

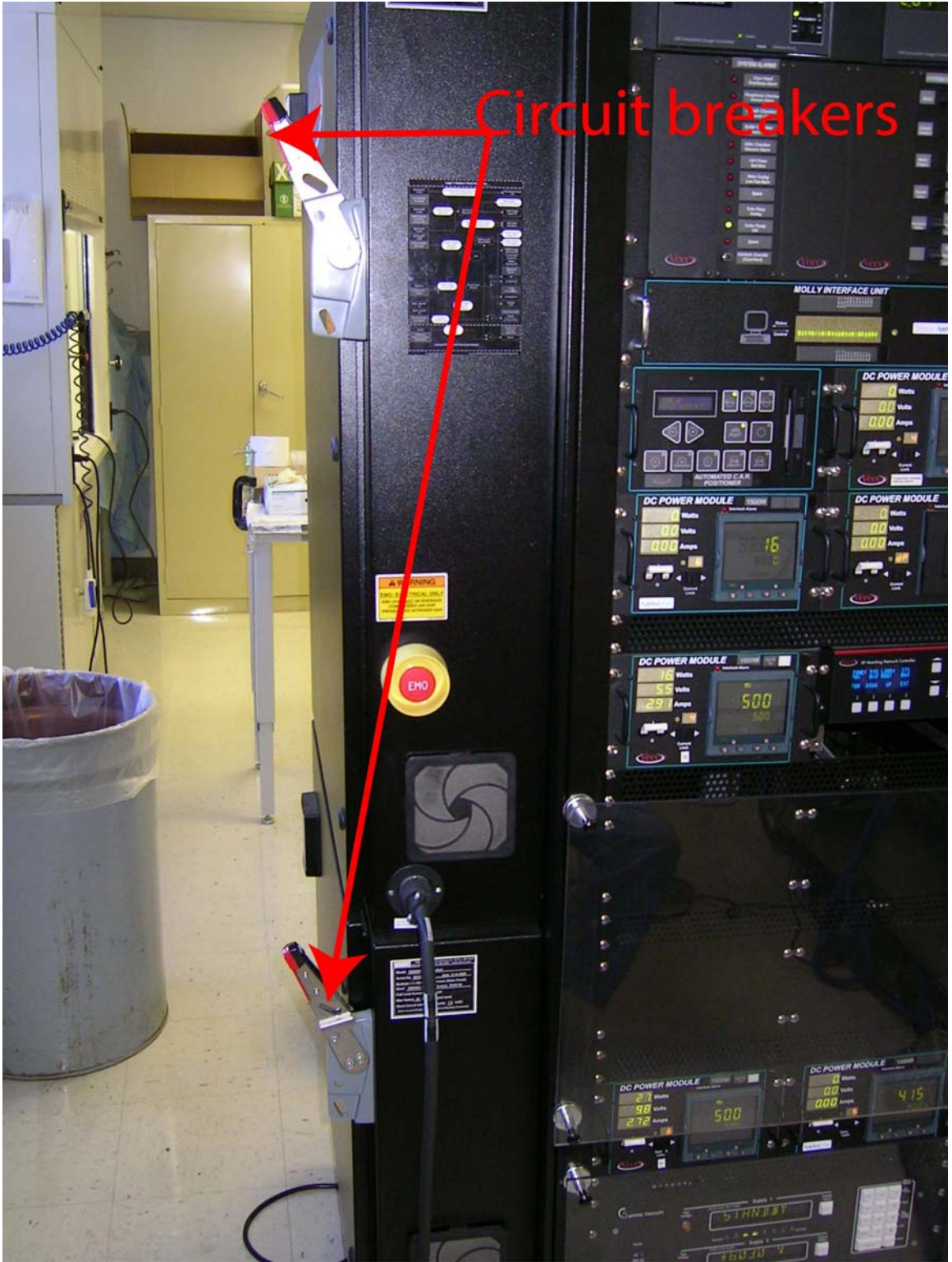
# POWER OUTAGE PROCEDURES

## If Power is out for less than 10 minutes:

1. Once power has come back on, switch the two main breaks (Figure 1) to the down position (OFF) and the back to the up position (ON).
2. Turn on Reactor Ion gauge (Figure 2), if pressure reads below  $6 \times 10^{-5}$  Torr the cryo pump gate valve should open automatically. If the pressure is higher than  $6 \times 10^{-5}$  Torr OR the cryo temperature is higher than 25K the gate valve won't open (follow procedures below to connect turbo pump to growth chamber).
3. Turn on Buffer chamber ion gauge. Verify the pressure is below  $5 \times 10^{-6}$  Torr. If pressure is above  $5 \times 10^{-6}$  Torr shut off the ion pump (Figure 3) and follow instructions below to connect turbo pump to buffer chamber.
4. Power up Molly computer (CPU on left side of monitor).
5. Once Molly is powered up log on to Molly 2000 software.
6. If Aluminum cell temperature has dropped below  $660^{\circ}\text{C}$ , then set the temperature to  $620^{\circ}\text{C}$  in Molly (do not try to melt it right away!). If growth heaters interlock red light is blinking (Figure 2), then press the growth heaters interlock to enable molly to change the set points.
7. Turn on Intro Chamber ion gauge on once the turbo pump has reached 56krpm.
8. Turn off Supply 1 from ion pump power module (Figure 3) by pressing high voltage operate on power module (number 9 on key pad), then press display select on supply 1 until display show HV OFF, then press enter on key pad. High Voltage light on supply 1 should turn off.

## If Power is out for more than 10 minutes:

1. Shut power to cryo pump compressor by pressing on/off button to OFF position.(Figure 4).
2. Shut Power to ion pump by pressing the on/off button in the power module (Figure 3) to the OFF position.
3. Open gate valve connecting buffer chamber and intro chamber as well as valve connecting buffer chamber and growth chamber to connect the turbo pump to both growth and buffer chamber.
4. Once power has come back on, switch the two main breaks (Figure 1) to the down position (OFF) and the back to the up position (ON).
5. Let turbo pump pump on all three chambers until pressure drops below  $6 \times 10^{-5}$ Torr in the growth chamber and  $5 \times 10^{-6}$  Torr in the buffer chamber.
6. Follow procedures in manual to regenerate the cryo before turning the cryo back on.



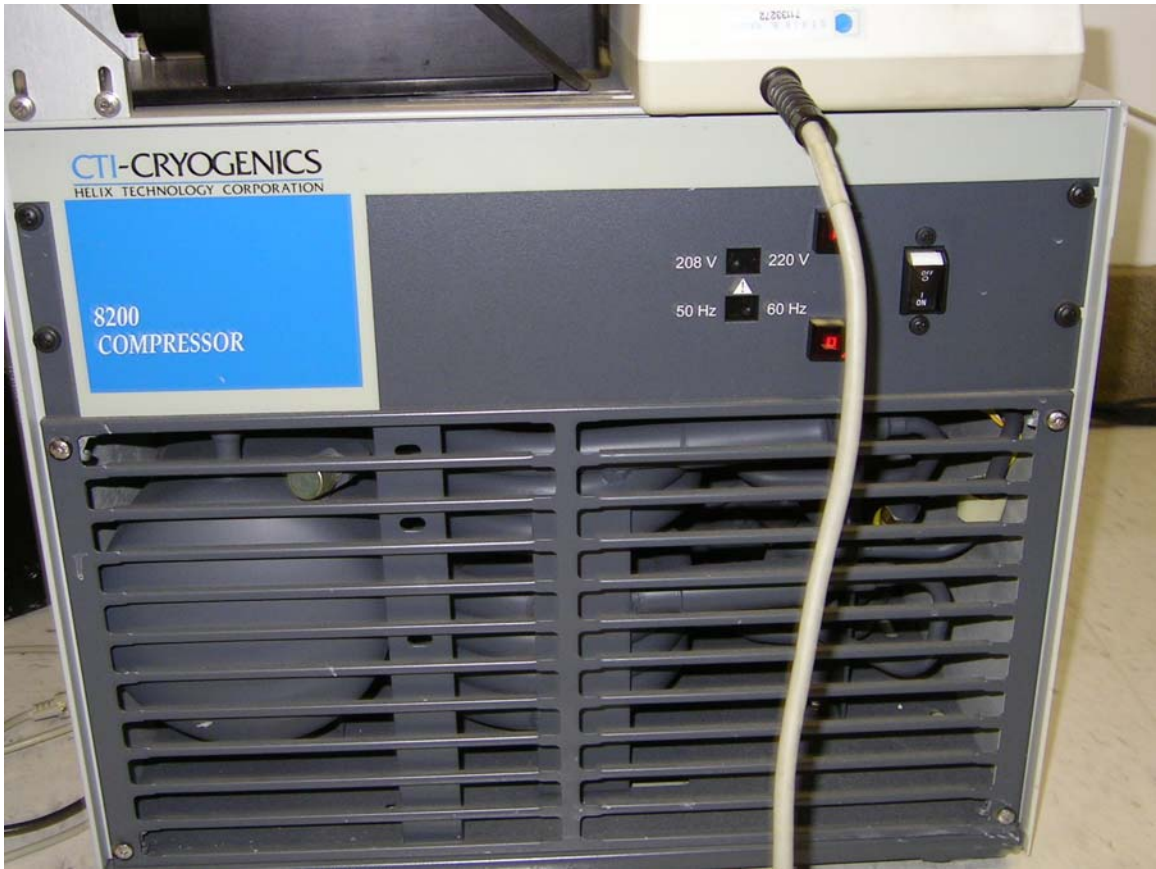
**Figure1:** Main circuit breakers for system (top) and baking bottom.



**Figure 2:** Reactor and Beam Flux Monitor Ion gauge (top). System alarms and interlocks (bottom left and right).



**Figure 3:** Ion Pump Power module.



**Figure 4:** Cryo pump compressor.