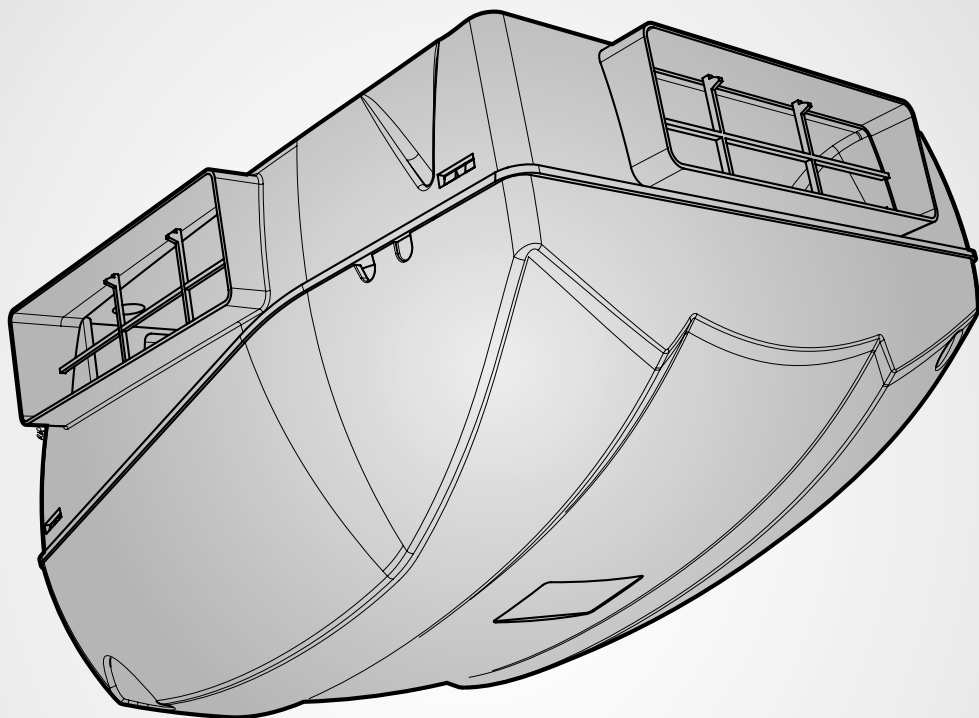


Titon CME1 *Q Plus*

Mechanical Extract Ventilation Unit



Product Manual



PCT Patent Application No PCT/GB2009/000114

This is the Product Manual for the Titon *CME1 Q Plus*

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Introduction

Interior comfort, air quality and energy efficiency are vitally important considerations in buildings today. The Titon CME1 has been developed to meet these demands by extracting stale polluted air from the building whilst fresh air is provided by passive means.

For the home owner or occupant, this Product Manual explains:

- Why ventilation is vital for the good health of your home and its occupants.
- How your Titon CME1 system works.
- How to operate and maintain your Titon CME1.

For the professional installer, this Product Manual explains:

- How to install the Titon CME1.
- How to commission the unit.
- How to maintain the unit.

It is important to read this Product Manual to ensure your ventilation system is installed, commissioned and used properly and continues to operate effectively. Failure to follow the guidance provided in this manual can have an adverse effect on health.

Ventilation is Vital

Construction methods used in older homes resulted in uncontrolled ventilation via air leaking through the building structure, such as small gaps around windows and doors or between walls and floors. These leaks allowed a large amount of air to move through a home largely unnoticed by the occupants. Other factors, such as open fireplaces, people being at home more often and opening windows to “air” rooms during daytime, all helped maintain reasonable levels of air quality in homes.

However, because this form of ventilation was uncontrolled, a large proportion of heat escaped to the outside and more energy was needed to make up for this loss.

Modern homes have greatly reduced air leaks and indoor air quality can deteriorate rapidly without the use of products made to control ventilation. Chemicals, gases and moisture produced by everyday products and activities may lead to the build up of excessive levels of pollutants which are harmful to the health of the occupants and may damage the building.

Poor ventilation can be a major contributory factor of heart disease, lung disease, mental illness and many more threats to our health.

The World Health Organisation and responsible Governments around the world recognise the vital importance of good indoor air quality. That is why building regulations govern the way homes are designed and built. Once homes are occupied it is the responsibility of the occupants to make sure they use and maintain the ventilation products following the guidance provided.



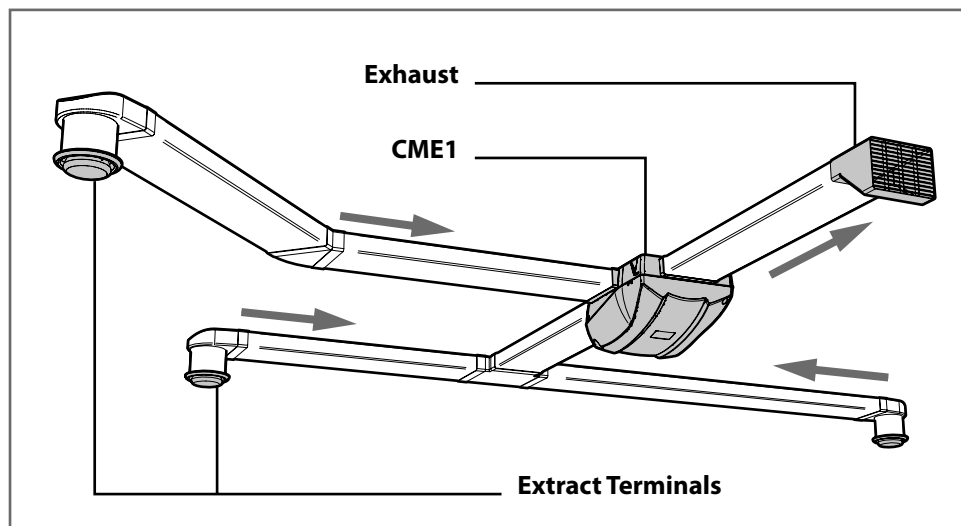
Ventilation an essential ingredient

How the System Works

The Titon CME1 works by continually extracting stale polluted air from rooms where most moisture is generated. Fresh air is provided passively from outside to habital rooms, creating a flow of fresh, clean air throughout the home. The air travels from terminals built into the ceiling which are connected by hidden ducts to the unit. The unit is usually installed in a roof space or cupboard.

Each unit is commissioned individually so the amount of air moved is set to suit the specific size and style of the home.

Most systems will also have a facility to boost the extraction rate at times when more moisture is being generated, such as when bathing or cooking. This may be done automatically by electronic sensors or by a conveniently located boost switch for manual operation.



Typical system layout

DO NOT switch off the unit; it is designed to run continuously. If the unit is switched off indoor pollutant and moisture levels may increase and become a danger to your health and damage your house.

It is important to follow the advice in this user manual and correctly maintain the system to ensure a healthy indoor environment.

How to Use the System

The unit runs automatically and should not be switched off, except for maintenance. If a boost switch has been installed, it can be used to increase the extract ventilation rate at times when moisture or pollutant levels are considered excessive. You may have electronic sensors which detect high levels of moisture and pollutants which boost the system automatically.

All ventilation units require periodic maintenance and this must only be carried out by a suitably qualified and competent person. See the servicing and maintenance section for further details.

Product Features

- Boost Control
- Compact low profile unit
- Hidden installation fixings.
- All duct ports on one level
- Accepts 204mm x 60mm or 110mm x 54mm ducting.
- Unit can be cleaned and serviced without disturbing any ducting.
- Straightforward installation
- Versatile Low Voltage boost control accepts any one-way switched input, such as PIR humidistat or thermostat.

Safety and Guidance

- The electrical installation of the appliance **MUST** be carried out by a suitably qualified competent person and all wiring must be in accordance with current I.E.E. Regulations and all appropriate standards and applicable regulatory guidance.
- The appliance must be connected to a local isolation switch with a contact separation of at least 3mm.
- The appliance is suitable for 230V ~ 50/60Hz single phase with a fuse rating of 3A.
- Ensure that external grills are located away from any flue outlet, in accordance with relevant Building Regulations.
- Always ensure ducting is free from blockages before switching the unit on.
- We recommend a minimum distance of 200mm between the appliance and any sharp bends in duct work.

Installation of the appliance MUST be carried out by a qualified and suitably competent person and should be carried out in clean, dry conditions where dust and humidity are at minimal levels.

The appliance is not suitable for installation to the exterior of the dwelling.

Failure to comply with any of the above points may have an impact on the validity of your guarantee.

Transportation, Packaging & Storage

- Great care should be taken when transporting the appliance, DO NOT drop as damage may occur.
- The unit must always be stored in a clean and dry environment.
- Remove all packaging before installation but leaving duct port covers/bungs in place (if fitted) until connecting ducting.

Inspection

- Inspect the appliance for damage.
- Check all accessories have been supplied.

Parts List

- CME1 Unit x 1.
- Port covers x 3.
- Product manual x 1.
- CME1 Screw Pack x 1.

All shortages or damage must be reported to the supplier.

Preparation

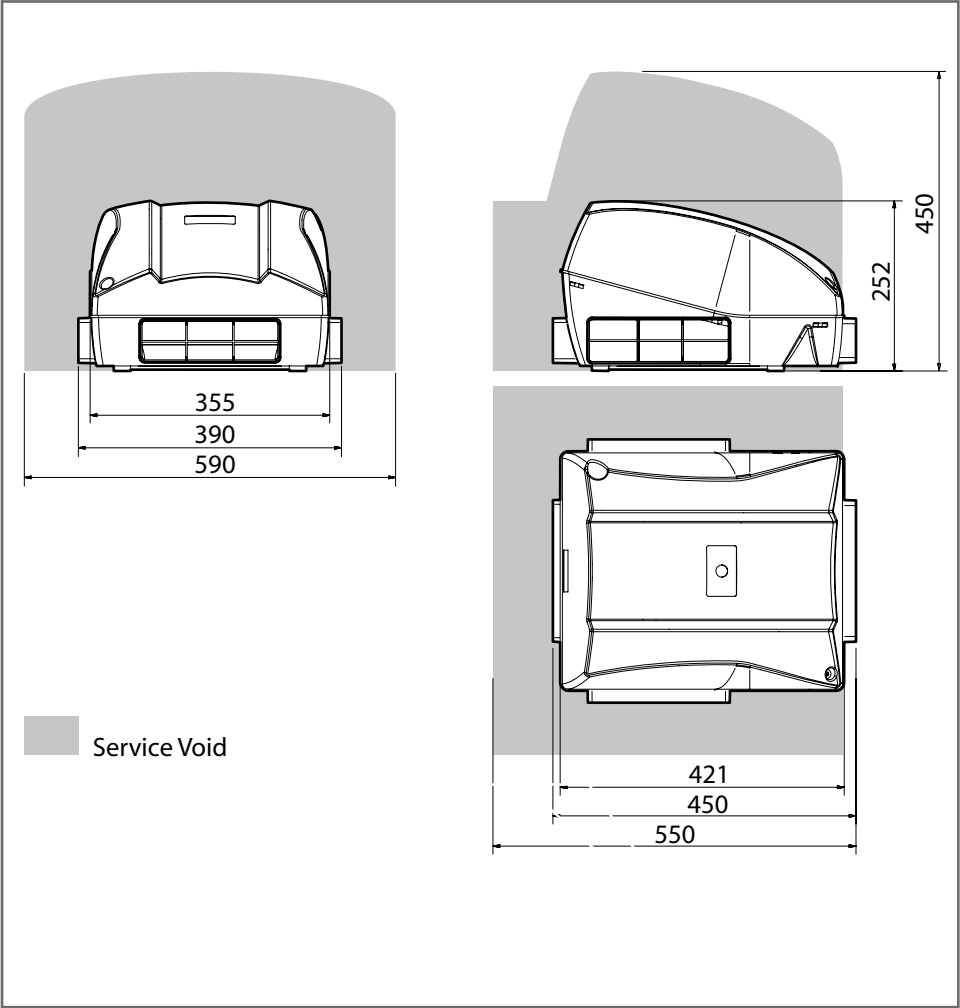
Important: read these instructions fully before the installation of this appliance

- NEVER install the unit in an area which does not have sufficient access for future maintenance, see Dimensions.
- NEVER install the appliance in an environment which contains:
 - Excessive oil or a grease laden environment.
 - Hazardous gases, liquids or vapours that are flammable or corrosive.
 - Ambient temperatures above 40°C or below -5°C.
 - Humidity levels above 90% or a wet environment.

Installation

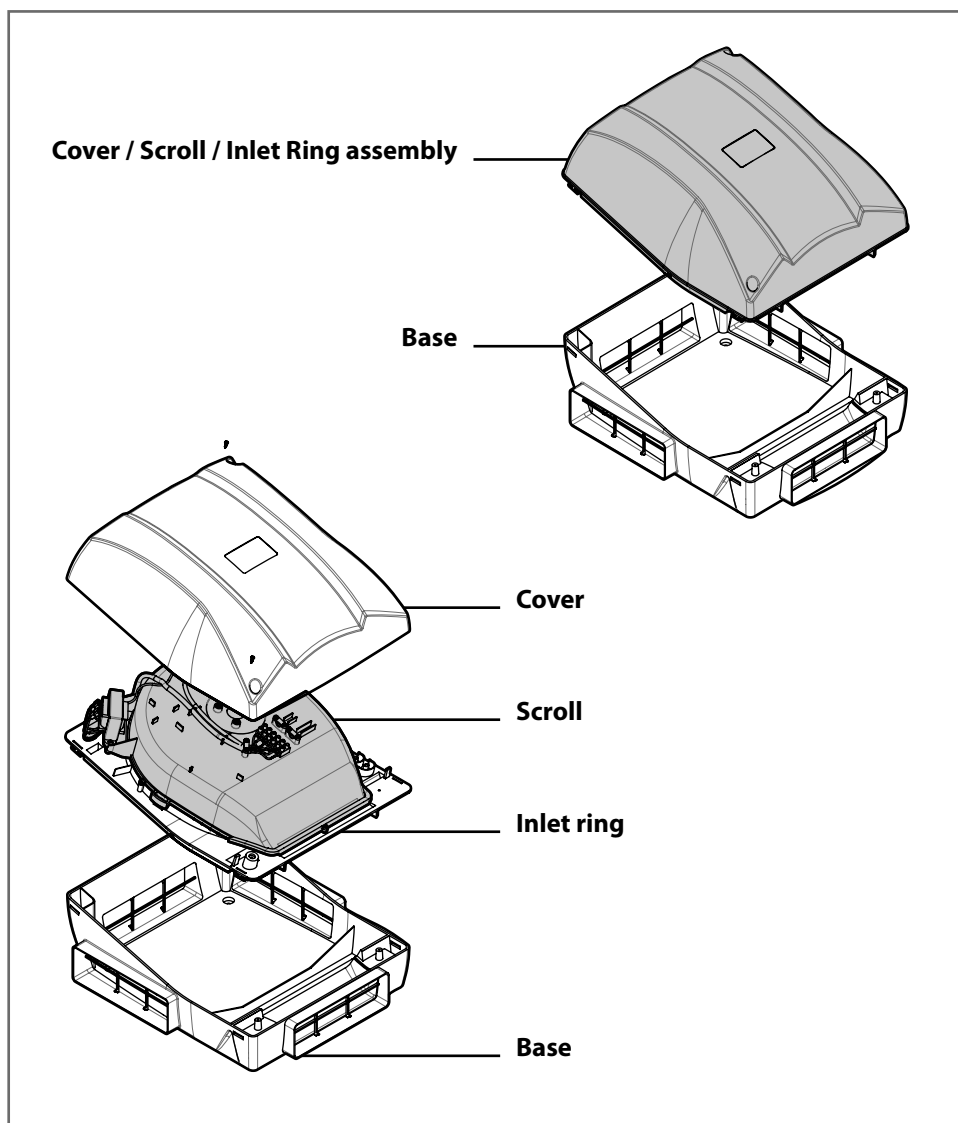
Dimensions

This diagram shows the overall dimensions of the unit, and the additional space required around the unit once installed to allow for future servicing and maintenance.



All dimensions in mm

Component Identification



CME1 Unit components

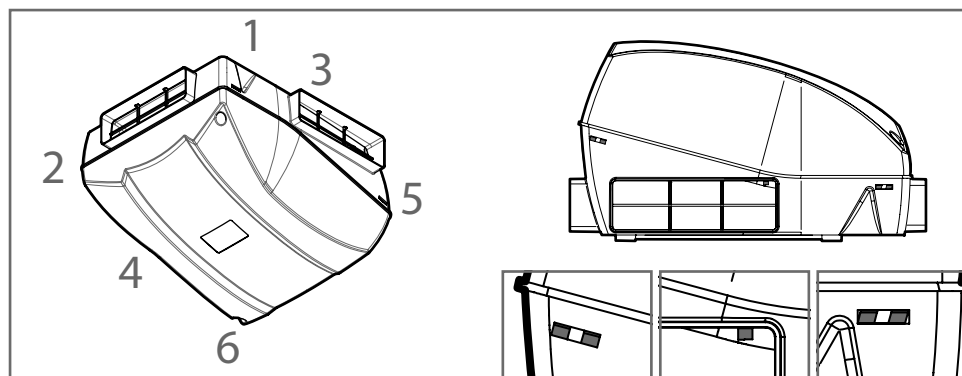
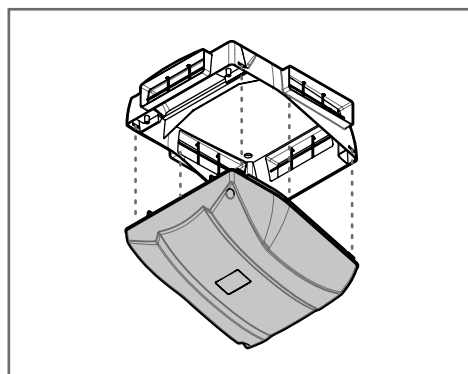
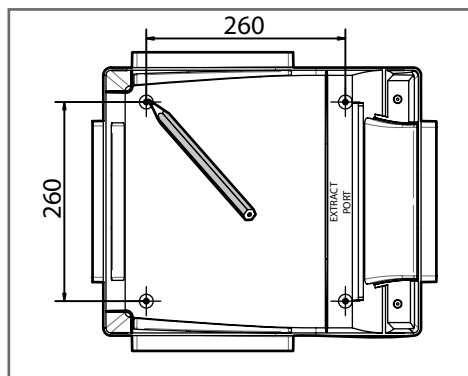
Installation

Fixing

1. The CME1 must be securely fixed to a smooth flat surface, any orientation is possible.
2. Mark the four fixing hole centres using the BASE as a template
3. Drill holes for fixings, use 4mm Pan Head screws. Always use a fixing type and length suited to the substrate type. The unit weighs approximately 5kg.
4. Mount the BASE, ensuring it is not distorted by the fixings or mounting surface.
5. Clip the MOTOR and LID assembly to the BASE, ensure that all 6 clips have engaged.

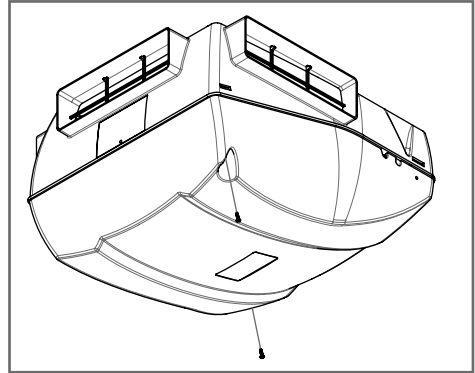
Do not use power tools to tighten screws. Tighten screws by hand.

Do not over tighten screws.

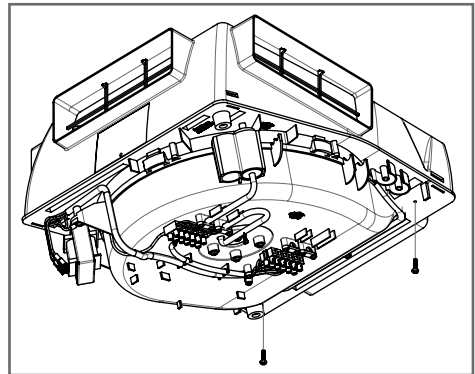


Fixing

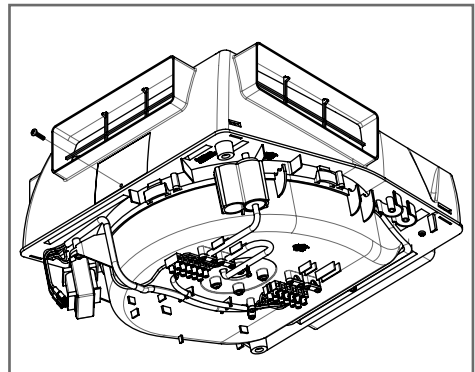
1. Unscrew the 2 retaining screws that hold on the COVER and remove, retain the screws.



2. Fit two screws through the pre-formed holes at the front of the INLET RING. to securely fix the INLET RING/SCROLL assembly to the BASE.

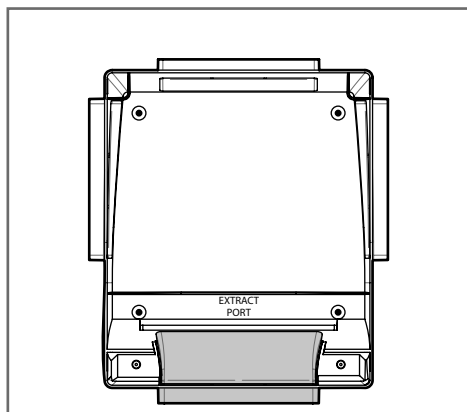


3. Fit one screw through the preformed hole in the back of the BASE. to securely fix the INLET RING/SCROLL assembly to the BASE.



Ducting Best Practice

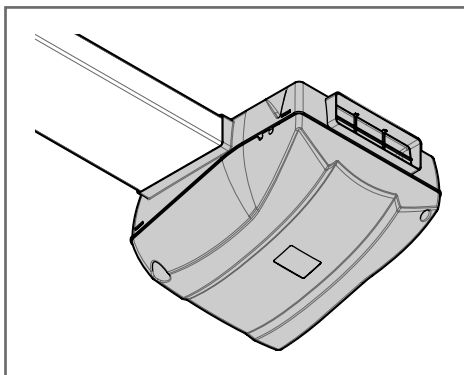
- The use of flexible ducting must be kept to a minimum and it should always be pulled taut.
- If applicable, Fire Dampers must be fitted to duct work at appropriate locations in accordance with Building Regulations.
- Ducting must be installed in such a way that resistance to airflow is minimised.
- Ducting terminal for Exhaust must be to the external air outside the building envelope.
- We recommend a minimum distance of 200mm between the appliance and any sharp bends in duct work.
- Ducting in unheated spaces must always be insulated to prevent condensation forming within the ducting.
- Additional guidance can be found in the Residential Ventilation Association Installation Good Practice Guide and Approved Document Part F.



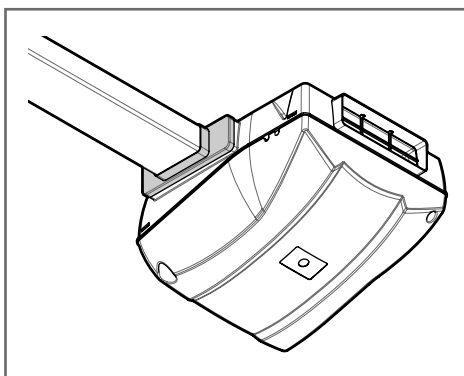
Extract Port to Outside

Ducting Connection

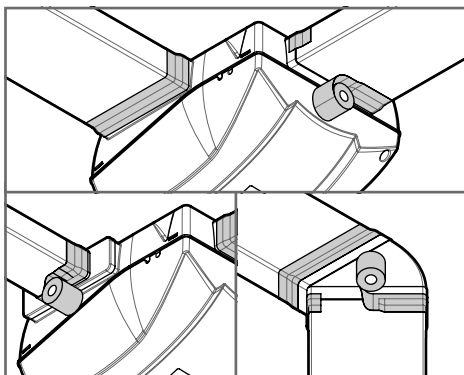
- 204mm x 60mm ducting fits inside the ports.



- 110mm x 54mm ducting fits inside the convertible port cover



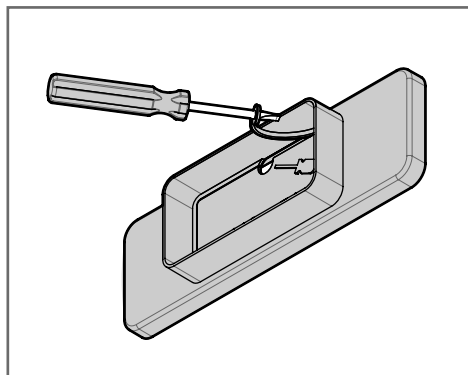
- All joints must be adequately sealed using a suitable ducting tape or silicone type sealant.



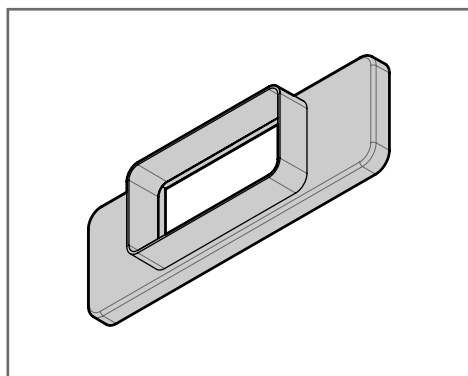
Installation

Ducting Connection

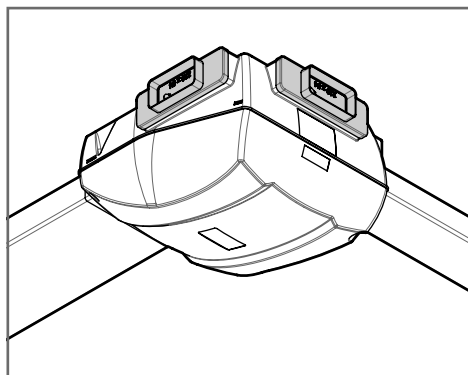
- To enable fitment of 110x54mm ducting, modify the convertible port cover by tearing out the 'rip strip'.



- When using the convertible port cover ensure the tear out section is completely removed.



- Unused extract ports must be fitted with non-converted or undamaged port covers.



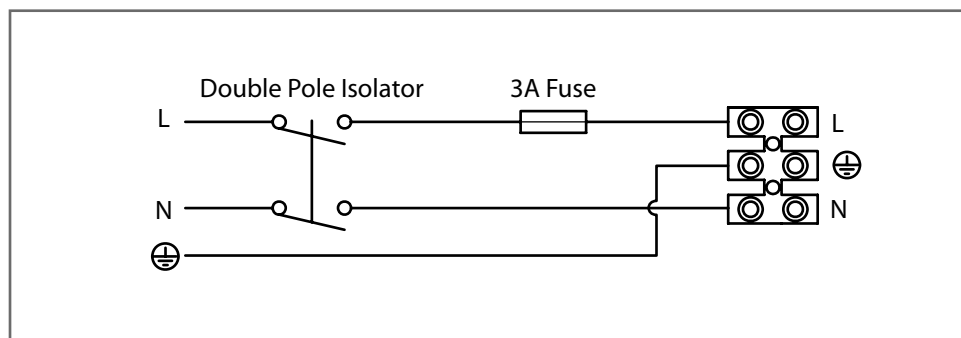
Notes

Installation

Wiring

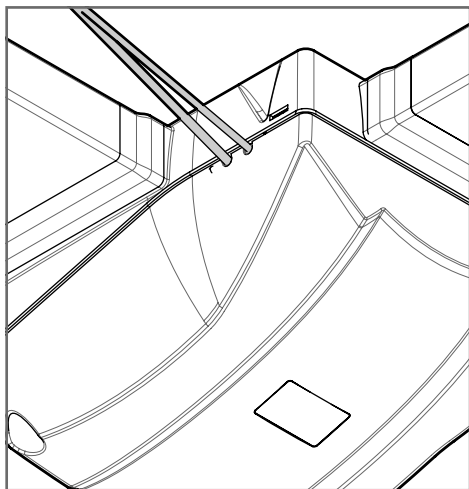
WARNING: The unit MUST be earthed. All wiring must conform to current I.E.E. Wiring Regulations and all applicable standards and Building Regulations.

- The unit is suitable for 230V~50Hz Single phase supply fused at 3A.
- A double pole isolation switch with contact separation of at least 3mm must be used to connect the appliance to the fixed wiring.
- Boost controls must not be located within 1 metre of a cooker or where they may be affected by excessive heat or moisture
- Boost controls should be clearly identified and conveniently located.
- The boost switch wiring must not be connected to the mains supply.
- The boost switch is connected to the control board (which is located under the COVER on top of the SCROLL).
- The boost switch wiring cable access is via cut outs in the COVER.
- The boost switch wiring connection to be made by the 5v+ and SW terminals on the control board.
- The boost overrun can be triggered by any device which provides a one-way switch, such as a PIR, thermostat, humidistat or a standard one-way switch.
- The boost facility features an overrun timer, so we recommend a sprung-return (momentary) switch is used to prevent the boost being accidentally left on for longer than intended.

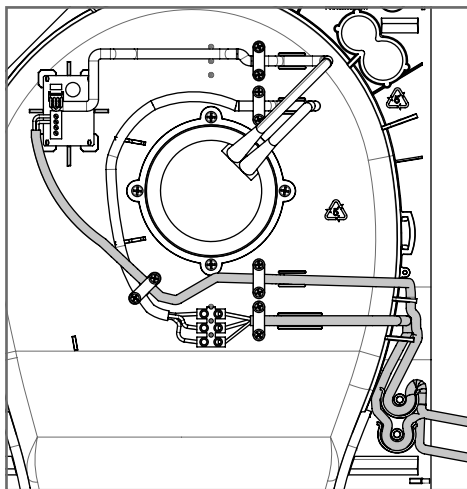


Supply Wiring Diagram 230V~50Hz

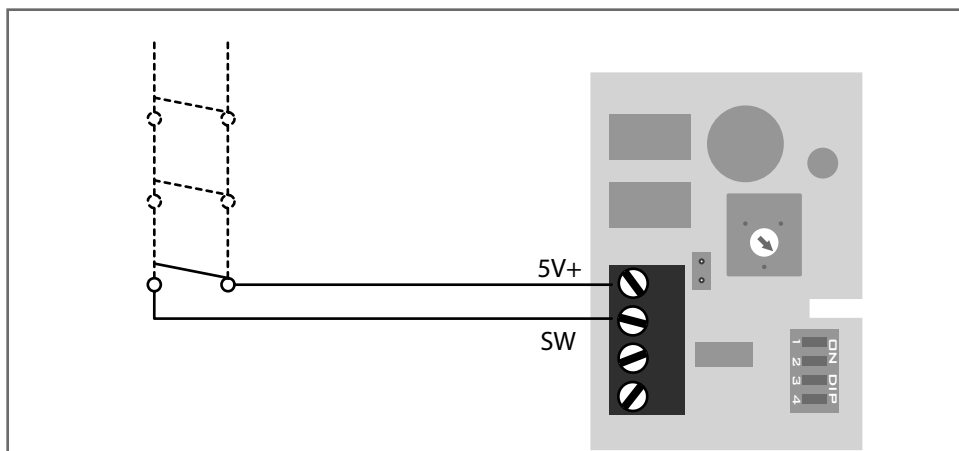
Wiring



Cable Access



Internal Cable Routing



Boost Control Wiring Diagram, Low Voltage Only

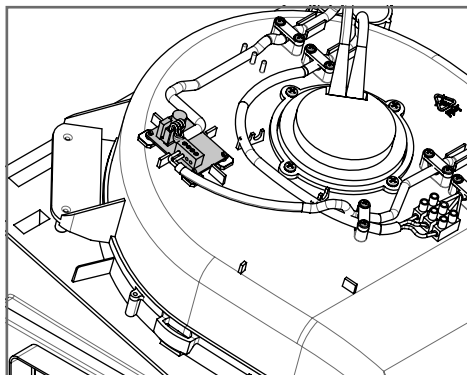
Quick Commissioning

The speed of the Titon HRV1 Q Plus will require adjustment to ensure the flow rates achieved provide adequate ventilation in accordance with all relevant Building Regulations and applicable Standards. The Titon HRV1 Q Plus has two commissioning modes

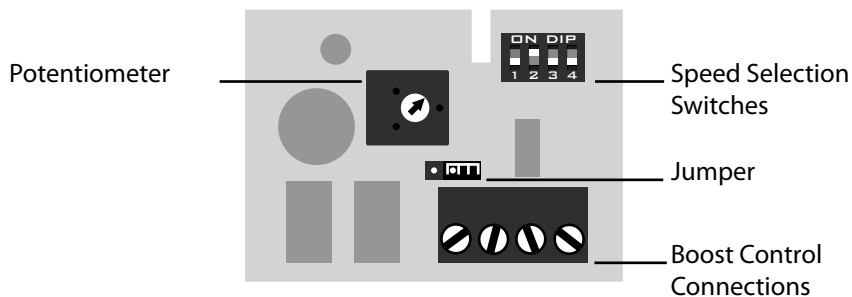
- Quick Commission Mode For easy installation and setup
- Full Commission Mode For optimum efficiency and system performance.

Quick Commission Mode

1. Power up the Titon CME1 Q Plus.
2. Gain access to the control board located under the COVER. (see diagram).
3. Select required speed setting using switches 2 to 4 on the Speed Selection Switch. (See opposite)
4. Select required boost overrun using switch 1 on the Speed Selection Switch.
5. Check boost activation by triggering the remote boost switch device.



Control Board location



Control Board component identification

Quick Commissioning

Speed 1



12.5%

Speed 2



25%

Speed 3



37.5%

Speed 4



50%

Speed 5



62.5%

Speed 6



75%

Speed 7



87.5%

Speed 8



100%

Speed setting percentages relate to the total capacity of the Unit

Speed selection switch settings in Quick Commission Mode

5 minute



10 minute



Boost Overrun switch settings in Quick Commission Mode

Full Commissioning

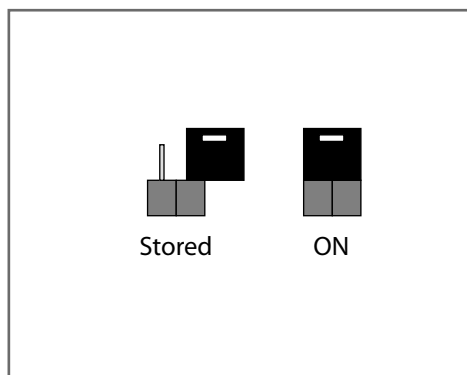
Full Commission Mode

To fully commission the unit for optimum efficiency, each step below MUST be followed in sequence:

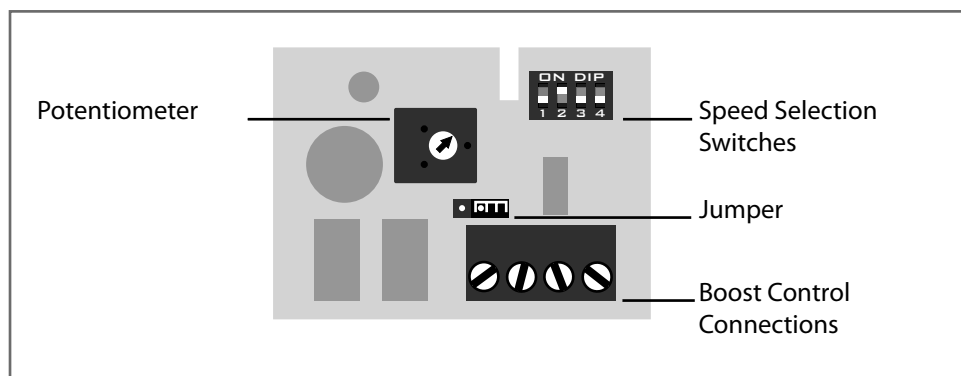
1. Power up the Titon CME1 Q Plus.
2. Gain access to the control board located under the COVER.

Continuous speed setting

3. Move the jumper from the STORED position to the ON position.
4. Ensure the controller is in Continuous mode, switch 1 OFF.
5. Select required setting for continuous speed using switches 2 to 4 on the Speed Selection Switch.



Jumper Positions



Control Board

Full Commissioning

Continuous Mode



Continuous Mode switch setting in Full Commission Mode

Speed 1



12.5%

Speed 2



25%

Speed 3



37.5%

Speed 4



50%

Speed 5



62.5%

Speed 6



75%

Speed 7



87.5%

Speed 8



100%

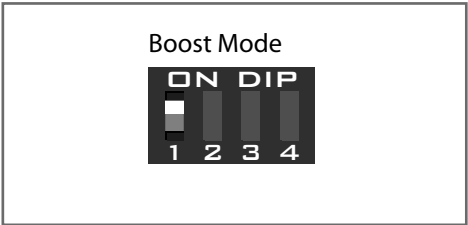
Speed setting percentages relate to the total capacity of the Unit

Continuous Speed selection switch settings in Full Commission Mode

Full Commissioning

Boost Speed Setting

- 6. Select Boost mode on switch 1 ON.
- 7. Select required range for boost speed using switches 2 to 4 on the speed selection switch.
- 8. Fine adjustment within each speed range can be carried out using the potentiometer (POT) on the control board..



Boost Mode switch setting in Full Commission Mode

Do not return switch to continuous mode as this will change the boost speed

Speed 1

0-12.5%

Speed 2

12.5-25%

Speed 3

25-37.5%

Speed 4

37.5-50%

Speed 5

50-62.5%

Speed 6

62.5-75%

Speed 7

75-87.5%

Speed 8

87.5-100%

Speed setting percentages relate to the total capacity of the Unit

Potentiometer positions

High

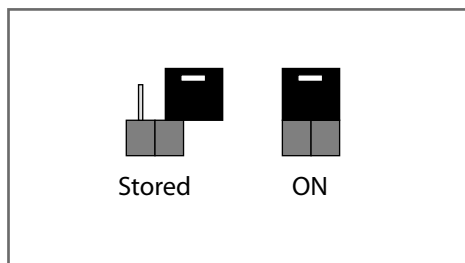
Mid

Low

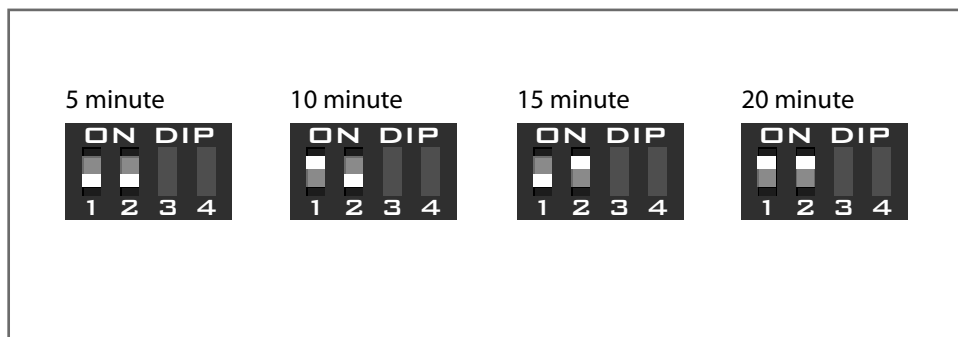
Boost Speed selection switch & POT positions in Full Commission Mode

Boost Speed Settings

- Once the Continuous and Boost speeds have been set, remove the jumper and return to the stored position.
- Select required boost overrun using switch 1 and 2 on the speed selection switch.
- Check boost activation by triggering the remote boost switch device.



Jumper Positions



Boost Overrun selection switch settings in Full Commission Mode

Resetting the Controller

If necessary the controller can be reset into the Quick commissioning mode.

- Place the jumper in to the ON position.
- Switch the power to the unit OFF for at least 1 minute.
- Switch the power to the unit back ON. The unit will now run at 50% capacity by default.
- Remove the jumper and place it back into it stored position.

The controller will now be in the Quick Commissioning mode.

Maintenance

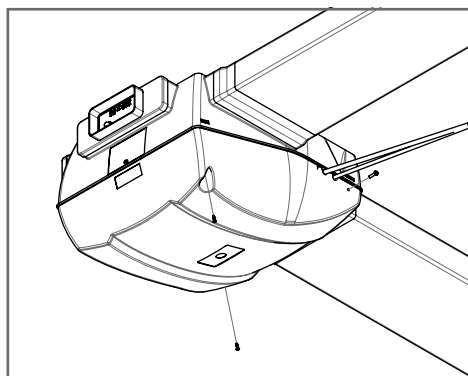
Cleaning

The CME1 must be periodically cleaned internally. The maximum time between cleaning will depend on the local environment, however every 3 – 4 years is recommended.

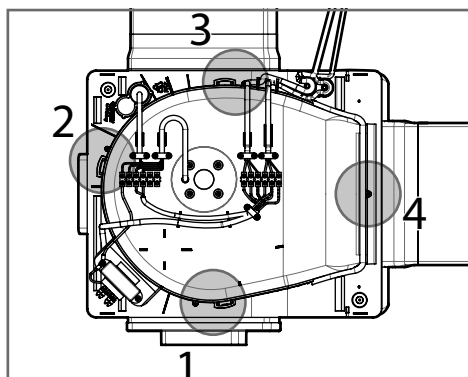
WARNING: The unit uses a 230V ~ supply and contains rotating mechanical parts.

Isolate the unit from mains power supply and allow sufficient time for all moving parts to stop before undergoing any Servicing or Maintenance.

- To gain access to the interior of the unit for cleaning –
- Unscrew the 3 retaining screws that hold on the COVER and remove

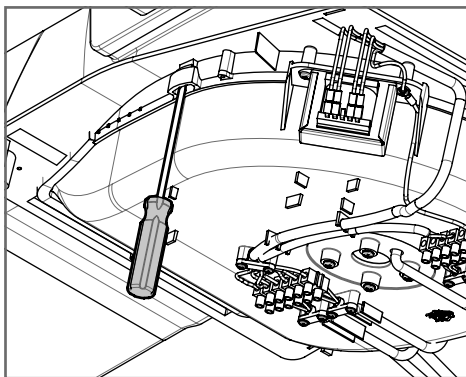


- Remove the 4 SCROLL retaining screws, if fitted.

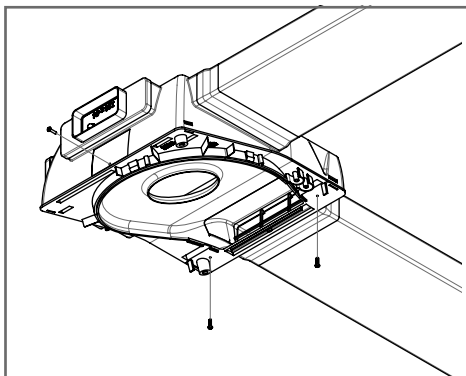


Cleaning

- Using a flat bladed screw driver, un-clip SCROLL from INLET RING by disengaging the 3 retaining clips. Ensure that the SCROLL is supported and does not strain the cables.



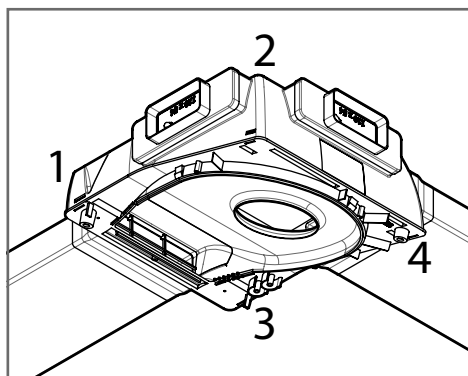
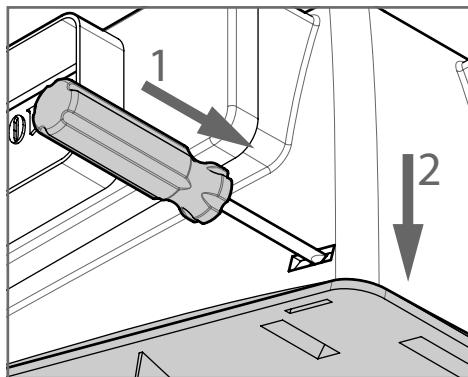
- Remove the 3 retaining screws.



Maintenance

Cleaning

- Using a flat bladed screwdriver, unclip the INLET RING from BASE. by disengaging the 4 retaining clips.



- Carefully remove dust from the unit and fan blades using a vacuum cleaner.
- Wipe with damp cloth and mild detergent.
- Check fixing screws.
- Assembly is the reverse of the preceding instructions.
- Ensure all fasteners are secure before returning power to the unit.

Do not use power tools to tighten screws. Tighten screws by hand.

Do not over tighten screws.

After servicing, always complete the service record

Declaration of Conformity

We declare that the equipment detailed below conforms to the requirements of EC council directives relating to electro-magnetic compatibility and safety of electrical equipment.



Equipment type:	Titon CME1 <i>Q Plus</i>
Description of equipment:	Mechanical ventilation unit
Relevant EC Council Directives:	2006/95/EC (LVD), 2004/108/EC (EMC)
Applied Harmonised Standards:	EN 60335-1:2002/A2:2006 EN 60335-2-80:2003/A1:2004
Manufacturer:	Titon Hardware Limited

Signature of manufacturer representatives

A handwritten signature in black ink, appearing to read 'N C Howlett'.

29 July 2009

N C Howlett
Development and Sustainability Director

A handwritten signature in black ink, appearing to read 'P S Cowell'.

29 July 2009

P S Cowell
Research and Testing Manager
BEng (Hons) CEng MCIBSE

A handwritten signature in black ink, appearing to read 'R Brighton'.

29 July 2009

R Brighton
Managing Director - Manufacturing Division

International House, Peartree Road, Stanway, Colchester, Essex CO3 0JL

Service Record

[illegible]

Service Record

[illegible]

Installed by



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



MARKETING DIVISION

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