

## Desiccant Dryer Connection

### Get to know the dryer:

### Electrical Requirements/Connections:

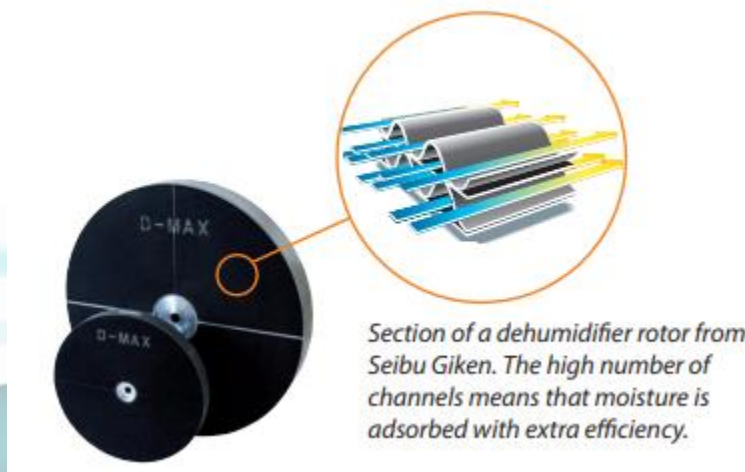
Your Dryer will require a 120 VAC 60Hz 15A dedicated circuit. This will be a separate circuit from the chamber's circuit.

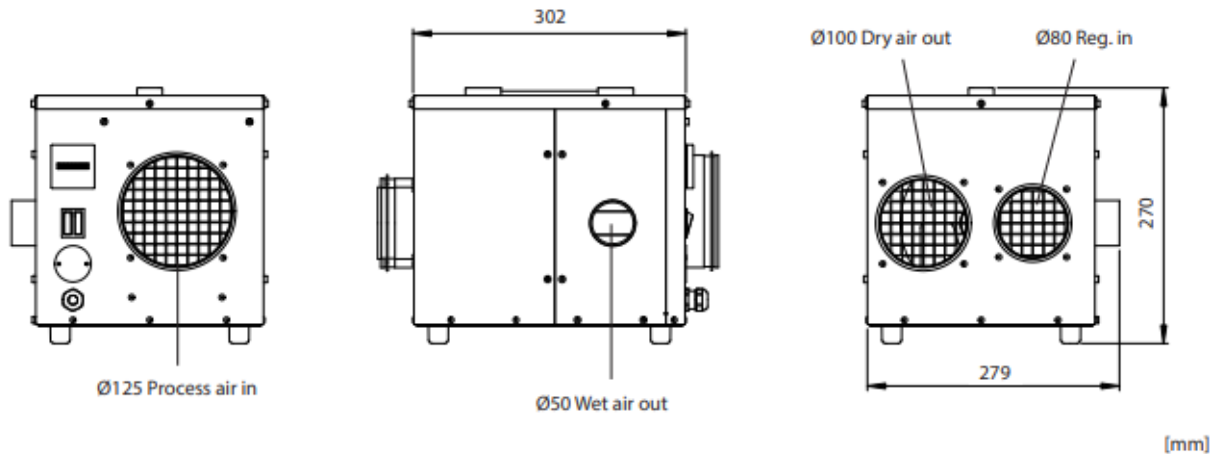
On the back of the chamber will be a connector for remote operation. Plug the cable into dryer and chamber when applicable. Note: Connector is keyed to only be installed one way. Twist end of connector to lock in place once connected. Care should be given to the remote cable as a power cord should have. Damage to this cable could cause electrical shock.



### Mechanical operation:

Desiccant Wheel: is used to absorb moisture from the air that passes through the veins of the wheel.





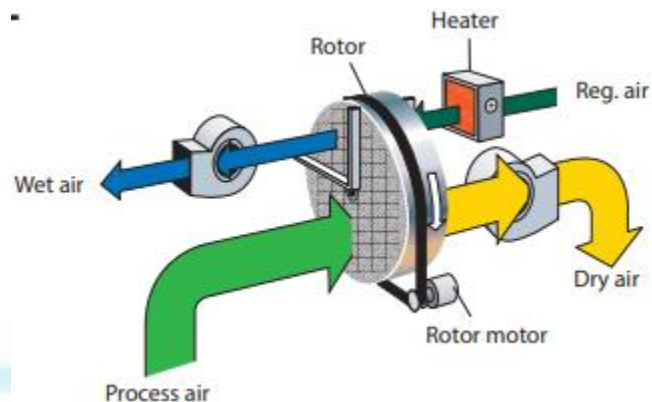
Process air in: is the air from the condition space of the chamber.

Wet air out: is the moisture that has been removed from the desiccant dryer wheel. The desiccant wheel is heated to remove moisture and is exhausted from the dryer.

Dry Air Out: is the dried air exhausted to the chambers condition space.

Regen air: air pulled from the ambient space to be heated and force moisture from the desiccant wheel. This replenishes the desiccant wheel to absorb more moisture. The dryer the ambient air the more effective the desiccant dryer. High humidity levels in ambient space will impact dryer performance.

The function of the Dryer:



As air is pulled from the condition space from the chamber, the chamber's air passes through the dryer's process air inlet, then through the desiccant wheel, then passed through the fan. The fan will then exhaust the dried air back into the condition space of the chamber.



Pipe labeled “A” will be for the process air. The piping on the back of the chamber will be labeled “A” at the connection point for the hose from the dryer also labeled “A”.

Process Air side of hose will connect to the process side of the dryer, labeled “Process Air”.

Dry Air side of Dryer will connect to the “Dry Air” labeled hose. The other end of the hose should be connected to pipe labeled “B”. Both hose and pipe should be labeled “B”.

Wet air hose should be connected to the dryer and the other end of the hose should be exhausted to the outside air or the building HVAC return air. If outside air or HVAC return is not available, it is best to exhaust air as far as possible from the chambers ambient space.

### **Valves**

The valves on the back of the chamber are used to help chamber performance for cooling and drying. There is a Valve on the process air to limit the amount of air leaving the condition space.

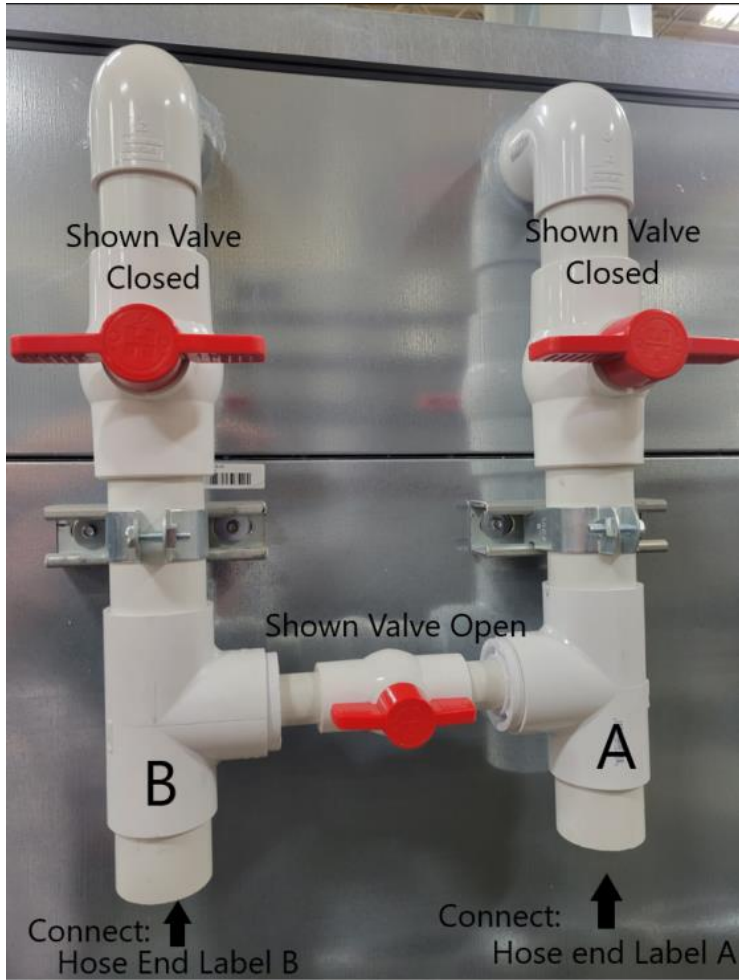
The Valve on the Dry Air out limits the amount of the dry air coming back into the chamber.

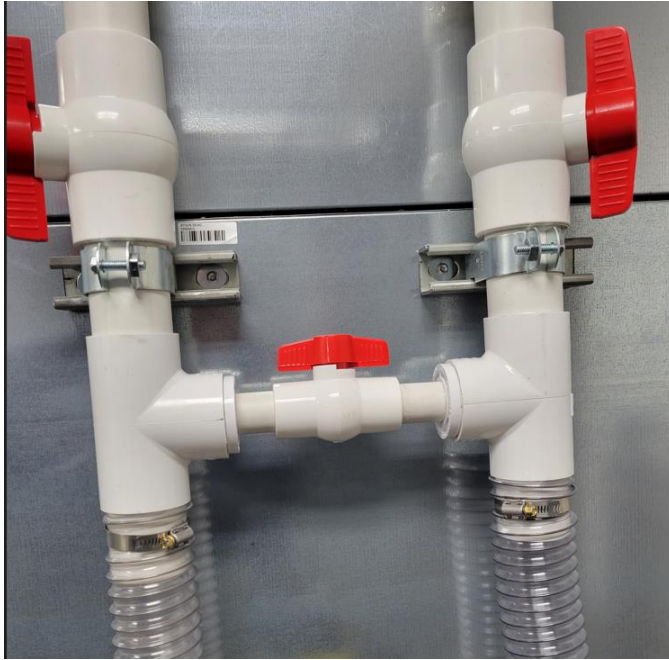
The Valve in the center is a short cycle valve. This helps to get the air dryer without adding more heat in the chamber. When drying the air, the desiccant wheel can be heated more than the chamber condition space. This added heat load can affect the lower temperature range the chamber is normally capable of achieving. Opening the short cycle valve may help to achieve the lower temperatures, while also achieving lower humidity levels. Opening the short cycle valve will also reduce the amount of the condition space air getting to dryer. This will increase the recovery times for achieving low humidity levels. The dryer is less effective with the short cycle valve open. For best drying performance leave closed. Incrementally over time open valve only when low temperatures are not achievable while dryer is running.

Adjust valves for proper operation for desired set point. For Lower temperatures Dry Air return Valve may need to be closed incrementally to achieve desired low temperature, along with opening Short Cycle valve to reduce load on the dryer. Experimentation in adjusting the valves will be best to get ideal performance.

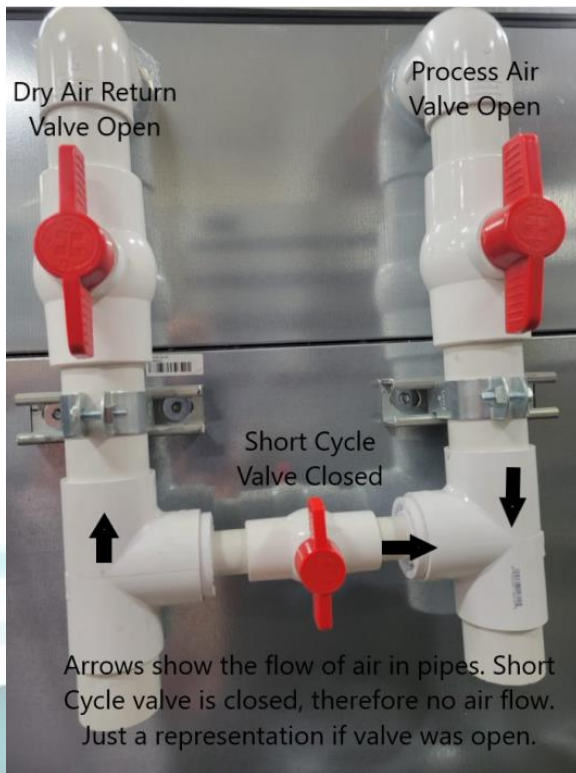
Hose Connections

Back of Chamber:





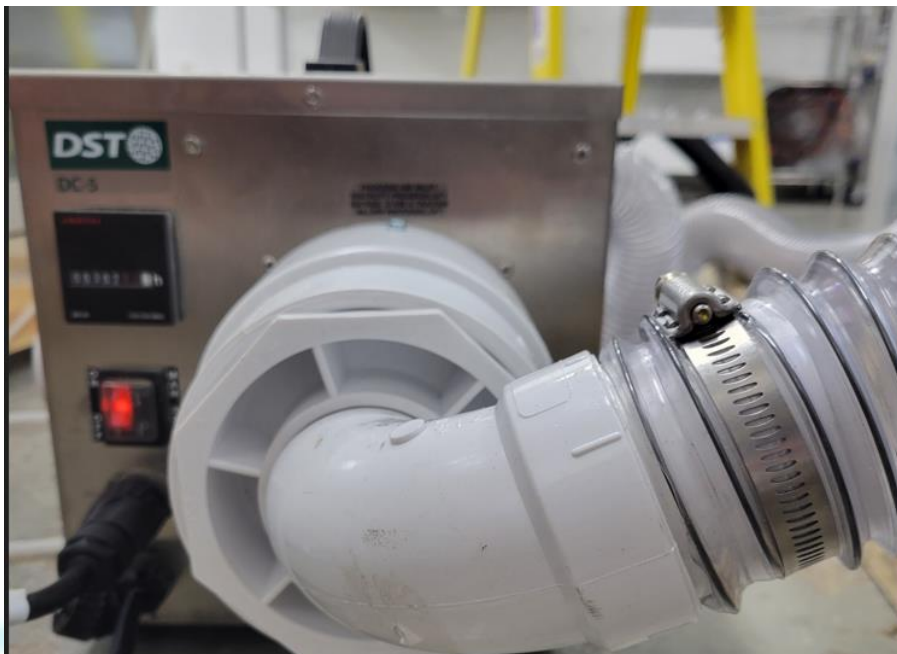
Connect hose to bottom of pipe. Fasten stainless steel strap to secure in place.



Dryer hose connections:



Pictured above is the Dry Air outlet and regen air inlet side of Dryer



Pictured above is the Process air inlet side of Dryer. Note power switch (illuminated) and the Auto /Manual switch in black.



Pictured above is the Wet Air outlet. Connect the exhaust hose end to this pipe and the other end of hose should exhaust to outside air. If outside air is not available, then best to direct to air return on building HVAC system.

DO NOT have dryer connected for a chamber with a high set point in humidity. This will cause condensation in the hoses and Dryer. This will cause corrosion in the Dryer and subsequent malfunction. This would void the warranty on the Dryer. The best practice is to remove hoses and close the Dry Air Return and Process Air Valves.