

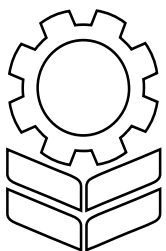
HEAT RECOVERY VENTILATOR (HRV)

FIRST STAGE VENTILATION



REDUCES HEATING COSTS & HUMIDITY LEVELS

- Significantly reduces energy requirement
- Regulates heat distribution and air circulation
- Virtually eliminates cold spots
- Reduces humidity for drier litter
- Reduces carbon footprint
- Easy to clean
- Easy to fit - no ducting or concrete pad required



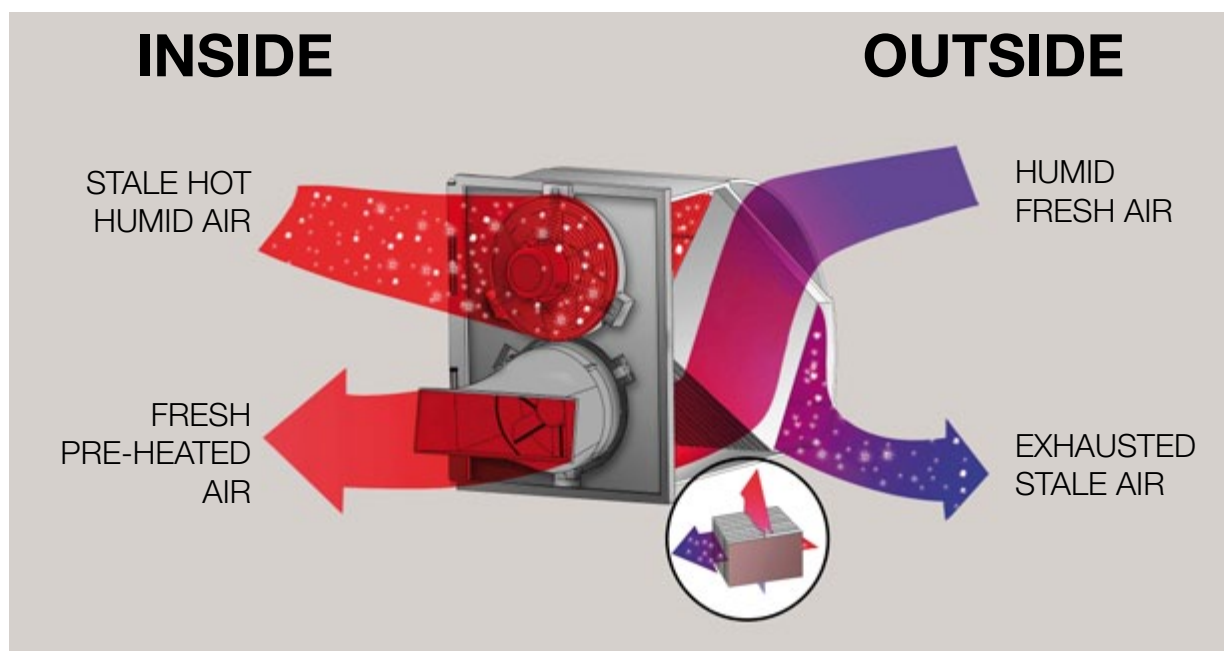
Climate Controls



HEAT RECOVERY VENTILATOR

The HRV is designed to ventilate whilst transferring heat energy from the outgoing stale air to the incoming fresh air via a plate heat exchanger. In practical terms, this equates to a considerable energy saving as the incoming air is heated to around 70% of the internal air temperature. In broiler houses, the HRV will provide sufficient ventilation for the first 12 to 14 days - the period with the highest energy requirement.

In addition, the heat exchange process and resultant increase in the incoming air temperature increases the ability of the incoming air to retain moisture and so excess humidity in the building is absorbed by the incoming fresh air. As the air is recycled and eventually leaves the building again via the HRV, this moisture condenses and flows out of the HRV casing and is drained outside the building.



Reduce heating cost

- The HRV uses the existing heat in the building to preheat the fresh air as it enters the building.
- Incoming air is preheated to 70% of the internal temperature.
- The HRV considerably reduces the need for supplementary heat thereby reducing overall running costs.

Control the humidity for drier litter

- The incoming air absorbs moisture which condenses and drains outside when the air is extracted from the building through the HRV.
- The HRV reduces humidity levels.
- Efficient ventilation gives a drier and healthier environment for the animals.

Inexpensive solution

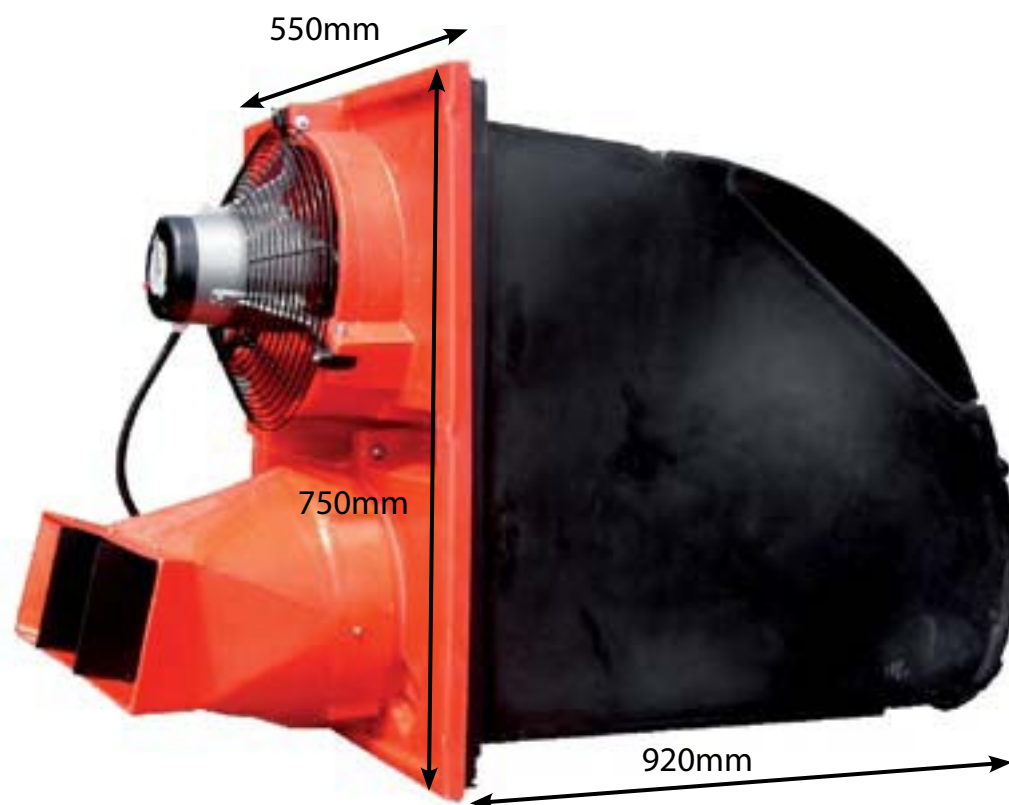
- With respect to air volume extracted (in cubic meters per minute), the HRV represents excellent value and is among the cheapest solution on the market.
- The unit can be easily installed anywhere in the poultry house.

TECHNICAL

- Width 550mm height 750mm
- Electrical requirement 220/240V; 1A; 200W
- Hard wearing polyethylene housing
- Quality seal
- Excess water drains outside the building
- Maximum heat exchange
- Simple and easy to clean



HEAT RECOVERY VENTILATOR



INSTALLATION

- Width 550mm height 750mm
- Depth 920mm (outdoor overhang will depend on wall thickness).
- Electrical requirement 220/240V, 1A, 200W

The HRV should be installed so that the base of casing is at least 1100mm above the external ground level. This will maximise the effectiveness of the fans.

- Mark and cut an opening of 560mm W x 750mm H at least 1100mm above ground level. As the casing is rotomoulded, these dimensions are approximate.
- Slide the heat exchanger inside the opening & secure with screws.
- Seal the opening with silicone / foam. For a tighter seal, a plastic angled flashing may also be used.

No ducting, no concrete pad and as the units weigh under 30 kilos, no crane is required for installation.

Climate Controls Limited

La route de Longcamps, St Sampson, Guernsey, GY2 4UQ

T: 01481 713588

F: 01481 713632

E: pierreb@climate-controls.com

W: www.climate-controls.com



HEAT RECOVERY VENTILATOR

INSTALLATION

Electrical

Ideally the fans in each HRV should be wired back to a control room so that each fan may be switched independantly. This enables the outlet fan to be switched on to warm the heat exchange matrix before the inlet fan is started. The result is that the incoming air is warm as soon as the inlet fan starts.

Maintenance

- 1 - Disconnect the mains
- 2 - Open the door
- 3 - Use a hand water jet or pressure washer to clean the internals
- 4 - Once the washing is complete, close the door of the unit
- 5 - Connect the mains

Regular cleaning twice a week (from 10 days) is recommended to ensure optimum operation. The heat exchange block should be removed and cleaned / disinfected at least every 3 months or more often if regular disinfection is required.

When the HRV is not to be used for any length of time, open the door and insert the plate with a notch on the heat exchanger. This will prevent air flow through one side of the heat exchange block. Similarly, slide the two smaller plates into the oval opening at the rear of the unit outside the building to prevent airflow through the inlet side.

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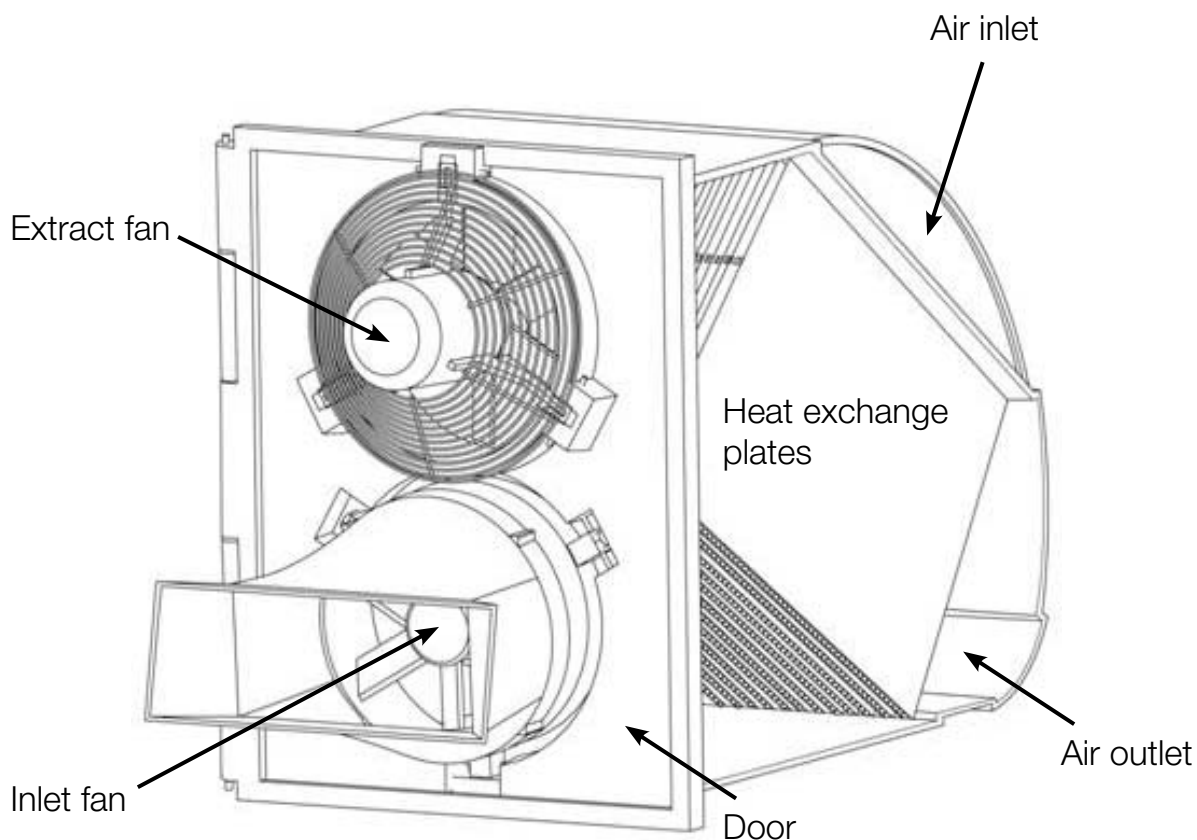
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PRINCIPLE OF OPERATION



The HRV is designed to provide minimum vent with heat recovery and is primarily used in broiler houses.

The principle of heat recovery is based on calorie shifting:

- The air from the building is extracted by a fan and after passing through a heat exchanger is discharged outside the building.
- The outside air is drawn through the heat exchanger by a second fan before being blown into the building.

In an ideal scenerio the HRV's should be installed along one side

of the house and not too close to any existing fans. For optimum performance there should be no obstacles to impede the airflow.

A rectangular directional diffuser is fitted on the internal air outlet of the HRV which guides the incoming air towards the ridge of the building to minimise air stratification.

Any condensate drains outside the building and the latest guidelines from the Environment Agency (June 2011) indicate that all condensate must be collected.

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