HEAT PIPE TECHNOLOGY

a subsidiary of **MiTek®** • a **Berkshire Hathaway** company
advanced energy recovery and dehumidification

DHP™ *WRAP-AROUND* DEHUMIDIFIER HEAT PIPE SYSTEMS

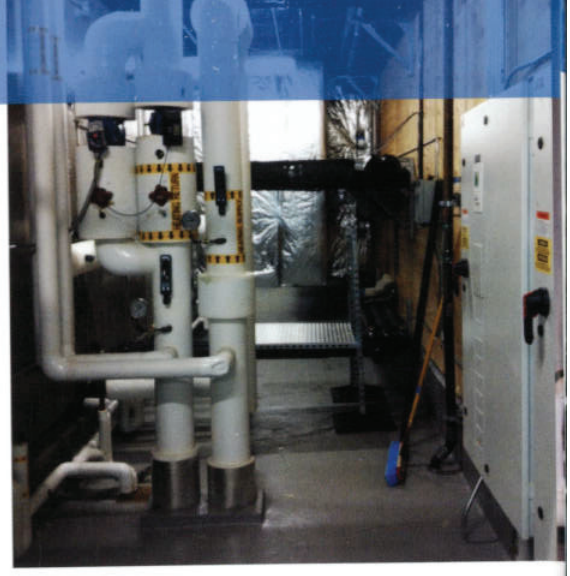
utilizing heat pipe heat exchangers

solving high humidity problems while saving energy

- pharmaceuticals
- hospitals
- hotels
- libraries
- museums
- military facilities
- schools
- laboratories
- data centers
- arenas

DHP Wrap Around Dehumidifier heat pipes are compact and highly efficient heat transfer devices designed to provide both pre-cooling and reheat in applications where both the temperature and humidity must meet requirements as well as solve high humidity problems.

heatpipe.com

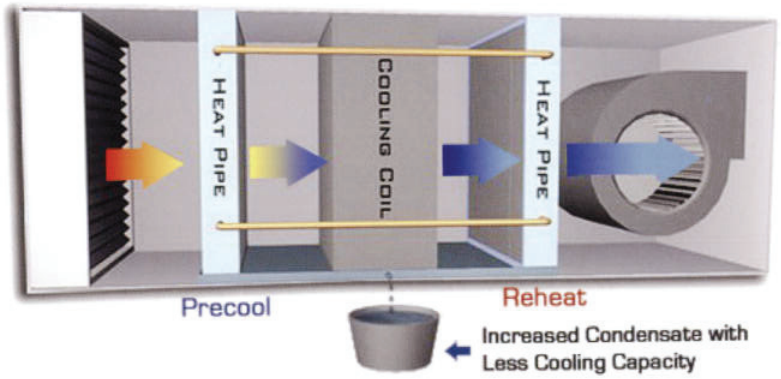


The Most Cost Effective Method of Dehumidification

What are HPT Dehumidifier Heat Pipes?

HPT Dehumidifier Heat Pipes are thermal transfer devices capable of moving large amounts of heat from the return air stream to the supply air stream of any AC system. Because heat pipes move heat with a process of vaporization and condensation, no mechanical parts or energy is needed.

HPT Dehumidifier Heat Pipes consist of two sections. The first section is placed in the incoming air stream before the AC cooling coil. When warm air passes over the first section, the liquid refrigerant vaporizes, moving heat to the second section, placed downstream from the cooling coil. Because heat has been removed from the air before entering the evaporator coil, air passing through the cooling coil drops to a lower temperature, resulting in more moisture removal. The overcooled air is then reheated to the desired temperature and a lower relative humidity by the second section, using the same heat originally absorbed by the first section.

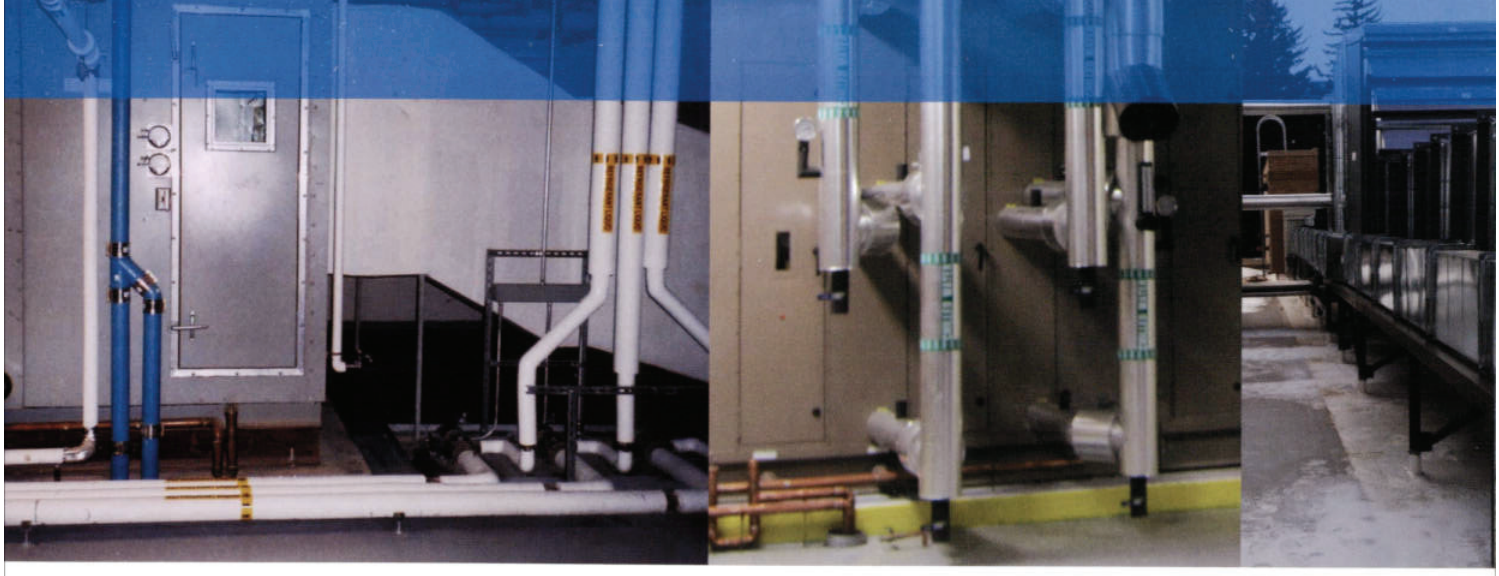


APPLICATIONS

- 100% Outside Air Systems
- Mixed air AHUs
- Replaces electric or hot water reheat
- Multi-zone AHUs
- Systems from 5,000 – 100,000 CFM
- Chilled Water, Brine, and DX Systems

THE BENEFITS TO YOUR AC SYSTEM

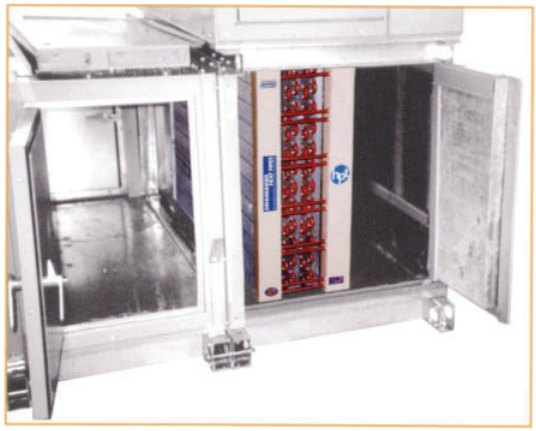
Amazingly, this entire process of precool and reheat is accomplished with no energy due to the passive nature of the heat pipe. The result is an air conditioning system with the ability to remove considerably more moisture than before, while free reheat is obtained for better IAQ and energy savings.



Factory Retrofits

Heat Pipes can be fitted in almost any AC unit. Units are shipped to the HPT facility where the heat pipes are retrofitted to the units and then shipped back to the jobsite.

Because heat pipes are passive and powered by the difference in air temperatures, they do not interfere with the existing circuiting of the system, be it chilled water or DX.



Made to Order Retrofits

"U-framed" dehumidifier heat pipes are completely charged and ready to be placed as a fitted component in any air handler.

When the configuration and specifications of the system are acceptable for the slide in design, this often provides the simplest and most cost effective method of installation in many AC units. This design is popular with OEMs and overseas customers.

On-site Retrofits

An HPT crew travels to the job site for a complete turnkey dehumidification heat pipe installation.

Controllable

Ideal for Controlling Supply Air Temperature & Variable Reheat

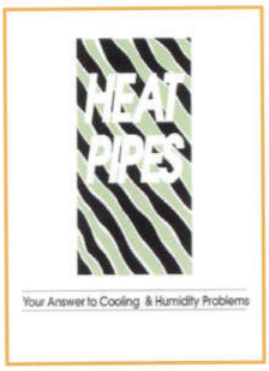
In those applications where precise temperature control is required, HPT dehumidifier heat pipes can be equipped with solenoid valves (24V or 110V). Number of valves is dependant on heat pipes size and number of rows. Control valves are grouped in stages to connect to the building BAS.

What Others Say...

Virtually Maintenance Free

"In addition to costing less to buy and install, other advantages are that they eliminate the need for reheat or desiccant systems, require no mechanical or electrical input, are virtually maintenance free, provide lower operating costs and last a very long time..."

From Edison Electric Institute's
"Heat Pipes: Your Answer to Cooling and Humidity Problems."



Saves Money

"The investment has definitely paid off and I would say that over the past couple of years, it's been well over a million dollars in savings."

Mike Garrison, Director of Engineering
Omni Orlando Resort at ChampionsGate

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THE HRM SERIES PASSIVE ENERGY RECOVERY SYSTEM

utilizing heat pipe heat exchangers

with no cross contamination

hospitals
laboratories
medical buildings
manufacturing
clean rooms
data centers

The HRM Series of energy recovery heat pipes are passive, compact, and highly efficient heat transfer devices. They are used to recover energy from exhaust air to pre-cool or pre-heat outside air in comfort or process applications.

heatpipe.com

The HRM Series

Utilizing Passive Heat Pipe Heat Exchangers

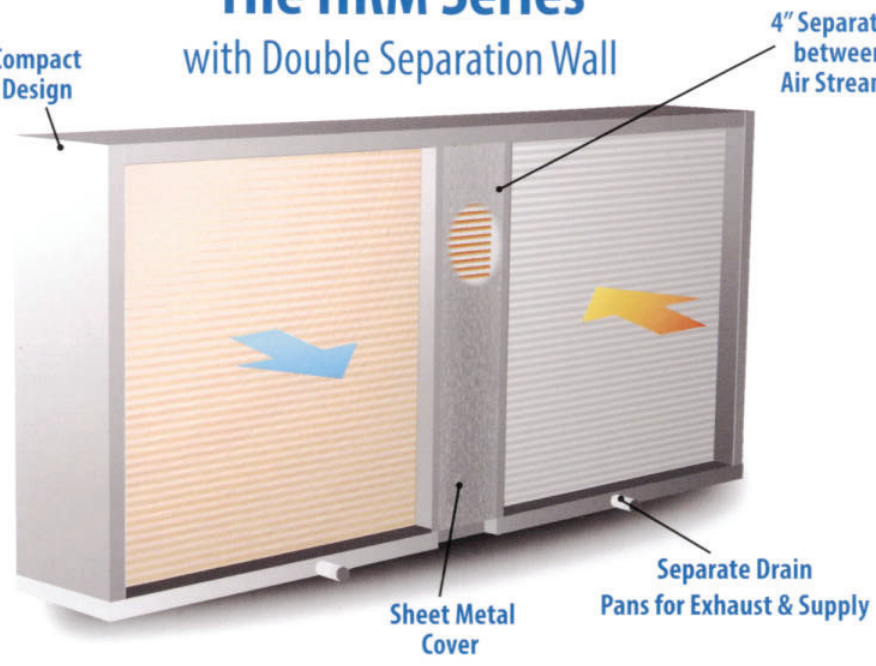
State of the art heat exchangers based on the **Heat Loop** by Heat Pipe Technology are opening doors to new applications with low air pressure drop, compact design, high effectiveness, and trouble-free static installation.

The **Heat Loop** is a breakthrough in multi-row heat pipe design, where the "pumping" of the working fluid is achieved not only by the differences of temperature between the two air streams, but also by the temperature differential between rows in the same air stream. The **Heat Loop** can transfer more mass of working fluid while using the same tubing diameter resulting in higher heat transfer capacities.

The No Cross Contamination Solution...

The HRM Series

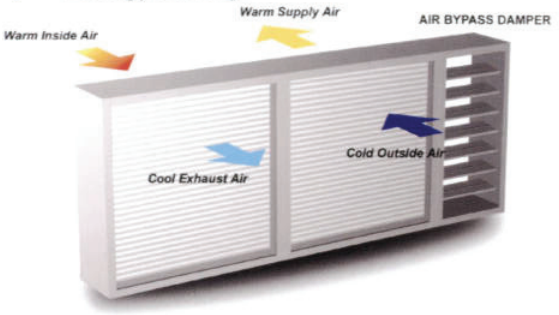
with Double Separation Wall



- No moving parts...years of uninterrupted energy savings
- Made with high quality copper tubes for reliability and longevity
- Separate liquid and vapor lines for maximum heat transfer effectiveness
- No tilting or mechanical seasonal changeover necessary
- Solid partition between air streams for no cross contamination
- Most compact design

Winter Heat Recovery Using Air Bypass for Defrost:

- ✔ Defrost mode in very cold climates
- ✔ Precise temperature delivery control
- ✔ Energy savings

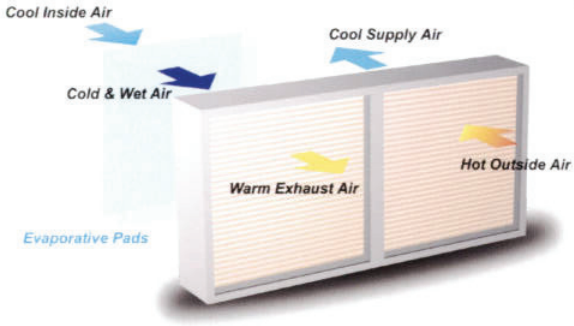


For Moderate Seasons:

- ✔ Economizer mode... avoids unnecessary static pressure loss
- ✔ Temperature control
- ✔ IAQ improvement

Summer Cooling Recovery:

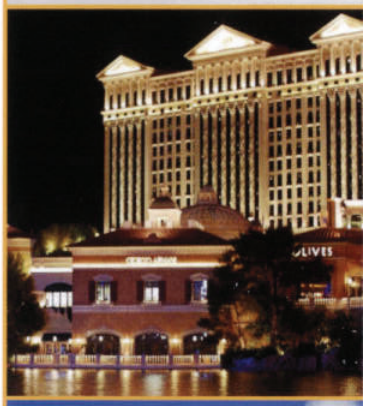
- ✔ Markedly enhanced performance with direct and indirect evaporative cooling
- ✔ Energy savings



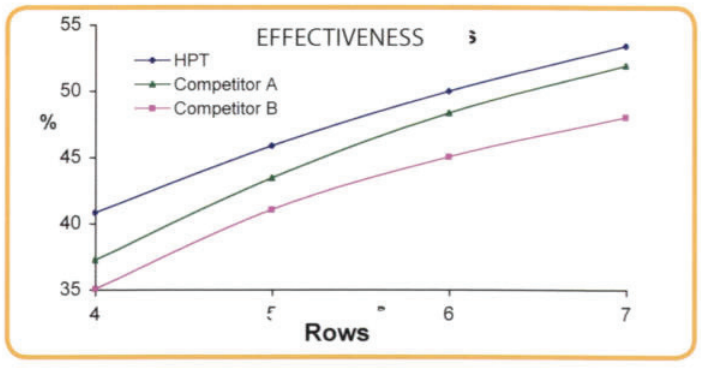
In a northern hospital, the estimated savings for this system were just under $12,000 a year, resulting in a simple payback in under 2 years!

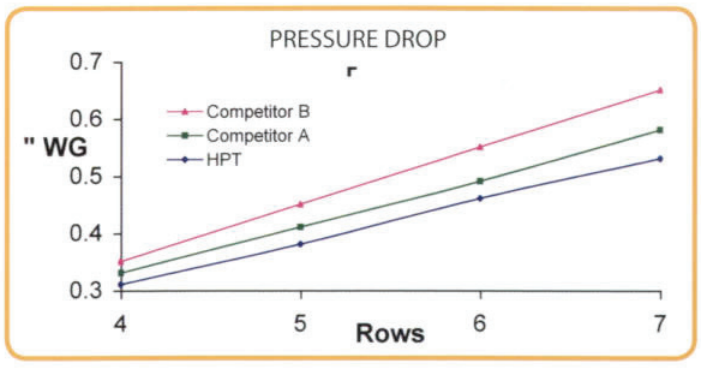
The HRM Series Can Earn You LEED Points!

- Energy and Atmosphere… **Max points 17**
- Indoor Environment Quality … **Max points 15**
- Innovation and Design … **Max points 5**



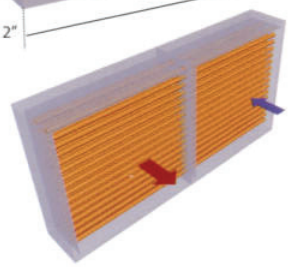
The HRM SERIES vs. THE COMPETITION



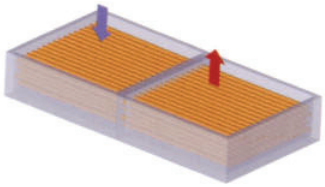


The HRM Series
by Heat Pipe Technology
with no cross contamination

- 1,000 to 50,000 cfm systems
- Copper or aluminum fins
- 8 to 14 fpi spacing
- Standard and custom dimensions
- Corrosion protective coatings
- Galvanized or stainless steel casings
- Drain pans
- Flange connections
- Dampers and actuators
- HFC heat transfer fluid



A. Side-by-side horizontal air streams with heat pipes in a vertical plane.



B. Side-by-side vertical air streams with heat pipes in a horizontal plane.

C. Over-and-under horizontal air streams with heat pipes in vertical plane.

The HRM Series is cost efficient and provides no cross contamination at facilities like these:

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