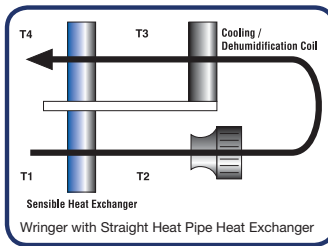


WRINGER™

The Indoor Air Quality Solution

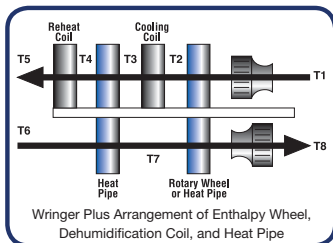
Wringer™ - Mechanical Dehumidifier

The key element of the Wringer™ is a highly efficient plate or heat pipe air-to-air heat exchanger. The airstream makes two passes through the heat exchanger. In the first pass, warm, humid air is pre-cooled, reducing refrigeration requirements by up to 50%. In the second pass, air is reheated, reducing or eliminating the need for supplemental reheat. Because the heat exchanger is a passive element, it does not appreciably add to the system complexity or maintenance requirements. Typically designed to deliver dry air at 50°F dewpoint or lower, and at a relatively neutral dry bulb condition, the Wringer™ offsets building internal latent loads and controls building humidity levels without affecting space temperature. When purchased with return air damper option, it may be used to control building humidity levels during unoccupied hours by drying recirculated air from the space (an extremely efficient and practical dehumidification strategy). If chilled water units are used in conjunction, then the chiller can be shut down during unoccupied periods and only the Wringer™ (inclusive of direct expansion coils) will operate to control space conditions.



Wringer™ Plus - Energy Recovery with Mechanical Dehumidifier

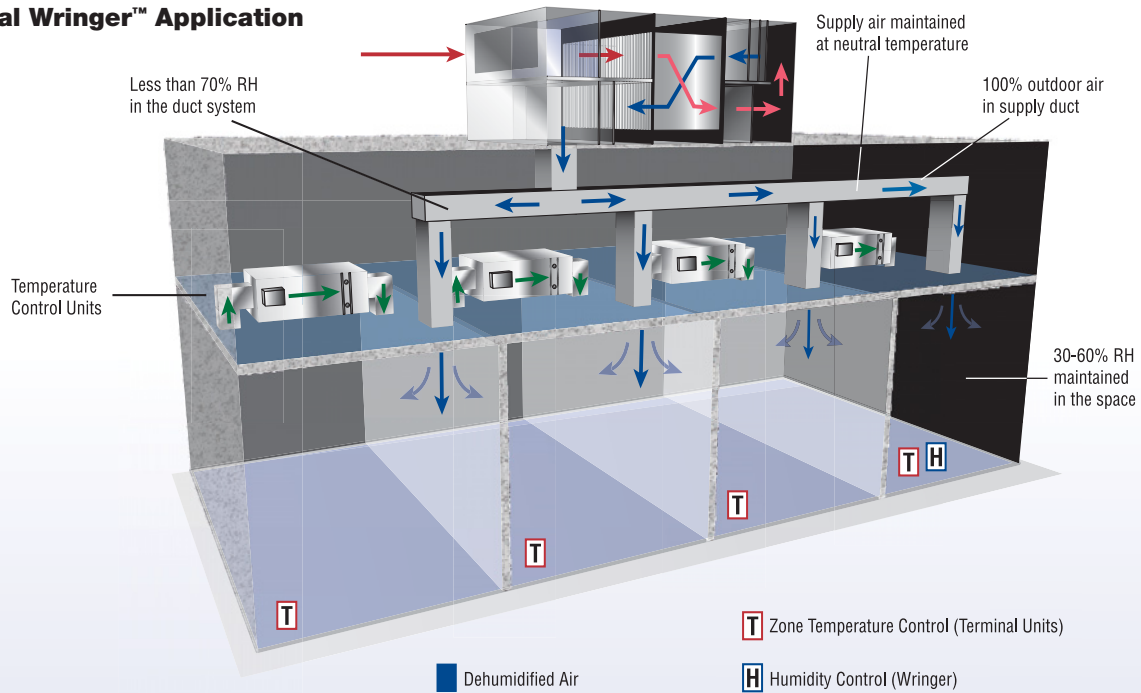
Offering all of the benefits and features of the Wringer™, the Wringer™ Plus goes a step beyond to reduce winter heating and summer mechanical cooling requirements through efficient recovery of energy from building exhaust air. The Wringer™ Plus dehumidifies and filters outdoor air while allowing for building pressurization, while simultaneously providing the ultimate in internal air quality for humid climates. This type of system generally requires minimal supplemental cooling and heating capacities, allowing for chiller and boiler plant downsizing relative to other designs. The Wringer™ Plus system also has the ability to save the most energy on an annual basis. In many cases it requires less energy to condition outdoor air than what would be required to condition recirculated air. Available in sizes anywhere from 1,000 cfm to greater than 50,000 cfm, (with options typical of the Wringer™), the Wringer™ Plus includes various combinations of straight heat pipes, wrap-around heat pipes, total energy recovery wheels, and sensible plate heat exchangers. Fully factory mounted and tested DDC control systems as standard options.



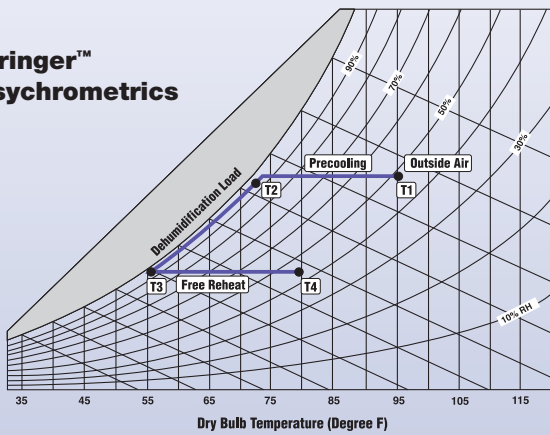
BENEFITS

- 100% Outdoor Air
- Precooling
- Humidity Control
- Free Reheat!

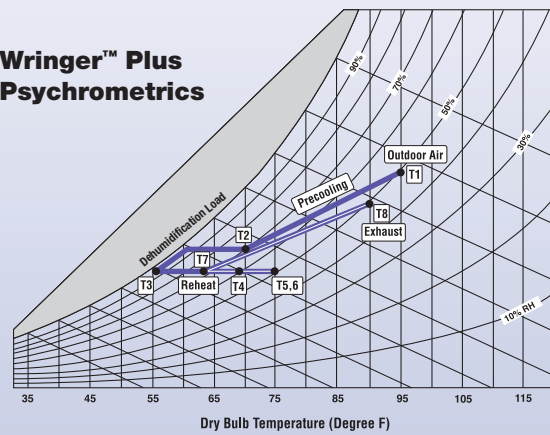
Typical Wringer™ Application



Wringer™ Psychrometrics



Wringer™ Plus Psychrometrics



Wringer™ Features

- 100% outdoor air
- Summer humidity control
- Plenum fans for quiet operation
- Factory wired electrical components: unit-mounted disconnect and single power point connection
- Heavy gauge, double-wall insulated weather-resistant housing
- High efficiency air-to-air exchanger

Wringer™ Plus Features

- Includes all basic Wringer™ features
- Integral exhaust air fan
- Summer energy recovery
- Winter heat recovery
- Building pressure control

Standard Options

- Sizes: 1,000 to >100,000 cfm
- Chilled water or direct expansion coils
- Integral or remote air or water cooled condensing units with multiple scroll compressors
- Hot water, steam, or electric heating coils
- Indirect-fired gas heat with minimum 10:1 turndown
- Humidification for winter humidity control
- Corrosion resistant coatings
- Heat exchanger face and bypass air dampers for regulating supply air reheat