



# RESINA FURNACE

## Operating Manual

This document contain a brief summary on how to operate the RESINA furnace.

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## Starting up the furnace

- Step 1:** Open up compressed air valve on the left of the furnace (Figure 1).
- Step 2:** Move to the right side of the furnace, you will find the water valves (Figure 2). First, open the water outlet valve (Figure 2A) and then the water inlet valve (Figure 2B). It is important to carry it in this order to prevent excessive water pressure in the tubes. You can check the water level on an indicator located at the bottom of the furnace (Figure 3). The water level (green) should be above the orange indicator.
- Step 3:** Open up the gas cylinder valve (always open the valve for inert gas and your choice of other process gas) and set pressure to one bar (Figure 4). Plug the argon sensor to the ABB instrument (Figure 5). This will allow monitoring of the gas flow.
- Step 4:** Turn on the main power switch for the furnace located on the side (Figure 6). Directly after powering on, gas-purging cycle will begin. Green indicator on the front panel of the furnace will blink (Figure 7). The cycle usually takes 20minutes.

## Preparing your sample and experiment

- Step 5:** After the cycle is complete, open the chamber (Figure 8). There is eight screws in total on the front plate and one additional screw at the bottom, which will allow you to raise and lower the chamber using the appropriate lever (Figure 9A). Place your crucible on the sample holder, raise it and close the chamber again. Do not tighten up the screws very much or else it will be very difficult to unscrew them after the experiment is completed
- Step 6:** Write the program corresponding to your experiment on the pc and save it. Launch it and it will be loaded into the furnace.

## Running the experiment

- Step 7:** Press on the run cycle button on the front panel of the furnace. The vacuum pump will start automatically to evacuate the chamber. The pressure should reach 80mtorr in 20mins. If this is not achieved the gas purging starts again automatically. Once it is over, you can press the button run cycle again. If everything is fine, the program will run and heating will start in the furnace automatically.

## Shutting down the furnace

- Step 8:** Once everything is finished, you have to repeat step to open op the chamber and pick up your sample. Be careful while handling your sample since it might still be warm. Once you are done close the chamber again, turn off the furnace and close the gas bottle.
- Step 9:** Finally close the compressed air valve and the water inlet than outlet valve.

## In case of emergency

Press the red button on the front panel of the furnace (Figure 9B). It will automatically shut down the furnace and start gas-purging sequence.

Figure 1: Compressed Air Valves

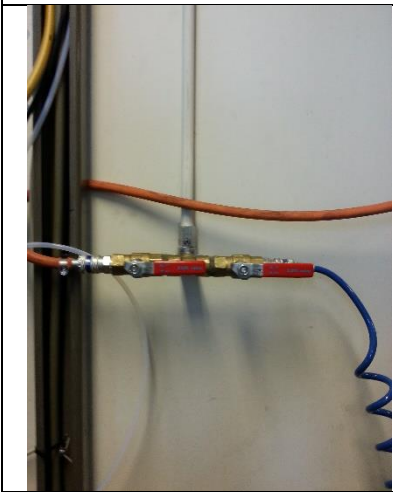


Figure 2: Water Valves



Figure 3: Water Level Indicator

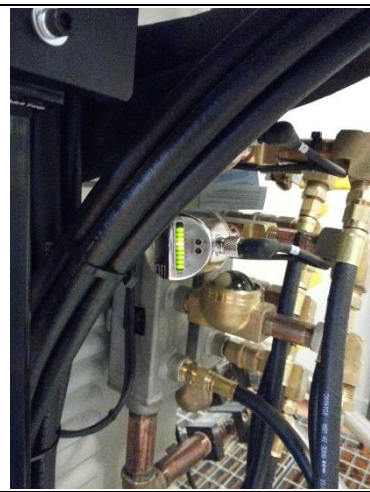


Figure 4: Gas Valves

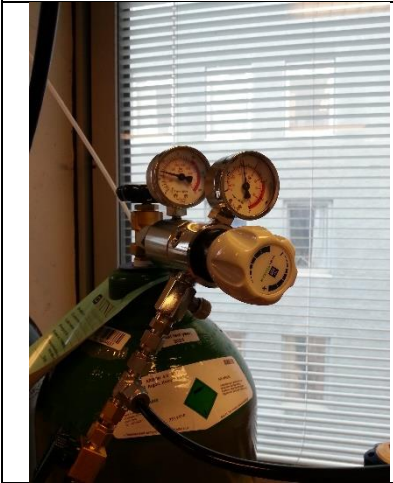


Figure 5: Gas Sensors



Figure 6: Furnace Power Switch



Figure 7: Furnace Front Panel

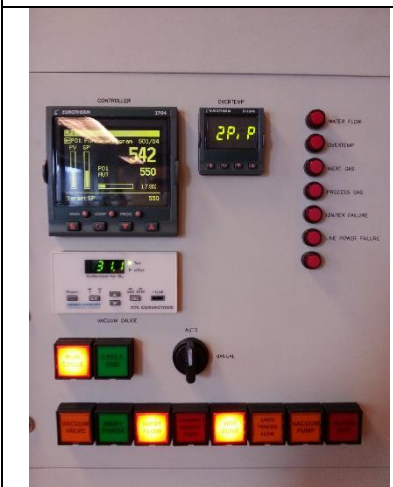


Figure 8: Furnace Chamber



Figure 9: Chamber Position Lever

