Energy-Efficient Compressed Air Combination Dryer-S2412

(Range 100 CFM to 500 CFM)

An energy-efficient compressed air dryer is a system used to remove moisture from compressed air, which is essential for keeping machines and equipment running smoothly. When air is compressed, moisture can build up, leading to rust, damage, or inefficiency in your equipment. That's where air dryers come in—by keeping the air dry, they prevent these issues and help the system operate at its best.

A combination dryer is simply a dryer that uses more than one method or type of technology to remove moisture, making it even more efficient. For example, some combination dryers use both refrigerated dryers and desiccant dryers. The refrigerated dryer cools the air to remove moisture, while the desiccant dryer uses special materials to absorb any leftover moisture. By combining these two methods, you get better performance and energy savings.

Why Energy-Efficient Compressed Air Dryers Matter

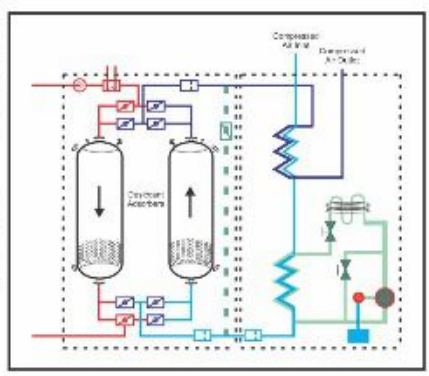
- Lower Energy Bills **(Adsorption dryer cost 4kw (Assuming 15 to 20% purge loss) with combination dryer will cost only 1.6kw, saving 2.4kw)**
- Reliable Performance
- Better for the Environment
- Long-Term Savings

Some key industries where these dryers are used

- Manufacturing
- Laser Cutting
- Pharmaceutical
- Food and Beverage
- Electronics and Semiconductor
- Automotive
- Petrochemical and Oil & Gas
- Textile, etc.

The hybrid technology is a further development of this principle, where both systems are integrated. As shown in the schema below. The refrigeration system supplies and cold (+3°c) compressed air to the adsorption dryer. The adsorption process shows its highest efficiency when the compressed air is cold (+3°c) and fully saturated (R.H.is 100%). Since 85% of the water content has been removed by the refrigerant dryer, the adsorption dryer only needs to remove the remaining 15%, under ideal process conditions. This allows long adsorption times using an adsorption dryer of reduced size. After the adsorption process the cold dry air (-40°c pressure dew point) is led back to the air/air heat exchanger of the refrigerant dryer. Where it is reheated to 27°c.

Before entering the adsorption dryer, the cold air flows through a high-efficiency demister/water separator and through a 0.01 micron oil fine-filter. At this low filtration temperature the efficiency of the oil fine-filter is about 10 times higher than at a filtration temperature of 20°c. Before entering back into the refrigeration dryer the air is cleaned from desiccant dust particles in a 1 micron dust filter.



Schematic Hybrid Dryer

Specifications :

- MWP : 16 bar
- Working Pressure : 7 bar
- Inlet Air Temp. : 45°c (Max.)
- Ambient : 45°c
- Dew Point : -40°c
- PF : 3 Mircon with Autodrain
- AF : 0.01 Micron with Autodrain
- OF : 0.003 mg/m³
- MSF : Moisture Removal with 5 Micron Filtration with Autodrain

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