EN

HRV10 *Q Plus*
TP440MB

HRV10M *Q Plus*
TP441MB

Heat Recovery Ventilation Unit

auralite®
TP518

Product Manual

LED Status Indicator

Titon®
ventilation systems

Warnings, Safety information and Guidance

Important Information

Important: read these instructions fully before the installation of this appliance

1. Installation of the appliance and accessories must be carried out by a qualified and suitable competent person and be carried out in clean, dry conditions where dust and humidity are at minimal levels.
2. All wiring must conform to current I.E.E. Wiring Regulations and all applicable standards and Building Regulations.
3. Inspect the appliance and electrical supply cord. If the supply cord is damaged, it must be replaced by the manufacturer, their service agent or similarly qualified persons in order to avoid a hazard.
4. The unit is supplied with a mains rated 3 core flexible cord (PVC sheathed, brown, blue and green/yellow 0.75mm^2).
5. The appliance must be connected to a local double pole isolation switch with a contact separation of at least 3mm.
6. The appliance must be earthed.
7. Suitable for 230V ~ 50/60Hz single phase with a fuse rating of 5A.
8. auralite®, control & communication cable access is via the fitted cable gland(s) which are suitable for Ø3- 6mm cable.
9. auralite® Communication Cable - Unshielded 4 Core 18-24AWG Stranded, Tinned Copper.

10. Communication cable should not be placed within 50mm or on the same metal cable tray as 230V switched live, lighting or power cables and any cables not intended for use with a HRV.
11. Ensure all cable glands are fully tightened.
12. The unit must be stored in a clean and dry environment. Do not install the appliance in areas where the following may be present or occur;

- Excessive oil or a grease laden atmosphere,
- Corrosive or flammable gases, liquids or vapours,
- Ambient temperatures above 40°C or below -5°C,
- Humidity levels above 90% or is a wet environment.

13. The appliance is not suitable for installation to the exterior of the dwelling.
14. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
15. Children should be supervised to ensure that they do not play with the appliance.
16. Ensure that external grilles are located away from any flue outlet, in accordance with relevant Building Regulations.
17. The unit must not be connected to a tumble dryer.
18. The unit must not be connected to a cooker hood.
19. Precautions must be taken to avoid the back-flow of gases into the room from an open flue appliance.
20. Ensure all ducting, condensate drain and associated pipe work is free from debris and blockages before switching on the unit.

Contents

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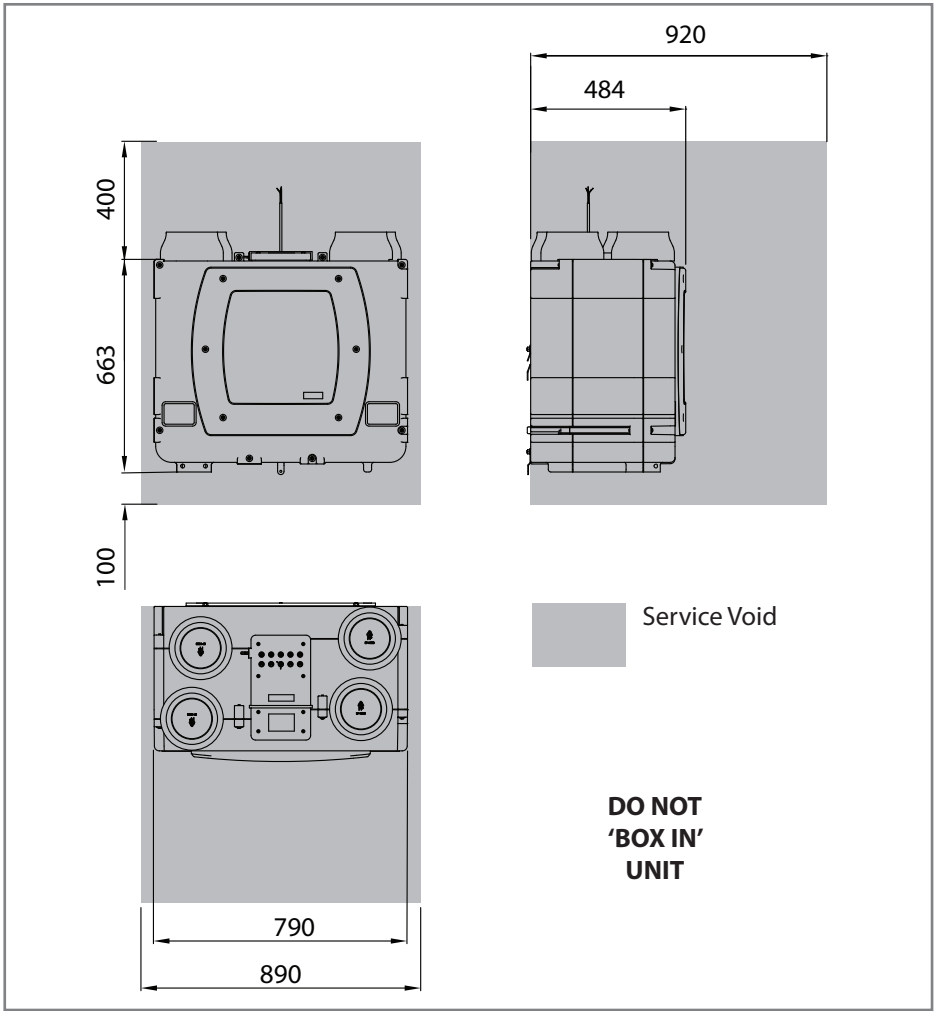
Dimensions HRV10 *Q Plus*

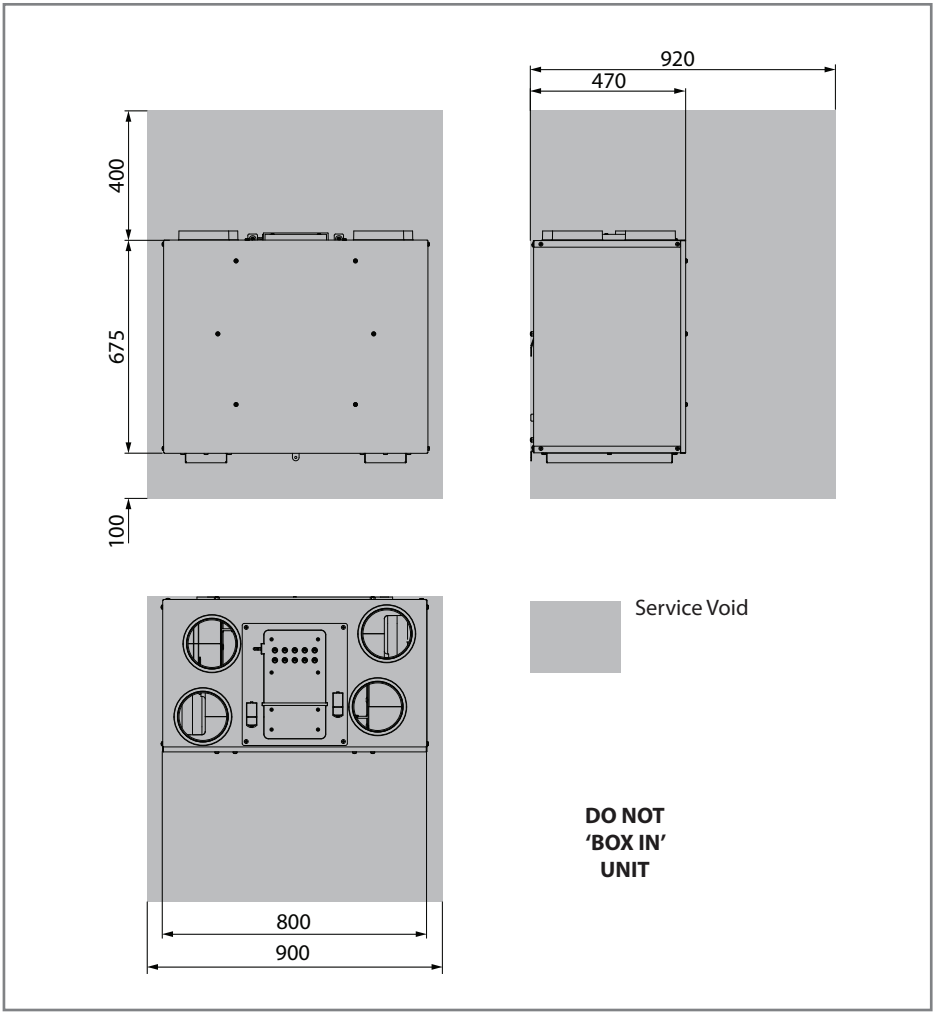
This diagram details the overall size of the unit and the additional space required around the unit to allow for commissioning and future servicing and maintenance.



All dimensions in millimetres

Dimensions HRV10M *Q Plus*

This diagram details the overall size of the unit and the additional space required around the unit to allow for commissioning and future servicing and maintenance.



All dimensions in millimetres

Product Features

The table below lists the models covered by this Product Manual. To find out what features your Titon HRV *Q Plus* has refer to the part number. The part number can be found on the serial number label fixed to the top and front of the unit.

Model	Part Number	auralite® Connection	Auto Setback Speed	Continuous Speed	Boost Speed with Overrun Timer	Summer Bypass	Ø100 & 125mm Ducting	Ø125 & 150mm Ducting	Independent Adjustment of Fans	Step-less Fan Speed Adjustment	Automatic Frost Protection
HRV10 *Q Plus*	TP440MB	•	•	•	•	•	•		•	•	•
HRV10M *Q Plus*	TP441MB	•	•	•	•	•		•	•	•	•

GB Patent Nos.
GB2491516, GB2471406

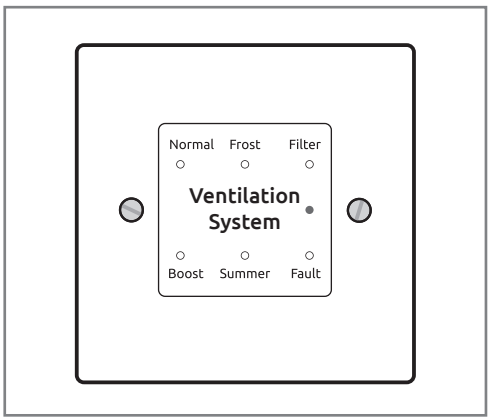
Controls & Features

The HRV *Q Plus* units are controllable by various volt free switches and sensors. The following describes the controls and features of the HRV *Q Plus* units and how they are controlled. Refer to the table opposite. Ensure all controls are adequately labelled, indicating their function clearly.

auralite

auralite® is a low voltage hard wired remote LED ventilation system status indicator, designed to fit a standard UK patress or recessed backbox. The indicator has six LEDs which display:-

- Normal — Solid light - Unit is running at Continuous Speed.
  Flashing light - Unit is running at Setback Speed.
- Frost — Unit is in Automatic Frost Protection mode.
- Filter — Filters require change.



auralite® Indicator Panel

- Boost — Solid light - Unit is running at Boost Speed.
  Flashing light Boost Alert is active.
- Summer — Unit is in Summer bypass.
- Fault — Unit has a fault - Contact the installer.

Auto Setback Speed

Setback Speed is used to reduce ventilation rates. Setback Speed is automatically set at the mid point between minimum possible Continuous Speed and the selected Continuous Speed. The Setback Speed can be enabled by connection of a volt free one-way switch, or combined with the Boost Speed with the 3 position switch TP 508.

Continuous Speed

Continuous Speed is the normal continuous extract and supply air flow running speed of the units.

Boost Speed with Overrun Timer

Boost Speed increases the extract and supply air flow. Boost Speed is configured with Step-less independent fan controls and includes an Overrun Timer variable between 0 and 60 minutes. The Boost Speed can be triggered by any device which provides a volt free one-way switch, such as a PIR, thermostat, humidistat or a standard one-way switch.

auralite® Boost Alert

Boost Alert is a timer designed to prevent the HRV being inadvertently left in Boost for long periods of time. Once the HRV is placed in Boost the timer is started and after 2 hours Boost Alert will be activated. This is indicated by the Boost LED on the auralite® Indicator Panel flashing. Once Boost Alert has been activated the Overrun Timer is disabled meaning the HRV will return to Continuous Speed as soon as the switch holding the unit in Boost is released.

Summer Bypass

Summer Bypass is designed to operate during hot periods where fresh air can be vented straight into the property without being preheated by the extracted stale air. Summer Bypass operation is automatically controlled. The Summer Bypass mechanism diverts the stale air being extracted from the dwelling around the heat cell so that its heat energy is not transferred to the fresh air being supplied to the property.

Automatic Frost Protection

During very cold weather, Automatic Frost Protection will detect temperatures that could form ice inside the unit. It will reduce the supply ventilation rate to prevent ice build up within the heat cell. Automatic Frost Protection reduces the flow rate of cold air, thus allowing the warmer stale air to raise the temperature within the heat cell to such a level that prevents the formation of ice. As internal temperatures rise Automatic Frost Protection will increase the supply ventilation flow rate back to the commissioned settings.

Packaging Contents

Inspect the unit when taking delivery. Check the unit for damage and that all accessories have been supplied. Each HRV10 *Q Plus* unit is supplied with:

- Mounting Bracket x 1.
- Ø40 x 12mm Condensate Drain worm gear hose clamp x 1.
- Port Cover 150mm to 125 adapters x 4, supplied packed on Duct Ports.
- Product Manual x 1.
- User Guide x 1.

Any shortages or damage must be immediately reported to the supplier.

Installation

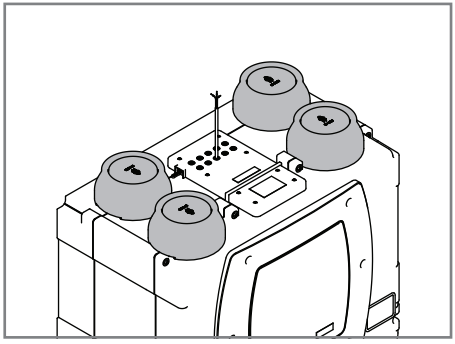
Fixing

Titon recommend the use of guidance given in the Domestic Ventilation Compliance Guide 2010 Edition ISBN-978 1 85946 378 9 and Approved Document Part F 2010 ISBN-978 1 85946 370 3 for all installations in the United Kingdom.

The above documents can be downloaded free from www.planningportal.gov.uk.

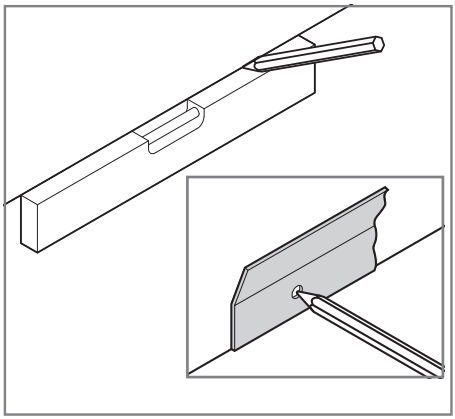
Do not remove the Port Covers until connecting ducting. Port Covers are fitted to prevent debris falling into the unit and causing blockages and damage:

- The Titon HRV10 *Q Plus* is designed to be mounted on a wall or similar. The mounting surface must be sufficiently strong to support the unit.
- Consider the positioning of electrical services and the Condensate Drain when siting the unit.
- Ensure there is sufficient access around the HRV10 *Q Plus* for future maintenance.
- Do not 'box-in' the unit making access to the unit difficult for maintenance and repair.

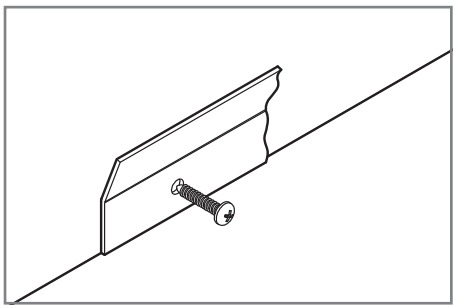


The Unit Must be mounted plumb and level front to back and side to side.

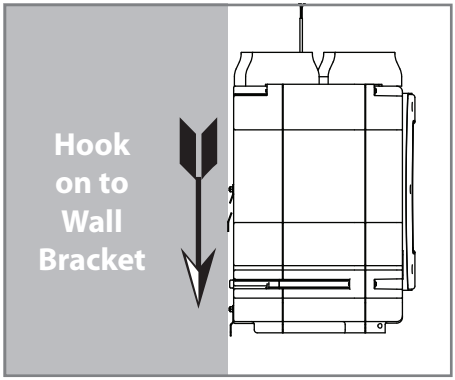
1. Mark a horizontal line on the wall using a spirit level. This line will be approximately 330mm below the location of the top face of the unit when fitted (excluding duct ports).
2. Use one of the Mounting Brackets as a template to mark the three fixing hole centres.
3. Drill holes for fixings, always use a fixing suited to the wall type.
4. Fix one Mounting Bracket to the wall ensuring the interlocking side is at the top, as shown.

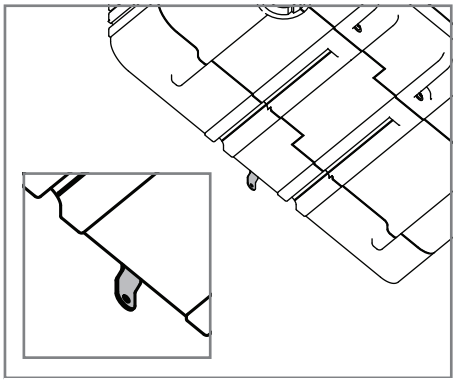


Mounting Bracket highlighted



5. Mount the unit by locating the two Mounting Brackets together. Ensure a positive location is made between the
two Mounting Brackets.
6. The Safety Bracket MUST be used. Rotate Safety Bracket into position. Drill hole for Safety Bracket, always use a fixing suited to the wall type. Packing to be used as required behind the Safety Bracket to ensure unit is level front to back.





Safety Bracket highlighted

Condensate Drain

The unit's Condensation Drain Pipe must be fitted and connected to the dwelling's foul water drainage system in accordance with the relevant building regulations.

The Condensate Drain:

- Is attached via the Condensation Drain Socket on the base of the unit.
- Must incorporate a suitable trap, which must act as an air lock.
- Must be adequately secured and be insulated with the equivalent of at least 25mm of insulating material with a thermal conductivity of 0.04 W/(mK) if any part of the pipe passes though an unheated void.
- Should be installed to have a minimum 5° fall from the unit.
- Titon recommend the use of a diaphragm type waste valve in place of a conventional 'wet' trap which could dry out. Such as, BRE certificate no. 042/97 'Hepworth Hepv0 Hygienic self sealing plastic waste valve' recommended as an alternative to traditional U-Traps.

Fitting

1. **HRV10M** - Remove the left hand cover from the base of the unit, retain screws & washers.
2. **All units** - Fit hose clamp around the Condensate Drain Socket, ensuring it is pushed over the lip and aligned with a screwdriver access hole to enable tightening of the hose clamp.
3. **All units** - Insert 22mm O/D PVC pipe into Condensate Drain Socket up to the stop, no more than 50mm of pipe should be inserted into the Condensate Drain Socket.
4. Hand tighten the hose clip. Do not over tighten.
5. **HRV10M** - Replace the cover on the base of the unit, ensure all screws and washers are reused.

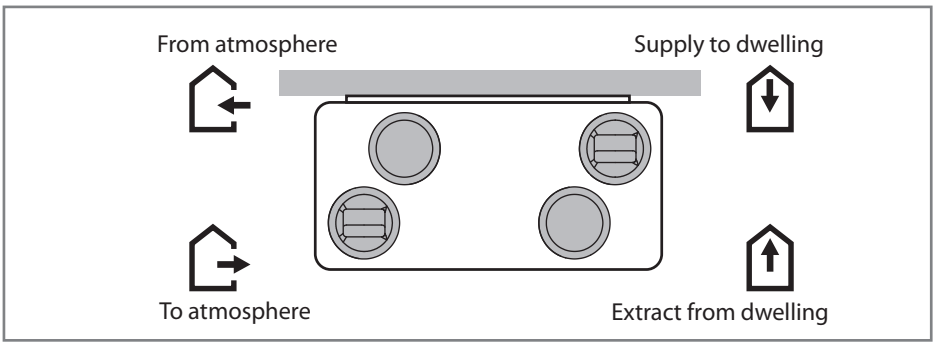
Ducting Connections

Titon recommend the use of guidance given in the Domestic Ventilation Compliance Guide 2010 Edition ISBN-978 1 85946 378 9 and Approved Document Part F 2010 ISBN-978 1 85946 370 3 for all installations in the United Kingdom.
The above documents can be downloaded free from www.planningportal.gov.uk.

Once the unit has been installed and the ducting is ready to connect to the unit, remove the Port Covers from the Duct Ports.

Titon recommend:

1. Ø150mm ducting is used to connect the HRV10 *Q Plus.*
2. A short piece of flexible ducting, approximately 200mm long is used to connect the unit to the ducting system.
3. Any flexible ducting used must be pulled taught.
4. A minimum distance of 200mm between the HRV10 *Q Plus* unit and any sharp bends in duct work.
5. Ducts within the building heated envelope between the external terminals and the unit's From Atmosphere and To Atmosphere ports should be insulated and wrapped additionally with a vapour barrier outside the insulation.



ENSURE DUCTING IS CONNECTED TO THE CORRECT PORTS

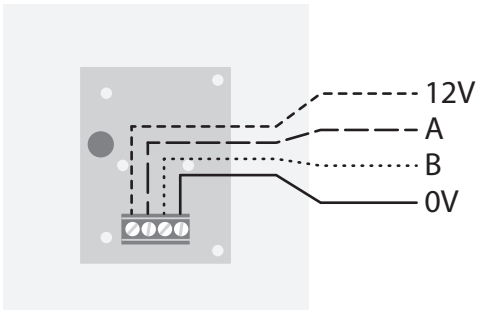
6. Ducting should be insulated where it passes through unheated areas and voids with the equivalent of at least 25 mm of a material having a thermal conductivity of ≤0.04 W/(m.K) to reduce the possibility of condensation forming. Where a duct extends externally above roof level the section above the roof should be insulated or a condensate trap should be fitted just below roof level.
7. Where ducts pass through fire barriers, they must be appropriately fire stopped in accordance with the requirements of Part B of the Building Regulations (for England & Wales).
8. A ducting condensate drain must be fitted to vertical To Atmosphere duct work.
9. Ducting must be installed in such a way that resistance to airflow is minimised.
10. Ducting connected to the From Atmosphere & To Atmosphere ports, must be to/from the external air outside the building envelope.
11. Duct joints to the unit's duct ports must be fixed using a method that ensures a long term seal is achieved. If using a short piece of flexible ducting secure using a hose clamp.
12. A minimum distance of 2m exists between the external supply and exhaust terminals .

Wiring Connections Access

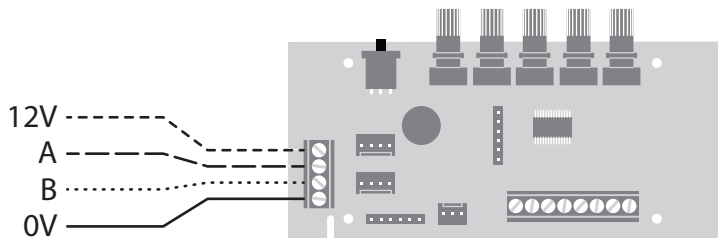
The electronics compartment is mounted on top of the unit. The compartment has two removable lids, front & rear. The front lid must always be removed before the rear lid; both lids are fixed by four screws. All wiring must be routed into the electronics compartment via the knock-outs and using cable glands or similar fitted to the rear lid.

auralite®, Boost and other volt-free connections are on the MVHR controller PCB located at the front of the electronics compartment.

Duct heater connections are on the auxiliary PCB located at the rear of the electronics compartment

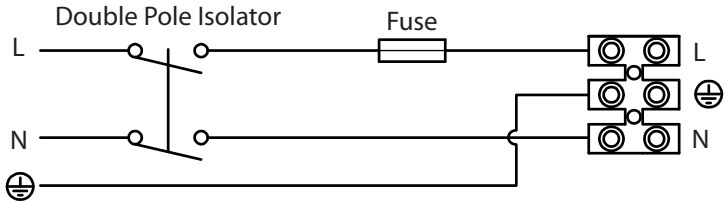


auralite® connection at Indicator



auralite® connection at Unit

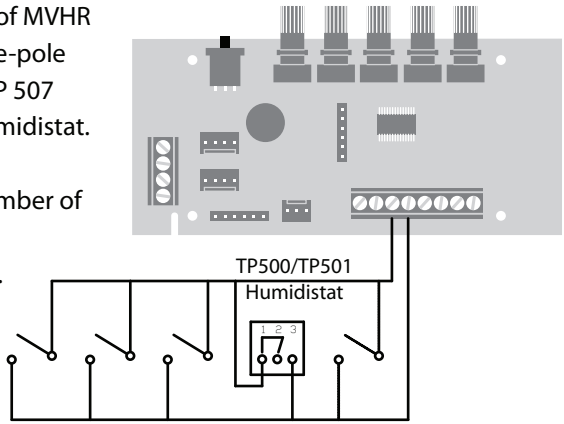
Wiring Diagrams



Supply wiring diagram 230V~50Hz ref EE 141

Volt-free boost switching of MVHR controller PCB using single-pole switches TP 502, TP 503, TP 507 and / or TP500 / TP501 humidistat.

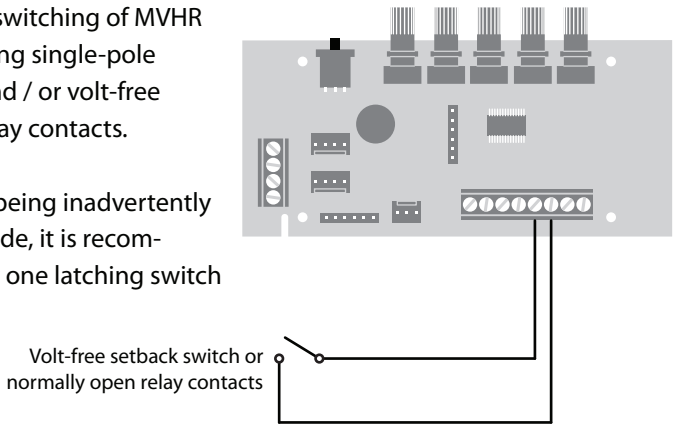
There is no limit to the number of single pole switches or humidistats that can used.



Boost switching and Humidistat connection

Volt-free setback switching of MVHR controller PCB using single-pole latching switch and / or volt-free normally open relay contacts.

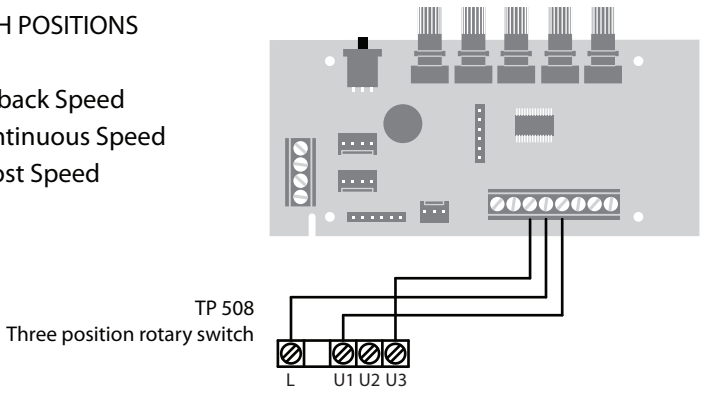
To avoid the unit being inadvertently left in Setback Mode, it is recommended that only one latching switch is fitted.



Setback Mode switching and connection

SWITCH POSITIONS

1 - Setback Speed
2 - Continuous Speed
3 - Boost Speed



Three Position Rotary Switch TP 508 switching and connection

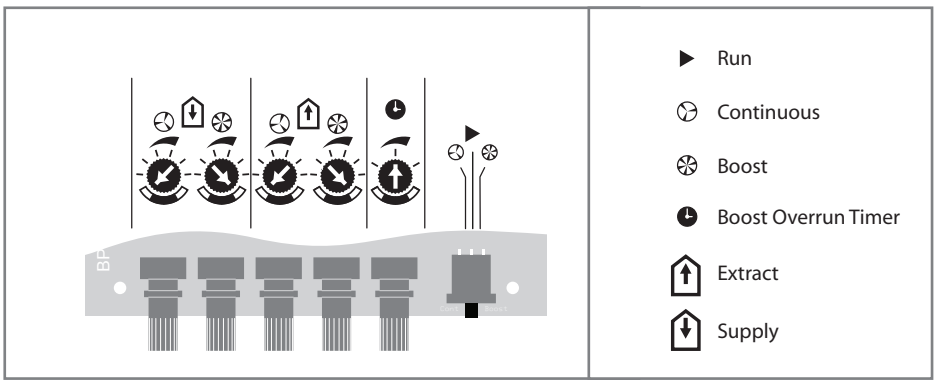
Controls

The fan speeds of the Titon HRV10 *Q Plus* will require adjustment to ensure the flow rates achieved provide adequate ventilation. The Titon HRV10 *Q Plus* has 3 standard fan speed settings, Continuous Speed, Boost Speed and Setback Speed.

The Continuous Speed and Boost Speeds are adjustable via Rotary Potentiometers. Setback Speed is automatically set at the mid point between minimum possible Continuous Speed and the selected Continuous Speed.

Prior to the first commission, set Continuous Speed potentiometers to minimum and Boost Speed potentiometers to maximum.

Control Parameters



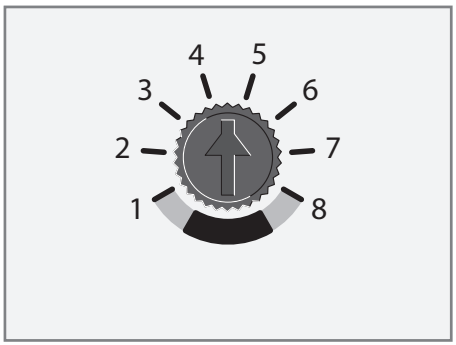
Control Identification

- The Boost Speed cannot be set lower than the Continuous Speed.
- The Continuous Speed cannot be set higher than the Boost Speed.
- All switching inputs are disabled when the Program/Run Switch is in Continuous or Boost positions.
- Speed control potentiometers are disabled when the Program/Run switch is in centre Run position.

For the commissioning settings to be stored the unit needs to be powered up.

Continuous Supply & Extract Speeds

1. Move Program/Run Switch to Continuous position.
2. Rotate supply fan Continuous Speed adjustment potentiometer to achieve required supply continuous air flow.
3. Rotate extract fan Continuous Speed adjustment potentiometer to achieve required extract continuous air flow.
4. Return Program/Run Switch to centre position to exit commissioning.



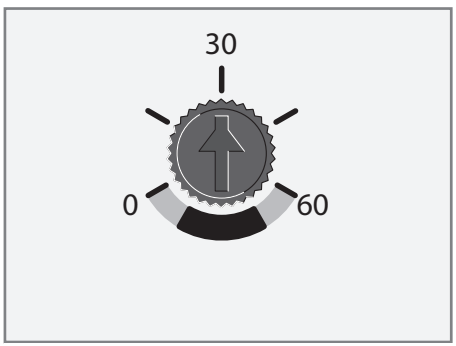
Rotary Potentiometer positions

Boost Supply & Extract Speeds

1. Move Program/ Run Switch to Boost position.
2. Rotate supply fan Boost Speed adjustment potentiometer to achieve required supply boost air flow.
3. Rotate extract fan Boost Speed adjustment potentiometer to achieve required extract boost air flow.
4. Return Program/Run Switch to centre position to exit commissioning.

Boost Overrun

Boost Overrun Timer is variable between 0 and 60 minutes. Rotate potentiometer to change overrun time. This can be done at any time.



Boost Overun positions

Controller Reset

Following a controller reset the ventilation system will need to be fully commissioned.

The procedure to reset the Titon HRV10 *Q Plus* controller is a simple three step operation. The unit will need to be powered up during the reset procedure.

1. Rotate the Supply and Extract Continuous Speed potentiometers fully anti-clockwise.
2. Rotate Supply and Extract Boost Speed potentiometers fully clockwise.
3. Move the Run/Program Switch from the Run position to the Continuous position, from the Continuous position to the Boost position and back to the Run position. To ensure that the reset switch movements are registered by the controller wait two seconds between each switch movement.

Controller reset is now complete.

Hardware Reset

Certain conditions (repeated supply interruptions etc.) can activate the automatic motor protection mode. Whereby the fan motors are prevented from operating. This requires a hardware reset to return the unit to normal operating mode, to achieve this power to the unit should be switched off for 5 minutes, restoring the power after this time will reset the hardware of both the motor and PCB. Commissioning settings are not affected during a hardware reset.

Routine Maintenance

All ventilation units require periodic maintenance. Routine maintenance, apart from filter changes, must only be carried out by a suitably qualified and competent person. The air filters should be checked regularly, the frequency of replacement will vary depending on the environmental conditions.

WARNING: The unit uses a 230V ~ supply and contains rotating mechanical parts. ISOLATE the unit from mains power supply and allow sufficient time for all moving parts to stop before undergoing any Servicing or Maintenance. The unit may be supplied with multiple live supply if a Duct Heater is fitted.

HRV 10 *Q Plus* Front Cover Removal

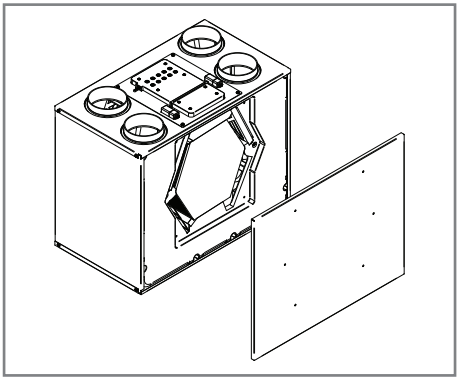
1. ISOLATE the unit from mains power supply and allow sufficient time for all moving parts to stop.
2. Loosen the six screws located in the front of the Cover.
3. Completely remove the Front Cover by pulling it away from the unit.

Front Cover replacement is the reverse of the above steps. Ensure that the large washers are re-used.

Note the two centre screws are shorter than the four corner screws.
When refitting Front Cover do not overtighten screws.

HRV 10M *Q Plus* Front Cover Removal

1. ISOLATE the unit from mains power supply and allow sufficient time for all moving parts to stop.
2. Loosen the six screws located in the front of the Cover.
3. Completely remove the Front Cover by pulling it away from the unit.
4. Front Cover replacement is the reverse of the above steps. Ensure that the star washers are re-used.



Note the two centre screws are shorter than the four corner screws.
When refitting Front Cover do not overtighten screws.

Cleaning Interior

For best results:

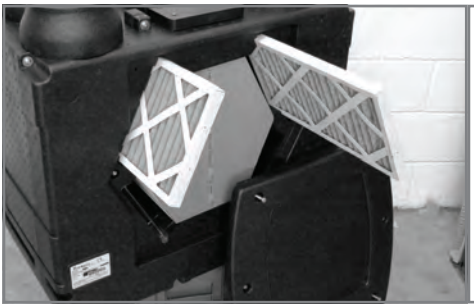
5. Slide out Filters fitted either side of heat exchanger.
6. Carefully remove any dust from face of heat exchanger, interior of the unit and the Bypass(if fitted) using a vacuum cleaner.
7. Do not use water or any other fluids.

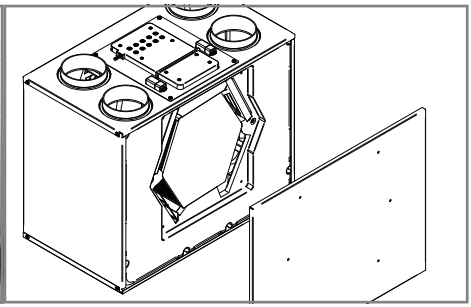
Cleaning Exterior

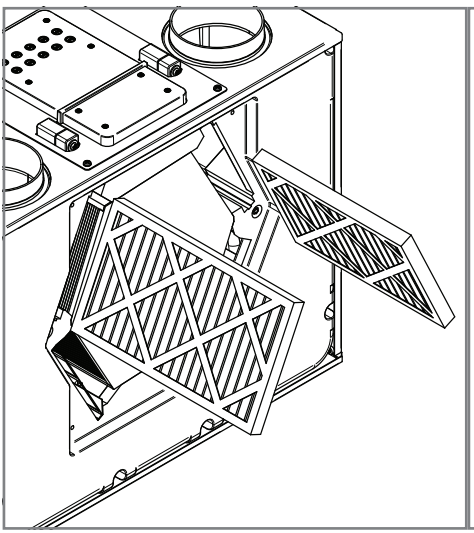
For best results use a clean cloth and warm water with a mild detergent solution.
Do not use solvents or abrasive cleaners.

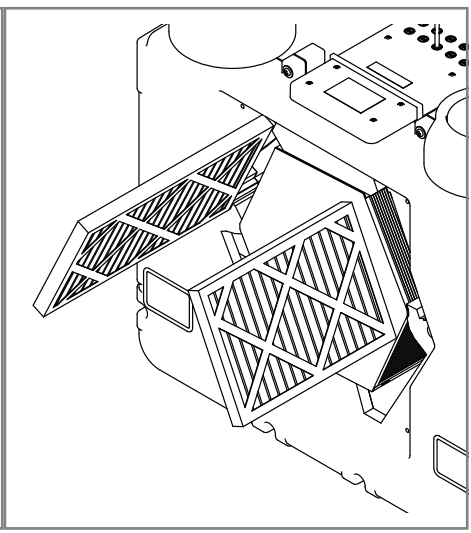
Filter Replacement

1. Remove Front Cover.
2. Slide out Filters fitted either side of heat exchanger as shown.
3. Replace Filters by carefully sliding the replacement Filters either side of the heat exchanger.
4. Ensure arrows printed on the ends of the Filters point towards the heat exchanger. MB models use unequal length Filters. When replacing Filters ensure the short filter is fitted to the right hand side of the heat exchanger, see illustration.









Replace the front cover. When refitting Front Cover do not overtighten screws.

Filters should be replaced at least annually, or more regularly dependent on environmental conditions. Replacement Filters are available from Titon.

Titon HRV10 *Q Plus* & HRV10M *Q Plus* Filters are available in grade G4.

Filter Part numbers in table below. The Unit part number can be found on the serial number label fixed to the front bottom left of the unit.

Model	G4 Filters Set
HRV10 Q Plus TP440MB	XP44023/099
HRV10 Q Plus TP441MB	XP44023/099

Service Record

Serviced By	Company	Date	Notes

Service Record

Serviced By	Company	Date	Notes

In the event of any queries please contact the system installer.

Ensure this booklet is passed to the householder once installation & commissioning of the ventilation system is complete. This Product Manual must be kept in the Home Information Pack and used as a service record.

Installed by:

MARKETING DIVISION
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Email: ventsales@titon.co.uk **Web:** www.titon.com

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