

Des Champs Products

# Energy Recovery & Dehumidification Equipment



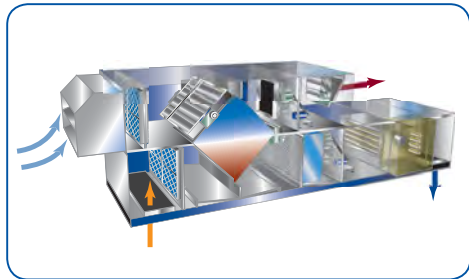
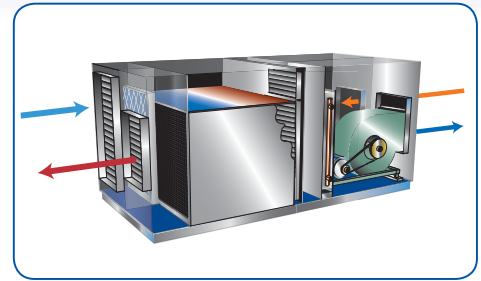
# Innovation, Quality and Value - The Munters Standard

Manufacturers today are dealing with rapidly escalating energy costs and commitments to consumers to reduce their environmental impact. Munters helps manufacturers meet this challenge with its line of Des Champs premium quality energy-recovery, precision air-conditioning, and mechanical dehumidification equipment. Constant innovation is necessary to meet the changing requirements of our customers. With our dedicated research and development team, Munters is committed to designing and manufacturing products that allow users to save energy with environmentally friendly technology.

## Packaged Heat Recovery Systems

### Micro-Z®

The Micro-Z line of standard packaged air-to-air, energy recovery units are designed for light duty industrial applications. Units are available in three standard models with five different size options depending on the model. They are designed to handle airflows between 600 SCFM and 5,000 SCFM at a nominal energy-recovery efficiency of 60%. The Micro-Z model offers single wall construction with heating only options. The Micro-ZS model features double wall construction with heating and cooling options. For applications that require double wall construction with no heating or cooling options, the Micro-ZSS model provides a very compact, lightweight, and affordable solution. All units deliver fresh outdoor air for ventilation through a high-efficiency Z-Duct aluminum heat exchanger that provides significant energy savings throughout the year.



### X-Pack™

The X-Pack line of custom packaged air-to-air, energy recovery units is designed to provide ventilation air for industrial applications while minimizing operating costs. The aluminum cross-flow air-to-air heat exchanger used by the X-Pack serves to reduce loads on heating and cooling systems. X-Pack energy recovery technology extracts heat or cooling energy from the outgoing exhaust air and transfers that energy to the incoming fresh air. Units with capacities from 500 SCFM to 40,000 SCFM are available to provide the most efficient and cost effective solution to meet your needs.

### E-Z-Aire®

The E-Z-Aire line of completely standard packaged energy recovery units offers an economic alternative for very light duty applications. Units feature single wall construction and a high-efficiency aluminum air-to-air heat exchanger that transfers energy from the exhaust air to an equal amount of fresh outdoor air. Unit capacities range from 600 SCFM to 4,000 SCFM with nominal 0.50" W.C. external static pressure. Available in two series, each series has five models that offer 70% to 85% sensible energy recovery effectiveness.



### MZP

The MZP line of custom packaged air-to-air energy recovery systems can be used for any industrial application with exhausting air and a need for outdoor air. Units feature an aluminum Z-DUCT plate-type, energy-saving heat exchanger. Its heavy-duty double wall construction ensures years of trouble free operation. Systems with capacities from 1,000 SCFM to 25,000 SCFM are available.

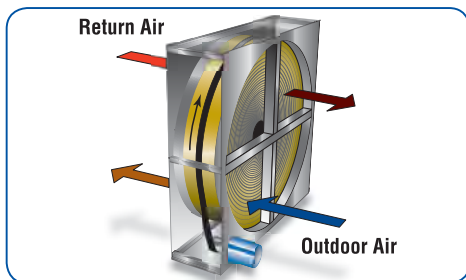
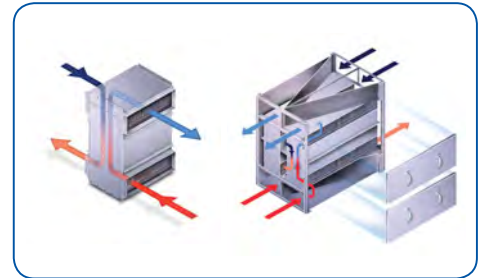
### PV

The PV line of custom packaged air-to-air energy recovery systems are designed to provide the most efficient solutions for industrial energy recovery needs. Available with a choice between energy-saving Z-Duct plate-type, heat pipe or rotary heat exchangers; systems are designed to best meet the demands of the project requirements. This product line offers unmatched flexibility in design with versatile unit configurations and capacities ranging from 500 SCFM to 100,000 SCFM.

# Heat Exchangers

## Plate Heat Exchangers

Plate heat exchangers are the most maintenance free and long lasting of the air-to-air heat exchangers. Used for dusty or dirty applications, they have integral online cleaning systems, drains, and cleanout panels that provide for low maintenance carefree operation. To protect against frost and ice buildup during winter operation, standard options include the traversing defrost mechanism, the most energy efficient frost control system on the market. Double wall insulated construction is available for higher temperature applications, with a maximum temperature of 400°F. There are six basic models of plate heat exchangers; five counter-flow Z-DUCT® models and one cross-flow model. The heat exchangers are available as either modular (stand-alone) versions or for integration into a packaged energy recovery system, complete with fans, filters, etc..



## Rotary Heat Exchanger

Rotary heat exchangers are designed to provide either sensible or total energy exchange between two airstreams. These unique heat exchangers are constructed of corrugated aluminum media with passages through which the air flows. The heat exchanger continuously rotates in a plane perpendicular to the airflow allowing the transfer of energy between the airstreams via the aluminum media. Latent energy transfer between the airstreams is accomplished through the addition of a desiccant coating to the base aluminum material.

## Heat Pipe Heat Exchanger

Heat pipe heat exchangers provide sensible heat transfer between two airstreams using a counter-flow configuration. These compact heat exchangers consist of rows of integrally finned aluminum tubes that are evacuated then partially filled with refrigerant. All tubes are individually sealed using a Schrader fitting; this provides the ability to evacuate and recharge the tubes in the field should a change in environmental policies necessitate a change in the refrigerant used. Heat transfer across a heat pipe heat exchanger is a continuous process whereby the warmer side acts as an evaporator and the colder side as a condenser with a sealed center partition to prevent cross contamination between the two airstreams.



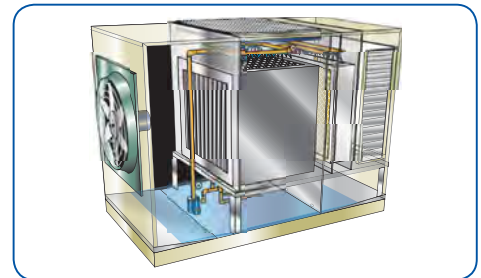
# Evaporative Cooling Systems

## Model EPX

The model EPX Indirect Evaporative Cooler uses a high-efficiency, air-to-air heat exchanger to introduce 100% outdoor air while reducing cooling-load tonnage. The EPX uses a corrosion-resistant polymer tube heat exchanger to produce dry, cool air without using refrigeration. The heat exchanger core incorporates unique, horizontal tubes, with water flowing outside and down over the tubes, counter-flow to a scavenger ambient air stream or return air stream. The supply or process air flows through the tubes and is sensibly cooled (no moisture is added). A special surface-wetting exterior-finish promotes enhanced evaporation for maximum efficiency. A unique finned interior design enhances turbulence for increased energy transfer. In many cases, on a design summer dry bulb day, the EPX can lower the supply air temperature by 30°F or more.

## OASIS™

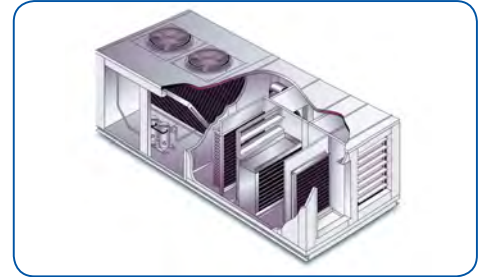
OASIS is the sensible alternative to conventional air-conditioning equipment and the ultimate air-conditioning unit for dry climates. Indirect evaporative cooling and direct evaporative cooling are packaged with optional DX or chilled-water for maximum cooling efficiency. In dry climates, the OASIS system provides the desired cooling during most of the year without refrigeration. As the regional zones become drier and the buildings require more outside air, the OASIS becomes more attractive as an option for cooling versus standard air conditioning techniques. OASIS is applied in much the same manner as a conventional recirculated air system, but with much lower operating costs, especially during peak electrical demand.



# Dehumidification Systems

## Modular Outdoor Air Conditioning Systems

The Modular Outdoor Air Conditioning System (MOACS) is available in six pre-engineered models for energy recovery and humidity control in industrial applications. These modular-type packaged units range from 1,000 SCFM to 11,000 SCFM, and are suited for all climates, applications, and budgets. Unit options include: heat pipe heat exchangers; rotary heat exchangers; DX or chilled water coil sections; 2" or 4" anti-microbial filters; integral or remote condensing units; indirect fired gas, electric, hot water, or steam heating modules; and utility modules for field-installed components. The condensing units feature an EER of 11.0 and multiple compressors to ensure optimum capacity control without the need for energy-wasting hot-gas bypass. All units are equipped with a programmable DDC controller.



## CompleVent®

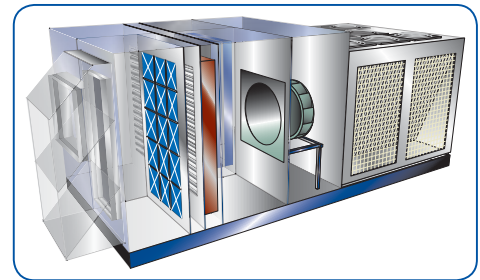
CompleVent units provide ventilation and dehumidification using heat pipe and rotary heat exchangers to reduce loads on heating and cooling systems. Five different models with standard one inch double wall construction, lightweight compact designs, and capacities ranging from 500 SCFM to 11,000 SCFM, make the CompleVent an economical alternative to the heavier duty MOACS product line. Unit options include: DX or chilled water coil sections; 2" anti-microbial filters; integral or remote condensing units; DDC controls; and electric, hot water, or steam heating sections.

## Wringer®

The Wringer Series of packaged mechanical dehumidification units are designed to supply clean process air at a specific flow and moisture level. These units incorporate a heat exchanger to reduce the energy required to dehumidify the air. Wringers are normally employed when the supply air dew point requirement is above 40°F. Wringers use approximately 30% less energy than conventional dehumidification systems and provide free reheat. Wringers can incorporate integral refrigeration or utilize chilled water for dehumidification. Options such as auxiliary heating, special filtration, and DDC controls are available.

## Wringer Plus®

Offering all of the benefits and features of the Wringer, the Wringer Plus goes a step further, reducing winter heating and summer mechanical cooling requirements through efficient recovery of energy from exhaust air. Wringer Plus units efficiently dehumidify outdoor air for processing, clean room and storage areas. Designed to deliver filtered, dehumidified outdoor air while allowing pressure in the space to be controlled (using the system's exhaust/relief fan) — all while minimizing heating and cooling requirements through efficient air-to-air energy exchange — the Wringer Plus provides the ultimate economical dehumidification solution in humid climates.



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