



COMMERCIAL & INDUSTRIAL HVAC EQUIPMENT

Project Overview:

Fairfield Inn - Durango, CO

Titan Air LLLP Product Lines

- | | |
|---|--------------------------------------|
| 100% Air Makeup Units | VAV Makeup Air Units |
| AR/80 - Air Recirculation | Swimming Pool Room Units |
| Cooling Units & Modules | Custom Equipment & Controls |
| • Direct & Indirect Fired, | Electric, Hot Water, & Steam Heating |
| • Direct Evaporative, DX, & Chilled Water Cooling | |
| • Energy Recovery Units (Flat Plate & Dessicant Wheels) | |

Energy Recovery Ventilators



The Fairfield Inn & Suites by Marriott has 80 rooms and features a pool & fitness center as well as dining facilities.

Project Background

The design called for the introduction of fresh air and exhausted air from each of the 62 rooms and 18 suites and well as providing ventilation to each of the common areas. By ducting exhaust air from each room through a Titan ERV unit which in turn, preconditioned the supply air to a Packaged Make-Up Air unit, the building system was able to recapture the available energy normally lost through the exhaust process.

Utilizing a separate ERV and Make-Up Air Unit provided the advantage of keeping the Overall Height to a minimum providing better aesthetics to overall look of the building.



Titan Air Partners

- **Mechanical Engineer:**
ABQ Engineering
Albuquerque, NM
- **Mechanical Contractor:**
Fahrenheit Enterprises
Bayfield, CO
- **Titan Air Reseller:**
The Tempered Air Group
Sheridan, CO - Curt Gagner



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Energy Recovery Ventilators

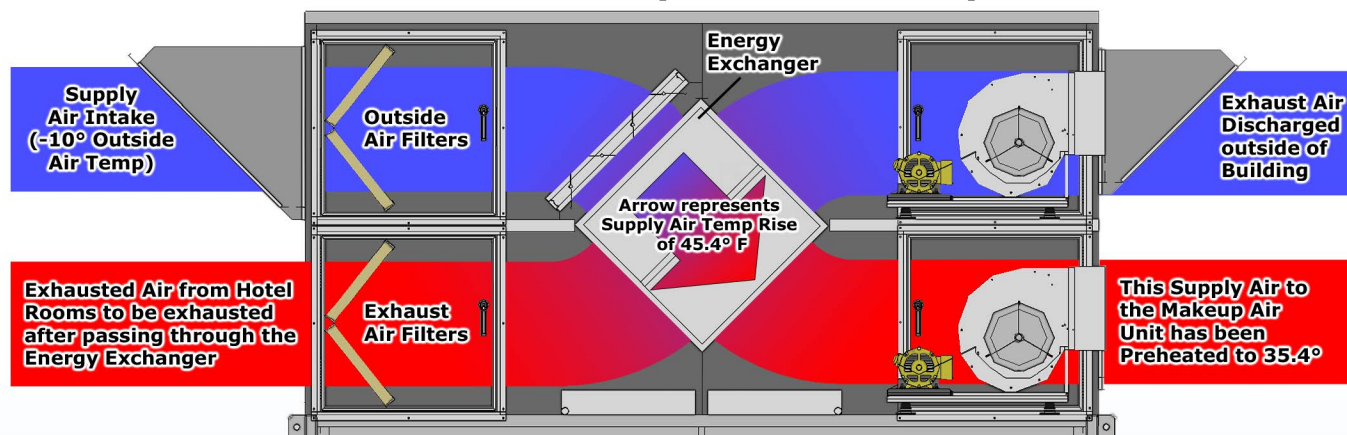
Titan Air's Solution

The ERV that Titan Air manufactured was designed to run continuously at a constant air volume to provide exhaust from the building and pre-condition the intake air for the air makeup unit. The ERV unit was able to defrost based on internal controls by bypassing the heat exchanger with the outside makeup air when needed. As seen in the example below, during winter this unit is capable of utilizing the energy of exhausted air to raise the temperature of -10.0°F entering air to 35.4°F (Temperature Rise of 45.4°F). In summer this unit is capable of cooling entering exhaust air of 95°F down to 89.1°F .

The Titan ERV was designed with a 5 HP supply motor for 4,735 CFM, and a 3 HP exhaust motor for 3,960 CFM, each powering a 12" Blower. The unit had a metal interior liner, and also received enamel paint to the exterior casing and accessories.



Winter ERV Operation Example



Operational Overview:

- Titan ERV: to furnish tempered air to Packaged MUA Unit
- Operation: Constant Blowers - 24 hrs / 7 days
- 4,735 Supply CFM / 3,960 Exhaust CFM
- Winter Design: -10 degrees (F)
- Summer Design: 95 degrees (F)
- Defrost Cycle: Bypass Damper for Exchanger Cell
- Typical Winter LAT @ -10 degrees ambient \rightarrow 34.5 degrees (F)
- Typical Summer LAT @ 95 degrees ambient \rightarrow 89.1 degrees (F)
- Supply Blower HP: 5 HP ODP motor
- Exhaust Blower HP: 3 HP ODP motor