

Why heat recovery?

manroland offers consultancy in all aspects of energy saving

High energy costs and ongoing environment pollution are forcing companies to optimize their processes and use resources more economically and efficiently. In many cases printing companies are not even aware how this can be done and where the highest energy consumption is to be found.

Heat is energy

High temperatures are necessary for many industrial processes. The heat generated by cooling the products, and also the heat and gases in the ambient air, can be recovered. For this to be effective the heat has to be removed where the temperature is the highest. The heat recovered from running processes can be directly utilized somewhere else. Especially with the operation of press peripheral systems, the majority of the energy used for production is available for reuse. Here there are potential recoverable energy sources that are generated during production and if not tapped the energy escapes unused into the environment. This gives printing companies the possibility to reuse expended energy.

Heat and water: dream team for environment-compatible heat recovery

Need-oriented equipment such as dampening solution cooling units, drying systems and motor cooling systems help to ensure stable, high-quality production. At the same time, a pressroom climate with constant air temperature and relative humidity is essential. With air-cooled systems the exhaust heat warms up the pressroom which has a negative effect on the microclimate. Water-cooled systems are more suitable for heat recovery purposes: compared to air, water has a high specific heat capacity, it stores large amounts and has a higher density.

Besides that, water-cooled systems avoid air turbulence, which raises dust and powder and is detrimental to employees' well-being. Another advantage is the much lower operating costs compared to air-cooled units since permanent air exchange is not necessary. The power costs for fans and the costs for air humidifiers are avoided, and there is no heating up of the outside air in winter. As a result quality is constantly high, energy costs lower, and there is less harm to the environment.

manroland EcoLogic – Economy through Ecology

Heat recovery works with systems that emit heat and require cooling. manroland offers efficient and environment-friendly options for sheetfed and webfed printing systems.

manroland AG is the world's second largest printing systems manufacturer and the world's market leader in web offset. manroland employs almost 8,700 people and has annual sales of some Euro 1.7 billion with an export share of 80%. Web fed and sheetfed presses provide solutions for publishing, commercial, and packaging printing.

manroland AG

Corporate Marketing & Communications
86219 Augsburg

Thomas Hauser

Phone: +49 (0) 821 424-26 82
Fax: +49 (0) 821 424-12 00
E-mail: thomas.hauser@manroland.com

Eva Doppler

Phone: +49 (0) 821 424-38 95
Fax: +49 (0) 821 424-12 00
E-mail: eva.doppler@manroland.com

Andrea Bleesen

Phone: +49 (0) 69 83 05-34 10
Fax: +49 (0) 69 83 05-69 34 10
E-mail: andrea.bleesen@manroland.com

Photos can be downloaded from www.manroland.com in the category **Press**.

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- SelectDryer drying systems (IR/hot-air, UV): Reuse of heated exhaust air (up to 70 percent) via heat feedback in the dryer circuit increases the degree of effectiveness and minimizes energy consumption.
- SelectAirStation air supply systems (blast and suction air): Frequency-modulated blowers provide each consumer with just the amount of air that is necessary for the given work operation.
- SelectCompressor air supply systems (compressed air): Low compressor revolutions lead to high output power, longer service life and longer maintenance intervals. The heat generated by compressing air can be recovered and reused.
- SelectCombiCenter temperature control system (for dampening solution and inking units): Output-regulated components considerably reduce the amount of energy needed for the cooling device and cool water pump. The dampening solution temperature remains constant, the printing process stable and evaporation of isopropanol in the dampening solution circuit is low.
- SelectMotorCooler drive systems (motor cooling): By a connection to the joint cooling circuit of the peripheral equipment the exhaust heat of the motors can be recovered.

Full output with half the energy consumption for heatset printing systems

Recovering the energy contained in solvents during the ink drying process makes the Dual-Dry[®] RTO (Regenerative Thermal Oxidation) dryer one of the world's most economical and environment-friendly dryers for heatset printing systems. Often the dryer emissions provide sufficient energy for exhaust air treatment and drying without additional gas consumption. In average production operation this dryer reduces gas consumption to half that of other systems. With this technology the combustion temperature lies around 100 degree Celsius above the combustion chamber temperature otherwise needed. As a result the warranted performances for nitrogen and carbon monoxide are halved – without any negative effects on the life of the dryer. Carbon dioxide emissions are also reduced. The dryer is available in two lengths for web speeds of up to 18 meters per second.

Captions:

The Dual-Dry[®] RTO dryer helps heatset printing companies to achieve substantial savings and protect the environment at the same time. Its degree of effectiveness is 95 percent.

Ultramodern air conditioning technology with heat recovery and recooling via a water/glycol circuit considerably reduces dependency on expensive fossil fuels.