



CASE STUDY: MICROBIOLOGY LAB

Facility: University Microbiology Laboratory
Location: Austin, TX

Project Type: Heat Wheel Retrofit

Wheel Type: Enthalpy High Performance 3Å 54,000 CFM
Scope: Replacement of one SEMCO TE3-70 heat wheel

Problem:

Mechanical Failure of Existing Wheel. In 2006 the facilities staff contacted Thermotech Enterprises concerning the existing SEMCO energy recovery wheel. According to the staff, "Several portions of the outer rim and spokes have been destroyed necessitating a complete retrofit." Our technician also noted that the pieces of media had come loose due to spoke deflection. The original casing design was found to be deficient allowing substantial wheel deflection causing an increase in bypass and a loss of performance. The wheel handles the exhaust from lab fume hoods so limiting cross contamination was also a major concern. The project had to be completed over one weekend including demolition and removal of old material. All Technicians were required to use protective suits while working in the AHU.

Solution:

Thermowheel TR-Series. The retrofit product chosen was a Thermowheel TR-697 energy recovery wheel utilizing high performance 3Å coated media. This product was installed in the existing frame of the old wheel. The frame was upgraded with over 1,000 pounds of structural steel and modifications were made to eliminate wheel deflection. All rotor parts were replaced with the patented Thermowheel system, including a new constant speed motor. The project was performed over one weekend to eliminate disruption of lab activities. All work was accomplished turnkey by Thermotech staff.

Results:

Functional Heat Wheel. With careful planning the project was successfully completed on schedule and the wheel was up and running Monday morning. Tommy Bennett, Maintenance Manager, sent Thermotech the following message: "I think you all did an excellent job. I am glad some companies/their employees still take pride in their work and performance. We have two more heat wheels down and will need repairing later on when permissible. Thanks." Thermotech's goal of providing high performance and reliability coupled with the engineering expertise of the Thermotech team has resulted in a reliability record that is the envy of the industry. As a follow up, Thermotech replaced 2 other SEMCO TE3-70 wheels in 2009 and is the vendor of choice for all future retrofit projects at the facility.