PLATE HEAT EXCHANGER UNITS

Provide 50-65% heat recovery
Round and square spigot versions
Ideal for confined areas
Duty of 0-2.0m³/s
Easy installation

VES PLATE HEAT EXCHANGER UNITS
part of a complete range of innovative, flexible products from the HVAC experts
Why choose VES
VES have been supplying products for the HVAC industry for over 40 years, and have the in-depth knowledge and resources to provide solutions to all ventilation related requirements. We are a substantial British manufacturing company with over 250 employees, several factories plus a regional base in the north of England, and sales engineers located throughout the UK.

Complete range of products
The product range encompasses all types of ventilation products, including those required for commercial, industrial, public and domestic buildings. The emphasis is on low energy products and sophisticated controls to meet the requirements of the Building Regulations.

The range extends from a small bathroom extract fan up to a mighty central station air handling unit. There are specialist heat recovery units, high temperature fans for kitchen hood extract; duct, wall, ceiling and roof units; low noise products and silencers; fitted controls.

High quality, flexible solutions
VES operate a quality assurance system to ISO 9001, monitored by the BSI. The air movement products are tested in house to BS 848 Part 1, and submitted for external testing and approval when necessary.

VES specialise in bespoke designs for ventilation units, and whatever the issue, be it space, noise, temperature etc, can provide a design solution to meet the requirements of the project.

Superior customer service
From the moment we receive your enquiry to delivery and beyond, we have the people in place to give excellent customer service. The VES after sales service covers the whole of the UK and is among the best in the industry.

Experience and expertise
VES employ a range of experts in disciplines including air movement, noise control, air conditioning, controls, electrics and product refurbishment, and we have key staff who have worked at VES for many years.

Manufactured in the UK
VES has over 12000m² of manufacturing and stores space, and has state of the art sheet metalworking equipment, plus a large powder coating plant. VES also has a substantial controls department, and makes components such as dampers and electric heaters in-house. This not only provides employment for local people, but also many suppliers around the UK.

Introduction
The Ecobox is a plate heat exchanger that eliminates cross contamination of fresh air. It is ideal for confined areas with no space for fan units, or if a fan system is already in place.

The Ecobox is robust and well built, including a thermal lining with casing made from galvanised sheet steel. The cased plate heat exchangers provide 50-65% heat recovery, depending on conditions.

Ecobox units can be hung or secured to a base with round or square spigots for easy ductwork connection. As well as easy installation the Ecobox can be used in conjunction with many VES and other manufacturers products. For instance it can be combined with VES Round Fans and Heater Batteries to provide a smaller scale heat recovery solution. This includes the Heatline with optional integrated controls.

VERSATILE HEAT RECOVERY SOLUTIONS
The Ecobox can be used in conjunction with other VES products - extract and supply fans, twin fans and air handlers. The image below illustrates a compact ceiling void solution, incorporating Round Fans and a Heatline electric heater.

**Versatile Heat Recovery Solutions**
- Nine different models.
- Duty of 0-2.0m³/s.
- 50-65% heat recovery, depending on conditions.
- Galvanised steel case and thermal lining.
- Condensate drain pan to exhaust with ¾ BSP side connections.
  (Option on ECO)

**RS and RM fans**  
**Heatline**

**Ecobox**

**Supply air**  
From space

**Heatline**

**electric heater battery**

**Round Fans**

(extract fan)

**Ecobox**

(supply fan)

**Exhaust air out**

**Optional**  
LCD Room Unit
Contents:

ECOBOX-EBX
Low duty/high efficiency
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ECOBOX-ECO
High duty/high efficiency
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Other Ecobox Compatible Units

Airline Low Profile Small Air Handler and Extract

SAM Small Air Handler

Weathermaster Extract Fan

REX Centrifugal Fan

Twinimum Low Profile Twin Fan

FLO₂ Twin Fan
ECOBOX - EBX

Low duty/high efficiency

Duty 0 - 0.5m³/s.
Cased plate heat exchangers.
Easy to install in ventilation systems.
Can be used in conjunction with many VES products.

- 50 - 65% heat recovery depending on conditions.
- Case manufactured from galvanised sheet steel with thermal lining.
- Condensate drain pan to exhaust with ¾" BSP connection.
- Round spigots c/w ‘safe fit’ rubber gasket for easy ductwork connection.

Note:
- The drain pan must be located to the air outlet of the plate heat exchanger on exhaust airflow.
- To achieve this, either turn unit around until correct, or follow instructions on O & M leaflet to relocate pan within unit.

Selection Chart

<table>
<thead>
<tr>
<th>ECOBOX Model</th>
<th>Weight kg</th>
<th>Round Fan</th>
<th>Filter Box</th>
<th>Heatline</th>
<th>Recommended EHB Rating kW</th>
<th>Air Volume m³/sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBX100</td>
<td>15</td>
<td>RS150</td>
<td>K150FS</td>
<td>HLC150</td>
<td>2.0</td>
<td>0.05</td>
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<tr>
<td>EBX200</td>
<td>25</td>
<td>RS200</td>
<td>K200FS</td>
<td>HLC200</td>
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<td>0.10</td>
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<tr>
<td>EBX300</td>
<td>34</td>
<td>RS200</td>
<td>K200FS</td>
<td>HLC200</td>
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<td>0.125</td>
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<td>EBX400</td>
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<td>RS250</td>
<td>K250FS</td>
<td>HLC250</td>
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<td>0.15</td>
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<tr>
<td>EBX500</td>
<td>77</td>
<td>RS315/L</td>
<td>K315FS</td>
<td>HLC315</td>
<td>7.5</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Combine Ecobox with Round Fans, Filter Boxes and Heatline Electric Heaters

Plan View

RS and RM fans

Heatline

Optional LCD Room Unit
ECOBOX - ECO

High duty/high efficiency

Duty 0 - 2.0m³/s.
Cased plate heat exchangers.
Easy to install in ventilation systems.
Can be used in conjunction with many VES products.

- 50 - 60% heat recovery depending on conditions.
- Case manufactured from galvanised sheet steel with thermal lining.
- Rectangular spigots with 20mm mez flange connections.

Optional Features

- Filters to inlet of both supply and extract airflow, with side access panels.
- Face and bypass damper, plus simple thermostatic control.
- Weatherproof housing.
- Drain pan to exhaust for high humidity applications.
- Larger sizes available - contact sales office.

Fitted Filters

- Pleated, synthetic disposable cell grade G4 (EU4).
- Maximum pressure drop of filter in BLUE part of fan curve 75Pa when clean.
- Do not use fitted filters if selecting from RED part of fan curve.

Selection Chart

<table>
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<tr>
<th>ECOBOX Model</th>
<th>Dimensions - mm</th>
<th>weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO100</td>
<td>A 330 B 765 C 980 D 250 E 250 F 50 G 37.5 H 1005 J 725</td>
<td>45</td>
</tr>
<tr>
<td>ECO200</td>
<td>A 380 B 900 C 1120 D 350 E 300 F 50 G 37.5 H 1145 J 860</td>
<td>60</td>
</tr>
<tr>
<td>ECO300</td>
<td>A 420 B 1185 C 1400 D 450 E 350 F 75 G 32.5 H 1425 J 1145</td>
<td>75</td>
</tr>
</tbody>
</table>

Note:
- Draw through Ecowbox with supply fan to ensure heat recovery from exhaust air.
- Optional drain pan must be located to the air outlet of the plate heat exchanger on exhaust air flow.
- Blow through Ecowbox with the extract fan to avoid need for trap on drain pipe when drain pan option selected.

Combine Ecowbox with other VES Extract & Supply Units

Airline
SAM
Weathermaster

REX
Twinimum
FLO₂
1.1 General
A. Provide a ventilation plate heat exchanger unit to meet the performance and configuration as indicated in the schedule and detail drawings. The unit shall be tested to BS848 and shall be of the EcoBOX - EBX plate heat exchanger type as manufactured by VES Andover Ltd a company accredited with BS EN ISO 9001:2008.

1.2 Unit Construction
A. The unit shall be supplied pre-assembled consisting of a single-skinned heavy gauge galvanized steel case, exhaust condensate drain pan and plastic plate cross flow heat exchanger.
B. The unit shall be supplied with a built-in galvanized sheet steel condensate drain pan as standard.
C. The unit shall be fitted with circular ‘safe fit’ spigots complete with rubber gasket seals.
D. The unit shall be internally lined with thermal & acoustic insulation foam as standard.
E. The casework shall incorporate mounting brackets compatible with drop-rod systems.
F. The unit casework shall be supplied naturally finished in high quality galvanised steel as standard. Optional internal or external powder coat colour as indicated in the schedule.
G. Access for maintenance shall be via a removable service lid, allowing access for the cleaning or removal of internal components where permitted by unit construction.
H. The unit shall be designed to be secured to a suitable base, wall or ceiling, ensuring the use of correct fixings for the application and taking into account individual unit weight as indicated in the schedule and detail drawings.

1.3. Plate Heat Exchanger
A. The unit shall be supplied with a full PVC plate heat exchanger with a minimum efficiency of 50%
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.

1.4. Drain Pan
A. The drain pan shall be situated on the extract air off side of the heat exchanger as standard.
B. The drain pan shall be designed for on-site positioning to suit schedule.
C. The drain pan discharge connection shall be 15mm plain PVC stub type.
D. The drain pan shall be manufactured in galvanised sheet steel & finished in natural uncoated finish as standard.

1.5. Operation Environment
A. The unit is designed to operate in ambient temperatures from -20°C up to 60°C, and can be used continuously at up to 100% humidity level with a correctly installed drain pan.

Download specification from www.ves.co.uk/information-centre
1.1 General
A. Provide a ventilation plate heat exchanger unit to meet the performance and configuration as indicated in the schedule and detail drawings. The unit shall be tested to BS848 and shall be of the EcoBOX - ECO plate heat exchanger type as manufactured by VES Andover Ltd a company accredited with BS EN ISO 9001:2008.

1.2 Unit Construction
A. The unit shall be supplied pre-assembled consisting of a single-skinned heavy gauge galvanized steel case, rectangular duct spigots, and plastic plate cross flow heat exchanger.
B. The unit shall be available in plantroom or weatherproof construction as indicated in the schedule and detail drawings. Weatherproof units shall have a sloped lid supplied fitted as standard.
C. The unit shall be available with optional pleated panel filters.
D. The unit shall be available with optional built-in galvanized sheet steel condensate drain pan.
E. The unit shall be available with an optional heat exchanger bypass duct, incorporating a face & bypass damper to allow adjustable free summer cooling.
F. The unit shall incorporate high quality leak resistant neoprene gaskets on service doors and panels.
G. The unit shall be supplied with rectangular spigots, fitted with 20mm MEZ flanges.
H. The unit shall be internally lined with thermal & acoustic insulation foam as standard.
I. The casework shall incorporate mounting brackets compatible with drop-rod systems.
J. Access for maintenance shall be via removable service panels, allowing access for the cleaning or removal of internal components where permitted by unit construction. Access space requirements shall be as indicated in the detail drawings.
K. Plantroom unit casework shall be supplied naturally finished in high quality galvanised steel as standard. Optional powder coat colour as indicated in the schedule.
L. Weatherproof units shall be supplied powdercoated signal grey RAL7004 as standard. Colour according to schedule.
M. The unit shall be designed to be secured to a suitable base, wall or ceiling, ensuring the use of correct fixings for the application and taking into account individual unit weight as indicated in the schedule and detail drawings.

1.3. Plate Heat Exchanger
A. The unit shall be supplied with a full PVC plate heat exchanger with a minimum efficiency of 50%.
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.
F. The optional face & bypass damper shall suitable for use with optional 230V or 24V open/close or modulating actuators as supplied by VES Andover Ltd.

1.4. Optional Drain Pan
A. The optional drain pan shall be situated on the extract air off side of the Heat Exchanger as standard.
B. The drain pan shall be designed for on-site positioning to suit schedule.
C. The drain pan discharge connection shall be 15mm plain PVC stub type.
D. The drain pan shall be manufactured in galvanised sheet steel & finished in natural uncoated finish as standard.

1.5. Optional Filtration
A. The optional filters shall be 98mm pleated filter media as standard, with rigid wax treated cardboard moisture resistant frame.
B. The filters shall be fitted prior to the exchanger matrix on the supply & extract sides.
C. The filters shall be to BS EN 779 Classification Grade G4 as standard, grade as indicated in the schedule and detail drawings.

1.6. Operation Environment
A. The unit shall be designed to operate in ambient temperatures from -30°C up to 50°C, and can be used continuously at up to 95% humidity level with a correctly installed drain pan.

Download specification from www.ves.co.uk/information-centre
Other products and services from the complete range of VES HVAC solutions:

**Air Handling Units:**
- Supply and extract, combined or separate.
- Heat recovery including crossflow plate heat exchangers, thermal wheel, run-around coils.
- Plantroom or weatherproof, flat or stacked.
- Fitted silencers, fitted inverters and controls.
- Matching DX condensing units.
- Various case constructions including EN 1886 certified units.

**Duct Fans:**
- In-line centrifugal, with forward or backward curved impellers.
- Round fans, axial and mixed flow fans.
- Fitted silencers available all units.
- Manual and automatic speed controllers available.

**Twin Fans:**
- For ceiling void, plantroom, and weatherproof.
- Many models and configurations.
- Fitted auto-changeover system.

**Roof Extract Units:**
- Three ranges for volume and pressure.
- Curb and soaker sheet bases.

**Wall and Ceiling Fans:**
- All types for commercial, industrial and domestic premises.

**Kitchen Hood Extract Fans:**
- Heavy duty high temperature fans for hot greasy air.
- Motors out of airstream.
- Single inlet fans, in-line and vertical jet roof units.

**Control Panels:**
- Off the shelf and built to order panels.
- Air quality sensors and energy savers.
- Intelligent control software.
- A range of remotes including touch screen.

**Noise Control:**
- Matching silencers available for all ventilation products.
- Silencers designed to meet noise criteria.
- Cleanable silencers.
- Weatherproof silencers.

**Specialist Site Services:**
- Plant refurbishment.
- Energy saving upgrades.
- Noise reduction.
- Site surveys.
- Kitchen ventilation.
- AHU flat pack installation.
- Maintenance.
- Spares.

VES reserve the right to amend product specifications and details without notice.