

Precision Control in Industrial Processes Applications

The benefits of energy recovery are not limited to air conditioning applications. Industrial processes often use air as a heat transfer fluid to heat or cool manufactured components, materials, or equipment. Energy recovery can be used to cut the costs of heating or cooling this air. This unit was designed for a manufacturing facility that used a material drying process which required a constant supply of air with a very precise mass flow rate and temperature. Using a highly precise volumetric airflow monitor, XeteX provided custom controls that accounted for changing outdoor air density to perform on-the-fly calculations of mass flow rate. Heating was accomplished with a super-efficient double-pass heat exchanger, and an electric heater with modulating SCR controls. These components provided a supply air stream at the specified conditions and with the precision required for the process while also using energy recovery to cut the operating costs of the facility.

Performance Specification

Model: **XC-8-24-XD-HE**

Supply cfm: 420

Exhaust cfm: 480

Built: March, 2010

Dimensions: 24" H, 60" L, 26" W

Weight: 600 lbs

Energy Recovered: 34 MBH

Design Conditions: 68 °F / 51% RH



The XeteX Unit, ready to ship.



As a part of factory testing, a remote blower was connected to the unit. The precision with which the unit could control the supply air temperature and mass flow rate were verified before it shipped.

Unit Features

- A Double-Pass XLT Epoxy-Coated Type H Aluminum Flat Plate Exchanger operates in a high temperature environment at 66% effectiveness.
- The Industrial Duty Double Wall cabinet has an 18 gauge Galvanized Steel Exterior, 18 gauge Galvanized Interior, and 1" thick Fiberglass Insulation. The Frame and Support Legs are Welded Structural Steel and the drain pan is all-welded galvanized steel.
- A 14 kW Electric Heater, rated for High Temperatures, warms the supply air from 140 °F to 240 °F. The heater is controlled by a fully modulating SCR that is capable of holding an extremely stable supply air temperature to within ± 2 °F as outdoor temperatures fluctuate .
- An Ebtron Airflow Monitor precisely measures the volumetric flow rate of outdoor air being supplied to the process. Custom controls by XeteX perform on-the-fly calculations to convert this volumetric flow rate into a mass flow rate. The XeteX VFD then operates a remote-located blower (provided by others) to supply the required 420 SCFM with a precision of ± 10 SCFM.

The XeteX unit featured on this page was built for an actual application. It is provided here to show our capability.