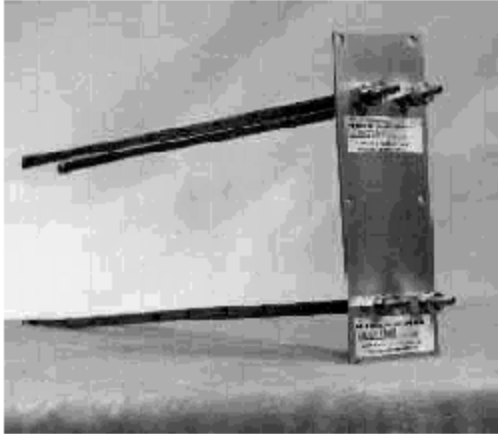


Small Self-Contained Air Valves

BULLETIN 825



Product Design

The Waddell solution is our airfoil damper with a form of airflow measurement either a low-pressure drop orifice plate or an airflow station. The airfoil damper has been applied to critical HVAC projects since 1970. The airflow station provides positive feedback (closed loop) control. The airfoil vanes provide stable non-turbulent airflow control without hysteresis during wide duct pressure changes. The non-turbulent airflow is inherently quiet.

Benefits

- Simple Rugged Construction
- Repetitive Output
- Accurate through a Wide Velocity Range

Application

- Vivariums
- Local Exhaust System

Advantages

- Low pressure drop
- Space savings
- Closed Loop

Benefits

- Accurate airflow
- Stable airflow
- Quiet

For supply applications we can include a small removable HEPA filter. Should animal hairs or other items be present in the exhaust side the valve can also include a removable 30% pre filter. In either application the damper will maintain a constant airflow in spite of the increase in filter resistance.

The valve is available in two sizes
25-150 CFM
125-350 CFM

System Design Considerations

Accurate temperature and humidity control in a space serving small animals is critical to the success of the experiments. Pressures relative to adjacent spaces should also be considered.

Several design options are available

1. One flow control valve managing the space airflow and temperatures
2. Temperature control over the entire space and airflow control to each rack
3. Temperature and flow control over each cage rack

Removal of one rack from the system requires a close off damper, as well as some pressure compensation.

Most airflow requirements are low - in the range of 25 to 100 CFM/rack and pressure between 0.3 and 0.5 in. This performance requires a properly sized valve operating in a very controllable pressure range. Oversized valves will operate very near to close off severely limiting the controllability of the valve.

Some feedback (closed loop) within the valve will assure accurate control when duct pressures vary.

Sometimes budget restrictions will eliminate the normal transmitter, building computer and transducer control.

AIR DISTRIBUTION PRODUCTS DIVISION
26 D Deacons Alley Moorestown NJ

YOUR LOCAL REPRESENTATIVE