BARNHART-TAYLOR, INC.

PENTAIRE SERIES EVAPORATIVE COOLERS SPECIFICATIONS - BLOW THROUGH THE EVAPORATIVE MEDIA - SINGLE BLOWER UNITS WITH SWSI AIRFOIL PLENUM FANS

Barnhart-Taylor, Inc. Pentaire Series with blow through units with the fan and motor located on the dry side and before the wet section. Units shall be suitable for floor mounting on concrete slabs or roof mounting on structural steel bases by others.

FAN, WET SECTION AND FILTER CASING: 2" single wall Galvanneal a60 with welded uniframe construction (painted black steel is not allowed), 18 gauge walls and roof, 16 gauge floors, with 18 gauge hinged double wall access doors. Unit construction shall include as a minimum, C6 x 8.2 structural steel bases with lifting lugs (C8 x 10.5 on larger units) Each access door shall be double wall and shall included one keyed access latch, one compression type latch for positive closure, heavy duty galvanized steel hinges with hard plastic bearings and each door is to be sealed with automotive type gaskets – neoprene gaskets are not allowed.

INSULATED DOUBLE WALL: Internal liner is installed downstream of the evaporative media. Liner material is to be 22 gauge 304 stainless steel sheets on wall and roof. Double wall construction is to include 2" glass fiber blanket 1.50pcf insulation.

WALLS, ROOF, FLOOR AND STRUCTURAL STEEL COATING: Internal wall areas are not painted except for the floors. Floors are coated with an ultra-high build, single component 6 mils dry 70% by volume coal tar mastic, after application of 4 mils dry two-component 70% by volume epoxy primer. All external wall and roof areas shall be painted with 4 mils dry two component 70% by volume epoxy primer and finished with 3 to 4 mils DTM Acrylic 42% solids by volume – Granite Gray or color selected by the architect.

Structural steel bases are to be painted with two coats red oxide primer, followed by 4 mils dry two-component 70% by volume epoxy and finished with 3 to 4 mils DTM Acrylic 42% solids by volume – Granite Gray or color selected by the architect.

All coatings are low VOC.

(Optional) External finishes such as polyurethanes are available.

(Optional) STAINLESS STEEL FAN and FILTER CASING: 2" single wall 304 stainless steel, welded uniframe construction and is to include 18 gauge walls, roof and floors, with 18 gauge hinged access doors. Unit construction shall include as a minimum, C6 x 8.2 structural steel bases with lifting lugs (C8 x 10.5 on larger units). Each access door shall be double wall 304 stainless steel and shall included one keyed access latch, one compression type latch for positive closure, heavy duty 304 stainless steel piano hinges, and each door is to be sealed with automotive type gaskets – neoprene gaskets are not allowed.

Stainless steel casing is unpainted; welds are coated with aluminum paint.

FAN WHEELS, SHAFTS AND BEARINGS: Greenheck or approved equal backward inclined QEP Series, AMCA rated plenum fans. Complete with airfoil aluminum wheel, welded steel frames. Bearings are self-aligning, medium duty roller type with contact seals. Fan housings are coated with Greenheck's Permatector coating.

DRIVES: Sheaves shall be type B, C or V and fabricated from heavy duty cast iron. Belts are sized for 150% of Bhp. Supply fan motors will be furnished with adjustable motor bases. Belt guards shall be constructed of expanded metal with solid backs, tops, and ends.

MOTORS: Motors shall be TEFC, premium efficiency, single speed, two speeds, or VFD driven as listed in the equipment schedule. 1800 rpm, rated for 230/460 volts, 3ϕ, 60 hertz.

Motors as manufactured by BALDOR, WEG, or US motors.

STANDARD FAN AND MOTOR VIBRATION ISOLATION: Furnish structural steel bases, minimum C6 x 8.2 under the fan, motor, drives and belt guard. Mount structural steel bases on seismic (1" deflection, 2" available) vibrations isolators sized per load requirements of the components. Vibration isolators are to be hot dipped galvanized steel with adjusting and shipping bolt.

Structural steel vibration isolation bases for are coated with 4 mils dry gray two-component 70% by volume epoxy primer followed by 5 mils dry gray two component 74% by volume epoxy semi-gloss finish.

DIRECT MEDIA: Evaporative media shall be Munters 12-inch thick CELDEK. Media is composed of cellulose paper, impregnated with insoluble anti-rot salts and rigidifying saturates. The evaporative media face area will be sized for a maximum face velocity of 520 fpm.

DIRECT MEDIA CASING AND SUMP: All metal in contact with water shall be welded construction, 18 gauge 304 stainless steel. Plumbing connections shall include 2" overflow (CPVC), 1" NPT drain (stainless steel), and bronze heavy duty make-up water valve by Flippen or Roberts with polyethylene floats and brass rods.

WATER PIPING: Schedule 40 PVC piping and fittings shall be used for the water recirculation piping. Water recirculation rate required to wet the evaporative media is to be set at the factory with minor adjustments made at the job site.

An adjustable bleed system shall be included and is to include a needle valve and vinyl tubing that drains to the units overflow drain.

(Optional) Timed flush pump bleed system for wiring, by others, or wired to the unit mounted motor control panel.

(Optional) Fill and drain kit with freeze protection for wiring, by others, or wired to the unit mounted motor control panel.

PUMPS: Circulating pumps shall be Little Giant WGP series with model selected per the flow rate required by the evaporative media. Construction shall include direct drive, oil-less construction, air filled housings, with completely sealed motors and nitrile shaft seal. Pump includes thermal overload protection motor with stainless steel housing, Noryl impeller, and polypropylene pump housing. Pumps shall be rated for 115 volts, 1ϕ, 60 hertz. Pump is to be wired by others or wired to the optional unit mounted motor control panel.

MIST ELIMINATOR: Install a mist eliminator downstream of the evaporative media that will prevent carryover of droplets into the supply air to the building. Mist eliminator is to be installed in an angled position, encased in a 304-SS 18 gauge enclosure. Mist eliminator media is to be multiple layers of pleated aluminum encased in aluminum frames with each filter equipped with drain holes. Racks are to be installed in the vertical and angled position to maximize retention of water droplets. Water droplets are to drain back to the sump.

AIR DISCHARGE LOCATION: Unit shall be fabricated as an up-blast, down-blast or straight (horizontal) discharge. Refer to the equipment schedules and plans for air discharge size and location of each unit.

FILTER SECTION WITH LOUVERED INLET: Filter sections opening hinged access doors with metal gauges, hardware, and gaskets specified in the casing section. Filter sections shall have a plenum between the filters and the evaporative cooling media to provide access to the inside of the filter section for filter removal and media maintenance. Units without a maintenance plenum will not be allowed.

Several types of filters may be selected as follows:

Filter sections accommodate 2” thick 25-30% efficient, 420 fpm maximum face velocity, high capacity throw away filters which slide freely on channels, equal to American Air Filter Merv 8 PerfectPleat HC, or (optional) 2” aluminum, permanent, washable filters.

(Optional) Aluminum pre-filter section shall be included after the louvers and before the throwaway filters. 2” aluminum filters are to be encased in an aluminum sheet metal frame which slide freely on channels. The filter media consists of multiple layers of pleated aluminum media.

(Optional) 12” thick Merv 8, 12, 14 and 15 extended surface rigid air filters with synthetic media are available. These filters are AAF VariCel RF mounted on AAF mounting brackets, spring loaded and supported, and include a neoprene gasket between the mounting bracket and the filter. AAF Merv 8 PerfectPleat filter or aluminum filter is added before the 12” VariCel RF with AAF’s mounting brackets specially designed to attach the 2” or 4” pre-filters to the frame.

4” intake louvers shall be drainable fixed blade type constructed of Galvanneal a60 with expanded metal bird-screen.

(Optional) MOTORIZED INLET DAMPER:

Low leakage parallel blade (or opposed blade – please choose) steel dampers with 16ga. galvanized steel frames and blades, vinyl or silicone blade seals, stainless steel jamb seals, plated steel stub axles, heavy duty molded nylon bearings, jackshafting as required for multi-panel applications.

(Note to spec writer – for actuator installation, add whether you prefer that the damper actuators be mounted and wired in our factory or that these actuators be furnished and installed by the controls contractor at the job site). Damper actuators are to be electronic, UL listed two position spring return 24V, 115V or 230V (refer to schedule) mounted and wired with the required controls transformer and install a terminal strip for use by the controls contractor.

(Optional) MOTOR STARTER/CONTROL PANELS – REMOTE CONTROLS BY OTHERS:

Single point wiring motor starter control panel shall be furnished with each unit. Each control panel is to include a disconnect switch, motor starter (single or two speed per equipment schedule), controls transformer, pump relay and terminal strips for use by the controls contractor to incorporate the building management system controls. Enclosure is to be oversized to provide room for use by the controls contractor.

All components are to be UL listed and motor starters are to be NEMA rated.

(Optional) ETL inspection and listing is available.

(Optional) Dirty Filter switches and pressure gauge is to be provided for each filter section and wired to the terminal strip in the motor control panel mounted on the unit.

(Optional) Motor control is to include a variable frequency drive without by-pass. Each control panel is to include a disconnect switch, variable frequency drive by Eaton, Baldor, ABB or Siemens, controls transformer, pump relay and terminal strips for use by the controls contractor to incorporate the building management system controls. Enclosure is to be oversized to provide room for use by the controls contractor.

(Optional) Motor control is to include a variable frequency drive **with** by-pass. Each control panel is to include a disconnect switch, variable frequency drive by Eaton, Baldor, ABB or Siemens, controls transformer, pump relay and terminal strips for use by the controls contractor to incorporate the building management system controls. Enclosure is to be oversized to provide room for use by the controls contractor.

BARNHART / TAYLOR
INCORPORATED
1602 E. Yandell Dr.
El Paso, TX 79902
Ph: (915) 533-1231
Fax: (915) 533-8942
www.barnharttaylor.com