



HTS / HTE

Haven Terminal System Installation Manual

1.0 SAFETY INFORMATION

- This equipment should not be used by children or persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning the safe use of the appliance by a person responsible for their safety. Children shall not play with the appliance. Cleaning and user maintenance shall not be carried out by children.
- Precautions may also need to be taken to protect the surrounding area from falling dust during maintenance.

1.1 Symbols



REFER TO INSTRUCTION MANUAL

Read and understand the installation and maintenance manual before installing, operating or maintaining this product.

1.2 Important Information

This manual contains important information on the safe and appropriate assembly, transport, commissioning, operation, maintenance, disassembly and simple troubleshooting of the product.

While the product has been manufactured according to the accepted rules of current technology, there is still a danger of personal injury or damage to equipment if the following general safety instructions and the warnings contained in these instructions are not complied with.

- **Read these instructions completely and thoroughly before working with the product.**
- **Keep these instructions in a location where they are accessible to all users at all times.**
- **Always include the operating instructions when you pass the product on to third parties.**

1.3 Personal Protective Equipment

The following minimum Personal Protective Equipment (PPE) is recommended when interacting with Nuaire product:

- **Protective Steel Toed Shoes** - when handling heavy objects.
- **Full Finger Gloves (Marigold PU800 or equivalent)** - when handling sheet metal components.
- **Semi Fingerless Gloves (Marigold PU3000 3DO or equivalent)** - when conducting light work on the unit requiring tactile dexterity.
- **Safety Glasses** - when conducting any cleaning/cutting operation or exchanging filters.
- **Reusable Half Mask Respirators** - when replacing filters which have been in contact with normal room or environmental air.

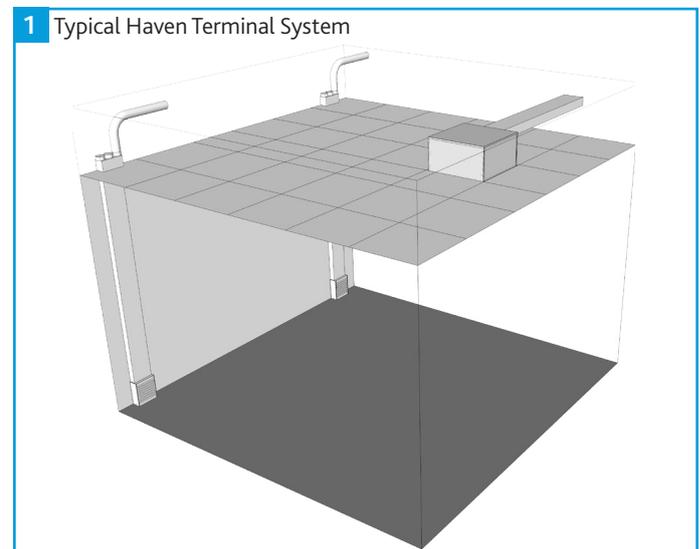
These products require installation work at ceiling level and require access to ceiling voids for installation. Suitable precautions should therefore be taken both for working at height, and for interaction with the contents of the ceiling void.

Nuaire would always recommend a site specific risk assessment by a competent person to determine if any additional PPE is required.

2.0 INTRODUCTION

The Haven range is a comprehensive collection of equipment that, when used as part of a ventilation system, can create a healthy environment in rooms within a commercial or other public building.

The essential concept is to deliver the correct amount of fresh supply air locally to each occupant, and to extract vitiated air such that cross contamination between occupants is minimised.



2.1 Code Description:

1	2	3	-	5
HT	S	12	-	PM1.80

- 1. Range: HT = Haven Terminal System
- 2. Airstream Type: S = Supply
E = Extract
- 3. Number Of Connections: 1 = Single (Supply or Extract Equipment)
2 = Two (Extract Equipment Only)
3 = Three (Extract Equipment Only)
4 = Four (Supply Equipment Only)
9 = Nine (Supply Equipment Only)
12 = Twelve (Supply Equipment Only)
- 4. Filtration: PM1.55 = Particulate Filter (ePM1>55%)
PM1.80 = Particulate Filter (ePM1>80%)
E11 = E11 HEPA Filter

3.0 MECHANICAL INSTALLATION

Installation must be completed by competent persons, in accordance with good industry practice and should conform to all governing and statutory bodies i.e. IEE, CIBSE, etc.

These products require installation work at ceiling level and require access to ceiling voids for installation. Suitable precautions should therefore be taken both for working at height, and for interaction with the contents of the ceiling void.

3.1 System Components

Other components may be required to complete the system – please refer to **Nuair Ducting Specification Guide**.

If adding Haven components to an existing system it is recommended that the system is first cleaned by a BESA registered contractor, and the system capacity and functionality verified.

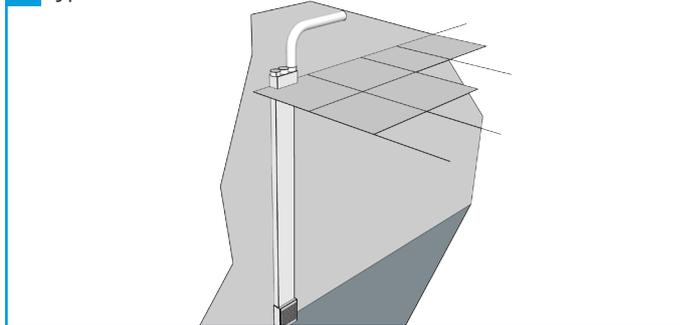
3.1.1 Supply Terminals

- Single - HTS1 (See Section 3.2).
- Multiple - HTS4, HTS9, HTS12 (See Section 3.3).

3.1.2 Extract Terminals

•HTE1, HTE2, HTE3 (See Section X.X).

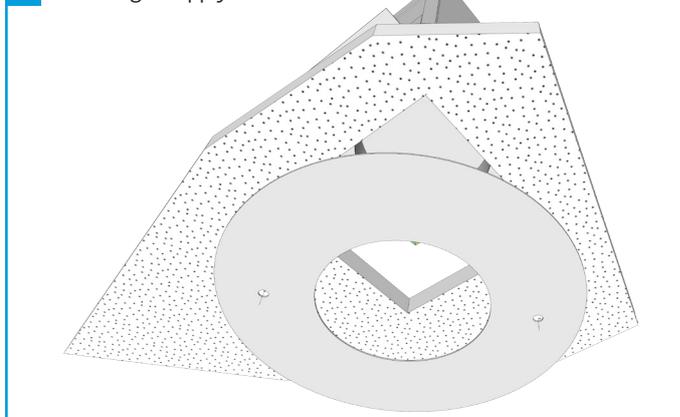
4 Typical Extract Terminal Installation



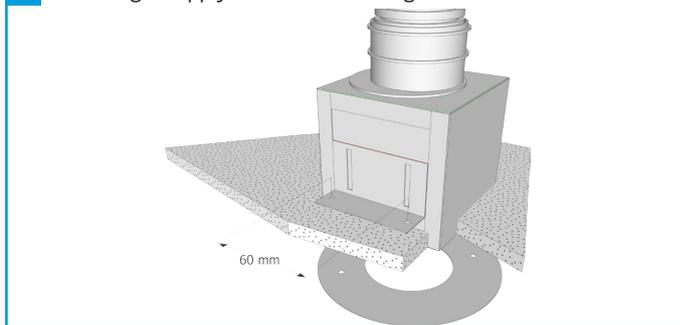
3.2 HTS1 Single Supply Terminal Installation

The terminal consists of a corrosion resistant steel housing with directional distribution louvre and a connection port for a single 75mm semi-rigid duct. A fascia plate is also provided for finishing purposes.

5 HTS1 Single Supply Terminal Facia



6 HTS1 Single Supply Terminal Mounting Brackets



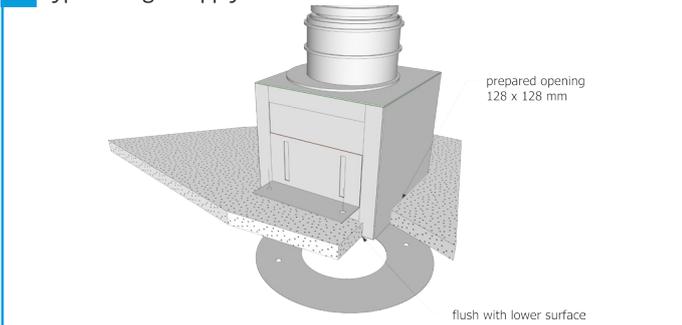
Alternatively, use the pre-tapped holes (M5) to fix to a prepared mounting frame. M5 screws (by others) should not penetrate into the housing beyond 25mm

The gap between the housing and ceiling cut-out should be fully sealed with a proprietary low modulus, neutral cure mastic.

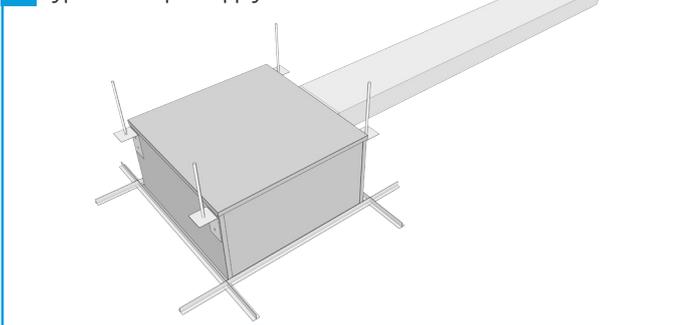
The semi-rigid ducting is installed by first locating the sealing ring provided into the second complete groove in the duct outer surface.

Mark the semi-rigid duct at 50mm from the cut end, and push evenly into the port aperture. When secure, close the port's clip to retain the duct. No further sealing of the connection is required or should be applied.

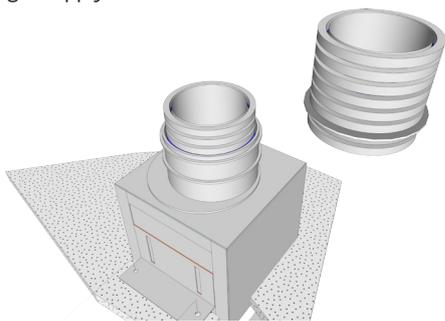
2 Typical Single Supply Diffuser Installation



3 Typical Multiple Supply Diffuser Installation



7 HTS1 Single Supply Terminal Duct Connection



This duct type is largely self-supporting, and may be readily cut with a hacksaw and manually formed into swept bends with a minimum internal radius of approx. 150mm. Compact 90° bend components are also available from Nuair with similar sealed port design (**product code NRDD75-90**).

For extended lengths of duct, supports with a maximum spacing of 1m must be provided.

The duct must not be used to support the weight of the terminal housing or other components. If the duct becomes kinked or crushed, the affected section must be discarded and replaced.

Once the installation is complete, the fascia plate may be attached to the lower surface of the housing to obscure the cut edges of the ceiling hole. Two M5 screw with caps are provided.

If required, the fascia plate may be carefully trimmed to shape with metal shears.

The directional louvre may be moved into the desired position at this stage (if known to the installer).

3.3 HTS(4/9 /12) Multiple Supply Terminal Installation

The terminal consists of a corrosion resistant steel housing, with a quantity of adjustable direction distribution louvres and a connection spigot for a single 220 x 90 rigid duct. The terminal includes a fixed flange trim, and (depending on model) may be fitted with a range of filters and other accessories. A pair of mounting angle brackets is provided.

In service, access to filters and internal ancillaries will be made via a hinged, drop down panel at the lower face of the terminal. The installation location should therefore allow an access space at least 600 x 600mm down to floor level directly below the terminal.

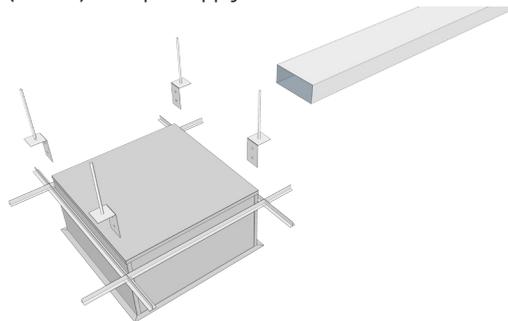
The terminal is primarily designed for installation into a suspended ceiling grid but may also be used for a continuous ceiling installation.

Please note that full access to the ceiling void adjacent to the terminal is required to complete the installation.

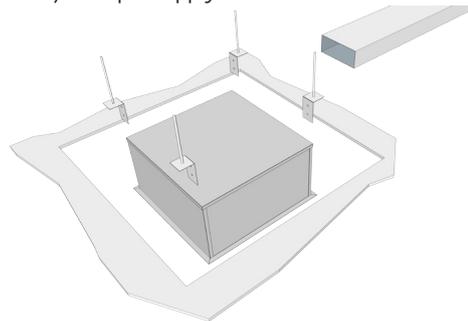
The terminal housing must be installed with upper surface of the trim flange tight to the lower surface of the ceiling or ceiling grid.

- If the ceiling grid is not present, the final location of the terminal will require coordination with the grid and means of positional adjustment in three planes should be provided. Or:
- In a continuous ceiling, prepare an opening in the ceiling surface at least 1000mm square (allowing for installation access around the terminal). Or:
- If ceiling grid is present, at the designated location, remove the existing ceiling tile and adjacent tiles as necessary. Manipulate the terminal to pass through the ceiling grid. It will be necessary to temporarily remove the mounting brackets, and assistance and/or temporary support may be required during this operation.

8 HTS(4/9/12) Multiple Supply Terminal Installation 1



9 HTS(4/9/12) Multiple Supply Terminal Installation 2



Using the mounting brackets provided, secure the terminal housing to a suitably rigid structure within the ceiling void.

The bracket fixing holes (4 no. M8) may also be used for alternative fixing methods.

Attach rigid ducting to the terminal's inlet spigot. Secure with self-tapping screws, duct sealant and durable tape as required.

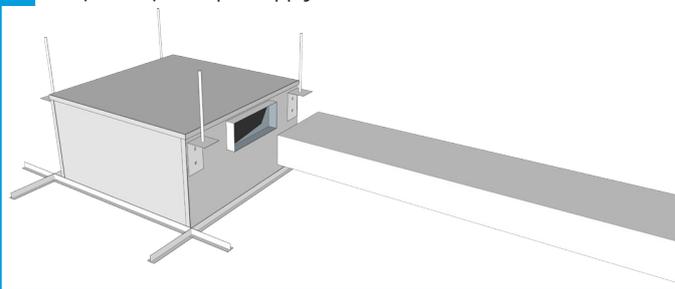
Ensure that the terminal is level, evenly supported and that the housing is not distorted.

Additional connections to the terminal can now be made for optional items if present, such as filter pressure tapplings (HAVEN-PDIFF). Please refer to documentation provided with those options.

Replace adjacent ceiling tiles / make good continuous ceiling to terminal housing.

The directional louvres may be moved into the desired position at this stage (if known to the installer).

10 HTS(4/9/12) Multiple Supply Terminal Duct Connections



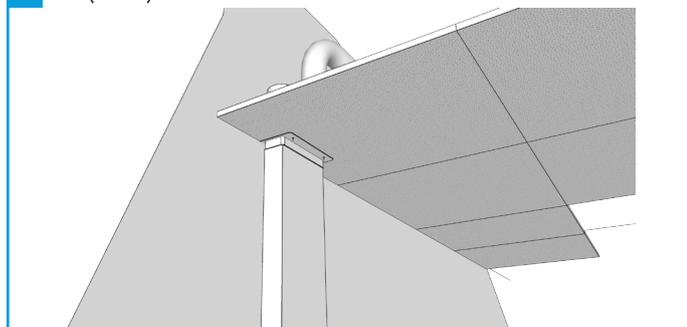
3.4 HTE(1/2/3) Extract Terminal Installation

The extract terminal assembly is designed to remove vitiated air at low level locally to room occupants.

The terminal assembly consists of a corrosion resistant steel floor plate and housing, A vertical rectangular duct section running floor to ceiling, and a transition section above the ceiling with connection ports for up to 3 no. 75mm semi-rigid duct connections.

A facia plate is provided for finishing purposes.

11 HTE(1/2/3) Extract Terminal Facia



It is necessary to gain working access to the ceiling void to install the transition section and associated ductwork.

Considering the overall installation spatial requirements, at the designated location, prepare a square opening in the ceiling surface 210 x 65 mm in the required orientation.

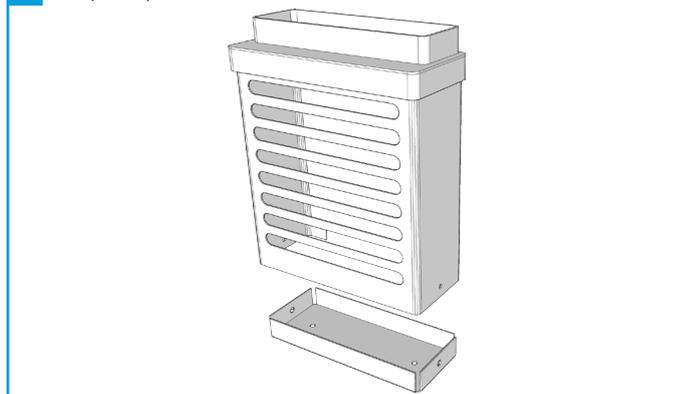
Drop a plumb line from a rear corner of the opening to establish the location of the floor plate.

Secure the floor plate to the floor.

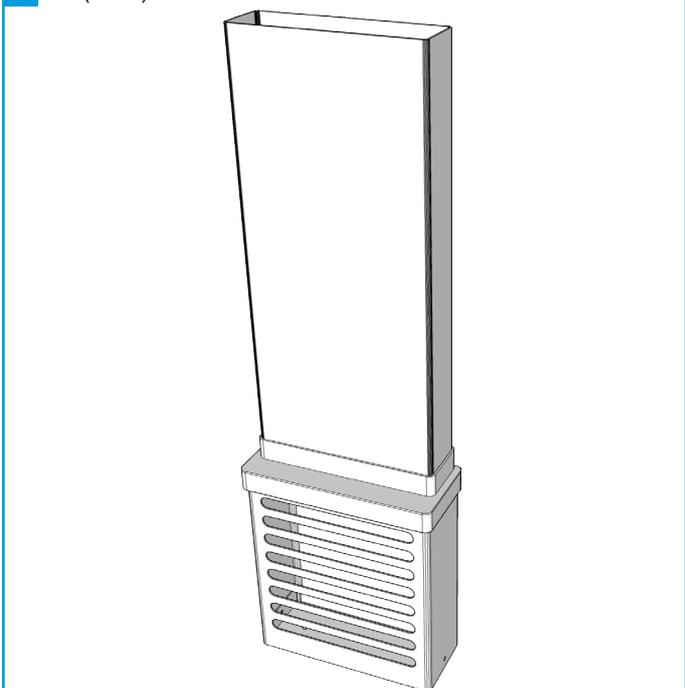
With the terminal grille facing into the room, fit the terminal housing to the floor plate using the screws and screw caps provided.

Fit the vertical ductwork to the housing and extend to pass through the ceiling opening.

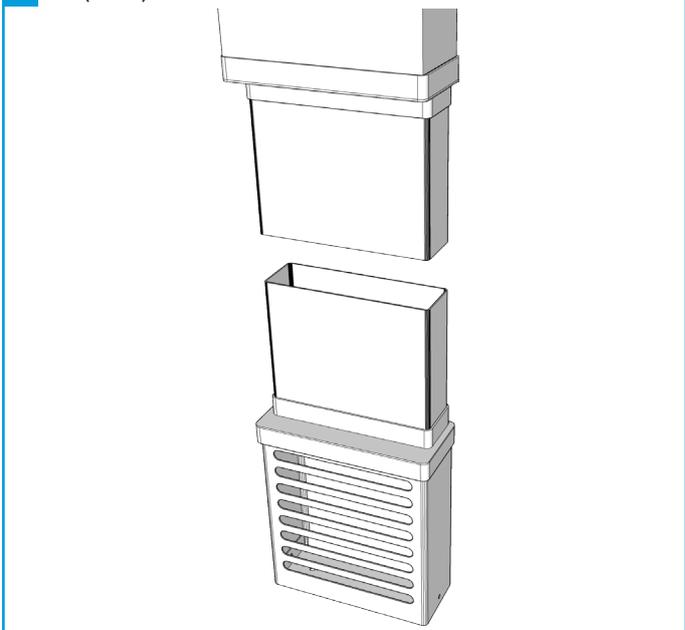
12 HTE(1/2/3) Extract Terminal Installation 2



13 HTE(1/2/3) Extract Terminal Installation 2

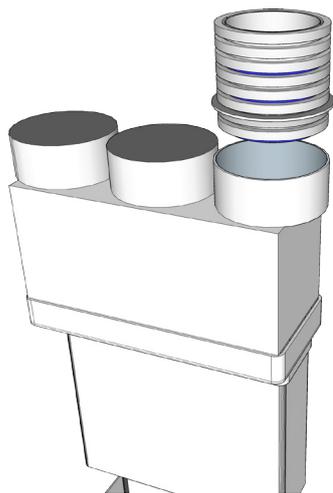


14 HTE(1/2/3) Extract Terminal Vertical Duct Connections



Visible ductwork connections should be bedded in white non-setting sealant, and excess sealant removed. It is not necessary to tape these joints, but additional mechanical fixings may be advisable if physical disturbance is likely. If required, the ductwork may be secured to an adjacent vertical surface.

Above ceiling level, fit the transition piece to the top of the vertical duct. Seal, tape and screw this joint.

15 HTE(1/2/3) Extract Terminal Duct Connections

The transition piece should be secured to a suitably rigid structure in the ceiling void.

The gap between the vertical duct and ceiling cut-out should be fully sealed with a proprietary low modulus, neutral cure mastic.

The transition piece is supplied with blanking plates. To remove these, pull out and retain the wire fixing clip and remove plate from the port. Ensure that unused ports have blanking plates with sealing rings fitted and wire fixing clip in place.

The semi-rigid ducting is installed by first locating the sealing ring provided into the second complete groove in the duct outer surface.

Mark the semi-rigid duct at 35mm from the cut end, and push evenly into the port aperture. When secure, insert the port's wire fixing clip to retain the duct. No further sealing of the connection is required or should be applied.

This duct type is largely self-supporting, and may be readily cut with a hacksaw and manually formed into swept bends with a minimum internal radius of approx. 150mm. Compact 90° bend components are also available from Nuair with similar sealed port design (**product code NRDD75-90**).

For extended lengths of duct, supports with a maximum spacing of 1m must be provided.

The duct must not be used to support the weight of the transition housing or other components. If the duct becomes kinked or crushed, the affected section must be discarded and replaced.

Once the installation is complete, the facia plate may be attached to the lower surface of the housing to obscure the cut edges of the ceiling hole using screw caps provided and screws / plugs appropriate to the ceiling type.

If required, the facia plate may be carefully trimmed to shape with metal shears.

4.0 MAINTENANCE

It is important that maintenance checks are recorded and that the schedule is always adhered to, in all cases, the previous report should be referred to.

Note and ensure that the position of adjustable louvres is maintained during the maintenance operation.

4.1 HTS1, HTE1, HTE2 & HTE3 Maintenance

The single supply terminal (HTS1) and extract terminals (HTE1/2/3) require cleaning only when necessary – vacuum and wipe over with a clean damp cloth – do not use cleaning agents on these products.

Check for damage and visible obstructions to louvre / grille and rectify / remove as necessary.

4.2 HTS4, HTS9 & HTS12 Maintenance

As required, clean the visible surface of the terminal - vacuum and wipe over with a clean damp cloth – do not use cleaning agents on these products.

Check for damage and visible obstructions to louvres and rectify / remove as necessary.

4.3 Filter Maintenance

Where a filter has been fitted to a Haven terminal, it will have been selected for its particular properties and must only be replaced with a new filter with the same properties.

Failure to observe this requirement will result in compromising the intended level of Indoor air quality in the occupied space, and may be detrimental to the health and well-being of occupants.

Filter changing should be carried out in accordance with the system design requirements, but an annual filter change is the minimum requirement. Failure to do so may impair the performance and energy efficiency of this unit.

The filter is accessed through the hinged lower panel of the terminal.

The panel is hinged at the side opposite to the retaining latches.

Undoing the latches will free the panel and a weight of up to 4kg will be released.

Whilst manually supporting the panel centrally between the latches, release them in turn by rotating through 90°.

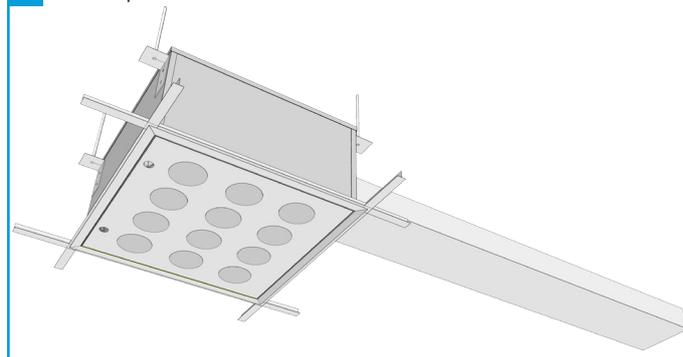
Gently lower the hinged panel down to its greatest extent.

The filters are 525 x 460 x 80mm and weigh up to 4kg (ePM1 type) and 5kg (E11 type).

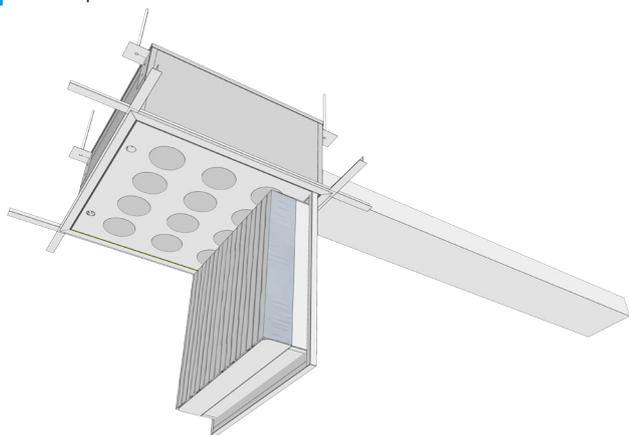
Remove the old filter, place in a suitable bag and seal.

Remove the new filter from its packaging and refit in housing.

Lift the hinged panel to its original position and re-secure the latches (full 90 degree rotation).

16 Filter Replacement 1

17 Filter Replacement 2



7.0 AFTER SALES AND REPLACEMENT PARTS

For technical assistance or further product information, including spare parts and replacement components, please contact the After Sales Department.

If ordering spares please quote the serial number of the unit together with the part number, if the part number is not known please give a full description of the part required. The serial number will be found on the identification plate attached to the unit casing.

Telephone 02920 858 400
aftersales@nuaire.co.uk

Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such changes without prior notice.

4.4 Replacement Supply Filter Codes

Filter Grade	Replacement Supply Filter Code
ePM1>55%	HTS-PM1.55-FILTER
ePM1>80%	HTS-PM1.80-FILTER
E11 (HEPA)	HTS-E11-FILTER

5.0 WARRANTY

The 2 year warranty starts from the day of delivery and includes parts and labour for the first year. The remaining period covers replacement parts only (replacement filters not included).

This warranty is void if the equipment is modified without authorisation, is incorrectly applied, misused, disassembled, or not installed, commissioned and maintained in accordance with the details contained in this manual and general good practice.

The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuair International Sales office for further details.

Failure to maintain the unit as recommended will invalidate the warranty.

6.0 END-OF-LIFE AND RECYCLING

Where possible Nuair use components which can be largely recycled when the product reaches its end-of-life:

- Sheet metal parts, aluminium extrusion, heating/cooling coils and other metallic items can be segregated and fully recycled.
- EPP, plastic ducting, nylon corner pieces, plastic heat exchangers, packaging material and other plastic components can be segregated into mixed plastic and widely recycled.
- Cardboard packaging, wood, used filters and other paper components can be largely recycled or fully processed in energy from waste centres.
- Remaining Items can be further segregated and processed in accordance with the zero waste hierarchy. Please call After Sales Support for further information on items not listed above.

Ensure that Nuair product is made safe from any electrical / water / refrigerant supplies before dismantling commences. This work should only be undertaken by a qualified person in accordance with local authority regulations and guidelines, taking into account all site based risks.

