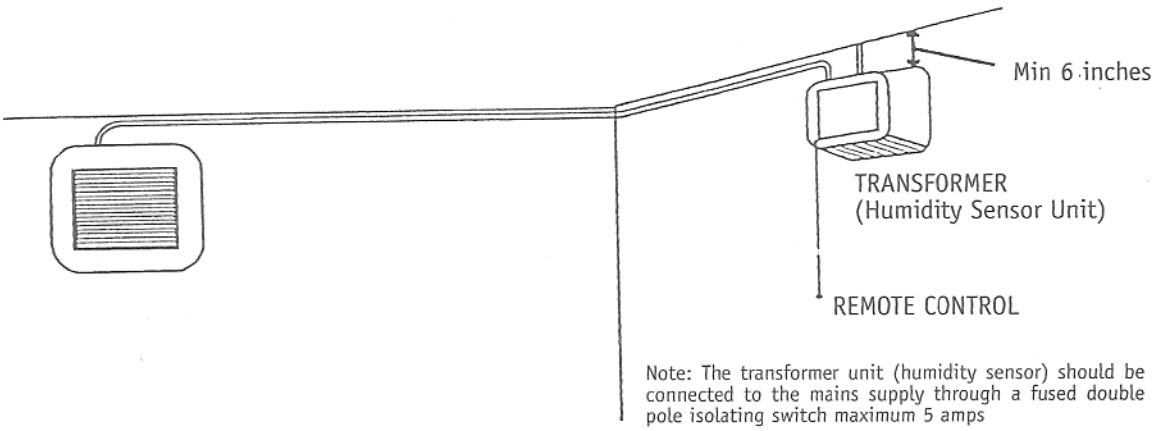
Heat Recovery Ventilator Installation Instructions

Safety First

The Heat Recovery Ventilator is a "SELV" (Safety Extra Low Voltage) ventilator which operates at 12 volts AC. Under no circumstances must this be connected directly to the mains supply. Damage so caused is not covered by the warranty. The low voltage used by the ventilator **must** be provided by the isolating transformer/humidity sensor supplied. A typical layout of installation is shown below.



Note: The transformer unit (humidity sensor) should be connected to the mains supply through a fused double pole isolating switch maximum 5 amps

The Heat Recovery Ventilator can be used in any room which has an outside wall open to fresh air. It is particularly useful in the bathroom, kitchen or laundry room where high levels of moisture are generated. It can also be used in the lounge, dining room or any bedroom to provide a fresh air supply to reduce dust-mite, eliminate mould growth or dampness and condensation and to provide warmed fresh air.

Isolating Transformer (Humidity sensor unit).

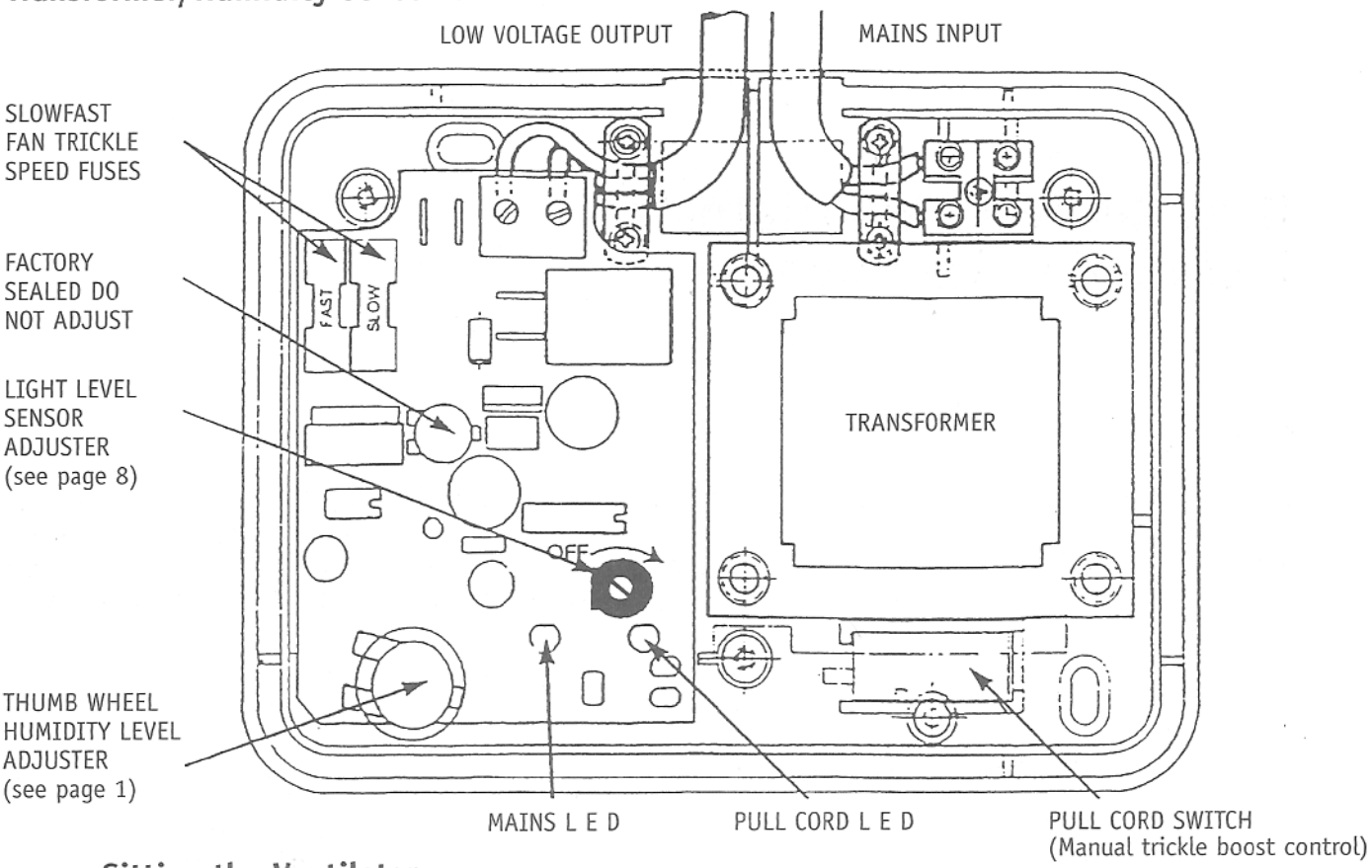
The humidistat monitors the humidity in the room and automtically switches the ventilator from continuous trickle speed to boost if the humidity exceeds the set point e.g. when using the shower, cooking or doing the laundry.

The humidity level can be adjusted by turning the thumbwheel (as shown on page 2). We recommend that it is initially set to 60% which is suitable for most locations. Turning the thumbwheel clockwise decreases the sensitivity (fan in boost for shorter time) and anticlockwise increases the sensitivity (fan in boost for longer time), and is marker in 10% stages.

To prevent tampering with the setting after installation, the thubwheel can be removed by carefully pulling gently upwards. A blanking plate is supplied to seal the hole previously occupied by the thumbwheel.

If installed in a shower or bathroom the transformer/humidistat must be out of reach of anyone using a bath or shower. We strongly recommend installation by a competent electrician.

Transformer/Humidity Sensor Unit



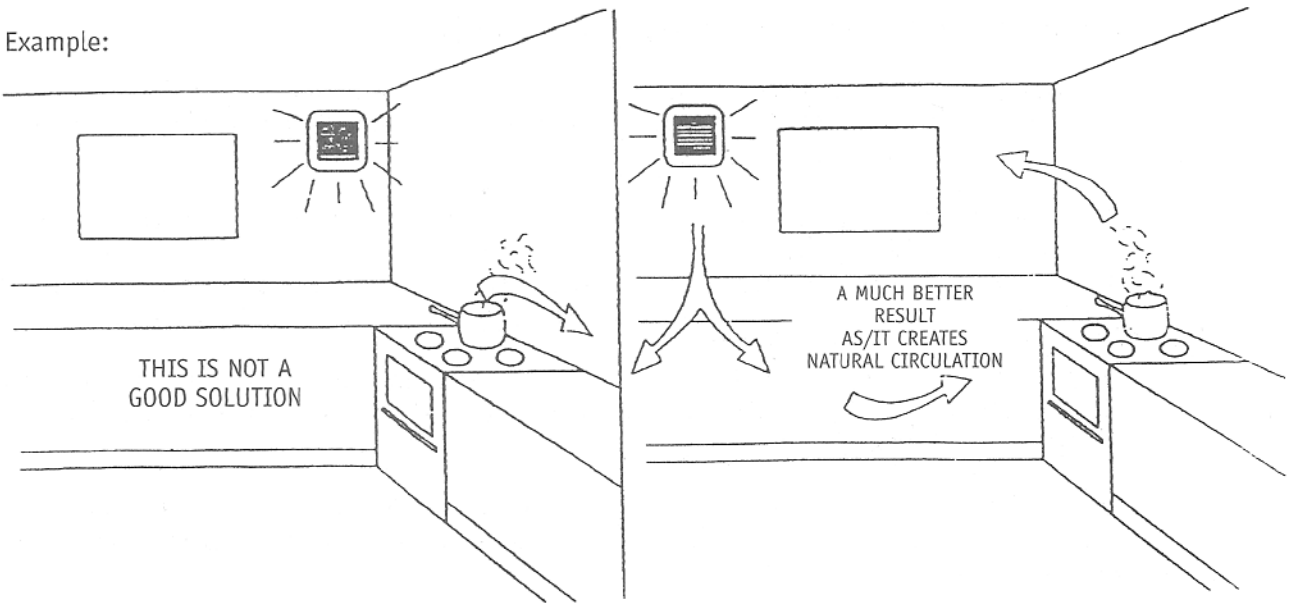
Sitting the Ventilator

a) Survey the property carefully and identify the best site for the ventilator. Condensation problems, dampness and mould growth are stimulated by high levels of humidity, the source of which can be the bath/shower room, laundry room, kitchen or possibly a damp wall.

Identify an area in the room with an outside wall which is clear of obstruction, both inside and out - Check for water and soil pipes, wiring and other obstructions before finalising your installation position.

b) Indicate the position of the core drill hole on the inside wall. If possible, mark it's position on the outside wall too. See if they look right. Remember that the Heat Recovery Ventilator is unique in that it both extracts stale, damp air and blows in warmed fresh air. Make sure that steam from your cooker/hob or appliance is not blown away from the fan.

Example:



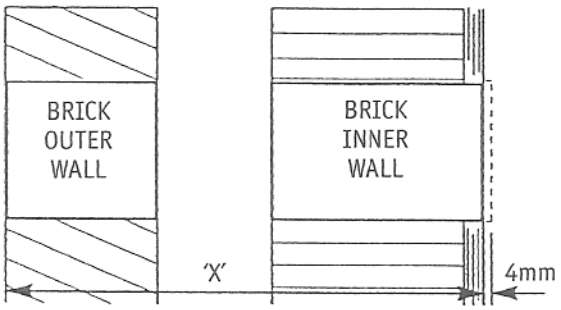
Installation

c) You should site the ventilator close to the ceiling. This will ease the installation of the power cable and give you the best position for air circulation.

Use the wall plate as a template, marking the core Drill hole, fixing holes and power cable entry position (which should be at the top, left of centre).

d) The ventilator is designed to be installed using a 6" (152)mm Core Drill system. The hole needs to be angled downwards very slightly to a maximum of 11/2 from the outside where the discharge cowl will allow drainage outside your home.

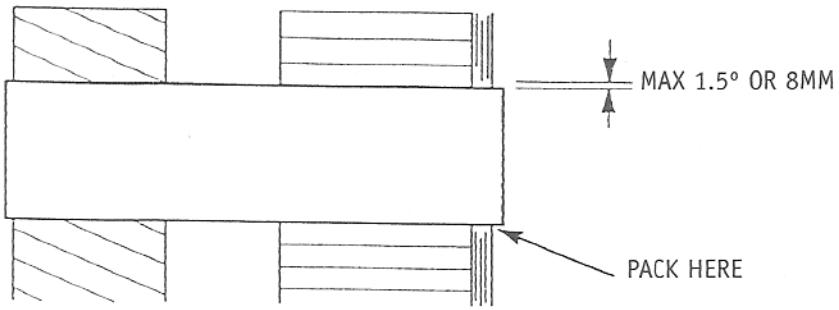
Drill the hole making sure that masonary does not fall and injure people or damage property below. We recommend the "Duradiamond" Core Drill system, details of stockists available on **01324 814 036**



Measure the distance 'X' between outside wall and inside plasterwork or tiles.

e) Measure the length of the hole between the outside brick face and inner plaster work. Now cut the outer tube accurately to the required length. The length should be 4mm greater than the length of the hole 'X' but no less than 254mm, otherwise the Heat Exchanger will not fit. Carefully mark the tube all round and cut with a hacksaw and finish off with a file or good quality sand paper, to remove steps and swarf.

f) Place the tube in the hole and ensure that it slopes downwards towards the outside wall to allow any condensation to run outwards. If you have not achieved this you may have to pack the inside end of the tube upwards on final installation.



Outside installation of finisher ring

g) Place the split finisher around the hole in the outside brickwork with the split at the bottom. Use the strip adhesive to secure the finidher to the wall.

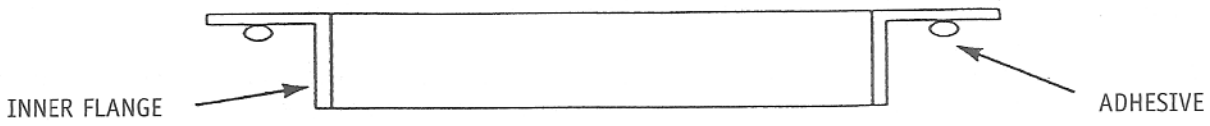
This is best done from the outside but if access is not possible then the split finisher is designed to pass through the large tube.

Inside installation of the finisher ring

Proceed as follows:

i) Push the large tube through the hole so it extends some 50mm beyond the face of the outside wall.

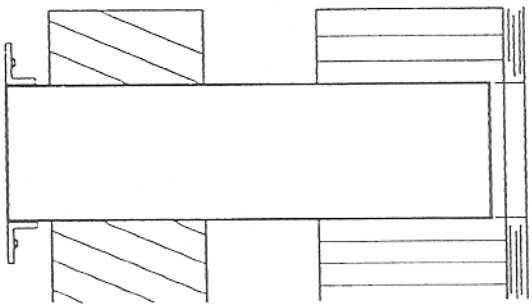
ii) Apply strip adhesive around the rear face of the split finisher and pull off the backing paper - do not compress the adhesive.



ENSURE EXTERIOR BRICKWORK IS DUST FREE

iii) Grip the finisher in your right hand, (palm uppermost) at the left hand end of the split with the adhesive side facing you and the split at the top. Pull back the right hand end of the split along your right arm with your left hand. Push the finisher right through the large tube and let it expand again. Don't let go !

With your right hand, place the inner flange on the outside of the large tube. Move your fingers in an anticlockwise direction until the finisher is pushed fully onto the tube - see below.



iv) Then, pull the tube and finisher back towards the room making sure that the split remains at the bottom. Carefully pull the finisher into the gap between tube and brickwork. Press the adhesive gently against the wall, compressing the adhesive somewhat. Then pull the tube into the room leaving the finisher in place. Ensure that the finisher does not fall.

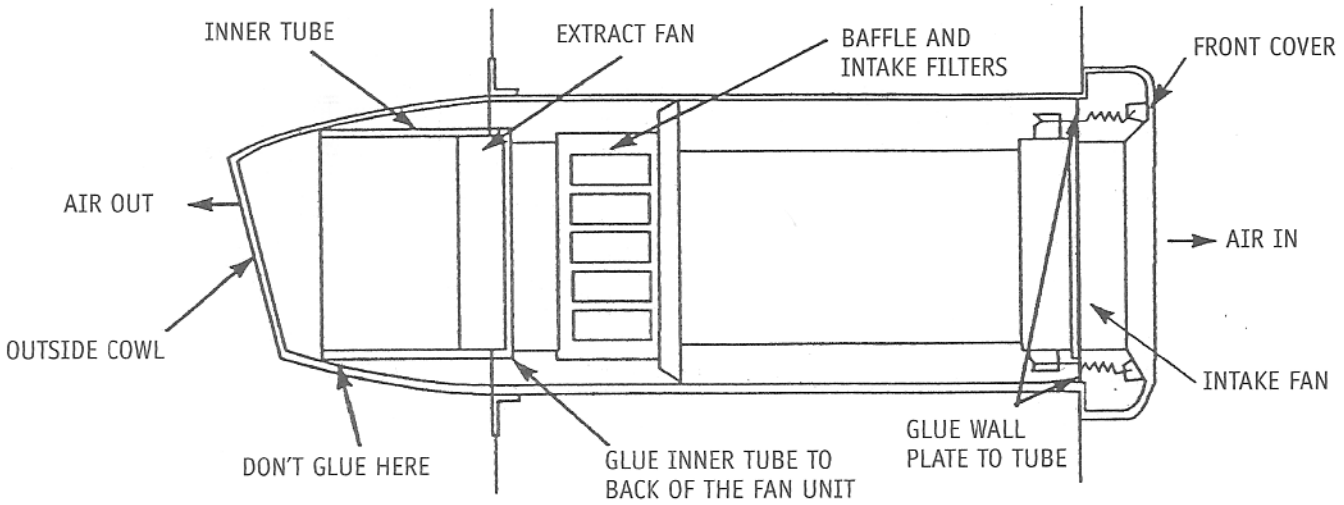
v) Now manipulate the finisher to expand it outwards and increase it's internal diameter as much as possible. This will assist the re-entry of the tube. Compress the adhesive fully against the wall to hold it in position.

h) Fit the outside cowl to your prepared length of tube using PVC adhesive such as - Bostic™ PVC Pipe weld or similar. This is available from most builders merchants. (other types of silicone adhesive will probably work just as well). Place the adhesive in an even layer around the inside diameter of the tube at the end that you did not cut. Place the outside louvres vent on the end of the tube and allow the glue to set before handling it again Wipe off any excess adhesive on the outside of the cowl.

i) It is important for the correct operation that the smaller diameter tube is the correct length This tube connects the extraction fan housing to the outside cowl and seperates the two air streams. The correct fitting of this tube is critical to the efficient operation of the venilator. To achieve this, whatever length has been cut off the outer tube, the exact same length must be cut off the inner tube.

Try to cut it as evenly as possible with minimum off set. File or otherwise finish your cut end to remove any offset and swarf.

j) Mounted on the heat exchanger is a round plastic baffle which seures the air intake filters. The extraction fan adjacent to these filters goes to the outside wall. Use the PVC weld adhesive to stick the small tube you have cut to length onto the end flange of the extract fan and allow the adhesive to set. Protect the front cover at all times from dirt and scratches.



k) Now fit the wall plate to the wall. The wall plate is amrked top on the front face. If the sleeve on the rear wallplate does not fit into the drilled hole, carefully open up the hole in the plasterwork until the wall plate will fit flush against the wall and is central in the drilled hole. (Use the remnant piece of large diameter tube as a template to ensure it is central). Mark out and drill the screw holes and chisel out a groove for the wiring from the cable entry hole (top left) upwards to the ceiling (or in the direction you have determined for the transformer or remote control). Fit screw plugs into the screw holes.

l) Fit the wall plate onto the open end of the large tube with the outside cowl. Measure the distance from the back edge of the wall plate to the other end of the tube. The tube should not extend beyond the outside wall finisher.

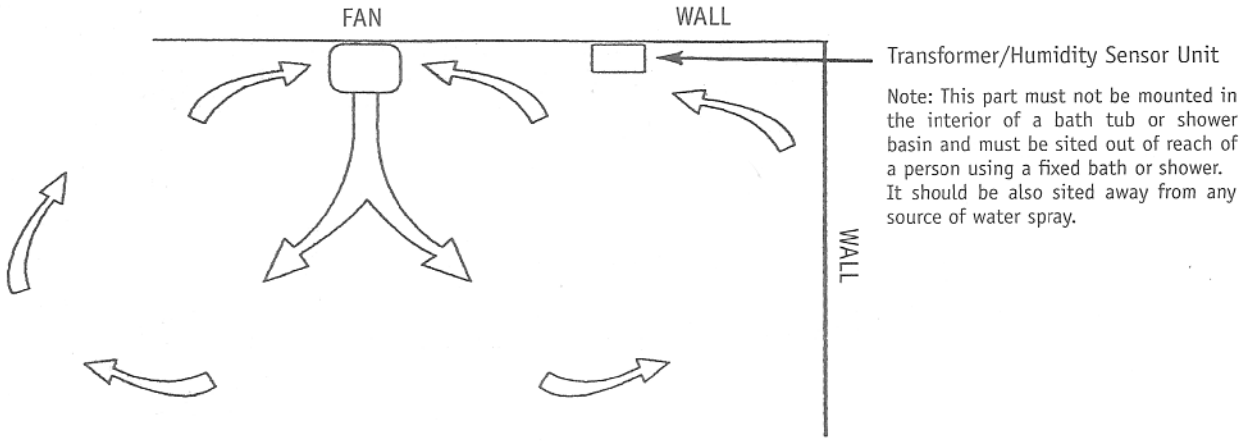
Use the PVC weld adhesive to stick the wall plate to the outside tube. Ensure that the outside cowl is the right way up (louvres pointing downwards to avoid rain ingress and the louvres are level to the wall plate). Push the outside cowl/tube/wall plate assembly into the hole in the wall. Make sure that top is correctly positioned and pull the four core cable through the cable hole, check that there is a small downwards gradient in the tube (see section f). Screw the wall plate to the plate to the wall ensuring that it is level with the ceiling. It is important to do this now in order to accomodate the angle of the tube in the back of the wall plate before the glue sets.

Location of the Transformer/Humidity Sensor unit

The Transformer/Humidity sensor may be mounted on the wall or ceiling.

Position the transformer/humidity unit at least 6"(150mm) from a corner to allow correct airflow over the humidity sensor. Also, ensure the humidity sensor unit is not directly in the stream of the fresh air coming in from the fan unit, as this will result in false sensing.

An ideal location is on the same wall, or one immediatly adjacent which is in the stream of the stale/damp air being drawn into the side vents of the fan assembly.



Wiring IF IN DOUBT CONSULT A QUALIFIED ELECTRICIAN

Decide how you are going to run the wires from the transformer to the fan unit. "All wiring must be in accordance with IEE wiring regulations".

A 5 amp two core power cable is required to connect the fan assembly to the remote control.
A two core, 3 amp supply is required on the input mains connection. An earth connection is not required.

Pass the input and output wires through the cable hole in the base plate of the remote control and fasten it in position. (SEE DIAGRAM ON PAGE 2)
To comply with electrical safety regulations both input and output leads must be clamped to the unit using the saddle clamps provided.

o) Mains wiring for remote control and transformer:

Red or Brown wire	to live terminal
Black or Blue wire	to neutral terminal

Do not aaply power to the ventilator in accordance with IEE wiring regulations for SELV circuits. No earth is required to the ventilator in accordance with IEE wiring regulations for SELV circuits.

All wiring must be 1mm Minimum, fixing securely to comply with IEE wiring regulations. if in doubt consult a qualified electrician.

p) follow the line diagram below to make the correct connections between the fan assembly and the transformer/humidity sensor, and wall plate.

q) Place the fan assembly and front cover through the wall plate and push home. Apply power to the system and check operation. Conduct a smoke test to ensure the extract fan is running. Check that the front filters are in place and screw the front cover to the wall plate with the screws provided.

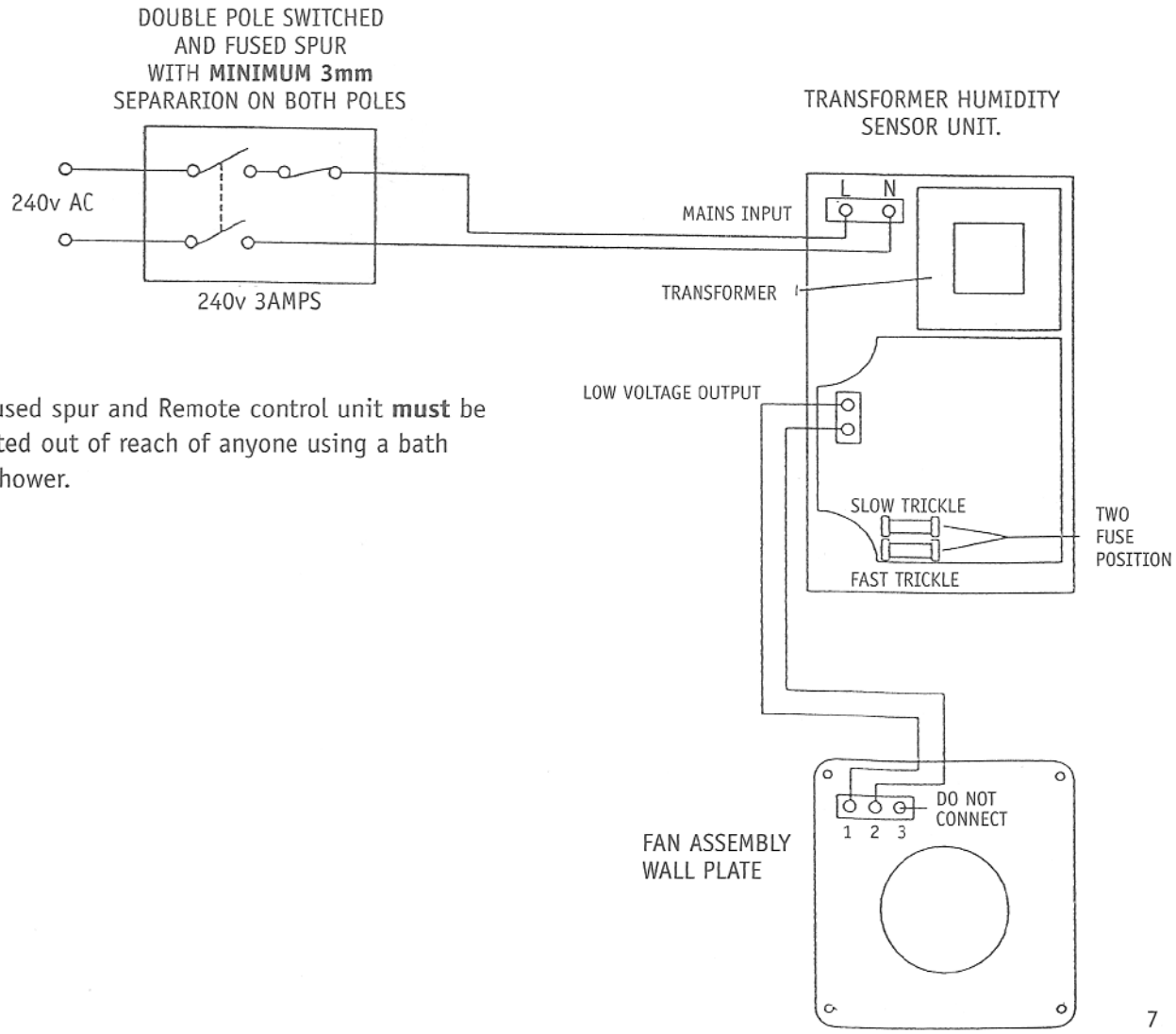
NOTE: If the unit has automatically switched to boost due to high humidity in the room, the pull cord switch will have no effect until the humidity drops below the preset level:

IMPORTANT: The pull cord manually switches the fan unit from trickle to boost. If the pull cord option is not required, when the installation is complete remove the cord ensuring that the switch is in the TRICKLE position. This is confirmed by the LED shown on page 2, being extinguished.

r) After the system has run for some time, check the fan unit switches to boost by directing steam from a kettle over the remote control unit.

s) The fan's continuous trickle speed has been factory set. However, if it is found that the fan is audible at this setting, it is possible to reduce the trickle speed still further, Remove the lid of the control box, and move the fuse link from **fast** trickle to **slow** trickle position (see diagram below). Always replace the fuse with one of the correct type and rating.

Transformer/Humidity Sensor unit Wiring



The fused spur and Remote control unit **must** be mounted out of reach of anyone using a bath or a shower.

Light Level Sensor

A Light Level Sensor is included to prevent the fan from switching automatically to boost at night-time. This is a useful feature particularly if the Heat Recovery Ventilator is installed in a bedroom or bed-sit accomodation, ensuring noise is kept to a minimum.

The sensor is factory set in the OFF position as this is preferred for most installations. This means that the automatic boost feature will operate if the humidity rises during the hours of darkness. To activate the light Sensing feature, (boost inhibited during darkness) turn the adjuster fully anti-clockwise, shown on page 2.

This should be an approximate setting for most installations depending on the location of the remote transformer/humidity assembly in the room.

Fine tuning may be required for precise operation:-

Clockwise allows boost to operate during darkness
Anti-clockwise prevents boost operating during darkness

A simple test for the correct setting is to trigger the boost feature via the humidity sensor in a darkened room. When switching the light on or off, the boost speed should cut in and out accordingly.