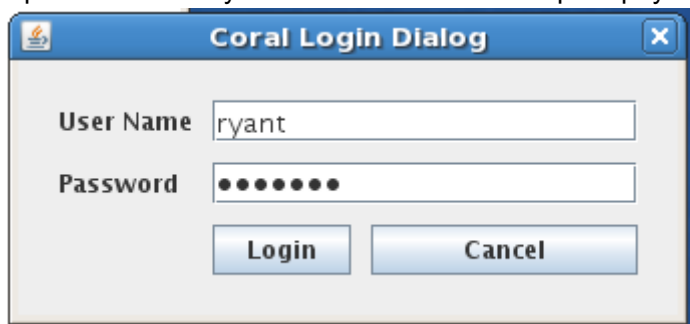


# OpenCoral Instructions

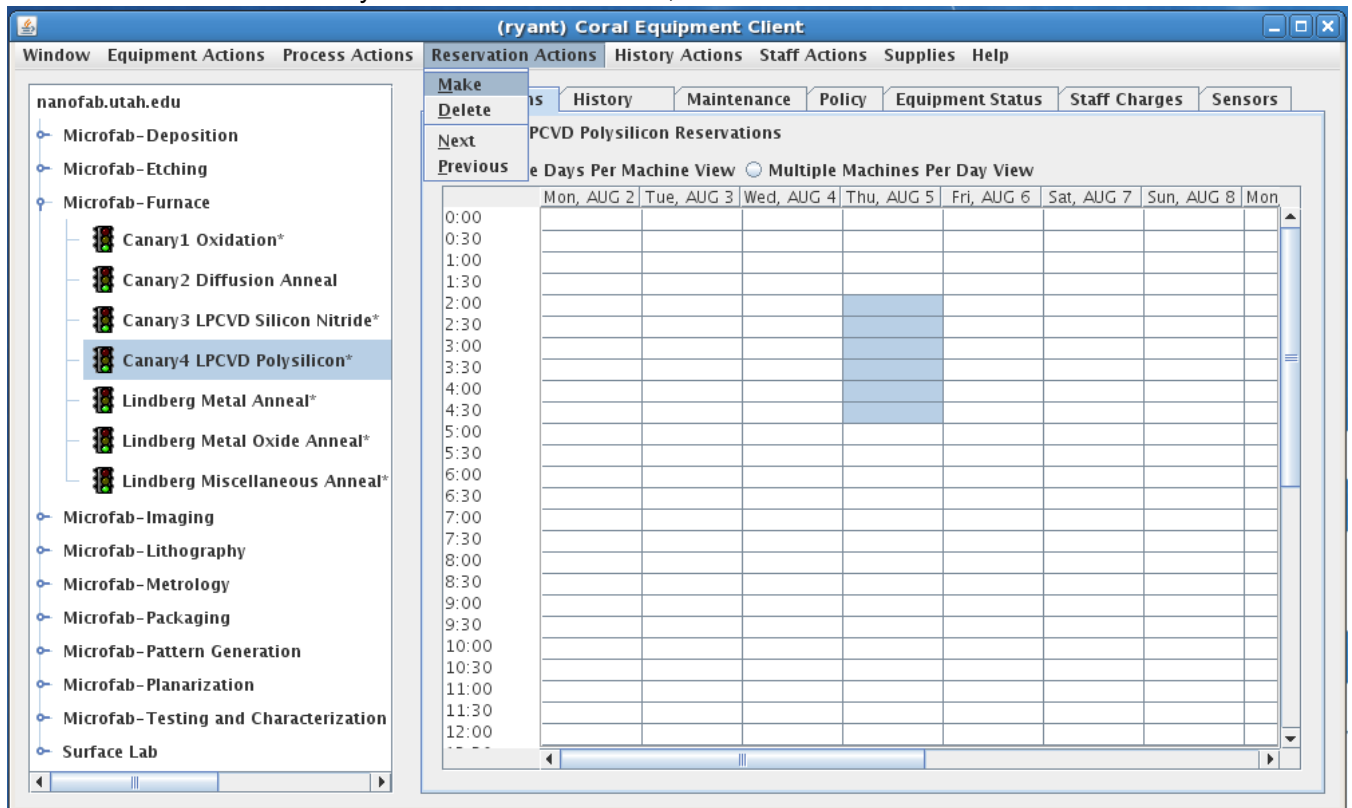
## Reserving Equipment

These instructions follow the simple use case scenario of reserving the Canary 4 LPCVD Polysilicon furnace.

1. Download OpenCoral ([http://coral.nanofab.utah.edu/lab/docs/get\\_doc/download](http://coral.nanofab.utah.edu/lab/docs/get_doc/download)).
2. Open the file that you downloaded. It should prompt you with a login screen.



3. Login with your Coral account. Please contact us (<mailto:nanofab-support@eng.utah.edu>) if you need your account information.
4. Select the machine on the left that you would like to reserve.
5. Select the block of time that you would like to reserve, then click on "Reservation Actions" -> "Make".

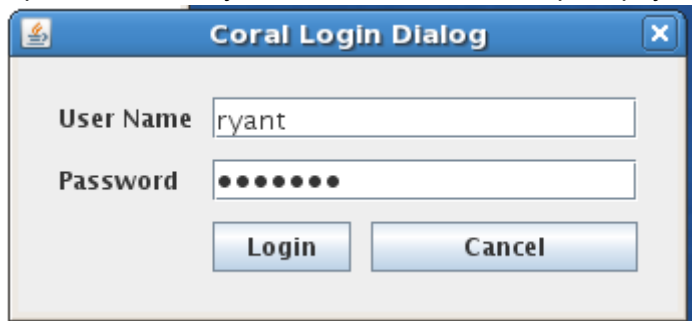




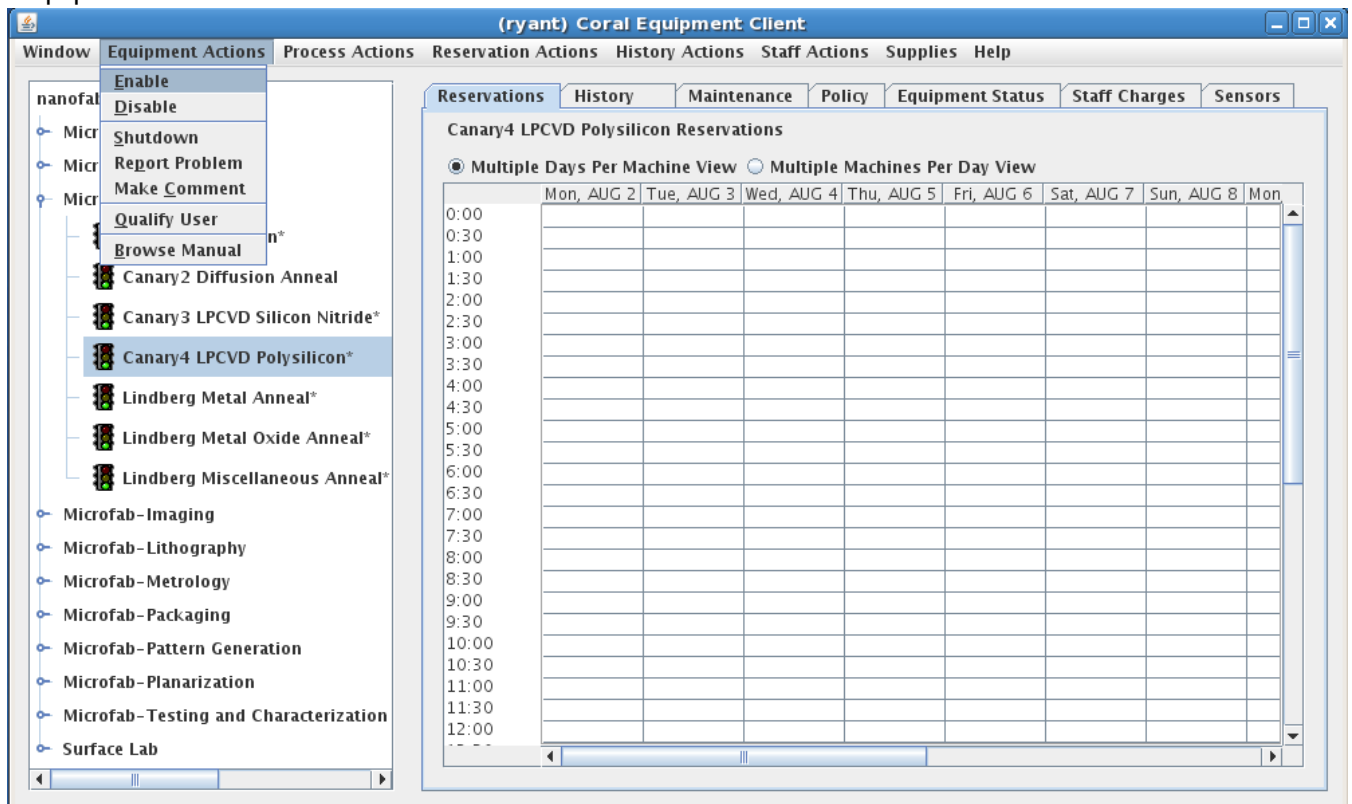
# Enabling / Disabling Equipment

These instructions follow the simple use case scenario of enabling and disabling the Canary 4 LPCVD Polysilicon furnace.

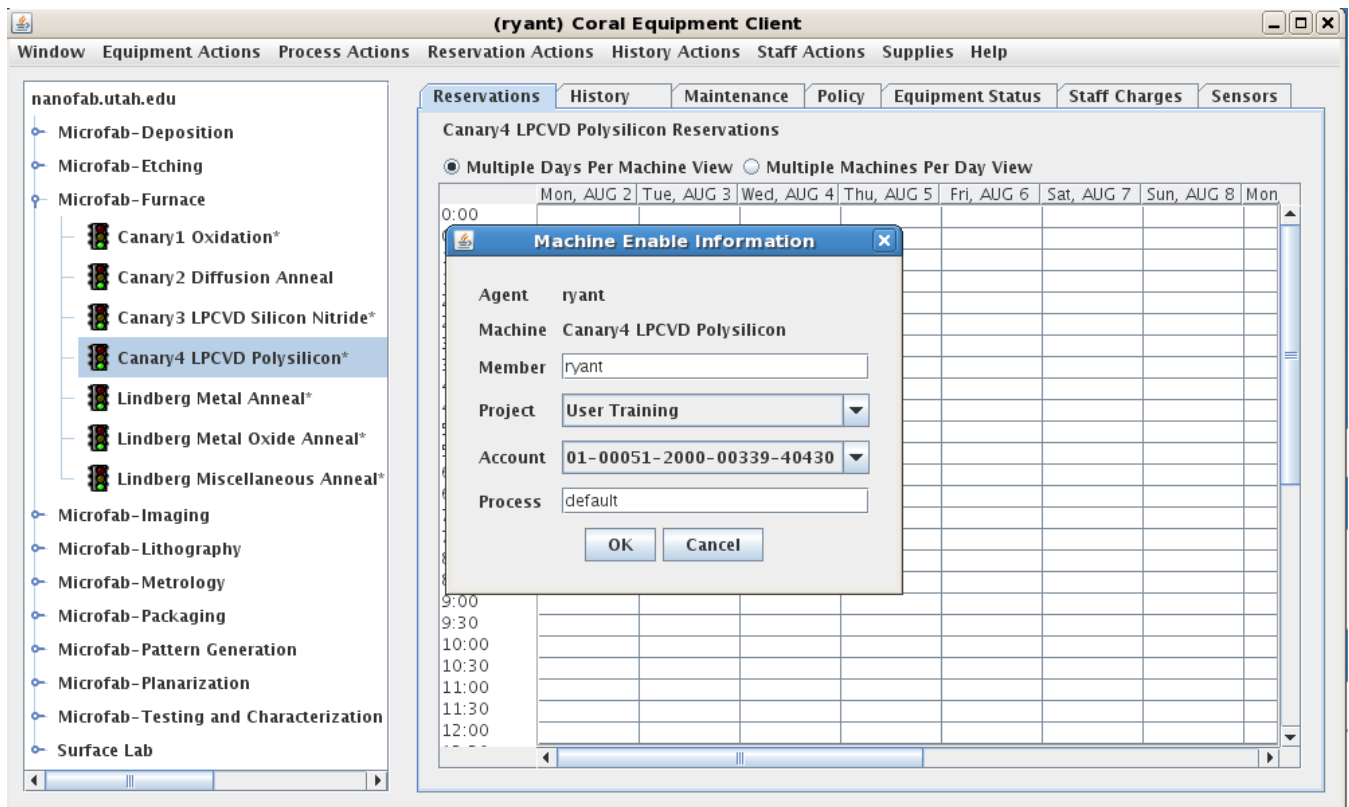
1. Download OpenCoral ([http://coral.nanofab.utah.edu/lab/docs/get\\_doc/download](http://coral.nanofab.utah.edu/lab/docs/get_doc/download)).
2. Open the file that you downloaded. It should prompt you with a login screen.



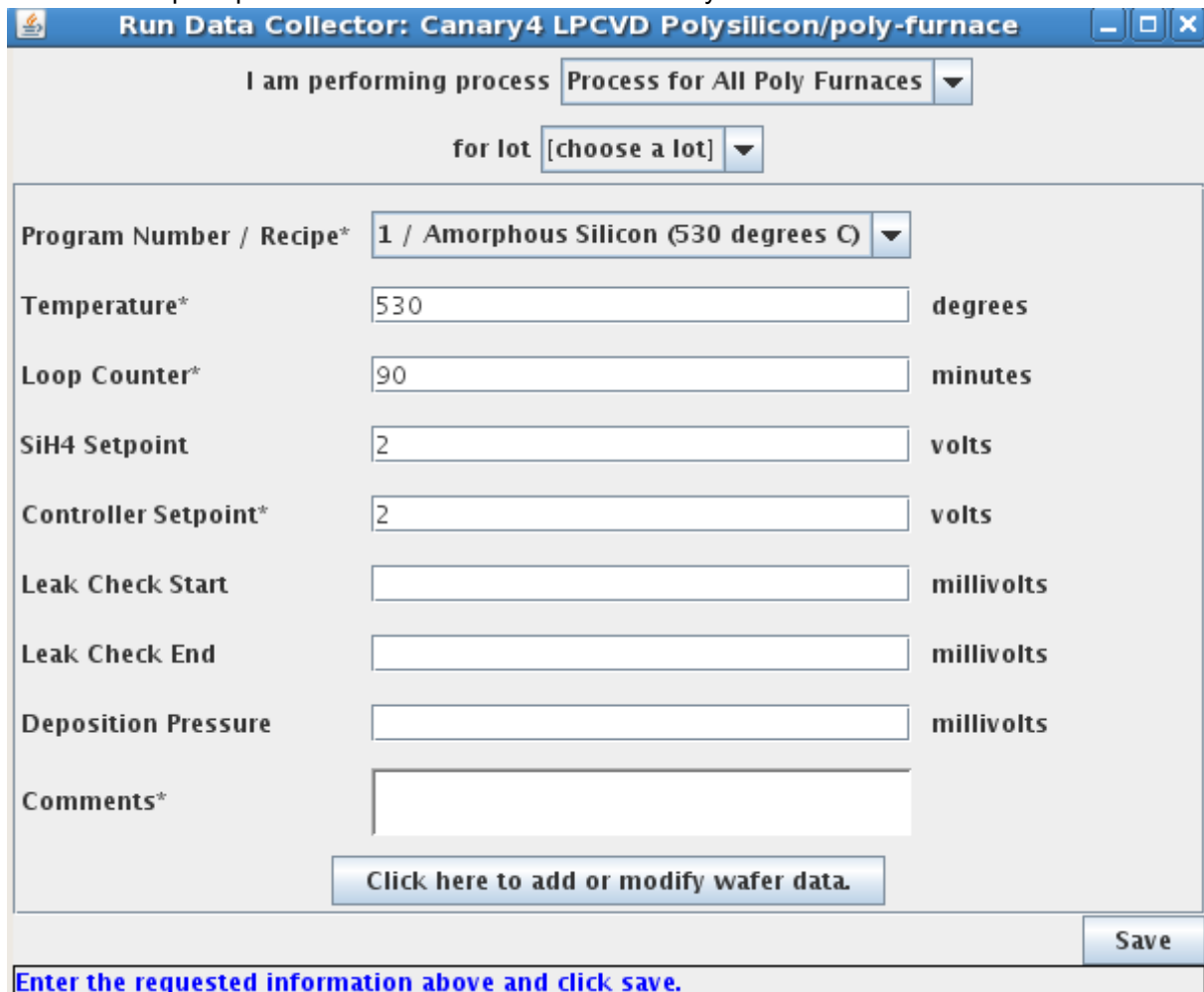
3. Login with your Coral account. Please contact us (<mailto:nanofab-support@eng.utah.edu>) if you need your account information.
4. To use a machine, you need to click on the machine name on the left, then select from the menu "Equipment Actions" -> "Enable"



5. You will then be prompted to select your project, account and process. The process should be "default". The project and account should correspond to the project you are working on.



6. You are then prompted for some run data that describes your current run.



7. When you are finished with your run, click the disable menu item that was next to enable earlier. This will again prompt you with a screen for entering your run data.

8. In the case of the Canary Furnaces, you must then click the button labelled "Click here to add or modify wafer data".
9. This will give you a screen where you can enter thickness measurements for 3 wafers. The wafer ID on this

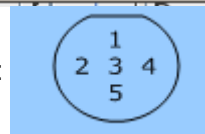
screen should just be 1, 2 and 3.

Field	Value	Unit
Enter wafer id	1	
Wafer Location	Front	
Site 1 Thickness	300	angstroms
Site 2 Thickness	400	angstroms
Site 3 Thickness	100	angstroms
Site 4 Thickness	200	angstroms
Site 5 Thickness	350	angstroms

Buttons: Remove wafer, Save wafer, Close

Status: Enter a unique identifier for the wafer.

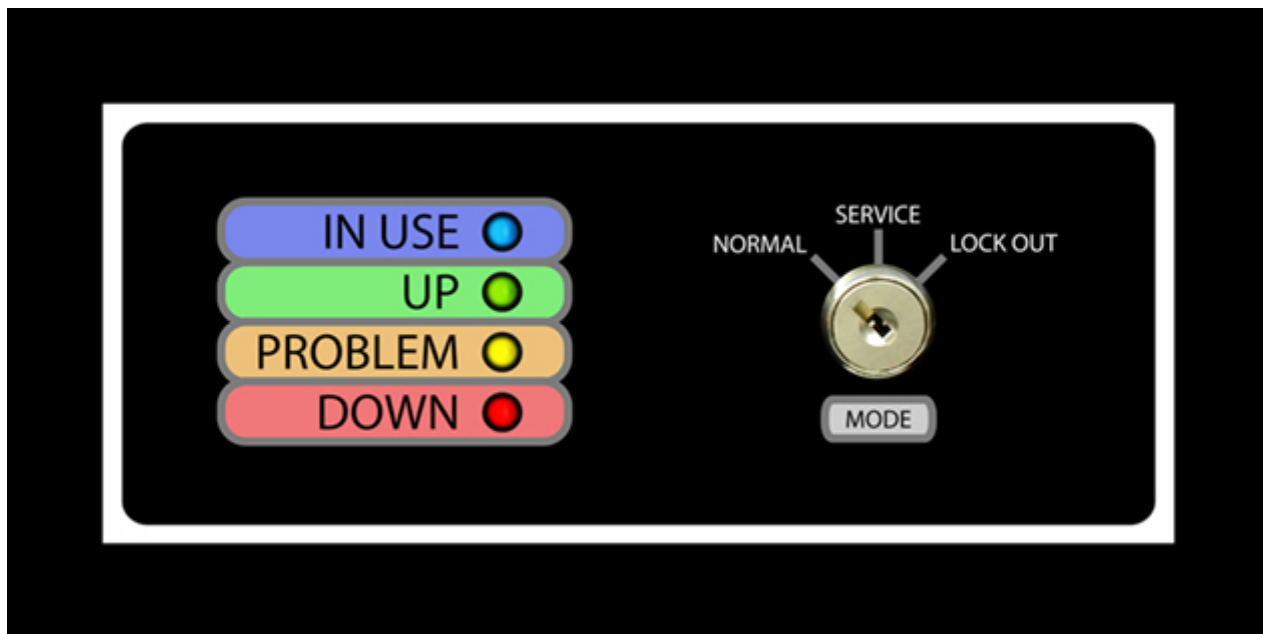
10. The numbered sites on the wafer are located according to this image:



11. Once you have finished your measurements, the machine will be disabled.

## Interlock Boxes

You may have noticed that several of the tools in the nanofab have interlock boxes attached to them. These boxes have been deployed in order to enforce the requirement that each tool be enabled in coral before use. Once a tool has been enabled in coral, a signal is sent to the associated interlock box that allows the tool to be run. Below is a picture of one of these boxes:



The box displays four LED lights to indicate the state that the machine is in. These are intended to make it easy to tell if a machine is currently in use by a lab member and what service state the machine is in.

\* = Please consult the "Maintenance" ([http://localhost:4000/lab/docs/get\\_doc/problems](http://localhost:4000/lab/docs/get_doc/problems)) tab in coral to see what conditions must be met in order to run the tool.

You will also notice that there is a key switch attached to each of the interlock boxes. This switch can be turned to "service" mode or "lock out" mode by any of the nanofab staff members. Service mode overrides any coral settings and allows the tool to be run. Lock out prevents any use of the tool.

The following machines currently have active interlock boxes attached to them:

- Cambridge Fiji F200
- Canary 1 Oxidation
- Canary 2 Diff - Annl
- Canary 3 SiN
- Canary 4 Poly-Si
- Denton Discovery 18
- Denton SJ20C
- Electromask CC250

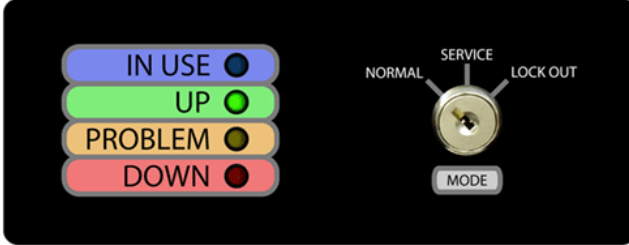
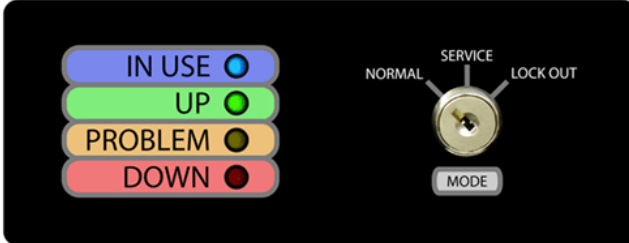
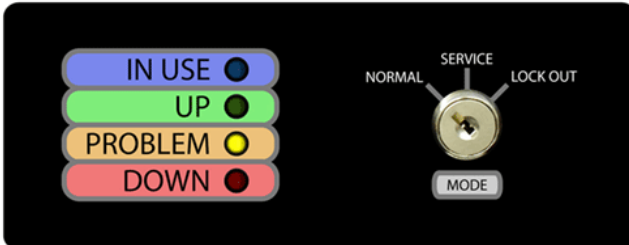
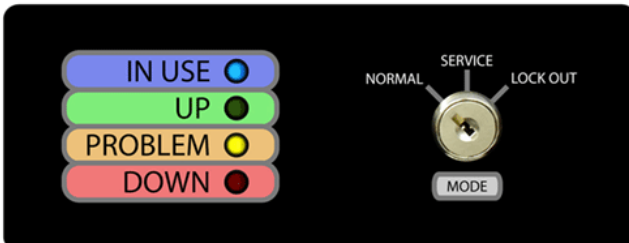
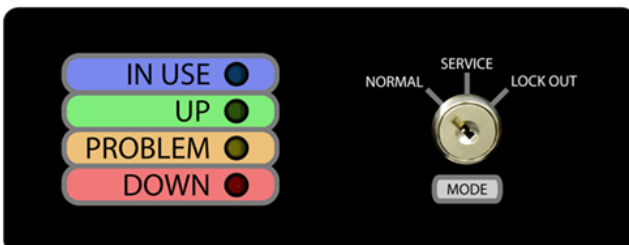
- LAM 590 Poly
- Oxford 100 ICP
- SCS PDS 2010
- TMV Super

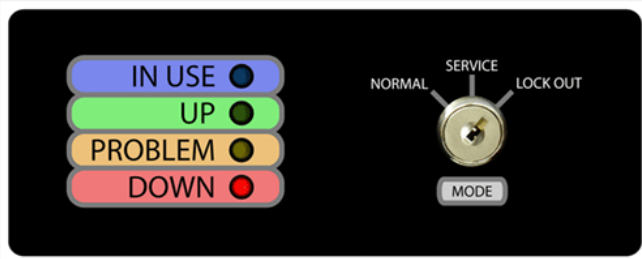
Upcoming interlock installations:

- Oxford 80
- Disco Dicing Saw

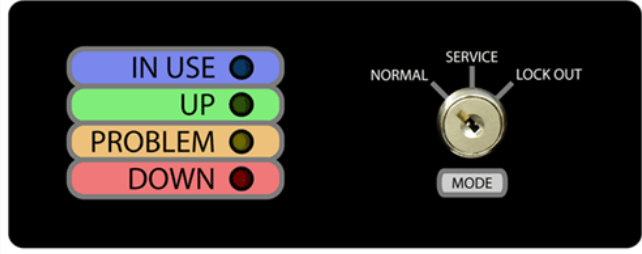
## Interlock Boxes LED Lights Key

Please consult the following table to determine the state of a machine based on its interlock box lights:

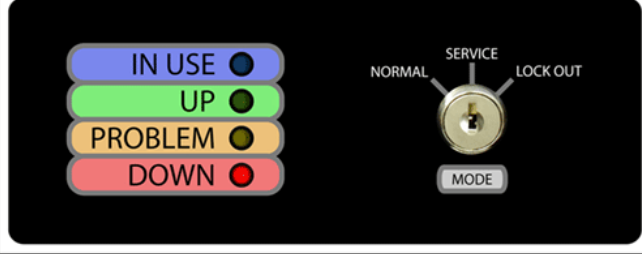
Lights	State of Machine
	<p>Tool is up with no reported problems and is not currently in use.</p>
	<p>Tool is running with no reported problems.</p>
	<p>Tool is not currently running and has one or more problems reported in Coral.</p>
	<p>Tool is currently running and has one or more problems reported in Coral.</p>
	<p>Tool is shutdown in Coral.</p>



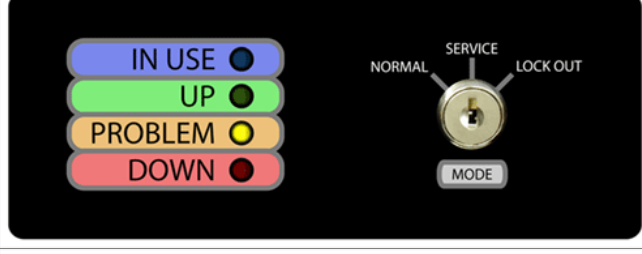
Key is switched to "LOCK OUT" and cannot be run.



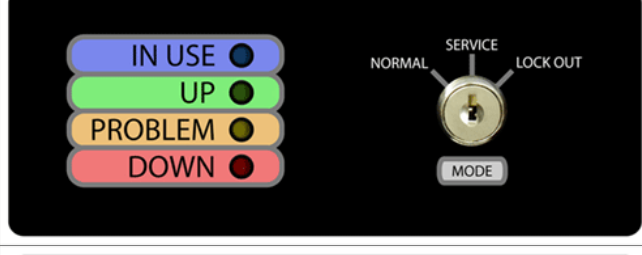
Tool is not in use and interlock box cannot communicate with Coral.



Tool is under repair and has been shut down through Coral.



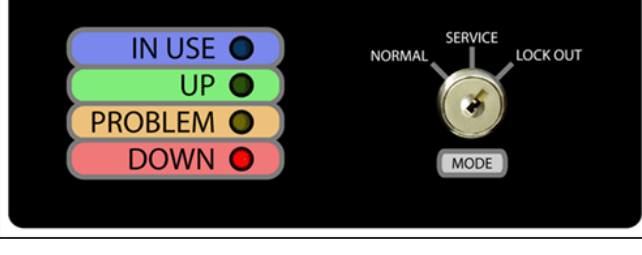
Interlock box is in service mode and tool is capable of running regardless of Coral state.



Interlock box is in service mode is capable of running, but is unable to communicate with coral.



Tool is running, but cannot communicate with Coral.

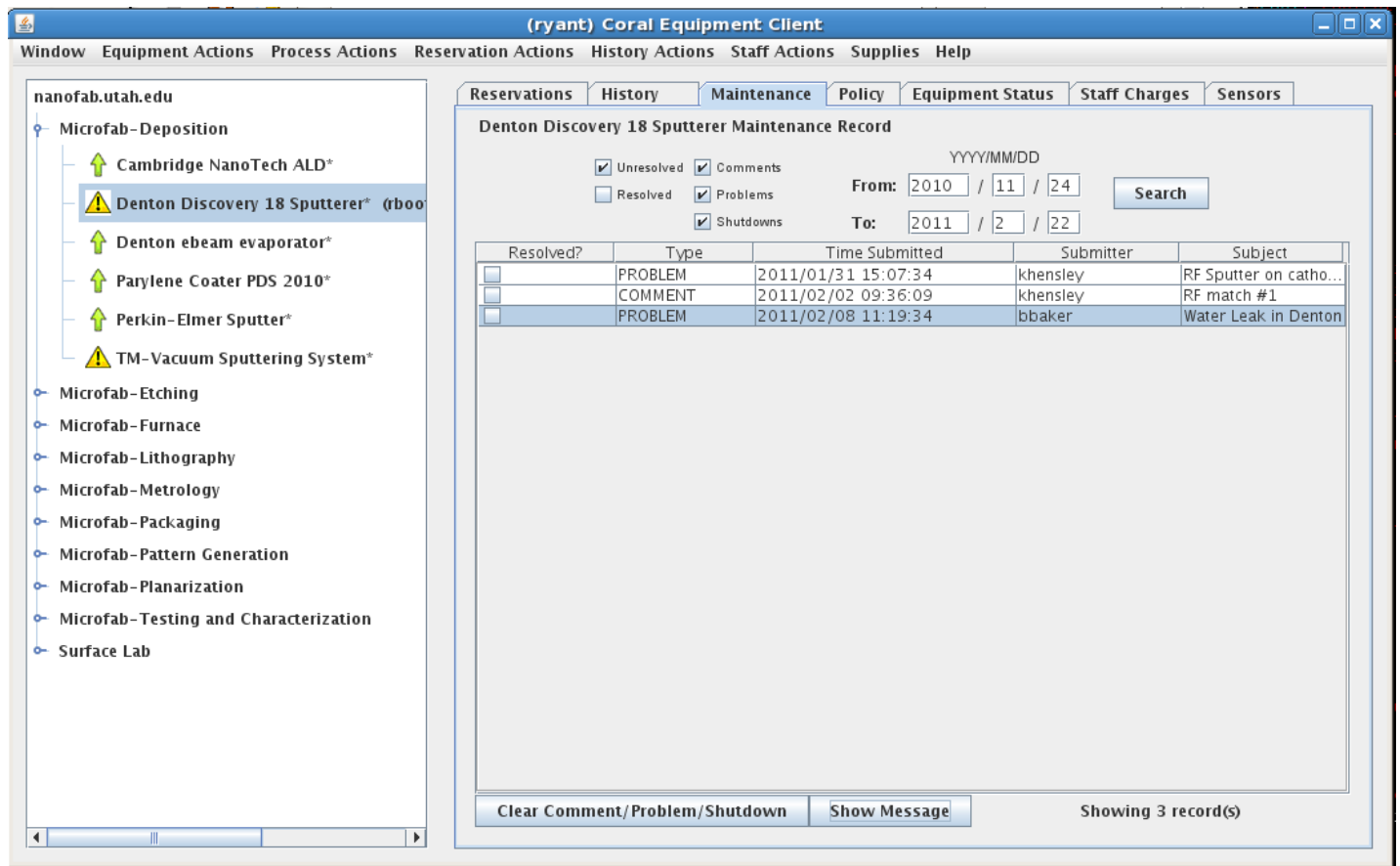


Key is switched to "LOCK OUT" and interlock box cannot communicate with Coral.



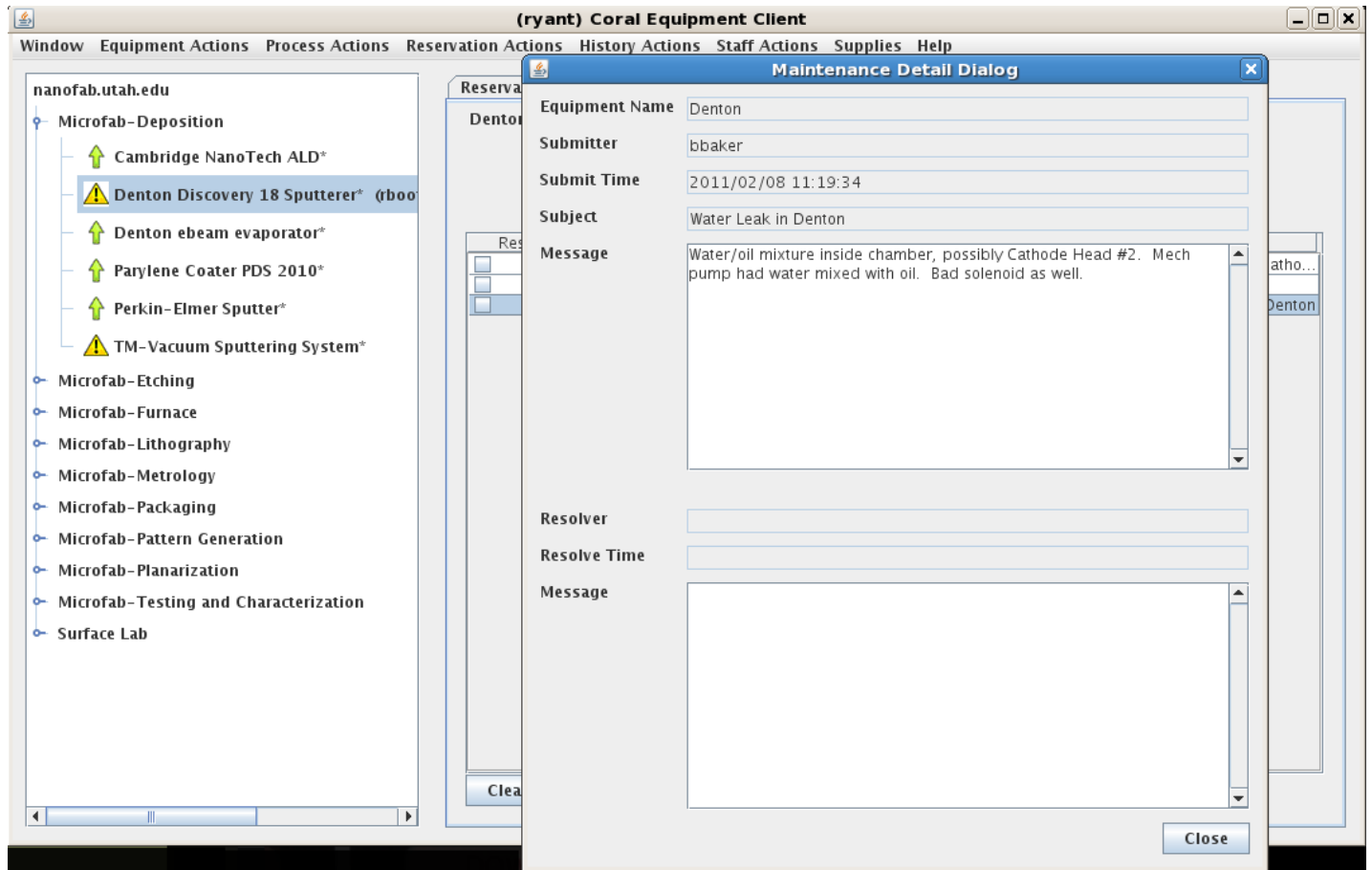
# Viewing Machine Problems

In the coral application, first click on the machine in question, then click on the tab labeled "Maintenance":



That tab will display a list of all unresolved issues for the selected machine. To get more details, you can select a

specific problem and click on the "Show Message" button in the lower right hand corner:



# Supply Checkout

In order to check out supplies to a member:

1. Log into Coral
2. Click on "Supplies" in the top right, then "Check Out"
3. Select an item from the supply tree at left
4. If checking out for someone else, type the username into the box labeled "Member" and **hit enter** to load that user's projects and accounts
5. Select the proper Project, Account and Quantity and hit OK