Product Specification

Ecovent® *Twin* High Efficiency Twin Heat Recovery Units

1.1. General

A. Provide a heat recovery air handling unit to meet the performance and configuration as indicated in the schedule and detail drawings. The heat recovery air handling unit shall be tested to BS848 Part 1 and shall be of the Ecovent *Twin* type as manufactured by VES Andover Ltd a company accredited with BS EN ISO 9001:2008.

1.2. Unit Construction

A. 1. The unit shall be provided pre-assembled comprising of a rigidly constructed 25mm tubular aluminium case, double skinned galvanised sheet steel panels, supply & twin extract centrifugal backward curved fans with direct drive motor, supply and extract G4 pleated panel filters, and plastic plate heat exchanger incorporating drain pan.

2. The unit shall be provided pre-assembled comprising of a rigidly constructed 50mm tubular aluminium case, double skinned galvanised sheet steel panels, supply & twin extract centrifugal backward curved fans with direct drive motor, supply and extract G4 pleated panel filters, and plastic plate heat exchanger incorporating drain pan.

B. 1. Size 1 and 2 shall be supplied in one section.

2. Size 3, 4 & 5 shall be supplied in two sections as indicated in the schedule & details drawings. The unit shall be pre-drilled & gusseted and complete with quick change plug connectors for all electrical components for sectional re-assembly on-site by others as indicated in the details drawings and O&M documentation.

C. The units shall be available with optional fitted electric or hot water heating as indicated in the schedule & detail drawings.

D. The units shall be available in plantroom or weatherproof construction as indicated in the schedule and detail drawings.

E. The units shall be fitted with a heat exchanger bypass duct, incorporating a bypass damper to allow heating / cooling recovery and free heating / cooling.

F. The unit shall have circular 'safe fit' duct spigots complete with rubber gasket seals for 25mm size 1 & 2 units, 20mm Mez flange connections for 50mm 3, 4, 5 units.

G. Access for maintenance shall be via a removable lid or panels, allowing access for the cleaning or removal of internal components as indicated in the detail drawings. The filters can be withdrawn through side access panels.

H. 1. Size 1, 2, 3, 4 & 5 plantroom casework shall incorporate mounting brackets compatible with drop-rod systems.

2. Size 1, 2, 3, 4 & 5 weatherproof casework shall be supplied as standard on a galvanised sheet steel channel base, the frame shall be 100mm high as indicated in the schedule & detail drawings. The frame shall be finished to match the unit casework.

I. Units 1, 2, 3, 4 & 5 shall be compatible with optional self-levelling feet as provided by VES Andover Ltd.

J. The units shall be supplied with access & handing as indicated in the schedule & detail drawings.

1.3. Fans

A. 1. The size 1, 2, 3, 4 & 5 unit fan impellors shall be of PA6 glass-fiber reinforced, backward curved plastic blade construction with galvanised steel mounting plate.

B. The impellers shall be statically and dynamically balanced to G 2.5 / G 6.3 according to ISO1940 part 1.

C. The fan impellers shall be mated with aerodynamic bell inlet eyes for high efficiency and low noise generation.

D. The fan impellers are supplied as standard in natural uncoated finish. Acrythane coating shall be available for galvanised steel fans as indicated in the schedule.

1.4. Motors

A. The fans shall incorporate external rotor motors to insulation class F, IP44 environmental protection rating & shall be supplied with thermal protection cut-out as standard.

B. The integrated motor shall be supplied epoxy painted grey to RAL7032.

1.5. Plate Heat Exchanger

A. The unit shall be supplied with a full PVC plate heat exchanger with a minimum efficiency of 50% to BS EN 308:1997 specification.

B. The plate heat exchanger shall incorporate a 100% recycled exchange matrix and heavy gauge PVC framework as standard.

C. The plate heat exchanger matrix shall be aerodynamically designed, with built-in spacers ensuring a constant plate separation.

D. The plate heat exchanger shall be available with optional virgin plastic exchange matrix for corrosive environments as indicated in the schedule.

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1.6. Drain Pan

A. The unit shall include a built-in condensate drain pan as standard.

B. The drain pan discharge connection shall be 15mm plain PVC stub type.

1.7. Filtration

A. The filters shall be 37mm pleated filter media as standard, with rigid wax treated cardboard moisture resistant frame.

B. Filters shall be to BS EN 779 Classification Grade G4 as standard, grade as indicated in the schedule and detail drawings. F7 alternative available.

1.8. Operation Environment

A. The units shall be available with hot water or electric element heating as indicated in the schedule and detail drawings.

B. The hot water heater battery shall be of copper tube, aluminium fin block construction, with galvanised sheet steel casework. The flow & return pipe connections shall be handed as indicated in the schedule and detail drawings.

C. The hot water heater battery shall be available with alternative fin coatings by special order, as indicated in the schedule.

D. The electric heater battery shall be suitable for single or three phase supply and compatible with thyristor control as indicated in the schedule and detail drawings.

E. The electric heater battery shall consist of an element array sized to suit the steps and phases as indicated in the schedule and detail drawings. The elements shall consist of a tubular incolloy shroud containing compressed magnesium oxide powder packed around a Nickel Chromium resistance wire. The element array shall be evenly spread across the open area of the duct.

F. Where multiple elements are required to achieve the steps and phases as indicated in the schedule, elements shall be linked by copper busbar or terminated with electrical connectors.

G. The electric heater battery shall be fitted as standard with a 130°C non-adjustable thermal safety cutout, with manual reset.

H. All electric heaters shall be 1500V flash tested, and resistance tested for correct component assembly. Test certificates shall be available on request.

1.9. Operation Environment

A. The unit shall be designed to operate in ambient temperatures from -20°C up to 40°C, and can run continuously at up to 80% humidity level.

B. The fan impellers shall be available with optional Acrythane finish suitable for coastal or corrosive environments.

2.0. Controls

A. The unit shall be fitted as standard with EC or Inverter fan speed control system to match fan type with max/min speed & 0-10v BMS control, i.e Air Quality or Temperature sensor.

B. The unit shall be available with optional unit mounted CPB control panel as manufactured and factory fitted by VES Andover Ltd. to suit electric or hot water heating, or alternative loose CPB panel for installation by others. If no control panel is ordered the unit will be supplied with local isolator for unit mains connections.

C. Fitted Controls shall be positioned as indicated in the schedule & detail drawings.

D. Controls shall be supplied with internally mounted circuit breakers, run, trip & panel live indication & lockable door isolation switch.

E. Control panels shall have individual circuit breakers for Supply, Extract, Control & Electric Heater Battery where indicated in the schedule & detail drawings.

F. Fitted controls shall be supplied with a supply air duct sensor to be fitted on-site by others as indicated in the schedule.

G. Fitted controls shall be supplied with a wired AHU mounted LCD controller. Optional room user interfaces are available.

H. Fitted controls shall be fully pre-wired to internal components. Hot water controls shall be pre wired to a local junction box for easy electrical connection to optional four port valve actuator supplied by VES Andover LTD as indicated in the schedule.

2.1 Ancillaries

A. The unit shall be fully compatible with a standard range of spigot mounted silencers. The silencers shall be suitable for direct mounting to the unit.

B. The silencer shall be a rigidly constructed single skinned galvanised sheet steel case lining incorporating internal splitting vanes lined with resin bonded mineral wool.

C. The silencer casework shall be provided naturally finished in high quality galvanised steel as standard. Internal & External powder coat available as indicated in the schedule. Colour to be in accordance with schedule.

Download specification from www.ves.co.uk/information-centre

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