

EXHAUST AND HEAT RECOVERY FOR BAKERIES

INTEGRATED VENTING AND HEAT RECOVERY SOLUTIONS



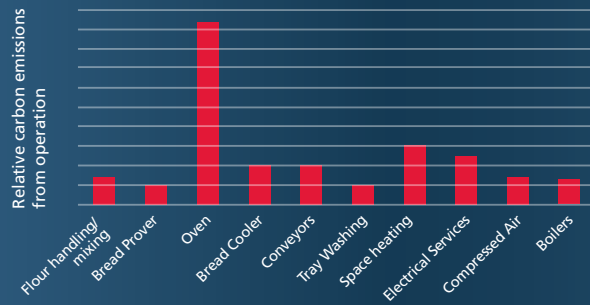
A VENTING SOLUTION THAT SAVES ENERGY— AND MONEY



Commercial and industrial bakeries looking to reduce their energy costs should survey the amount of energy expended by their baking, deck and tunnel ovens. Despite sophisticated controls designed to precisely manage the temperature and humidity of the environment, external factors such as atmospheric pressure, outside temperature and wind can cause excessive heat to exhaust through the chimney system — often at as much as a 35% heat loss.

This heat loss is often the result of a constant flow exhaust system that does not adjust to actual demand. The Ultimate Venting System is a packaged solution that offers demand-controlled exhaust and recovers energy from the exhaust.

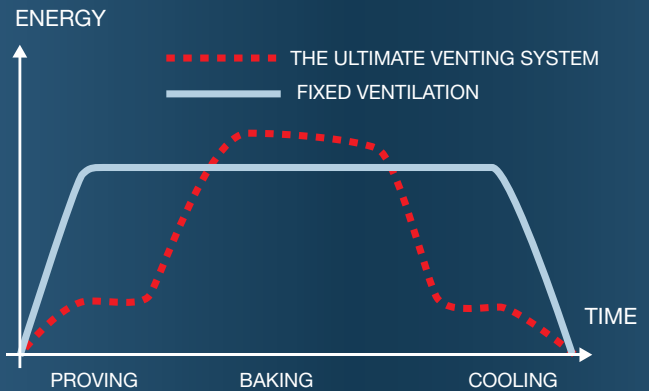
Energy use in Bakeries



PERFECT EXHAUST CONDITIONS AND MAXIMUM HEAT RECOVERY

ENERVEX's Ultimate Venting System is the single design that combats all the challenges in the typical economizer. It is the combination of modulating exhaust system and economizer that provides energy recovery opportunities to practically any boiler or oven application.

Fixed-speed exhaust systems operate at peak capacity 24/7, which accounts for the tremendous heat loss that's often seen in bakeries. The ENERVEX exhaust system accounts for any exhaust variation by automatic adjustment of the exhaust rate via fan speed, and the integrated heat exchanger will recover heat from the exhaust and transfer it to water.



VENTING AND HEAT RECOVERY FROM OVENS

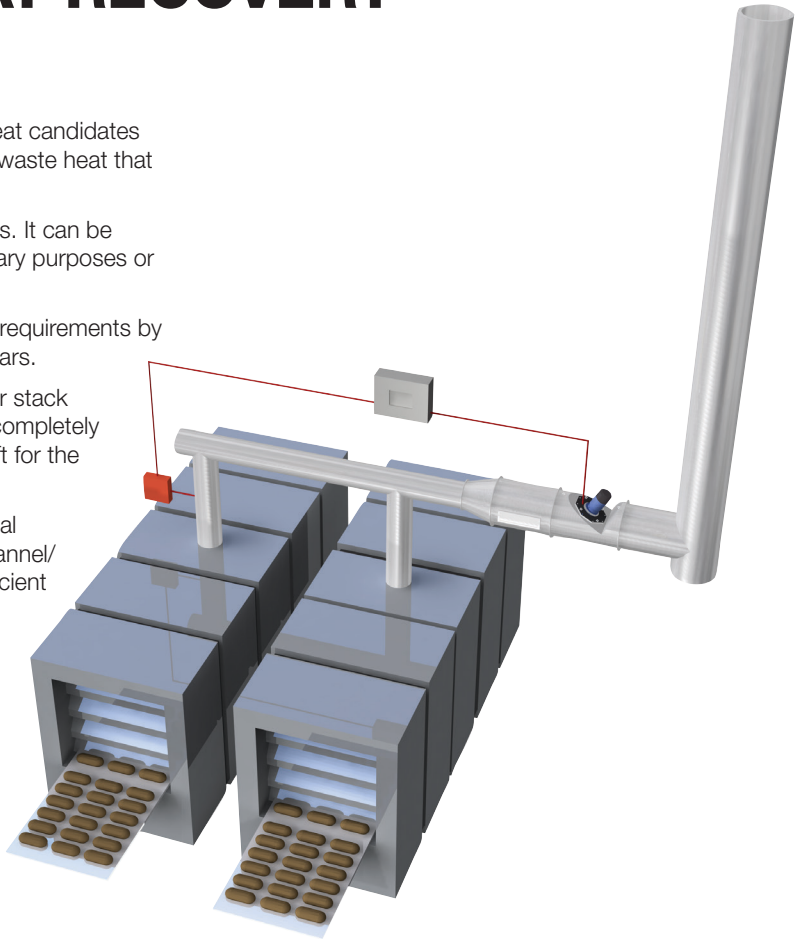
Baking ovens are huge energy consumers and are great candidates for harvesting Btu's. They often operate 24/7 and the waste heat that goes up the exhaust system is energy lost forever.

Recovered waste heat can be used for many purposes. It can be used to pre-heat water for processes, stored for sanitary purposes or used in conjunction with proofing.

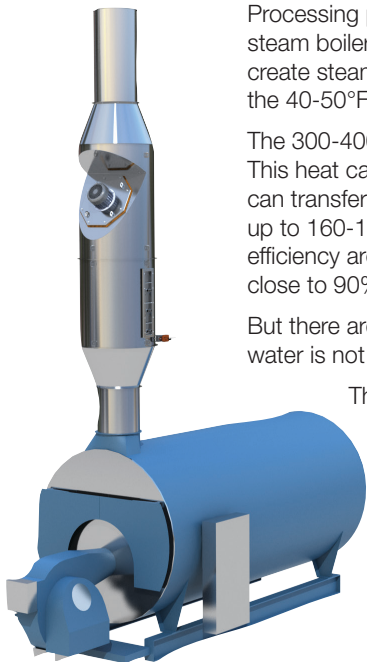
By recovering waste heat, it is possible to reduce fuel requirements by 5% to 10%. Payback are usually no more than two years.

The economizer system integrates seamlessly with our stack and demand-controlled mechanical draft systems to completely stabilize efficiency while ensuring proper/constant draft for the appliance.

ENERVEX's economizer solutions outperform traditional economizers in virtually all areas. Our hybrid micro-channel/plate heat exchangers (heat modules) are far more efficient and compact — two plates forming a channel provide a more optimized surface for heat transfer. The plate configuration is superior in terms of compactness (area per volume), heat transfer coefficient, and pressure drop.



VENTING AND HEAT RECOVERY FOR BOILERS



Processing plants and bakeries use steam or hot water generated by steam boilers for a variety of purposes. Steam boilers use water to create steam and makeup water is usually supplied at temperatures in the 40-50°F range.

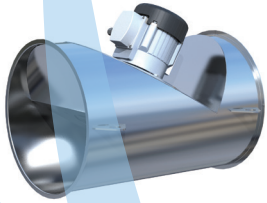
The 300-400°F boiler exhaust contains an enormous amount of Btu's. This heat can easily be recovered by an economizer. The economizer can transfer the heat to the makeup water and bring its temperature up to 160-180°F — virtually for free. As a steam boiler has a rated efficiency around 80%, the heat recovery can bring the efficiency close to 90% depending on the application.

But there are many other uses for the wasted energy if pre-heated water is not an option.

The economizer system integrates seamlessly with our stack and demand-controlled mechanical draft systems to completely stabilize efficiency while ensuring proper/constant draft for the appliance.

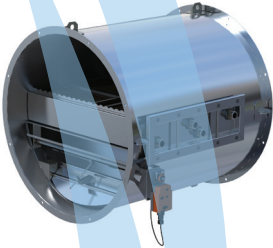
COMPREHENSIVE COMPONENTS THAT DELIVER

MECHANICAL DRAFT FAN



True inline mechanical draft fan in 316L-PCM stainless steel with capacities of 30,000+ CFM. Variable speed permanent magnet (EC) hi-temp motors and stainless steel 316L-PCM impellers. UL listed to UL378 ULC/ORD-C375 and ULC/ORD2162 for temperatures up to 1400°F. Also listed to UL705 and CSA C22.2 No. 113.12.

ECONOMIZER



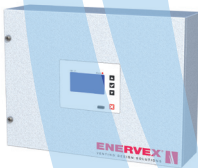
Single-row, double-row, and stacked-row economizers in 316L stainless steel with capacities from 500,000 Btu/hour up to 40,000,000+ Btu/hour. Includes modulating bypass.

ECONOMIZER CONTROLLER



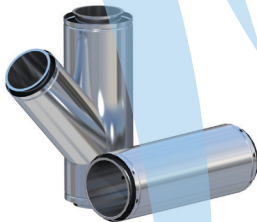
Controller that monitors inlet/outlet water and flue temperatures; maintains desired outlet water temperature while maximizing heat recovery and efficiency. Can be used in conjunction with EBC controllers.

DRAFT CONTROLLER



Modulating draft controller for use with mechanical draft fans. Can control fans, over-draft damper, and combustion-air supply simultaneously. Wireless access and CO-monitoring optional. Intertek listed to UL378 for draft equipment and UL508 for industrial controls.

CHIMNEY EXHAUST SYSTEM



Single and double-wall chimney for use with boilers, water heaters, baking ovens, etc. Available with 1", 2" and 4" insulation. UL listed to UL103, UL1738, UL2561, ULC/ORD-C959 and ULS636-08.