

## **Chilled Water Units**

### **AHU Section.**

The unit casing is manufactured from laminated composite panels with an inner and outer covering of Chrom-A-Dek steel on a core of 25 or 45 mm thick polystyrene. Stainless-steel inners/outers can be fitted on request. The casing is assembled using anodised aluminum sections. Access doors are provided for easy access to all serviceable components of the AHU. These doors are fixed with aluminum hinges and are fastened with rugged glass reinforced nylon cam-locks, fitted with handles. Nylon square key cam-locks are also fitted standard on fan access doors for safety & security reasons. All locks are keyed alike.

### **Fan.**

The supply fan is either a Nicotra FCC or BCC fan which, together with the fan motor is mounted on a common frame/base & fan discharge opening sealed into a flexible canvas collar. Suitably sized pulleys are then selected & fitted in consultation with the approved computer generated fan selection.

All supply fan motors are suitable for speed control & will be wired to terminal boxes located on the exterior of the units unless switchboards are purchased.

### **Cooling Coil.**

The chilled and/or hot water coils, designed for counter flow & selected in accordance with ARI standards, are manufactured from aluminium fins, bonded to copper tubes & fixed into a galvanised coil casing. Copper fins & stainless steel frames are optional extras. Coils are positioned in stainless steel 304 drip trays complete with a 32mm MPT drain connection penetrating through the unit casing. Coils are sized to provide a maximum face velocity of 2.5m/s & come with an air bleed & drain fitting which fall over the drip tray.

### **Heater Bank.**

Electrical heater banks are installed to supply heating when required. The elements are manufactured from 3.2 Watt/cm<sup>2</sup> Incaloy and are fitted onto a sheet metal terminal box. The elements are removable as a single assembly. This removable assembly incorporates the element mounting plate and terminal cover. An auto overheat protection is also fitted onto this assembly as standard.

## **Filters.**

### **Primary Filters**

Standard washable removable 50mm primary filters are normally installed into appropriately sized galvanized holding frames on the air entering side of the cooling coil. 100mm depths are also available. Filter frames are “flashed”, using 1.6mm galvanised sheet metal, to unit casings for rigidity & air bypass prevention. Furthermore filter banks are reinforced with 5mm flat bar lengths in anticipation of strong forces when filters become dirty.

Initial Resistance – Approx. 65Pa

Final Resistance – Approx. 250Pa

Primary filters are generally selected to produce a face velocity of not more than 2.5m/s.

### **Secondary Filters**

Where required bag or rigid cassette type secondary filters, EU9 rating, are installed into common filter frames with the primary filters. Bag filters typically vary in length from 300-600mm & manufactured with 6 to 8 “pockets” depending on filter size. A gasket will be installed between primary & secondary filters when a common frame is shared.

Stand alone dedicated secondary filter banks are also installed depending on the nature of unit design & application.

Initial Resistance – Approx. 135Pa

Final Resistance – Approx. 400Pa

Secondary filters are generally selected to produce a face velocity of not more than 2.5m/s.

### **Tertiary Filters**

Where specified, high efficiency particle arrestor (HEPA) filters with an EU11 rating shall be fitted down-stream of the cooling coil. HEPA filter holding frames are to be manufactured from powder coated 1.6mm tubular steel and flashed and sealed to the unit casing in such a manner that there is zero bypass of unfiltered air. The HEPA filters are to be fastened into these frames using clamps and seals but are not to be fitted into the A/C unit until the interior of the unit as well as all ducting has been blown clean. The fitting & particle count testing of these filters is carried out by others on site.

Industry standard Dwyer Differential Magnehelic Pressure Gauges are installed across each filter bank for spot inspections.

Initial Resistance – Approx. 250Pa

Final Resistance – Approx. 500Pa

HEPA filters are generally selected to produce a face velocity of not more than 2.5m/s.

HEPA filters are always supplied loose, still sealed in their original cartons, for fitting by others on site.

### **Electrical Switchboards**

Switchboards are fabricated from 1.6mm electro galvanised sheet metal, primed & spray painted electric orange & recess, or surface mounted, into unit casings with outer doors of the same material as the unit. The inner door houses the alpha numeric controller display, plant control switch, run/fault pilot lights & main isolator handle/s. Ammetres & voltmeters are optional extras. Each switchboard incorporates door interlocking isolators, short circuit protection, contactors & overloads for the safe & efficient operation of the A/C unit.

### **Temperature Control.**

When controls are supplied they are already factory commissioned & operational.

### **Installation.**

The unit must be handled with care. Rough handling and dirty site conditions may damage coil fins and internal components as well as cause external damage to the casings.

The unit should be mounted on a firm, level surface, preferably on a 50-100mm high concrete plinth. The plinth, apart from raising the unit and base above standing water and ensuring a positive fall on the condensate drain, will also absorb all minor vibrations. A 150mm deep P-trap on the condensate drain is to be installed by the A/C contractor. These units are virtually vibration-free but, if desired, TECO pads can also be fitted under the feet of the unit.

Allow sufficient room around the unit for access as well as space to open access doors and to remove filters and other equipment.

Duct and pipe connections should be "self-supporting" and not place stress on the unit.

Connections to the Essential and Non-essential electrical supply and to the supply and return air ducting and external wiring are not included. The remote panel, if required must be installed by the contractor.

<b>Performance and Specifications</b>		
<b>Model</b>		<b>040HH</b>
<b>Reference</b>		
<b>Supply Air Volume</b>	<b>l/s</b>	<b>4440</b>
<b>Ext. Static</b>	<b>Pa</b>	<b>250</b>
<b>Fan Static</b>	<b>Pa</b>	<b>600</b>
<b>Fan Type</b>		<b>FCC 560</b>
<b>Fan Motor</b>	<b>kW</b>	<b>5.5</b>
<b>On coil °C DB / °C WB</b>	<b>°C</b>	<b>24 °C DB/18 °C WB</b>
<b>Supply air °C DB / °C WB</b>	<b>°C</b>	<b>10 °DB/9 °C WB</b>
<b>Total Cooling</b>	<b>kW</b>	<b>105</b>
<b>Altitude</b>	<b>masl</b>	<b>Sea level</b>
<b>Electric heating</b>	<b>kW</b>	<b>2x15kW</b>
<b>Humidifier</b>	<b>Kg/hr</b>	<b>15</b>
<b>Power supply</b>	<b>A</b>	<b>11A 380Vac</b>
<b>Filter Media</b>		<b>EU 2-stage</b>
<b>Filter quan / size</b>		<b>6 600x600</b>
<b>Length / Depth</b>	<b>mm</b>	<b>3 000</b>
<b>Width</b>	<b>mm</b>	<b>2 100</b>
<b>Height</b>	<b>mm</b>	<b>1 400</b>