



CYBORTRONICS INC.



Model HR2050 Chamber

QUICK START REFERENCE GUIDE

1

UNPACKING AND PLACEMENT OF YOUR HR2050

- If your unit has arrived in a crate, carefully remove the crate siding and examine the unit for and signs of damage that may of occurred in shipping. Please report any damage to Cybortronics by phoning 1-800-289-8203 or email us at: service@cybortronics.com.
- Locate the chamber where the flooring is smooth and level.
- Place the chamber so that the condenser air filters are no closer than 18 inches, (0.45 meters) from walls or other objects that can restrict airflow to the refrigeration system.

2



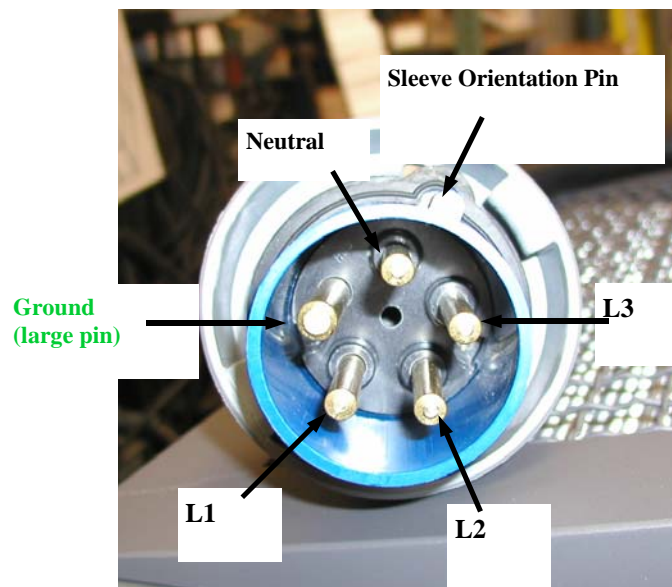
ELECTRICAL REQUIREMENTS **Should only be provided by a qualified electrician**



Provide a **208/230 VAC 50/60 Hz 3 Phase, 'Y', 5-wire, 60 amp** drop to the unit using a Hubbell HB560C9W Connector (Cybortronics part number 405004) on an S/O type cord. (Also available in a receptacle as a R9W)



Correct phasing of the power drop insures that the refrigeration system will run in the proper direction. (See photo below) Ask the electrician to provide this phasing when wiring the chamber power

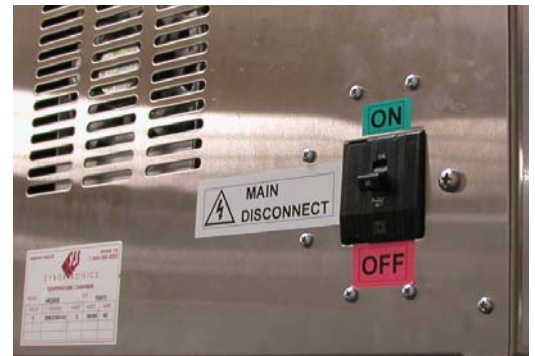


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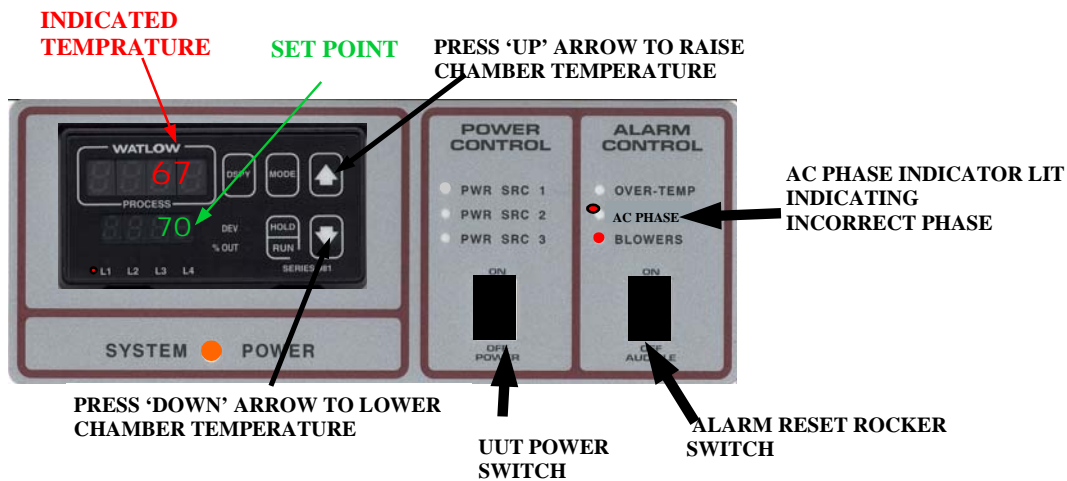
PHASE VERIFICATION

- Attach the chamber to the live power cord and switch the chamber main disconnect switch to the 'ON' position.
- The chamber's process blower will activate and the chamber will begin regulating at the factory setting of 25°C.
- **INCORRECT PHASING** will light the **RED AC PHASE ALARM LED** on the front panel of the chamber and the chamber will **NOT** turn on.
- **IF** this condition exists, the electrician must change the phasing on the **supply side** of the power drop by interchanging any two of the power lines in the supply connector.

MAIN DISCONNECT SWITCH



DO NOT CHANGE THE PHASING ON THE CHAMBER, DAMAGE TO THE CHAMBER COULD RESULT!!



4

VERIFY CHAMBER OPERATIONS

- Turn ON the chamber using the main disconnect switch, the process blower will activate.
- Dial UP the chamber process set point temperature (displayed in 'GREEN' to 70°C, using the 'UP' arrow button on the Watlow Temperature Controller. **(the temperature controller has been programmed to display and send (via RS232) all temperature readings in Celsius)**)
- The chamber will heat to 70°C in approximately 5 minutes, as indicated by the 'RED' chamber temperature controller display.
- Dial **DOWN** the chamber process set point temperature, as indicated by the 'GREEN' chamber temperature controller display) to -10°C. The chamber's refrigeration system will activate and the process temperature will drop to, -10°C as indicated by the 'RED' chamber temperature controller display) in approximately 10 minutes.
- Return the chamber set point to 25° before turning the chamber off for loading.

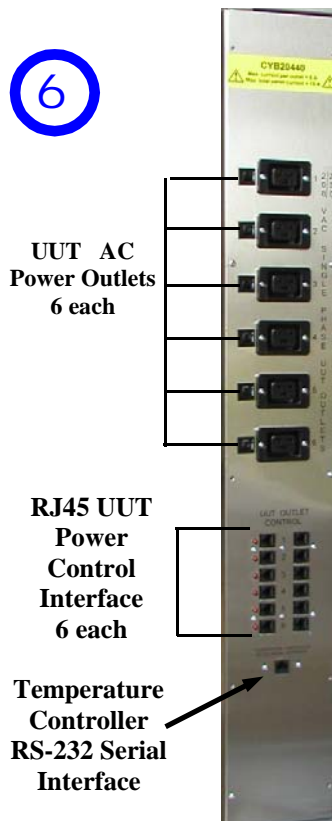
5

UUT AC Distribution Panel

The CYB20440 AC Distribution Panel is an option used to switch 208/230 volts AC 1 phase to 6 different UUT, (Units Under Test) in the chamber.

- Each of the six, (6) switched outlets can support up to 5 amp UUT loads through the Cybortronics provided patch cords. The patch cords can be routed through a local pass through port on the sides of the chamber, to the UUTs inside.
- The UUT power control interface, consisting of two RJ-45 connectors for each UUT outlet, are provided to control each respective outlet through the DTR leg in the UUT console port.
- Route each UUT's console port into and out of the respective control I/O connectors before terminating it at the UUT.
- When the DTR signal is 'ON' or 'HIGH', the respective panel LED will light and the AC circuit will be turned 'ON' to the UUT.
- When the DTR signal is commanded 'OFF' or 'LOW' the panel LED and the AC outlet will turn 'OFF'.
- An LED is also attached to each DTR line. The ground line to all of the SSRs is passed thru a relay connected to the chamber control circuit. This relay is controlled via the Power On/Off switch located on the front panel of the chamber. The relay will also be turned off if an alarm condition is present in the chamber. This will then disable all SSR's and remove AC power to any product plugged into the 6 UUT Outlets.

6



RS232 Communications with the Watlow Temperature Controller :

Specifications:

- RS232 ASCII format, 9600 Baud, 8 Bits, No parity, 1 stop bit
- Connector is: RJ45 Female:
- Pin 3 = Send
- Pin 6 = Receive
- Pins 4-5 = Ground
- Commands: via RS232 interface:

Symbol definitions:

<sp> is the space character

<cr> is the carriage return

To Read a Chamber Temperature:

The command string is:

?<sp>C1<cr>

Controller response is:

xx<cr>

(Where xx is the temperature value in °C)

To Program a Chamber Set Point:

The command string is:

=<sp>SP1xx<cr>

(Where xx is the temperature value in °C)

(There will be no response back from the Watlow Controller)

To Read Back Current Set Point:

The command string is:

?<sp>SP1<cr>

The Controller response is:

xx<cr>

(Where xx is the temperature in °C)

UUT Pass Through Ports. Three on the left side and four in the back



PLEASE NOTE THAT THE ENTIRE UUT AC DISTRIBUTION PANEL CAN BE CONTROLLED BY THE 'POWER CONTROL' ROCKER SWITCH ON THE FRONT PANEL OF THE CHAMBER. THIS SWITCH WILL HAVE TO BE 'ON' IN ORDER TO ENABLE THE AC PANEL TO THE UUTs.



ALSO NOTE THAT ANY ALARM CONDITION WILL AUTOMATICALLY DISABLE THE ENTIRE UUT AC DISTRIBUTION PANEL.