pipetman®

M96

Tips and Tricks

Quickly and Efficiently Pipette in Microplates with Confidence

INCREASE THE PRODUCTIVITY OF YOUR WORKFLOWS WITH THE ALL-IN-ONE SIMPLE AND INTUITIVE PIPETMAN® M96

Smart and Easy 96-channel Motorized Pipette

The intuitive interface on a large touchscreen assists you during your pipetting, whatever the application. Pipetting on 96-well microplates has never been this simple! Create your protocols and choose your preferred pipetting parameters to handle various workflows.

Flexible

PIPETMAN M96 is compatible with a large variety of SBS-standard labware and addresses different working habits with its pipetting options and improved ergonomics. Different packaging types of PIPETMAN® DIAMOND Tips can be used with PIPETMAN M96. Optimized accessories allow for a better-organized working space with no additional footprint.

Confidence and Improved Productivity

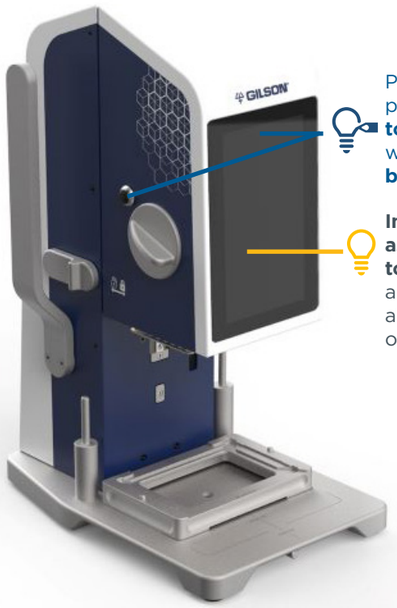
PIPETMAN M96 reproducibility eliminates any variability caused by repetitive pipetting tasks.

Results are reliable even at a high throughput thanks to the Gilson repeatability and performance standards.

Scan the code above for more information.

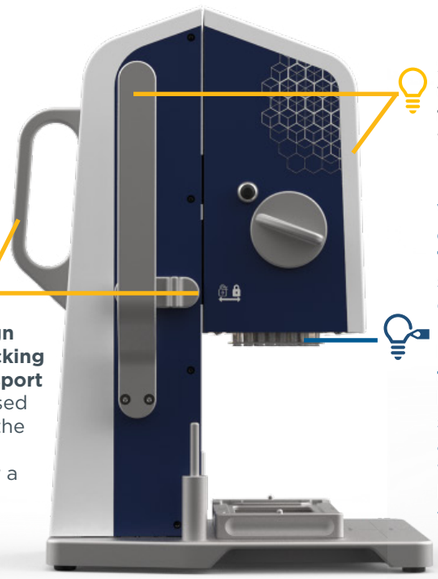
PIPETMAN M96 Key Features and Advantages

Easy-to-Use *Flexible* *Tailored Options for Optimal Usage*



Pipette as you prefer with the **touch-screen** or with the **pipetting buttons**

Intuitive and fully assisted large touchscreen with a simple interface always in front of you



Compact design with a **head locking bar and a transport handle** to be used everywhere in the lab, either on a bench or under a fume hood

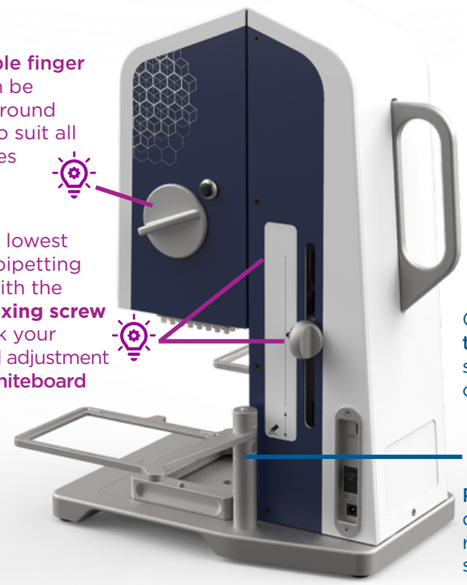
Simple tip fitting with the **tip-fitting arm, fully assisted ejection** with the touch-screen

Various packaging types of PIPETMAN DIAMOND Tips can be used: no specific tips or cartridges of tips are needed

Easy and quick partial tip fitting: rows on the left or the right, and special tip fitting patterns are possible (ex, for 12-well microplates) with both the multi-tray and the single tray.

Adjustable finger rests can be moved around an axis to suit all hand sizes

Lock the lowest desired pipetting height with the **height-fixing screw** and mark your preferred adjustment on the **whiteboard sticker**



Multi-tray can simultaneously be adjusted to both 96- and 384-well microplates with the positioning wheels. It can move back and forth and sideways with levers and **preferred sliding options** (free sliding or with notches).

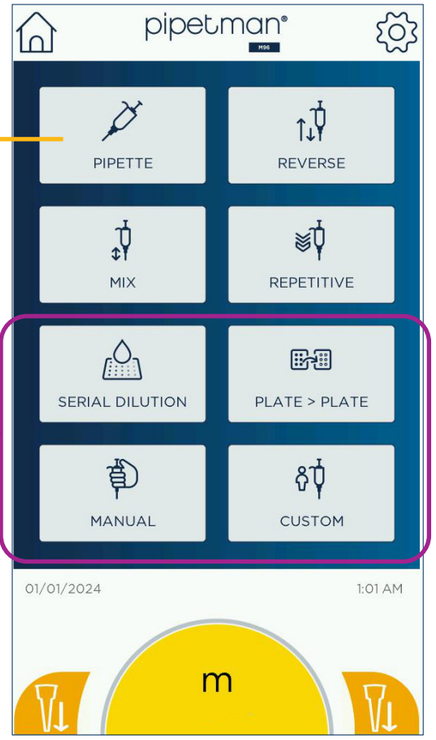
Choose to have **one or two rotating trays,** and stack microplates to save space and minimize the risks of contamination on the bench.

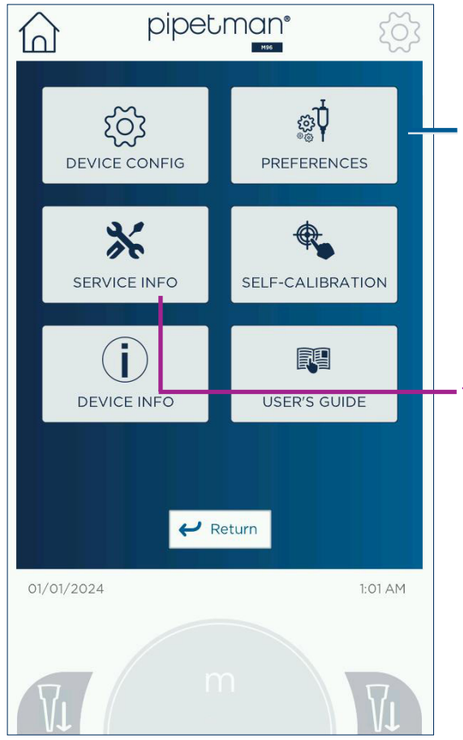
Rotating trays are quick, easy to fit, and remain in place with a small fixation magnet.

Friendly and easy-to-use interface, all the pipetting functions are accessible from the Home screen.

Improve your workflows with special modes:

- **Custom mode** to create your protocols or perform x-fold dilutions (with partial tip fitting).
- **Plate-to-Plate** mode with various options such as special microplate filling patterns.
- **Serial Dilution mode** (10-fold dilutions).
- **Manual mode** to quickly aspirate and dispense liquids without the need for precise volume (ex, to stop a reaction or to aspirate supernatant).





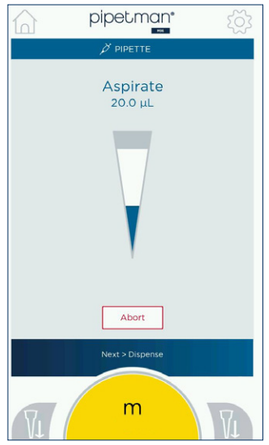
Define your **own configuration and pipetting preferences.**

The **Admin control** function enables an admin to create a PIN code to secure some custom protocols and service information.

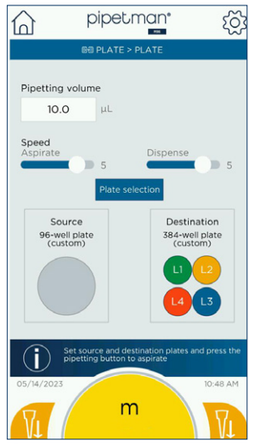
Adjust the pipette with the **self-calibration mode**.

The **Service Info mode** enables you to define the next service date: choose several cycles, a period, or a single date.

Gilson Service also has direct access to this menu for a detailed follow-up of your device.



Each mode has an intuitive **parameter setting** page before starting. During pipetting, **indications are provided** in the text bar to guide you at each protocol step.



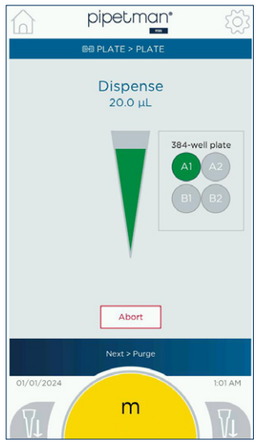
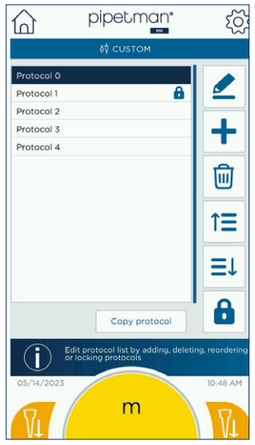
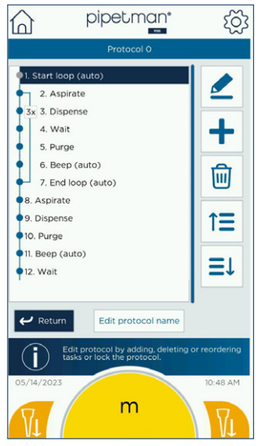


Plate-to-plate mode is fully adaptable to your handlings: **various combinations** are possible from source to destination plate.

Custom option: 384-well plates can be filled with different liquids. **Define your microplate pattern** and pipette the desired liquid in the right wells.





The **Custom mode** allows the creation and execution of personalized protocols. Simply reorganize, modify, copy, and lock protocols.

PIPETMAN M96 Different Pipetting Modes

Pipetting Modes, Accessible from the Home Screen

Pipette
All standard applications.
Partial plate filling (with partial tip fitting).

Mix
Mix and homogenize different solutions right after a pipetting step.
Perform several mix cycles at mid or low speed to pre-wet the tips (recommended)

Serial Dilution
10-fold dilutions (pipette + mix row by row)

Manual
Manually controlled pipetting such as: multiple aspirations of supernatant, multiple dispenses of medium or reagent to fill plates without setting specific volume.
Titration.
ELISA: addition of the last reagent to stop a reaction.

Reverse
Reverse pipetting mode is recommended for dense, foaming, or high vapor pressure liquids; cold or hot samples.

Repetitive
Dispensing aliquots.
Filling several plates (ex. reagent addition, plate preparation).

Plate-to-Plate
Plate transfer, plate replication, and plate reformatting with one or up to 4 different liquids.
Source plates: 96- or 384-well
Destination plates: 96- or 384-well

Custom
Creation of personalized protocols including different tasks.
X-fold serial dilutions.
Partial plate filling, plate filling with different liquids or samples.

Why Choose PIPETMAN M96?

Thanks to its various features designed for improved efficiency, PIPETMAN M96 is the ideal answer to most of the laboratories' needs:

- Time is saved and throughput is increased.
- Variability due to human factors is drastically reduced, and reproducibility and repeatability are guaranteed.
- Minimized number of pipetting tasks limits the risks of Repetitive Strain Injuries (RSI).
- Life in the lab is simplified:
  - All-in-one quick and easy-to-use motorized pipette enables you to fill a 96-well microplate in only one step.
  - The large touchscreen is in front of you, always visible: monitor the microplates and look at the screen at a glance without moving your head.
  - No special tips or cartridges are required, and standard PIPETMAN DIAMOND Tips can be used.
  - The working space remains well organized, and no additional space is necessary for the accessories, which can all be placed on the pipette to stack microplates.

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Users
TESTIMONIALS

The instrument is appealing to the eye. The look and feel are unique.

All the functions are here, and there are not too many of them so we are not lost.

Clear menu and nice pipetting parameters (volume, speed).

Modulable product thanks to the accessories (rotating trays and multi-tray), we can be organized as we wish.

The product is very nice. The ability to control flow rates, and mixing is an advantage over manual 96-channel instruments.

★ ★ ★ ★ ★

How to Improve Protocols with PIPETMAN M96

Use of the P96x200M in an ELISA Protocol

The following protocol is an example of the various steps PIPETMAN M96 can execute in an ELISA workflow.
This protocol is given as an **example only**, based on the use of an ELISA kit for the detection of pathogens in biological samples.

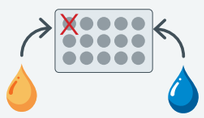
In this example, the complete 96-well microplate is filled with samples. When performing a reduced number of tests, the same protocol can be done with **partial tip fitting** to fill only the part of the microplate containing the strips of samples to analyze.

Creating a **protocol in the Custom mode** of PIPETMAN M96 allows you to perform most of the tasks of the workflow and to run this protocol when necessary, it will remain in the list of protocols of the Custom mode once created.

ELISA Protocol

1 Samples Pre-Dilution

In the pre-dilution plate (keep wells A1 to D1 empty for + and - controls)

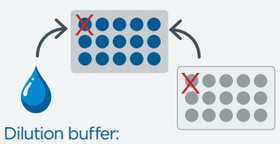


Samples: 5 µL/well

Dilution buffer: 245 µL/well
Remove tips A1 to D1

2 Samples Dilution

In the ELISA plate (keep wells A1 to D1 empty for + and - controls)

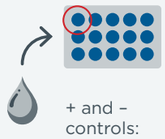


Dilution buffer: 80 µL/well
Remove tips A1 to D1

Pre-diluted samples: 20 µL/well
Remove tips A1 to D1

3 Addition of the + and - controls

In the ELISA plate, wells A1 to D1



+ and – controls: 100 µL/well in wells A1 to D1

4 Incubation and Washing

Incubation: 21°C, 30 min
Three washing steps with 300 µL of washing solution each time

5 Conjugate Addition

Conjugate: 100 µL/well

6 Incubation and Washing

Incubation: 21°C, 30 min
Three washing steps with 300 µL of washing solution each time

7 Revelation

Revelation substrate: 100 µL/well

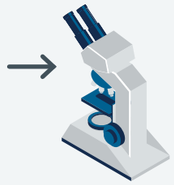
8 Incubation

Incubation: 21°C, 15 min In the dark

9 Revelation

Stop solution: 100 µL/well

10 Analysis



When creating the custom ELISA protocol, use the **Beep and Wait tasks** to integrate the incubation and washing steps or any step not done with PIPETMAN M96. They can be used either as a timer or as a step reminder.

If the pipetting volumes are higher than the nominal volume of the pipette, include several pipetting steps in your protocol or use the **Loop task** to duplicate a step.

Integration of the P96x20M in a PCR Workflow

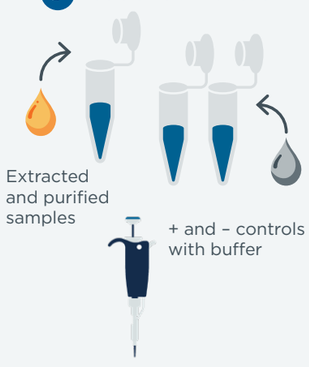
PIPETMAN M96 can easily be integrated into various PCR workflows.

PCR plates are filled in just a few steps instead of several pipetting tasks. Using PIPETMAN M96 to prepare microplates **will increase the throughput and productivity** of laboratories running many tests, such as clinical or diagnostic laboratories.

The following protocol is given as an **example only**. It is a simple RT-qPCR protocol based on the use of a SARS-Cov-2 PCR kit.

PCR Worklow

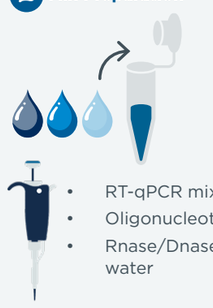
1 Nucleic Acid Extraction



Extracted and purified samples

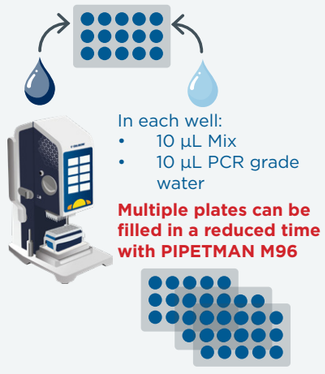
+ and – controls with buffer

2 Mix Preparation



- RT-qPCR mix
- Oligonucleotides
- Rnase/Dnase free water

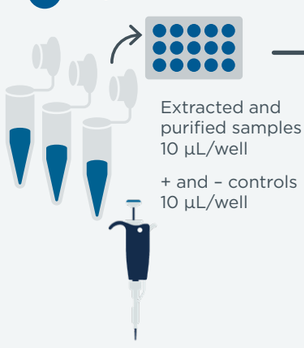
3 Plate Preparation



In each well:
- 10 µL Mix
- 10 µL PCR grade water

Multiple plates can be filled in a reduced time with PIPETMAN M96

4 Samples Addition



Extracted and purified samples 10 µL/well

+ and – controls 10 µL/well

Centrifugation PCR reaction

Recommended Tips

It is recommended to use PIPETMAN® DIAMOND Tips for optimum performance. These tips are made from pure polypropylene. Plastic tips are for a single application—they must not be cleaned for reuse. PIPETMAN DIAMOND Tips offer a wide range of packaging. For increased productivity and minimal plastic waste, **the use of Blister Refills and Reload Packs is recommended**.

Choose the Right PIPETMAN DIAMOND Tips According to the Pipetting Volume

- **D200 tips are the reference tips for both P96x20M and P96x200M.**
- DF30ST are recommended to pipette small volumes of liquid (up to 30 µL), for both P96x20M and P96x200M.
- DF100ST are recommended to pipette a maximum volume of 100µL, for both P96x20M and P96x200M.
- D300 tips are recommended to pipette volumes of liquids close to the nominal volume of the pipette for P96x200M only.
- DS tips are certified 384-well and are recommended when using 384-well microplates.

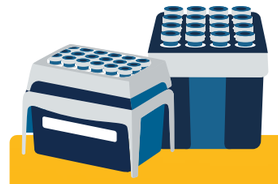
Find The Right Tip Packaging According to Your Needs

Packaging Type	Standard Tips	Sterilized Tips	Sterilized Filter Tips
Blister Refill (recommended)	D200 D300 DS200 (384- certified)	D200ST D300ST DS200ST (384- certified)	DF30ST DF100ST DF200ST DF300ST DSF30ST (384- certified) DSF200ST (384- certified)
Reload Pack	D200	-	-
TIPACK	D200 D300	D200ST D300ST	DF30ST DF100ST DF200ST DF300ST

For more information, download the Gilson Tips Selection Guide.

From purity level to volume range, this handy interactive tip selection guide will help you find the perfect tip for your application.

DOWNLOAD



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Questions & Answers

Key Features	Questions	Answers
Tips	How can I ensure that tips are correctly fitted?	Always use the recommended tip adapters (either for PIPETMAN DIAMOND Tips Blister Refills, Reload Packs, or TIPACKS), and push the tip-fitting arm until the end for a proper tip fitting. It will slowly return to its initial position by itself. When turning on the pipette, an animation appears on the screen. It describes how to ensure a proper tip fitting. Before fitting the tips: check that the height-fixing screw is at its lowest position and that the head locking bar is unlocked.
	Can I do partial tip fitting?	Yes, PIPETMAN M96 can be fitted with less than 96 tips, to be used with several accessories. Rows of tips can be fitted either on the left or on the right of the pipetting head (the use of the multi-tray is recommended). Partial tip fitting can also be done according to special patterns, for instance, to work with 12-well microplates. Prepare a rack of tips partially filled (e.g., with 12 tips) and fit the tips following the standard instructions.
	Can I use tips from other brands than Gilson?	PIPETMAN M96 is a high-quality pipette that offers excellent accuracy and precision. The Gilson maximum permissible errors are guaranteed only when genuine PIPETMAN DIAMOND Tips are used. Different packaging types of PIPETMAN DIAMOND Tips can be used with PIPETMAN M96. You can use those that are already on your shelf or choose the best packaging type according to your needs. Standard or sterilized tips (with or without filters) and 384-well certified tips are available in Blister Refills, Reload Packs, or TIPACKS. Please contact your Gilson Representative for further information and quotation requests.
Working environment and samples	Can I work under fume hoods?	Yes, PIPETMAN M96 has a compact design, a small footprint, and a transport handle, and can be placed anywhere, either on a bench or under fume hoods.
	I have special samples, sensitive to light, can I turn the light off?	The light of the pipetting head can be turned off from the Device configuration page.
	I am pipetting foaming liquids and sensitive samples. Can I adapt the pipetting speeds?	Each pipetting mode can be set with variable speeds, from 1 to 6. Choose the right pipetting speed according to your needs and the nature of the liquids to transfer. Low mixing speeds are recommended for a gentle mix of foaming liquids or samples containing proteins, enzymes, or cells that could be damaged with a strong mix.
	Can I use liquids with higher viscosity than water?	PIPETMAN M96 is an air-displacement pipette, and the physical properties of non-aqueous liquids could affect the volume of the air cushion between the piston of the pipette and the liquid. • When pipetting solutions with a density, viscosity, surface tension, or vapor pressure slightly different from water, use the Reverse mode and pre-wet the tips. • You can also adjust your pipette to such solutions with the Self-Calibration menu.
	When working with magnetic beads, can the device attract the beads?	There are no proven interactions: microplates filled with 200 µL in each well of a solution containing magnetic beads were tested without any issues. Nevertheless, when using special mixes, reagents, or materials, testing before use is recommended.
Pipetting	Can I stop the pipette before the end of a task?	The Abort button enables you to stop a protocol anytime, empty the tips, and go back to the Pipetting function setting page. If Abort is pushed during the execution of a custom protocol and you want to continue the protocol where it has been stopped, start the protocol and the already executed tasks without any tips fitted on the pipetting head, and fit the tips before the step you would like to restart the protocol.
	What should I do if droplets appear at the end of the tips?	• Droplets can appear at the end of the tips, most of the time when dispensing aliquots in Repetitive mode. After dispensing an aliquot, re-immerge the tip in the liquid to remove the droplets. • Increase the pipetting speeds if the liquid to transfer allows it. • Slightly lift the pipetting head to have the tips above the liquid level. Slide the microplate smoothly to have the tips in contact with the walls of each well: the droplets will remain on the walls and fall by gravity into the liquid. The accessories have been designed to enable microplate sliding.
	What is the difference between Purge and Blow-in? 	Purge consists of emptying the tips after each pipetting step with a blow-out step to expel residual liquids from the tips. It is followed by a blow-in step, in which the piston returns to its initial position. During the blow-in step, a small amount of air is aspirated. Ensure that the tips are not in contact with the liquid during blow-in to avoid any liquid aspiration. Choose your preferred Purge and Blow-in settings in the Pipetting Preferences menu, and execute Blow-in after purge accordingly: Executing a manual **Blow-In** step with a touch on the pipetting button will give you the time to remove the tips from the liquid. The **auto Blow-In** function can be set **with a delay**. Define a time between purge and blow-in to remove the tips from the liquid before blow-in. After the defined time, blow-in will be automatically done. During the purge, when the tips are pressed against the wall of the tube to avoid any droplets, **immediate auto Blow-In** is ideal to avoid an extra push on the pipetting button and to gain time.
	How can I avoid hitting the bottom of the wells with the tips?	Adjust the pipette to the lowest desired position with the height-fixing screw. It can be adjusted anytime. Always ensure that the screw is at the lowest level to fit the tips. Mark your preferred height on the sticker with a dry-erase marker

Key Features	Questions	Answers
Accessories	Can I use various sizes and models of microplates?	All accessories comply with the SBS standards and can be used with any microplate or accessory for microplate meeting these standards. Each side of the reversible trays (single tray and rotating trays) specifies the kind of microplate that can be placed on it. 💡 Associated with partial tip fitting, 6-, 12- and 48-well SBS-format microplates can also be used on the 96-well sides of the accessories. 💡 96-well sides of the accessories correspond to the SBS-format footprint. 384-well sides are larger to slide the microplate from one corner of the tray to the other, allowing to fill a 384-well microplate in only four steps with 96 tips.
	How can I transfer liquids from 96- to 384-well microplates?	All the accessories enable the transfer of liquids from 96- to 384-well microplates. 💡 The single tray is reversible, switch side according to the microplate used. 💡 Two rotating trays can be used with PIPETMAN M96: organize your working space with the tray. Several options are available: 96-96 sides, 384-384 sides, and 96 left – 384 right sides. You can, for instance, place a tray with the 96-well side on the left and a tray with a 384-well side on the right of the pipette. 💡 The multi-tray is a convenient accessory, allowing work with two microplates, sliding from one plate to the other. Use the positioning wheels and the shifting levers for precise placement of the microplates under the pipetting head, depending on their types. **Select 96** When the plate is under the pipetting head  **Select 384** When the plate is under the pipetting head Use the shifting levers to move the tray sideways and back and forth.
Connectivity	I am afraid Bluetooth® could interfere with other devices. Can I turn it off?	Only PIPETMAN M96 Connected models are smart Bluetooth-enabled pipettes. Yes, Bluetooth can be enabled or disabled from the Device configuration menu. 💡 When Bluetooth is enabled, a logo will appear on the top bar of the screen.
Cleaning, maintenance, and service	Which products are recommended to clean the pipette?	PIPETMAN M96 and its accessories are designed so that the parts in contact with contaminants can regularly and easily be cleaned and decontaminated. Wipe PIPETMAN M96 and the trays with a soft cloth dampened with a mild detergent and disinfect as needed. 💡 Standard laboratory cleaning and disinfecting solutions can be wiped on the pipette, such as sodium hypochlorite (chlorine bleach), hydrogen peroxide, ethanol, and surface decontaminants (eg. RNaseZap, Lookout® DNA Erase). Avoid using highly concentrated solutions or solvents that could damage the cover and colored housing of the pipette (e.g. isopropanol, methanol, or solvents like dichloromethane and chloroform).
	What type of maintenance is required?	PIPETMAN M96 requires very little maintenance. However, to ensure pipette accuracy, precision, and performance, yearly calibration and routine maintenance are recommended and can be done more frequently according to the SOPs in place in your laboratory. • 💡 Set a reminder for the next service and maintenance date with the Service Info menu. • Proceed periodically with a leak test to check the pipette. • In case of intensive use between each maintenance interval, lightly lubricate the external O-rings of the pin-plate using the lubrication box (part number F1077606).
	Can the pipette be calibrated to comply with special norms?	PIPETMAN M96 complies with the requirements of the ISO 8655 standard. For ISO 17025 compliant or tailored services please contact your dedicated Gilson Service Center for further information.

Notes

Specifications subject to change without notification — errors excepted.

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