Heatless Desiccant Compressed Air Dryer
Operation and Flow Diagram

DRYER OPERATION - Heatless Desiccant Compressed Air Dryers from General Air Products provide a smooth, controlled uninterrupted delivery of dry compressed air.

Wet air passes through a pre-filter and travels down to the bottom valve assembly. The air is then fed through the bottom of the desiccant bed and moves through the high performance desiccant until it becomes dry. On exit from the desiccant cartridge, the air is passed through the outlet valve assembly.

During this process, the dryer control system cycles the process air between the two desiccant towers. While one chamber is on stream removing water vapor, the other is being carefully de-pressurized in preparation for regeneration. The desiccant bed is regenerated by expanding a small amount of dry process air, or purge air, through the saturated desiccant.

Purge air passes to atmosphere through the silencer, which is fitted to an exhaust valve. The chamber is then repressurized, with the control system assuring each chamber is at full operational pressure prior to changeover. This ensures a reliable and efficient operation. The air stream is switched and the cycle repeats on a continuous basis.

1.) The pre-filter with electronic drain removes particulates and coalesced liquids from the air stream. Wet air passes through the filter to the bottom of the valve assembly.

2.) The air is fed through the bottom of the desiccant bed and moves through high performance desiccant until dry.

3.) Purge air passes to atmosphere through the silencer which is fitted to the exhaust valve.

4.) On exit from the desiccant cartridge the air passes through the integral 1 micron dust filter removing particulate in the air stream

5.) The control system cycles the process air between the two desiccant towers.

6.) While one chamber is on stream removing water vapor, the other is being regenerated.