"> <li>• Protein and Nucleic Acid Solutions</li> <li>• Glycerol</li> <li>• Tween 20/40/60/80</li> </ul>	Reverse Pipetting	Pipette slowly to avoid bubble formation.
Volatile Compounds	<ul style="list-style-type: none"> <li>• Methanol</li> <li>• Hexane</li> </ul>	Reverse Pipetting	Pipette rapidly to avoid evaporation.
Body Fluids	<ul style="list-style-type: none"> <li>• Whole Blood</li> <li>• Serum</li> </ul>	Reverse Pipetting	Wait one second after aspiration and dispensing.
Nucleotide Solutions	<ul style="list-style-type: none"> <li>• Genomic DNA</li> <li>• PCR Products</li> </ul>	Forward Pipetting	—
Radioactive Compounds	<ul style="list-style-type: none"> <li>• <sup>14</sup>C-carbonate</li> <li>• <sup>3</sup>H-thymidine</li> </ul>	Forward Pipetting	—
Acids/Alkalis	<ul style="list-style-type: none"> <li>• H<sub>2</sub>SO<sub>4</sub></li> <li>• HCl</li> <li>• NaOH</li> </ul>	Forward Pipetting	—
Toxic Samples	—	Forward / Reverse Pipetting	—

### 3-1. Forward Pipetting

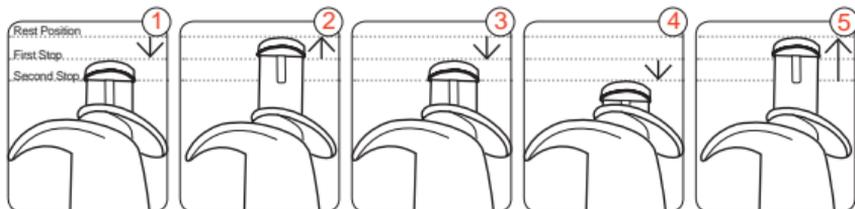


Figure 6. Forward Pipetting

1. Preparation: Hold the pipette in a vertical position. Press the push button smoothly to the First Stop.

2. Aspiration: Immerse the pipette tip in the liquid. Allow the push button to move up smoothly to the Rest Position. Wait one second, so that the liquid has time to move up into the tip.

▶ While pipetting, hold the pipette vertically, so that the tip does not touch the vessel wall. (figure 7)

▶ Press down and/or release the push button smoothly and consistently.

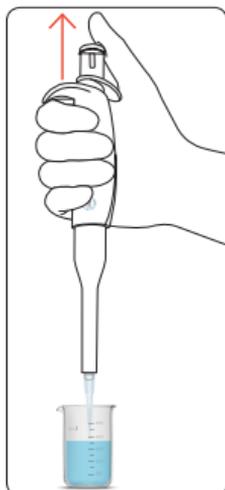


Figure 7. Hold the pipette vertically to aspirate

3. Dispense: Place the pipette tip at an angle ( $10^{\circ}$  to  $45^{\circ}$ ) against the inside wall of the receiving vessel. Depress the push button smoothly to the First Stop. (figure 8)

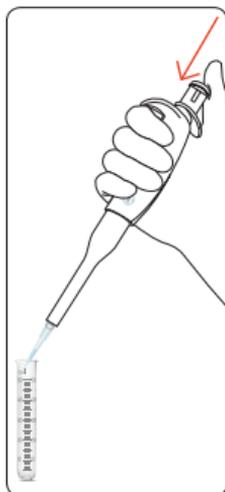


Figure 8. Dispensing Angle

▶ Before dispensing, carefully remove droplets on the outside of the tip with a lint-free cloth, being sure to stay clear of the tip opening. (figure 9)

4. Purge: Wait one second, then press the push button to the Second Stop. This purge stroke removes any remaining sample from the tip. Remove pipette tip end from sidewall by sliding it up the wall.

● Repetitive pipetting: Hold the push button in the First Stop position. Repeat steps 2,3 and 4.

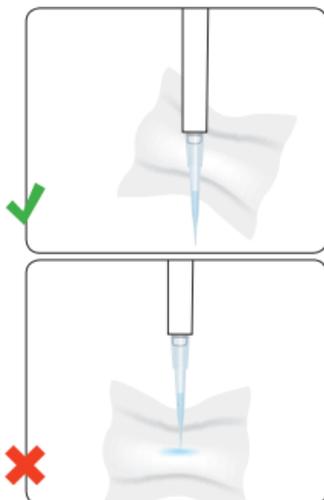


Figure 9. Removing Droplets on the Tip

5. Home: Allow the push button to move up to the Rest Position. Press the tip ejector button to remove the tip. (figure 10)

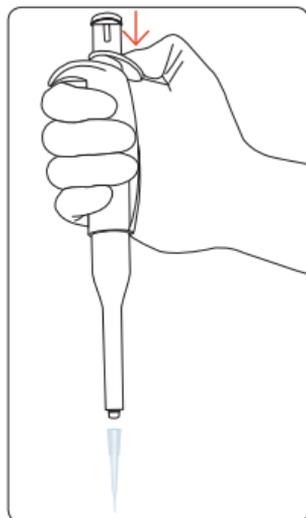


Figure 10. Tip Ejection

## 3-2. Reverse Pipetting

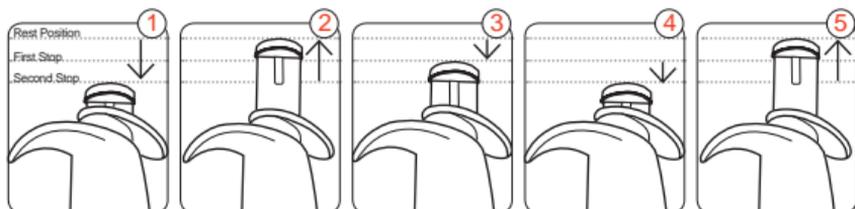


Figure 11. Reverse Pipetting

1. Preparation: Hold the pipette in a vertical position. Press the push button smoothly to the Second Stop.

2. Aspiration: Immerse the pipette tip in the liquid. Allow the push button to move up smoothly to the Rest Position. Wait one second, so that all the liquid has time to move up into the tip.

▶ While pipetting, hold the pipette vertically, so that the tip does not touch the vessel wall. (figure 7)

▶ Press down and/or release the push button smoothly and consistently.

3. Dispense: Place the pipette tip at an angle ( $10^{\circ}$  to  $45^{\circ}$ ) against the inside wall of the receiving vessel. Depress the push button smoothly to the First Stop. Wait one second. (figure 8)

▶ Before dispensing, carefully remove droplets on the outside of the tip with a lint-free cloth, being sure to stay clear of the tip opening. (figure 9)

4. Purge: Some liquid will remain inside the tip. The liquid remaining in the tip can be dispensed back into the original solution or thrown away.

● Repetitive pipetting: Hold the push button in the First Stop position. Repeat steps 2 and 3.

5. Home: Allow the push button to move up to the Rest Position. Press the tip ejector button to remove the tip. (figure 10)

## 4. Proper Pipetting Advices

To achieve the highest accuracy while using P.I.P pipette, follow the proper pipetting advices:

- Choose the right pipette. The nominal volume written on your pipette should fit the volume you plan to pipette.
- Use the appropriate pipette tip size from a high-quality manufacturer. (figure 12)
- ▶ Use single-use tips.

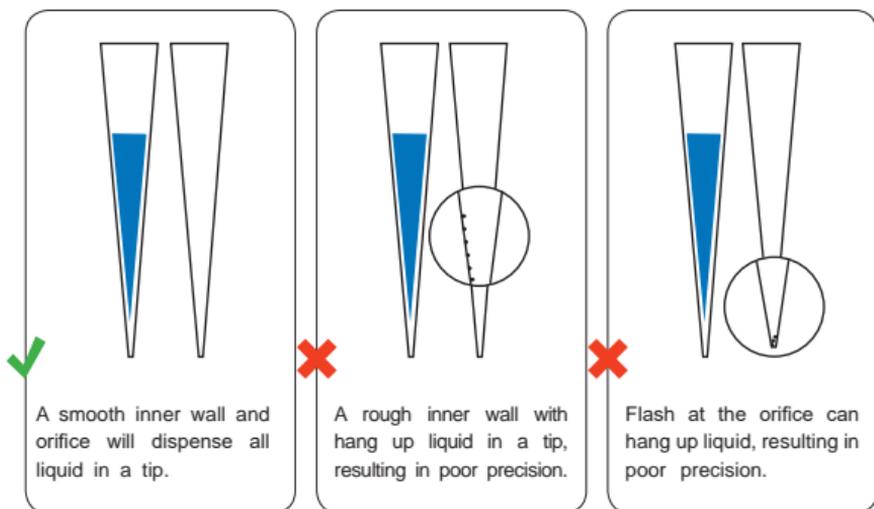


Figure 12. Evaluating tip quality

- To fit a disposable tip on P.I.P pipettes:

1. Hold the micropipette in one hand.
2. Lower the pipette into the tip.
3. Use a slight twisting motion to seat the tip firmly on the tip holder of the pipette. (figure 13)

- ▶ To protect your pipette, avoid tapping the pipette onto the tip like a hammer. (figure 14)

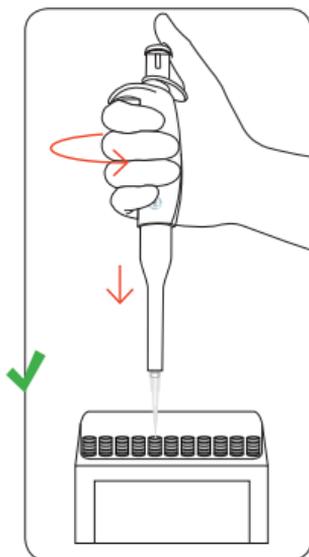


Figure 13. Press down with a rotating motion.

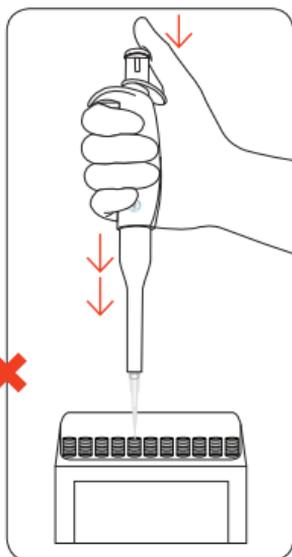


Figure 14. Avoid hammering on the pipette tip.

- Allow liquids and equipment to reach an equilibrium at an ambient temperature before you begin pipetting.
- Pre-wet the pipette tip by aspirating and dispensing any sample at least 3 times before aspirating it for delivery. This helps to prevent evaporation loss.
- Immerse the tip to the proper depth during aspiration. (see table 3)

Table 3. Appropriate Immersion Depth

Volume	Immersion Depth
0.1-1 $\mu\text{l}$	1 mm
1-100 $\mu\text{l}$	2-3 mm
101-1000 $\mu\text{l}$	2-4 mm
1001-10,000 $\mu\text{l}$	3-6 mm

- Choose the proper pipetting technique. (see page 12)

- Minimize pipette handling time and wear gloves to reduce body heat transfer to the pipette.

- Put the pipette vertically on a pipette stand when you are not pipetting. (figure 15)

⚠ **NOTICE:** Damage to the device due to penetration of liquids.

- Do not set the pipette aside when the pipette tip is filled. (figure 16)

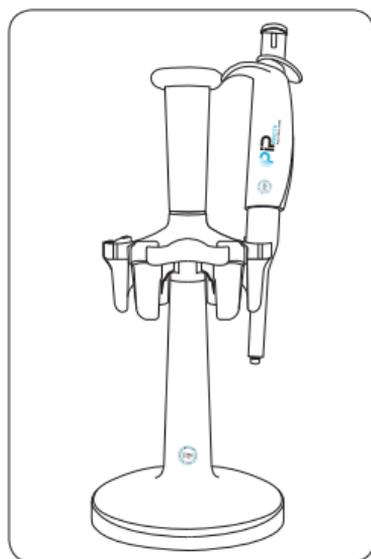


Figure 15. Proper Maintenance of P.I.P. Pipettes.

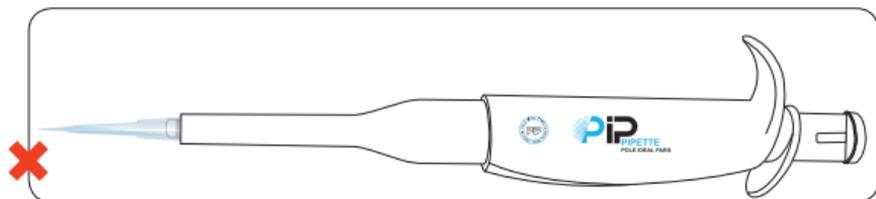


Figure 16. Do not set the pipette aside when the tip is filled

## 4- 1. Pipetting Influencing Parameters

To find out about the factors affecting pipetting accuracy refer to table 4.

Table 4. Pipetting Influencing Parameters

Influencing Parameters	Effects	Corrective Actions
Leaky/Poorly seated pipette tips	0.5% to 50%	Using appropriate and recommended pipette tips (see page16)
Reuse of pipette tips	Up to 4%	Using pipette tips only once
The straightness of pipette tips	Up to 10%	Using standard tips only (see page 16)
The difference in vapor pressure of the liquid to be pipetted versus that of the water used for calibration	Up to 2%	Sufficient pre-wetting of pipette tips (see page 17)
Failure to wipe the pipette tip on the vessel wall	Up to 3%	Wiping of the pipette tip on the vessel wall after dispensing the sample
Improper pipette tip immersion depth	Up to 1%	Immerse the tip to the proper depth during aspiration (see page 18)
Improper handling angle during pipetting	Up to 1%	Holding pipette in a vertical position while pipetting
Irregular rhythm and timing during pipetting	Up to 1.5%	Applying a consistent pipetting technique
Uneven push button movement	Up to 0.5%	Smooth operation of push button
A leaky pipetting system	1% to 50%	Send the pipette back to P.I.P company for service and repair (see page 26)

## 5. Cleaning and Maintenance

### To clean the pipette:

- Never use corrosive cleaning agents or strong solvents.
- Check the compatibility with the materials used, before cleaning.
- Do not clean the device with sharp objects.
- External cleanings are recommended using normal cleaning agents such as water with mild detergents or 60%-70% ethanol.

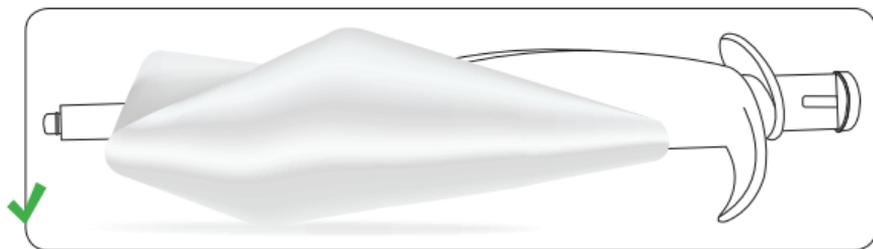


Figure 17. Pipette Cleaning

- ▲ Do not disassemble the pipette for cleaning.
- ▲ Only use common laboratory cleaning agents.

## 6. Decontamination

### In the case decontamination is needed:

1. Only disassemble the tip ejector and shaft carefully. (figure 18, figure 19)

⚠ The guarantee will be voided, if other parts of the pipette are disassembled.

⚠ Piston and other components may be damaged if the shaft is carelessly disassembled.

2. Only use appropriate decontamination process. (see table 5)

3. After decontamination, carefully reassemble the pipette.

⚠ To prevent leakage, pay attention that the shaft is completely seated.

⚠ Do not use too much force while dis/reassembling the pipette.

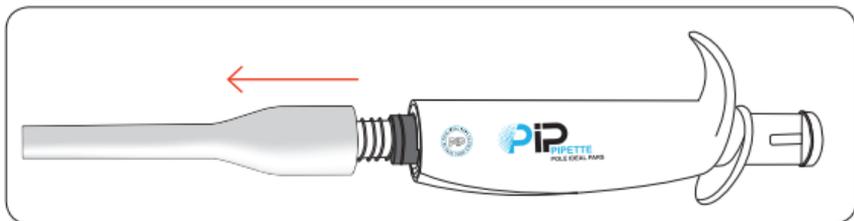


Figure 18. Remove the tip ejector

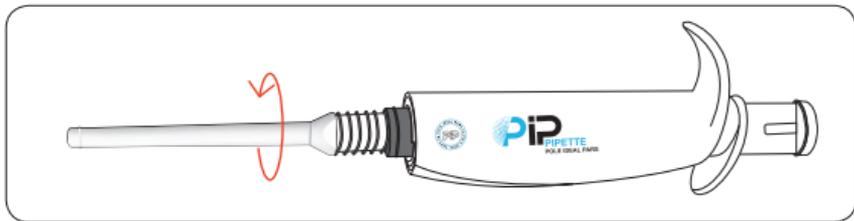


Figure 19. Unscrew the shaft

**Pole Ideal Pars Co. will assume no responsibility for any damages to the pipette caused as a result of improper decontamination process, disassembling and reassembling the pipette.**

To understand how to decontaminate P.I.P pipette correctly, refer to table 5.

Table 5. P.I.P Pipette Decontamination Process

Contamination Causes	Decontamination Techniques	Corrective Actions
Radioactive Compounds	Detergent-Cleaning Solution	Disassemble the shaft and tip ejector of your pipette. Fully immerse the contaminated parts* into an ultrasonic bath with a detergent or cleaning solution recommended for laboratory instruments. It is strongly recommended to rinse the shaft and tip ejector several times with water and dry it thoroughly. Always make sure that radioactivity has decreased to an acceptable level.
Viruses, Bacteria, Mycoplasma, Fungi	UV Radiation	Work surfaces may be decontaminated by exposure to 300 nm UV light for 15 minutes. UV will not damage P.I.P pipette materials. Note that the UV rays cannot penetrate inside the pipette and cannot be considered as a decontamination protocol for the internal components of the pipette.
DNA, RNA, Biological Samples	10 % Bleach Solution or UV Radiation	Disassemble the shaft and tip ejector of your pipette. Fully immerse the contaminated parts* into at least 3% Sodium Hypochlorite for at least 15 minutes. Rinse thoroughly with distilled water and dry. Exposure to UV light for 30–60 minutes will further reduce DNA contamination, but not fully eliminate it from the pipette surface.
Aqueous Solutions and Buffers	Water Cleaning	Disassemble the shaft and tip ejector of your pipette. Rinse the contaminated parts* thoroughly with distilled water and dry.
Acids/Alkalis		
Organic Solvents	Detergent-Cleaning Solution	Disassemble the shaft and tip ejector of your pipette. Fully immerse the contaminated parts* into an ultrasonic bath with a detergent or cleaning solution recommended for laboratory instruments. It is strongly recommended to rinse the shaft and tip ejector several times with water and dry it thoroughly.
Proteins		

\*Tip ejector and shaft

## 7. Autoclaving

- ▲ Damage to device from incorrect handling.

**Do not use any additional disinfectants, chemicals, decontamination agents or Sodium Hypochlorite during autoclaving or UV Irradiation.**

- ▶ Before autoclaving, take out the push button. (figure 20)

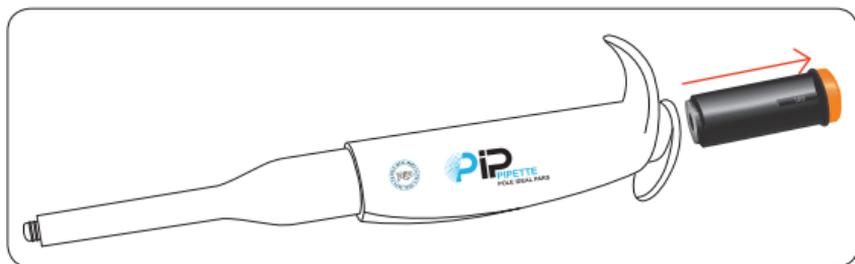


Figure 20. Disassembling the Push Button

- ▶ The lower part of the pipette can be autoclaved in the assembled state.

### Prerequisites

- The pipette has been cleaned. (see page 20)
- Any residual cleaning agent has been removed.

### Steps

1. Autoclave the pipette at 121°C and 1 bar pressure for 20 minutes.
2. Cool the pipette to ambient temperature and let it dry.

- ▶ For maximum precision and accuracy, a Gravimetric Test is recommended after autoclaving. (see Standard Operating Procedure<sup>1</sup> for P.I.P. pipettes. You can find it on our website: [www.medpip.com](http://www.medpip.com))

<sup>1</sup> SOP

## 8. Pipette Service

Notice that it is vital to contact P.I.P. company for any operational problems. To find out about P.I.P. pipette service intervals refer to table 6.

Table 6. P.I.P. Pipette Service Intervals

Frequency	Action	Who
Daily	Leak Test	End-Users
Weekly to up to every three months	Cleaning and Visual Inspection	End-Users
Annually	Adjustment / Calibration	Certified Calibration Centers
Annually	Replacement Spare Parts	P.I.P. company

**Pole Ideal Pars Co. recommends servicing pipettes on an annual basis to keep them in optimal working condition.** (see page 26)

### 8-1. Troubleshooting

⚠ All the information mentioned for troubleshooting (table 7) are just for a quick performance check.

⚠ The problems mentioned in table 7 should be solved by trained personnel.

⚠ The pipette should be sent back to P.I.P. company in the case of serious problems. (see page 26)

**Pole Ideal Pars Co. takes no responsibility for any damages caused by the users misuse.**

Table 7. P.I.P Pipette Troubleshooting

Problem	Cause	Solution
Liquid is leaking from the pipette tip	Pipette tip does not fit properly onto the pipette tip cone.	Use the appropriate tip size. (see page 16)
	Liquid being pipetted is hot or cold.	Shorten the time between pipetting steps.
	Liquid being pipetted is very viscous.	use reverse mode pipetting. (see page 12)
	Pipette O-ring is worn.	Replace O-ring. (Do not use sharp objects)
	Pipette tip is loose.	Press on tip more firmly. (avoid using too much force and over inserting the tip)
	Dispensed liquid has high vapor pressure.	Pre-wet the pipette tip at least 3 times.
	Pipette is damaged due to falls.	Send the pipette to P.I.P company*.
Amount of sample delivered is not accurate	The tip cone is damaged.	Send the pipette to P.I.P company*.
	Improper pipetting technique	Refer to pipetting techniques on page 12.
Uneven movement of piston or push button	Pipette is not within calibration	Send the pipette to authorized Calibration Centers.
	Piston has corrosion	Send the pipette to P.I.P company*
	Internal parts are dirty	
Pipetting system has been damaged		
Uneven movement of the tip ejector	Tip ejector is not seated correctly	Disassemble the tip ejector & reassemble it by using a slight force.

\* For more details about pipette shipment to P.I.P company, see page 26

## 9. Shipment

When sending a pipette for service, please notice the followings:

1. Contact us before sending the pipette back to the company:

 +98 21 88545922-9

2. In the case the pipette is contaminated, decontaminate the device in accordance with the instructions of table 5. (See page 22)

**▲ CAUTION:** Contact with a contaminated device may result in personnel severe diseases.

3. Please complete the information in the document " Service Order Form "

4. It can be found on our website.

5. Contact us to get the form in the case of inaccessibility to the website.

 info@medpip.com

 +98 912 3340197

6. Enclose the completed " Service Order Form " with the device and send them to P.I.P company.

**If the " Service Order Form " is not filled and enclosed with the pipette, we are sorry to accept the pipette for any service actions.**

## 10. P.I.P. Pipette Serial Number

Your P.I.P. pipette has been engraved with a Serial Number on the body of the pipette. It provides unique identification of your pipette. Registering the instrument via "[my.medpip.com/en](https://my.medpip.com/en)" will create an ownership record for the device. (see page 6)

## 11. P.I.P. Pipette Warranty

Pole Ideal Pars Co. warrants to the purchaser (Customer) of P.I.P. pipette (Product) that the instrument will be free of defects in workmanship and materials for a period of one year (Warranty Period) and also supports it for a period of 5-year after-sale service from the date of the purchase. During the Warranty Period, we provide repair services in case of any failure or malfunction on our products as far as they have been used normally.

**Pole Ideal Pars Co. recommends servicing pipettes on an annual basis to keep them in optimal working condition.** (see page 24)

### Warranty Coverage and Service

- The warranty is only valid for pipettes with P.I.P. Guarantee Card and Hologram.
- The Hologram and Guarantee Card should not be defaced.
- This warranty applies only to a Product which is purchased for Customer's own use and does not apply to a Product purchased for resale. (This warranty is not transferable)
- During Warranty Period, Pole Ideal Pars Co. will, at its sole discretion, repair or replace a defective pipette.
- Notice of a defect in the pipette must be received by Pole Ideal Pars Co. prior to the expiration of the Warranty Period and within fifteen (15) days after any alleged defect becomes reasonably apparent to Customer.
- Pole Ideal Pars Co. reserves the right to determine any defects of the pipette in accordance to warranty conditions.
- The Customer will be required to ship the pipette, at Customer's expense, to P.I.P. company.
- To benefit guarantee services, the Guarantee Card should be completely filled by the seller.

## Exceptions

- Any damage caused by Customer misuse, accident, fire or any disasters
- Any damage caused during shipment, transport and movement of the Product
- A vitiated Guarantee Card or Serial Number
- Component replacement by the Customer and any damage caused due to the replacement of wearing parts
- Service of the Product by a service supplier not authorized by P.I.P
- Pipette disassembling
- Use of the Product in non-standard environmental conditions (such as humidity, corrosive chemicals, etc.)
- Do not follow the Product Operating Manual. (Improper cleaning, decontamination, etc.)

**All warranty work and repair must be done only by P.I.P company.**

## 12. Choosing the Proper Pipette

► Depending on your application, P.I.P pipettes are available in a wide range of nominal volumes which offers you a lot of choices.

**In addition to the volumes named in the pipette Technical Data (table 8), you can order any desired volumes in accordance with your application needs.**

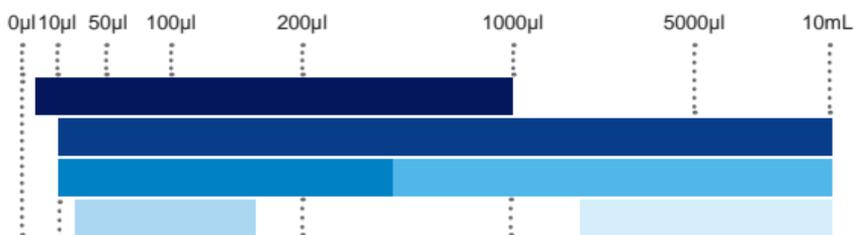
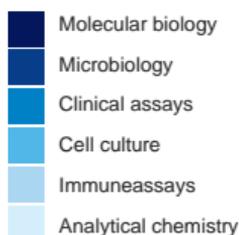


Figure 21. Choosing the Proper Pipette



## 13. P.I.P. Pipette Technical Data

Our customers are able to order P.I.P. pipettes in any desired volumes according to their application.

- ● 2 models of 10 µl fixed vol. pipette: Compatible with 2 tip sizes
- ● 2 models of 100 µl fixed vol. pipette: Compatible with 2 tip sizes

Table 8. P.I.P. Pipette Technical Data

Product No.	Volume	Systematic Error	Random Error	Appropriate Tips	GTIN
120260	● 1 µl	0.02 µl	0.01 µl	0.5-10 µl	6260807503027
120261	● 2 µl	0.03 µl	0.02 µl	0.5-10 µl	6260807503010
120262	● 3 µl	0.04 µl	0.03 µl	0.5-10 µl	6260807503034
120263	● 4 µl	0.05 µl	0.04 µl	0.5-10 µl	6260807503041
120264	● 5 µl	0.06 µl	0.04 µl	0.5-10 µl	6260807503058
120265	● 6 µl	0.07 µl	0.04 µl	0.5-10 µl	6260807503065
120266	● 7 µl	0.08 µl	0.05 µl	0.5-10 µl	6260807503072
120267	● 8 µl	0.08 µl	0.05 µl	0.5-10 µl	6260807503003
120268	● 9 µl	0.09 µl	0.05 µl	0.5-10 µl	6260807503089
120298	● 10 µl	0.10 µl	0.05 µl	0.5-10 µl	6260807503096
120269	● 10 µl	0.12 µl	0.08 µl	10-100 µl	6260807503102
120270	● 15 µl	0.18 µl	0.09 µl	10-100 µl	6260807503119
120271	● 20 µl	0.20 µl	0.10 µl	10-100 µl	6260807503126
120272	● 25 µl	0.29 µl	0.11 µl	10-100 µl	6260807503133
120273	● 30 µl	0.35 µl	0.12 µl	10-100 µl	6260807503140
120274	● 40 µl	0.44 µl	0.14 µl	10-100 µl	6260807503157
120275	● 50 µl	0.50 µl	0.15 µl	10-100 µl	6260807503164
120276	● 60 µl	0.58 µl	0.16 µl	10-100 µl	6260807503171
120277	● 70 µl	0.64 µl	0.18 µl	10-100 µl	6260807503188
120278	● 75 µl	0.66 µl	0.18 µl	10-100 µl	6260807503195

Product No.	Volume	Systematic Error	Random Error	Appropriate Tips	GTIN
120279	80 $\mu$ l	0.68 $\mu$ l	0.18 $\mu$ l	10-100 $\mu$ l	6260807503201
120280	90 $\mu$ l	0.70 $\mu$ l	0.19 $\mu$ l	10-100 $\mu$ l	6260807503218
120281	100 $\mu$ l	0.70 $\mu$ l	0.20 $\mu$ l	10-100 $\mu$ l	6260807503225
120299	100 $\mu$ l	0.80 $\mu$ l	0.30 $\mu$ l	100-1000 $\mu$ l	6260807503232
120282	110 $\mu$ l	0.90 $\mu$ l	0.30 $\mu$ l	100-1000 $\mu$ l	6260807503249
120283	120 $\mu$ l	1.00 $\mu$ l	0.30 $\mu$ l	100-1000 $\mu$ l	6260807503256
120284	150 $\mu$ l	1.20 $\mu$ l	0.30 $\mu$ l	100-1000 $\mu$ l	6260807503263
120285	200 $\mu$ l	1.60 $\mu$ l	0.40 $\mu$ l	100-1000 $\mu$ l	6260807503270
120286	220 $\mu$ l	1.80 $\mu$ l	0.40 $\mu$ l	100-1000 $\mu$ l	6260807502990
120287	250 $\mu$ l	2.00 $\mu$ l	0.40 $\mu$ l	100-1000 $\mu$ l	6260807503287
120288	300 $\mu$ l	2.40 $\mu$ l	0.50 $\mu$ l	100-1000 $\mu$ l	6260807503294
120289	400 $\mu$ l	3.20 $\mu$ l	0.70 $\mu$ l	100-1000 $\mu$ l	6260807503300
120290	450 $\mu$ l	3.60 $\mu$ l	0.80 $\mu$ l	100-1000 $\mu$ l	6260807503317
120291	500 $\mu$ l	4.00 $\mu$ l	0.80 $\mu$ l	100-1000 $\mu$ l	6260807503324
120292	600 $\mu$ l	4.80 $\mu$ l	1.10 $\mu$ l	100-1000 $\mu$ l	6260807503331
120293	700 $\mu$ l	5.60 $\mu$ l	1.40 $\mu$ l	100-1000 $\mu$ l	6260807503348
120294	750 $\mu$ l	6.00 $\mu$ l	1.50 $\mu$ l	100-1000 $\mu$ l	6260807503355
120295	800 $\mu$ l	6.40 $\mu$ l	1.70 $\mu$ l	100-1000 $\mu$ l	6260807503362
120296	900 $\mu$ l	7.20 $\mu$ l	2.00 $\mu$ l	100-1000 $\mu$ l	6260807503379
120297	1000 $\mu$ l	8.00 $\mu$ l	2.00 $\mu$ l	100-1000 $\mu$ l	6260807503386

**P.I.P pipette desired fixed volume**

More Information: [www.medpip.com](http://www.medpip.com)



# POLE IDEAL PARS

Single Channel Pipette



