

# Omni Prep 96

## Cleaning Station

Installation and User Manual



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Data herein has been verified and validated. It is believed adequate for the intended use of the instrument. If the instrument or procedures are used for purposes over and above the capabilities specified herein, confirmation of the validity and suitability should be obtained; otherwise Omni International does not guarantee results and assumes no obligation or liability. This publication is not a license to operate under, or a recommendation to infringe upon, any process patents.

This product is warranted to be free from defects in material and workmanship for a period of ONE YEAR from the date of delivery. Omni International will repair or replace and return free of charge any part which is returned to its factory within said period, transportation prepaid by user, and which is found upon inspection to have been defective in materials or workmanship. This warranty does not include normal wear from use; it does not apply to any instrument or parts which have been altered by anyone other than an employee of Omni International nor to any instrument which has been damaged through accident, negligence, failure to follow operating instructions, the use of electric currents or circuits other than those specified on the plate affixed to the instrument, misuse, or abuse. Omni International reserves the right to change, alter, modify, or improve any of its instruments without any obligation whatever to make corresponding changes to any instrument previously sold or shipped.

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This product has been engineered for safety; however, basic safety precautions and common sense must always be demonstrated when using any electrical product.

- Use this product only for its intended purpose.
- Keep this product away from heated surfaces.
- **DO NOT** attempt to modify any part of this product.
- **DO NOT** allow the machine to be submerged in any liquid.
- **DO NOT** use in any setting other than an indoor laboratory.
- **DO NOT** use attachments not recommended by the manufacturer.
- **DO NOT** operate the product if it is damaged in any way.
- **DO NOT** operate the product with the safety ground disconnected.
- **DO NOT** modify the plug or cord that is provided.

**WARNING:** Reduce the risk of unintentional starting; make sure the machine is OFF before plugging into a power supply.

**WARNING:** Damaged or worn power cords should be repaired or replaced immediately by a qualified electrician.

**WARNING:** Improper connection of the equipment can result in a risk of electric shock.

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## Section 1: Site Requirements

Ensure your site meets these requirements for a successful system installation. System users should be present throughout the installation and familiarization services; otherwise, they will miss important operational, maintenance, and safety information. Before the system is installed, the installation site should be prepared as follows:

### Weight & Dimensions

#### Omni Prep 96 Automated Homogenizer

The system's total weight is 125 lbs. (57 kg). Use suitable lifting equipment when moving the package.

The dimensions (W x D x H) of the system are:

Door Closed: 37.5" (95.2 cm) x 25.5" (64.8 cm) x 28.7" (72.9 cm)

Door Open: 37.5" (95.2 cm) x 25.5" (64.8 cm) x 42.5" (107.9 cm)

The system is supplied on a pallet, and the dimensions (W x D x H) of the package, including the pallet, are: 44" (106.7 cm) x 38.5" (97.8 cm) x 34" (86.4 cm). The fume hood or bench must be able to support the system's total weight.

#### Cleaning Station

The cleaning station's weight is 10.2 lbs. (0.45 kg), which is supplied in a box. When installed, the only additional fume hood or bench space required is for the power supply control module, which is placed within 3' of the system.

Power Supply Control Module: 8.2" (20.8 cm) x 8.4" (21.2 cm) x 3.6" (9.1 cm)

#### Operating Environment

- Operating Temperature: 39 °F to 104 °F (4 °C to 40 °C)
- Humidity: 5 % to 95 % RH

The system must be located in an area with clean ambient air. Adjacent equipment cannot emit solid particles or smoke into the air. The level of dust should be comparable to that of normal laboratory spaces.

#### Electrical Supply

Prep 96 Automated Homogenizer 100-230 VAC, 50/60 Hz 950 VA.

Cleaning Station 51-BRA-1095 115 VAC, 50/60 Hz

Cleaning Station 51-BRA-1096 220 VAC, 50/60 Hz

Connect only to a properly grounded outlet

One power outlet is required to install the Omni Prep 96 Automated Homogenizer. The cleaning station power supply control module requires an additional power outlet.

## **Water Supply**

The cleaning station inlet tubing has a 3/8" (9.53 mm) outer and 1/4" (6.35 mm) inner diameter and is 10 ft (3 m) in length. The drain tubing has a 1/2" (12.7 mm) outer and 3/8" (9.53 mm) inner diameter and is 25 ft (7.2 m) in length. It is the customer's responsibility to ensure that suitable connections are available from their water supply within the installation area. We supply the cleaning station with the following connectors/adapters to facilitate connection.

**Inlet:** 3/8" compression fitting tee valve for most sink installations. This will tap into the existing line at sink valves and allow the sink to be reattached after installing the new tee valve.

**Note - If a 3/8" compression is unavailable, a push-to-connect 3/8" valve must be sourced to work with existing plumbing.**

**Outlet:** The 1/2" drain lines must be routed below the cleaning station to ensure good flow. Most applications call for draining into a carboy below the deck.

## **External Fire Protection**

External fire protection should be installed according to local regulations for equipment operating unattended.

## Section 2: Overview

Cleaning Station - 120V or 220V and Replacement Side Panel with Cleaning Station Modification



Provides cleaning station and wash bath functionality to the Prep 96 to support the use of 7 and 12 mm Hybrid Probes and 5, 7 and 10 mm Stainless Steel Generator Probes.

Features flow through, static and ultrasonic cleaning tanks and overflow control.

The Cleaning Station consists of the following items:

Part Number	Description	Quantity
51-BRA-1095-00	Cleaning Station	1
51-BRA-1094 or 51-BRA-1094-2	Power Supply Control Module 120V or 220V	1
51-BRA-1016-03C	LH Panel with Cleaning Station Cutout	1
00-1013	Digital Cable, 3.2 ft	1
00-552	Plastic On/Off Valves with Barbed Fitting for 1/4" Drain Tube	2
29-600-51	BNC Cable, 6 ft	1
51-BRE-1042	Ethernet Cable, 3 ft	1
LT710/LT712	US or EU Power Supply Cord	1
00-554	3/8" Inlet Water Valve	1
00-516-1	3/8" Outer Diameter Inlet Tubing	10 ft
00-551H37	3/8" Inner Diameter Drain Tubing	25 ft

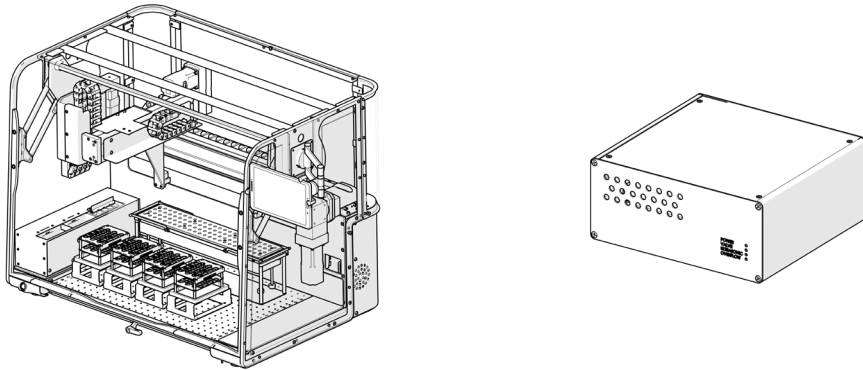
## Section 3: Installation

Carefully unpack and check all the items supplied with the cleaning station.

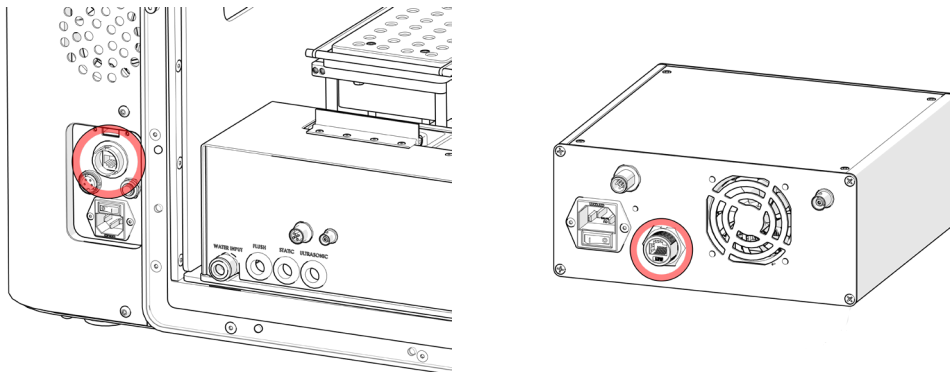
Turn off and unplug the Prep 96 Automated Homogenizer

Remove the left hand side panel of the Prep 96 and replace using the panel supplied in the cleaning station kit. Install the Cleaning Station on the left hand side of the modular deck of the Prep 96 Automated Homogenizer.

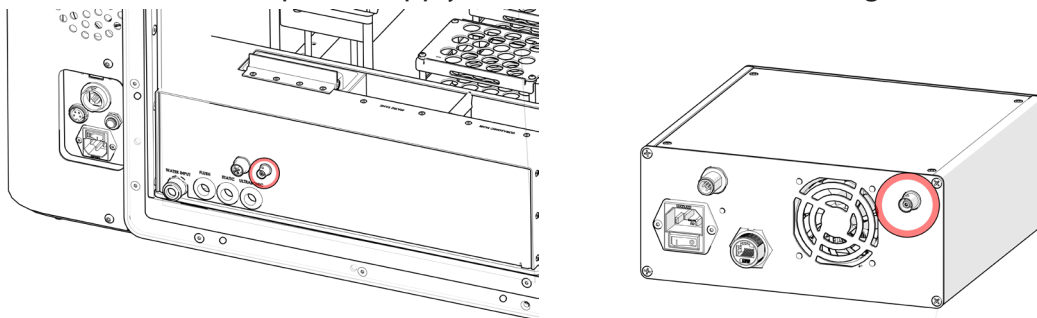
Place the power supply control module on the bench to the left of the Prep 96.



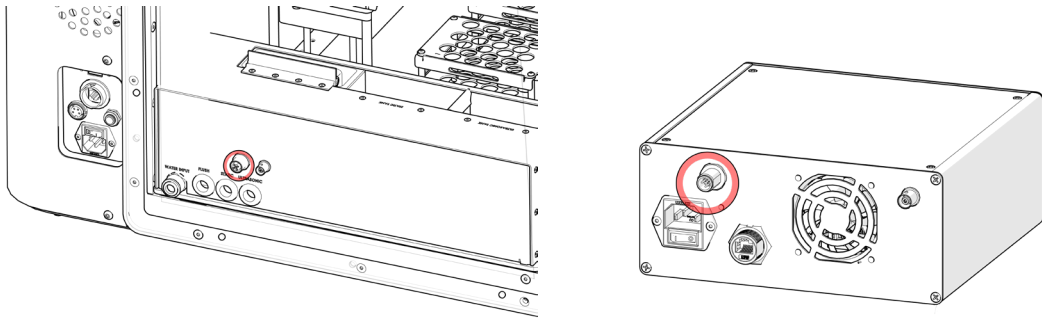
Using the ethernet cable, connect the power supply control module to the Prep 96.



Using the BNC cable, connect the power supply control module to the cleaning station.



Using the digital cable, connect the power supply control module to the cleaning station.

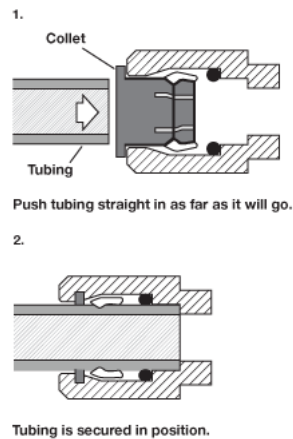
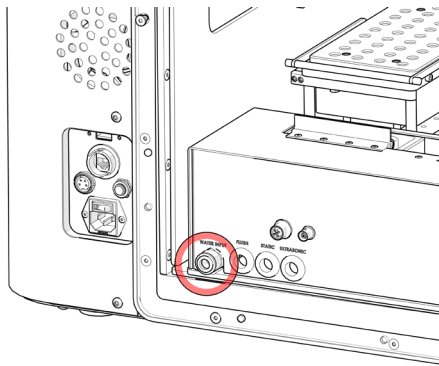


Using the appropriate power supply cable for your region, connect the power supply control module to the mains power supply .

Using the 10 ft length of 3/8" outer diameter inlet tubing and the 3/8" inlet water valve, connect a fresh water supply to the water input quick fit connection on the cleaning station. **Instructions below.**

### Instructions for Installing Water Inlet Valve

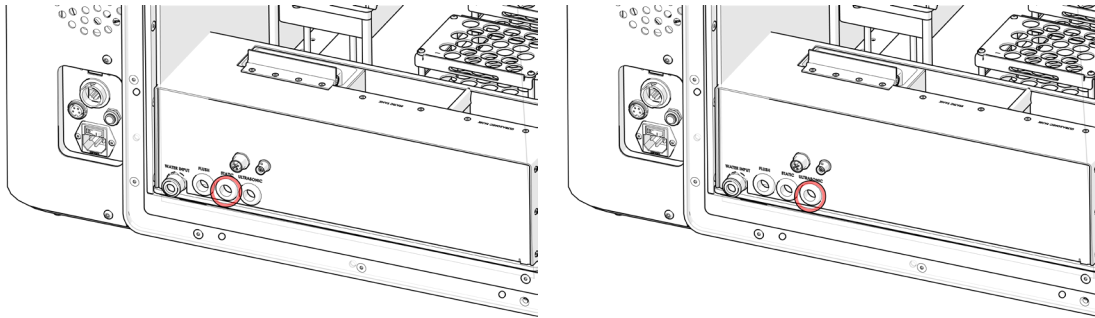
1. Turn OFF the water supply valve.
2. Unscrew the existing sink connector from the water supply.
3. Screw the water inlet valve into the water supply.
4. Reinstall the sink connector onto the threaded side of the water inlet valve.
5. Ensure the inlet valve is OFF.
6. Route the inlet tubing through the side panel cut out
7. Connect the water supply to the cleaning station, using newly installed water inlet valve and the 3/8" outer diameter inlet tubing and quick connect on the cleaning station.
8. Turn ON the water supply valve and inspect both valves for leaks.
9. Turn the inlet valve ON.





Using the 25 ft length of 3/8" inner diameter drain tubing and the two plastic ON/OFF valves, install three separate drainage lines from the cleaning station to a laboratory sink or drain (flush) and a waste container (static and ultrasonic). **Instructions below.**

### Static and Ultrasonic Drain Lines

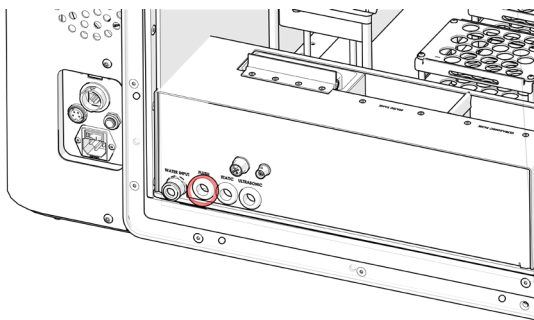


### Instructions for Static and Ultrasonic Drain Lines

1. Cut two suitable lengths of the 3/8" inner diameter drain tubing to connect from the cleaning station static and ultrasonic drain ports to a suitable waste container.
2. Route the flush drain lines through the side panel cut out
3. Use the two plastic ON/OFF valves, one on each length of tubing. Additional tubing can be used from the valve to the waste container.
4. Use the zip ties to secure the tubing to the ON/OFF valves
5. Ensure that the drain tubing is secured in the waste container to prevent flooding.

The valve is operated in the "OFF/CLOSED" position when filling the static or ultrasonic tanks on the cleaning station and then "ON/OPEN" when draining to a waste container.

### Flush Drain Line

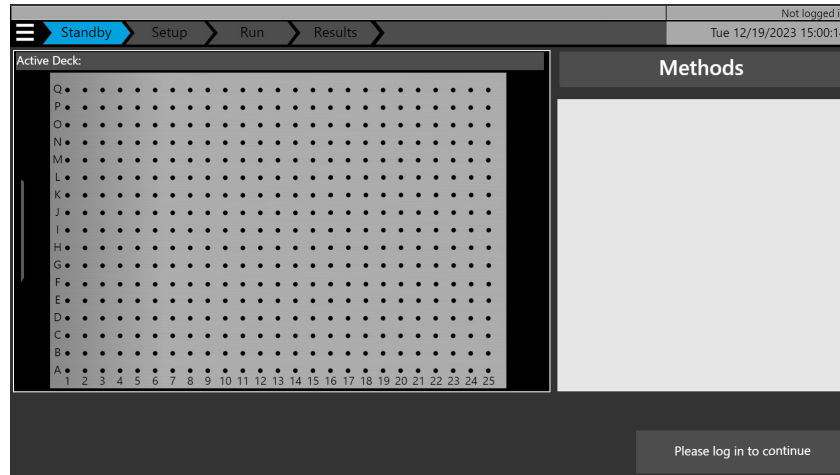


### Instructions for Flush Drain Line

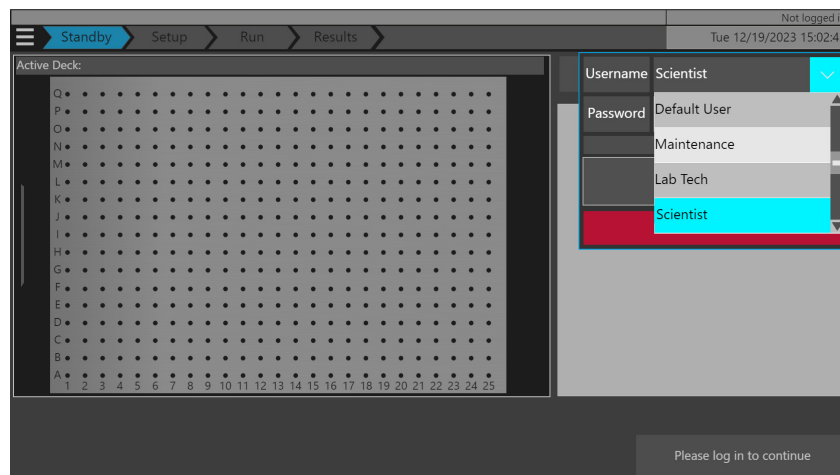
1. Cut a suitable length of the 3/8" inner diameter drain tubing to connect from the cleaning station flush drain port to a laboratory sink or drain. **It is important that the drain line flows downhill.**
2. Route the flush drain line tubing through the side panel cut out
3. Ensure that the drain tubing is secured in the sink or drain to prevent flooding.

## Section 4: Installation and Checkout (Admin or Maintenance Group User Only)

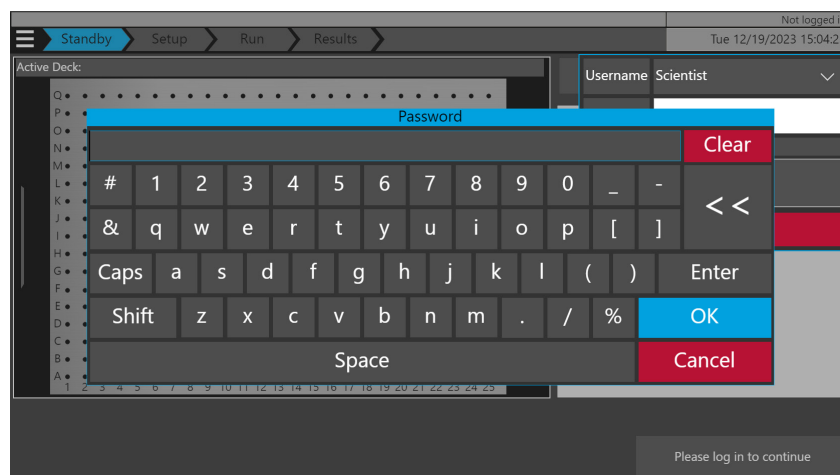
1. Turn on the power supply control module
2. Plug in and turn on the Prep 96 Automated Homogenizer
3. Login to the Prep 96 by pressing the "Please log in to continue button" found on the bottom right hand side of the screen or the "Menu Hamburger Icon" found on the top left of the screen.



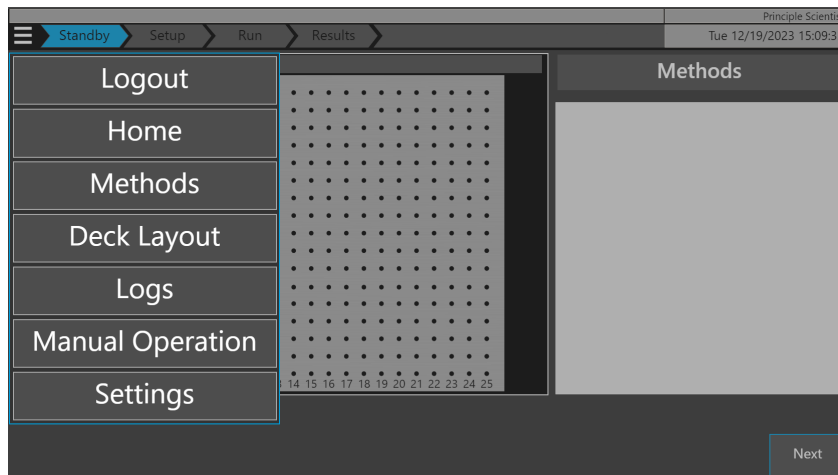
4. Select the Maintenance user by pressing on the username drop down.



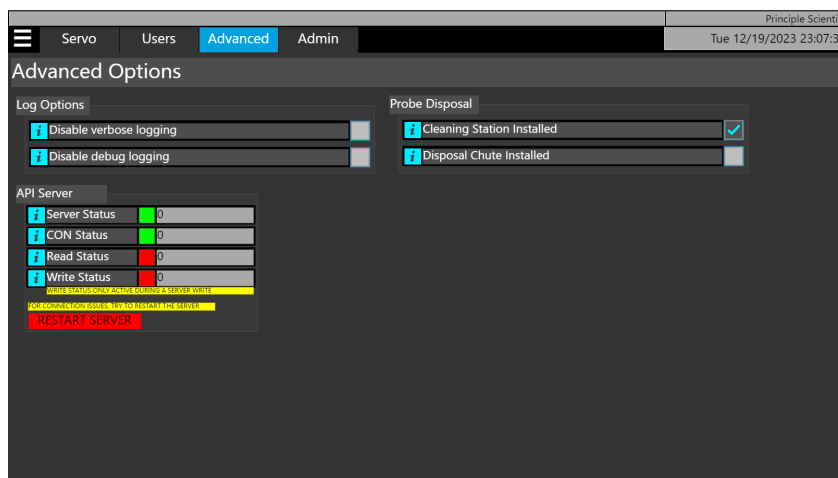
5. Press the password field and enter the corresponding password for the user logging in. Then press OK and then press Login.



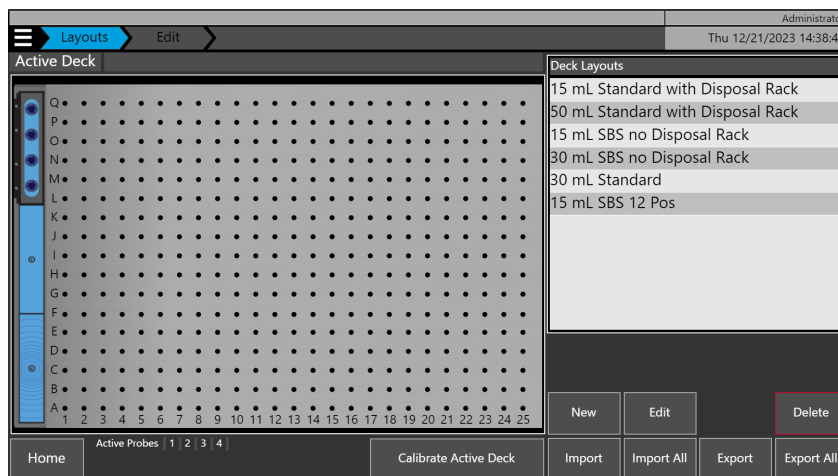
6. Press the "Menu Hamburger Icon" and then press "Settings"



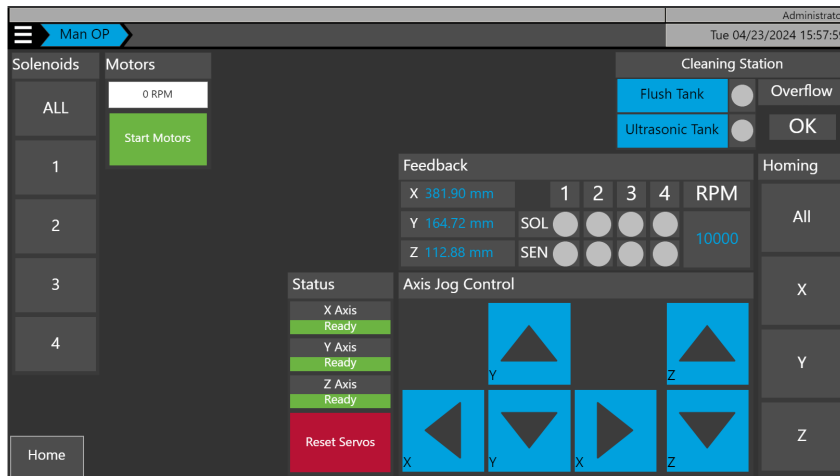
7. Press Advanced at the top of the screen and select cleaning station installed.



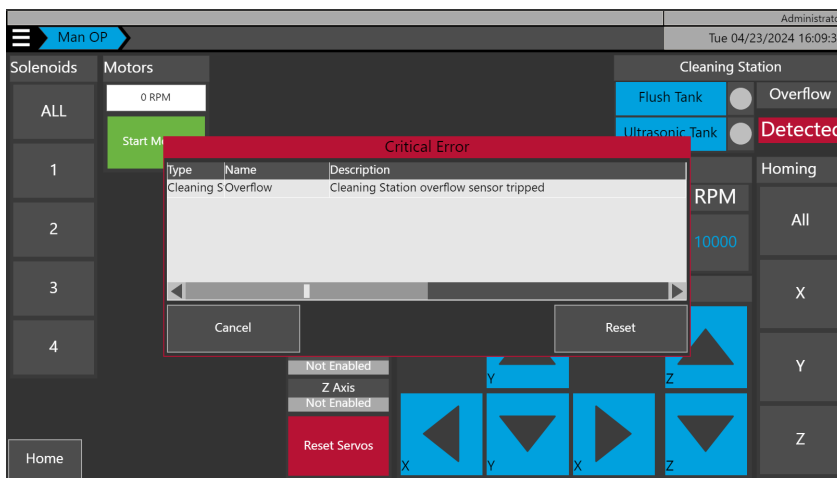
8. Return to the Home screen and the Cleaning Station is now visible on the Prep 96 modular deck.



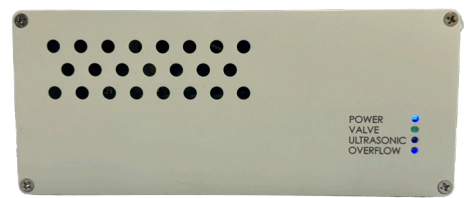
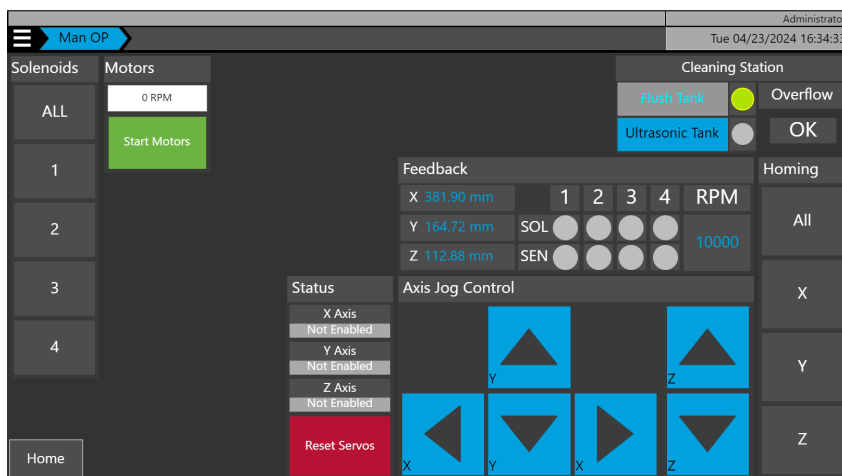
9. Press “Manual Controls” on the main menu



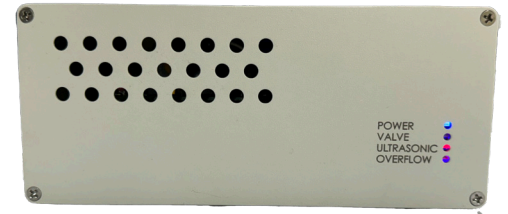
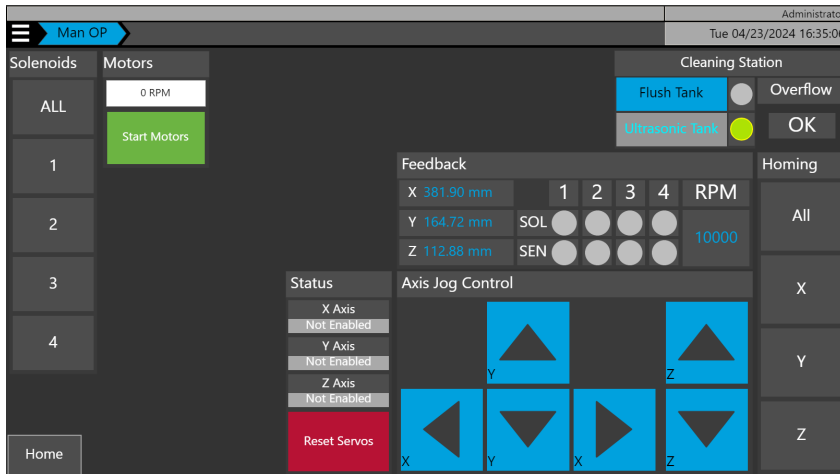
10. Wet your fingers (or jump/connect) the two screws in the flush tank to trigger and check the overflow sensor warning in the software and the LED indicator on the control box. **Following confirmation reset the error.**



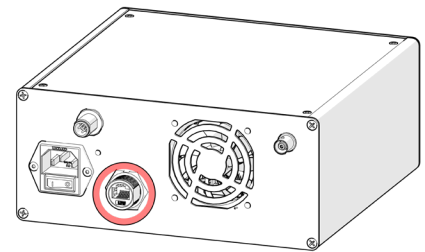
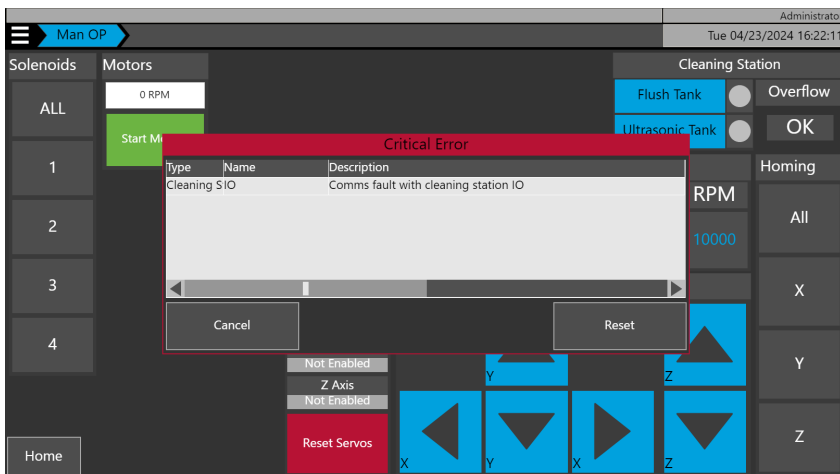
11. Toggle the flush tank inlet valve ON and verify that water flows into the flush tank and out of the drain line. Check the LED indicator on the control box. **Turn the flush tank inlet valve OFF.**



12. Toggle the ultrasonic tank ON and verify that the ultrasonic tank operates, check the LED indicator on the control box. **Turn OFF the ultrasonic tank.**



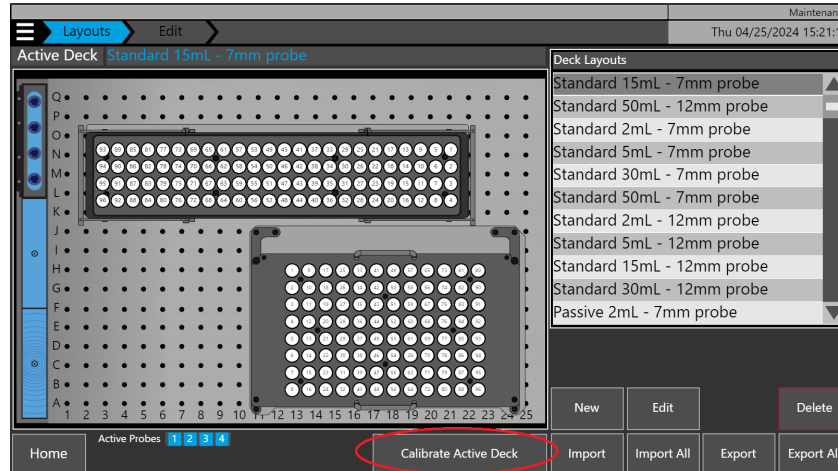
13. Lastly, unplug the ethernet cable from the power supply control module and verify that a communications fault is detected. Plug in the ethernet cable and reset the error.



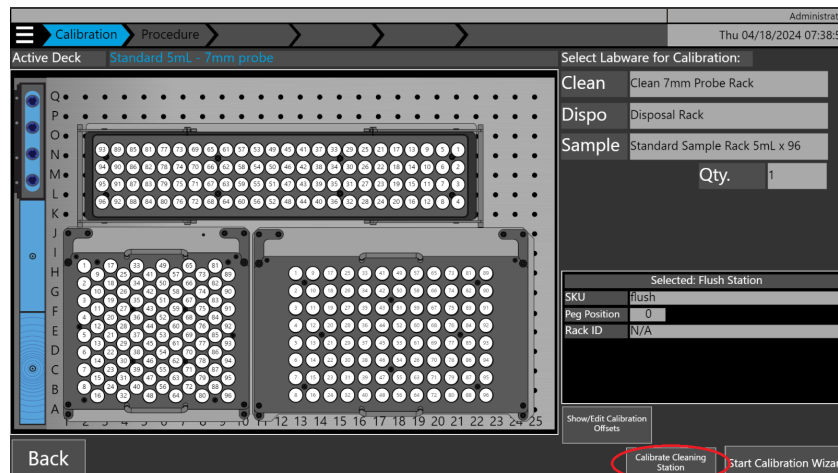
## Section 5: Calibration (Admin or Maintenance Group User Only)

Labware within any deck layout requires calibration before use. Calibration of a deck layout begins with physically adding the labware accessories containing tubes to the Omni Prep 96 modular deck. Once the required labware accessories are in place, change the active deck to match.

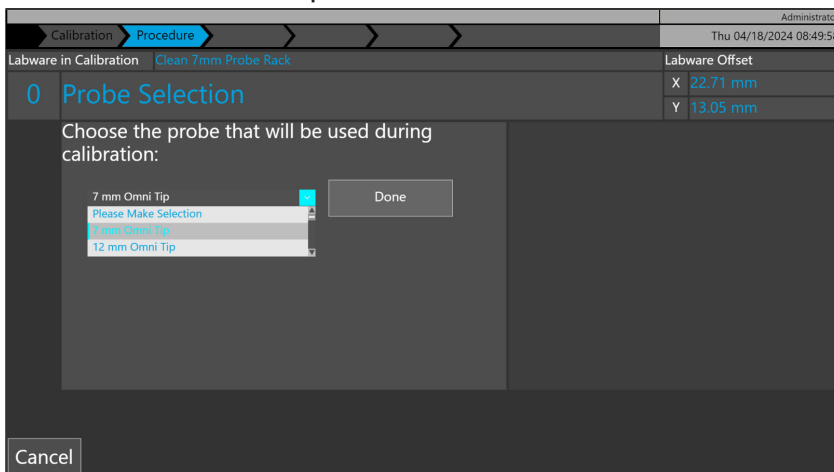
1. Press the **“Calibrate Active Deck”** to start the calibration process.



2. Press the **“Calibrate Cleaning Station”** button.



3. During calibration actions you will need to have a probe installed in positions #1 or #4 of the Omni Prep 96 homogenizing head. Ensure that the installed probe matches the selection in the software. Scroll through the list to select and then press **“Done”**.



7 mm Omni Tip
12 mm Omni Tip
7 mm Hybrid Probe
12 mm Hybrid Probe
5 mm Stainless Steel Probe
7 mm Stainless Steel Probe
10 mm Stainless Steel Probe

4. You will be presented with various calibration actions. See below.

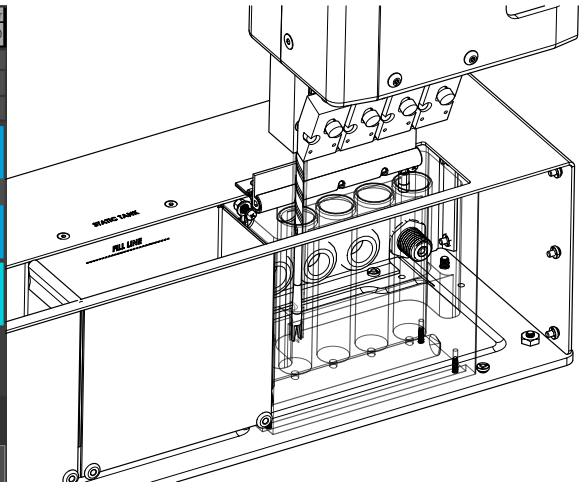
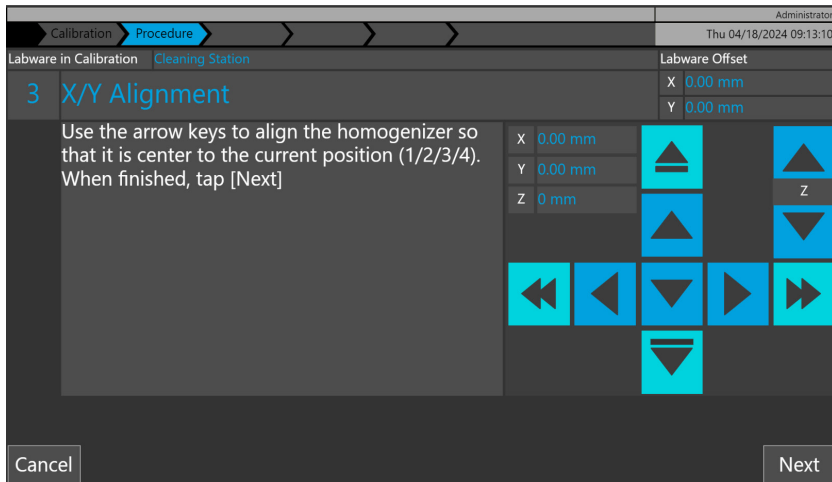
## Cleaning Station - X/Y Alignment

This calibrates the X and Y positions on the cleaning station

Items needed for calibration: Probes and installed cleaning station.

Step to calibrate:

1. Place the appropriate probe as shown below, in **position 4** of the end effector.
2. Press the "X/Y Alignment" button and the Prep 96 will move to the desired location.
3. Using the X, Y and Z arrow keys in the software, move the Prep 96 end effector so that the probe in position 4 is located centrally over the cleaning station position 4.
4. When at the desired location, press "Next". The Prep 96 will save calibration data.



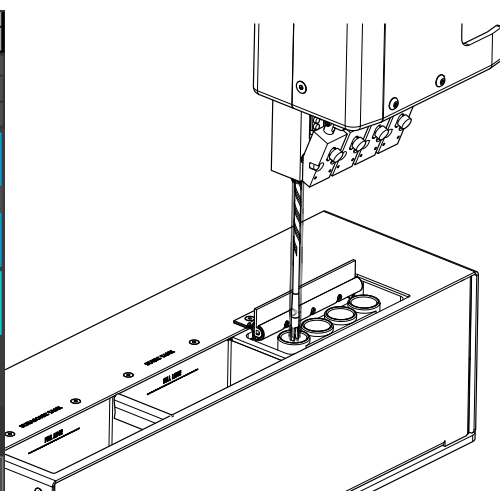
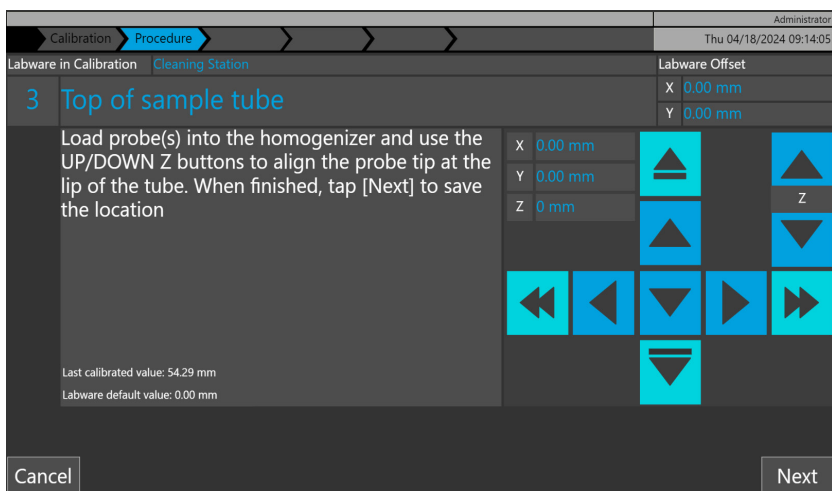
## Cleaning Station - Top of Tube

This calibrates the top of the tube position in the sample rack , which is used during touch off.

Items needed for calibration: Probes and installed cleaning station .

Step to calibrate:

1. Place the appropriate probe as shown below, in **position 4** of the end effector.
2. Press the "Top of Tube" button and the Prep 96 will move to the desired location.
3. Using the X, Y and Z arrow keys in the software, move the Prep 96 end effector so that the probe in position 4 is located at the top of the cleaning station position 4.
4. When at the desired location, press "Next". The Prep 96 will save calibration data.

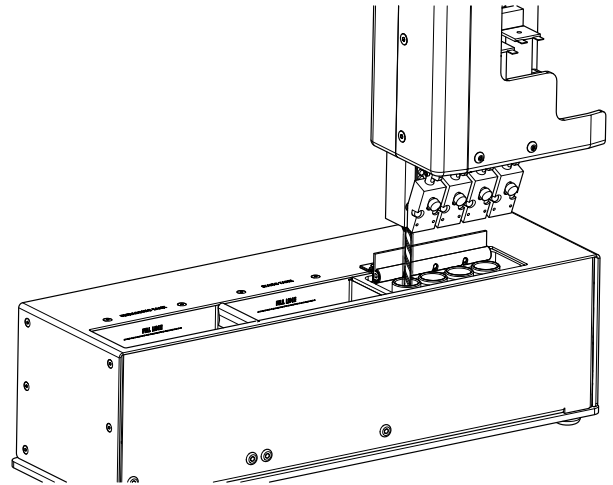
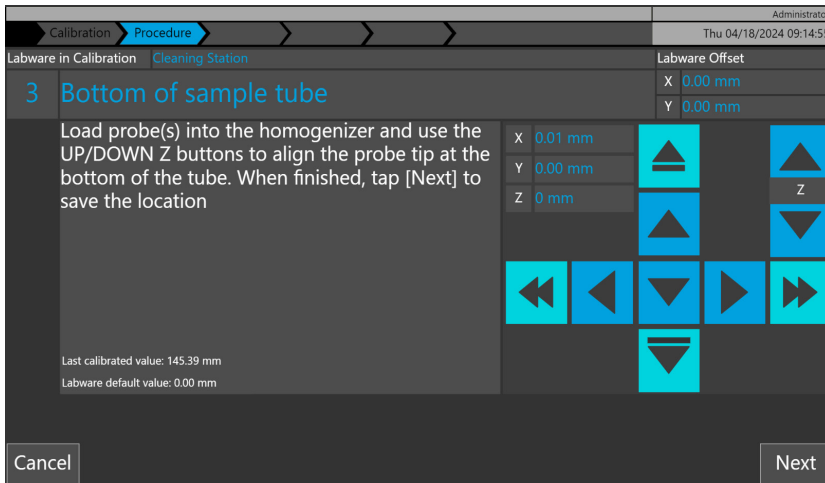


## Cleaning Station- Bottom of Tube

This calibrates the bottom of the tube position in the sample rack, which is used during homogenization. Items needed for calibration: Probes and installed cleaning station.

Step to calibrate:

1. Place the appropriate probe as shown below, in **position 4** of the end effector.
2. Press the "Bottom of Tube" button and the Prep 96 will move to the desired location.
3. Using the X, Y and Z arrow keys in the software, move the Prep 96 end effector so that the probe in position 4 is located at the bottom of the cleaning station position 4, without bottoming out.
4. When at the desired location, press "Next". The Prep 96 will save calibration data.



5. Ensure each calibration action for the selected labware is completed and saved, until each action is complete.
6. You are now ready to use the cleaning station in deck layouts and methods.



## Section 6: Method Substep Parameters for Cleaning Station

Substep	Parameter	Description	Default	Min	Max
<b>Flush**</b>	Motor RPM	Speed of probe during the cleaning step	12,000	0	28,000
	Cleaning Duration (sec)	Time in seconds of the cleaning step	10	0	7,200
	Probe Wash Depth	Height of the homogenization probe from the bottom of cleaning station	30	0	50
	Up / Down Distance (Z) (mm)	Up and down distance of the probe during cleaning step	15	0	50
	Up / Down Velocity (Z) (mm/s)	Up and down speed of the probe during cleaning step	20	0	50
	Delay for Each Movement (ms)	Pause time between each of the above movements	100	0	200
	Pre-flow Time (sec)	Time in seconds that the cleaning station will flush lines and bath before probe cleaning step	1	0	10
	Post-flow Time (sec)	Time in seconds that the cleaning station will flush lines and bath after probe cleaning step	1	0	10
	Touchoff - Distance from Top of Tube X (mm)	Distance to the side of cleaning station during droplet removal (touch-off) post cleaning step	0	0	25
	Touchoff - Distance from Top of Tube Z (mm)	Distance from top of cleaning station during droplet removal (touch-off) post cleaning step	3	0	25
	Touchoff - Motor RPM	Speed of probe during droplet removal (touch-off) post cleaning step	15,000	0	28,000
	Touchoff Time	Time for droplet removal (touch-off) post cleaning step	2	0	1,000
<b>Ultrasonic**</b>	Motor RPM	Speed of probe during the cleaning step	12,000	0	28,000
	Cleaning Duration (sec)	Time in seconds of the cleaning step	10	0	7,200
	Probe Wash Depth	Height of the homogenization probe from the bottom of cleaning station	30	0	50
	Up / Down Distance (Z) (mm)	Up and down distance of the probe during cleaning step	15	0	50
	Up / Down Velocity (Z) (mm/s)	Up and down speed of the probe during cleaning step	20	0	50
	Delay for Each Movement (ms)	Pause time between each of the above movements	100	0	200

Substep	Parameter	Description	Default	Min	Max
<b>Ultrasonic**</b>	Pre-flow Time (sec)	Time in seconds that the cleaning station will flush lines and bath before probe cleaning step	1	0	10
	Post-flow Time (sec)	Time in seconds that the cleaning station will flush lines and bath after probe cleaning step	1	0	10
<b>Static**</b>	Motor RPM	Speed of probe during the cleaning step	12,000	0	28,000
	Cleaning Duration (sec)	Time in seconds of the cleaning step	10	0	7,200
	Probe Wash Depth	Height of the homogenization probe from the bottom of cleaning station	30	0	50
	Up / Down Distance (Z) (mm)	Up and down distance of the probe during cleaning step	15	0	50
	Up / Down Velocity (Z) (mm/s)	Up and down speed of the probe during cleaning step	20	0	50
	Delay for Each Movement (ms)	Pause time between each of the above movements	100	0	200
	Pre-flow Time (sec)	Time in seconds that the cleaning station will flush lines and bath before probe cleaning step	1	0	10
	Post-flow Time (sec)	Time in seconds that the cleaning station will flush lines and bath after probe cleaning step	1	0	10

## Section 7: Creating and Editing Methods (Admin Group User Only)

When a cleaning station has been installed and is toggled on in settings, additional substeps appear as part of the default new method. **“Flush”, “Ultrasonic”** and **“Static”** are available to facilitate cleaning of stainless steel and hybrid probes. The sequence of substeps can be rearranged using the up and down arrows.

The screenshot shows the 'Edit' method configuration interface. The 'Method Name' is 'New Wash Method'. The substeps list on the left includes: 1 Homogenize samples, 2 Touch off probes, 3 Wash probes in flush tank (highlighted), 4 Wash probes in ultrasonic tank, and 5 Wash probes in static tank. The right panel is titled 'Flush Tank Cleaning' and contains the following parameters:

Name:	Wash probes in flush tank	
Generate Step Name		
Motor RPM		12000 rpm
Cleaning Duration		10 s
Probe Wash Depth	Z	30.0 mm
Up / Down Distance	Z	15.0 mm
Up / Down Velocity	Z	20 mm/s
Delay for Each Movement (ms)		100 ms
Pre-flow Time (s)		1 s
Post-flow Time (s)		1 s
Touchoff		
Distance from Top of Tube	X	0.0 mm
	Z	3.0 mm
Motor RPM		15000 rpm
Touchoff Time		2 s
Deck Layout: 50 mL Test		
Probe: Please choose a probe		

Buttons at the bottom include: Homogenize, Repeat, Ultrasonic, Touchoff, Wait, Static, Flush, Exit, Save & Exit, and Defaults.

The screenshot shows the 'Edit' method configuration interface. The 'Method Name' is 'New Wash Method'. The substeps list on the left includes: 1 Homogenize samples, 2 Touch off probes, 3 Wash probes in flush tank, 4 Wash probes in ultrasonic tank (highlighted), and 5 Wash probes in static tank. The right panel is titled 'Ultrasonic Cleaning' and contains the following parameters:

Name:	Wash probes in ultrasonic tank	
Generate Step Name		
Motor RPM		12000 rpm
Cleaning Duration		10 s
Probe Wash Depth	Z	30.0 mm
Up / Down Distance	Z	15.0 mm
Up / Down Velocity	Z	20 mm/s
Delay for Each Movement (ms)		100 ms
Pre-flow Time (s)		1 s
Post-flow Time (s)		1 s
Deck Layout: 50 mL Test		
Probe: Please choose a probe		

Buttons at the bottom include: Homogenize, Repeat, Ultrasonic, Touchoff, Wait, Static, Flush, Exit, Save & Exit, and Defaults.

The screenshot shows the 'Edit' method configuration interface. The 'Method Name' is 'New Wash Method'. The substeps list on the left includes: 1 Homogenize samples, 2 Touch off probes, 3 Wash probes in flush tank, 4 Wash probes in ultrasonic tank, and 5 Wash probes in static tank (highlighted). The right panel is titled 'Static Tank Cleaning' and contains the following parameters:

Name:	Wash probes in static tank	
Generate Step Name		
Motor RPM		12000 rpm
Cleaning Duration		10 s
Probe Wash Depth	Z	30.0 mm
Up / Down Distance	Z	15.0 mm
Up / Down Velocity	Z	20 mm/s
Delay for Each Movement (ms)		100 ms
Pre-flow Time (s)		1 s
Post-flow Time (s)		1 s
Deck Layout: 50 mL Test		
Probe: Please choose a probe		

Buttons at the bottom include: Homogenize, Repeat, Ultrasonic, Touchoff, Wait, Static, Flush, Exit, Save & Exit, and Defaults.

## Section 8: Troubleshooting

### Overflow not functioning

- Check communications on the Prep 96
- Check power connections
- Check Data cable
- Check control module LEDs

### Ultrasonic not functioning

- Check communications on the Prep 96
- Check power connections
- Check BNC cable
- Check control module LEDs

### No LEDs on control module

- Check communications on the Prep 96
- Check power connections
- Check BNC cable
- Check control module LEDs

## Section 9: Cleaning and Maintenance

Ensure that all 3 drain lines are appropriately routed to a water container or sink/.drain Open the valves for Ultrasonic and Static tanks draining them into a waste container.

Flush and wipe down all 3 cleaning tanks with any stainless steel, polypropylene , polyurethane safe solvents.

In manual operation use the “Flush Tank” button to flush clean water through the Flush tank flutes after cleaning.



revvity

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