

C m ac
Regene a i e
Ai D e
DE0, DE5 Se ie

Catalog 9CW-AW-220



WILKERSON®

Compact Regenerative Pressure Swing Heatless Air Dryers

Features and Benefits

- Compact, modular design with few moving parts for long term reliability.
- Automatic regenerative operation and no regular maintenance required.
- Available in multiple voltages. Low power consumption.
- Solid state cycle timer with memory and quiet DC solenoid valves.
- Desiccant chambers are spring-loaded for long life and optimum performance.
- Purge mufflers are standard for quiet operation.
- Space-saving wall-mount bracket is standard.

Dryer Operation

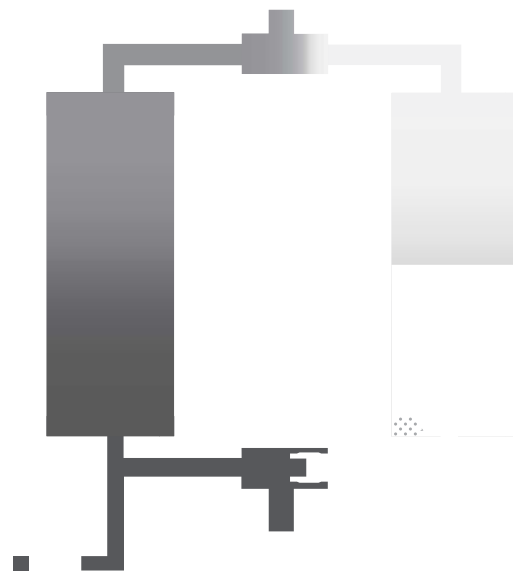
The heatless air dryers utilize two symmetrical desiccant towers. The wet air enters the dryer and flows through one of the towers where nearly all the water vapor is adsorbed. In the flow schematics shown below, the right tower is being regenerated while the left tower is drying the wet inlet air. Inlet air flow direction is controlled by the solenoid valves. As shown below, valve A is open and valve B is closed in the DE0, DE1, and DE2 dryers, directing the inlet air to the left tower. Valve B is open and valve A is closed in the DE3, DE4 and DE5 dryers, which allows the inlet shuttle valve to direct the air to the left tower.

A portion of the dry air is allowed to flow through an orifice into the right tower. The dry air flowing through the orifice expands to nearly atmospheric pressure, which dries the purge air still more. This very dry air extracts the water from the desiccant as it flows through the right tower and out the solenoid valve exhaust port.

The orifices are fixed and are sized by the factory, based on flow and pressure.

A solid state timer controls the cycling of the solenoid valves. After a set period of time, the procedure is reversed. The wet left tower is being regenerated, while the right tower is drying the wet inlet air. During each cycle, the desiccant towers are either drying the wet inlet air or being reactivated with dry air from the drying tower.

The total cycle time for the DE0, DE1, and DE2 dryers is one minute. The tower being regenerated has 30 seconds of purge flow before the valves switch towers. The DE3, DE4, and DE5 dryers have a total cycle time of two minutes. The tower being regenerated has a purge flow of 40 seconds and then a 20-second repressurization.



Notes

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