DeNovix®

Squid™

Squid Full Range Pipette (1 - 1000 µL)

User Guide

Version: 9-SEP-2026

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1. Introduction

Product Technology

The Squid™ Full Range Pipette is a revolutionary electronic pipette designed by DeNovix. Unlike traditional technologies that require a set of multiple pipettes to cover the core range of volumes used by scientists, Squid's patented design includes an impressive 1 - 1000 µL capacity. It maintains high accuracy and precision for all volumes within its wide range.

This all-in-one, user-friendly solution reduces clutter, saves time, and minimizes setup and operating costs in the lab.

Squid Pipettes feature a high-resolution screen and an easy-to-use software based on a custom operating system. The software allows for easy transitions between all volumes in the range, and it also enables users to save preset volumes and build custom protocols.

Key Features

- Patented Dynamic Volume Control™ Enables 1 - 1000 µL Range in a Single Pipette
- Exceeds ISO 8655-6_2022 pipetting performance specifications when tested in Standard Mode as a set of four pipettes with volume ranges from 1 - 10 µL, 2 - 20 µL, 20 - 200 µL, and 100 - 1000 µL (DeNovix Technical Note 249).
- Compatible with Universal Style Pipette Tips; Specialized Tips Not Required
    - **Note**: The Squid Pipette is tested and certified only using DeNovix Pipette Tips
- One-Click Switching Between Two Built-In Tip Sizes
    - **Large Tip Mode**: 100 - 1000 µL
    - **Small Tip Mode**: 1 - 200 µL
- 1.5 Inch Full Color Display
- Simple, Intuitive Pipette Modes
- Custom Presets to Instantly Switch Between Required Volumes
- Five Vibrant Color Choices (Pacific Blue, Volcano Red, Deep Purple, Sea Mist Green, and Storm Gray)
- Bluetooth® v5.0 Connectivity
- Wi-Fi Connectivity
- All-Day Battery Life
- Charging via USB-C or Charging Stand
- Ergonomically Balanced Design with Finger Hook for Support
- Autoclavable Tip Holders and Ejector Mechanism with Easy Disassembly and Reassembly

2. Setup and Safety

1. Remove all packing materials.
2. Press Action Wheel (center button) for 0.5 seconds to turn on
3. Once the unit has been started, it will go through a quick initialization and homing process. Once this is complete the Squid Pipette is ready for use
4. To charge: Plug the unit into a 100-240 VAC, 50-60/Hz receptacle using the power supply (Part number MKD-0503000VEXC) included with each unit. Only use the power supply shipped with the pipette for charging. Use of a different supply may damage unit and may void warranty. Input Rating: 100-240V~, 50-60 Hz, Output Rating: 5V / 3.0A / 15.0W.

Safety Precautions

The following safety precautions provide important information intended to prevent personal injury to the operator and/or others, and damage to the DeNovix Squid Pipette.

Warnings:

Follow general instructions for hazard prevention and safety instructions; e.g., wear protective clothing, eye protection, and gloves.

Follow the ergonomic guidelines for laboratory work to minimize the risk of repetitive strain injury.

Follow the safety instructions and general laboratory practice for use and waste disposal of hazardous material e.g., radioactive and potentially infectious.

Ensure proper storage of the device to prevent contamination or mechanical damage.

Do not immerse the unit in liquid and do not clean the upper part of the pipette by spraying. Fluid seepage can damage internal components and may cause a safety risk.

Incorrect handling of the battery or pipette may cause personal injury. Do not drop the battery. Do not expose the battery to any kind of mechanical stress or extreme temperatures: above 60°C (45°C when charging) or under 0 C°.

The Squid Pipette contains a Li-ion battery. Do not expose to short circuit, mechanical stress or any use not intended within this guide.

Cautions:

The Squid Pipette is designed for indoor use under the following conditions:

Temperature: 15˚ to 35˚ C
Humidity: 35 to 65 %
Elevation: 2000 m or less
Pollution: Pollution degree 2

Use only the power supply provided with the instrument. Use of the instrument in any manner not specified by the manufacturer may impair the protection provided by the supplied power cord and power supply.

Always turn off the power and unplug the power transformer before cleaning the exterior. Fluid can damage internal components.

Do not autoclave the entire unit. Extreme heat can damage the display and other electronic components.

Do not clean the buttons or screen with bleach solution or other solvents. Caustic cleaning solutions can damage the electric components.

La pipette Squid est conçue pour une utilisation en intérieur dans les conditions suivantes :

Température : 15 à 35 °C

Humidité : 35 à 65 %

Altitude : 2000 m ou moins

Pollution : degré de pollution 2

Utiliser uniquement l'alimentation fournie avec l'instrument. L'utilisation de l'instrument d'une manière non spécifiée par le fabricant peut compromettre la protection offerte par le cordon et le bloc d'alimentation fournis.

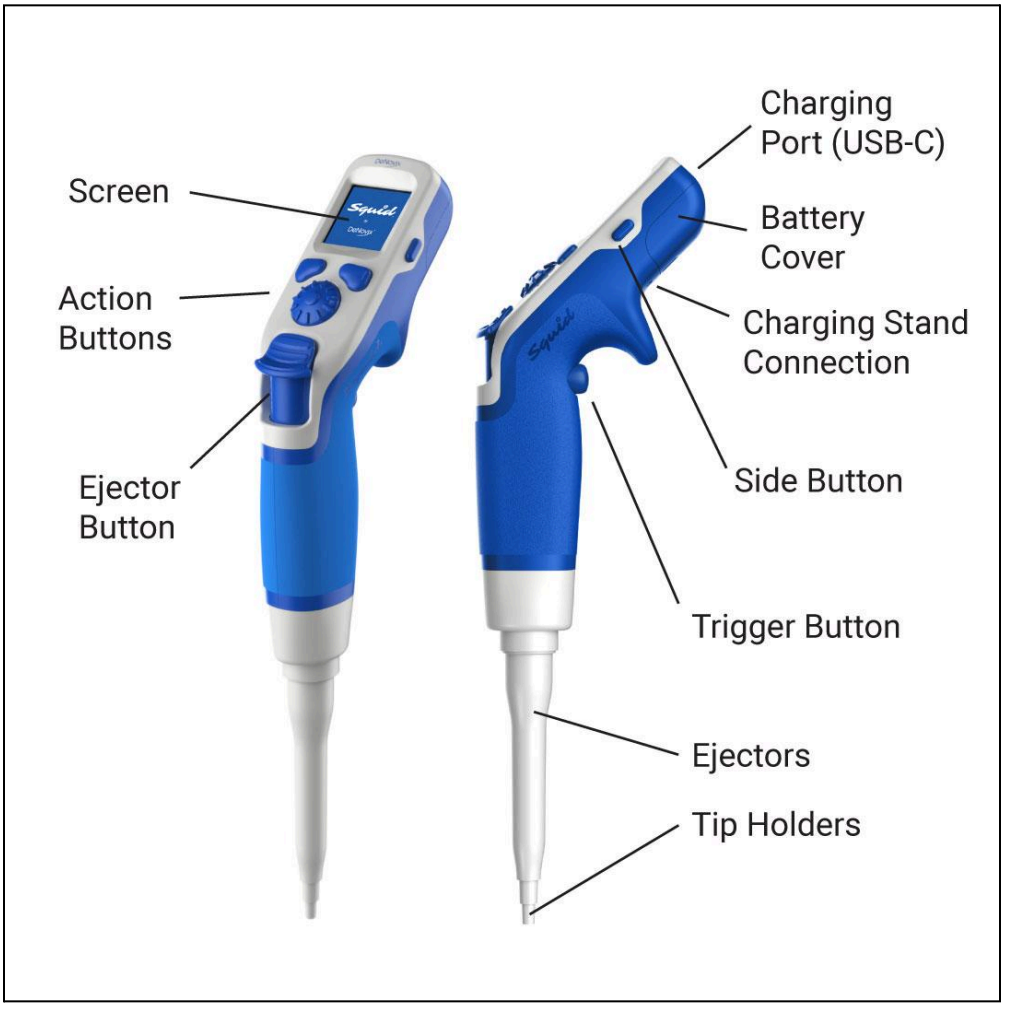
Toujours éteindre l'appareil et débrancher le bloc d'alimentation avant de nettoyer l'extérieur. Les liquides peuvent endommager les composants internes.

Ne pas autoclaver l'appareil complet. Une chaleur extrême peut endommager l'écran et d'autres composants électroniques.

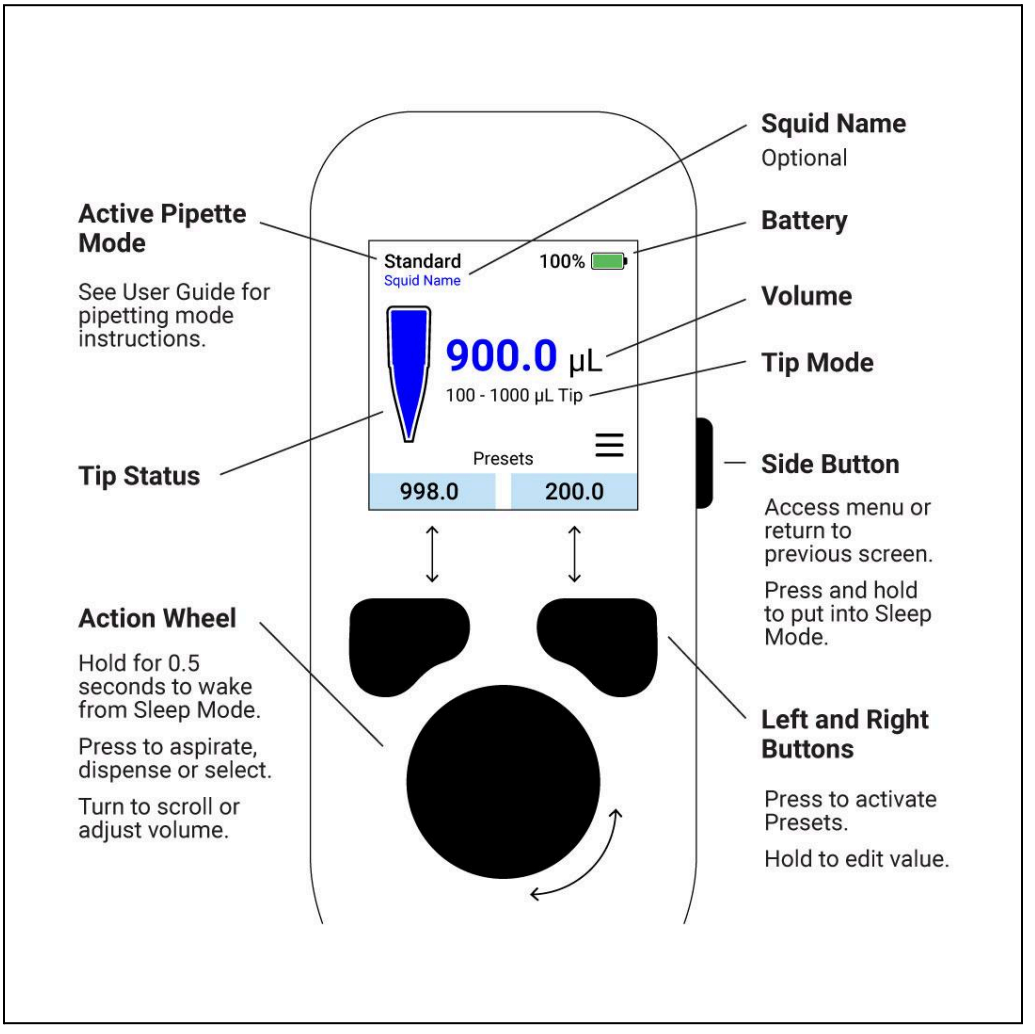
Ne pas nettoyer les boutons ni l'écran avec une solution d'eau de Javel ou d'autres solvants. Les solutions de nettoyage caustiques peuvent endommager les composants électroniques.

3. Software and Hardware

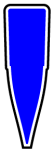
Instrument Diagram



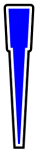
Software and Action Buttons



- **Active Pipette Mode**: Displays the current Pipette Mode, including "+AP" if Auto Purge is enabled.
- **Tip Status**: Displays as empty when the piston is down and filled when the piston is up. The graphics below indicate whether the pipette is in Large or Small Tip Mode.



Large Tip Mode
100 - 1000 µL



Small Tip Mode
1 - 200 µL

- **Squid Name**: Displays the pipette name determined in Device Settings (if specified), or displays the name of the protocol in Custom Protocol Mode.
- **Battery**: Indicates the current battery percentage and charging status.
- **Volume**: Displays the target volume in microliters.
- **Tip Mode**: Displays the volume range of the active Tip Mode.

- **Action Wheel**
  - Hold for 0.5 seconds to wake from Sleep Mode
  - Press to aspirate, dispense, or select
  - Turn to scroll or adjust volume
- **Side Button**
  - Press to access the menu ☰ or return to the previous screen ⮌
  - Press and hold until the menu icon flashes to put the device into Sleep Mode
    - Note: The device will **not** enter Sleep Mode while connected to a charging cable.
- **Left and Right Buttons**
  - Press to activate preset volumes
  - Press and hold to edit preset values
  - In some modes, press for other actions visualized by the icons onscreen, such as cancel ✖ or accept ✔

Tips

The Squid Pipette is compatible with universal style pipette tips and has been calibrated and certified at the factory exclusively using DeNovix Brand Pipette Tips. To ensure optimal accuracy and precision that exceeds ISO 8655 standards, it is recommended to use DeNovix tips, which are available in sterile, non-sterile, and filtered formats. While other third-party universal brands may be used, they must be validated for performance by the user to ensure data reliability.

The device utilizes a patented Dynamic Volume Control™ system to span its full 1 - 1000 µL range using two primary tip sizes:

- **Small Tip Mode (1 - 200 µL):** Designed for use with 200 µL universal tips.
- **Large Tip Mode (100 - 1000 µL):** Designed for use with 1000 µL universal tips. 1250 µL universal tips may also be used in this range.

Filter tips are compatible with the Squid Pipette but must be matched to the pipetting volume to prevent contamination and maintain accuracy:

- For pipetting volumes **20 µL or less** with a filter tip, a tip with the filter in the 20 µL position (commonly referred to as a 20 µL filter tip) must be used.
- For pipetting volumes **between 20 and 200 µL** with a filter tip, a tip with the filter at the 200 µL position is required.
- When operating in **Large Tip Mode**, a tip with the filter in the 1000 µL or 1250 µL position can be utilized.

Proper tip selection and secure attachment are critical; if inaccurate dispensing or leaking occurs, ensure the tip is firmly seated on the tip cone or verify the tip brand compatibility.

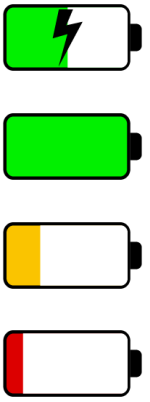
4. Charging and Power Management

Battery Information

- The Squid Pipette can charge from 0% to 80% in 80 minutes and 0 to 100% in 140 minutes.
- At full charge, the device yields approximately 1500 aspirate and dispense cycles at 1000 µL and the highest speed.
- It is recommended to store the Squid Pipette on the charging stand or plugged in to ensure that it always has adequate battery life for any experiment.

Battery Software Icons

- If toggled on under the “Display” menu item, the battery percentage will show numerically beside the battery icons below.



Charging
(Lightning Symbol)

40 - 100%
(Green)

20 - 40%
(Yellow)

0 - 20%
(Red)

Insufficient Battery

- When the Squid Pipette is no longer able to aspirate and dispense liquid due to low battery, the device will enter Sleep Mode.
- Instead of restarting when the Action Wheel is pressed, a battery charging icon will be displayed on the screen.
- To resume using the pipette, either plug in or recharge the battery.
- The Squid Pipette is fully operable when plugged into the USB-C charger.

Battery Best Practices

- Only the power supply included with the Squid Pipette should be used to charge the device.
- The Squid Charging Stand is a safe option for maintaining the charge of the Squid pipette. This stand comes with a specific power supply that adheres to the same guidance provided in this guide. Only use the provided power supply that comes with the Squid Charging Stand.

For instructions on how to replace the battery, the **DeNovix Squid Pipette Service Manual** is available upon request by contacting info@denovix.com or your local distributor.

5. Menu

Access the Menu by pressing the side button.

Speed Settings

Adjust aspirate and dispense speeds.

Purge Settings

Turn the Auto Purge feature on or off and adjust the Auto Purge Delay settings.

- The Auto Purge feature automatically resets the piston to a ready-to-aspirate position after the dispense and purge steps, removing the need to press the button to complete the purge.

Pipette Modes

The Squid offers various Pipette Modes, providing a range of operational choices.

- **Standard:** Includes aspirate, dispense, and purge steps. Two presets are available for each tip size.
- **Repeat:** Allows users to divide a larger volume into multiple smaller aliquots that are dispensed from the original volume.
    - **Example:** Aspirate 100 µL, dispense 20 µL 5 times
- **Reverse:** Allows users to reverse pipette, mimicking the functionality of a positive displacement pipette. Instead of aspirating up the exact volume indicated and dispensing extra volume to fully purge the tip, a small amount of extra volume is aspirated into the pipette tip (~10% of the target volume) and the exact volume is dispensed. The remaining volume must be purged in a separate step.
- **Mix:** Allows users to mix a selected volume by aspirating and dispensing for a determined number of mix cycles prior to final dispense. Requires a purge step at the end.
    - **Example:** Aspirate and dispense 100 µL 3 times, then purge any extra remaining volume.
- **Manual:** Simulates manual pipette operation. Fine control of precise volume increments allows aspiration and dispensation of measured sample volumes. Allows rapid real time measurement of unknown sample volumes.

Custom Protocol

Build, clone, edit, or delete customized pipetting protocols. Custom protocols can also be built and imported using the DeNovix Squid Computer Software.

Device Settings

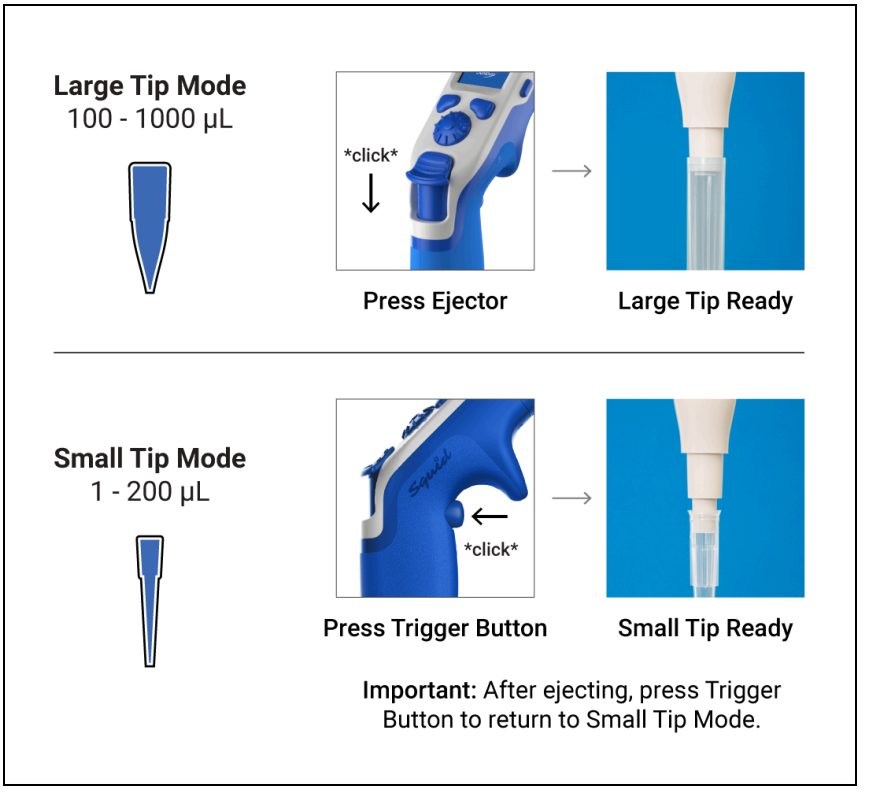
- **Squid Name**: Customize the name of the device by rotating the Action Wheel and pressing to confirm each letter or special character
- **Display**: Select the Theme Color, Screen Brightness, and Battery Percentage display
- **Sound**: Turn Sounds ON or OFF and select Beep Duration
    - **Button Press:** Beep on button press
    - **Movement Complete:** Beep when aspirate or dispense step is complete
- **Auto Dim**: Set interval of inactivity before screen dims; determine if an additional button press is required to un-dim the device from dimmed state
- **Auto Sleep**: Set interval of inactivity before device enters low-power Sleep Mode
- **Bluetooth®**: Toggle ON or OFF
    - **Note:** Bluetooth® pairing will switch off after 60 seconds if a connection is not established to preserve battery power
- **Color Mode:** Toggle between Light and Dark Mode

More Options

- **About:** View serial number, software version, and other device information
- **Calibration:** Enter calibration mode (high precision scale required)
- **Software Update:** Check for and perform software updates
- **Maintenance:** View last calibration date and cycle counts
- **User Guide:** QR code to access this User Guide document
- **Games:** Play games such as Pipettris and Ink-Out

6. Basic Operation Guide

1. Wake the Squid from Sleep Mode by holding the Action Wheel for 0.5 seconds.
    - If the Squid enters sleep mode, it will return to the previous mode upon waking.
2. Press the Side Button to select a Pipette Mode. Standard Mode is default.
3. Choose the Tip Mode required for the appropriate volume.
    - **Large Tip Mode (100 - 1000 µL):** Press the Ejector down until it clicks, as visualized in the graphic below.
    - **Small Tip Mode (1 - 200 µL):** Press the Trigger Button on the back of the device until it clicks and the Ejector slides back up, as visualized in the graphic below.
        i. **Important:** After ejecting a tip, the Trigger Button must be pressed to return to Small Tip Mode.



4. Adjust Volume.
    - Turn the Action Wheel until the “Press to Change Volume” message appears.
    - After pressing the Action Wheel, rotate the wheel to adjust the flashing volume integer. Press to confirm, then repeat for value after the decimal point.
    - The minimum and maximum volumes are determined by the active Tip Mode.
5. Adjust presets as desired.
    - Press the Left or Right Buttons to select a preset volume displayed at the bottom of the screen.
    - To adjust preset values, press and hold either the Left or Right Button.
    - Once the value is flashing, use the Action Wheel as described in Step 4 to adjust the preset volume value.

- Two presets are available for each of the two tip modes
    i. **Note**: Only values appropriate for the selected tip mode are selectable.

6. Aspirate and Dispense liquids.
    - Load the appropriate tip for the tip mode selected by firmly pressing the tip cone into a fresh, clean tip.
    - Press the Action Wheel to aspirate the selected volume displayed onscreen. The Tip Status graphic will reflect the progress.
    - Press the Action Wheel again to dispense the volume.
    - Press the Action Wheel to purge (unless Auto Purge is turned on—see “Purge Settings”).
    - Eject the used tip by pressing the Ejector down.
    - In Standard and Reverse modes, press and hold the Action Wheel to quickly mix your sample.
    - Reference the individual “Pipette Mode” sections in this User Guide for specific instructions on each mode.

7. Best Practices for Sample Handling

1. **Pre-Wet the Tip:** Important for volumes under 10 µL.

   Aspirate and dispense the sample liquid 1 to 3 times back into the reservoir to humidify the dead air space. You can do this by running a standard pipetting cycle manually, or by using a dedicated "Mix" or "Pre-wet" custom program

2. **Immerse and Aspirate:**

   Hold the pipette vertically. Immerse the tip just 1 to 2 mm below the surface of the liquid. Press the Action Wheel to Aspirate.

3. **Pause Before Withdrawing:**

   Wait briefly after the motor stops running. This gives the liquid time to finish settling into the tip, ensuring the full volume has been aspirated.

4. **Dispense Against the Wall:**

   Place the tip against the inner wall of the receiving vessel at an angle. Press the Action Wheel to dispense.

5. **Slide and Withdraw:** The “Touch-off”

   Slide the tip up the side of the vessel to remove it.

6. **Maintain and Calibrate Pipettes Regularly:**

   DeNovix provides total care packages for Squid Pipettes. Servicing and calibration can also performed by local pipette calibration providers

7. **Filter Tips:**

   For pipetting volumes 20 µL or less with a filter tip, a tip with the filter in the 20 µL position (commonly referred to as a 20 µL filter tip) must be used.

   For pipetting volumes between 20 and 200 µL with a filter tip, a tip with the filter at the 200 µL position is required.

   When operating in Large Tip Mode, a tip with the filter in the 1000 µL or 1250 µL position can be utilized.

   Note: As you decrease in volume, using best practices will have a greater effect on the accuracy and precision of your pipette.

8. Speed Settings

- Aspirate and dispense speeds are independently customizable for aspirate and dispenses routines.
- Select Menu > Speed Settings.
- Turn the Action Wheel to move the cursor between aspirate and dispense speed and press to select. The bar will flash to indicate it is editable.
    - Rotate to increase (right) or decrease (left) the speed.
    - Press to confirm the new speed.

9. Purge Settings

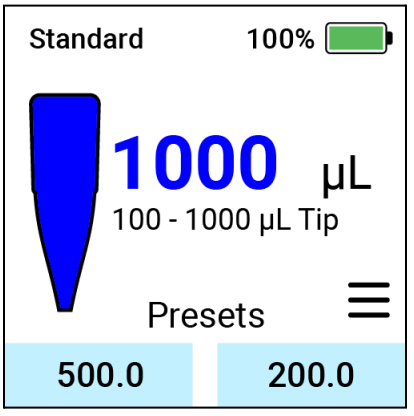
Turning on Auto Purge will trigger the device to automatically perform the Complete Purge step, removing the need for an additional button press.

- The Auto Purge option affects only the Standard and Mix Pipetting Modes.
    - In these modes, the dispense and purge steps always occur together automatically, leaving the piston at the bottom position.
    - To return the piston to an aspirate-ready position, a “Complete Purge” step must be performed manually (with an additional button press) or automatically (with the Auto Purge feature turned on).
    - When Auto Purge is enabled, the homescreen will include “+ AP” after the name of the mode
- In Repeat, Reverse, and Manual Modes, residual liquid will be in the tip after dispensing, so the purge and Complete Purge steps must always be performed manually.

Settings

- Auto Purge
    - Press the Action Wheel, then rotate to toggle ON / OFF.
    - Press the Action Wheel again to confirm the choice.
- Auto Purge Delay
    - Press the Action Wheel, then rotate to select 0.1, 0.5, 1, or 2 seconds. This will determine when the automatic Complete Purge step occurs.
    - Press the Action Wheel again to confirm the choice.

10. Pipette Modes: Standard Mode

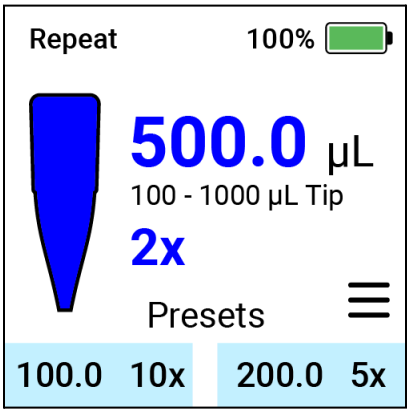


The default Pipette Mode enables users to aspirate a specified volume and then dispense that volume into a new container.

Operation Protocol

- Choose a Tip Mode (Large or Small) and adjust the volume and presets as described in the Basic Operation Guide.
- Press the Action Wheel to aspirate the selected volume.
- Press the Action Wheel again to dispense the selected volume and purge any remaining liquid.
- Complete the purge to return the pipette to an aspirate-ready position.
    - If Auto Purge is on, the Complete Purge step will occur automatically.
    - If Auto Purge is not on, the Complete Purge step must be completed manually.
- Press and hold the Action Wheel to quickly mix your sample. Mix cycles will continue until the Action Wheel is released.

11. Pipette Modes: Repeat Mode



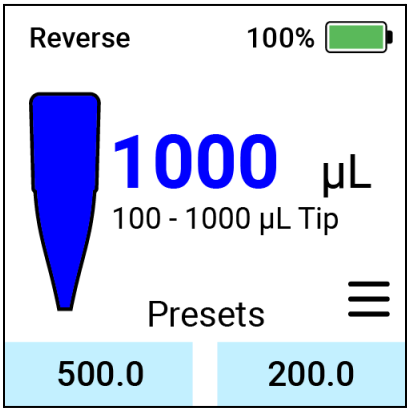
Repeat Mode allows users to aspirate one large volume and dispense smaller aliquots of this larger volume in multiple increments.

Operation Protocol

- Choose a Tip Mode (Large or Small).
- Adjust volume and replicate value as desired.
  - Turn the Action Wheel until the “Press to Change Volume” message appears.
  - After pressing the Action Wheel, rotate the wheel to adjust the flashing volume integer. This will determine the volume dispensed for each replicate value. Press to confirm.
    - **Minimum Usable Volume:** 2 µL
    - **Maximum Usable Volume:** 500 µL
  - Rotate the Action Wheel to adjust the flashing replicate value. This will determine the number of times that the selected volume is dispensed. Press to confirm.
    - The minimum is 1 replicate, and the maximum is 99 replicates.
    - Ensure that the selected volume multiplied by the replicate value does not exceed the maximum Tip Mode volume range.
    - **Example:** In Small Tip Mode, setting the volume to 100 µL and the replicate value to 3x will result in a “Volume Too High” error. This is because 100 µL * 3 (300 µL) goes above the maximum volume for Small Tip Mode, which is 200 µL.
  - Adjust presets as described in the Basic Operation Guide.
- Press the Action Wheel to aspirate selected volume multiplied by the replicate value.
  - **Example:** A volume of 50 µL with a replicate value of 4x will aspirate 200 µL of liquid
- Press the Action Wheel to dispense each fraction / aliquot.
  - Press the Side Button ✖ to cancel the operation before reaching the final replicate.

    - The number of replicates remaining, displayed underneath the volume, will decrease by n-1 after each aliquot is dispensed.
    - The Tip Status graphic will decrease by the corresponding volume for each replicate.
- After the last replicate is dispensed, press the Action Wheel to purge, then again to Complete Purge.
- Repeat Mode specifications conform to the specific guidelines for repeater pipettes (dispensers) described in ISO 8655-5_2022.

12. Pipette Modes: Reverse Mode



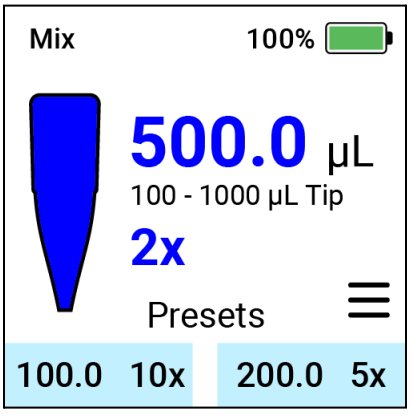
Reverse Mode allows users to reverse pipette, mimicking the functionality of a positive displacement pipette. Instead of aspirating up the exact volume indicated and dispensing extra volume to fully purge the tip, an extra percentage of the target volume is aspirated into the pipette tip, and the exact volume is dispensed. The remaining volume must be purged in a separate step.

This mode is useful when pipetting viscous, volatile, or foaming liquids.

Operation Protocol

- Choose a Tip Mode (Large or Small) and adjust the volume and presets as described in the Basic Operation Guide
- Press the Action Wheel to aspirate slightly more than the selected volume.
- Press the Action Wheel again to dispense the exact selected volume.
- Purge the remaining liquid.
    - The purge and Complete Purge steps must be completed manually.
- Press and hold the Action Wheel to quickly mix your sample. Mix cycles will continue until the Action Wheel is released.

13. Pipette Modes: Mix Mode

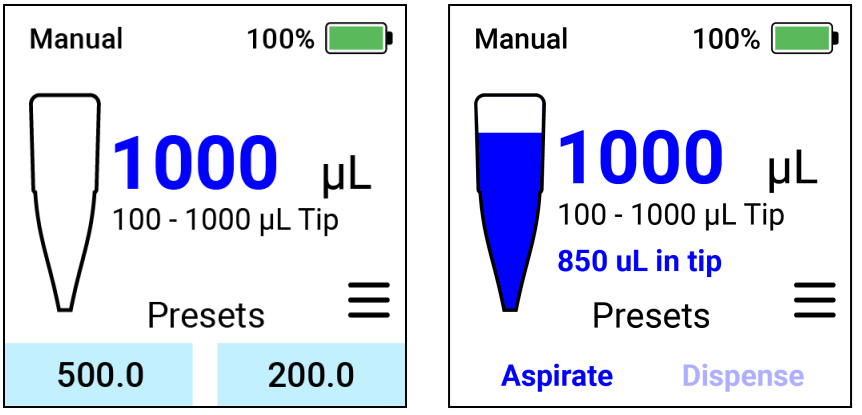


Mix mode is designed to mix solutions together and effectively resuspend dissolved solutes. After rapidly aspirating and dispensing the selected volume for a given number of mix cycles, any remaining volume will be purged.

Operation Protocol

- Choose a Tip Mode (Large or Small).
- Adjust mix cycle value as desired.
    - Turn the Action Wheel until the “Press to Change Volume” message appears.
        - **Minimum Mix Volume:** 2 µL
    - After pressing the Action Wheel, rotate the wheel to adjust the flashing volume integer. This will determine the volume aspirated and dispensed with each mix cycle. Press to confirm.
    - Rotate the Action Wheel to adjust the flashing replicate value. This will determine the number of mix cycles. Press to confirm.
        - The minimum is 1 mix cycle, and the maximum is 99 mix cycles.
    - Adjust presets as described in the Basic Operation Guide.
- Press the Action Wheel to aspirate and dispense the chosen volume.
    - The aspirate / dispense mix cycles will run automatically until all mix cycles have been complicated.
        - Press the Side Button ✖ to cancel the operation before reaching the final mix cycle.
    - The number of mix cycles remaining, displayed underneath the volume, will decrease by n-1 after each mix cycle is completed.
    - The Tip Status graphic will display the piston position during each mix cycle.
    - To adjust mix cycle speed, refer to the “Speed Selection” section.
- When the mix cycles are complete, press the Action Wheel to purge the remaining liquid.
- Complete the purge to return the pipette to an aspirate-ready position.
    - If Auto Purge is on, the Complete Purge step will occur automatically.
    - If Auto Purge is not on, the Complete Purge step must be completed manually.

12. Manual Mode



Press and hold the Action Wheel to manually aspirate and dispense liquids, and view the real-time volume of liquid currently in the tip. This mode may be useful when measuring unknown volumes from a container by displaying the exact volume that has been aspirated.

Operation Protocol

- Lower aspirate and dispense speeds are recommended for precise volume control.
- Choose a Tip Mode (Large or Small) and adjust the volume as described in the Basic Operation Guide.
- Press and hold the Action Wheel to aspirate up to the selected volume.
    - The Tip Status graphic will display the percentage that has been aspirated, and the text below the Tip Mode Range will show the real-time tip volume.
    - The highlighted word “Aspirate” or “Dispense” at the bottom of the screen indicates whether the pipette will aspirate or dispense when the Action Wheel is pressed. Press the Left or Right buttons to switch between aspirating and dispensing.
- Once the desired volume has been reached, press and hold the Action Wheel to dispense the liquid.
- When the text reads “0 µL in tip,” purge the remaining liquid.
    - After the device purges automatically, the Complete Purge step must be completed manually.

14. Custom Protocol

This feature allows users to build and run hundreds of different custom protocols on the Squid Pipette. Protocols can either be built on the device or imported from the DeNovix Squid Computer Software.

Build a Custom Protocol On the Squid Pipette

- Select “New Protocol”
- Enter Custom Protocol name
  - Select letters, numbers, or special characters by turning the Action Wheel to the left or right.
  - Press the Action Wheel to confirm the character selection, and the cursor will stop flashing.
  - Continue selecting and confirming characters until the name is complete.
    - Names are limited to 8 characters
    - Press the Left Button ← to delete the previous character.
    - If the selected Custom Protocol name already exists, an error message will appear. The name must be changed before proceeding.
  - To save the protocol name, press the Right Button ✔
  - To cancel, press the Side Button ↩
- Press the Action Wheel to add a new step.
- Available protocol step options:
  - **Tip Select**: Select whether Large Tip Mode (100 - 1000 µL) or Small Tip Mode (1 - 200 µL) will be used.
    - **Note:** A Tip Select step **MUST** be added before any other steps.
  - **Aspirate**: Select a precise amount of liquid to aspirate from a container. Excess volume to aspirate can also be specified.
  - **AirGap**: Aspirate two different liquids into one pipette tip, separated by an air gap. Both liquids will be dispensed into the same final container.
  - **Dispense**: Select a precise amount of liquid to dispense into a container.
  - **Mix**: Select how many mix cycles of a given volume the pipette will perform.
  - **Repeat**: Enables repeat dispensing of smaller volumes from a larger fill volume. Select the smaller dispensed volume and how many times that volume will be dispensed.
  - **Purge**: Clear the pipette tip of remaining liquid.
  - **Loop**: Set a number of repeated instructions within the “Loop Start” and “Loop End” steps.
- Select steps and configure step parameters.
  - Use the Action Wheel to scroll between step parameters, and press to edit the value indicated by the cursor. The text in the selected parameter will blink to indicate the value is editable.
  - Rotate the Action Wheel to choose the selection for each parameter.

    - Press again to confirm the selection.
    - Once all the elements of each parameter have been selected, press the Right Button ✔ to confirm the entered information.
    - Press the Left Button ✖ to delete the current step.
    - After confirming the step or deleting the step, the user will return to the protocol Builder screen.
- Continue adding steps until the protocol is complete.
    - If an illegal step is added, a red error message will appear at the top of the screen. The “L#” identifies which line contains the error (Example: L2 designates an error on Step 2 of the protocol).
- Press the Action Wheel while the cursor is pointing at any step to bring up an additional menu.
    - **Edit Step:** Edit step parameters.
    - **Move Step:** Move the position of the selected step.
    - **Delete Step:** Discard the selected step.
    - **Insert Step:** Add new step above the selected step.
    - **Cancel:** Close the overflow menu.
- Press the Right Button ••• to open up the overflow menu
    - **Save**: Save the named protocol to the list.
    - **Save As**: Save the protocol under a new name.
    - **Clear All**: Clear all steps to start from scratch.
    - **Cancel**: Close the overflow menu.
- Press the Left Button ✖ at any time to close out of the protocol and discard changes.
    - Press the Right Button ✔ to discard changes and return to the Custom Protocol Menu
    - Press the Left Button ✖ to cancel out of the popup dialog and continue making edits

Existing Protocol Options

- Select an existing Custom Protocol from the list to perform an action:
    - **Run:** Run the protocol.
    - **Edit**: View each step of the protocol and edit as desired.
    - **Clone**: Duplicate the protocol and give it a new name.
        - This can allow users to save time if two or more protocols have similar steps with small differences. Cloning a protocol and then editing the clone will allow users to avoid creating an entirely new protocol.
    - **Rename**: Change the protocol’s name.
    - **Delete**: Completely discard the protocol from the device.
    - **Share**: Share the protocol with another Squid Pipette.

Run a Custom Protocol

- After selecting “Run,” in the desired Custom Protocol Options screen, the protocol will open on the main homescreen.
- The name of the current protocol will be displayed above the Tip Status graphic
- The name of the next protocol step will be displayed below the Tip Status graphic
    - **(ST)**: The step uses Small Tip Mode (1 - 200 µL)
    - **(LT)**: The step uses Large Tip Mode (100 - 1000 µL)
- Press the Side Button ❌ to pause the protocol progress.
    - Press the Left Button (Resume) to complete the next step of the protocol.
    - Press the Right Button (End) to exit out of the Custom Protocol.

Import a Custom Protocol from Another Squid Pipette

Custom protocols built on Squid Pipettes may be shared between devices via Bluetooth®. This feature allows convenient sharing of protocols among labs with more than one Squid Pipette.

- Turn on Bluetooth® on the receiving device.
- Select an existing Custom Protocol from the sending device’s list.
- Select “Share” to scan for devices, then select the name of the device you would like to send the protocol to.
    - If no devices are found, check the Device Settings on the receiving device to ensure that Bluetooth® is still on. Bluetooth® pairing will switch off after 60 seconds if a connection is not established to preserve battery power.
- Once the sending device completes the transfer, the protocol will be available in the receiving device’s Custom Protocol list.

15. More Options: Calibration

Calibration should be performed on your lab or institution's schedule. The Squid Pipette is designed so users can easily calibrate their own device and ensure the device is always pipetting the most accurate volumes possible.

The Squid Pipette is fully compatible with standard gravimetric calibration procedures performed by any accredited pipette calibration provider, integrating seamlessly into existing laboratory calibration schedules.

For customers in the USA, DeNovix also offers a calibration service to provide a convenient option backed by the expertise of the instrument's manufacturer.

Measure and Record Target Volumes

- Before opening the Calibration screen on the device, use a high precision scale for the calibration procedure.
- Pipette distilled water onto an analytical balance and record the mass.
- Record the actual mass and number of desired replicates, and then calculate the active actual volume average for each of the target volumes using a mass to volume calculation accounting for environmental conditions.
- Repeat this process for Small Tip Mode (1 - 200 µL) and Large Tip Mode (100 - 1000 µL).
    - **Small Tip Mode (1 - 200 µL) Target Volumes**: 1, 2, 10, 50, and 200 µL
    - **Large Tip Mode (100 - 1000 µL) Target Volumes**: 100, 500, and 1000 µL

Use Calibration Mode on the Squid

- After recording replicates and calculating averages for the target volumes as described above, select "More Options" from the Squid Pipette menu, then "Calibration."
- Rotate the Action Wheel and press to select an option.
    - **Yes**: Begin calibration
    - **Cancel**: Return to menu
    - **Factory Reset**: Reset to default calibration settings
- Press the Side Button ⮌ to return to the More Options menu

Select Tip Mode for Calibration

- Use the Action Wheel to select a tip mode to calibrate (Small or Large), then press to confirm.
- Press "Begin" to start the calibration process.
- Press the Side Button ⮌ to return to the previous screen

Enter Calibration Values

- Press the Action Wheel, and the value of the “Actual” volume will flash to indicate that it is editable.
- Rotate the Action Wheel to select the value, then press to confirm.
- Rotate the Action Wheel to select the value after the decimal point, then press to confirm.
    - If values are outside acceptable limits, the user will not be able to enter the value. Please contact DeNovix support for assistance.
- Press the Right Button ✔ to move to the next screen, then repeat the process.
- Press the Side Button ⮌ to return to the previous screen
- After the last target volume has been entered, the calibration is complete.
    - Select “Yes” to save the entered values, or “No” to return to the Calibration homescreen.

16. More Options: Software Update

- Open the Menu ☰ using the Side Button.
- Select “More Options,” then “Software Update”
- If device is not connected to Wi-Fi:
    - Choose “Select Wi-Fi ID” to scan for networks, then select a Wi-Fi network from the list
        - **Note:** Captive Portals that include a permission acceptance screen in a browser are not supported.
    - Enter the network password
        - Rotate and press the Action Wheel to select and confirm characters
        - Press the Left Button ← to delete the previous character
        - Ensure that you have entered the password correctly before proceeding
        - To confirm the password, press the Right Button ✔ . Then press the Right Button again to “Connect.”
- If device is already connected to Wi-Fi:
    - The currently connected Wi-Fi ID will be displayed under the line “Check for Updates using Wi-Fi ID”
- Select “Update”
    - If you have the latest software, a message with your version number will appear with “Up-To-Date.” Press the side button to return to the main Software Update screen.
- If there is a new software update available, select “Update”
    - The device will automatically reboot, then download the latest software version
    - The download percentage will be shown on the screen
    - Once the update has finished downloading, the device will automatically restart

17. More Options: Maintenance

Maintenance can be performed on your lab or institution’s regular pipette schedule. The Squid Pipette is designed for easy disassembly, cleaning, and autoclaving.

For customers in the USA, DeNovix offers a maintenance service to provide a convenient option backed by the expertise of the instrument's manufacturer.

For a detailed guide on device maintenance, the **DeNovix Squid Pipette Service Manual** is available upon request by contacting info@denovix.com or your local distributor.

Maintenance Screen

The Maintenance screen shows the last calibration date of the pipette and gives the cycle counts, both total and since the last calibration:

Information displayed on this screen includes:

- Last calibration date
- Cycles since last calibration
- Total cycles in device lifetime

18. More Options: Games

- Rotate the Action Wheel to select a game, then press to confirm selection
  - **Pipettris**: Earn points by filling horizontal lines with blocks
    - Press and hold the Left and Right Buttons to move the block left and right.
    - Rotate the Action Wheel to change the block's orientation.
    - Press the Action Wheel to drop the block.
  - **Ink-Out**: Earn points by destroying colored bricks.
    - Press the Action Wheel to begin.
    - Press and hold the Left and Right Buttons to position the paddle underneath the ball before it reaches the bottom of the screen.
  - **Speed:** Adjust the speed of the games.
- Press the Side Button to return to the "More Options" menu.

19. Troubleshooting

Issue	Probable Causes / Solutions
Inaccurate Dispensing	Seal / O-Ring Wear Reapply grease or replace O-rings. Tip Not Secured Check the type of tips and ensure correct attachment. The Squid Pipette is compatible with universal tips, but for best performance, use DeNovix Pipette Tips (available at denovix.com/squid-purchase). Out of Calibration Recalibrate the pipette using the procedure in the “Calibration” section.
Stuck Piston	Lack of Lubrication Apply silicone grease to piston and Black O-ring.
Stuck Ejector	Lack of Use Occasionally, a user may need to manually slide the ejector button up. This can happen if the pipette has been sitting unused for a couple of days.
Liquid Leaking	Tip Not Secured Check the type of tips and ensure correct attachment. The Squid Pipette is compatible with universal tips, but for best performance, use DeNovix Pipette Tips (available at denovix.com/squid-purchase). Contamination on Tip Holders Clean the tip holders using 70% ethanol with a lint-free cloth. Seal / O-Ring Wear Reapply grease or replace O-rings.
Tip Ejection Fails	Contamination in Tip Holder Unscrew and clean ejectors with 70% ethanol and a clean lint-free cloth.
Reboot Required	Reboot Device Remove the battery cover at the top of the device. Unplug the visible cable (battery connector) and wait for 5 seconds. Then, press and hold the Action Wheel to turn the device back on.

If additional support is needed, please refer to the following “Customer Support” section.

20. Customer Support

DeNovix Inc.

3411 Silverside Road, Hanby Building

Wilmington, DE USA 19810

302-442-6911

Technical Support Email: techsupport@denovix.com

Please include the serial number and software version of your pipette when contacting Customer Support by email. This information may be found in the About screen on the main menu.

Outside of the US, please contact your local distributor for assistance.

Warranty

All product(s) and accessories sold by DeNovix Inc. are under warranty against manufacturing defects in parts.

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Instructions for Disposal of Packaging and Waste Equipment

DeNovix encourages customers to locally recycle shipping and packaging materials. Corrugated cardboard and paper can be recycled wherever it is accepted locally (e.g., curbside bins, recycling facilities, etc.). For foam and plastics, please contact your local recycling office for information on how to recycle.

When a device has reached its end of life, DeNovix recommends that customers responsibly dispose of the equipment by following in line with local regulations. Material construction is available upon request. Visit denovix.com/sustainability for more information.

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