Specification
SS HR - TRAHP®
Split System Heat Recovery Thermosyphon Run Around Heat Pipe

1.0 General

1.1 Furnish, install, and place into service a SS HR - TRAHP® Sensible Heat Recovery Thermosyphon Run Around Heat Pipe for air-to-air heat exchanger as shown in the design drawings and schedule to be manufactured by Carolina Heat Pipe. Controllable option available.

1.2 The SS HR - TRAHP® will transfer heat between the air (outside) entering the duct and the exhaust air duct without any cross contamination using the heat pipe thermosyphon system process.

1.3 Each SS HR - TRAHP® section shall be provided in an insulated and drainable enclosure suitable for incorporation into a ducted air stream.

1.4 The SS HR TRAHP® shall be capable of operating at temperatures ranging from -80F to 130F.

1.5 The SS HR - TRAHP® system requires custom field installation. Sections shall be made ready by Carolina Heat Pipe. Actual field installation and final charging shall be performed by Carolina Heat Pipe personnel or by factory certified refrigerant technicians with CHP supervision.

1.6 Carolina Heat Pipe will provide a five-year limited warranty.

2.0 Construction

2.1 The SS HR - TRAHP® heat transfer surfaces shall be constructed of seamless ½ inch OD, rifled copper tubing which is permanently expanded into aluminum or copper fins to form a rigid and complete metal to metal contact between the copper tube and the fin collar at all operating conditions. Special corrosion resistant coatings may be applied when so specified.

2.2 The SS HR -TRAHP® working fluid (R134a) shall conform to Group I of the American National Safety Code for Mechanical Refrigeration unless otherwise specified.

2.3 The final circuiting and working fluid charge of the SS HR - TRAHP® system will be determined by Carolina Heat Pipe Engineers to meet or exceed the specified performance.

2.4 The SS HR - TRAHP® heat transfer surfaces shall have vertical tubes with upper and lower headers to allow a minimum of liquid and vapor connecting lines between the precool and reheat tubes. One control valve shall be provided to control two rows of heat transfer surfaces.

2.5 The Split System TRAHP® Heat Recovery system shall be controllable as specified by responding to an owner provided control signal in an variable manner, over the range of "off to full" capacity by means of one or more control devices located in the interconnecting lines between heat transfer systems.

2.6 Controllability Option: The SS HR - TRAHP® shall have the capability of controlling the heat transfer BTUH by varying the refrigerant flow between heat transfer sections. This also makes it possible to frost control during winter operation by turning off or reducing the heat transfer when the outside air temperature is much colder than the exhaust air temperature.

When controllability is required, Carolina Heat Pipe installs modulating Danfoss Stepper valves in the interconnecting line between the heat transfer sections. These stepper valves allow controllability in an infinitely variable manner in the range of "0-100%" using the HS-KVS-001V3 control system which requires a 120-volt power supply and a control input signal from the local BMS. The analog control input signal, provided by others from a local BMS, may be: 0-20 ma, 4-20 ma, 0-5 vdc, or 0-10 vdc.

3.0 Delivery, Storage and Handling

3.1 The Air Handler drainable coil section equipment for installation of the SS-HR - TRAHP® coils will be shipped from the Air Handler Manufacturer to the Carolina Heat Pipe production facility at least 4 weeks prior to the date on which the completed system is to be delivered to the job site.

3.2 CHP shall inspect the delivered air handler equipment thoroughly and report any damaged or missing components to the original manufacturer. CHP will then store these in a clean dry space until ready for delivery upon completion of work.

3.3 The equipment provided with SS- HR -TRAHP® coils installed will be delivered as requested by the customer.