

Major US Online Retailer

INTRODUCTION

In the competitive world of e-commerce, maintaining efficient and reliable operations is paramount for success. Our customer, a prominent online retailer, sought to enhance the performance of their Heating, Ventilation, and Air Conditioning (HVAC) systems to ensure the preservation of their valuable inventory and mitigate potential issues related to temperature, air quality, and organic growth, such as mold and mildew. To address these concerns, they engaged Melink, a trusted expert in HVAC system optimization, for a comprehensive Test, Adjust, and Balance (TAB) service.

CUSTOMER BACKGROUND

Our customer, a major player in the e-commerce industry, relies on a vast warehouse to store and distribute a wide range of products. Efficient climate control is essential for safeguarding their inventory, ensuring the comfort of their workforce, and preventing any adverse effects on their equipment. The HVAC systems in their facility comprise numerous Roof-Top Units (RTUs) designed to regulate temperature, humidity, and air quality.

IMPORTANCE OF TAB

For a retailer like our client, maintaining proper HVAC system balance is of paramount importance. A well-balanced system helps in regulating temperature and humidity, preventing condensation and reducing the risk of organic growth issues, such as mold and mildew, on

KEY FINDINGS

72%

RTUs Operating Below
Specified Design
Airflow

66.1

Motor AMPS Savings

15%

Overall Increased
Efficiency

Customers Feedback

"We'll build a 7-figure store, and then we'll fight with the A/C or negative air pressure for months or years, all because the equipment was never setup properly. The TAB was done by the mechanical contractor, hired by the general contractor, but it was a fox guarding the henhouse. Melink's reports allowed us to know everything was installed the way it should be from the beginning."

Melink Test, Adjust, & Balance (TAB)



stored products. Timely TAB services are essential to ensure that the HVAC systems perform optimally and minimize the potential for downtime due to mechanical issues.

MELINK'S SOLUTION

Melink collaborated closely with the customer to resolve the issues at hand. The key steps in our approach included:

Replacement of Incorrectly Sized Motors: Melink worked diligently to inspect all the RTUs on site. 40 out of 55 RTUs had 5 hp motors and were specified for 7.5 hp motors. This upgrade will significantly improve the system's airflow and performance.

Comprehensive TAB Services: After the motor inspections, Melink conducted a thorough TAB of the entire HVAC system. This involved adjusting and balancing the air and water distribution throughout the facility to meet the design specifications.

Ongoing Maintenance and Monitoring: To ensure continued performance and to mitigate potential issues, Melink recommended a regular maintenance and monitoring program. Routine check-ups and adjustments can be performed to maintain the HVAC system's efficiency.

RESULTS

Following the implementation of Melink's solution, the customer experienced efficiency improvements in their HVAC system performance:

Optimized Airflow: With the correct motor sizes identified, the customer made arrangements to replace the undersized units. Once complete, TAB services will be performed, thus helping the HVAC system achieve the specified design airflow and providing efficient temperature and humidity control.

Prevention of Organic Growth Issues: The enhanced HVAC performance will effectively minimize the risk of organic growth issues, such as mold or mildew, safeguarding the integrity of the stored products.

Energy Savings: The customer also witnessed energy savings due to the improved system efficiency, contributing to reduced operating costs.

CONCLUSION

In this case study, Melink addressed critical HVAC system issues that were impacting the operations of a leading online retailer. By identifying incorrectly sized motors and performing a follow-up, comprehensive TAB service, the customer's HVAC system will be better optimized once the underperforming RTUs are replaced. This will ensure optimal climate control and mitigate potential issues related to organic growth or equipment failure. Melink recommends rebalancing outside air every 5 years, according to ASHRAE standards.

Did you know?

The annual energy consumption of an average-sized distribution center's HVAC system can be equivalent to the energy use of over 200 households?

