

Townsend's, Inc. Controls Condensation and Saves Energy with Munters PowerPurge™ Dehumidification System

The Problem

Townsend's, Inc. is one of the largest processors of chicken in the United States. Townsend's produces more than 12 million pounds of chicken a week and is one of the top three producers of quality boneless breast meat in the nation with an annual production level of more than 125 million pounds.

Townsend's plants produce whole birds, chicken parts, boneless breasts, boneless leg meat, portion control breasts, IQF retail products, and custom products. Approximately 80 percent of this output is sold to poultry distributors, retail chains, and food service institutions across the country. The remainder is exported to countries such as Japan, Hong Kong, and Singapore.

Townsend's was challenged to keep the overhead surfaces in the evisceration and further processing areas free of condensation. As the facility would prepare for its pre-op inspection, the crew would concentrate on wiping down the ceiling, cable trays, structural columns, etc. Much of the surface water was due to overspray from sanitation, but substantial moisture also entered the facility with the ventilation air which then condensed on these surfaces. Sometimes this would occur after wipers had already prepped the surface, thus requiring re-wiping.

Randy Evans, North Carolina Plant Operations Manager, had tried to use fans and heaters to eliminate the problem with no success. "We were concerned about condensation on the ceiling, especially at startup. No checks could be done until all condensation was removed from the area. We had 18 to 20 people wiping down surfaces each night to prepare for QA and USDA inspection. This was causing 1-2 hours per week of downtime since we could not get it done quickly enough after sanitation was complete" he said.

Townsend's contacted Munters for a dependable, cost-effective solution.

The Solution

The solution was to install a Munters Condensation Control System (CCS) in both the further processing and evisceration areas.

Initially, Munters provided a temporary Condensation Control System (CCS) to solve the condensation related problems at Townsend's until permanent equipment could be budgeted, built, and

Remove Condensation
with Dehumidification



Benefits of Using
Desiccant Dehumidification

- USDA Compliance
- Reduced Manual Labor
- Reduced Pulldown Time/
Increased Production
- Reduced Microbial Count
- Reduced Defrost Cycles
- Improved Temperature
Control/Reduced
Refrigeration Load

installed. Munters typically can supply temporary systems in 24 to 48 hours to meet a customer's immediate dehumidification needs.

The CCS works by supplying dehumidified air that absorbs moisture and controls the formation of condensation. The temporary CCS consisted of desiccant dehumidifiers, cooling modules and chillers. The condensation began to disappear within hours of the equipment installation.

"After installing the Munters equipment we quickly saw great results. The condensation was not evident like prior to installation. Instead of 18 to 20 wipers we now use 2 to 4 for approximately half an hour just prior to pre-op wiping down overspray and the minimal amount of condensation present. The ceilings stay dry and we continue to enjoy a better relationship with QA and the USDA. This has been a big success in our facility" says Evans.

Munters PowerPurge™

A permanent CCS was first installed in the debone area.

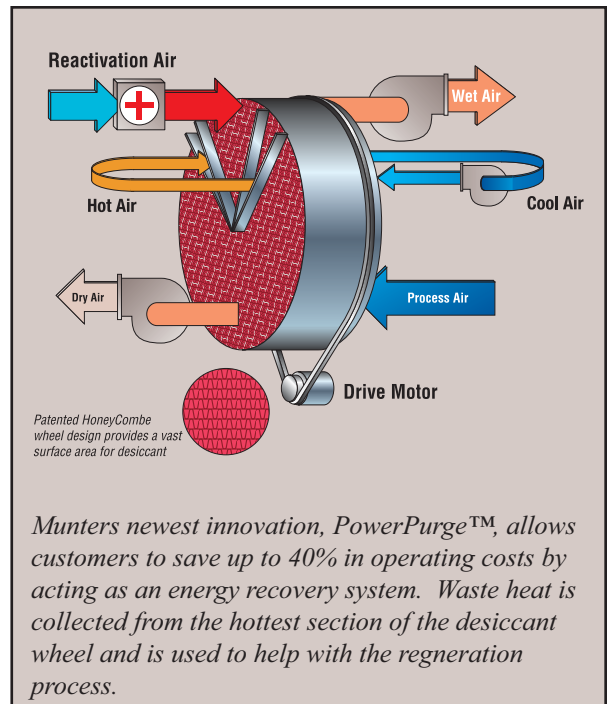
Approximately one year later funds were budgeted for a permanent system in the evisceration area. During that time period Munters had introduced PowerPurge, an energy recovery

option available in the CCS.

PowerPurge improves performance by delivering air at drier levels, while using significantly less energy than traditional active desiccant dehumidification systems.

The heart of the Munters CCS is the desiccant wheel. The desiccant wheel rotates slowly between two primary airstreams, process and reactivation. In the process airstream, water vapor is removed as it passes through the desiccant wheel. This dehumidified air is then delivered to a processing or evisceration area. The wheel then rotates into the reactivation sector where a heated airstream is passed through the wheel. The desiccant wheel releases the water vapor to this airstream. This moisture laden airstream is then exhausted outdoors. The majority of the energy required for the desiccant process is used in heating the reactivation airstream.

The unique patented PowerPurge system acts as an energy recovery system, collecting waste heat off of the hottest section of the desiccant wheel and using it to help with the regeneration process. This reduces the energy required for reactivation while lowering the discharge temperature of



the process air, decreasing energy costs for post cooling.

PowerPurge can also save on the initial capital investment. Equipping a desiccant system with PowerPurge can reduce the size of the desiccant rotor without diminishing the dehumidification capacity while still decreasing energy costs.

For Townsends the use of PowerPurge resulted in a desiccant wheel approximately 17% smaller that uses 21% less reactivation energy than a system designed to achieve the same amount of moisture removal without PowerPurge. The system also delivers air 9°F cooler than conventional systems, helping to maintain a comfortable, productive work environment.

Steve Fields, Plant Manager for Siler City says, "It was a win - win for us, using PowerPurge resulted in lower first cost due to the smaller wheel size while saving operational cost due to the reduced reactivation energy requirement."



Munters Condensation Control System equipped with PowerPurge™ installed at the Siler City, North Carolina plant.

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The Humidity Expert