CASE STUDY:
Energy Recovery in the Printing Industry

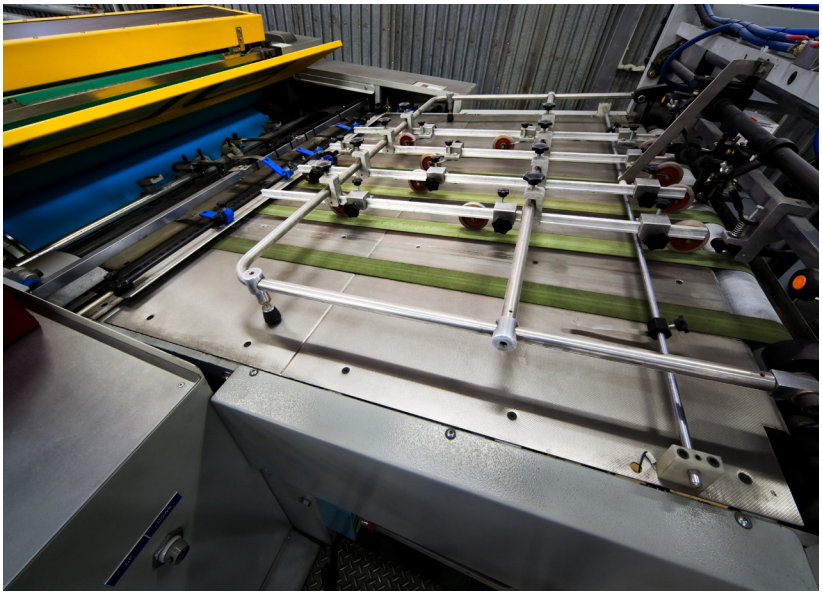
Printing press scores energy savings

A Wisconsin printer using flexographic printing equipment was experiencing air balance problems in the printing plant. Problems included drafts and high energy bills associated with negative air situations. Rather than simply addressing the air deficit with a traditional gas fired makeup unit, an approach was formulated to capture much of the energy in the exhaust air stream with Munters air-to-air heat exchangers.

The Problem

The printing industry uses diverse technologies to produce a wide variety of printed materials such as magazines and product labels. From lithography and flexography to screen printing, the many different printing processes share some common production and environmental challenges. Among these are the wise use of energy, maintenance of good indoor air quality, and year-round control of temperature and humidity in the facility.

In the Wisconsin plant, the web presses required approximately 23,000 cubic feet per minute (cfm) of air to dry the ink on the printed material. Air from the plant was drawn into the presses, warmed by electric heaters in the presses to about 160°F, and exhausted to the outside. This wasted energy that could have easily been captured to help increase production and profits.



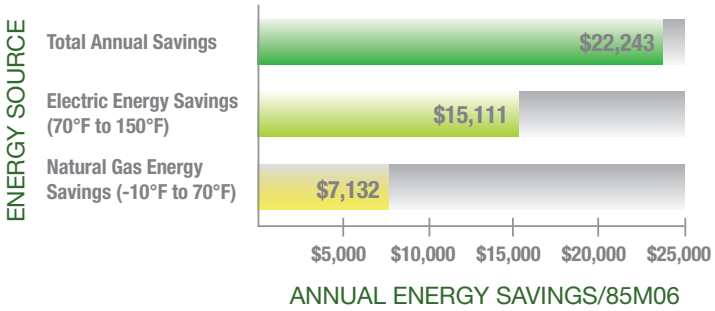
Precise humidity control and heat recovery systems for printing plants can help achieve annual energy savings of over $80,000 per year.

BENEFITS

- Continuous savings, 365 days/year
- Hedge against increases in energy prices
- Rapid payback
- Low maintenance
- Increased performance of printing presses
- Eliminates negative pressure problems

Munters

85 Series Heat Exchanger: **Printing Press Heat Recovery**



The Solution

Energy recovery technology like air-to-air heat exchangers has been used in the printing industry to improve the overall performance of production by reclaiming otherwise wasted energy.

There were many benefits to using the Munters energy recovery system at the Wisconsin plant. Most importantly, the negative pressure problem in the plant was eliminated. Gas fired heaters that were needed to maintain temperatures in the plant were shut down, reducing gas consumption and reducing maintenance costs.

A major part of the energy savings stems from the fact that the electric heaters in the press do not have to operate as frequently. On a typical winter day, the heat recovery system raises the 32°F outside air to 98°F and this preconditioned air is supplied directly to the presses. Much of the heating of the outside air had been done with expensive electricity.

Over $80,000 of annual energy savings make good economic sense. It is also a responsible step to take in terms of environmental benefits and conservation of resources.

Other Product Applications in the Printing Industry

Heat recovery ventilation systems (HRVs) have also been used to provide healthy levels of ventilation to improve indoor air quality. In addition, this same heat recovery technology is used in products like the Wringer™ to control humidity in printing plants.

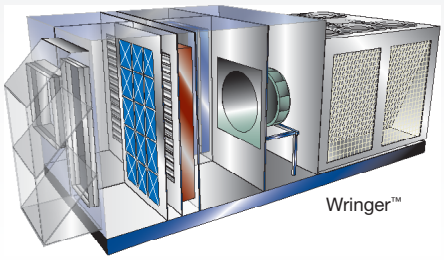
Indoor Air Quality

Heat recovery ventilators can be used to provide the proper levels of ventilation without paying a large penalty in energy costs. Some units can also help to reduce summer cooling costs. Good indoor air quality is an important component of a healthy, productive work environment.

Humidity Control

Humidity levels that are too high can create problems with paper stocks and the drying time of inks which can reduce productivity. The Wringer™uses heat recovery technology to “wring” additional moisture out of the air and reduces the size and operating cost of the dehumidification equipment.

Optional humidification can be added to take care of overly dry winter conditions.



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