

STANDARD OPERATING PROCEDURE FOR CASCADE TEK TVO-2 VACUUM OVEN



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OVERVIEW

Cascade TEK TVO-2 vacuum oven is designed for constant temperature drying, curing, and baking applications under vacuum. The vacuum is maintained by a replaceable silicone gasket rated at 230°C and is vulnerable to acids and solvents. Heating takes place primarily by conduction. The heating elements inside the chamber heat the shelves which in turn heat the samples resting on the shelves. A temperature probe is attached to the bottom side of the short chamber shelf. A nitrogen line supplies the oven with an inert gas source and is set to no more than 15 psi.

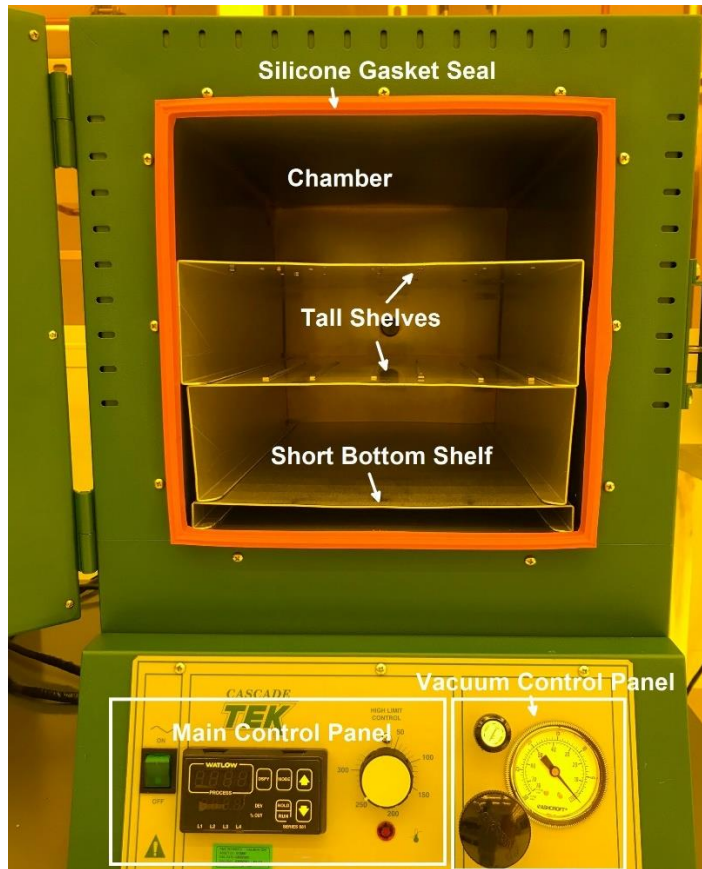
PRECAUTIONS

- 1) **The oven is not explosion proof.**
- 2) Do not use this oven under applications that produce flammable or combustible gases, vapors, liquids, or explosive fuel-air mixtures.
- 3) Do not heat hazardous fibers or dust.
- 4) Oven chamber floor runs hotter than shelf during operation. Do not put samples on oven chamber floor underneath the short bottom shelf.
- 5) Do not put sealed or filled containers in oven.
- 6) The oven door should be sealed and evacuated during baking.

OPERATION



- 1) Verify the Vent Valve and Vacuum Valve are in the closed position (turned fully clockwise)
- 2) Open chamber door and inspect the silicone gasket seal for particles and/or wear. If necessary, use dry cleanroom wipe to gently remove particles.



- 3) Place sample on a shelf inside the oven chamber.
- 4) Close and latch the chamber door.
- 5) Turn on the Oven. The display will illuminate the current temperature.
- 6) **Set the Over-Temp Safety Dial** by initially turning fully to the clockwise (maximum setting). This setting initially allows the temperature to stabilize at its set point.
- 7) Once the temperature is stable at desired set point, turn the Over-Temp Dial to counterclockwise just until the Over-Temp Light turns on.
- 8) Next, turn the Over-Temp Dial clockwise just until the Over-Temp Light turns off.
- 9) Continue turning the Over-Temp Dial clockwise another hash mark. This sets the Over-Temp Safety Thermostat to approximately 10°C above the Main Temperature Set Point.
- 10) Open the Vacuum Valve and evacuate the oven. The door may need to be gently pushed in while evacuating to create an initial seal. Note: The Over Temp Light will be blinking when the Main Temperature Controller is calling for heat.
- 11) Set the Operating Temperature using the Up/Down arrows on the Main Control Panel



- 12) Continue evacuating the chamber while baking to remove outgassed byproducts.
- 13) After baking completes, turn off the Vacuum Valve off by turning fully clockwise.
- 14) Wait for oven chamber to cool to safe handling temperatures (<50°C)

- 15) Slowly open the Vent Valve and vent to atmosphere.
- 16) Remove sample and leave oven door slightly opened when not in use.
- 17) Turn off the Oven power. The current Set Point will be saved even if the power is turned on and off.

| Contributors | Revised Date |
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