**Part 2: Priming 3/8” Circuit with 5.0 HLS Module- CRYSTALLOID ONLY**

1. **Remove yellow de-airing cap!**
2. Turn on Cardiohelp console and activate “global override”. (While holding down the  safety button, press global override button .)
3. Turn **pump to 1000 RPMs** (flow approximately 1 LPM)
4. Add **50 ml of 25% albumin** to the priming reservoir via either 2-way stopcock at the top of the priming bag and circulate for a few minutes.
5. Fill CardioQuip with **4L of sterile water** (waterline needs to be well above mesh). Ensure that both the lid AND the body of the heater are plugged in and turned on. Check that you are in Low Power Mode.
6. Prime the water heater: **SEE CARDIOQUIP GUIDELINE**. Verify flow and make sure there are no leaks and that you do NOT see water entering the oxygenator!
7. Confirm that the sweep gas line is connected to the oxygenator and blender.
8. Turn **pump to ZERO RPMs.**
9. Move the 4 white clamps on the red and blue lines close to the quick-action couplings and close all (4) white large clamps (two hand technique). Moving clamps helps to limit the amount of spillage.
10. Separate the priming bag from the table set bowl by disconnecting the quick-action couplings. **Using airless technique, connect the red and blue lines of the table set (clam shell)**. Also, connect the red and blue lines of the priming bag together.
11. **De-activate the “Global Override” mode** **, and unclamp the 2 white clamps on the arterial and venous lines of the table set**.
12. Turn up RPMs to 1000.
13. Turn on the sweep gas to 0.3L, 21%.
14. **The set is now ready for connecting to the cannulas** – when the surgeon is ready, clamp the venous tubing and arterial tubing above the bridge.
15. Open the table set bowl (clam shell) and have the surgeon clamp the red and blue lines before and after the quick-action couplings or on the clamp symbols using **4 sterile 3/8” clamps**.
16. The surgeon will then separate quick connects and place sterile tubing onto sterile field – you will discard remainder of table set (clam shell).
17. The surgeon will make cannula connections by cutting off quick connect ends (if present) and attaching circuit to the cannula connectors airlessly (arterial to red line; venous to blue line)
18. Ask the surgeons to remove the clamps on their end.
19. Adjust the sweep gas to half of anticipated ECMO flow rate and 80% FiO2.
20. **You are now ready to go on ECMO - increase RPMs to 1500**
21. When confirmed with the surgeon, remove the venous clamp above the bridge and then slowly remove the arterial clamp above the bridge – making sure no air is seen.
22. **Increase flows to achieve 100-150 ml/kg.**
23. Sweep gas flow should be changed to match blood flow 0.5-1:1
24. Once the patient is on ECMO, connect the venous probe correctly to the venous shelf on the HLS module. **Please DO NOT force probe onto shelf, since this may break off connecting pin**.
25. **Transfuse 20 ml/kg (if patient < 15kg) or 1 unit (if patient > 15kg) of platelets to the patient**.
26. Confirm that you are **NOT on Global Override**.
27. **Confirm ALARMS**: venous pressure -60; Arterial pressure > 350; Delta P pressure ³ 25; Low flow alarm at 500 ml/min;
28. **Confirm Interventions are on**: ARTERIAL BUBBLE SENSOR – **pump stops**, venous pressure >100 – pump slows down
29. Confirm the water heater is on and set to 37 degrees and running in **low power mode**.
30. Obtain cannula placement CXR/ECHO as needed. If cannulas are in good position, secure the ECMO cannulas to the bed.
31. After cannulas are sutured in place, secure to christmas tree with paper tape. **Tie-band ALL new connections**.
32. Obtain ACT, first round of gases and labs (CBC, coags), correlating with SVO2 monitor.
33. Begin **heparin infusion at 25 units/kg/hr when ACT < 350.** 
    * For post-op Cardiac patients, determine with CT surgeon whether or not heparin will be immediately started.
    * For adult sized pediatric patients:
      + ***Max initial heparin bolus is 5000 units***
      + ***Max starting heparin drip is 1000 units/hr***.
34. Adjust sweep gas FiO2 to achieve post-oxygenator PaO2 200-300.
35. **Replace the yellow cap on the de-airing port *loosely* to allow air to escape**.