

PIPETMAN® P

ENGLISH

Other languages can be consulted and downloaded on our website, www.gilson.com.



PIPETMAN® P

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1 - INTRODUCTION

Congratulations on acquiring your new Pipetman P. Enjoy the following features.

- Continuously-adjustable, designed to dispense precise volumes of liquid safely.
- Large range of volumes, eight models cover a range from 0.1 μ L to 10 mL, for many applications:

P2 and P10: measurement and transfer of micro-volumes, DNA sequencing and enzyme-assays.

P20, P100, P200, P1000: measurement and transfer of general aqueous solutions, acids and bases.

P5000, P10ml: measurement and transfer of large volumes.


- Volume is continuously adjustable within the useful volume range using the digital volumeter.
- Tip-ejector and disposable tips mean no need to handle tips, protecting the user from contamination.
- Carry-over between samples eliminated by using a new tip from a Tipack™ box for each transfer.
- Nominal volume (i.e. pipette model) is shown on the color coded push-button.
- Personalize your Pipetman by fitting a Coloris™ identification clip to the connecting nut (5 colors).

2 - PARTS CHECK LIST

Just take a moment to verify that the following items are present:

- Pipetman P,
- User's Guide,
- Sample pack of tips,
- Safety bag,
- Adhesive id-tags (strip of 4),
- Certificate of conformity (including bar-code sticker).

3 - DESCRIPTION

 Please refer to the schematic on the next page to see the items.

- A) Color coded push-button for setting the volume, aspirating, and dispensing.
- B) Body or handle.

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C) Connecting nut to upper part (body or handle) of removable tip-holder.

D) Diamond tip.

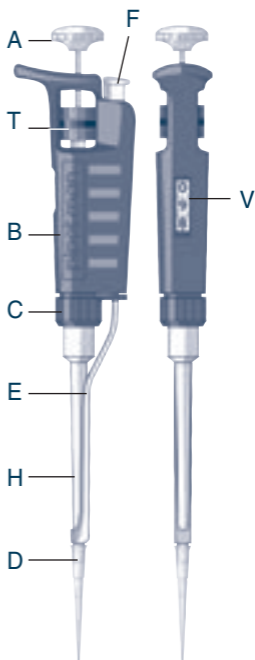
E) Tip-ejector.

F) Tip-ejector button.

H) Tip-holder (removable for cleaning and decontaminating).

T) Thumbwheel for setting the volume.


V) Volumeter.



4 - OPERATING RANGES

Model	Range
P2*	0.2 - 2 μ L
P10*	1 - 10 μ L
P20	2 - 20 μ L
P100	20 - 100 μ L
P200*	50 - 200 μ L
P1000	200 - 1000 μ L
P5000	1 - 5 mL
P10ml	1 - 10 mL



 * With a precise pipetting technique (see “General Guidelines for good pipetting”) P2 may be used to aspirate volumes down to 0.1 μ L, P10 at 0.5 μ L, and P200 at 30 μ L.

5 - SETTING THE VOLUME

The volume of liquid to be aspirated is set using the volumeter. The volumeter consists of three number-dials, which are read from top (most significant digit) to bottom (least significant digit). A marker is used to set exact or intermediate volumes using the scale on the bottom dial. The dials are colored either black or red to indicate the position of the decimal point, according to the model (see examples).

The volume is set by turning the thumbwheel or the push-button. The push-button makes it easier and quicker to set volumes, especially when wearing gloves. The thumb-wheel may be turned to slowly reach the required setting.











To obtain maximum accuracy when setting the volume, proceed as follows:

- when **decreasing** the volume setting, slowly reach the required setting, making sure not to overshoot the mark.
- when **increasing** the volume setting, pass the required value by 1/3 of a turn and then slowly decrease the volume to reach the volume, making sure not to overshoot the mark.

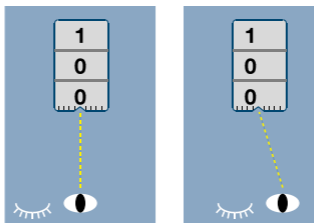
Model	Color of volumeter numbers	
	Black	Red
P2 to P200	μL	0.1 μL and 0.01 μL
P1000, P5000	0.1 mL and 0.01 mL	mL
P10ml	mL	0.1 mL

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Example for each pipette:

P2	P10	P20	P100
			
1.25 µL	7.5 µL	12.5 µL	75 µL
P200	P1000	P5000	P10ml
			
125 µL	0.75 mL	1.25 mL	7.5 mL

To avoid parallax errors, make sure that the volume indicator and the selected volume marking are in your direct line of vision. At close range you may find it helps to close one eye.



6 - PIPETTING

- 1) Fit a new Gilson Diamond Tip.

Plastic tips are for a single application - they must not be cleaned for reuse. Push the tip-holder into the tip using a slight twisting motion to ensure a firm and airtight seal.

 (1) **For P2 and P10:** tip ejector extensions are supplied.

(2) **P5000 and P10ml:** insert a filter into the tip holder before fitting a tip. (If the filter gets dirty it should be replaced with a clean one.)

(3) **P5000 and P10ml:** these models are not equipped with tip-ejectors.

2) Pre-rinse the tip.

Some liquids (e.g. protein-containing solutions and organic solvents) can leave a film of liquid on the inside the wall of the tip; pre-rinse the tip to minimize any errors that may be related to this phenomenon.

Pre-rinsing consists of aspirating the first volume of liquid and then dispensing it back into the same vessel (or to waste). Subsequent volumes that you pipette will have levels of accuracy and precision within specifications.

3) Aspirate.

Press the push-button to the **first stop** (this corresponds to the set volume of liquid).

Hold the pipette vertically and immerse the tip in the liquid (see immersion depth table).

Release the push-button slowly and smoothly (to **top** position) to aspirate the set volume of liquid.

Wait one second (time depends on model, see table) ; then withdraw the pipette-tip from the liquid.

You may wipe any droplets away from the outside of the tip using a medical wipe, however if you do so **take care to avoid touching the tip's orifice**.

4) Dispense.

Place the end of the tip against the inside wall of the recipient vessel (at an angle of 10° to 40°).

Press the push-button slowly and smoothly to the **first stop**.

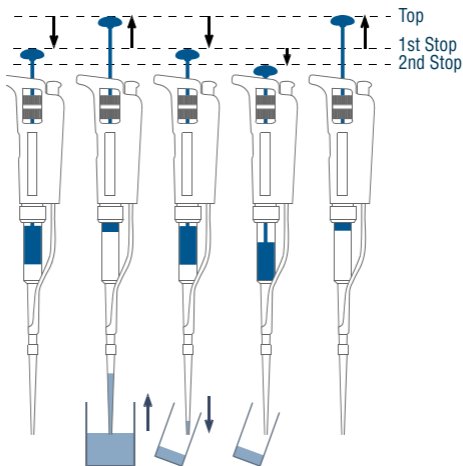
Wait for at least a second; then press the push-button to the **second stop** to expel any residual liquid from the tip.

Keep the push-button pressed fully down and (while removing the pipette) draw the tip along the inside surface of the vessel.

Release the push-button, smoothly.

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- 5) Eject the tip by pressing firmly on the tip-ejector button.



General Guidelines for Good Pipetting

- 1) Make sure that you operate the push-button slowly and smoothly.
- 2) When aspirating, keep the tip at a constant depth below the surface of the liquid (refer to the table).

Table - Immersion Depth & Wait Time

Model	Immersion Depth (mm)	Wait Time (Seconds)
P2	1	1
P10	1	1
P20	2-3	1
P100	2-4	1
P200	2-4	1
P1000	2-4	2-3
P5000	3-6	4-5
P10ml	5-7	4-5

- 3) Change the tip before aspirating a different liquid, sample, or reagent.
- 4) Change the tip if a droplet remains at the end of the tip from the previous pipetting operation.

- 5) Each new tip should be pre-rinsed with the liquid to be pipetted.
- 6) Liquid should never enter the tip-holder; to prevent this:
 - press and release the push-button slowly and smoothly,
 - never turn the pipette upside down,
 - never lay the pipette on its side when there is liquid in the tip.
- 7) If you use the same tip with a higher volume, pre-rinse the tip.
- 8) For volatile solvents you should saturate the air-cushion of your pipette by aspirating and dispensing the solvent repeatedly before aspirating the sample.
- 9) When pipetting liquids with temperatures different to the ambient temperature, pre-rinse the tip several times before use.
- 10) You may remove the tip-ejector (see "Maintenance") to aspirate from very narrow tubes.
- 11) After pipetting acids or other corrosive liquids that emit vapors, remove the tip-holder and rinse the piston and O-ring and seal with distilled water.
- 12) Do not pipette liquids having temperatures above 70 °C or below 4 °C.



The pipette can be used between + 4 °C and + 40 °C but the specifications may vary according to the temperature (see Chapter 14 for controlled conditions of use).

7 - GILSON DIAMOND TIPS

Gilson Diamond Tips are made to the highest specifications, strict quality control is maintained throughout the manufacturing process.

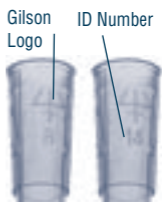
Diamond Tips are used to calibrate Pipetman P,

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therefore for optimum performance, you are strongly advised to use Gilson's Diamond Tips with your Pipetman P. Diamond Tips have the Gilson logo engraved on their collar, ensuring that you have a genuine Gilson product.

To ensure accuracy and precision, Gilson's Quality Assurance System focuses on the following critical parameters.

- Diamond Tips are made from pure polypropylene (virgin, metal-free, to avoid the possibility of contamination). They are available sterilized.
- Optimized shape (revised collar for optimum sealing, thin walls, and fine point), making them easier to mount, more flexible, with no vortexing, and improved precision.
- Diamond Tips are free from even microscopic defects, especially at the orifice. All surfaces are smooth and hydrophobic, thereby avoiding the excessive retention of liquids that causes poor accuracy and a lack of precision.
- Mold and cavity references are marked on the collar, ensuring the traceability for quality assurance purposes, batch numbers appear on all packages (bags and boxes).
- They form an air-tight seal with the tip-holder, preventing the leaks that cause poor accuracy and a lack of precision.
- They may be autoclaved at 121°C for 20 minutes at 0.1 MPa.



Diamond Filter Tips

Filter tips are used when sample-to-sample, sample-to-pipette, or sample-to-operator contamination must be avoided.

Because of their unique construction, Diamond Filter (DF) Tips may be autoclaved, without risk of damage to the filters. Gilson's sterilized Diamond Filter Tips are certified free of detectable RNase, DNase, DNA, RNA, and protease.

Table - Tips to Use for Best Results

Pipette	Diamond Tips	Volume (Range)
P2	D10, DL10, DF10, DFL10	0.1 μ L to 2 μ L
P10	D10, DL10, DF10, DFL10	0.5 μ L to 10 μ L
P20	DF 30, D200	2 μ L to 20 μ L
P100	DF30	20 μ L to 30 μ L
	D200, DF100	20 μ L to 100 μ L
P200	DF100	30 μ L to 100 μ L
	D200, DF200, D300, DF300	30 μ L to 200 μ L
P1000	D1000, DF1000, D1200	200 μ L to 1 mL
P5000	D5000	1 mL to 5 mL
P10 ml	D10 ml	1 mL to 10 mL

8 - PERSONALIZING YOUR PIPETTE

Personal Label - Application Name Tag

In addition to the four round adhesive stickers, supplied with your pipette, you can identify your pipette with a Coloris clip. Made of polyacetal, these clips accept permanent ink, and wipe clean with ethanol.



Ideal for recording service or calibration dates. Perfect for quick visual identification. Also useful for identifying pipettes dedicated to specific applications or as a warning when there is risk of contamination.

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These brightly colored clips snap quickly over the connecting nut of Pipetman models P2 to P1000. Because they don't require dismantling or changing original parts, there's no danger of the pipette's calibration being affected.

Tip-ejector: Dual-position Adaptor for P2 and P10

The component parts of a tip-ejector assembly are a metallic rod and a blue plastic connector, which goes into the body of the pipette.

For P2 and P10, a dual-position adaptor (plastic) is also required; the metallic rod is shaped so that the adaptor may be clipped to it in either of two positions.

Pipetman P2 and P10 are delivered with the adaptor in place and configured to accept DL10 tips. When you use D10 tips, which are shorter, you must reposition the adaptor as follows.



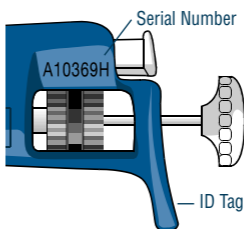
- 1) Pull the adaptor away from the metallic rod.
- 2) Turn the adaptor through 180°.
- 3) Refit the adaptor so that the end of the metallic rod engages the shorter slot of the adaptor.
- 4) Finally, check that end of the metallic rod is correctly seated in the appropriate slot of the adaptor; the 'dimple' on the metallic rod must be engaged in the corresponding hole on the adaptor.

9 - GLP FEATURES

These are as follows:

- **Serial Number:** engraved on body of the pipette.


- **Bar Code:**
on the box and with the certificate (can be transferred).
- **ID Tag (Application or User).**



10 - TROUBLESHOOTING

You may be able to identify and to correct the problem by reference to the following table. If you can't solve the problem, contact your Gilson representative.

However, a quick inspection of the pipette may help you isolate the problem.

 You may download from the Gilson website (www.gilson.com) the "2 minutes inspection", which shows how to perform a quick diagnosis of your pipette.

Is the operating rod straight?

Is the operating rod free of chemical damage?

Are the volumeter digits clear and easy to read?

Can you set any volume in the useful range?

Can you set the nominal (maximum) volume?

Does the volumeter operate smoothly without hitching?

If the answer to any of these questions is NO, it is probable the pipette has been damaged as the result of a mechanical shock or chemical damage, in which case it should be returned to your supplier for repair.

If the answer to these questions is YES, continue as follows.

Is the tip-ejector straight?

Is the tip-ejector free of chemical damage?

Remove tip-ejector; is the tip-holder undamaged


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and free of chemical damage?

Are the O-ring and seal undamaged and free of chemical damage?

If answer is NO, clean or replace the damaged part.

If the answer is YES, refer to the table below; you may need to clean or replace the piston assembly, O-ring and seal. Pipetman must be adjusted (re-calibrated) after the piston assembly is changed.

 *If you see a bubble in the aspirated liquid: dispense the liquid into its original vessel, then ensure that the tip is properly immersed below the surface of the liquid and aspirate more slowly - if a bubble appears again, replace the tip.*

Symptom	Possible Cause	Action
Pipette is leaking sample	Worn O-ring or seal.	Replace both parts.
Pipette won't aspirate	Worn O-ring or seal.	Replace both parts.
	Tip holder is loose.	Tighten connecting nut.
	Piston is damaged (chemically or mechanically).	Return pipette to supplier.
	Damaged tip holder.	Replace the tip-holder.
Pipette is inaccurate	Connecting nut is loose.	Tighten connecting nut.
	Improper assembly.	See 'Maintenance'.
	Unscrewed tip-holder.	Tighten connecting nut.
	Connecting nut is loose.	Tighten connecting nut.
Pipette is not precise	Tip-holder is loose.	Tighten connecting nut.
	Incorrect operator technique.	Operator training.
	Worn O-ring or seal.	Replace both parts.
	Connecting nut is loose.	Tighten connecting nut.
	Piston is damaged (chemically or mechanically).	Return pipette to supplier.
	Damaged tip-holder.	Replace the tip-holder.
Tips fall off or don't fit	Low quality tips.	Use Gilson Diamond Tips.
	Damaged tip-holder.	Replace the tip-holder.
	Damaged tip-ejector.	Replace the tip-ejector.



Before returning any pipette, ensure that it is completely free of chemical, biological, or radioactive contamination. Refer to chapter “Cleaning and decontamination”.

11 - LEAK TEST

This test may be performed at any time to check that the pipette does not leak, especially after performing a maintenance or decontamination procedure. If a pipette fails this test you should replace the O-ring and seal and repeat this test, after making sure that the pipette is correctly reassembled.

P2 to P200

- fit a Gilson Diamond Tip,
- set the pipette to the maximum volume given in the specifications, and pre-rinse,
- aspirate the set volume from a beaker of distilled water,
- maintain the pipette in the vertical position and wait for 20 seconds,
- if a water droplet appears at the end of the tip there is a leak,
- if you see no droplet, re-immersed the tip below the surface of water,
- the water level inside the tip should remain constant; if the level goes down there is a leak.

P1000 to P10ml

- fit a Gilson Diamond tip,
- set the pipette to the maximum volume given in the specifications,
- aspirate the set volume from a beaker of distilled water,
- maintain the pipette in the vertical position and wait for 20 seconds,

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- if a water droplet appears at the end of the tip, there is a leak.

12 - MAINTENANCE

Routine maintenance will help keep your pipette in good condition, ensuring a continued high level of performance. Maintenance is limited to cleaning or autoclaving the parts specified under “Cleaning and Decontamination” or to replacing the push-button, connecting nut, tip-ejector, tip-holder, seal and O-ring.

Pipetman P2 and P10 should not be disassembled, so you may only replace the push-button, tip-ejector, dual position tip-ejector and its adapter; with these pipettes if the tip-holder is damaged, the piston may also be damaged.



After replacing any parts you should verify the performance of your pipette following the verification procedure available on the Gilson website (www.gilson.com). If the pipette needs to be readjusted, please contact your local Gilson authorized Service Center.

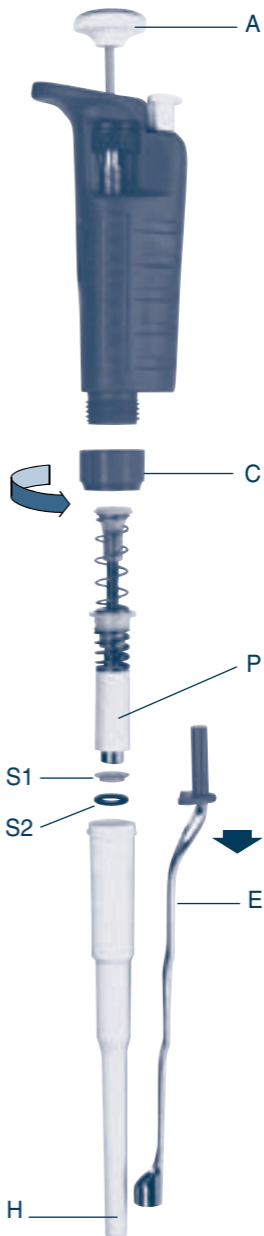
Tip-ejector and Tip-holder

These parts must be changed, if they are accidentally damaged or attacked chemically. You should also remove these parts for cleaning or decontamination purposes. A cloth dampened with ethanol may be used to routinely clean the outside of the pipette.

Changing the Tip-ejector

- 1) To remove the tip-ejector, keep the tip-ejector button depressed and pull down on the flanged upper part of the tip-ejector with the other hand (moderate force is required).

- A) Color coded push-button.
- C) Connecting nut.
- E) Tip-ejector.
- H) Tip-holder.
- P) Piston assembly.
- S1) Seal.
- S2) O-ring.



- 2) To refit the tip-ejector, keep the tip-ejector button depressed, slide the end of the tip-ejector over the end of the tip-holder and push the plastic end of the tip-ejector back into the body of the pipette until it is gripped firmly by the tip-ejector rod (metal).

Changing the Tip-holder

- 1) Remove the tip-ejector (see above).
- 2) Unscrew the connecting nut by turning it counterclockwise, by hand.
- 3) Carefully separate the lower and upper parts.
- 4) Remove the piston assembly, O-ring and seal.
- 5) Clean, autoclave, or replace the tip-holder.
- 6) Reassemble the pipette (refer to the figure).
- 7) Tighten the connecting nut (turn by hand, clockwise).
- 8) Refit the tip-ejector (see above).

Servicing the Piston Assembly

You may remove the piston assembly for cleaning purposes only. If the piston assembly is changed, the pipette must be adjusted and calibrated in a Gilson authorized Service Center.



The piston assembly must not be autoclaved.

- 1) Remove the tip-ejector (see above).
- 2) Unscrew the connecting nut by turning it counterclockwise, by hand.
- 3) Carefully separate the lower and upper parts.
- 4) Remove the piston assembly, O-ring and seal.
- 5) Clean and decontaminate the piston assembly.
- 6) Reassemble the pipette (refer to the figure).
- 7) Tighten the connecting nut (turn by hand, clockwise).

8) Refit the tip-ejector (see above).


Changing the O-ring

The O-ring and seal are normally to be found on the piston; they must not be autoclaved, if worn or damaged in any way (chemical or mechanical), they must be replaced. The dimensions of the O-ring vary according to the model of pipette.

- 1) Remove the tip-ejector (see above).
- 2) Unscrew the connecting nut by turning it counterclockwise, by hand.
- 3) Carefully separate the lower and upper parts.
- 4) Remove the piston assembly, O-ring and seal.
- 5) Clean or replace the seal then the O-ring.
- 6) Reassemble the pipette (refer to the figure page 17).
- 7) Tighten the connecting nut (turn by hand, clockwise).
- 8) Refit the tip-ejector (see above).

13 - CLEANING AND DECONTAMINATION

Pipetman P is designed so that the parts normally in contact with liquid contaminants, can easily be cleaned and decontaminated. However, because Pipetman P2 and P10 contain miniaturized parts, it is best not to disassemble these pipettes yourself; please contact your local Gilson authorized Service Center.

 You may refer to the Decontamination procedure available on the Gilson website (www.gilson.com).

 **Liquid must never enter the upper part (body) of any pipette.**

Cleaning

The pipette must be cleaned, as described below, before it is decontaminated. Soap solution is recommended for cleaning Pipetman P.

External

- 1) Remove the tip-ejector.
- 2) Wipe the tip-ejector with a soft-cloth or lint-free tissue impregnated with soap solution.
- 3) Wipe the entire pipette with a soft-cloth or lint-free tissue impregnated with soap solution, to remove all dirty marks. If the pipette is very dirty, a brush with soft plastic bristles may be used.
- 4) Wipe the entire pipette and the tip-ejector with a soft cloth or lint-free tissue impregnated with distilled water.
- 5) Refit the tip-ejector and allow the pipette to dry.

Internal

The following components **only** can be immersed in a cleaning solution: connecting nut, tip-ejector, tip-holder, piston assembly, seal and O-ring.

- 1) Disassemble the pipette as described in "Maintenance".
- 2) Set aside the upper part in a dry and secure location.
- 3) Clean the individual components of the lower part of the pipette using an ultrasonic bath (20 minutes at 50°C) or with a soft-cloth and brushes. Small round brushes with soft plastic bristles may be used to clean the interior of the tip-holder.
- 4) Rinse the individual components with distilled water.
- 5) Leave the parts to dry by evaporation or wipe them with a clean soft-cloth or lint-free tissue.
- 6) Reassemble the pipette as described in "Maintenance".

Decontamination

Autoclaving

The upper part (body) and the piston assembly of the pipette are **not** autoclavable. **Only** the following parts may be autoclaved: tip-ejector, tip-holder and connecting nut. The O-ring and seal are **not** autoclavable; they may be cleaned or replaced with the one specified in “Spare Parts”.

- 1) Clean the parts to be autoclaved, especially the tip-holder.
- 2) Put the parts in an autoclaving sack.
- 3) Autoclave for 20 minutes at 121°C, 0.1 MPa.
- 4) Check that the parts are dry before re-assembling the pipette.
- 5) Set the pipette aside to stabilize at room temperature.

Chemical Decontamination

You may choose to decontaminate your pipette chemically, in accordance with your own procedures. Whatever decontaminant you use, check with the supplier of the decontaminant that it is compatible with the plastics used in the construction of the pipette and does not attack any of the following plastics: PA (Polyamide), PC (Polycarbonate), POM (Polyoxy-methylene), or PVDF (Polyvinylidene Fluoride).

Upper Part (body)

- 1) Wipe the upper part (body) of the pipette with a soft-cloth or lint-free tissue impregnated with the chosen decontaminant.
- 2) Wipe the upper part of the pipette with a soft-cloth or lint-free tissue impregnated with distilled water or sterile water.

Lower Part

The following components **only** can be immersed in a decontaminant solution: tip-ejector, tip-holder, connecting nut, piston assembly.

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- 1) Disassemble the pipette as described in “Maintenance”.
- 2) Immerse the components in the de-contaminant solution or wipe them according the instructions given by the manufacturer or supplier of the decontaminant.
- 3) Rinse the individual components with distilled or sterilized water.
- 4) Leave the parts to dry by evaporation or wipe them with a clean lint-free tissue or a soft-cloth.
- 5) Reassemble the pipette as described in “Maintenance”.

14 - SPECIFICATIONS


Pipetman P is a high quality pipette that offers excellent accuracy and precision. The figures given in the “Gilson Maximum Permissible Errors” table were obtained using Gilson Diamond Tips. These figures are only guaranteed by using genuine Gilson Diamond Tips. Refer to Chapter 7, Gilson Diamond Tips.

Each pipette is inspected and validated by qualified technicians according to the Gilson Quality System.

Gilson declares that its manufactured pipettes comply with the requirements of the ISO 8655 Standard, by type testing. The adjustment is carried out under strictly defined and monitored conditions (ISO 8655-6):

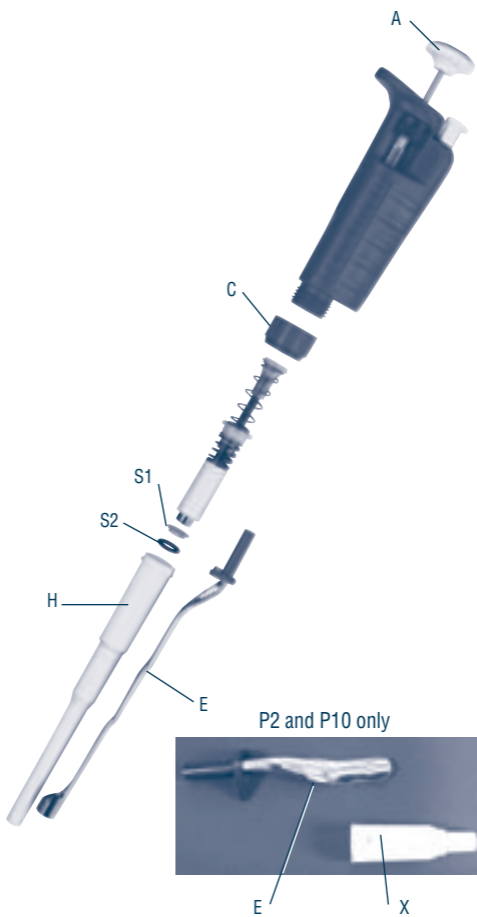
- Basis of adjustment, Ex.
- Reference temperature, 20 °C
- Relative humidity, 50%
- Barometric pressure, 101 kPa
- Use of distilled water grade 3 (ISO 3696)
- Ten measurements for each test volume, which are Nominal Volume, 50% of Nominal Volume, and the minimum or 10% of Nominal Volume.

Model (Reference)	Volume (μL)		Maximum Permissible Errors			
			Gilson		ISO 8655	
			(Accuracy)	(Precision)	(Accuracy)	(Precision)
			Systematic error (μL)	Random error (μL)	Systematic error (μL)	Random error (μL)
P2 (F144801)	Min.	0.2	± 0.024	≤ 0.012	± 0.08	≤ 0.04
		0.5	± 0.025	≤ 0.012	± 0.08	≤ 0.04
	Max.	2	± 0.030	≤ 0.014	± 0.08	≤ 0.04
P10 (F144802)	Min.	1	± 0.025	≤ 0.012	± 0.12	≤ 0.08
		5	± 0.075	≤ 0.030	± 0.12	≤ 0.08
	Max.	10	± 0.100	≤ 0.040	± 0.12	≤ 0.08
P20 (F123600)	Min.	2	± 0.10	≤ 0.03	± 0.20	≤ 0.10
		5	± 0.10	≤ 0.04	± 0.20	≤ 0.10
		10	± 0.10	≤ 0.05	± 0.20	≤ 0.10
	Max.	20	± 0.20	≤ 0.06	± 0.20	≤ 0.10
P100 (F123615)	Min.	20	± 0.35	≤ 0.10	± 0.80	≤ 0.30
		50	± 0.40	≤ 0.12	± 0.80	≤ 0.30
	Max.	100	± 0.80	≤ 0.15	± 0.80	≤ 0.30
P200 (F123601)	Min.	50	± 0.50	≤ 0.20	± 1.60	≤ 0.60
		100	± 0.80	≤ 0.25	± 1.60	≤ 0.60
	Max.	200	± 1.60	≤ 0.30	± 1.60	≤ 0.60
P1000 (F123602)	Min.	200	± 3	≤ 0.6	± 8	≤ 3.0
		500	± 4	≤ 1.0	± 8	≤ 3.0
	Max.	1000	± 8	≤ 1.5	± 8	≤ 3.0
P5000 (F123603)	Min.	1000	± 12	≤ 3	± 40	≤ 15
		2000	± 12	≤ 5	± 40	≤ 15
	Max.	5000	± 30	≤ 8	± 40	≤ 15
P10ml (F161201)	Min.	1 mL	± 30	≤ 6	± 60	≤ 30
		2 mL	± 30	≤ 6	± 60	≤ 30
		5 mL	± 40	≤ 10	± 60	≤ 30
	Max.	10 mL	± 60	≤ 16	± 60	≤ 30

 The data given in the table conform to the ISO 8655-2 Standard.

PIPETMAN® P

15 - SPARE PARTS



P2 (F144801) and P10 (F144802)

	Description	P2	P10
A	Push-button	F144781	F144782
C	Connecting nut	F123654	F123654
H	Tip-holder	F144816	F144819
S1+S2	Seal + O-ring	F144861	F144862
X	Adaptor (set of 5)	F144879	F144879
E+X	Tip-ejector	F144876	F144876
	Coloris clips, (mixed colors set of 10)	F161301	F131301

P20 (F123600) and P100 (F123615)

	Description	P20	P100
A	Push-button	F144783	F144784
C	Connecting nut	F123654	F123654
E	Tip-ejector	F123657	F144605
H	Tip-holder	F123353	F144602
S1+S2	Seal + O-ring (set of 5)	F144863	F144864
	Coloris clips, (mixed colors set of 10)	F161301	F131301

P200 (F123601) and P1000 (F123602)

	Description	P200	P1000
A	Push-button	F144785	F144786
C	Connecting nut	F123654	F123654
E	Tip-ejector	F123658	F123659
H	Tip-holder	F123305	F123371
S1+S2	Seal + O-ring (set of 5)	F144865	F144866
	Coloris clips, (mixed colors set of 10)	F161301	F131301

P5000 (F123603) and P10ml (F161201)

	Description	P5000	P10ml
A	Push-button	F144787	F161281
H	Tip-holder	F123608	F161263
S1+S2	Seal + O-ring (set of 5)	F144867	F161829
	Coloris clips, (mixed colors set of 10)	F161301	F131301
	Filters (set of 10)	F161280	F161280

EC DECLARATION OF CONFORMITY

The company,

GILSON S.A.S.

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Hereby certifies on its sole responsibility that the products listed below:

**Pipetman P2, P10, P20, P100, P200,
P1000, P5000 and P10ml**

*comply with the requirements
of the following European
Directive:*

98/79/EC*
on In Vitro Medical Diagnostic

** Annex III, self-declared*

Villiers-le-Bel, October 5th, 2004



S. Solotareff
General Manager



R. Pascal
Quality Director



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