

# THERMOGAIN WRAP-AROUND HEAT PIPE

## A must for any dehumidification applications!

With ASHRAE Standard 62 (Ventilation for Acceptable Air Quality), new efforts were introduced to increase indoor air quality. These changes inevitably lead to more outdoor air being brought into buildings and consequently, greatly affected the heating, cooling and dehumidification costs.

Luckily, ways to offset these increases were also developed and today, heat wheels, flat plate exchangers and standard heat pipes are widely used to help reduce heating and cooling costs. Concerning dehumidification, the most commonly used solution remains the Thermogain wrap-around heat pipe (TWHP).



Each of our TWHP is specifically designed around your cooling coil dimensions which mean a very compact and easy to install component (even for retrofit jobs). Moreover, their full aluminum tube with integrally turned fins' construction requires no external connection or power; your best guaranty to a long lasting, trouble free product. In addition, not only does our TWHP help in greatly reducing operating costs, their incorporation in new systems usually means a downsized cooling coil which significantly reduces payback periods.

### ► Features and benefits

- High effectiveness for rapid payback
- Integral fin technology for long lasting, reliable performances
- Tough and easy to clean product
- Most compact energy recovery component
- No moving parts for virtually maintenance free operation
- No external power required
- Bear the UL Recognized Mark (tested per the UL207 standard)

### ► Options

- Stainless steel casings
- Heresite phenolic coating
- Electrofin E-Coat

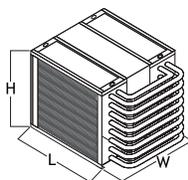
### Dimensional data

Maximum height for one unit (H): 72"  
(For applications requiring higher heat pipes, two or more units can be stacked).

Maximum standard length (L):  
125.5 (120" fin length per section)  
for both the pre-cool and reheat sections.\*\*\*

Width (W):  
From 5.9" (2 rows) to 9.8" (4 rows) plus a  
maximum of 96" between sections

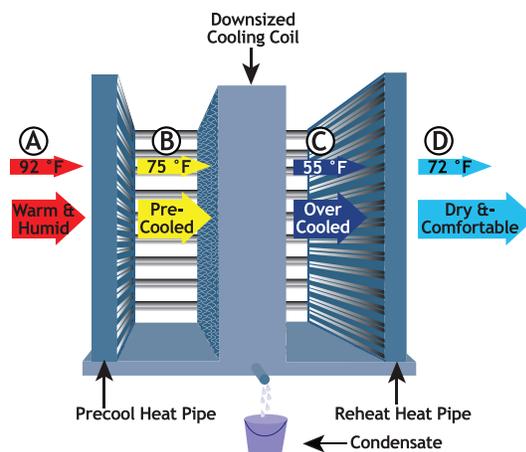
\*\*\* To the length of the product should be added the "U-bends" dimension which depend on the number of rows: 6-5/16" for 2 rows, 7-3/4" for 3 rows and 9-5/16" for 4 rows.



### Operating Principle:

Unlike standard energy recovery components, TWHP does not recover energy from one airstream to another but rather transfers it from one point to another within the same airflow. On the free pre-cool side (location A to B), the TWHP greatly helps in reducing the outdoor air temperature, bringing it close to its dew point. On the free reheat side (location C to D), it uses the heat contained in the outdoor air to re-heat the air from the cooling coil to comfortable levels. The end result being great energy savings and reduced operating costs.

\* See below for typical TWHP psychrometric chart.



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setting the  
standard  
for **energy**  
**recovery**

# THERMOGAIN WRAP-AROUND HEAT PIPE SPECIFICATIONS

## Specifications:

### 1. General specifications:

- 1.1 Furnish and install the Thermogain wrap-around heat recovery units of the heat pipe air-to-air type, as shown in the Schedule, to be manufactured by Innergy tech inc., Drummondville, Quebec, Canada.
- 1.2 Thermogain wrap-around heat recovery units shall transfer heat from the incoming air to the overcooled air (from cooling coil) within the same airstream.
- 1.3 Thermogain wrap-around heat recovery units shall be labeled for direction of air flow, supply inlets and outlets.
- 1.4 Manufacturers of alternate equipment must be approved to bid via addendum, in writing by the specifying engineer, at least two weeks prior to bid time in order to be accepted by the contractor. If the equipment is not pre-approved then under no circumstances shall the contractor invest time or money in receiving submittals or considering the equipment. Costs associated with dimensional, performance, or other deviations from the specified equipment, including engineering costs to evaluate such deviations, shall be paid by the contractor.
- 1.5 The manufacturer must be ISO-9001 certified to insure a quality management system which includes the design, manufacture and service of its energy recovery components.
- 1.6 The wrap-around heat pipe must be manufactured in North America.
- 1.7 The heat pipe shall bear the UL Recognized Mark (tested per the UL207 standard).

### 2. Product Specifications:

- 2.1 Tube core shall be 1 inch (25.4 mm) ID seamless, integrally finned aluminum 1050 tube with 0.058 inch (1.5mm) wall thickness. Tubes shall use heights increments of 2-1/8 inches (54 mm) maximum and the spacing between rows shall be no more than 1 7/8 inch (48 mm).
- 2.2 Fin surface shall be integral to the tube wall and shall have a minimum of .017 inch (.043 mm) between fins. Heat pipes using different materials for the fins and tubes are not acceptable.
- 2.3 Acceptable Fin densities are 11, 9, 7 or 5 fins per inch. Fin height from root to tip shall be .437 inch (11 mm) minimum.
- 2.4 Circumferential capillary wick structure shall be integral to the inside of the tube wall.
- 2.4 Working fluids used shall be selected on the basis of the heat pipe operating temperatures and compatibility with tube and wick materials.
- 2.5 Tubes shall be individually processed, charged, hermetically sealed and factory tested for leakage.
- 2.6 The exchanger frame shall be fabricated from minimum 14 gauge galvanized steel. The frame shall be supplied with minimum 2 inches (51 mm) flanges on all four sides. Intermediate tube supports shall be furnished as required.
- 2.7 End covers shall be provided to protect tube ends. Covers shall be fabricated in 16 gauge galvanized steel.
- 2.9 When protective coating is required, a baked phenolic coating to protect against corrosion must be applied.

