



# ULTRA OPTICS

## Standard Operating Procedure

MR3 & OTB  
Coating Machine



# ULTRA OPTICS

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# Start Up Procedure



## AIR:

Slowly press the orange rocker on the air valve to the down position to supply air to the machine.

The valve is located on the left side of the machine.

Check air pressure regulators inside the front door.

Left **80 PSI** | Right **60 PSI**



## POWER:

Press the red rocker switch, just to the left of the touchscreen, to the **ON** position.



## WATER:

Empty the water buckets and wipe out with 90% IPA or bleach, weekly to kill any algae and bacteria.

Fill the clean water bucket with deionized water that is 1MΩ or better.



After refilling the buckets, prime the wash pump. **Refer to page 23**



# Start Up Procedure



Check the coating reservoir to make sure the coating level is high enough.

The coating level should be at least  $\frac{1}{2}$  full.



Add more coating if needed by pouring it directly into the coating bowl.



Inspect the coating filter to ensure that there are no air bubbles. If so, release any air bubbles from the filter using the bleeder cap. **Refer to pages 19 & 22**

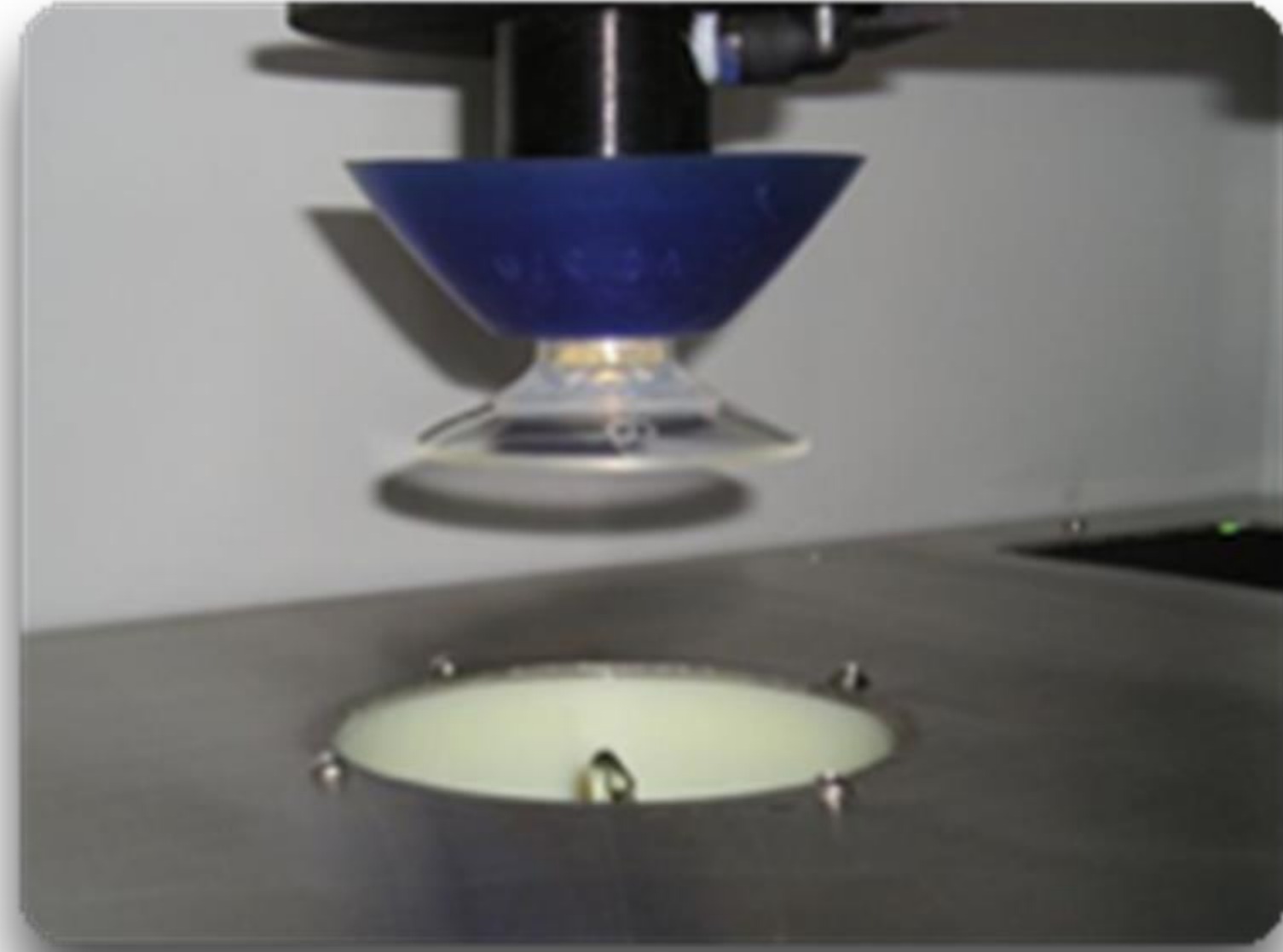
*\*\* When bleeding air from the filter, make sure to only open the cap a 1/4 of a turn and continue to hold on to the cap. This will prevent the bleeder cap from blowing off from the pressure of the coating pump. \*\**

**5**  
minutes

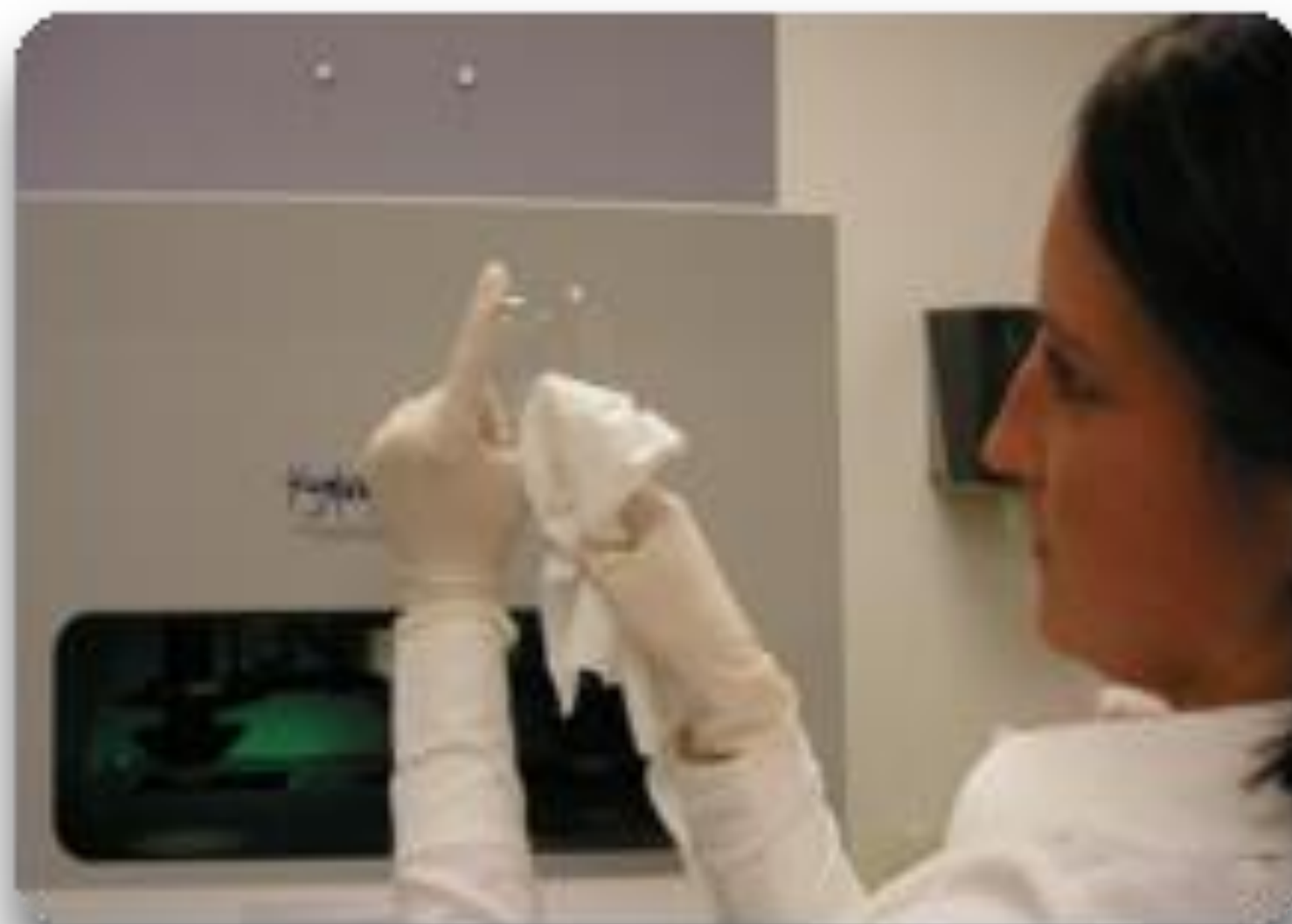
Prime the coating for 5 minutes.



# Start Up Procedure



Check the coating height to make sure it is level with the top of the coating bowl. [Refer to page 5](#)



Run one or more sample lenses to verify that the lens is dry before running live work. [Refer to page 6](#)



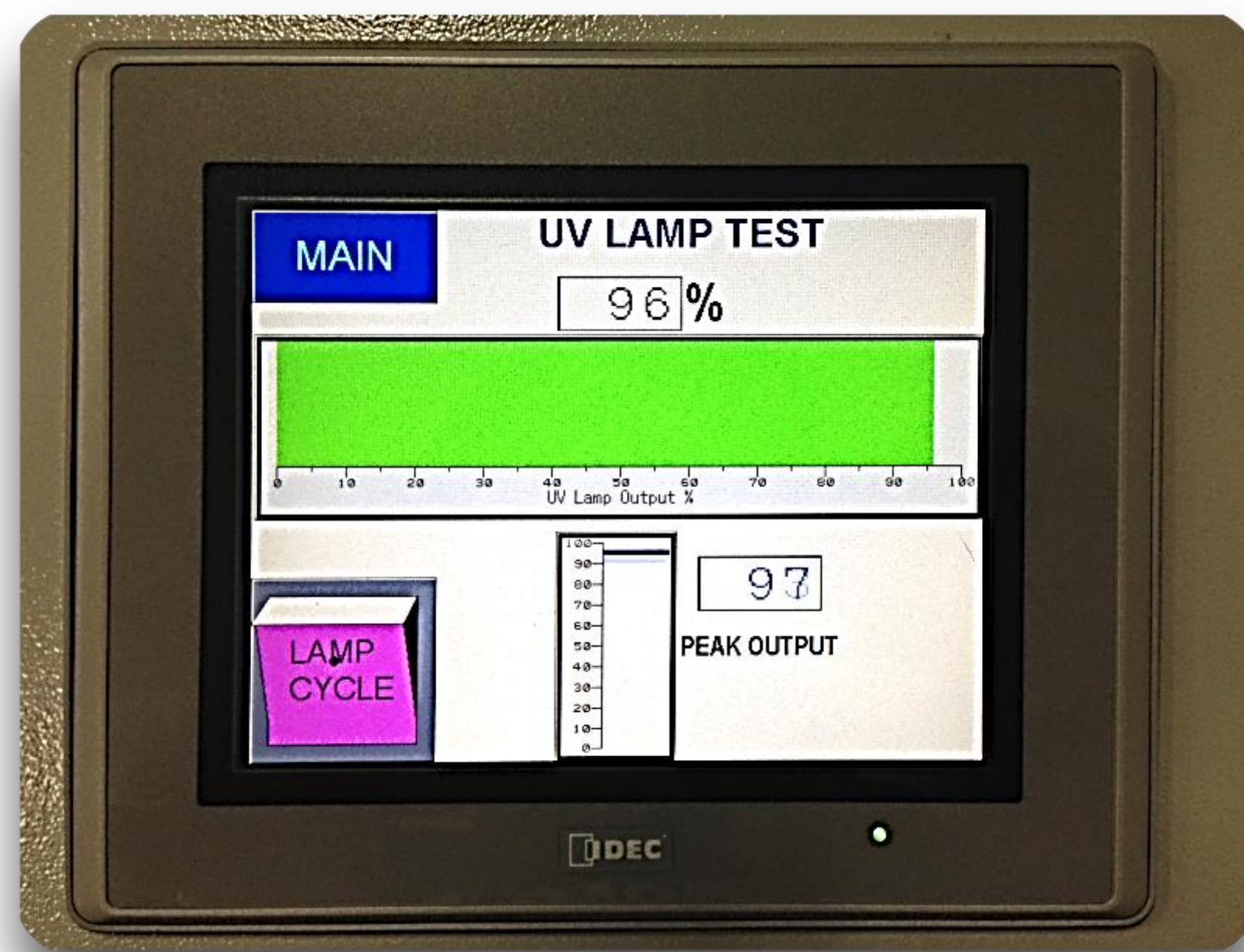
Using a Kimwipes™, hold it above the front opening and check to make sure the Kimwipes™ is blowing away from the opening at a 45° angle.



If it is not, use the adjustment knob located on the top of the HEPA filter blower unit.



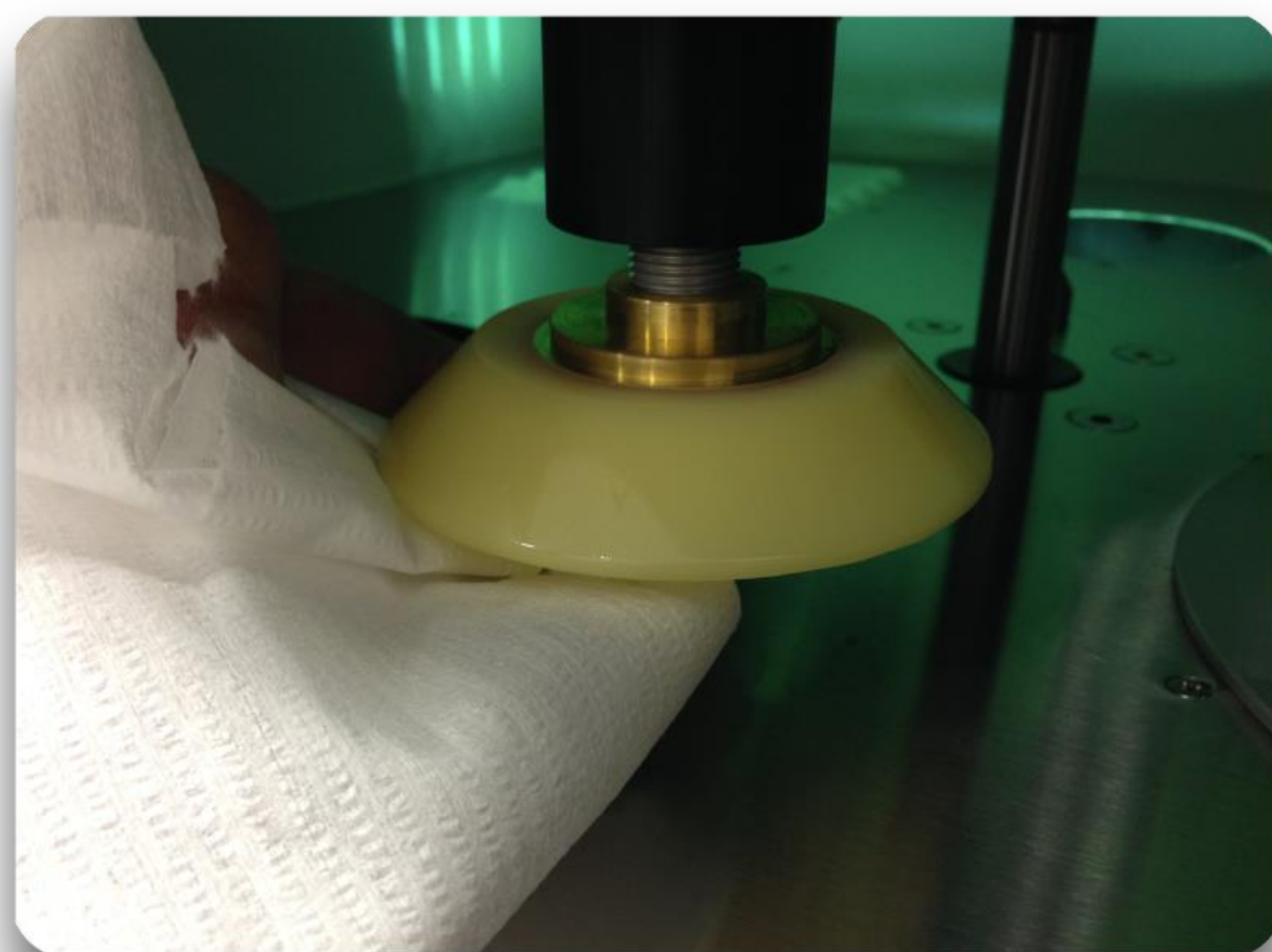
# OTB Start Up Procedure



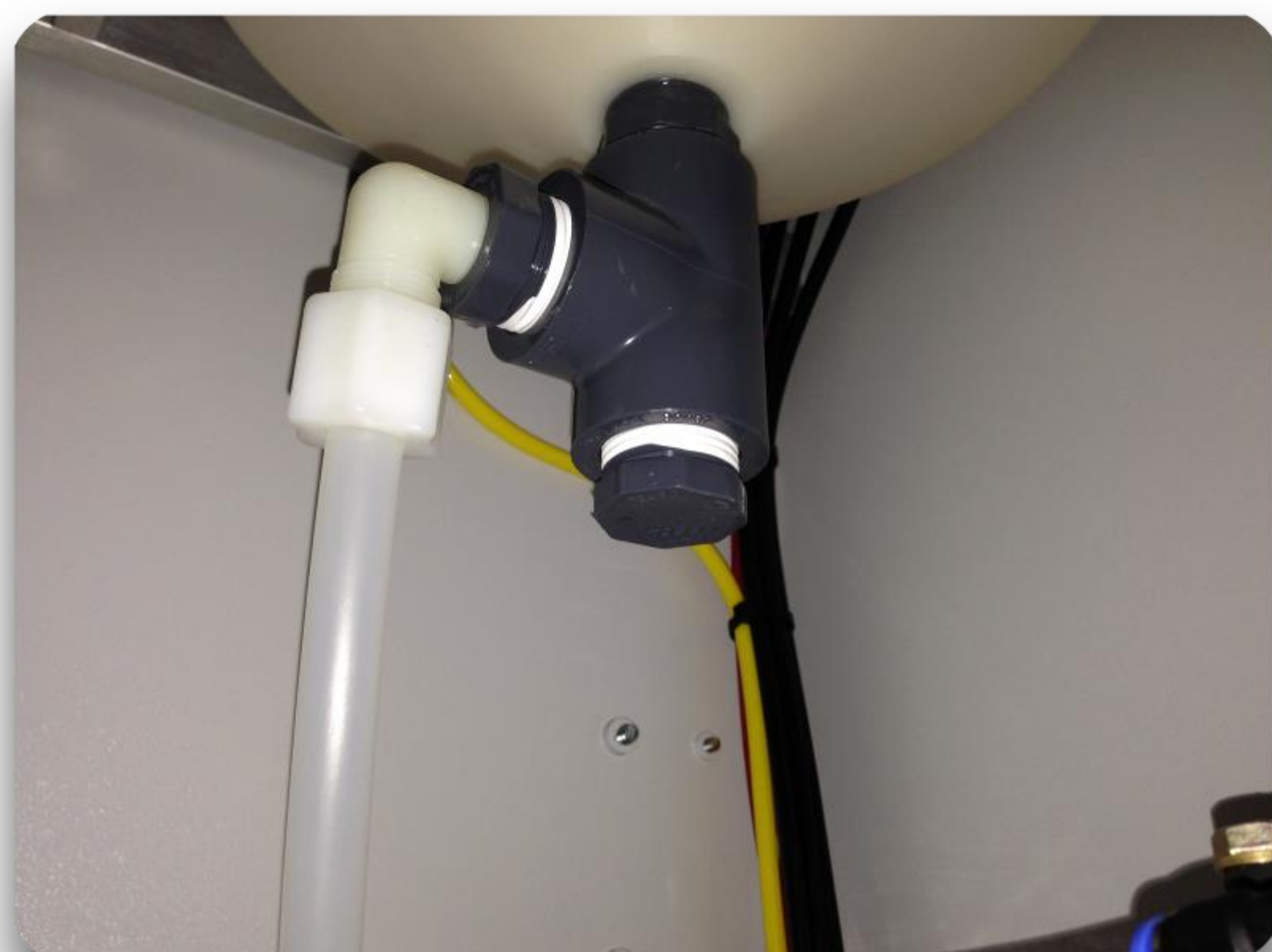
Press **SYSTEM DETAILS**

Press **UV LAMP TEST**

UV-Lamp Intensity should be greater than 70%, if less replace the UV-Lamp.



Wipe out the inside of the suction cup with a lint free cloth.



Empty the trap at the bottom of the wash bowl. Use teflon tape on the trap plug and retighten. Do not overtighten, it only needs to be hand tight.



Verify the water quality sensor is illuminated **green**, indicating the water quality is 1MΩ or better.



# Checking The Coating Height



Press **MACHINE SET-UP**.

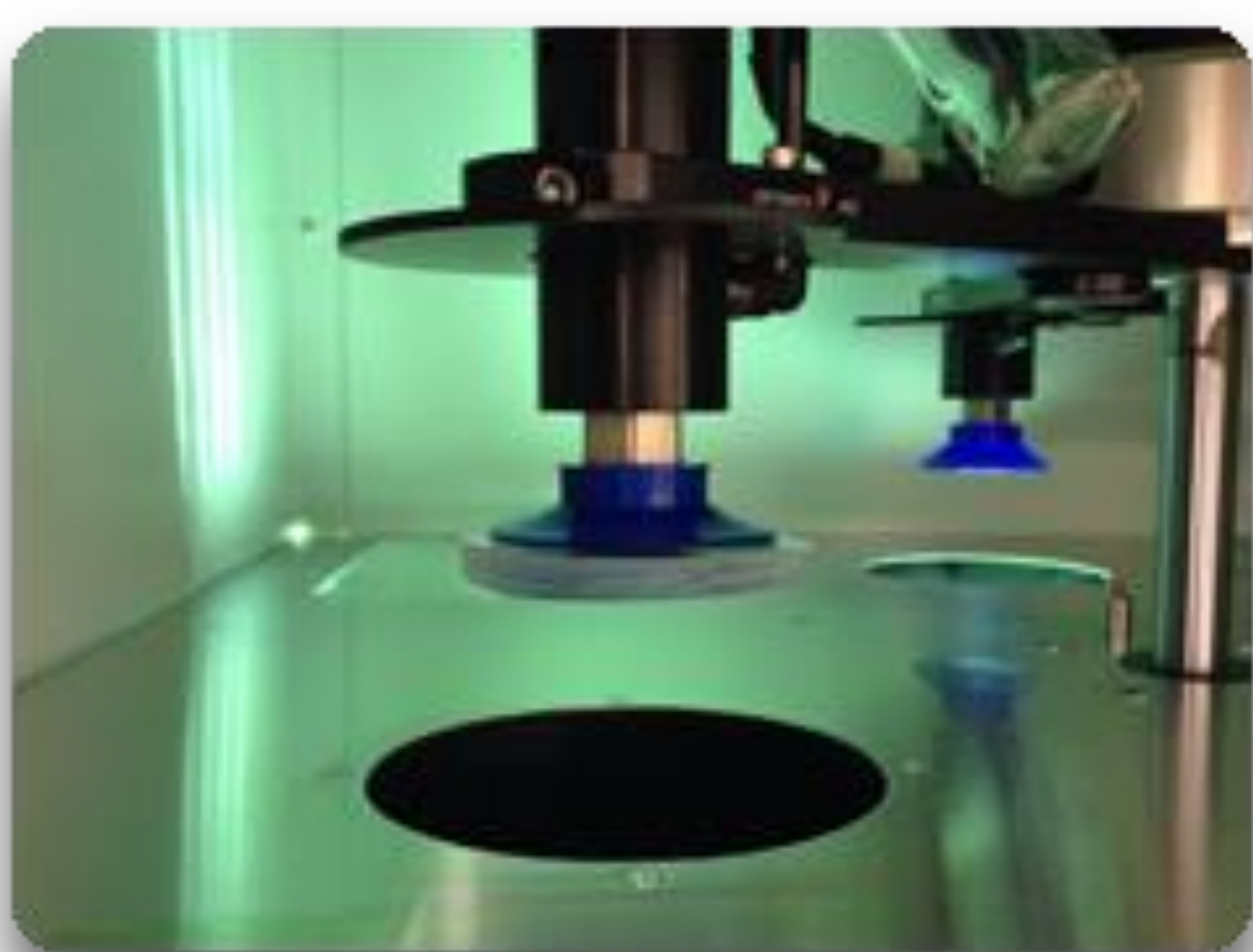
Press **COATING PRIME**.



Press **VACUUM**.

Chuck a lens on the suction cup located over the coating bowl.

Press **COATING ON/OFF**.



Adjust the coating height to the top of the coating bowl using the speed potentiometer labeled “Coating Pump”.

***Clockwise*** to increase.

***Counterclockwise*** to decrease.





# Dry Lens Test



Press **PRODUCTION CYCLE**.

Chuck a lens on the suction cup located over the wash bowl.

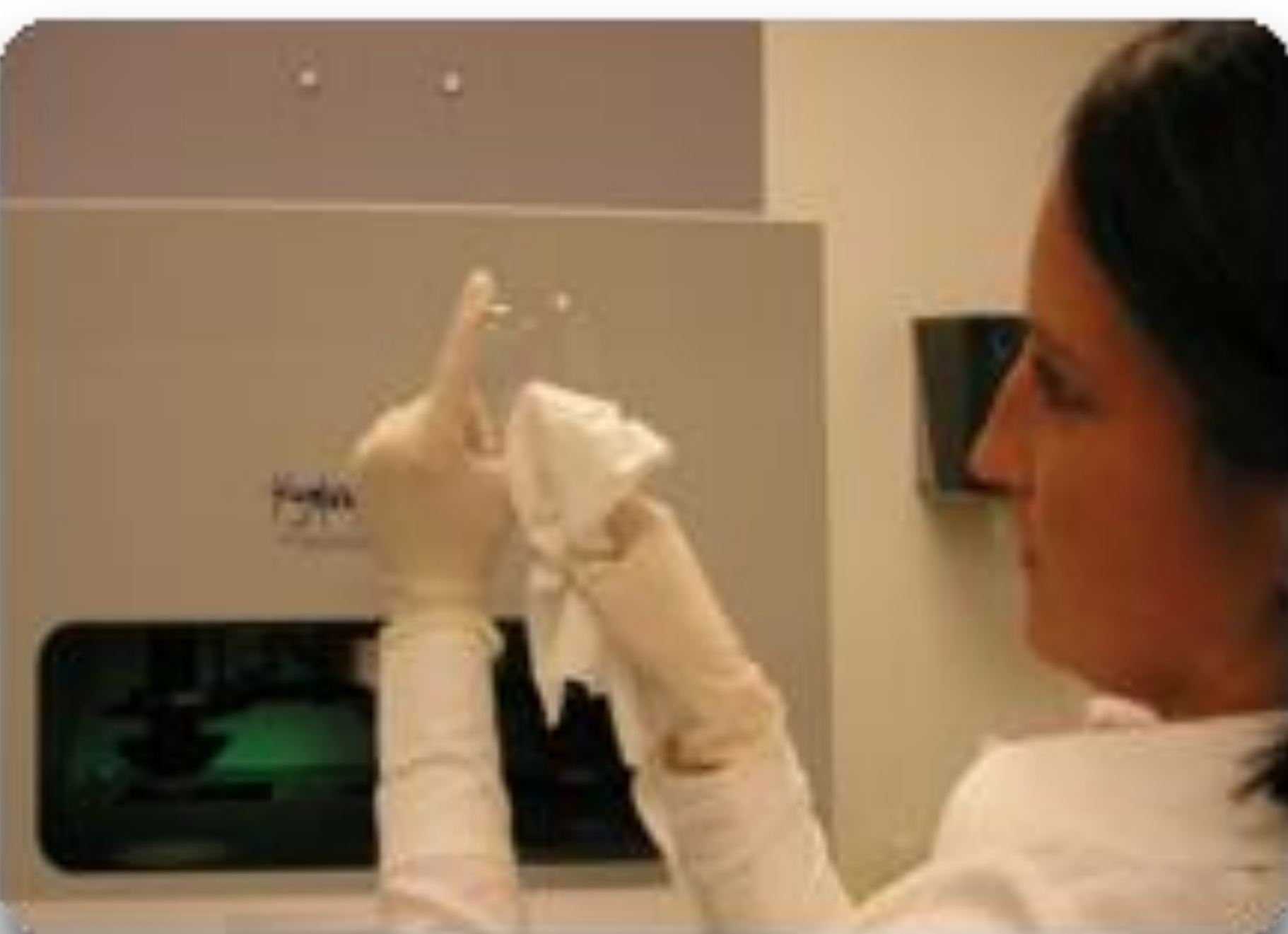
When the wash pump starts to beat, count how many times it beats before the air jet turns on.



This needs to be 21 beats for the M/R III and 26 beats for the OTB.

Allow the lens to complete the drying cycle.

As soon as the spindle starts to come up out of the wash bowl, press **CYCLE STOP**.



Remove the lens using the foot pedal.

Wipe away any moisture from the front side of the lens and inspect the backside to ensure it is dry.



# De-blocking & Lens Prep

Immediately after polishing, rinse the lens and the block thoroughly with hot water before placing it back into the tray.

**The amount of time should not exceed 15 minutes from the time when the lens leaves the polisher to when the lens is de-blocked.**

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The person de-blocking and removing the tape from the lenses should not be the same person washing the lenses.

If the same person has to do both jobs, then they must always wash their hands and change to a new pair of gloves before washing lenses.

This is to avoid carrying over any adhesive from the de-blocking and tape removal process.



# Lens Wash Procedure



Use hot water and dish soap. Make sure the dish soap is non-lemon. Ultra Optics recommends original formula Dawn™ dish soap.

Change the water when the temperature falls below 85° F.

Wash the lens with a sponge or alpha type cloth. Make sure to replace with a fresh cloth every 2 hours.



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**The time between washing the lens and coating the lens should be no more than 20 minutes.**

After cleaning, the longer the lenses sit there is a higher risk of defects due to residual polish left on the lens.



# Procedure For Coating Lenses



Place trays in order.



Press **PRODUCTION CYCLE**.



Press **ON/OFF** on touch screen so that the **green** bar is towards "ON"



# Pre-Coating Lens Prep

Put on a clean pair of approved Nitrile gloves.



Hold the lens backside up.

Keep fingers only on the edges of the lens.

Squirt a quarter size amount of 90% IPA or UOC Lens Cleaner on the backside of the lens.



Using a finger with light pressure, clean lens using a circular motion starting from the center and moving towards the outside edge.



Hold the lens in a vertical position.

Rinse the lens off into a waste container.

This will ensure the lens is as clean as possible.



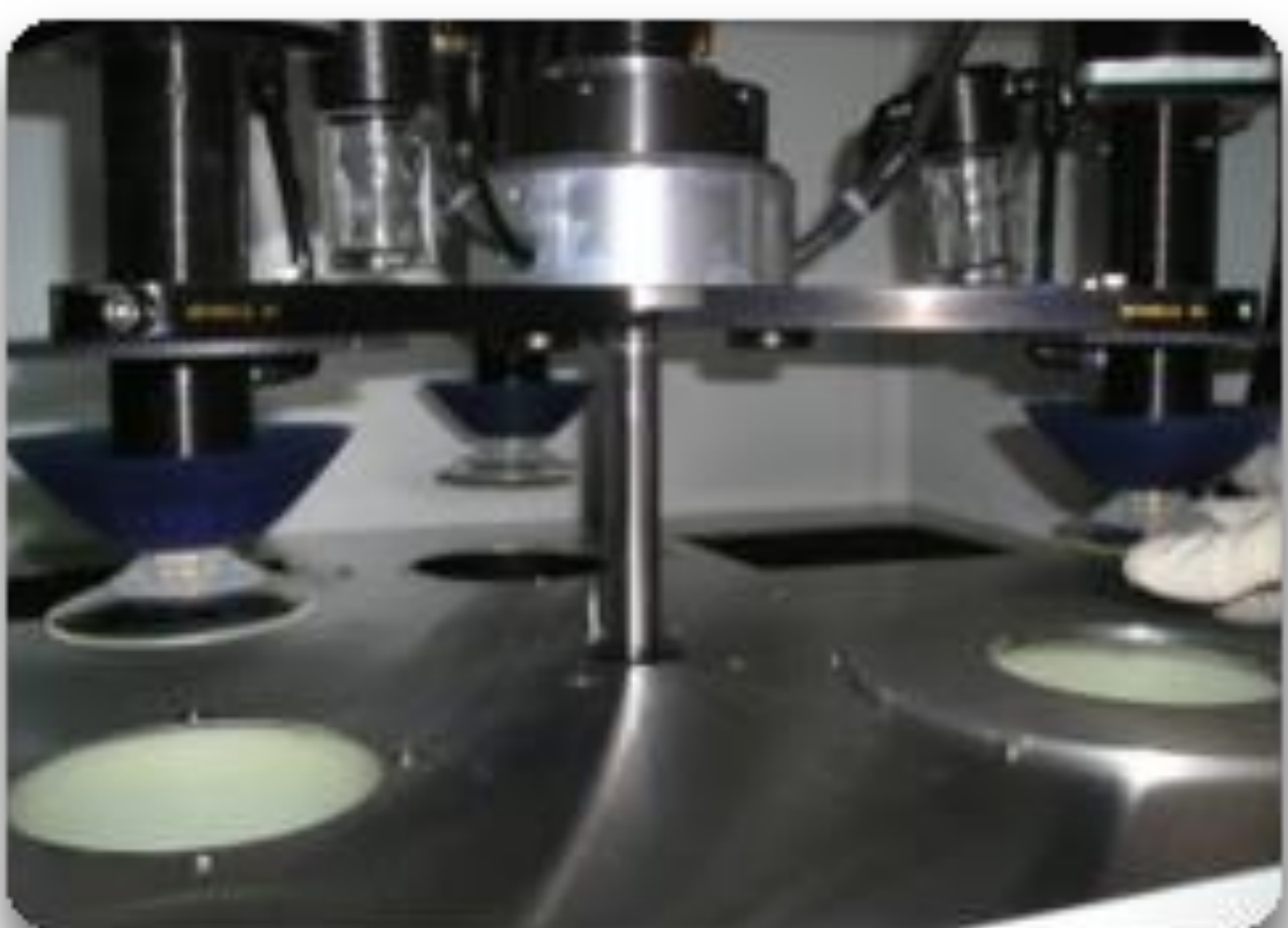
# Procedure For Coating Lenses



Chuck the lens onto the suction cup over the wash bowl.

Check that the lens is centered before removing your hand from window.

If the lens is not centered on the suction cup, press the foot pedal to release and rechuck.



Continue this procedure until there is a lens ready to be removed.

Press the foot pedal and remove the coated lens above the wash bowl.

Chuck the next lens onto the suction cup over the washbowl.



# Procedure For Coating Lenses

When there are no more lenses to coat, remove the lens above the wash bowl.



Hold **LAST CYCLE** until the button turns green.

This will finish the remaining lenses in the machine.

**\*\*DO NOT attempt to load any lenses once LAST CYCLE is activated\*\***



Make sure that all coated lenses have been removed from the spindles.

Press **ON/OFF** on the touchscreen so that the **RED** bar is towards "OFF" to deactivate spindle vacuum.



# Lens Care After Coating

45  
minutes

The lenses must sit for a minimum of 45 minutes before edging or tinting.

The reason for this is to stabilize the lens material after the coating process.



Keep lenses away from constant water contact and allow airflow underneath to prevent fogging.

Cleaning the lens is okay, but avoid contact with wet areas like dirty trays.



Before tinting, Ultra Optics recommends cleaning the lens using the Lens Wash Procedure.

**Refer to page 8**



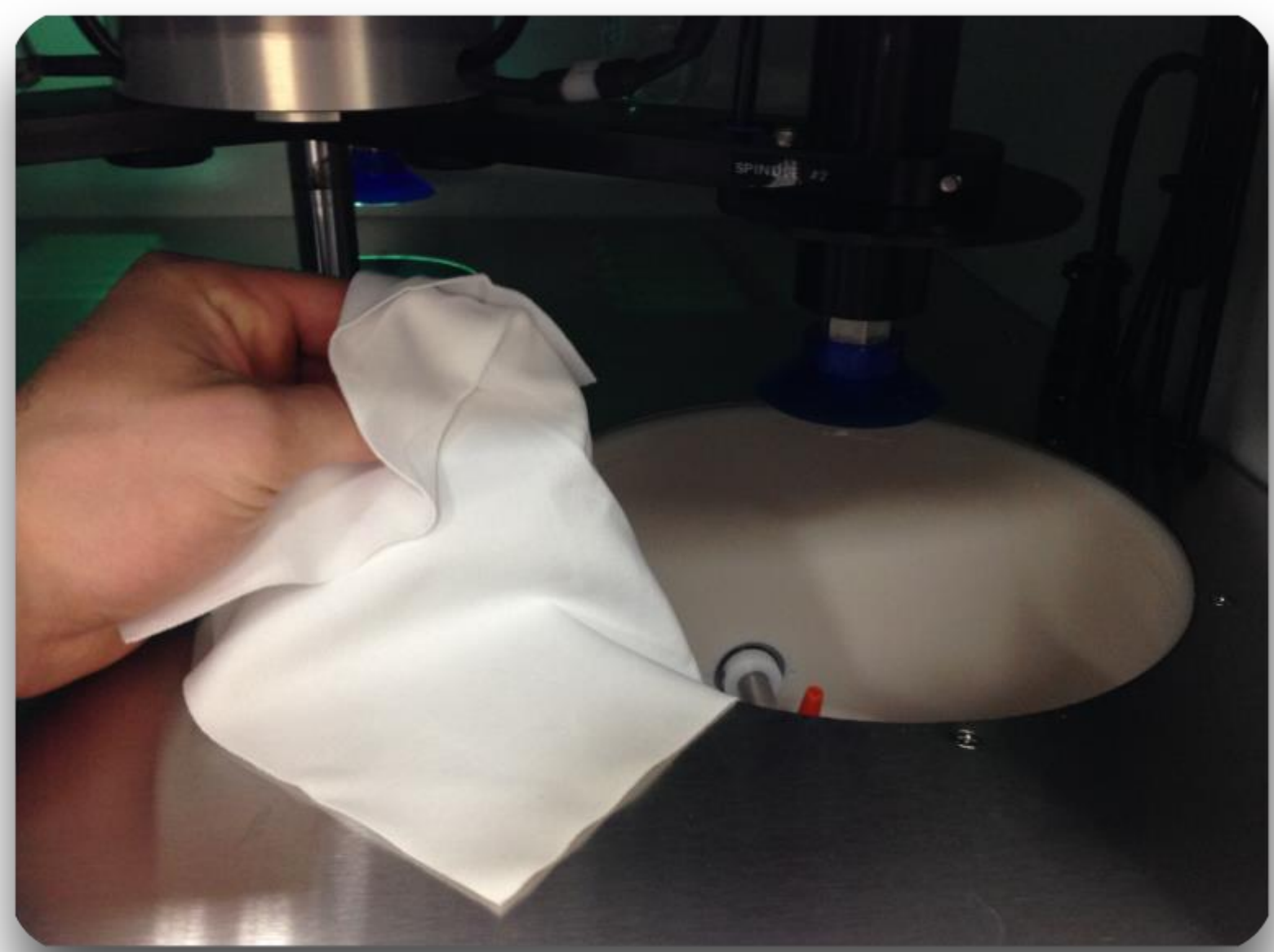
# Preventive Maintenance

## Daily

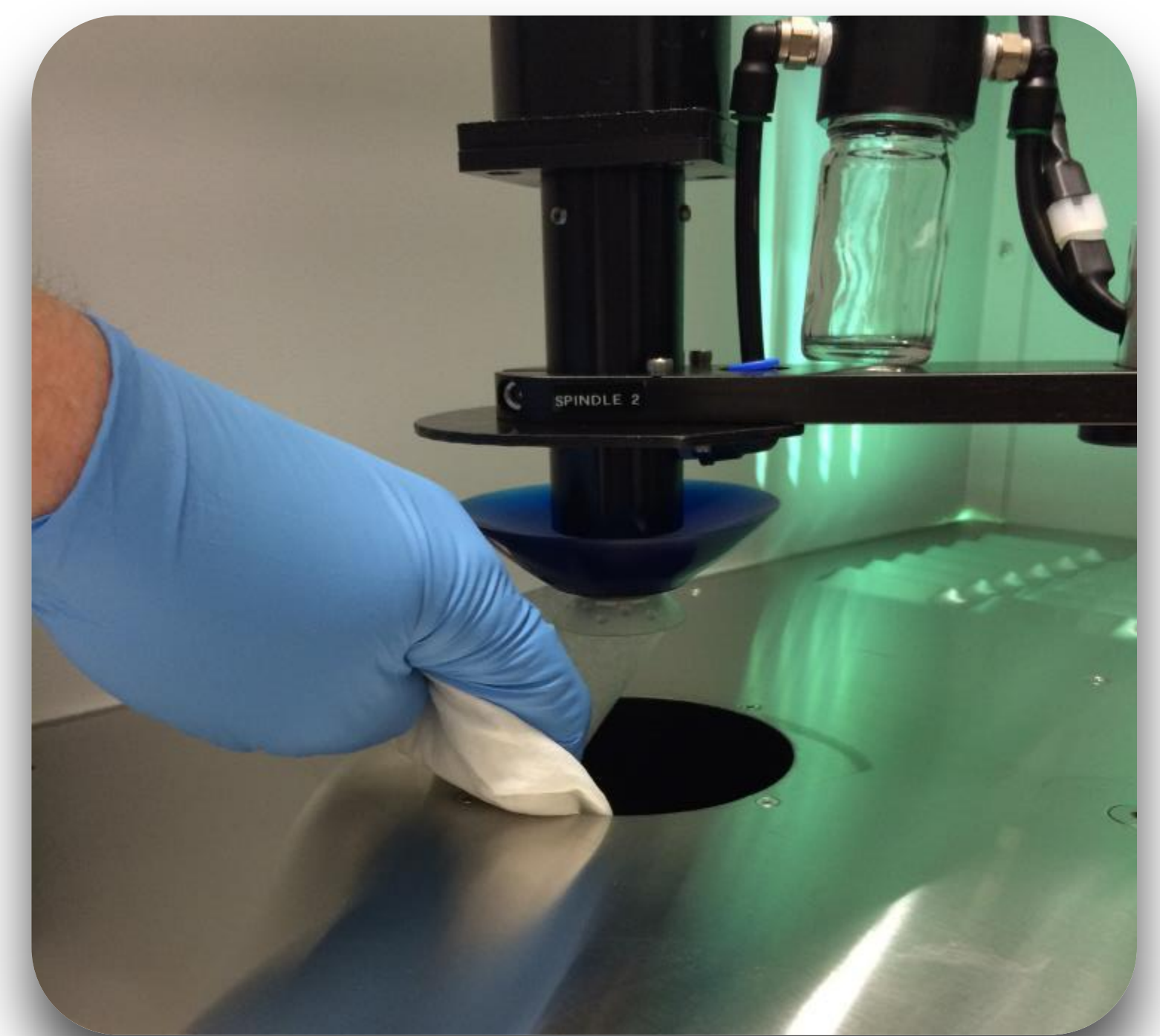
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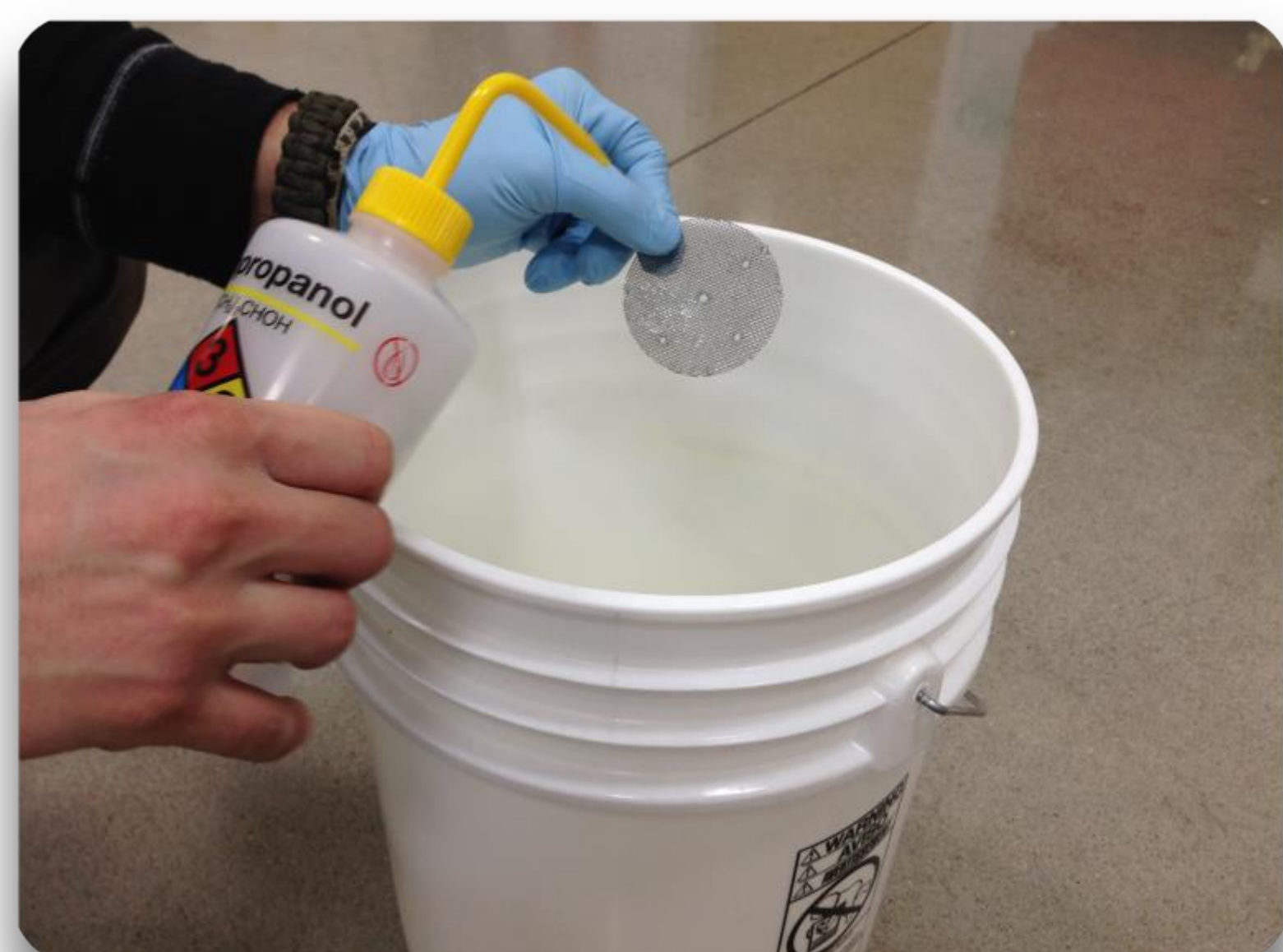
Check air pressure regulators inside the front door. Left 80 PSI | Right 60 PSI



Wipe out wash bowl and deck area with a clean damp lint free alpha type cloth.



Wipe out inside of coating bowl with a clean lint free alpha type cloth slightly dampened with Acetone or 90% IPA.



Rinse wash bowl and coating bowl screens with Acetone or 90% IPA, replace as needed.



# Preventive Maintenance

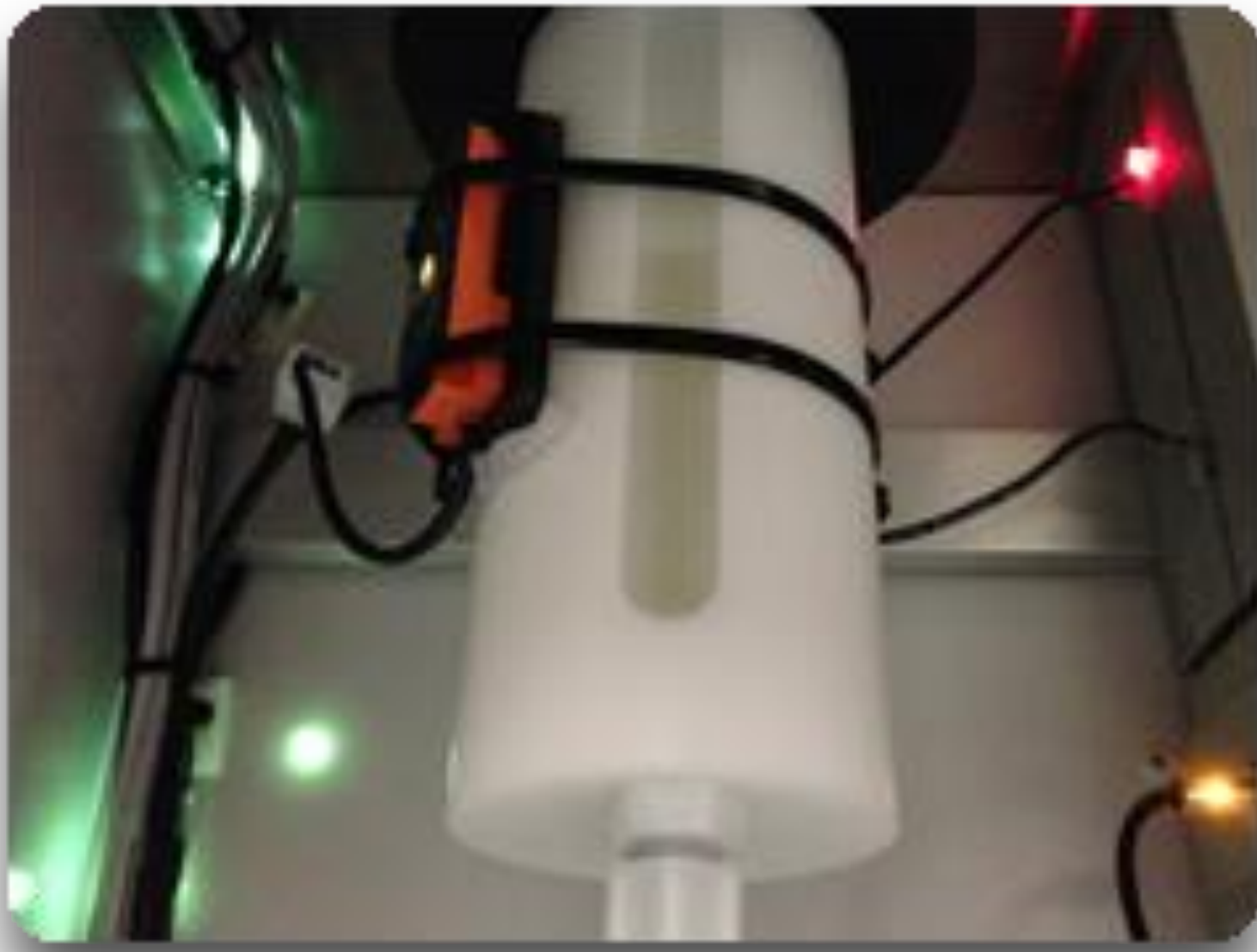
## Daily

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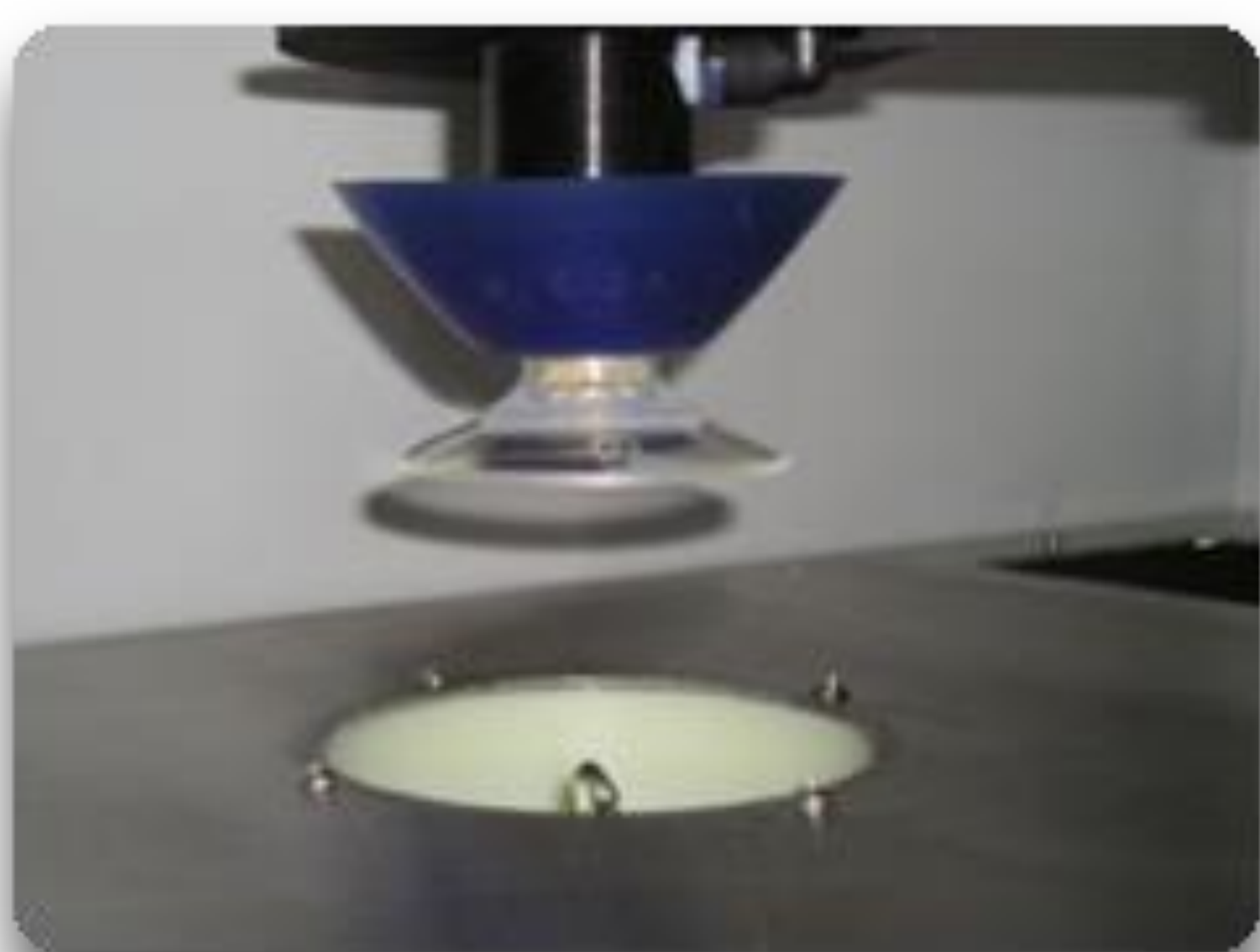
Empty the water buckets and wipe out with 90% IPA or bleach, weekly to kill any algae and bacteria.

Fill the clean water bucket with deionized water that is 1MΩ or better.



Check the coating reservoir to make sure the coating level is high enough.

The coating level should be at least ½ full.



Check that the coating height is up to the top of the coating bowl.



Check UV-Lamp hours. Replace at 1000 hours.

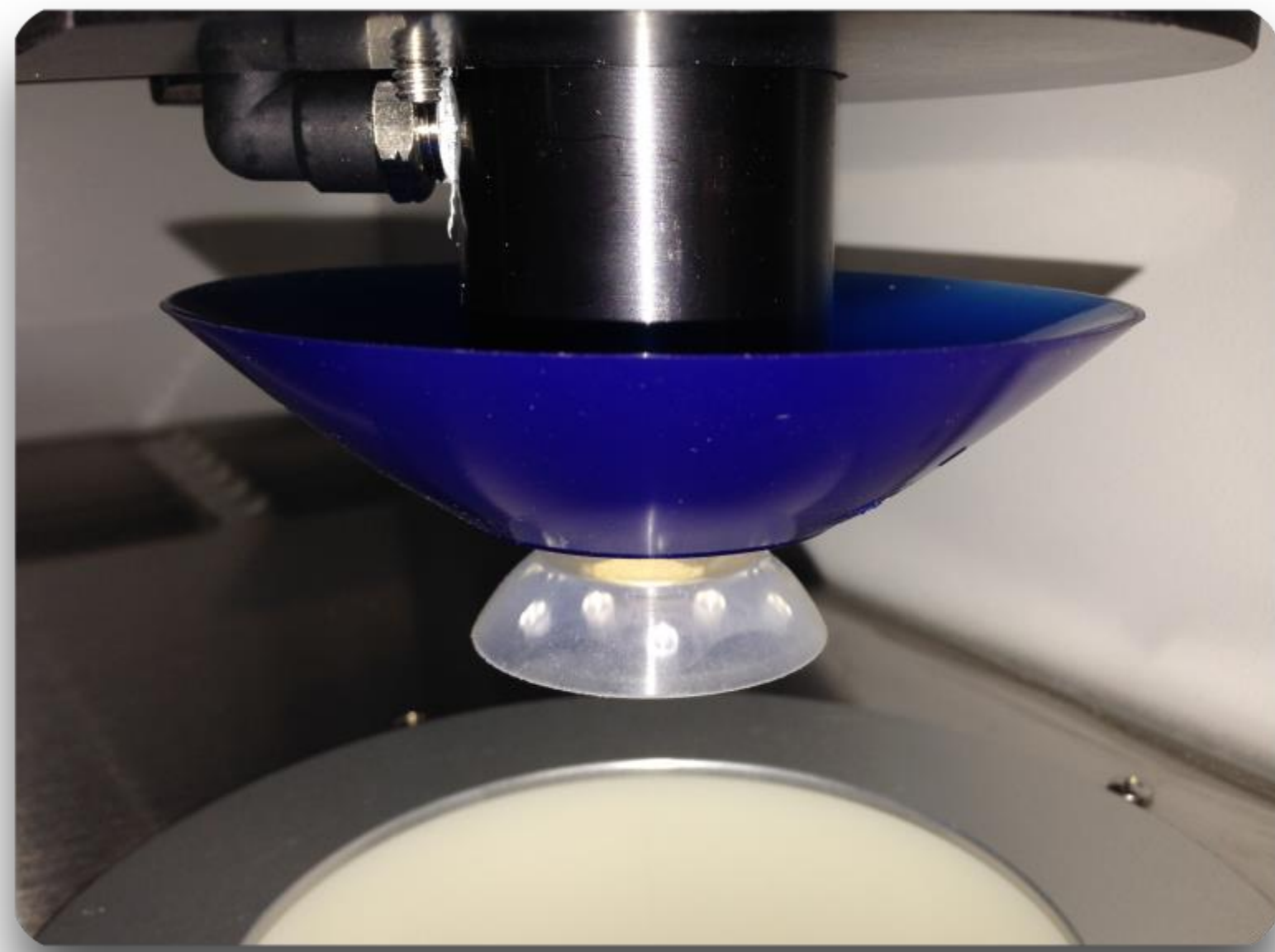
*\*\*Ultra Optics guarantees the UV Lamp up to 800 hours and pro rates any returns under 800.\*\**



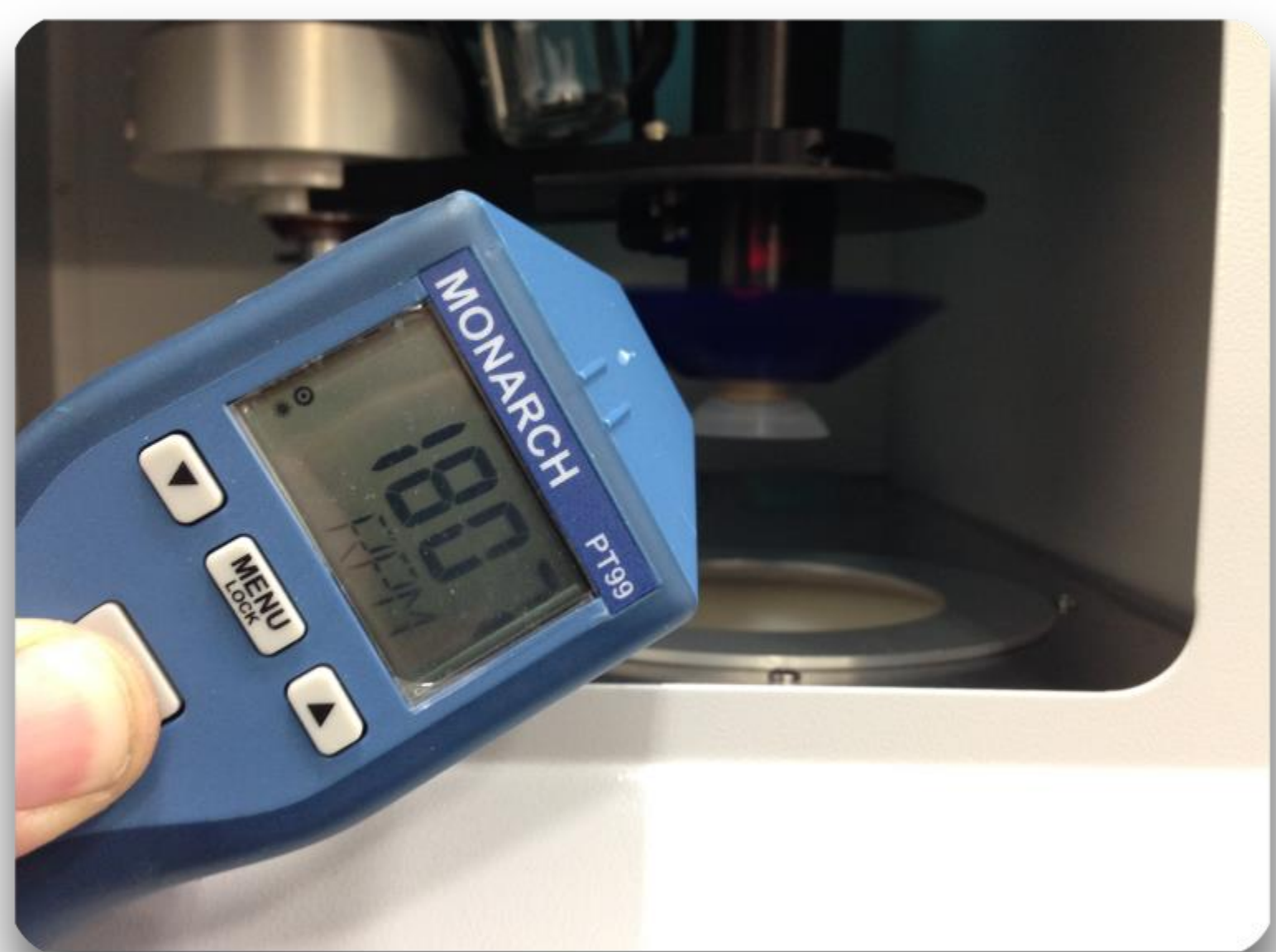
# Preventive Maintenance

## Weekly

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Visually inspect the suction cups and water deflectors for any deterioration. Replace as needed.



Check the spindle speeds at each spindle.

Coat speed: 400 RPM (+ or - 25)  
Wash speed: 1800 RPM (+ or - 50)  
Coat spin-off speed: 2000 RPM (+ or - 50)  
**1600 RPM (AST-1)**



Check that the lamp cycle time is at 24 seconds. If it is not, adjust by using the speed potentiometer labeled **LAMP**.

***Clockwise** to decrease*  
***Counterclockwise** to increase*



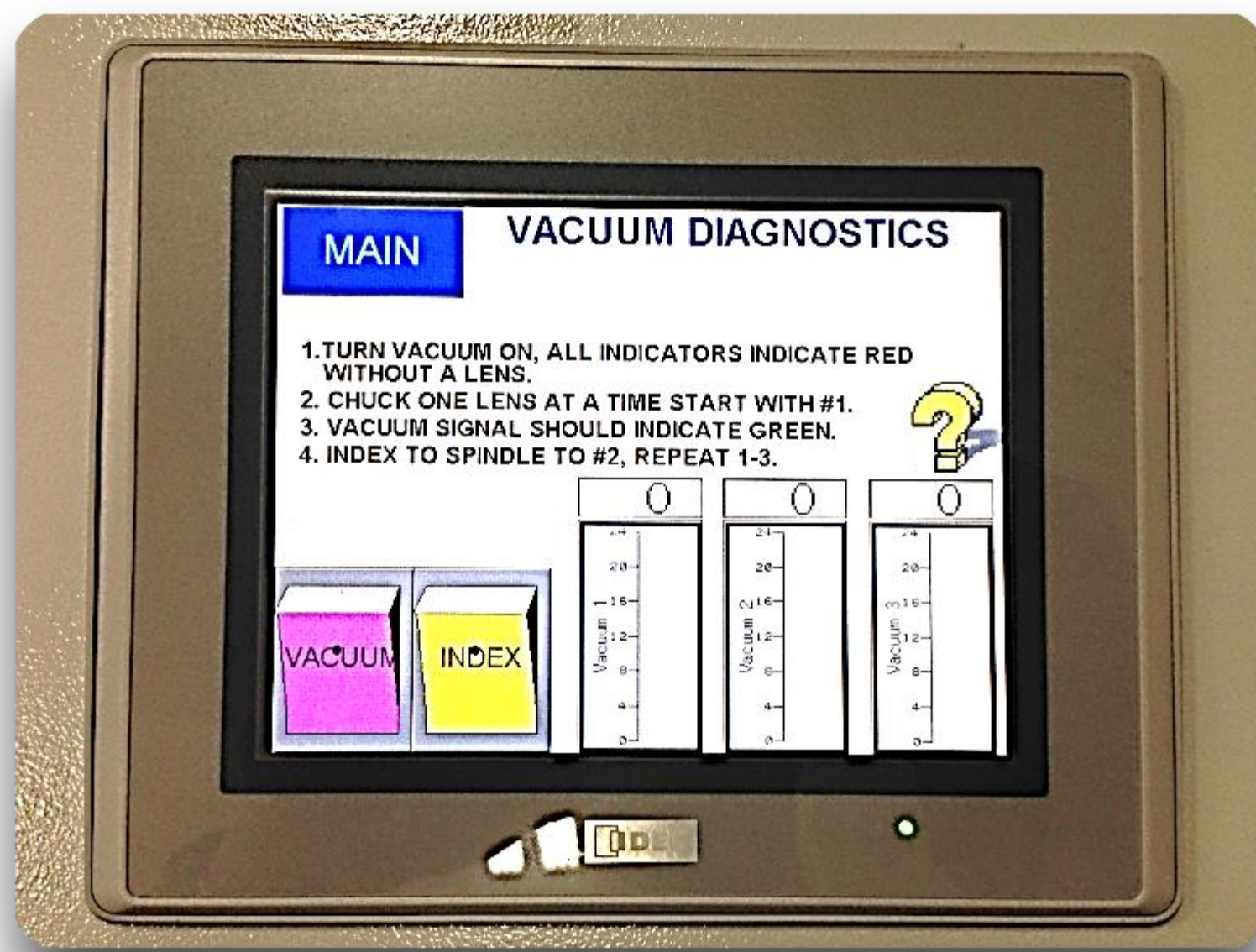
Replace the Hepa Pre-Filter



# Preventive Maintenance

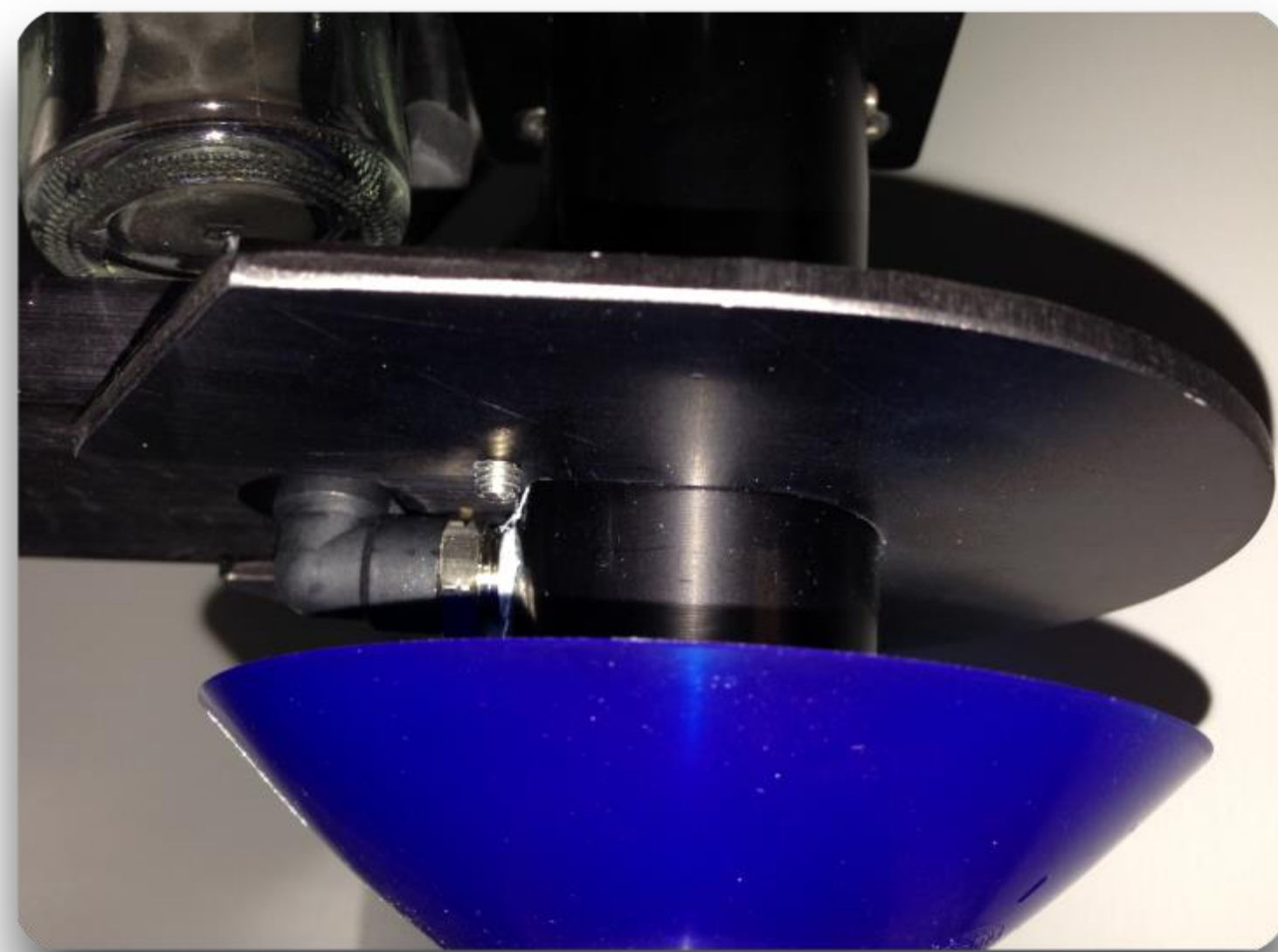
## Weekly

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Check vacuum pressure using the **VACUUM DIAGNOSTIC** screen or using the Convum Gauge.

*\*\*If a spindle reads below 13 with a lens chucked, Contact UOC Tech Support for assistance\*\**



Inspect entire vacuum chuck assembly for any dry coating or debris. Clean as needed.



Turn main machine air off:  
Visually check the Air Dryer Filter Pack by unscrewing the filter from the canister and feel the inside of filter for moisture.

If any moisture is found replace all three filters.



# Preventive Maintenance

## Monthly & Annually

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Every 6-8 weeks, replace the UOC filters in the coating system and clean water bucket.

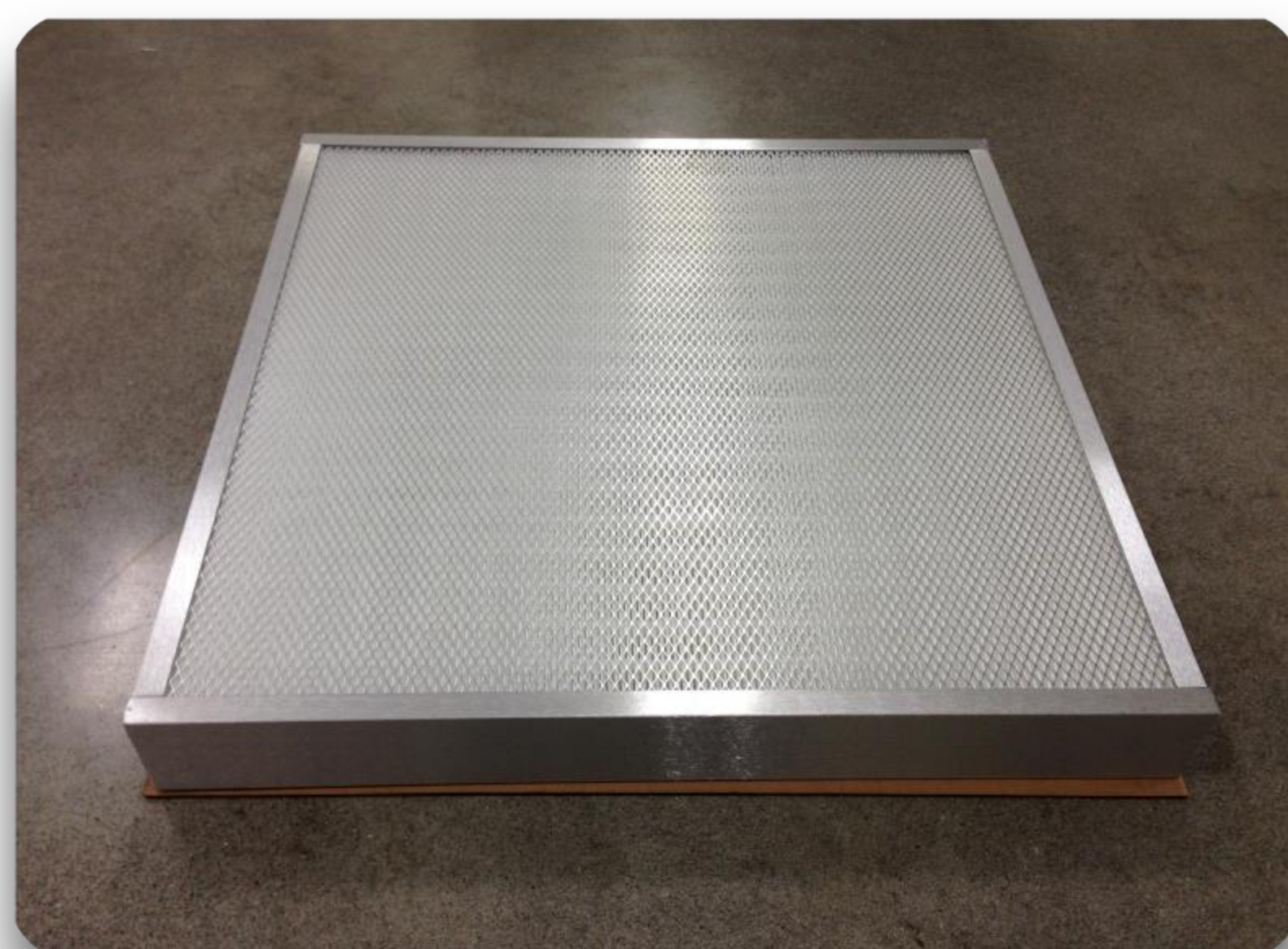


### **ELECTRICAL HAZARD**



**UNPLUG & DISCHARGE CAPACITORS BEFORE TESTING**  
Contact UOC tech support for proper procedures & tolerances

Every month, check the **16uf** and **4uf** Capacitors



### **Hepa Filter:**

Remove from the fan assembly and inspect the Hepa Filter. Replace as needed.

DO NOT exceed 2 years



# Flushing Coating System

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**Always wear approved Nitrile gloves when performing the coating flush.**

Press **MACHINE SET-UP**.

Press **COATING PRIME**.

Press **VACUUM** button.

Chuck a lens on the suction cup over the coating bowl.

Position clean container under the filter.

Disconnect the nut from the nylon elbow at the bottom of the coating filter.

Point nut and tubing into clean container.

Press **COATING ON/OFF** button.

The coating will flow out of the tubing into the container.

When reservoir is empty press **COATING ON/OFF** button to turn off coating pump.





# Flushing Coating System

## Continued

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With the container still positioned under the filter, loosen the top bleeder cap on the filter to drain the remaining coating out of the filter and into the container through the elbow on the bottom.

If the coating is contaminated, flush the system with Acetone.

With the tubing still disconnected from the bottom of the filter, pour Acetone into the coating bowl as you would with coating.

Follow the same procedure to drain Acetone, but drain into a separate container from the coating.

**\*\*DO NOT RUN ACETONE THROUGH THE FILTER. JUST DRAIN INTO A WASTE CONTAINER.\*\***



# Flushing Coating System

## Continued

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Unscrew the elbow from the coating filter, clean and set aside, this will be reused.

Follow the longer black tubing from the coating pump up to the coating reservoir and disconnect the nut from the straight fitting on the bottom of reservoir.

Both coating tubes should now be free.

Disconnect the coating sensor at the 3 pin harness on the left of the reservoir.

The coating reservoir can now be unscrewed from the bowl by twisting it to the left, allowing for easy cleaning.

Once the reservoir is removed, flush it out using Acetone and allow to dry.

Make sure any debris in the reservoir has been removed. Flush again if needed.

Unscrew the filter from the reducing coupler and throw away.

Wipe out the coating bowl using a lint free Alpha type cloth dampened with Acetone and allow to dry.





# Flushing Coating System

## Continued

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The coating bowl screen will be at the bottom of the coating bowl. Make sure it has been cleaned with Acetone and free of debris before reassembling.

Reassemble the coating system, making sure to use teflon tape on the top and bottom threads of the new filter, not on the elbow.

Either pour in all new coating or reuse drained coating as long as the used coating is not contaminated.

Re-prime the coating and release any air from the filter using the bleeder cap on the top of the filter. **Refer to Pg. 5**

***\*\* When bleeding air from the filter, make sure to only open the cap a 1/4 of a turn and continue to hold on to the cap. This will prevent the bleeder cap from blowing off from the pressure of the coating pump. \*\****



# Priming The Wash Pump

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Press **MACHINE SET-UP**.

Press **VACUUM**.



Chuck a lens on the suction cup over the wash bowl.

Press **WASH PRIME**.

Press **DUMP VALVE**.

Allow to run until the pump slows down.

Press **DUMP VALVE** again to close. Beats should be a steady constant beat, much like a heartbeat.

If wash prime has not been achieved, run with **DUMP VALVE** open until the pump slows down.

Press **WASH PRIME**.

Press **DUMP VALVE**.

The wash pump should now be primed.



# MR3 Lens Retrieval From UV Light Module

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Detach remaining lenses off of the suction cups.

Turn off the power to the machine and disconnect the power cord from the electrical outlet.

With the power off, open the back doors of the machine.

Remove the screws that hold the UV light module in the carriage.

Remove the UV light module by grabbing the silver handle and pulling it straight out.

Allow UV light to cool for 15 minutes or until it reaches room temperature.

Remove the lens from the lamp and reflector area. Be careful not to touch the UV bulb.

Check the bulb and reflectors for any melted lens debris or burns. If debris or burns are present and can not be cleaned, replace the UV light module with a new one.

If original lamp looks clean or is able to be cleaned, return it to the carriage and reinstall the screws. *(for cleaning recommendations please contact a UOC technician)*

Plug in the power cord, turn machine on, and return to normal machine operation after the warm up process is complete.