

# SMARTCLEAR II PRO

## Quick Installation Guide

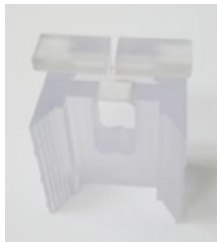
- Carefully remove **SmartClear II Pro** and the **SmartBox** from the packaging and place at the installation location. We recommend at least 8 inches of space around the devices for proper airflow, and a level surface. Locate the parts listed below.



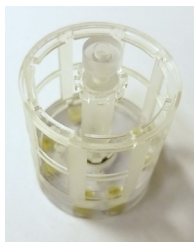
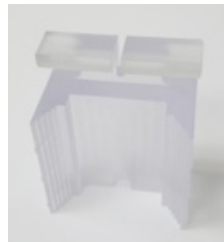
POWER CABLE (1)



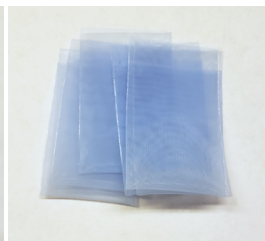
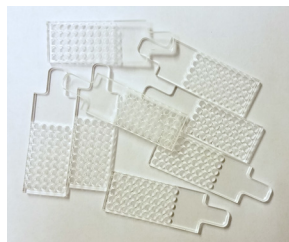
EXTRA FUSES (2)



MEMBRANE SPACERS (A/B)

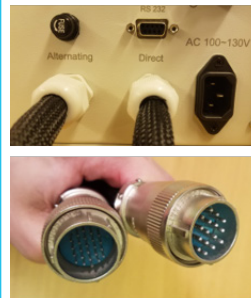


SAMPLE HOLDER (1) / SPACERS (8)



SMALL SAMPLE BAGS (10)  
LARGE SAMPLE BAGS (6)  
EXTRA SAMPLE BAGS (16)

Connect the cable originating from the 'Alternating' port on **SmartBox** to **SmartClear II Pro**. Do the same for the 'Direct' cable. Attach the main power cable to the rear side of **SmartBox** and plug it into an outlet with the correct voltage requirements.



ALIGN TABS AND  
PLUG IN CABLE

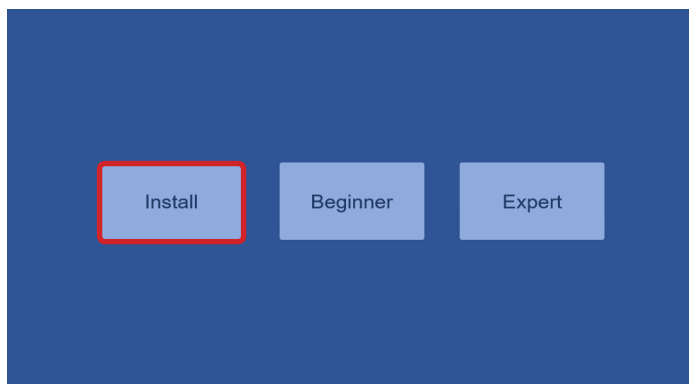


SCREW BEARING  
LOCK NUT  
CLOCKWISE  
COMPLETELY.

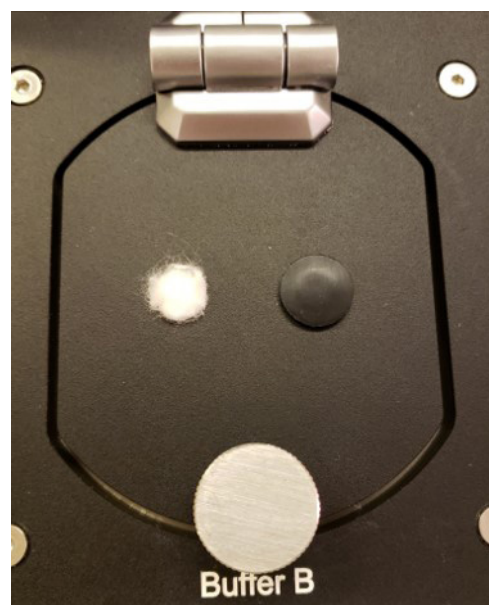
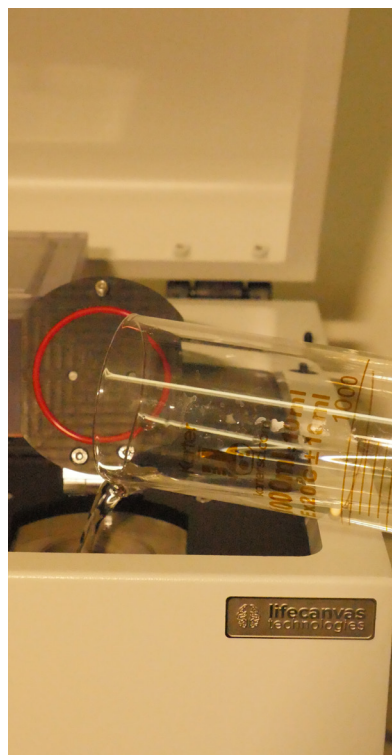
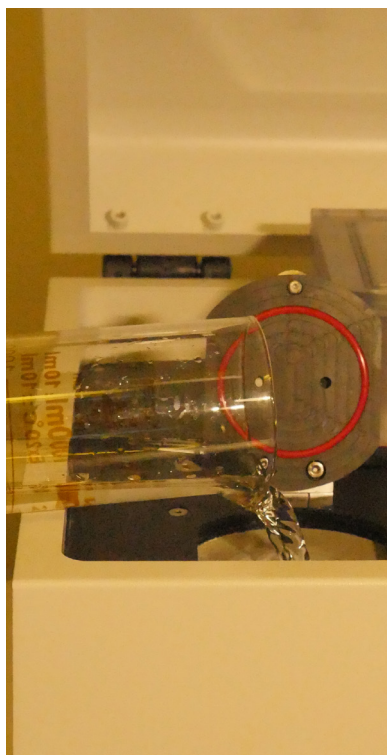
PLUG POWER  
CABLE INTO  
OUTLET.



- 2 Turn on the **power switch**. Choose **'Install'** for buffer and membrane installation and follow the direction on the screen.



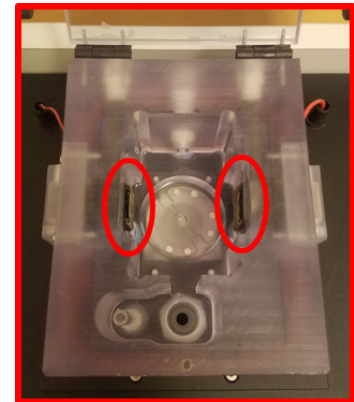
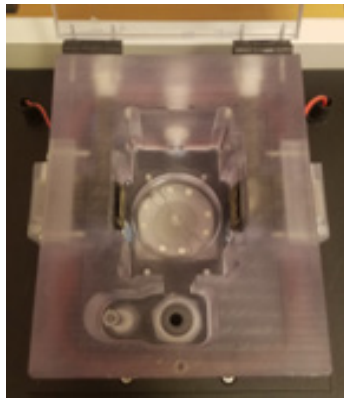
- 3 Remove any paper towel packing from the reservoirs, and pour 500 mL DI water into both A and B reservoirs.



Note: The cotton in the reservoir lids prevents bubble formation and allows gas exchange. If it pops out or leaks bubbles, you can replace it with more cotton.



**4** The next step is for installation of the membrane window in the clearing chamber. Membranes are shipped dry, and can be stored dry. However, they must be kept hydrated once installed to prevent leaks.



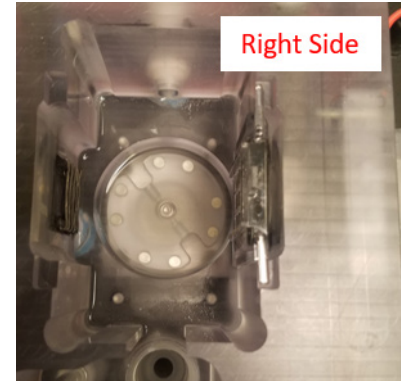
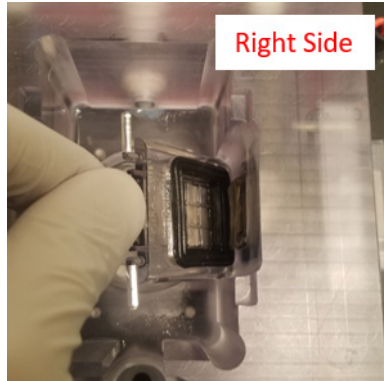
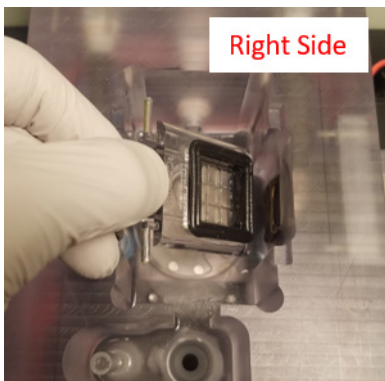
**MEMBRANE WINDOW**

**CLEARING CHAMBER**

Place the membrane windows to the right and left slots of the chamber without touching the electrodes (Pt wire). The window wing fits each side holder.

**Remember:**

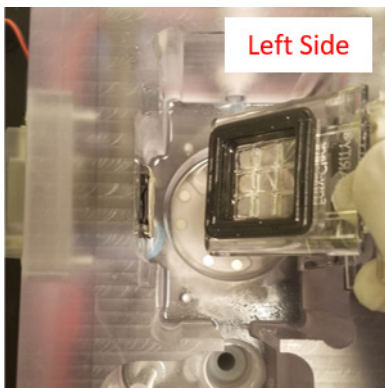
- 1) Place the rubber gasket towards the electrode (facing out from the center of the chamber).
- 2) Make sure that the rubber gasket does not touch the electrode.



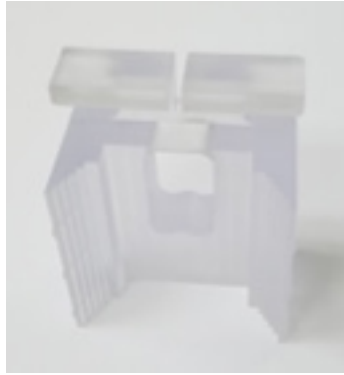
1) Place the rubber gasket toward the electrode.

2) Place the window below the electrode and tilt it up without touching electrode.

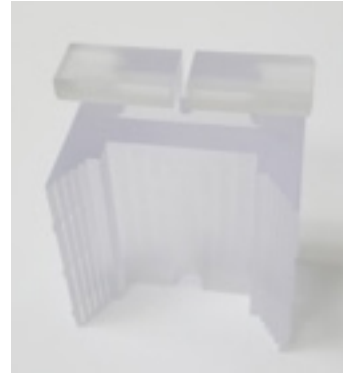
3) The window wings are placed on the window holder at each side.



**5** Place **Spacer B** into the rear slot. Place **Spacer A** into the front slot. When the spacers are placed properly, membrane windows stand straight.



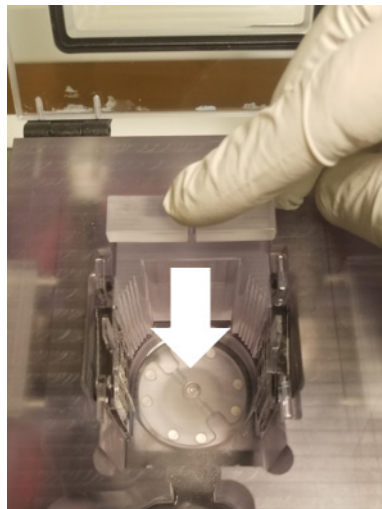
SPACER A



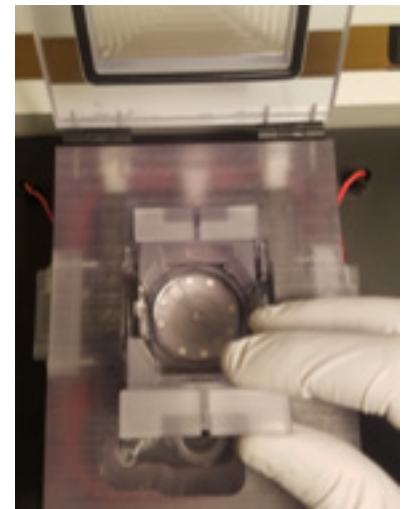
SPACER B



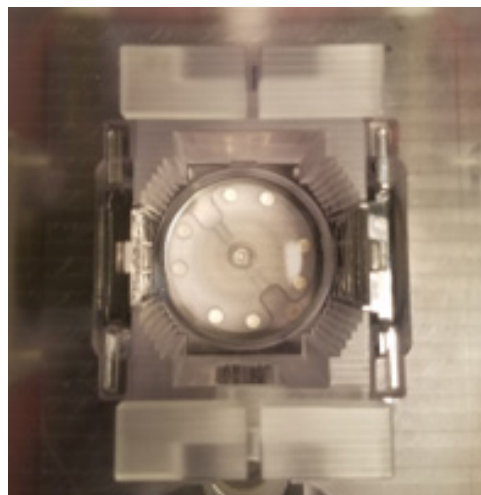
1) Place Spacer B



2) Gently push until the spacer touches the bottom.



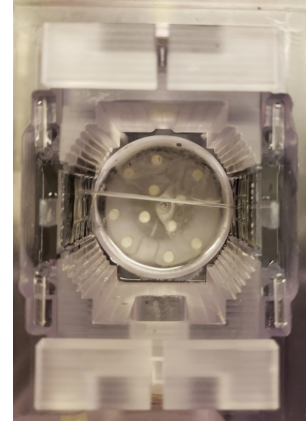
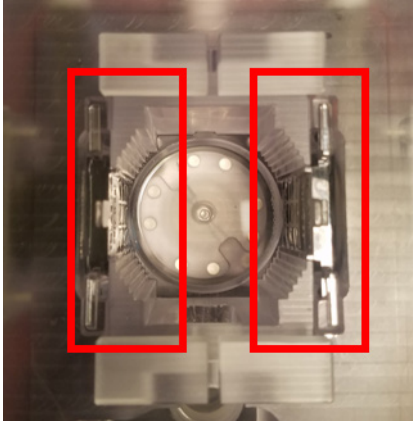
3) Repeat steps 1 and 2, inserting **Spacer A** with the big hole into the front side.



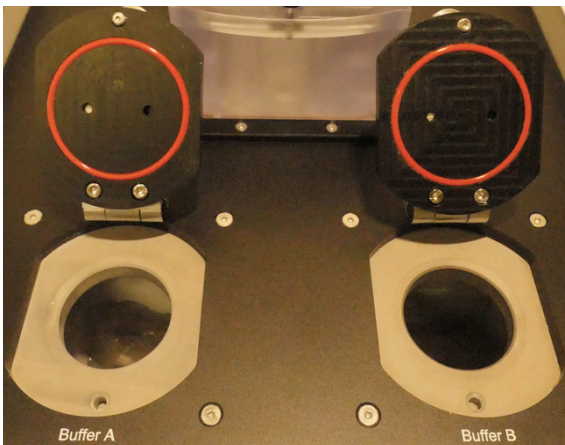
4) Check if the spacers are well fixed and secure.



- 6** Look inside the chamber and confirm that the membranes do not leak.  
Check area around membranes for leaks. This is a significant leak.



- 7** Look inside the A and B reservoirs, and remember the water level. Wait more than an hour to check the membranes. Check the level of DI water in Reservoir A and B by checking its height relative to the drain tubes in the back.



If there is a leak, you will see that the water level in Reservoir A will be very high, and the water level in Reservoir B will be very low. If this happens, replace the membranes and install again or contact the LifeCanvas support team.

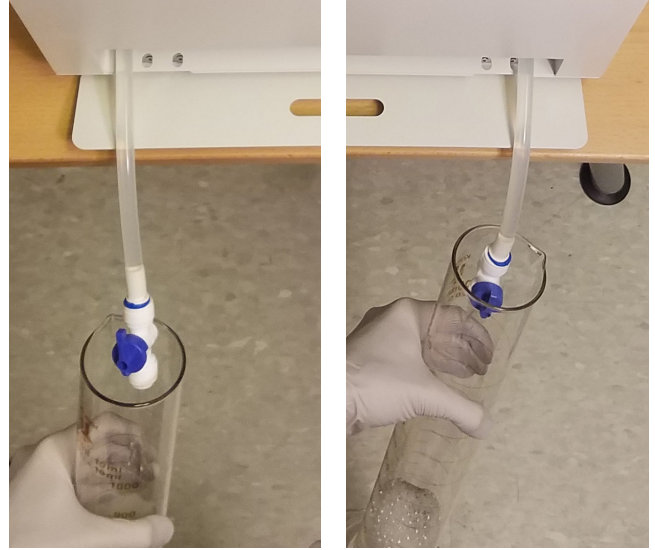
**Reservoir A** water level after leak.



**Reservoir B** water level after leak.



**8** You will find a drain hose at the bottom of the device. The drain hose on the left is for **Reservoir A**, and the drain hose on the right is for **Reservoir B**. Drain DI water completely by opening the valve one at a time and close the valve when you are done.

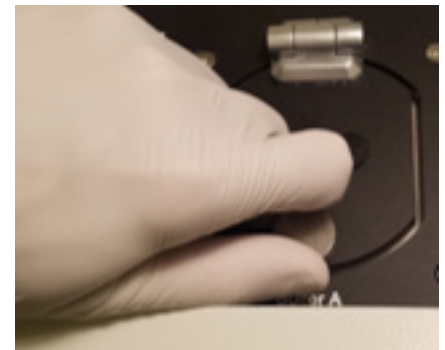


**9** Fill **Reservoir A** with Delipidation Buffer and fill **Reservoir B** with new Conduction Buffer, respectively. Close each lid by tightening the screw.

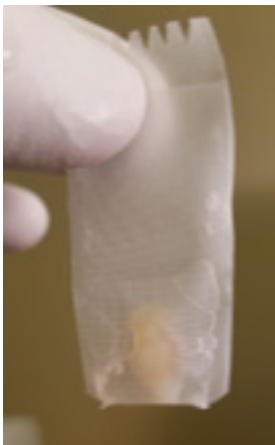
Pour Delipidation Buffer. Pour Conduction Buffer.



Tighten lid screws.



**10** Place the samples in the shaped **Sample Bags**. You can use the notches on the top of the bags to identify your samples. For optimal clearing, orient your samples with the longest axis vertically. Then, use the **Sample Holder Spacers** to make slots in the **Sample Holder** for your samples. We find it best to divide the **Sample Holder** into quarters. You can fit 2 mouse brain hemispheres in each quarter. Insert the mesh bag and sample all the way down into the slots. Then, insert the **Sample Holder** into the **Clearing Chamber**.



Insert sample in mesh bag with long axis vertical.



Insert sample holder spacers in sample holder.



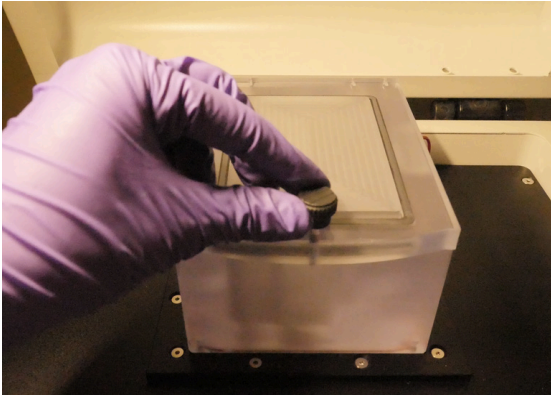
Insert mesh bags into sample holder.



Insert sample holder into the clearing chamber.



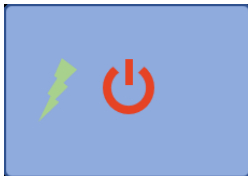
- 11** Close the **clearing chamber lid** by tightening the screw. Close the **cover door** and you are ready to clear. Choose Beginner or Expert mode to start clearing.



- 1) Close the clearing chamber lid and tighten screw.



- 2) Close the cover door.



- 3) Press the power button to turn on electrophoresis.

### BEGINNER MODE

The system is optimized for beginners with the following settings:

**Gentle:**

85V, 1500 mA, A 42°C, B 42°C

**Fast:**

85V, 1500 mA, A 50°C, B 42°C

If your sample has any fluorescent proteins, use the Gentle setting to preserve fluorescence. If not, you can use the Fast setting for faster clearing.

### EXPERT MODE

Users can manually set the settings for temperature, voltage, current, rotation, polarity, and timer functions.

For more information on Expert Mode and additional settings customization, please consult the **User's Manual**.

- 12** When finished using the device, remove the sample holder from the **Clearing Chamber**.

If you are planning to start clearing again within 2-3 days, you can turn off the electrophoresis and leave the machine on. In Beginner Mode, pumps will run to keep membranes dry. In Expert Mode, always keep pumps running when membranes are installed.

If you will not start clearing again for a longer period of time, turn off the electrophoresis power (and pumps if you are in Expert Mode), and switch off the device using the power switch behind the SmartBox.

Then, remove the **Membrane Spacers** and **Membranes**. Drain buffers from **Reservoirs**. Store membranes in a sealed container with saline to keep hydrated, and store buffers in a sealed container to prevent evaporation.



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