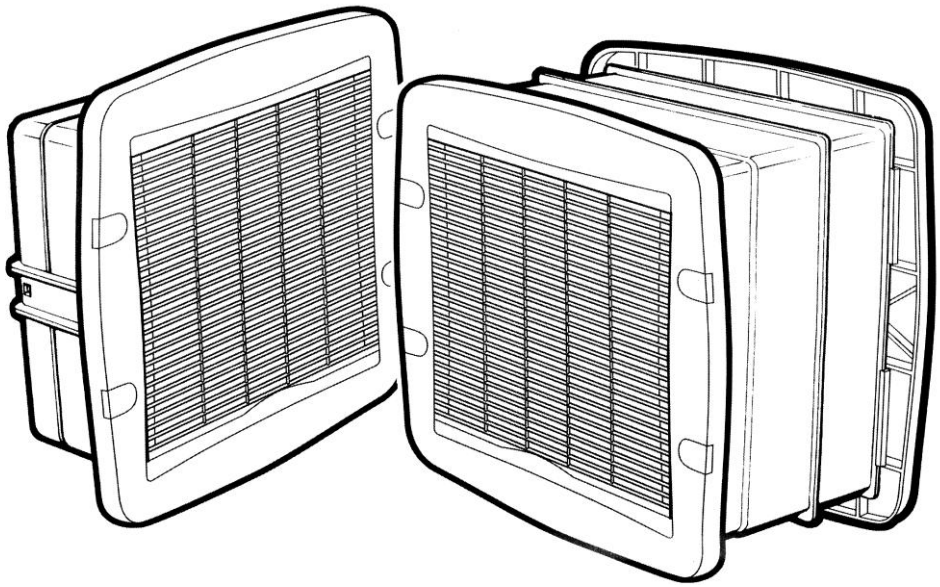
Vent-Axia®

# Lo-Carbon Sentinel T-Series
## Wall & Panel Models

Installation & User Instructions



### Stock Ref. N°

**416296 (LCST9WL)**
**416297 (LCST9PL)**
**416300 (LCST12WL)**
**416301 (LCST12PL)**

**Sentinel T-Series controller (415169):** Refer to the separate F&W supplied.

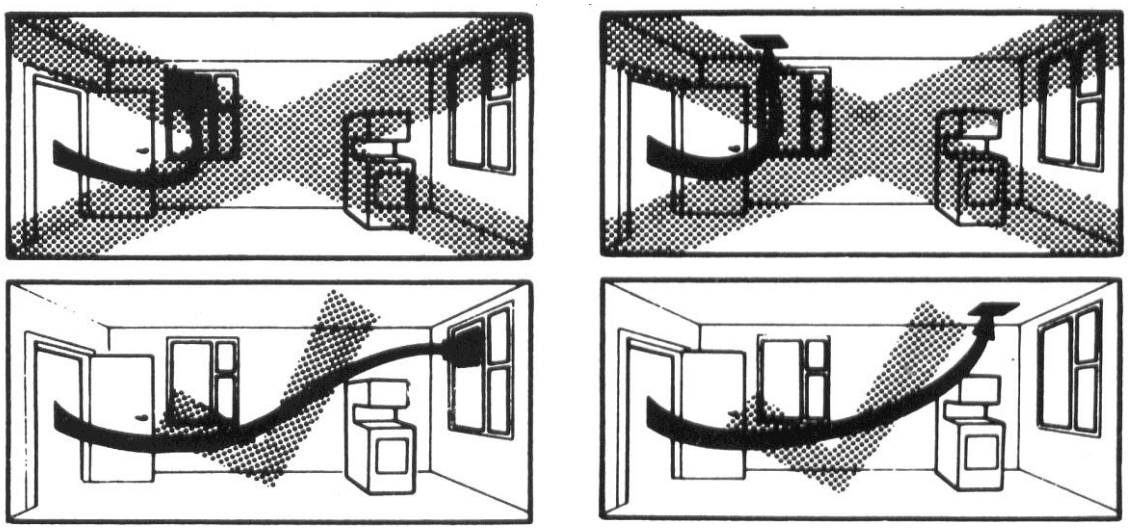
**PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE COMMENCING INSTALLATION OR OPERATION.**

**PLEASE REFER TO ACCOMPANYING DOCUMENTATION FOR INFORMATION SPECIFIC TO YOUR UNIT.**
**PLEASE RETAIN THESE INSTRUCTIONS WITH THE PRODUCT.**

***IMPORTANT***

1. ALL WIRING MUST COMPLY WITH CURRENT I.E.E. REGULATIONS WITHIN THE UK OR AS/NZS 3000 WITHIN AUSTRALIA AND NEW ZEALAND OR LOCAL REGULATIONS IF OUTSIDE OF THESE AREAS.
2. THIS APPLIANCE IS NOT SUITABLE FOR INSTALLATION IN A SHOWER CUBICLE OR ENCLOSURE AND MUST BE SITED AWAY FROM ANY SOURCE OF WATER SPRAY, AND MUST BE OUT OF REACH OF A PERSON USING A FIXED BATH OR SHOWER.
3. SITE AWAY FROM DIRECT SOURCES OF HEAT IN EXCESS OF 50ºC OR LESS THAN –10ºC.
4. EXHAUST FANS MAY ADVERSELY AFFECT THE SAFE OPERATION OF APPLIANCES BURNING GAS OR OTHER FUELS (INCLUDING THOSE IN OTHER ROOMS) DUE TO BACK FLOW OF COMBUSTION GASES. THESE GASES CAN POTENTIALLY RESULT IN CARBON MONOXIDE POISONING. AFTER INSTALLATION OF AN EXHAUST FAN SUCH AS A PARTITION FAN OR A DUCT FAN THE OPERATION OF FLUED GAS APPLIANCES SHOULD BE TESTED BY A COMPETENT PERSON TO ENSURE THAT BACK FLOW OF COMBUSTION GASES DOES NOT OCCUR.
5. IT IS RECOMMENDED THAT THE CONNECTION TO THE CONNECTOR SOCKET IS MADE WITH FLEXIBLE CABLE FOR EASY MAINTENANCE.
6. WIRING SHOULD BE VIA A SWITCHED SPUR WITH A 3 AMP FUSE (UK ONLY).
7. DOUBLE POLE SWITCH WITH A MINIMUM CONTACT SEPARATION OF 3MM OR PLUG AND SOCKET SHOULD BE LOCATED OUTSIDE OF A ROOM CONTAINING A FIXED BATH OR SHOWER.
8. THIS APPLIANCE MUST BE EARTHED.
9. READ THESE INSTRUCTIONS FULLY BEFORE COMMENCING INSTALLATION.
10. 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. CHILDREN SHALL NOT PLAY WITH THE APPLIANCE.CLEANING AND USER MAINTENANCE SHALL NOT BE MADE BY CHILDREN WITHOUT SUPERVISION.
11. A SHORT CIRCUIT OF THE AIR FLOW SHOULD ALWAYS BE AVOIDED BY SITING THE FAN AS FAR AWAY AS POSSIBLE FROM AND OPPOSITE TO THE MAIN SOURCE OF AIR REPLACEMENT. **B1/ 2**

**B1/ 2**



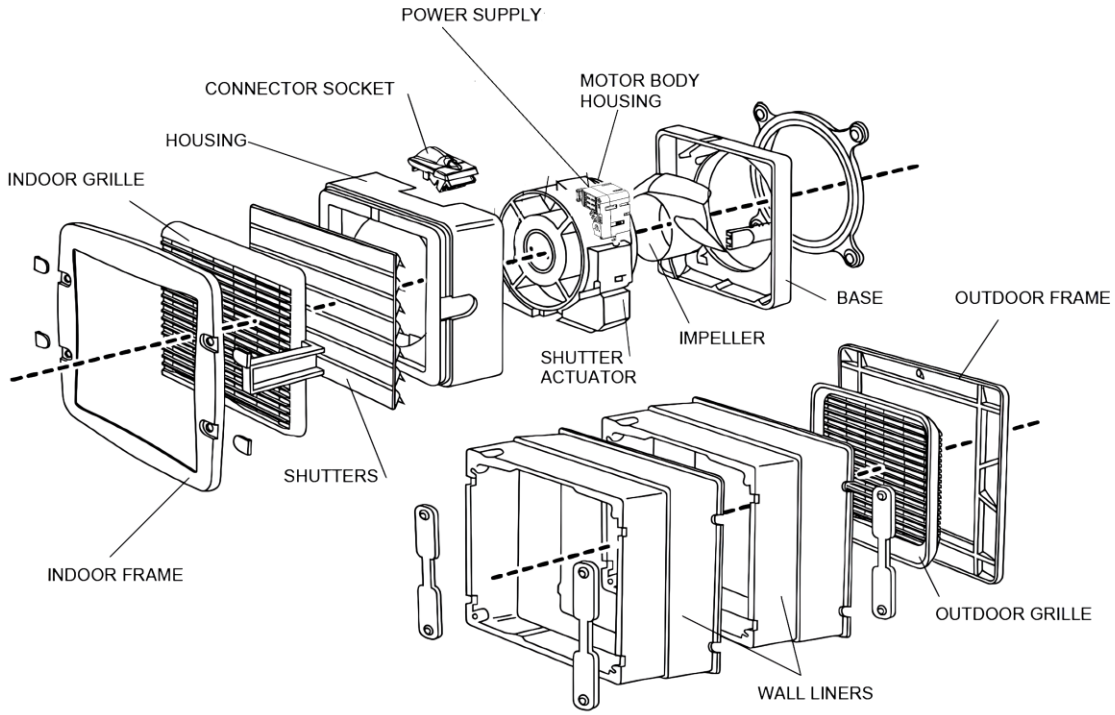
## CONTENT

# 1. PRODUCT DESCRIPTION

The Lo-Carbon Sentinel T-Series Fan range is designed to provide reliable ventilation with high energy efficiency. Fitted with an advanced EC3 motor, the fan delivers improved performance while reducing running costs and maintaining the rugged reliability of the T-Series. Each unit can operate as a standalone device or paired with a controller. Both configurations support reversing direction between supply and extract modes, with settable speeds, making the unit suitable for a wide range of applications. The T-Series is available in two sizes: 9 inch and 12 inch models.

The fan incorporates an electronically controlled automatic louvre shutter located behind the interior grille. This shutter operates quietly on both intake and extract functions, at any mounting angle. When used with a Lo-Carbon Sentinel T-Series controller, which can be purchased separately, the shutter can be held open with the fan switched off to provide secure, natural ventilation.

The Lo-Carbon Sentinel T-Series can be paired with Sentinel T-Series controller (Ref No 415169) using either wired or wireless communication, selectable on site. It works with a wide range of sensors and switches to further enhance indoor air quality, providing flexible control for any installation.




*Schematic of Lo-Carbon Sentinel T-Series Wall and Panel models*

# 2. INSTALLATION AND OPERATION

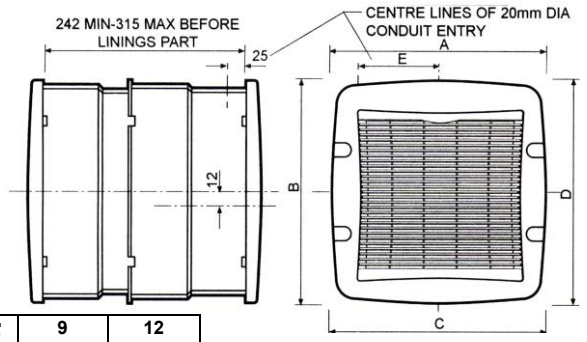
## 2.1. FAN DIMENSIONS

Before commencing work, study the tables shown in figures **C1/ C2 – WALL INSTALLATION** and **C3/ 4 – PANEL INSTALLATION** to ensure fan will fit in position proposed.

- The Wall Fan is suitable for installation in walls between 240mm to 315mm thick, using the two wall liner sections provided. Further wall liner sections are available as an accessory in 150mm modules.

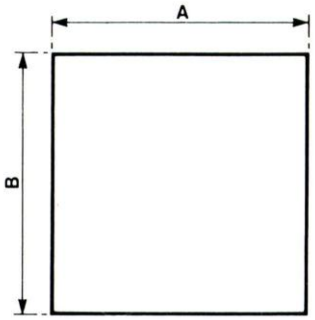
**NOTE: With reference to the product's outer dimensions, as shown in Figures C1 and C2, ensure a minimum gap of 150 mm from the ceiling and adjacent walls when drilling the hole.**

**C1**



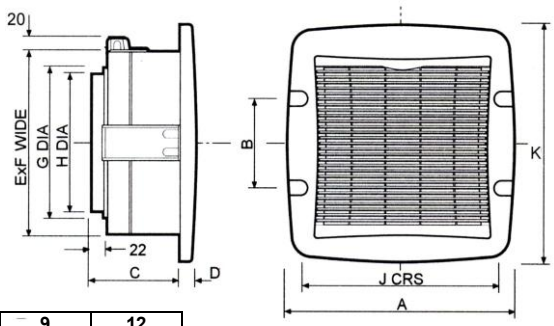

| SIZE | 9 | 12 |
|---|---|---|
| A | 391mm | 470mm |
| B | 388mm | 467mm |
| C | 365mm | 442mm |
| D | 375mm | 450mm |
| E | 143mm | 182mm |

**C2**



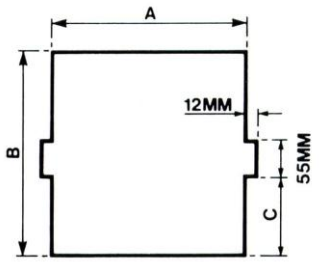

| SIZE | 9 (mm) | 12 (mm) |
|---|---|---|
| A | 365 | 442 |
| B | 375 | 450 |

**C3**




| SIZE | 9 | 12 |
|---|---|---|
| A | 391mm | 470mm |
| B | 180mm | 180mm |
| C | 129mm | 152mm |
| D | 38mm | 41mm |
| E | 302mm | 378mm |
| F | 304mm | 381mm |
| G | 255mm | 334mm |
| H | 247mm | 325mm |
| J | 345mm | 422mm |
| K | 391mm | 470mm |

**C4**




| SIZE | 9 (mm) | 12 (mm) |
|---|---|---|
| A | 309 | 386 |
| B | 326 | 402 |
| C | 126 | 164 |

## 2.2. WALL LINER INSTALLATION

**Notes to be read in conjunction with the corresponding diagram number.**

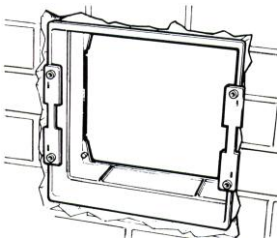
D1 (From Outside) - Position the liner with external flange flush with the outside face of the wall, with the two stiffening ribs at the bottom.

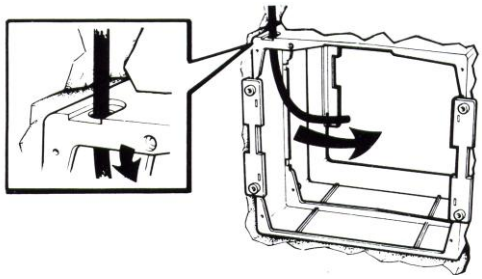
D2 Cut out the cable/conduit entry on the remaining liner, feed the supply and controller cable (wired version only) through the liner cut out, ensuring sufficient cable is available to allow for the removal of the fan.
(From Inside) - Position the liner with the internal flange flush with the inside face of the wall, with the two stiffening ribs at the bottom.

D3 Cement the liners into position. Do not distort the sides of the liners.

D4 Align the frame and outdoor grille. Lock the grille into position. Remove the fixing screw covers from the grille frame.
Note: The frame recesses are marked A & B and correspond with the covers.
Fix the grille to the outside liner with the louvres slanting downwards using the fixing screws. Replace the screw covers. **** Note: The A's and B's must match.***

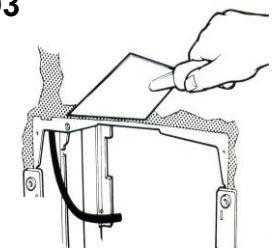
D1



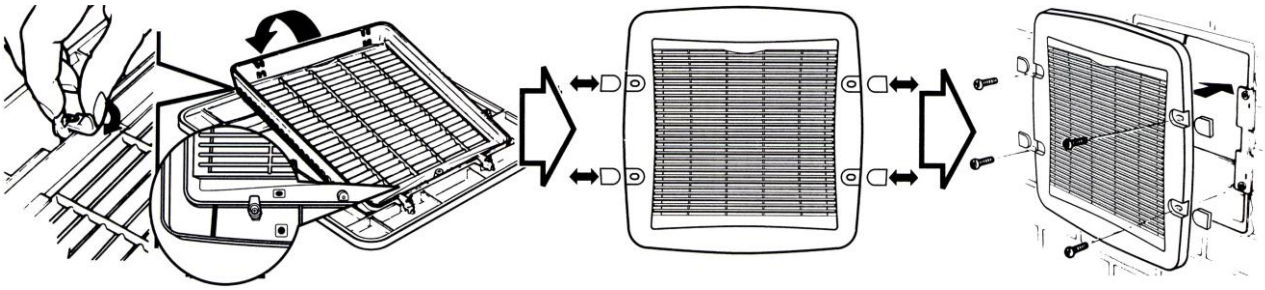


D2

D3



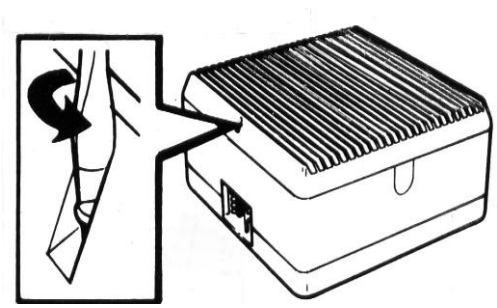
D4



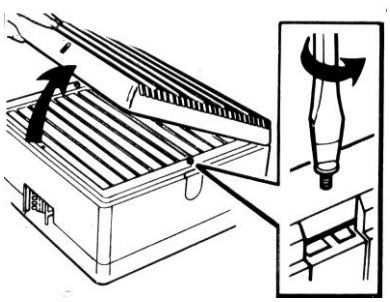
## 2.3. INSTALLATION

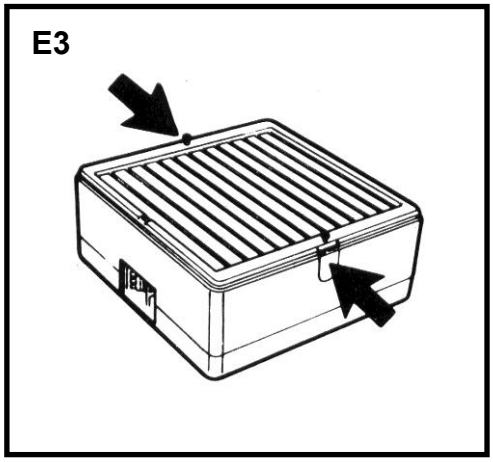
E1 Place fan unit, impeller downwards, on a flat surface. Unscrew the grille securing screw located at the top of the grille.
E2 Remove grille. Partially unscrew the two safety catch screws on the face of the housing
E3 Depress the side catches.
E4 Lift off the housing.
E5 Set the slider location to 1 or 2 or 3 based on the requirement and set the speed using the potentiometer (Refer section 2.5).
E6 Refit the housing ensuring that no internal wires are trapped between the housing and base.
E7 Replace the grille with the louvres slanting upwards and the Vent-Axia logo at the bottom, then secure with the retaining screw.
E8i/ii Position the fan on the inside frame ensuring that the socket connector cutout is aligned. Loosen the clamping screws and attach the clamps. Ensure that the tongues under the clamp heads engage in the slot of the housing and tighten the clamping screws.

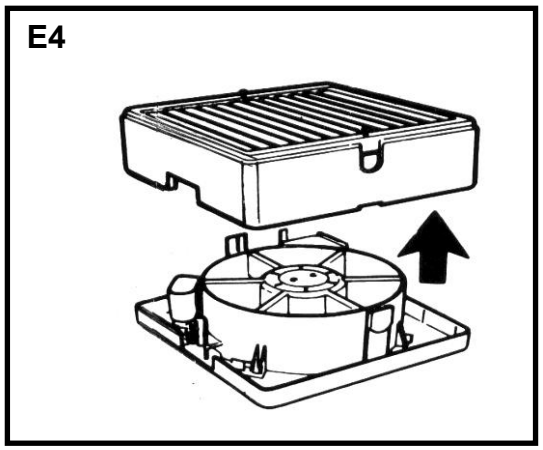
E1

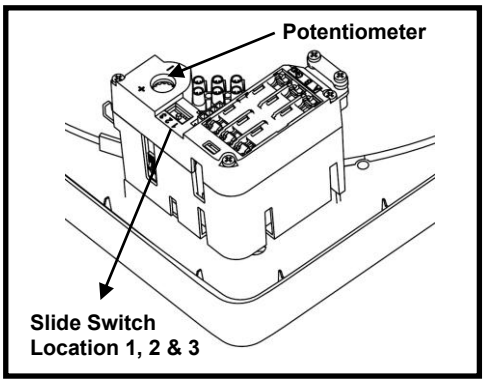


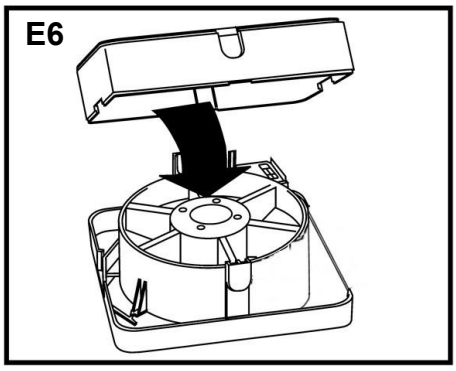
E2

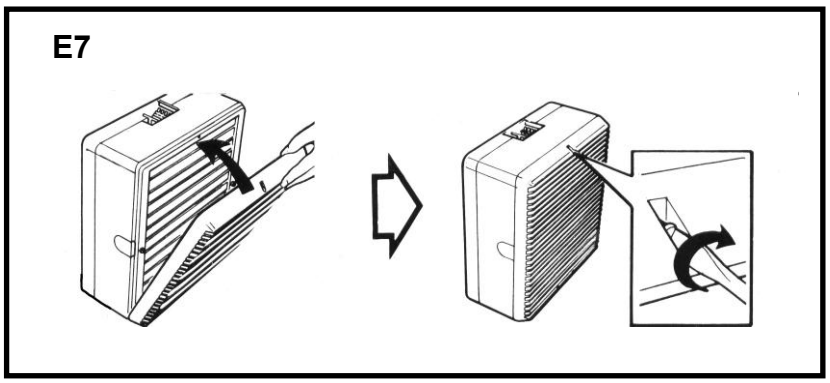


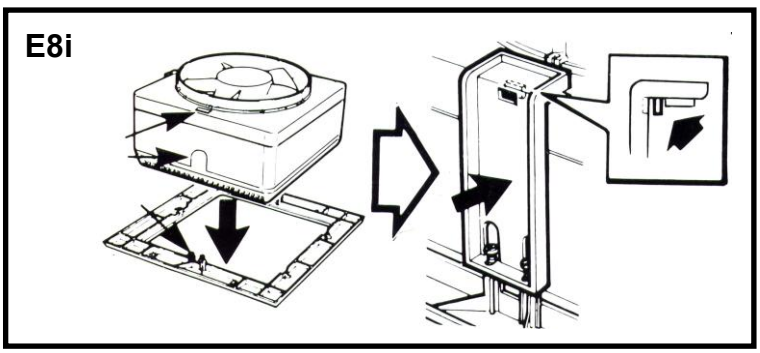

E3

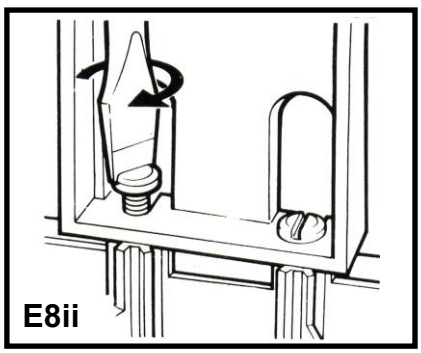

E4


Potentiometer
Slide Switch
Location 1, 2 & 3


E6


E7


E8i


E8ii

## 2.4. WIRING THE CONNECTOR SOCKET

- Ensure that the supply (Voltage, Frequency and Phase) complies with the rating label.
- This appliance **must** be earthed.

F1 Remove the top cover from the connector socket by undoing the 2 retaining screws.
F2 Lift up the lever and slide out top cover.
F3 Loosen cable clamp screws and pass the cable through the clamp. (It may be necessary when using some 3-core cables to reverse the cable clamp to ensure that the cable is securely retained. For ease of wiring, the terminal block may be removed from the connector housing.

**For controller mode**

F3i Connect Live (brown) to terminal L3, Neutral (blue) to terminal N and Earth (green/yellow) to terminal ⏚.

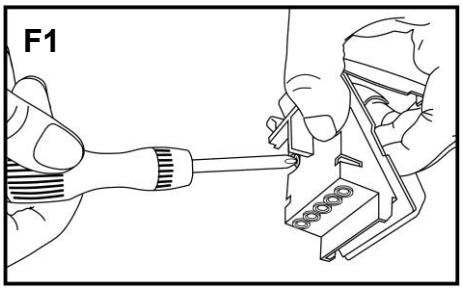
**For Manual mode**

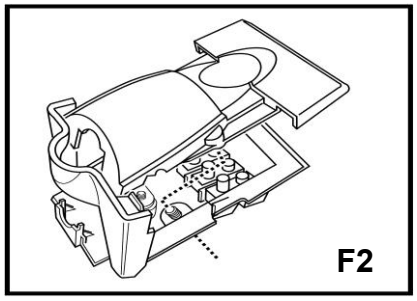
F3ii **Extract operation**: Connect Live (brown) to terminal L3, Neutral (blue) to terminal N and Earth (green/yellow) to terminal ⏚ in the connector socket. Link terminal L3 to L1.

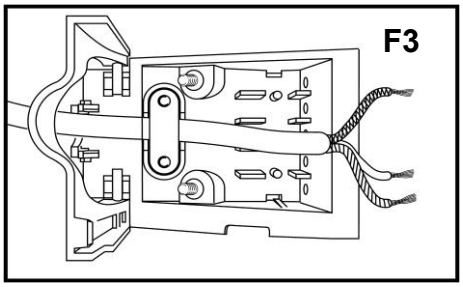
F3iii **Intake operation**: Connect Live (brown) to terminal L3, Neutral (blue) to terminal N and Earth (green/yellow) to terminal ⏚ in the connector socket. Link terminal L3 to L2.

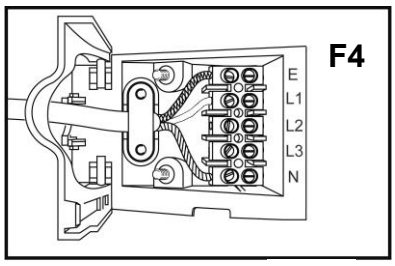
F4 "Click" terminal block into the base of the connector socket, then tighten cable clamp screws evenly, ensuring a secure grip on the outer sheath of the cable.
F5 Slide the top cover back on and secure with the 2 retaining screws.
F6a Place the fan partially into the wall liner and replace the connector socket by pushing positively into position. Finally, press the black locking peg down flush with the top of the connector socket. Plug the controller wire into the controller socket (wired version only).
F6b Remove the fixing screw covers. Fix the fan on to the inside liner with the louvres slanting upwards using the fixing screws. Replace the screw covers.

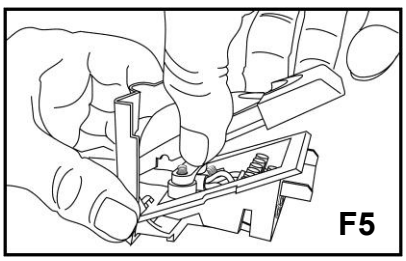
***Note:*** *The A's and B's must match.*

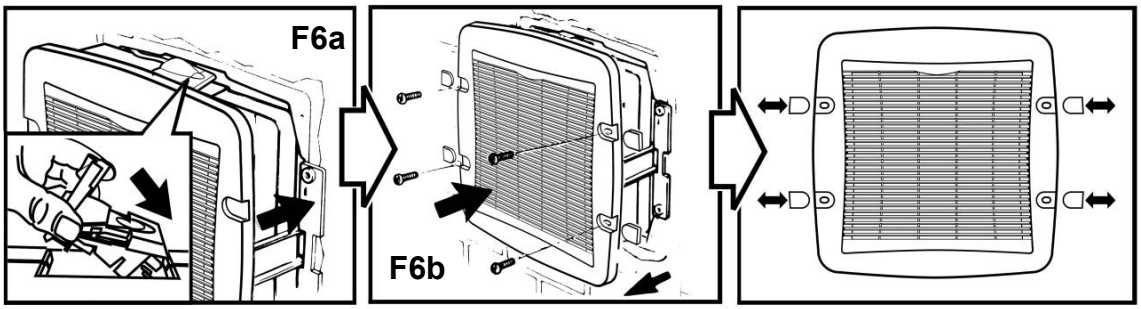


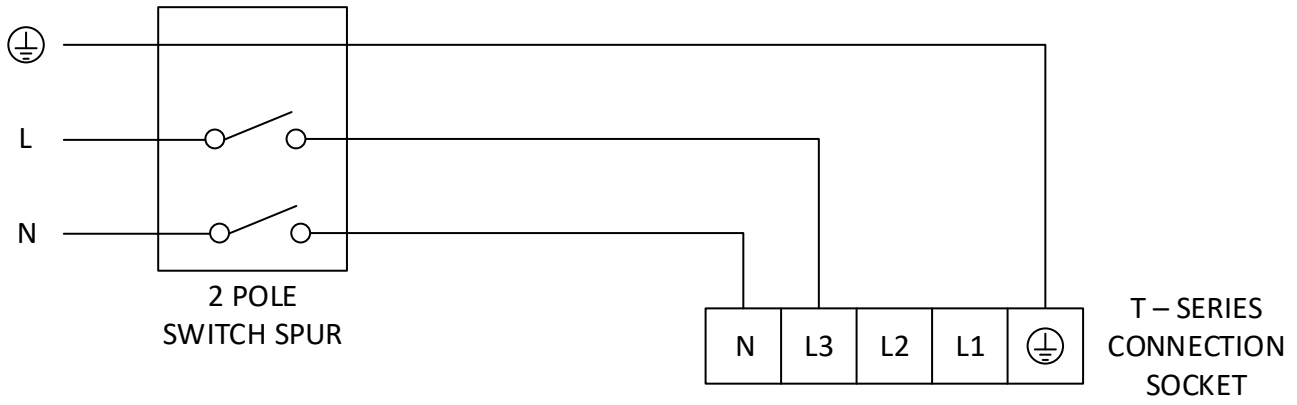



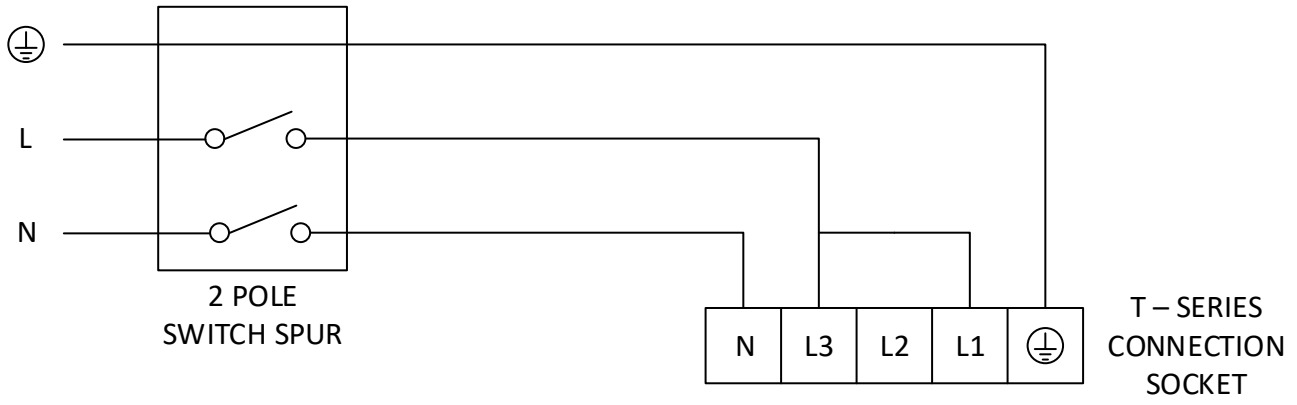



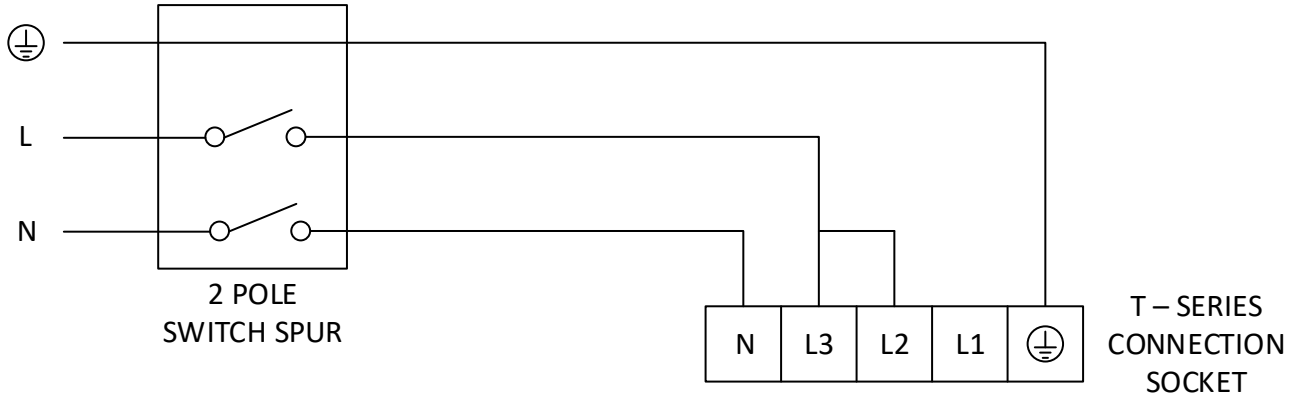
**F3i – PAIRED WITH CONTROLLER (415169)**




**F3ii – EXTRACT MODE**




**F3iii – INTAKE MODE**

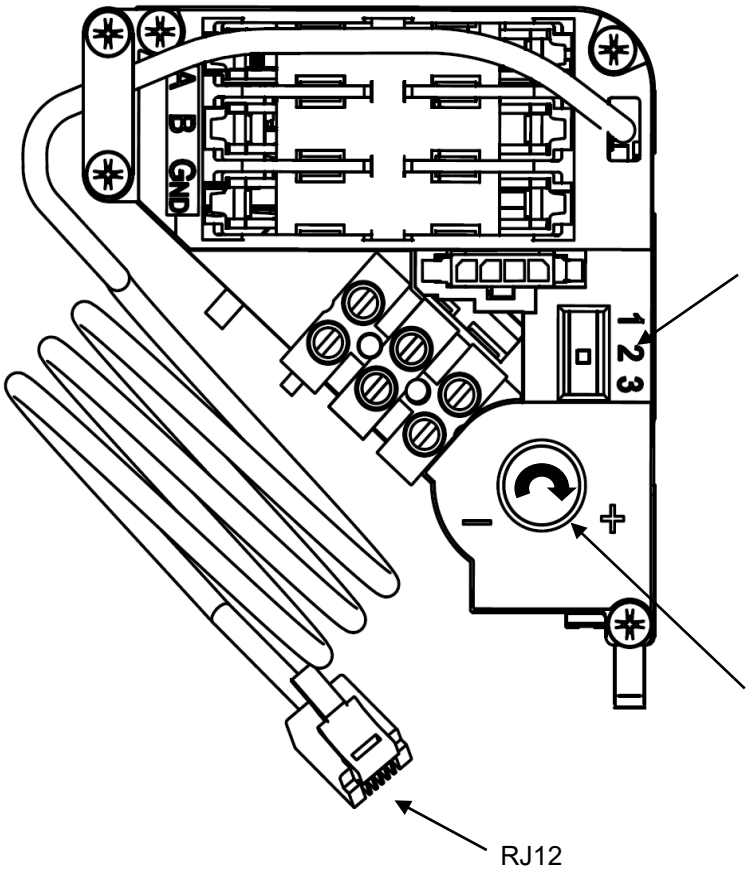


**IMPORTANT: If you already have a T-Series unit and are upgrading to Lo-Carbon Sentinel T-Series, please follow the steps below**

1. Check the model of the existing T-Series unit.
2. If upgrading from a Lo-Carbon T-Series:
   a. Follow Section 2.4 for top socket wiring. Make sure to change the Live from **L1** to **L3**.
   b. The old controller cannot be used. The new unit can be controlled either manually or via the Sentinel T-Series controller (sold separately).
3. If upgrading from a Traditional T-series:
   a. Follow Section 2.4 for top socket wiring. The wiring can remain unchanged; however, ensure **L1** and **L2** are safely terminated unless they are used as part of manual mode control as described in F3ii/iii.
   b. The old controller cannot be used. The new unit can be controlled either manually or via the Sentinel T-Series controller (sold separately).

## 2.5. PSU ASSEMBLY

The PSU assembly is an essential part of the fan system. It enables the fan to function either as a standalone unit or paired with an external controller (sold separately). The fan can be paired wirelessly with the controller and if wireless connection is not possible, a wired connection can be made through the RJ12 plug on the PSU assembly. For setup and operating instructions with an external wall controller (Ref. No. 415169), please refer to the relevant controller leaflet.




**Slide Switch**
The slide switch allows you to select between three modes:
Position 1 – Manual Mode, where the device is operated manually.
Position 2 – Pairing Mode, which enables wireless or wired connection to a remote controller
Position 3 – Paired Reverse Mode, where the device operates in paired mode with reversed direction.

**Potentiometer**
The potentiometer is used to adjust the speed when operating in Manual Mode (Position 1)—turning it clockwise increases the speed, while turning it counterclockwise decreases it.

# 3. MAINTENANCE

**WARNING**

**ISOLATE FROM THE POWER SUPPLY PRIOR TO ANY MAINTENANCE AND CLEANING**

## 3.1. USER INSTRUCTIONS

- At intervals appropriate to the installation, inspect and clean the fan to ensure there is no build up of grease or dirt on the impeller or the motor.
- The motor is fitted with sealed for life bearings and does not require lubrication.

## 3.2. DISMANTLING

G1 Remove the four fixing screw covers on the indoor grille frame and unscrew. Note: In the frame recesses are marked A & B and these correspond with the covers.
G2 Partially remove the fan and remove the connector socket by lifting up the lever gently with a finger. Disconnect the controller cable (wired version only) and remove fan.
G3 Remove the outdoor grille from inside ready for cleaning.
G4a/b Loosen the clamping screws and remove the clamps. Remove the fan from the frame.
G5 Remove the grille.
G6 Partially unscrew the two safety catch screws on the face housing. Depress the two side catches.
G7 Lift off the housing.
G8 Release the PSU assembly by pulling away from the unit. Unplug the RJ12 plug (wired version only).
G9 Release the motor body housing assembly locking catch located to the left of the connection socket opening and rotate the motor body housing assembly anti-clockwise until the bayonet catches disengage.
G10 Withdraw the motor body housing assembly and put to one side, with the impeller facing upwards.
G11 Remove the impeller with a sharp pull, away from the motor.

## 3.3. CLEANING

**IMPORTANT: Keep all electrical components away from water.**

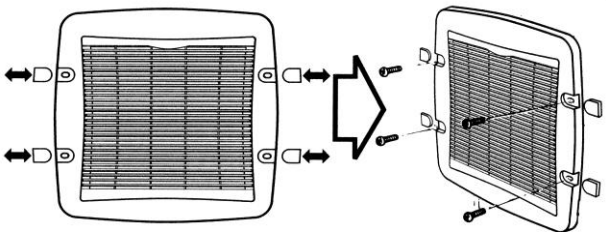
G12 Wipe the wall liner with a damp cloth.
G13 Wipe the motor housing assembly with a damp cloth.
G14 Wash all non-electrical components in hot water and detergent.

## 3.4. REASSEMBLY - ALLOW THE COMPONENTS TO DRY BEFORE REASSEMBLY

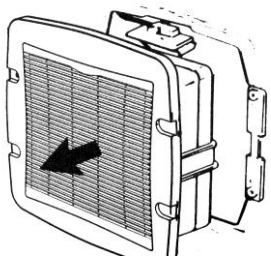
G15 Replace the outdoor grille with the louvres slanting downwards and the Vent-Axia logo at the top grille.
G16 Align the impeller with the locating pins on the motor shaft. With a sharp push, replace the impeller back onto the motor shaft. Ensure that the impeller snaps into position.
G17 Refit the motor body housing assembly and turn clockwise until the locking catch is engaged. Take care not to trap the speed controller socket cable (wired version only).
G18 Clip in the PSU assembly back into the support by locating the clip and pushing down. Plug the RJ12 (wired version only).
G19 Refit the housing ensuring that no internal wires are trapped between the housing and base.
G20 Engage the two side catches. Tighten the two side catch screws.
G21 Replace the indoor grille and secure with the retaining screw at the top of the grille.
G22 Position the fan on the indoor frame ensuring the socket connector cutout is aligned. Attach the clamps. Ensure that the tongues under the clamp heads engage in the slot of the housing.
G23 (Tighten the clamping screws) G24.
G24 Place the fan partially into the wall liner and replace the connector socket by pushing positively into position. Plug the controller wire into the controller (wired version only). Fix the fan onto the inside liner with the louvres slanting upwards using the fixing screws and replace the screw covers. Note: The A's and B's must match.

**RECONNECT THE MAINS SUPPLY AND SWITCH THE UNIT ON.**

G1



G2



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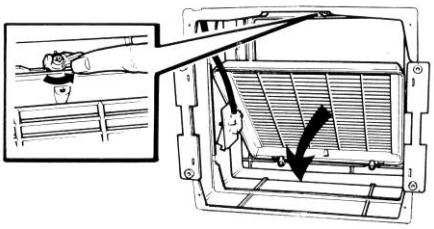

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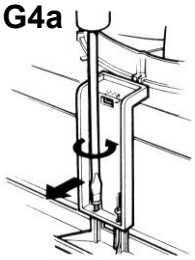

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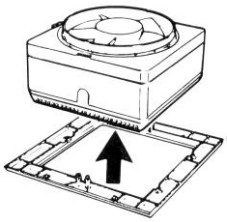

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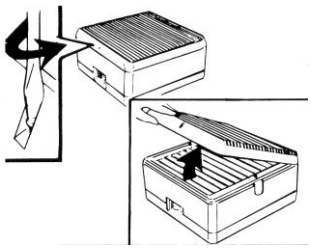

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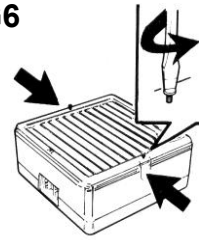

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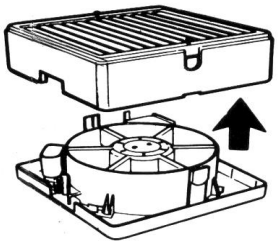

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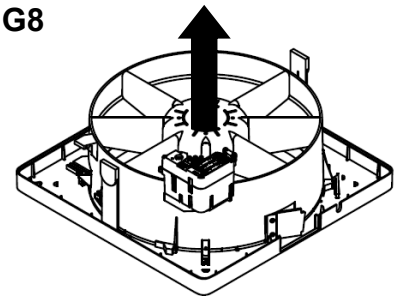

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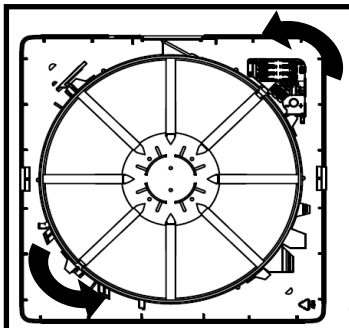

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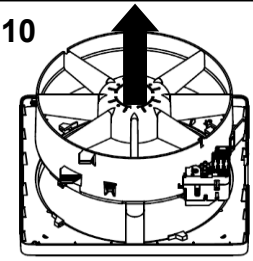

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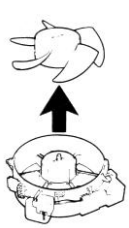

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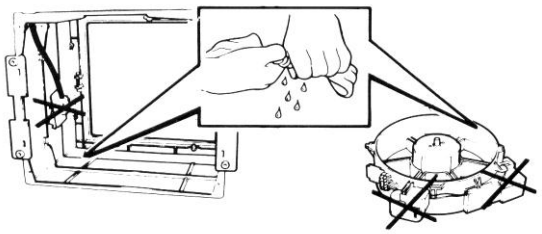

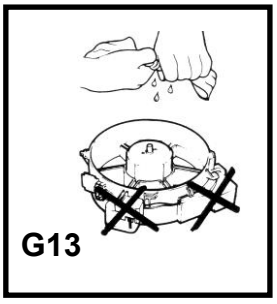
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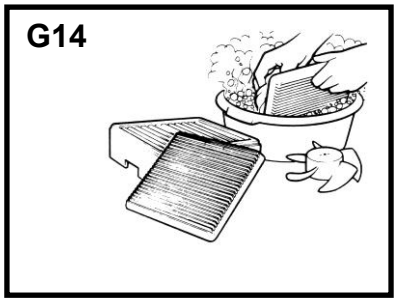
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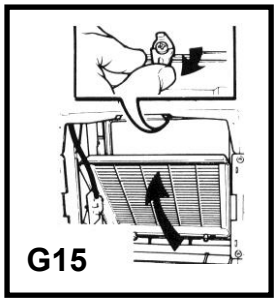
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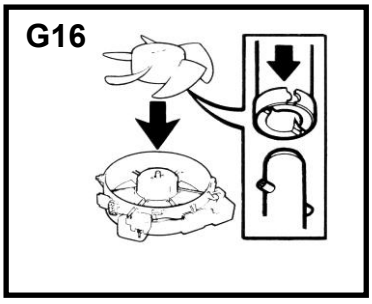
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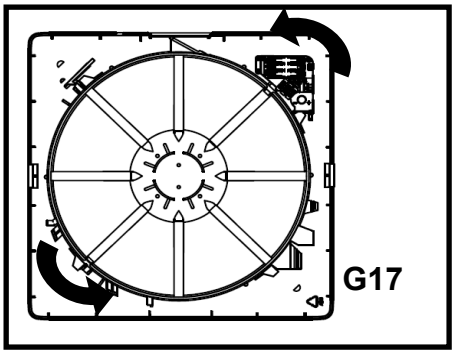
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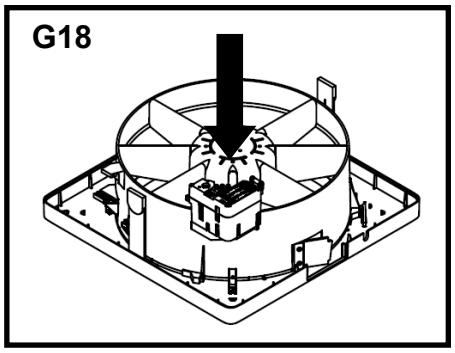
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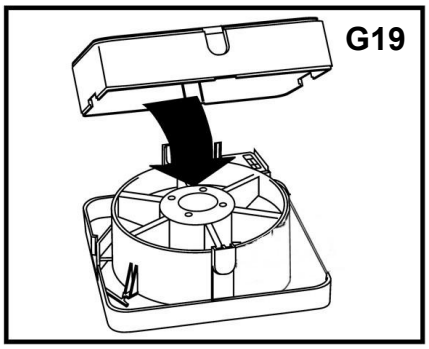
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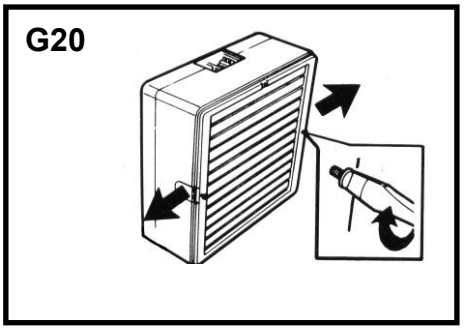
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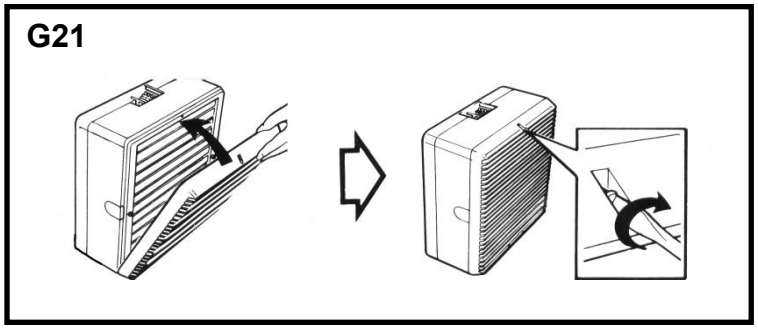
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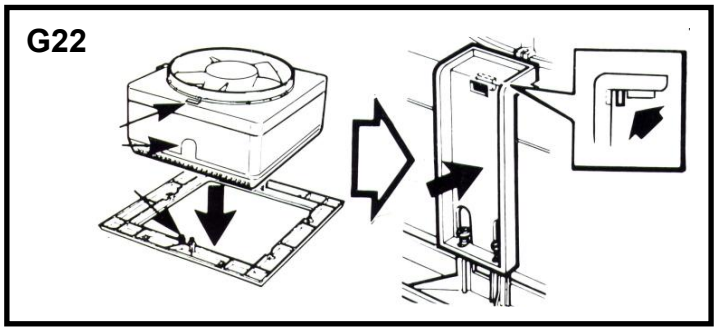
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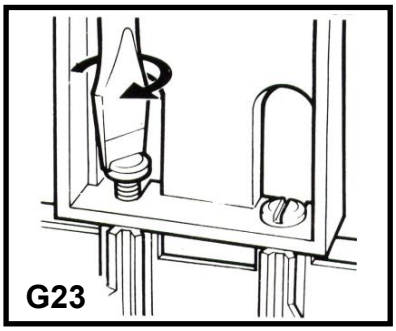
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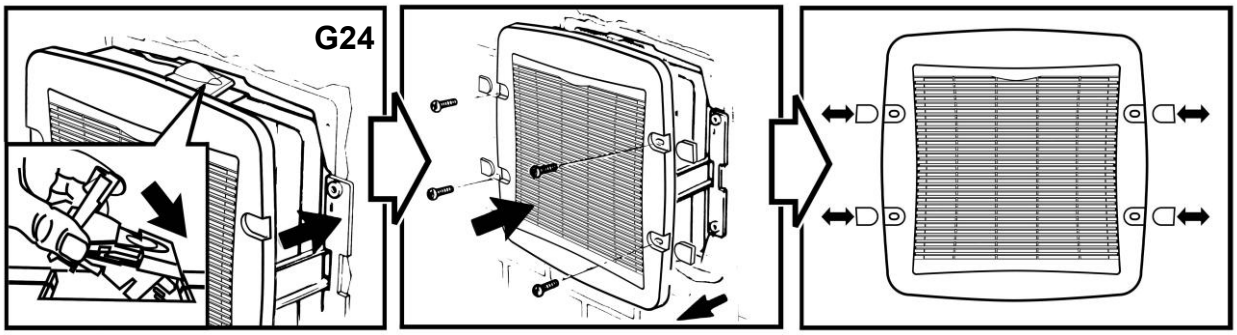
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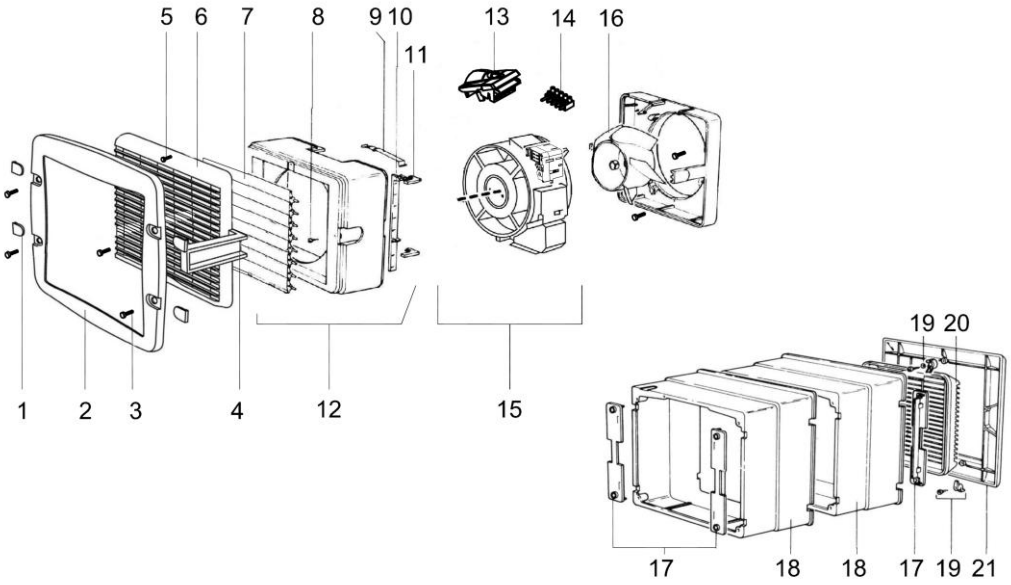
## 4. SPARES




| Item No | Description | 9” | 12” |
|---|---|---|---|
| 1 | Frame Screw Covers A&B (pack of 4) | 457942 | 457943 |
| 2 | Internal Grille Frame | 428117 | 428118 |
| 3 | Wall Frame screws (set of 8) | 460426 | 460426 |
| 4 | Frame Clamp (set 2 with screws) | 467725 | 467726 |
| 5 | Grille retaining screws (pack of 2) | 426325 | 426325 |
| 6 | Internal Grille c/w retaining screw | 457649 | 457650 |
| 7 | Shutter Blade - each | 460060 | 460048 |
| 8 | Housing screws, (set of 2) | 460436 | 460436 |
| 9 | Shutter Return Spring | 460088 | 460088 |
| 10 | Shutter Actuator Lever | 460061 | 460050 |
| 11 | Lever retainer (set of 2) | 460433 | 460434 |
| 12 | Housing c/w shutter blade assembly | 466458 | 466459 |
| 13 | Connector Socket | 428031 | 428031 |
| 14 | Terminal Block | 428030 | 428030 |
| 15 | Motor/Impeller Kit | 457934 | 457935 |
| 16 | Impeller incl. Compression ring | 448925 | 458260 |
| 17 | Liner Bracket (set of 4) | *460435 | *460435 |
| 18 | Wall Liner - per section | *460096 | *460086 |
| 19 | Frame Button Clip Set | *457944 | *457945 |
| 20 | External Grille | *428039 | *428040 |
| 21 | External Grille Frame c/w Retaining Clip Set | *428121 | *428122 |
| 22 | Shutter Actuator | 460004 | 460004 |
| 23 | Accessory Pack | 416401<br>*416399 | 416402<br>*416400 |
| 24 | Fan Core | 417009 | 417010 |
| 25 | Wall Kit | *472045 | *472046 |
| 26 | Panel Kit | 472053 | 472054 |

* Wall models only

# 5. ACCESSORIES

| Part No | Description |
|---|---|
| ***Mechanical accessories*** | |
| 460096 | Wall Liner 9” |
| 460086 | Wall Liner 12” |
| **417128 | Wired Connection Kit |
| ***Controller/Sensors*** | |
| 415169 | Sentinel T-Series Controller Mains Wired/Wireless |
| *496431 | Temperature/RH Sensor Battery Powered |
| *496429 | Temperature/RH Sensor 240V |
| *496433 | CO2 Sensor 240V |
| 459623 | PIR sensor |

* Sensors that must be used with Sentinel T-Series controller
** To be purchased with Sentinel T-Series controller for wired connection only

## Disposal

This product should not be disposed of with household waste.
Please recycle where facilities exist. Check with your local authority for recycling advice.

### The Vent-Axia Guarantee

Applicable only to products installed and used in the United Kingdom. For details of guarantee outside the United Kingdom contact your local supplier.

Vent-Axia guarantees its products for five years from date of purchase against faulty material or workmanship. In the event of any part being found to be defective, the product will be repaired, or at the Company's option replaced, without charge, provided that the product: -

- Has been installed and used in accordance with the instructions given with each unit.
- Has not been connected to an unsuitable electricity supply. (The correct electricity supply voltage is shown on the product rating label attached to the unit).
- Has not been subjected to misuse, neglect or damage.
- Has not been modified or repaired by any person not authorised by the company.

**IF CLAIMING UNDER TERMS OF GUARANTEE**

Please return the complete product, carriage paid to your original supplier or nearest Vent-Axia Centre, by post or personal visit. Please ensure that it is adequately packed and accompanied by a letter clearly marked "Guarantee Claim" stating the nature of the fault and providing evidence of date and source of purchase.

The guarantee is offered to you as an extra benefit and does not affect your legal rights.

Vent-Axia


**UK Head Office**:

Vent-Axia, Fleming Way, Crawley, West Sussex, RH10 9YX
EU Authorised Representative: Vent-Axia Sigarenmaker 5 - 5521DJ Eersel Nederland authorisedrep@vent-axia.nl

**CALL CENTRE: -**

| | | |
|---|---|---|
| **Sales Enquiries**: | Tel: 0344 8560590 | Email: sales@vent-axia.com |
| **Technical Support**: | Tel: 0344 8560594 | Email: tech@vent-axia.com |



**416404 A** **1025**