



pipetmax[®]



PIPETMAX[®] 268 Setup Guide

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OVERVIEW

- I** Unpacking
- II** Install Removable Tray
- III** Make Connections and Power On
- IV** Run PIPETMAX Alignment Utility
- V** Prepare to Run Protocol
- VI** Run Protocol

I UNPACKING

PIPETMAX is delivered with most major components already assembled. Keep the original packaging if PIPETMAX must be returned to the factory.

Installation Site Requirements

Power Requirements (External Power Supply)

Voltage Input

Frequency: 50 to 60 Hz

Voltage: 100-240V AC

Voltage Output

Voltage: 24V DC

Current rating: 6.25A, 150W

Temperature Range

5°C-40°C

Stable, level surface

Maximum Dimensions (W x D x H)

PIPETMAX with Rotating Cover Installed on

Optional Riser Assembly for Off-Bed Tip Disposal

54.4 x 65.5 x 69.6 cm (21.4 x 25.8 x 27.4 in)

Accessories and Documentation

- Allen wrench (for removing shipping bracket)
- Removable Tray
- Pipette Head(s)
- Black Plug
- Power Supply
- Power Cord
- USB Cable
- Tip Reload Block
- Tip Disposal Bin
- USB Drive
- Installation Qualification Procedure
- Declaration of Conformity
- Quality Control Checklist
- Items Included Checklist
- Packing List

Instructions

These instructions assume that you have already cut the shipping straps and tape and have cut open the box.

- 1 Remove the open-ended cardboard box.
- 2 Remove the box of accessories and open it.
- 3 Lift the printed, outer cardboard box up to remove.



It is recommended that two people lift PIPETMAX out of the box as it weighs approximately 24.9 kg (55 lbs.).

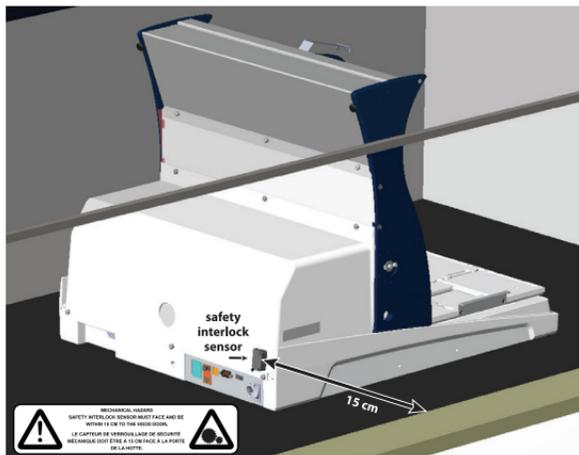
- 4 Grip PIPETMAX at the recesses near the base. There is one recess in the front, one in the back, and one on each side. Use these recesses when lifting PIPETMAX out of the foam-lined, cardboard tray.

NOTICE

Do not attempt to lift PIPETMAX from the cover or from the X-arm (the horizontal arm). Always lift the instrument from its base.

5 Place PIPETMAX with cover on a lab bench.

PIPETMAX is configured with one of two safety interlocks. One interlock is internal to the rotating cover installed on the instrument, and the other interlock is an external sensor used when the instrument is located in a hood. The safety interlocks prevent the instrument from operating when the rotating cover or hood door is open. If PIPETMAX was ordered without a rotating cover, it must run in a hood. When the instrument is installed in the hood, the external sensor must face the door of the hood and be located within 15 cm (6 in) of the door.

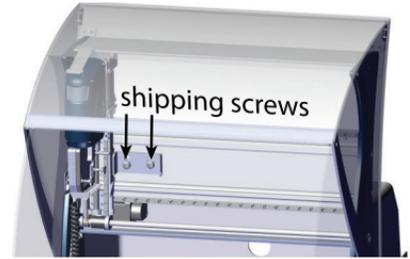


PIPETMAX Configured with External Safety Interlock Sensor and Placed in Hood

6 Remove the film protecting the rotating cover (if installed).

7 Remove the shipping screws and bracket using the tool provided and then store the shipping screws and bracket in the rear panel for future use if PIPETMAX needs to be shipped or transported.

8 Remove the shipping brace from the rear panel by loosening the thumb screws securing the shipping brace to PIPETMAX. After removing and storing the shipping brace, tighten the thumb screws.



Shipping Screws
(Front View of PIPETMAX®)



Shipping Brace
(Rear View of PIPETMAX®)

9 Remove the foam block preventing the tray from moving.

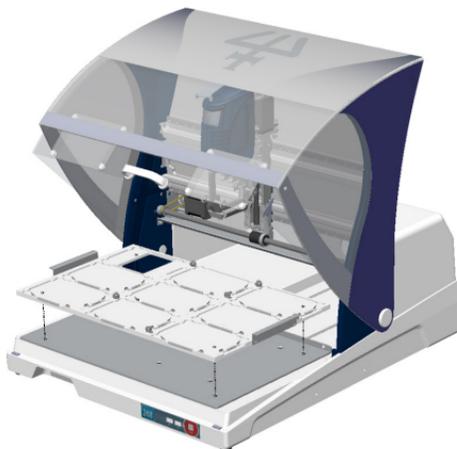
10 Remove the tape securing the alignment cable.

II INSTALL REMOVABLE TRAY

A removable tray for placement of labware and tip racks is required.

There are two removable tray options:

- 9-position removable tray (microplate footprints, but not for 384-well microplates)
 - 9-position removable tray for 384-well microplates
- 1** While holding the handles on the sides of the tray, lower the removable tray onto the fixed tray. It is keyed and will only mount one way.
 - 2** Grip the removable tray and then gently rock it back and forth.



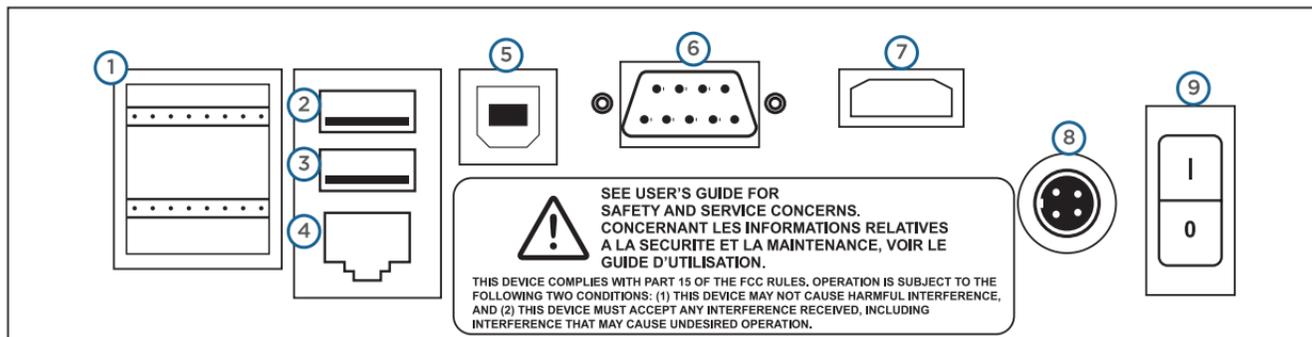
Removable Tray Installation on PIPETMAX with Rotating Cover

If it seems that the removable tray is shifting position on the fixed tray, use a 3 mm Allen wrench and gentle pressure to adjust the spacers on either side of the fixed tray. Spacers should just barely contact the removable tray. Remove and then place the removable tray again to ensure there is not any significant interference.



Spacer Adjustment

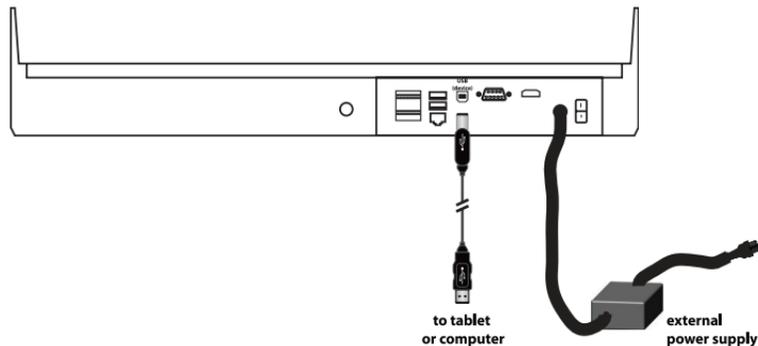
III MAKE CONNECTIONS AND POWER ON



PIPETMAX® Rear Panel Connections

1. **Input/Output**
2. USB host (Not Supported)
3. **USB host**
4. Ethernet (Not Supported)
5. **USB device**
6. RS-232 (Not Supported)
7. HDMI (Not Supported)
8. **Power receptacle**
9. **Power switch (MAINS)**

- 1** Use the USB cable supplied in the accessory package to make the connection between the USB device port on PIPETMAX and a USB port on the supplied tablet or PC.
- 2** The connection from the external power supply to PIPETMAX uses a connector with a locking collar. Use the power cord from the external power supply to make the connection between the power receptacle on PIPETMAX and the external power supply. Check the alignment of the pins and then push in until it clicks and locks in place.
- 3** Use the supplied power cord to make the connection between the external power supply and the AC power source.
- 4** Turn PIPETMAX power on using the power switch located on the rear panel. The indicator light on the front panel illuminates.
- 5** Connect the supplied tablet or PC to a power source and power it on. Install TRILUTION® micro Software on the PC per the supplied installation instructions. TRILUTION micro is factory-installed on the tablet.

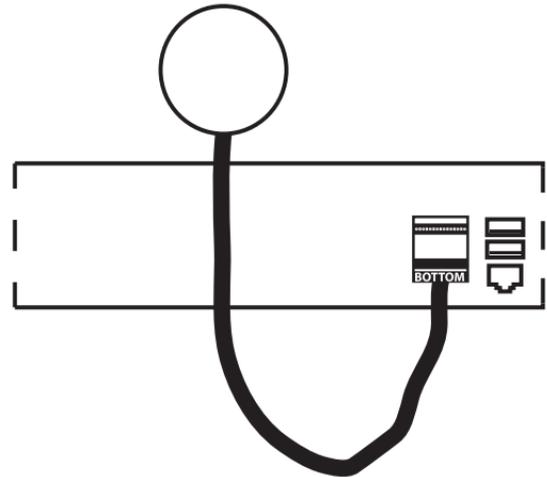


IV RUN PIPETMAX ALIGNMENT UTILITY

The PIPETMAX Alignment Utility is installed as part of the TRILUTION micro installation.

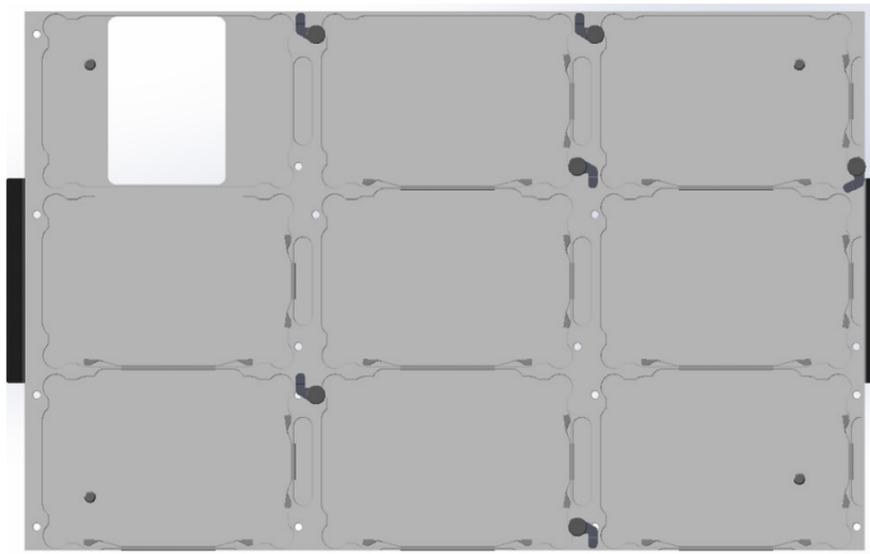
Run the PIPETMAX Alignment Utility to ensure proper alignment. It is only necessary when setting up the instrument for the first time, or if instructed to do so by your local Gilson representative.

- 1** If your PIPETMAX does not have a rotating cover and uses the external safety interlock sensor, disconnect the BOTTOM terminal block connector from the input/output ports on the rear panel.
- 2** Pass the end of the alignment cable with pre-wired connector through the access hole at the back of PIPETMAX.
- 3** The connector is labeled BOTTOM because it connects to the bottom set of input/output ports on the rear panel of PIPETMAX. Make the connection.



**from alignment head
to BOTTOM input/output port**

- 4** The clips to secure the tip racks on the tray can interfere with the alignment. Ensure that the clips () are positioned as shown in the diagram below, and that the thumbscrews have been tightened.



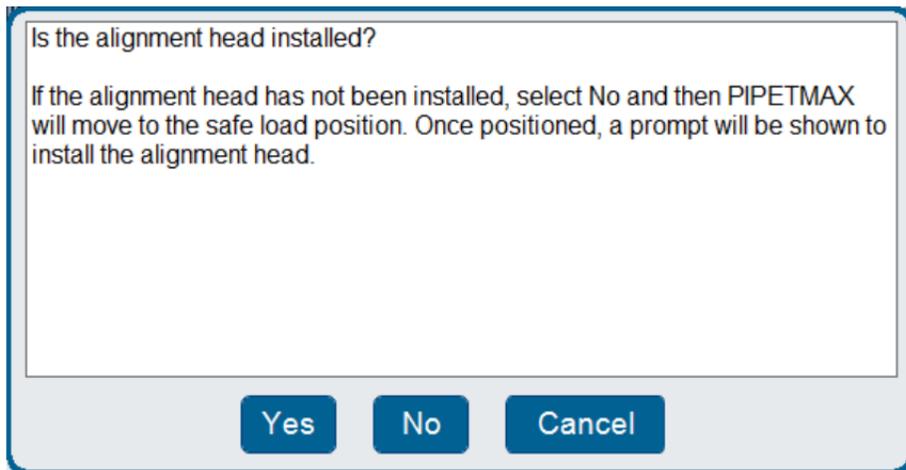
Clip Locations

- 5** Close the rotating cover or the fume hood door.

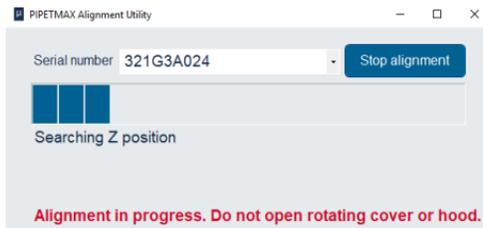
- 6 Start the PIPETMAX Alignment Utility. On the PC or tablet, select the **Start** button and then select (**All apps**) > **Gilson Applications** > **PIPETMAX Alignment Utility**.



- 7 Select **Start Alignment**. A message box appears:



8 Select **Yes** to start running the utility.



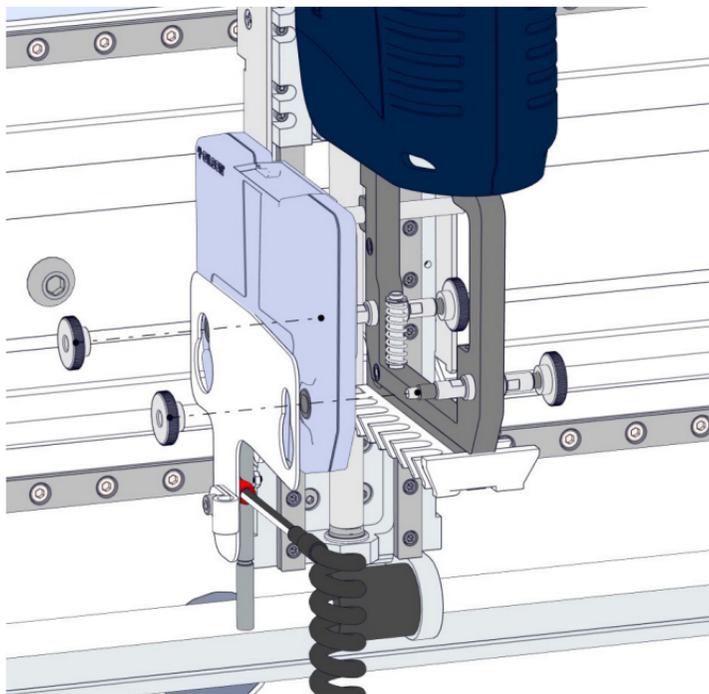
Wait approximately six minutes while the alignment runs.

NOTE If the rotating cover or fume hood door is opened while running, the alignment is canceled.

A notification appears when the alignment is complete. Remove the alignment head.



- 9 Remove the alignment head by disconnecting the terminal block connector from the rear panel, and then removing the thumb nuts securing it to the upper pipette head assembly.

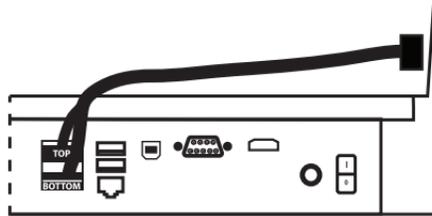


Alignment Head Removal

- 10** Cover the hole on the rear panel from the exterior using the black plug supplied in the accessory package.



- 11** If your PIPETMAX does not have a rotating cover, it requires an external safety interlock. The external safety interlock was disconnected prior to running the alignment. Reconnect the BOTTOM terminal block connector to the input/output ports on the rear panel.



**from external safety interlock sensor
to input/output ports**

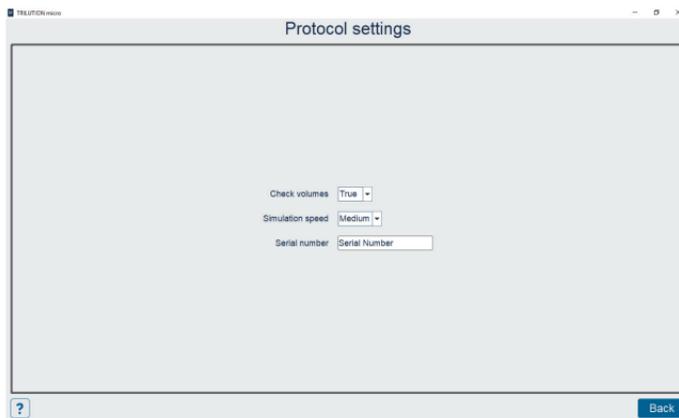
- 12** Close the PIPETMAX Alignment Utility.

V PREPARE TO RUN PROTOCOL

- 1 Start TRILUTION micro. Click the **Start** button and then select (**All apps**) > **Gilson Applications** > **TRILUTION micro x.x**.

The first time you start the software, no login or password is required. Optionally, set up users with permissions and require a password.

- 2 Set the serial number. If the serial number is not entered, then the software will not be able to communicate with PIPETMAX. The serial number is set on the tablet by Gilson. PC installations require the user to enter the serial number.



- a. On the **Protocol Selection** screen, select  to access the **Settings** screen.

- b. On the **Settings** screen, select **Protocol settings**.
- c. Enter or verify the serial number for PIPETMAX in the **Serial number** field. The serial number for PIPETMAX is located on the inside panel of the right support.
- d. Select **Back** and then do one of the following:
 - If the serial number was not changed, select **Back** to return to the **Protocol Selection** screen.
 - If you changed the serial number, you will be prompted to restart the software. First, select **X** to close the message box. Next, select **X** in the upper right corner to close the software. Select **Yes** when asked to confirm and then restart the software. (Select the **Start** button and then select **(All apps) > Gilson Applications > TRILUTION micro x.x.**)

3 Build a protocol list.

The screenshot displays the TRILUTION micro software interface. At the top left, the title bar reads "TRILUTION micro". To the right of the title bar, there is a status bar containing a gear icon, the text "Not connected", a user icon, and the text "Administrator (admin)". Below the title bar, there is a search bar with a magnifying glass icon and the word "Search". To the right of the search bar is a blue button labeled "Create protocol or labware". The main area of the interface is a table with three columns: "Protocol name", "Modified by", and "Last run date". The table is currently empty. At the bottom of the interface, there is a navigation bar with several buttons: a question mark icon, "Results", "Import", "Export", "Delete", "Manual control", and "Next".

Protocol name	Modified by	Last run date -
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Import Protocol or Create Protocol or Labware

Do either of the following:

- a. Import a protocol that was created in Protocol Builder.

If your protocol file is on a USB drive, connect it to a USB on the PC, one of the USB ports on the front of PIPETMAX, or the middle USB host port on the rear panel. (The top USB port on the rear panel is not supported.)

Select **Import**, then browse for and select a PIPETMAX protocol file (.sqlite). The file name may or may not match the name of the protocol, depending on how it was saved. Lastly, select **Open**. The imported protocol appears in the protocol list.

- b. Create protocols using Normalization Assistant or qPCR Assistant.

NOTE

It is necessary to import any labware needed to create the protocol. Labware will need to be exported/obtained from the source, which is likely Labware Creator. Obtain the files from the person who created them. For more information about Labware Creator and how to export labware, refer to the *Labware Creator User's Guide* (part number LT313126).

- 4** Add pipette heads
- a. On the **Protocol Selection** screen, select  to access the **Settings** screen.
 - b. Select **Pipette heads**.
 - c. Do any of the following:
 - If using a tablet or PC equipped with a camera, select **Scan** and then select **Camera**. Optionally, **select the icon** to switch between the front and rear camera. When prompted, scan the barcode on the pipette head.
 - **Enter the values** from the Gilson Quality Control Report supplied with each pipette head.
 - Using the optional barcode scanner (ordered separately), select **Scan** and then **scan the barcode**.
 - d. Select **Save**.
 - e. Repeat for additional pipette heads. When finished adding heads, select **Back** to return to the **Settings** screen and then select **Back** again to return to the **Protocol Selection** screen.

Pipette head management

Open pipette head

Serial number

Pipette head type

Calibration Values

10%

50%

Nominal

Calibration Volume Adjustment

Calibration Offset



Scan

Import

Clear

Delete

Save

Back

- 5 On the **Protocol Selection** screen, select a protocol in the list. It will highlight when selected. Select **Next**. The Scanning dialog appears while the software checks that the PIPETMAX is connected. If connected, the software goes to the next screen, which is the **Run setup** screen. If not connected, a message appears notifying you that you are not connected and asking if you want to simulate or check your cabling connections and try again to run.



Run Setup Screen

VI RUN PROTOCOL

- 1 If there are variable(s) in the selected protocol without a default value, a screen with a list of variables is displayed automatically or you can modify the variable values by selecting **Variables**. The **Variables** screen displays a list of variables that must be satisfied before running the protocol.

The screenshot shows a window titled "Variables" from the "TRILUTION micro" software. The window contains two input fields for flow rates:

Source Flow Rate	5	mL/min
Destination Flow Rate	5	mL/min

At the bottom left of the window is a help icon (a question mark in a square). At the bottom right are two buttons: "Reset" and "Back".

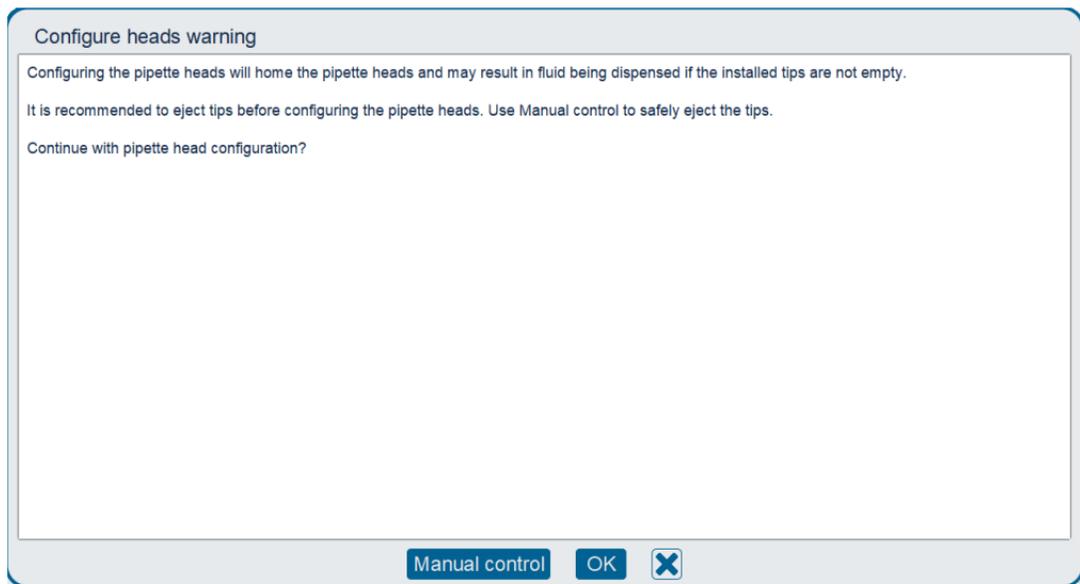
Variables Screen

- 2 Close the rotating cover or hood door. PIPETMAX will not operate with the cover or hood door open.
- 3 Install pipette heads. Select **Head setup** to go to the screen for selecting or adding pipette heads.



Pipette Heads Selected Do Not Match Pipette Heads Used in Protocol

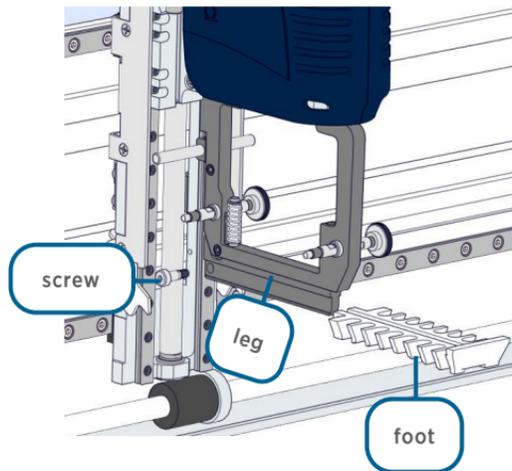
- 4 Select **OK** to close the **Configure heads** warning message.



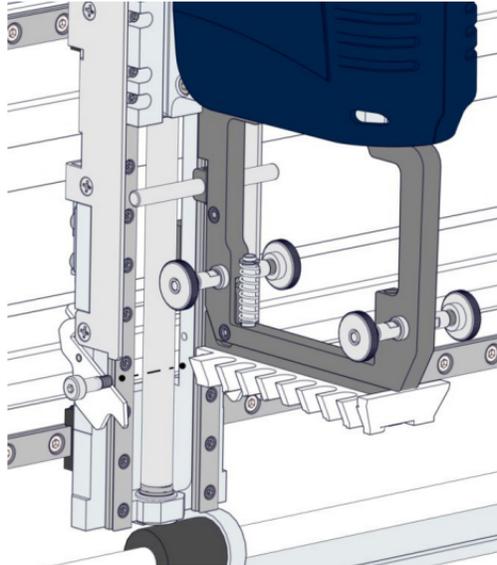
- 5 Open the rotating cover or fume hood door.

- 6** Install the tip ejector foot.
- If using a MAX8x20 or MAX8x200 pipette head, skip this step.

If using the MAX1000 or MAX4x1200 pipette head, you ordered a tip ejector foot kit specific to the pipette head.



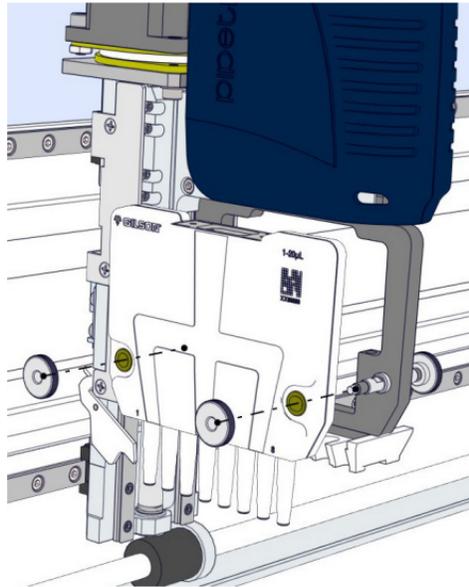
Tip Ejector Foot Components



Tip Ejector Foot Installation

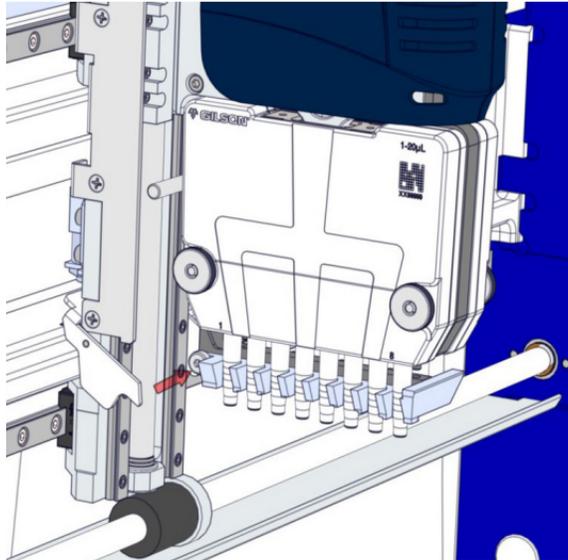
- a. Using the supplied 3/32" hex wrench, remove the shoulder screw in the installed tip ejector foot.
- b. Remove the tip ejector foot.
- c. Slide the tip ejector foot onto the channel in the ejector leg.
- d. Use the supplied 3/32" hex wrench to start threading the shoulder screw, but do not fully tighten.

- 7** Install the pipette head(s) on the upper pipette head assembly using the thumb nuts. Ensure proper alignment of the pipette head against the upper pipette head assembly before tightening the thumb nuts.



Pipette Head Installation

- 8** Finish tip ejector foot installation on a MAX1000 or MAX4x1200 pipette head. Manually move the tip ejector foot down to the bottom, and while holding it down, tighten the shoulder screw.

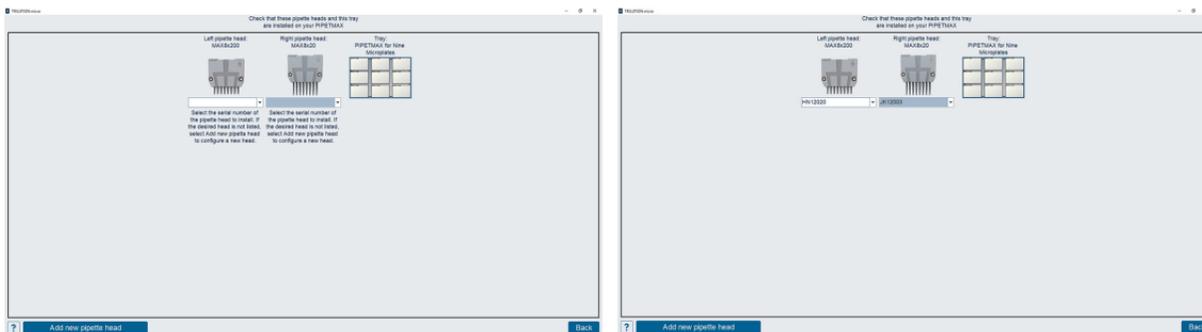


Tighten Shoulder Screw to Finish Tip Ejector Foot Installation

9 Select the serial number of each installed pipette head.

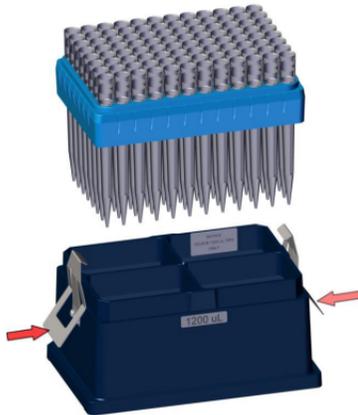
From the drop-down list below each pipette head image, select the serial number of the pipette head installed in each position (left and/or right). The software automatically filters pipette heads that have been added by type.

Close the rotating cover or the fume hood door and then select **Back**. The software configures the pipette head(s) in PIPETMAX and returns to the **Run setup** screen.

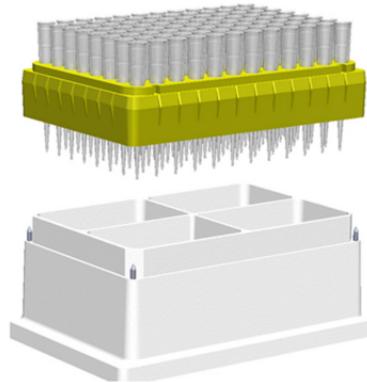


Head Setup Screen

- 10** Select **Tip configuration**. The tray image in the upper left identifies location of each tip rack and all labware.
- a. Each tip rack consists of a rack of PIPETMAN® DIAMOND Tips and a tip reload block. To assemble the tip rack, first open the sealed BLISTER REFILL, lift the rack of tips out, and then set the rack of tips on the tip reload block. Ensure that the rack of tips is fully seated on the tip reload block. If using the PIPETMAX D1200 tip reload block (required when using D1200 PIPETMAN DIAMOND Tips and the MAX4x1200 head), press clips to open and then set the rack of tips on the tip reload block.

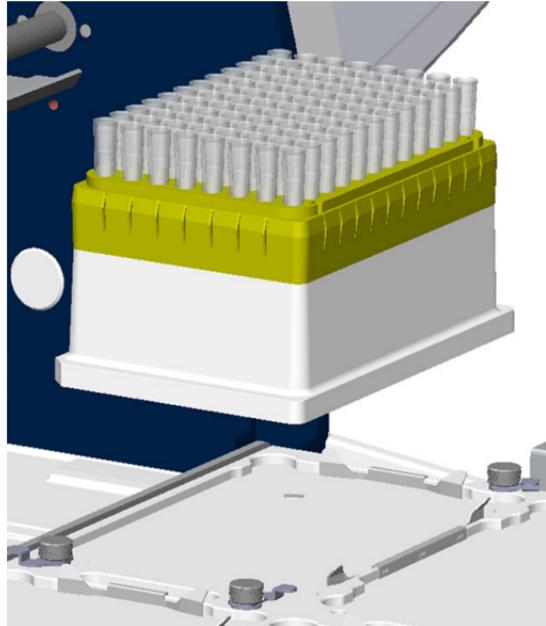


Tip Rack Assembly - Rack of
D1200 PIPETMAN® DIAMOND Tips
and D1200 Tip Reload Block



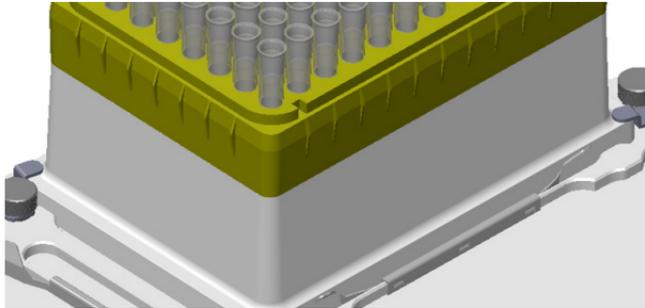
Tip Rack Assembly - Rack of
PIPETMAN® DIAMOND Tips
and Tip Reload Block

- b. Remove the cover, if applicable.
- c. Tip racks can only be placed in positions with installed clips. To install the tip rack, first loosen the thumbscrew for each clip, and then place the tip rack on the removable tray with the beveled corner in the back left corner.



Install Tip Rack on Tray

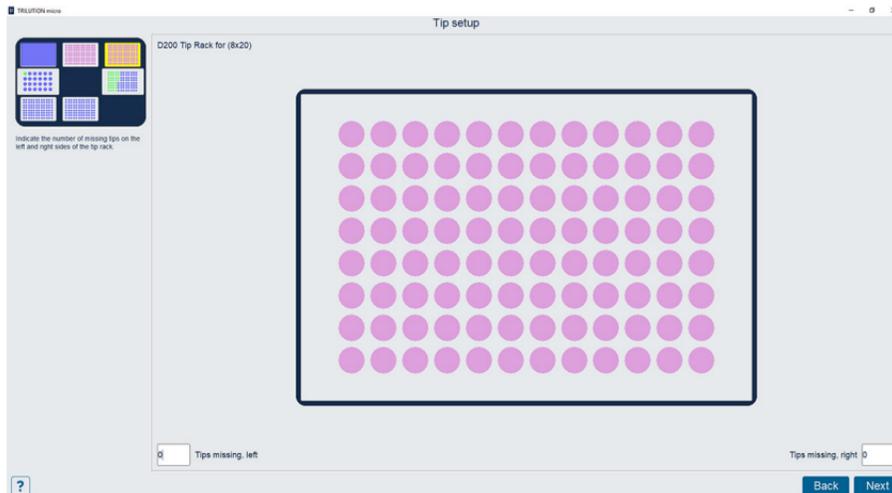
- d. Rotate each clip so that it will effectively secure the tip rack on the tray as shown in the image below.



Clips Rotated Into Position to Secure Tip Rack on Tray

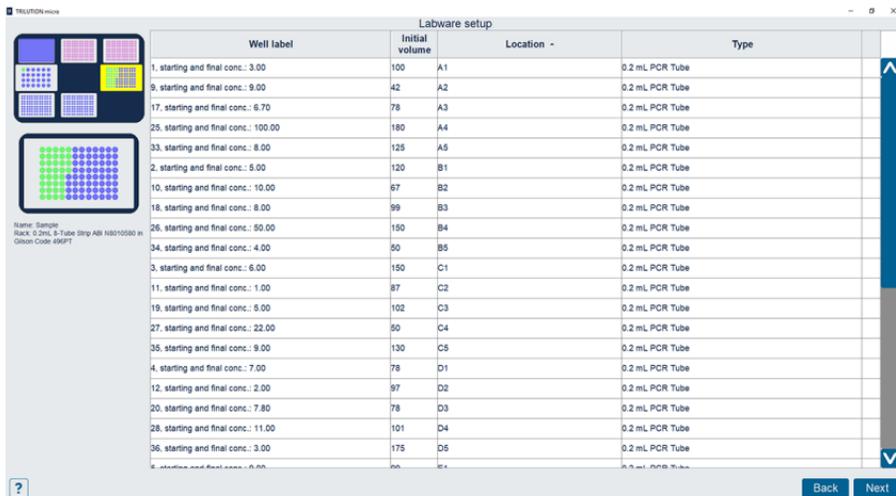
- e. Tighten the thumbscrew for each clip.
- f. Ensure that the illustration on-screen in TRILUTION micro matches your tip setup. The colors indicate the following information:
- White - Missing tips
 - Pink - Tips

- g. Select in the **Tips missing, left** or **Tips missing, right** field and then specify the number of missing tips. The software will indicate missing tips starting from the bottom left corner for **Tips missing, left**. The software will indicate missing tips starting from the bottom right corner for **Tips missing, right**.



- h. If your configuration uses multiple tip racks, select **Next** to advance to the next tip box on the bed. Select **Back** to return to the previously selected tip box. After configuring the last tip rack, select **Next** to return to the **Run Setup** screen.
If your configuration has only one tip rack, select **Back** to return to the **Run Setup** screen.

- 11 Select **Bed Setup**. The tip waste bin is displayed. The tray image in the upper left identifies the location of the bed elements.



The screenshot shows the 'Labware setup' window. On the left, there is a tray image with a grid of colored dots (green, blue, yellow) representing well locations. Below the tray image, the text reads: 'Name: Sample', 'Block: 0.2mL 96 Tube Strip ABX N8010500', and 'Gibson Code: EMPT'. The main area is a table with the following columns: Well label, Initial volume, Location, and Type. The table contains 36 rows of data, each representing a well in the tray. The 'Well label' column contains well numbers and their starting and final concentrations. The 'Initial volume' column contains the volume in microliters. The 'Location' column contains the well's coordinates (e.g., A1, A2, B1, B2, C1, C2, C3, C4, C5, D1, D2, D3, D4, D5). The 'Type' column contains the well's contents (e.g., 0.2 mL PCR Tube). At the bottom right of the window, there are 'Back' and 'Next' buttons.

Well label	Initial volume	Location	Type
1, starting and final conc.: 3.00	100	A1	0.2 mL PCR Tube
9, starting and final conc.: 9.00	42	A2	0.2 mL PCR Tube
17, starting and final conc.: 6.70	78	A3	0.2 mL PCR Tube
25, starting and final conc.: 100.00	180	A4	0.2 mL PCR Tube
33, starting and final conc.: 8.00	126	A5	0.2 mL PCR Tube
2, starting and final conc.: 5.00	120	B1	0.2 mL PCR Tube
10, starting and final conc.: 10.00	67	B2	0.2 mL PCR Tube
18, starting and final conc.: 8.00	99	B3	0.2 mL PCR Tube
26, starting and final conc.: 50.00	150	B4	0.2 mL PCR Tube
34, starting and final conc.: 4.00	50	B5	0.2 mL PCR Tube
3, starting and final conc.: 6.00	150	C1	0.2 mL PCR Tube
11, starting and final conc.: 1.00	87	C2	0.2 mL PCR Tube
19, starting and final conc.: 5.00	102	C3	0.2 mL PCR Tube
27, starting and final conc.: 22.00	50	C4	0.2 mL PCR Tube
35, starting and final conc.: 9.00	130	C5	0.2 mL PCR Tube
4, starting and final conc.: 7.00	78	D1	0.2 mL PCR Tube
12, starting and final conc.: 2.00	97	D2	0.2 mL PCR Tube
20, starting and final conc.: 7.80	78	D3	0.2 mL PCR Tube
28, starting and final conc.: 11.00	101	D4	0.2 mL PCR Tube
36, starting and final conc.: 3.00	175	D5	0.2 mL PCR Tube
6, starting and final conc.: 0.00	00	EX	0.2 mL PCR Tube

Labware Setup Screen

Select **Next** to advance to the next bed element that is not a tip box. Select **Back** to return to the previously selected bed element.

- a. Ensure that the illustration matches your bed setup.

When a bed element is selected, the tray image in the upper left identifies the current, selected bed element.

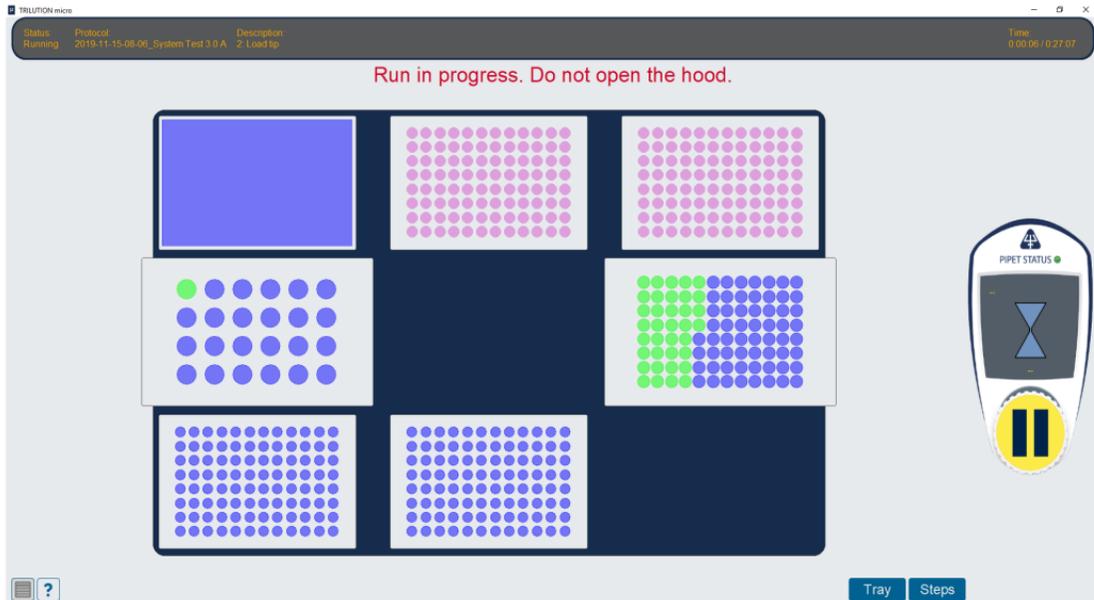
If a well/tube is selected, it is highlighted red in the plate/rack image.

- The initial volume list is displayed. Initial volume is the initial volume for the well or tube. The initial volumes are set to the default values defined in the protocol, but can be modified.
- Well label is the name of the well or tube.
- Location is the location of the well or tube on the labware. Type is the type of well (microplate, vial, etc.). The Location and type fields are not editable.

- b. After reviewing the last bed element, select **Next** to return to the **Run Setup** screen.

12 Select **Run**.

When prompted, it is recommended to simulate if this is the first time running the protocol.



Run - Tray View

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