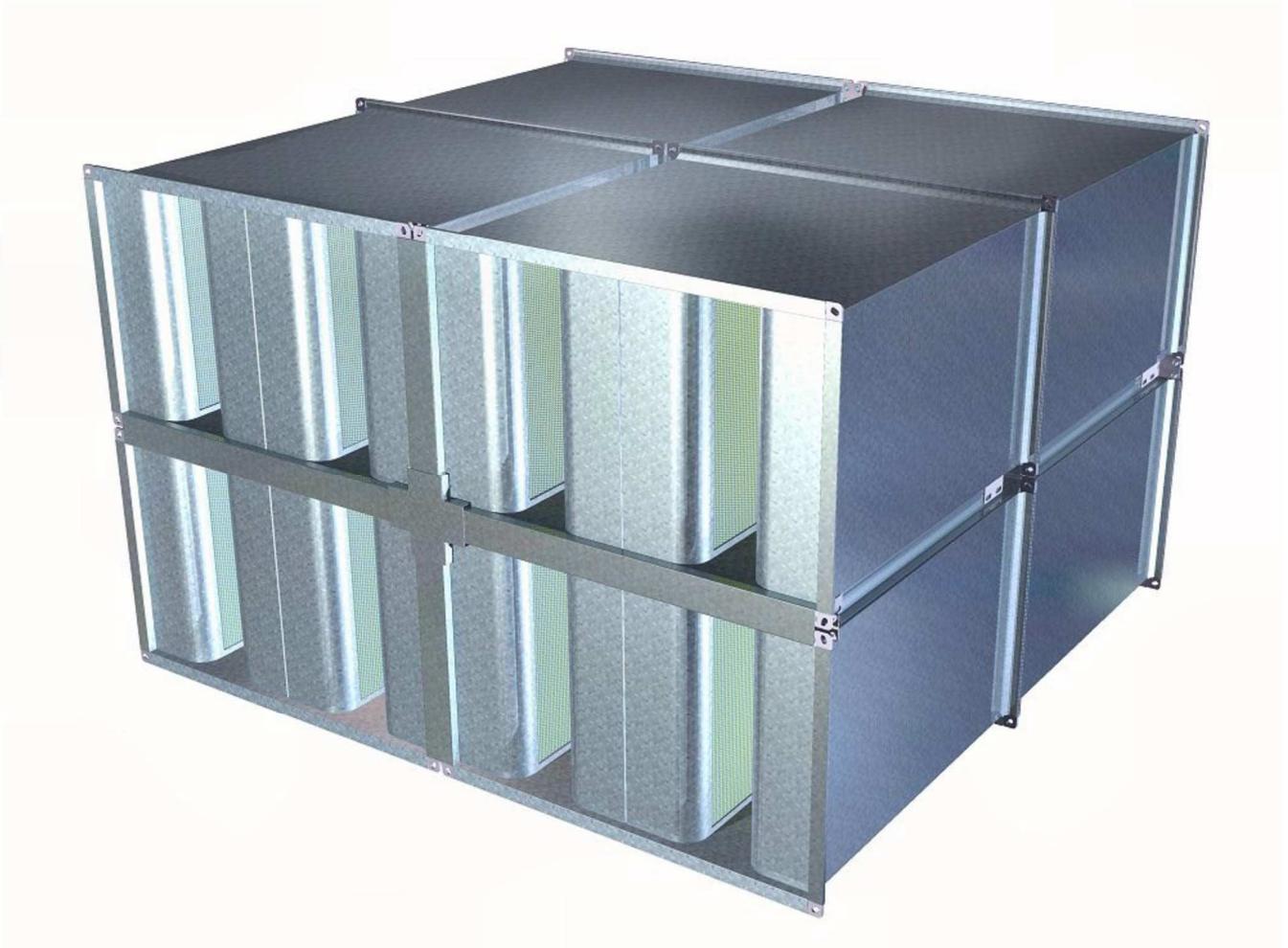




Instruction Manual

Modular Attenuator Assembly

Instruction manual - Modular Attenuator assembly



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1.0 Introduction

These Assembly instructions relate solely to the Modular Attenuator product (model code MG) as manufactured by CAICE Acoustic Air Movement Ltd.

The information herein provides guidance on how the product should be assembled. Qualified and professional personnel should be used in all instances to determine exact methods of working using these instructions as a guide to good practice.

General information regarding product specifications can be obtained by reference to our sales literature. Information on performance under any particular application can be obtained by reference to project specific documentation, or by contacting your local technical representative.

This assembly document forms an important part of the technical information associated with the product, and should be passed to the end user for reference during the working life of the product. This assembly document is provided to the purchaser as part of project specific documentation, but may also be obtained by either contacting your local technical representative, or by visiting our website at www.caice.co.uk and following the links to our product information.

The following symbols are used within these instructions to highlight references to potential danger, advice for safe operation, or other important information



Caution

Indicates hazards requiring safety advice for personnel or with regard to possible damage to the equipment or property



Important

Indicates important information

The Caice MG attenuator modular concept allows attenuators to be supplied to site in more manageable sections, allowing the final assembly to be carried out at the required location.

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2.0 Safety



Important

Before commencing any work to install, operate or maintain this product, the personnel undertaking the work must ensure:

- That these instructions have been read and understood fully and completely
- That the nature of the installation site and associated working conditions have been appraised and hazards identified
- That all necessary risk assessments have been undertaken, and all ensuing safety measures have been implemented
- That they understand fully the scope of the work required, and that they have been trained and are competent to undertake the work
- That they wear the correct personal protective equipment
- That they have the correct tools and equipment to undertake the various tasks

The equipment is to be assembled into a system of ventilation which may, or may not, incorporate additional components. For the purposes of safety, the entire system must be considered, and it is the responsibility of the installer to ensure that all equipment is installed in accordance with manufacturer's recommendations, and with consideration to any relevant industry standards and codes of practice, and in conformance with all statutory legislation or regulations that are applicable.

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3.0 Delivery and Receipt of Equipment

3.01 Receipt of goods on site

A Delivery Advice Note will be issued in advance of any delivery, usually providing 2-3 working days' notice of the delivery date, destination and any other delivery conditions.

Prior to dispatch all equipment is inspected in accordance with our Quality Assurance procedures. On arrival to site the client must thoroughly inspect the goods before signing the Delivery Note, Any damage or shortages in delivery must be confirmed by writing on the note and also by reporting the matter to our main sales office within 48 hours of receipt.

No responsibility will be accepted for damage sustained during offloading from the delivery vehicle or thereafter from distribution of goods around the site.

3.02 Offloading and distribution



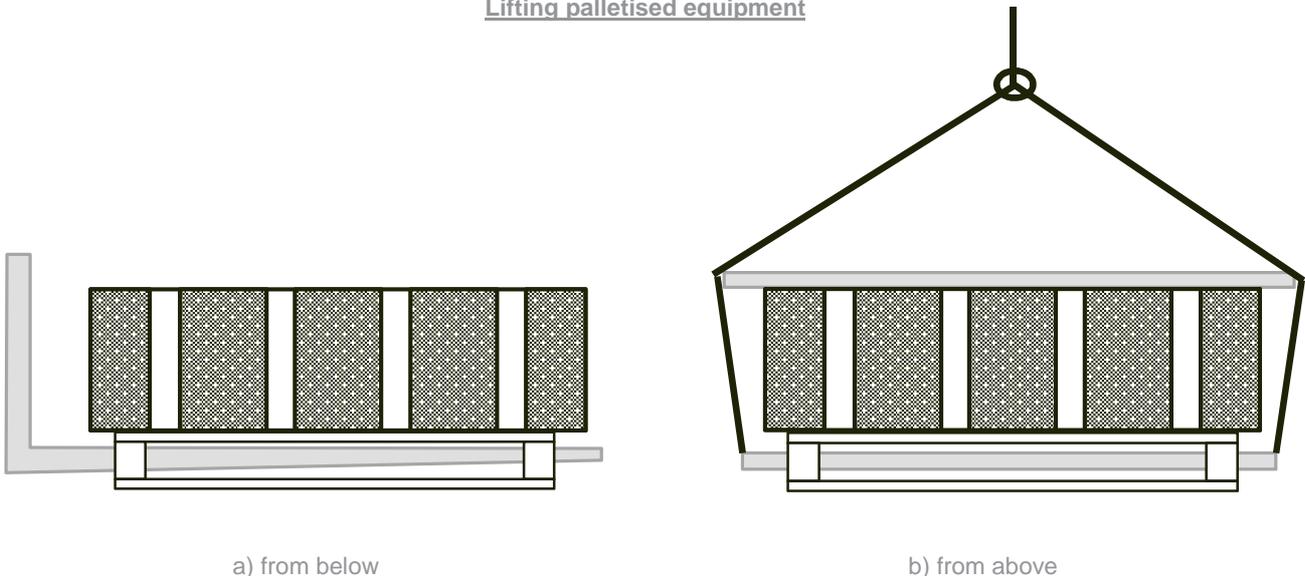
Caution

It is the purchaser's responsibility to ensure that offloading of equipment from the delivery vehicle is undertaken in an appropriate manner, and that suitable mechanical lifting and/or moving devices are available to suit the delivery vehicle and site conditions.

Equipment will be palletised for delivery, and each unit will have an individual identification label affixed bearing the weight of the equipment. It is recommended that offloading is undertaken using a suitably rated fork-lift truck or other mechanical lifting device. Note that pallets may contain more than one unit.

Alternatively, the equipment may be lifted from above using a crane. Lifting beams should be passed through the pallet in the same way as the forks of a forklift truck would be inserted. When lifting in this way, spreaders must be used to avoid damage to the casings of the equipment. Care must be taken to ensure that slings are correctly positioned.

Lifting palletised equipment



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Distribution of equipment should be undertaken using suitable mechanical handling devices. The attenuator modules may be very heavy.

Care must be taken at all times to prevent damage to the equipment. Corners, edges and protruding components may be particularly susceptible to damage if handled incorrectly.



Caution

It is not permissible under any circumstances to lift any attenuator module by inserting any lifting device into the attenuator airways, as this will result in damage to the product and possible injury to personnel.

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4.0 Preparing for Assembly

4.01 General

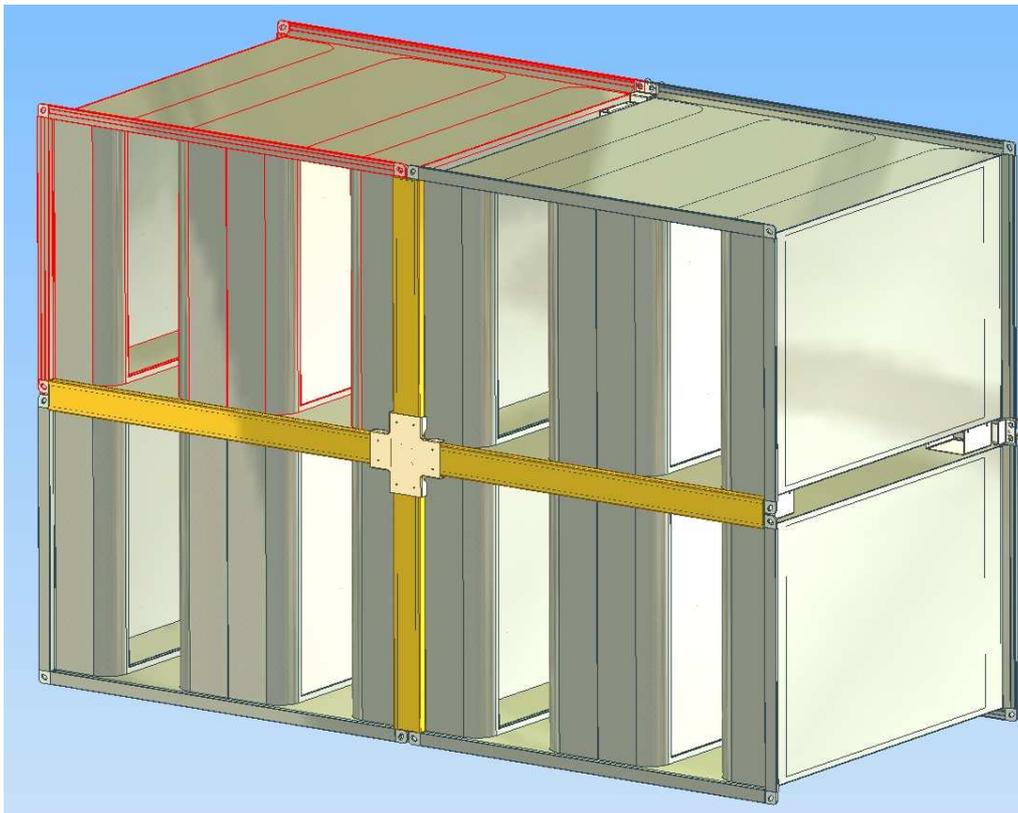


Important

The modular concept allows attenuators to be supplied to site in more manageable sections/modules, with the final assembly being carried out at the required location.

Prior to assembly, it is the operative's responsibility to observe the environmental and operational limitations of the equipment and ensure that they are compatible with the installation location. The method of support must be suitable for the installation location of the equipment. Any proprietary support system must be capable of taking the full unit weight and must be installed in full accordance with the manufacturer's instructions.

Reference should be made to project specific drawings and data sheets in order to identify the correct configuration and final assembly size for any particular unit, and to verify that the installation location does not compromise these aspects of the equipment. Each unit module will be fitted with an identification label.

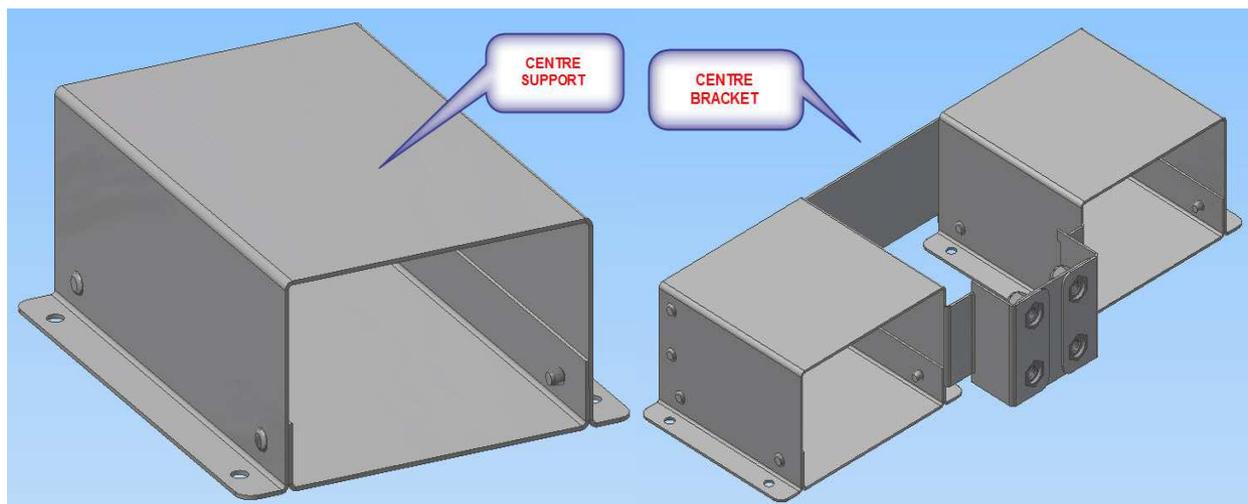
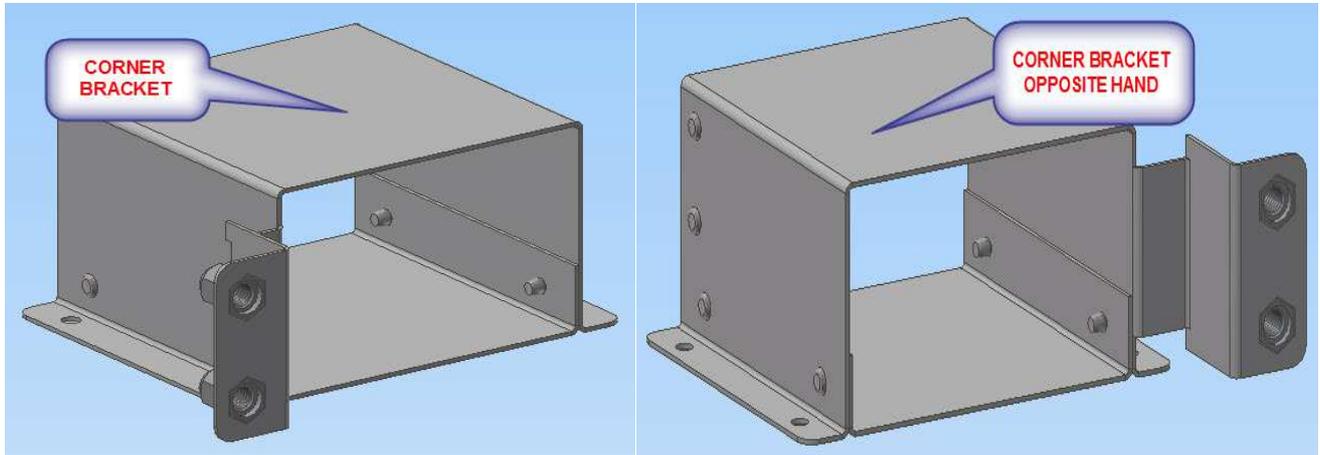


Capping channels and centre capping pieces are used to seal adjoining sections. These are shown in colour purely for the purpose of this document, and will be provided as self-finish galvanized steel unless specifically requested otherwise.

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4.02 Joining Brackets

Some or all of the joining brackets shown below will be supplied with the attenuator modules. The quantity of each will depend on the particular configuration and dimensions of the modules and the final assembled size.



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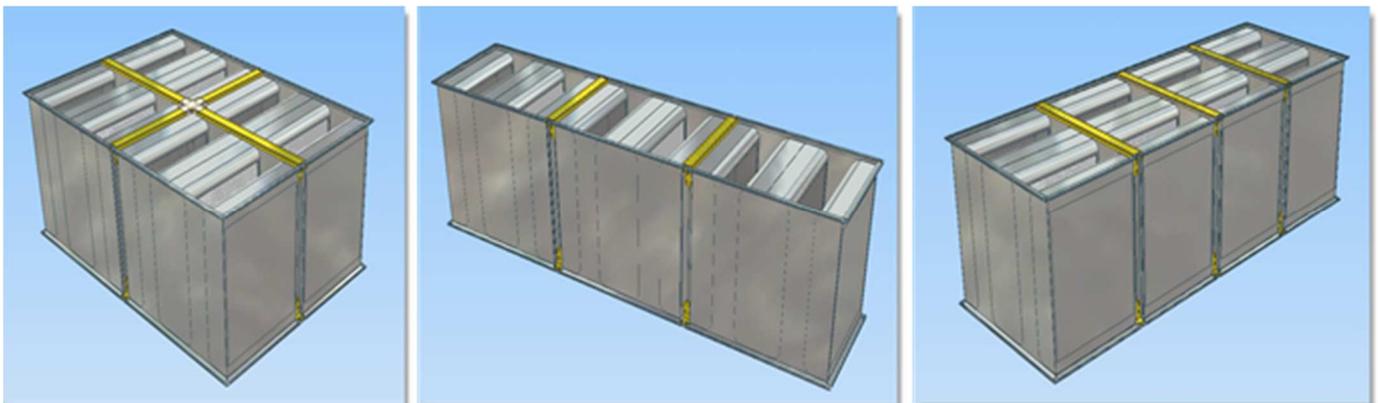
4.03 Notes

The following notes are provided as specific guidance to assist the assembly process:

- Ensure a flat, level base/platform is available for assembly. Sufficient space should be maintained in order to allow a safe system of work.
- Where attenuator modules are to be joined in length, it will be necessary to utilise suitable fixings (M8 nuts and bolts, intermediate flange clamps) and duct sealing tape. These items are not supplied as part of the product.
- Individual attenuator modules/sections will need to be supported independently of each other until the assembly is complete.
- Ensure clear access is available to all of the corners/joints for the fixing of brackets, and also to the front and rear faces for fixing of the sealing capping channels.
- These units may be very heavy, ensure appropriate lifting equipment is available for manoeuvring of the modules during assembly, and also for the completed assembly.
- Before joining sections, make sure that they are aligned correctly, in accordance with the overall product drawing.
- Ensure also that the external brackets on adjoining sections align.
- Initially make all bolted fixings loosely and only tighten once all fixings are in position.
- It may be necessary to lever/joggle the position of the units/brackets during the assembly to enable hole /fixing alignment.
- It may be helpful to temporarily clamp adjacent modules to assist in pulling them tightly together for fixing (using speed clamps or G-Clamps for example), at all times ensuring that the flanges are not damaged or distorted.
- It is the installer's responsibility to ensure an airtight seal during assembly (refer to Assembly Steps 7 & 8, and also during final installation, ensuring that appropriate tapes and sealants are used as necessary).

The instructions that follow show the example of an eight piece modular attenuator, split into two sections in width, two sections in height, and two sections length, as this illustrates all of the possible fixing options.

The same general assembly methodology applies to all other assemblies regardless of the final configuration. Some examples are shown below:

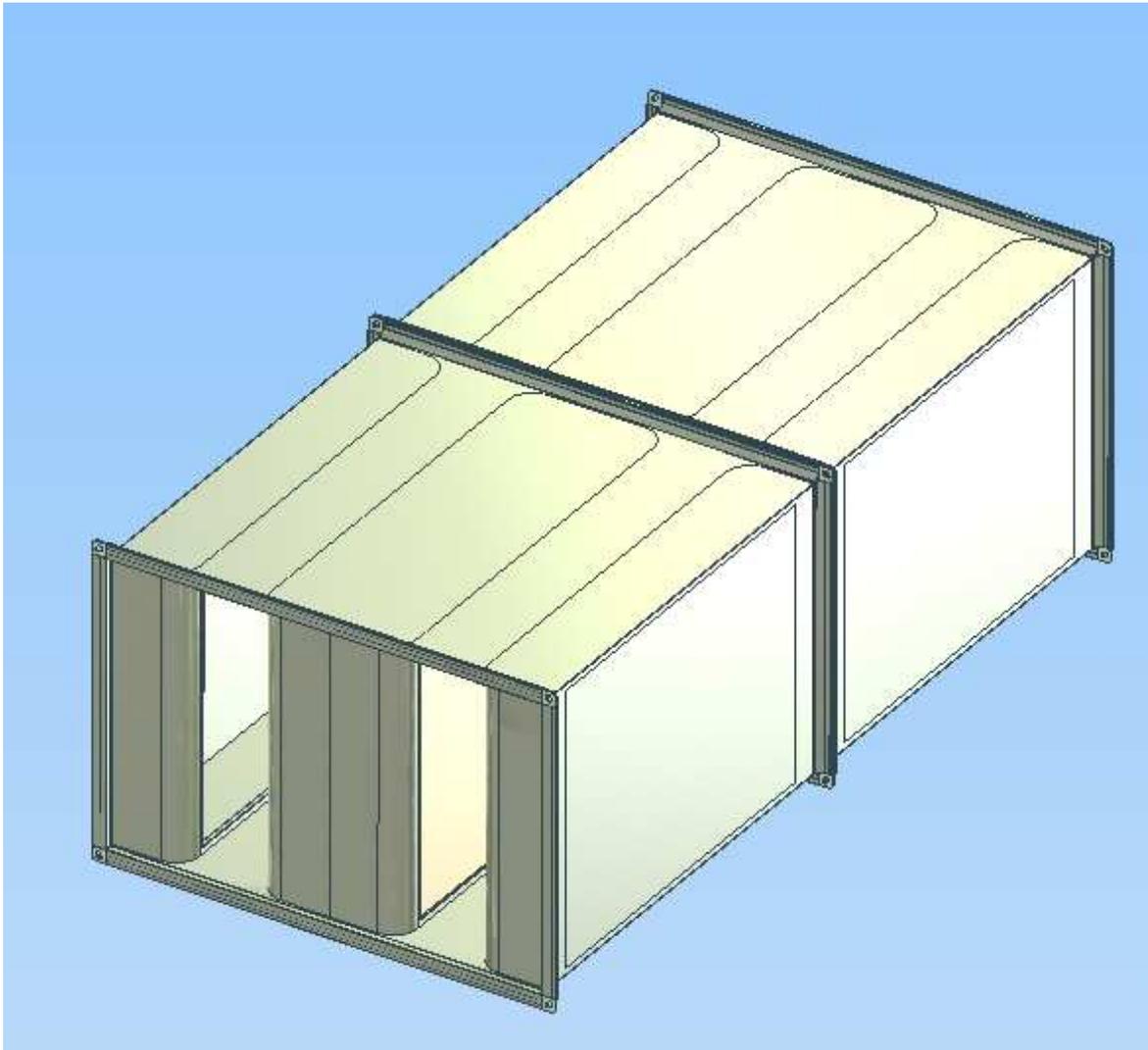


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5.0 Assembly

5.01 Assembly Step 1

Where attenuator sections are to be joined end to end, this should be undertaken first. Apply suitable duct sealing tape to the face of the flanges. Bring the sections together and use M8 nuts and bolts to connect each corner of the adjoining flanges. In addition, clamp the flanges at 300mm centres before proceeding, as it will not be possible to access the flanges later on.

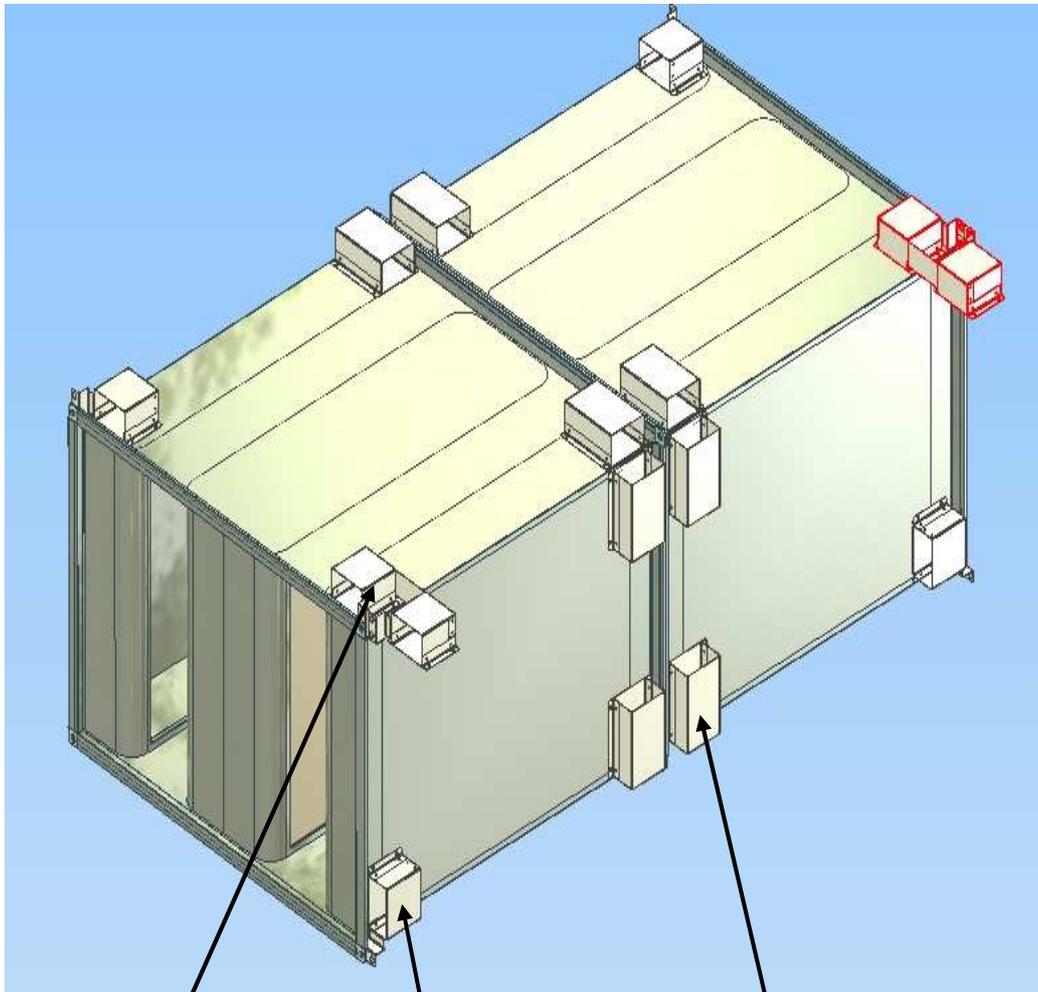


Note: where sections are supplied already joined in length corresponding to the final assembly length, then proceed directly to Assembly Step 2.

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5.02 Assembly Step 2

Using the TEK screws supplied, fix the joining brackets to first set of joined cases as shown, (assuming adjoining cases are to be added to the side and above). Four fixing holes are provided in each bracket, but a minimum of two TEK screws fixings should be used. Where possible, choose the fixing holes such that the TEK screws do not protrude into the attenuator airways.



Centre brackets: 2-off

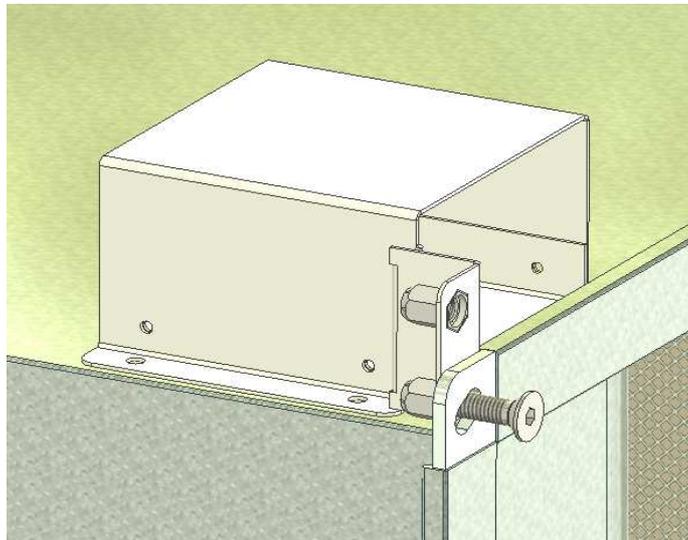
Corner brackets: 4-off
(2 handed pairs)

Centre supports: 8-off

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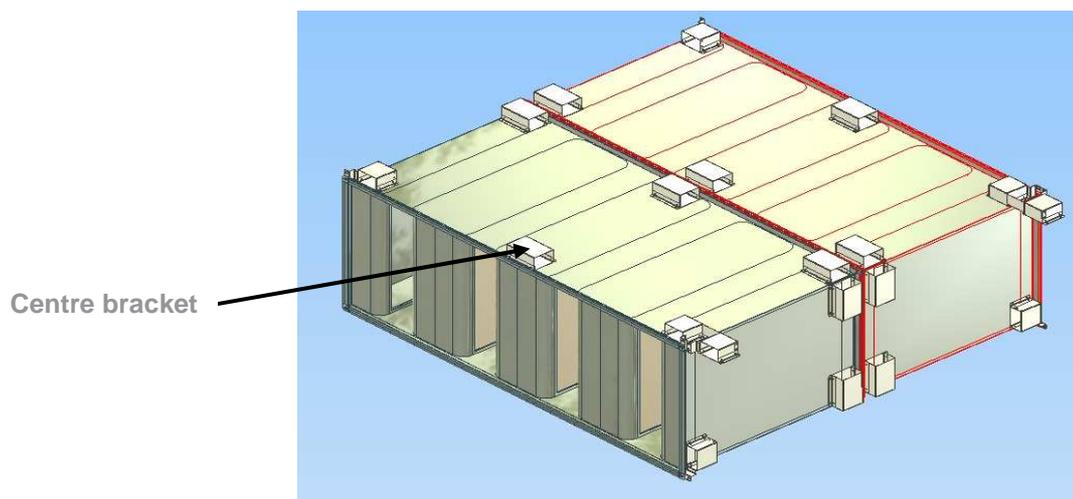
Important

Side and centre joining brackets incorporate M8 nutserts, these must be aligned with clearance holes in flange corners before fixing to cases. Loosely fit the supplied M8 countersunk screws to assist with alignment.



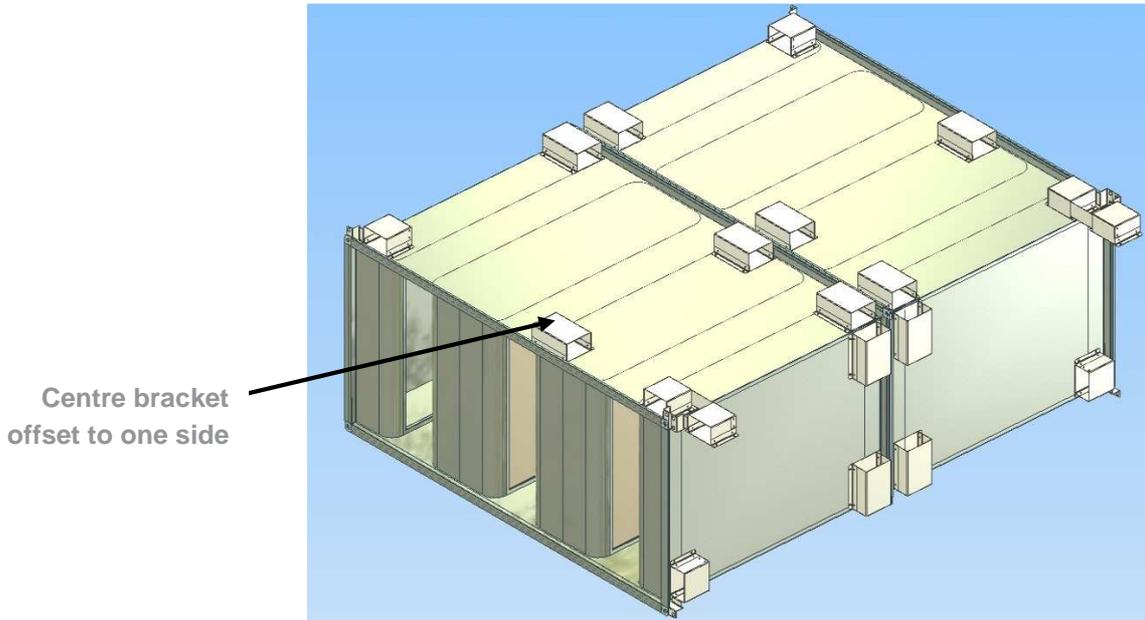
5.03 Assembly Step 3

Modules over 1500mm wide will require additional centre supports centrally positioned to prevent “sag”. Where the module contains an “odd” number of centre elements, the supports should be positioned and fixed directly above the centre splitter, thus ensuring that the TEK screw fixings do not protrude into the airways.



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Where the module contains an “even” number of centre elements, the additional centre supports may be offset slightly to one side, in a position to align vertically above the splitter nearest to the centre of the module. Again, this ensures that the TEK screw fixings do not protrude into the airways.

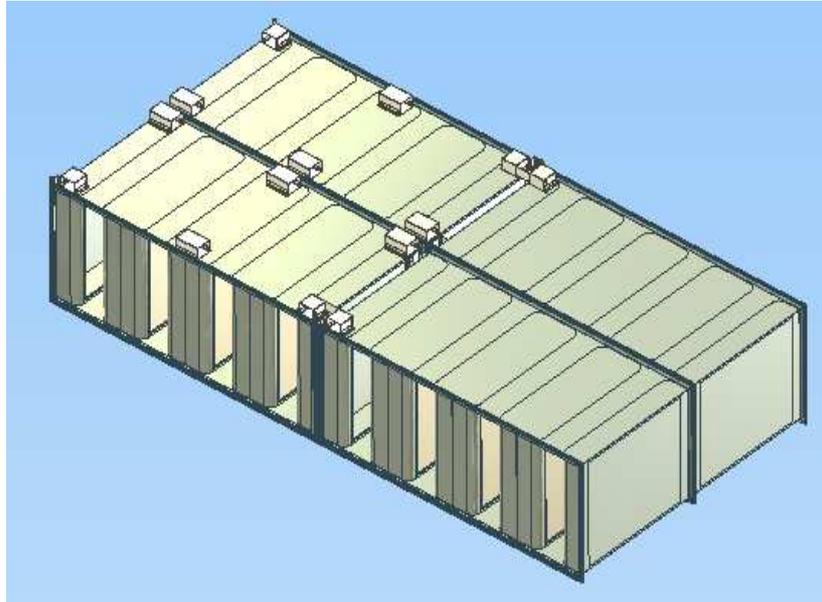


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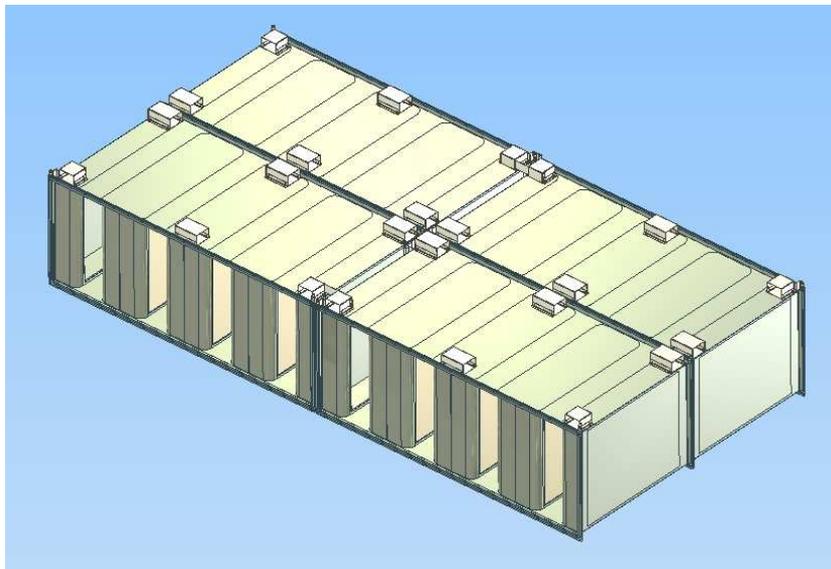
5.04 Assembly Step 4

The next set of joined cases can now be aligned next to the first set. Care should be taken not to damage the protruding centre brackets and corner brackets. Once aligned and in position, fix the second assembly to the first assembly using the supplied M8 countersunk screws in the centre brackets and corner brackets.

Use TEK screw fixings to secure the centre brackets to the second set of joined cases.



Finally, fix additional joining brackets and supports to the second module

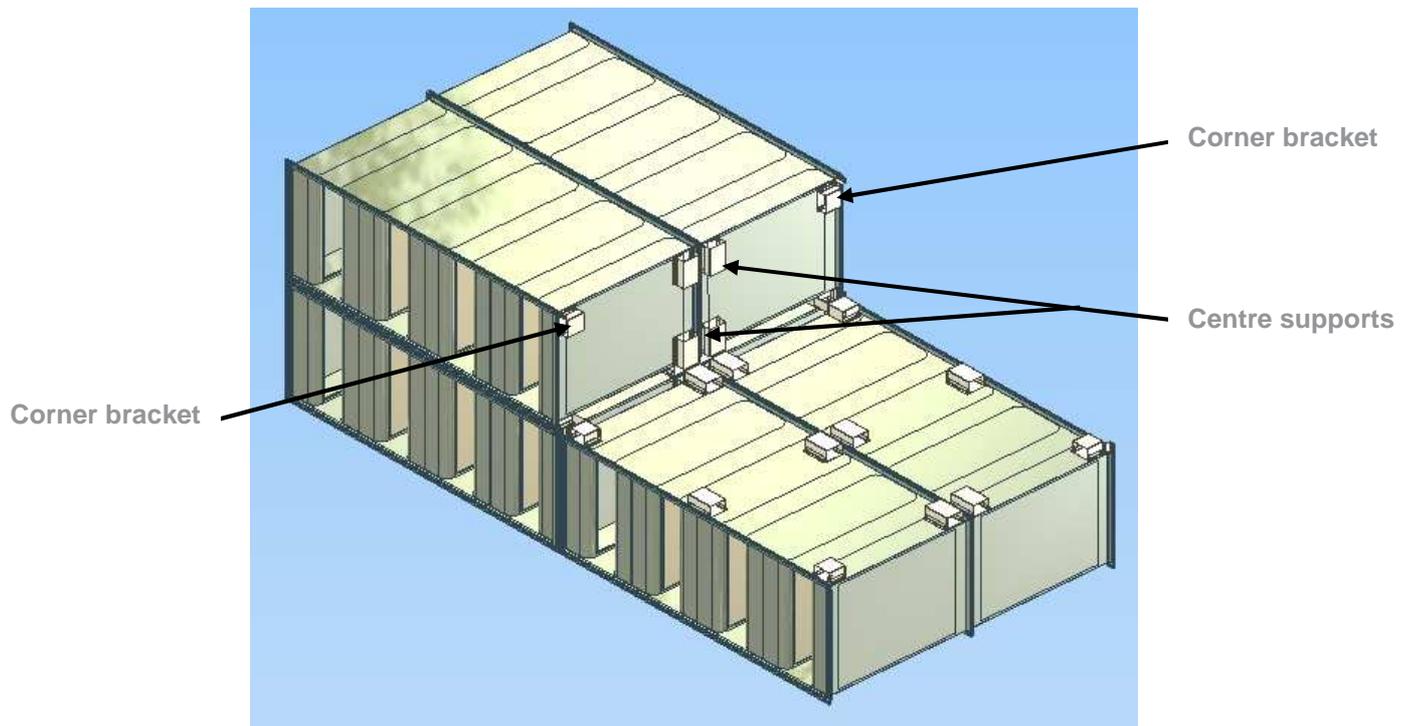


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5.05 Assembly Step 5

Lift the third set of joined cases into position and fix in place using the supplied M8 countersunk screws, which should be inserted through the flange corners and screwed into the side and centre brackets.

Fix 1 off each handed corner brackets and 4-off centre supports as shown, prior to positioning fourth and final pair of joined cases.

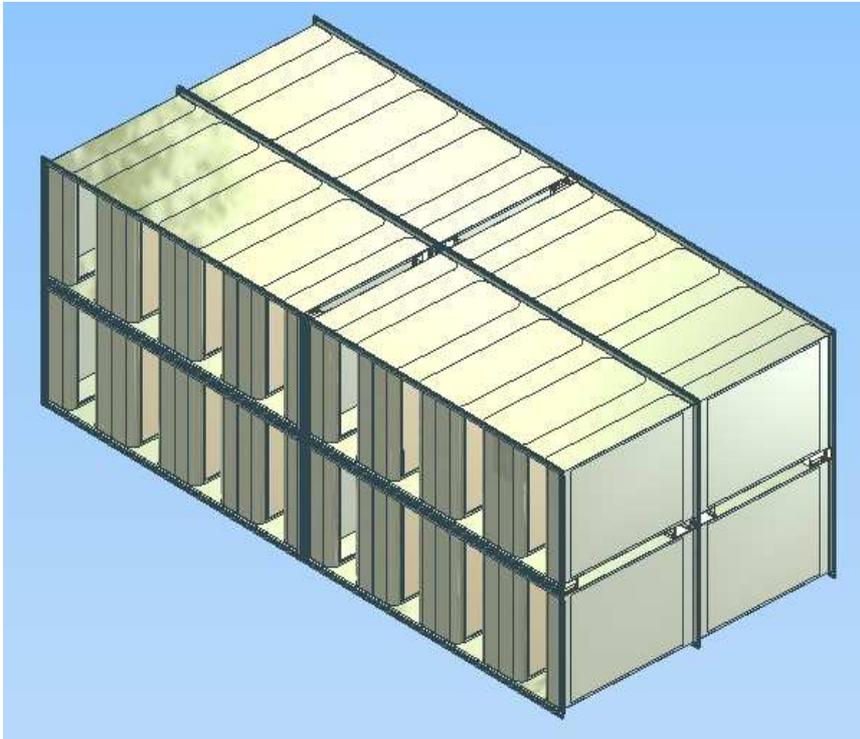


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5.06 Assembly Step 6

With the final set of joined casing lifted into position, the remaining M8 countersunk screws can be inserted.

After checking alignment of all assembled modules, all screws can now be tightened ready to fit capping channels



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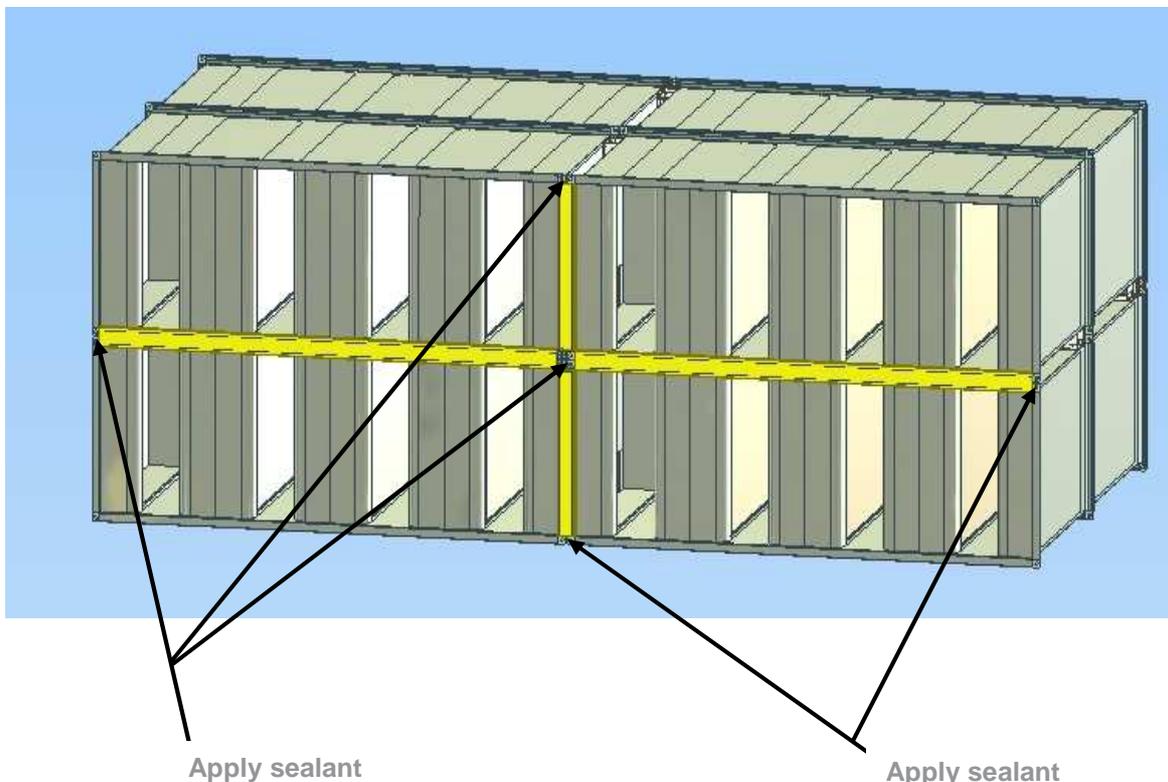
5.07 Assembly Step 7

Once the modules have been joined, the next stage is to fit capping channels over the adjacent flanges within the periphery of the assembly. This must be undertaken at both ends of the assembly.

The capping channels are provided with butyl tape on the rear. Proceed by peeling off the protective backing, position the capping channel over the flanges and then apply sufficient pressure so that the capping adheres to the flanges. However the sealant tape alone must not be relied upon as a means of permanent fixture.

Using TEK screw fixings (or other similar self-tapping fixings), screw the capping channel to the flanges. Ensure that the position of the fixing screws is such that it passes through both the capping channel and the flange behind. Fixings should be made at a maximum of 300mm centres. The sealant tape alone must not be relied upon to provide a permanent long term fix.

Additional sealant must be applied at the ends of each capping channel to ensure an airtight seal to the peripheral flange. The peripheral flange then constitutes the connection to any adjacent ductwork.



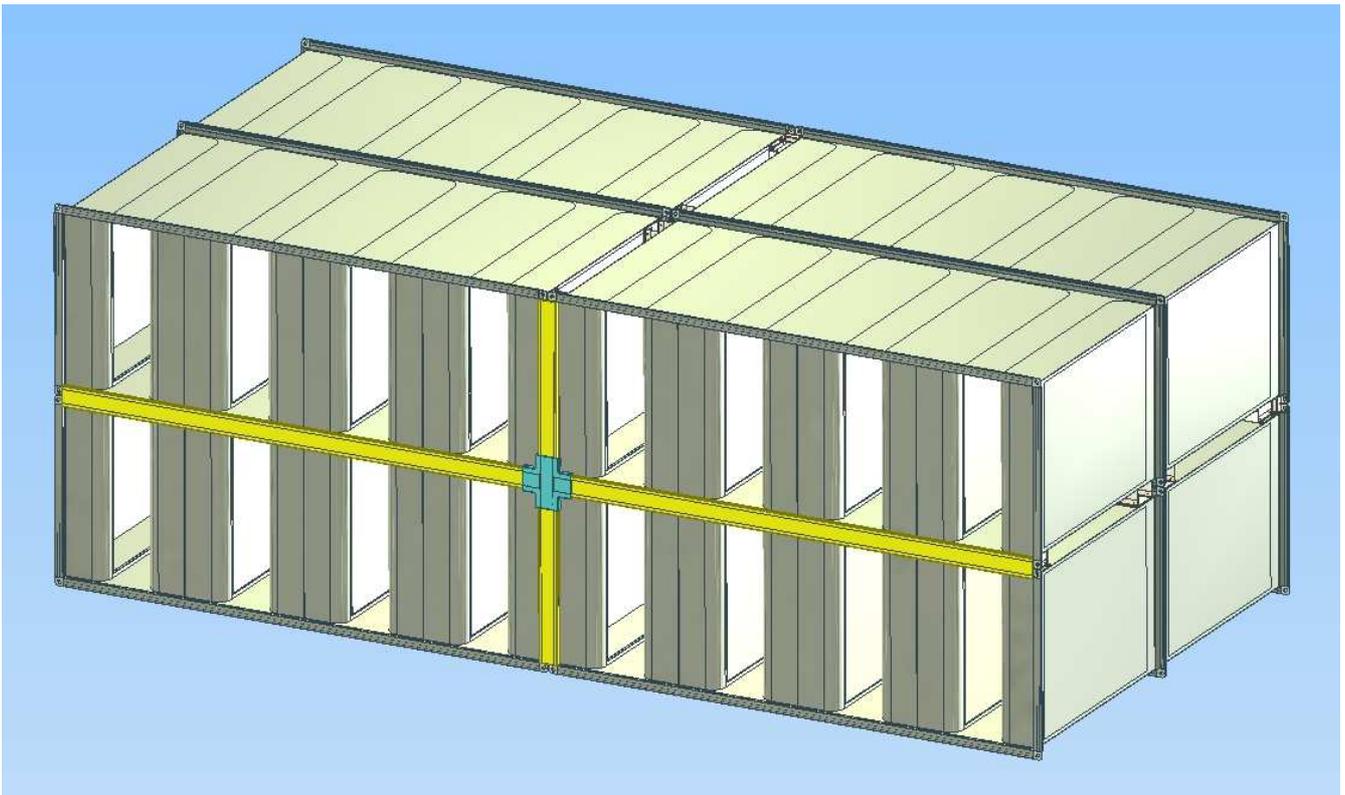
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5.08 Assembly Step 8

Once the capping channels have been fixed, centre caps need to be fixed to seal and close off the central flange joint. Again, this must be undertaken at both ends of the assembly.

The centre caps are provided with butyl tape on the rear. Proceed by peeling off the protective backing, position the centre cap such that it overlaps the horizontal and vertical capping channels, and then apply sufficient pressure so that the centre cap adheres to the capping channels.

Finally secure the centre caps into position using TEK screw fixings (or other simile self-tapping fixings). Again, this is positioned using butyl tape and fixed using suitable self-tapping or "TEK" screws

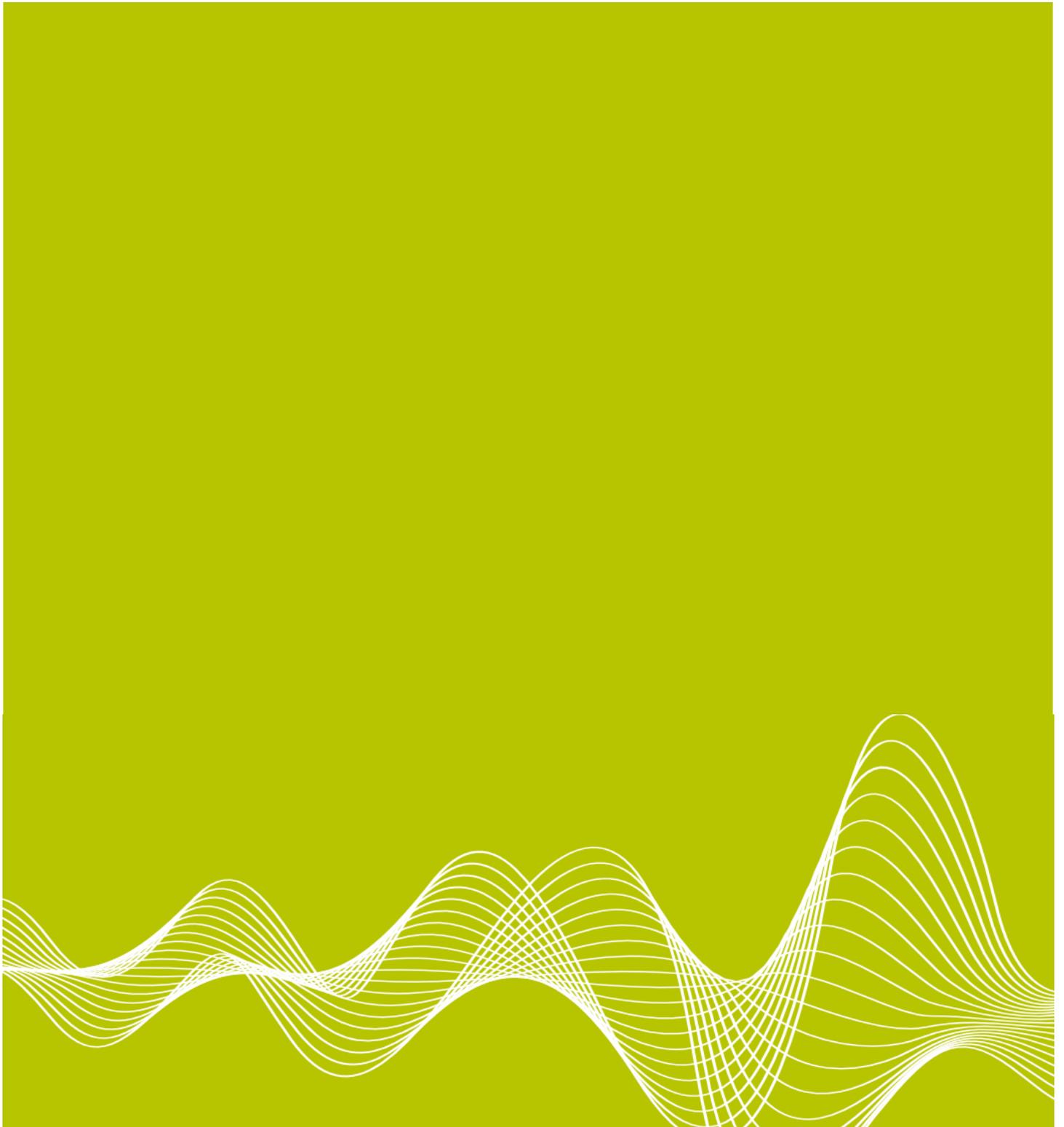


Important

It is the installer's responsibility to ensure an airtight seal for the final assembly. Appropriate additional sealing materials should be used as necessary.

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