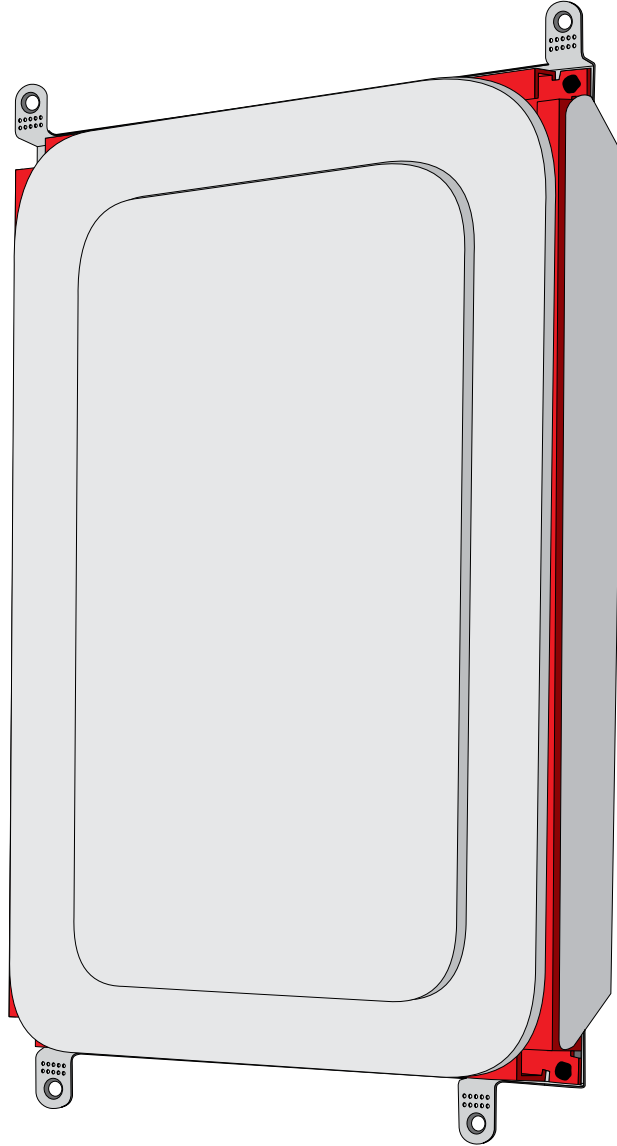


Installation Guide (dry wall method)

Amina Edge*iB*, tape & fill seam style

Invisible Loudspeakers



Compatibility

This installation guide covers installation of the Amina Edge*iB* Invisible loudspeakers when installed into walls and ceilings using dry wall construction techniques.

Other installation guides are available to download at www.aminasound.com for walls built with different construction methods.

Always choose the installation guide that matches the speaker and wall type for your installation.


THE INVISIBLE SPEAKER CO.®

Amina Edge*iB* Fully Concealed Loudspeakers

The Amina Edge*iB* series of Loudspeakers is designed to deliver best in class audio performance in fully concealed in-wall and in-ceiling applications, preserving the interior aesthetic of any space.

Featuring an integrated Backbox housing, Amina Edge*iB* products are designed for quick installation into cavity walls and ceilings of any construction type.

The Edge*iB* products feature the revolutionary Amina® ToneRelief® technology that facilitates improved bass reproduction.

Wall Construction

This installation guide describes fully the installation of the Amina Edge*iB* loudspeaker into cavity stud walls or ceilings using drywall construction techniques. This method must not be used to install Edge*iB* speakers into other wall types.

Refer to www.aminasound.com to download installation guides for installation of the Edge*iB* speaker into other wall types.

What's in the box

The following items are included with each Amina Edge*iB* loudspeaker -

- 1 x Amina Edge*iB* loudspeaker
- 2 x Mounting strips
- 8 x Countersunk head, stainless steel fixing screws.
- 1 x Quick reference installation guide with installation template
- 2 x Lever splice connectors*

*Other connectors may also be included, allowing the installer to choose a preferred connection method.

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Caution: Read before installing this product



WARNING:

No attempt should be made to install this product within existing building structures unless you are certain that no electric cables, water pipes, gas pipes or supporting joists will be cut through.



FIRE PROTECTION:

When making an intrusion into an internal wall or ceiling to install an Amina loudspeaker be sure to check the appropriate regulations pertaining to the required fire rating. Depending on the location of the intrusion and the applicable regulations it may be necessary to build in or install additional fire rated components or products to enclose the speaker and back box. Amina Technologies take no responsibility for the correct specification and installation of any such fire protection system that is required behind their loudspeakers.



SPEAKER PROTECTION:

Amina loudspeakers should be installed with an APU or other suitable electrical overload protection device. These devices help ensure the loudspeaker operates reliably for many, many years ahead, by limiting and protecting against temporary excessive audio signals that could damage the product.

Common sense should always prevail though. Your product should never be operated at repeated or consistently excessive audio levels. Never operate your Amina loudspeakers at a level where audio reproduction sounds distorted.

For the ultimate in protection, Amina recommend using the Amina A100Q digital amplifier to drive your loudspeakers. It continuously prevents unwanted and excessive electrical energy from reaching the speaker whilst allowing it to perform at its very best at all times.



METAL FRAME CEILINGS:

When installing in metal frame (MF) ceilings (& walls), please ensure the assembled metal frame is fully solid and secure and that all metal mating joints are mechanically fixed or bonded together. Metal joints that are not tightly fixed have the potential to generate spurious buzzing noises as the two free edges rub against each other when activated by the acoustic energy generated by the Amina Loudspeaker. All debris, loose screws, excess materials etc, should be removed from above ceilings to avoid unwanted rattles.

Caution: Read before installing this product

- To ensure optimal performance, please read this guide carefully and keep in a safe place for future reference.
- Install this product in a cool, dry, clean place - away from direct sunlight, cold bridges and heat sources, strong vibrational forces, chemical fumes, dust and moisture (steam).
- Do not expose this product to sudden temperature changes or locate it in an environment with high humidity. This is to prevent condensation forming inside which may cause damage to the product.

NOTE: The product can be installed in bathrooms and wet rooms (typically ceilings) as when plastered over and painted the product is situated in the dry cavity ceiling space. The above warnings apply to the conditions in that cavity space.

- Do not clean this product with chemical solvents as this may damage the finish. Use a clean, dry or damp cloth.
- Ensure that all installation mounting surfaces are able to support the weight of the product and any mounting accessories.
- After installation, avoid pushing on the wall or ceiling surface immediately in front of the speaker. Excessive excursion can crack the plaster around its perimeter and can damage the loudspeaker.
- Do not attempt to modify or repair the product. Contact your distributor or Amina if a fault should occur.
- When applying the fine surface finish over the entire speaker, ensure less than 0.5mm of material covers the product. More than this will degrade the performance of the product and could lead to product failure.

- Avoid the use of silicone sealants within the area of the loudspeaker. Sublimation of silicone will deposit a thin layer of silicone material on the panel surface, severely degrading the ability of plaster to bond to its surface.
- You will require a minimum cavity depth of 70mm behind the plasterboard for installation of a Edge*iB*.
- Prior to taping and filling the seam and applying the final, fine surface finish, wipe the front panel surface clean with a damp cloth.

Environmental

- Before installing, ensure that the building is environmentally sealed, de-humidified to a maximum of RH50%, and at a stable temperature in the range 16 to 22 degrees centigrade (61 to 72 degrees Fahrenheit).
- This product should not be used with single thick coat plaster solutions or with other finishing methods that take days (rather than hours) to dry out.
- Please be aware that when this product is directly fitted into a solid brick, block or concrete wall structure, vibrational energy is inevitably transferred into the solid wall structure. This energy can travel for some considerable distance up, down and along the structure. It is therefore recommended the product be fitted within acoustically isolated stud walls or ceiling sections where possible. The use of the product directly embedded in solid walls is not recommended in multi occupancy buildings.
- Please be aware that when this product is fitted in simple (stud or rafter with plasterboard/floorboard attached on either side) stud walls or wooden rafter ceiling/floor structures, vibrational energy is inevitably transferred into the building structure. This energy can travel for some considerable distance up, down and along the structure. It is therefore recommended the product be fitted within acoustically isolated stud walls or ceiling sections where possible. Special care should be taken when installing the product in multi occupancy buildings.
- Completed and fully dried plaster surfaces should be finished with permeable coatings / materials, to allow moisture in that coating or the adhesives used to apply those materials, to dry into the environment, rather than trap moisture in the speaker.
- During installation take care to use appropriate and suitable joint filling compounds to fill the gap between speaker and the surrounding surface. This gap should be no less than 2mm and no more than 5mm in width. Inappropriate compounds used in such a joint can shrink and crack excessively and lose strength. Allow the joint to dry thoroughly before applying surface skim coats, as shrinking in the joint depth whilst drying could create a very slight embossed outline in the finished and decorated surface.
NOTE: The joint may take several days to dry fully.
- As a general rule in the construction industry, any drying process should be gradual rather than forced with excessive heat otherwise materials can lose strength and can crack.
- Amina Technologies take no responsibility for inappropriate use of materials and environmental conditions under which they are applied.

Sound in your home

Amina products are widely applied in whole house audio systems and multichannel home cinemas to create the very best entertainment source whilst not impinging on the design of your home.

Never imagine though that sound reproduction is isolated to one room only and will not be heard elsewhere in the home. Sound from any audio source (a person talking, a conventional speaker, a TV or an Amina speaker) will transfer in air through open doors, ventilation structures, gaps under doors etc, to other areas of the house. Sound will also pass mechanically through the structure of the building (a good example is the central heating boiler. Most homeowners know exactly when it is on!) to other areas quite some distance away.

Whole house/multi-room audio systems are designed to give you the very best audio experience in the space/room you might occupy at any one moment. This does not mean to say that occupiers of other rooms will not hear some of that sound at the same time. They are more than likely to experience it in some lesser level and lesser quality than the intended room.

Please remember therefore that it is not always possible to enjoy the full capabilities of your audio system when other members of the household want to remain undisturbed.

Sound in your work or leisure environment

Amina products are widely applied in prestigious retail, hotel, board room, restaurant, office, spa and other leisure facilities.

The Amina Active Sound Board technology creates an incredibly even level of sound across an entire space.

This creates an entertaining yet naturally comfortable sound field for users and occupiers.

At the same time the physical embodiment of the speaker is totally unobtrusive, allowing interior designers complete freedom from technology.

Message from the Managing Director

Congratulations and thank you for purchasing an Amina Technologies high performance invisible loudspeaker.

At Amina we are proud of being at the forefront of flat panel Active Sound Board loudspeaker technology. All the components that make up your loudspeaker have been developed specifically to provide the ultimate in sound quality and reliability, whilst allowing you to decorate, furnish and enjoy your home in any way you wish without any visible 'clutter' created by your audio system.

At the heart of an Amina loudspeaker is our high performance acoustic panel driver, featuring a unique high power neodymium magnet motor system. This enables the product to provide high quality, high loudness levels from such a compact design. Please take a moment to read this guide which will help you achieve the best possible performance from your product.

Thank you and enjoy listening.

Richard Newlove

Founder - Amina Technologies Ltd

About the Manufacturer

Amina Technologies Ltd is the world's leading designer and manufacturer of truly invisible loudspeaker solutions. Our flat panel loudspeakers have been used in a wide range of both commercial and residential applications for over twenty years.

Luxurious hotels & spas, exclusive retail outlets and stunning private residences have all benefitted from using Amina invisible loudspeakers, not only for its' incredible aesthetic quality, but for its' absolute ability to reproduce sensationally clear audio across any space. Amina has created the very best discrete audio solution for architects, interior designers and design conscious clients.

See our website for more details about Amina and a selection of prestigious projects completed using our products.

Introduction

Thank you for purchasing Amina Edge*iB* series invisible loudspeakers. Properly installed, these loudspeakers will provide high quality sound for many years, even decades, to come.

Installation options

Installation is simple, but should only be attempted by professional building trades with plastering experience and who have completed an Amina installation training course.

Please read the instructions carefully, particularly the Installation section.

Unpacking

Check that your carton contains the correct number of items and accessories.

Retain this Installation Guide. If you pass the unit on to a third party make sure you pass on the Installation Guide.



Ensure that the Amina Edge*iB* is mounted using the stainless steel screws provided to avoid screw head rusting causing marks in the wet plaster.

Packaging



CAUTION:

Take care when removing the loudspeakers from the carton.

The packaging for Amina Edge*iB* loudspeakers has been carefully designed to protect the product during transit. Please retain it in the unlikely event you need to return the product to your dealer or to Amina. Please recycle the packaging should you wish to dispose of it.

The outer carton is made up of 80% recycled board.

Compatibility

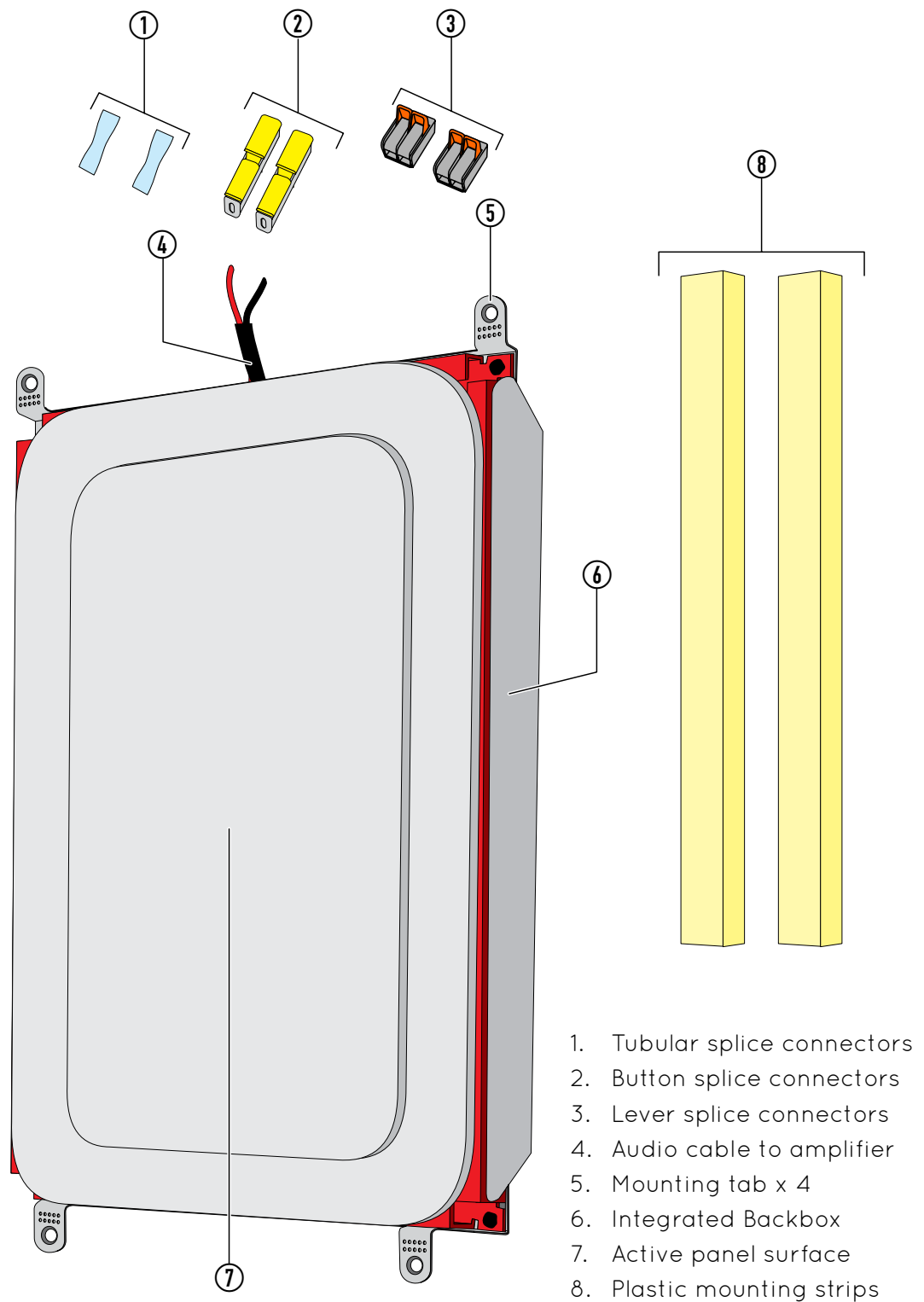
This installation guide covers installation of the Amina Edge*iB* range of Invisible loudspeakers into cavity walls and ceilings of drywall construction.

Other installation guides are available at www.aminasound.com for installing Edge*iB* series loudspeakers into walls built with the following construction methods -

- New plasterboard which will receive a full plaster skim coat.

Always choose the installation guide that matches the speaker and wall type for your installation.

Overview



The EdgeiB speaker is supplied with three connector options for the speaker wiring.

- Conventional tubular splices that require a crimp tool for fitting (non-removable).
- Button splices that require a pair of large pliers for fitting (non-removable).
- Lever splices that may be fitted by finger pressure alone (removable).

All three connectors are reliable. Choose the connector that best suits your installation.

Setup tips

APU protection

Amina loudspeakers must be used with an APU protection device or another protection device, approved by Amina. Please refer to the instructions supplied with the APU devices and full warranty information for further details.

Alternatively, use the Amina A100Q amplifier for the best protection and acoustic performance.

Wall or Ceiling Placement

Amina loudspeakers are suitable for both wall and ceiling installations. When the most uniform audio coverage in a room is required, space the loudspeakers evenly in the ceiling. However, if the room has a height greater than 4m (13'), Amina suggests installing them in the walls at a height of around 1.8m (6').

In dedicated listening rooms where loudspeakers are used in stereo or multi channel systems, position them in the walls so that the centre point of the speaker is approximately 1 – 1.8m (3.5 - 6') from the floor. This will give excellent results, but don't worry, if this is not possible to achieve in your room, the audio characteristics of Amina loudspeakers make exact positioning according to stereo, 5.1 and 7.1 conventions far less critical.

Audio Characteristics

Amina loudspeakers generate sound in a similar way to an acoustic musical instrument. The speaker's front face is effectively the "musical" soundboard and the sound waves generated from it are diffuse and are dispersed over a very wide angle. This means that loudspeaker positioning is far less critical than with conventional loudspeakers. Additionally, just like the acoustic musical instrument, Amina loudspeakers have excellent room filling abilities.

Amina loudspeakers are planar devices and this feature is further enhanced when flush mounted into your wall or ceiling. Being planar (or flat) means that the audio's arrival time to the listener is the same for all frequencies, i.e. there is very little phase distortion. Therefore Amina loudspeakers (and other planar devices such as electrostatic loudspeakers) can reproduce subtle nuances on a recording with incredible accuracy.

In addition to the above characteristics, the radiating surface of an Amina speaker is very stiff and undergoes very small amounts of movement in order to generate high sound pressure levels. This means that the loudspeakers are inherently "fast" making them highly articulate loudspeakers.

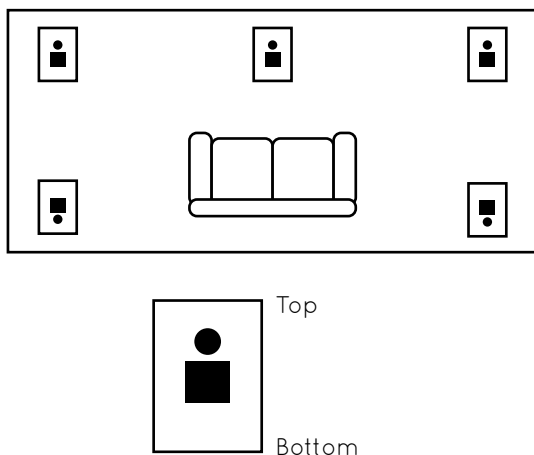
Setup tips

Speaker Orientation

Amina loudspeakers can be installed either in portrait or landscape orientations. Typically the spacing between wall joists will dictate portrait orientation and Amina have optimised the dispersion characteristics for this setup. Therefore when installing into walls Amina suggest portrait orientation for best sound quality.

For non-critical listening in ceiling installations the orientation of the speaker is not crucial.

For critical listening in ceilings, e.g. a 5.1 surround system, ensure that the orientation of all loudspeakers are the same relative to the main listening position and position the top of the speaker closer to the wall/ceiling boundary.



Boundary Loading

It is possible to increase the low frequency output of Amina loudspeakers by positioning them close (50mm - 150mm) to the corners of a room. This can be useful when no additional subwoofer (e.g. ALF80 or ALF120) is used.

System Requirements

From a system compatibility point of view your speaker (and it's accompanying APU protection unit) can be treated like any conventional low impedance (4-8 ohm) loudspeaker. Amina recommends you use a good quality amplifier so as to avoid driving them with high levels of distortion, which at best, will provide poor sound quality and at worst may permanently damage the loudspeaker.

The cable connectors supplied with the Edge/B speaker require 14 - 16AWG cable. Amina recommends you connect your loudspeakers to your amplifier with 16AWG OFC (oxygen free) cable or 14AWG for runs over 10m to avoid any chance of reduced efficiency and restricted audio bandwidth.

For 2.1, 5.1, 7.1 and other multi-channel systems, always use the amplifier's crossover settings to divert frequencies below 100Hz to your subwoofer. This will improve the dynamic range and power handling of the system. (APU devices should still be used).

IMPORTANT: Amina loudspeakers are highly revealing of any shortcomings in the source or amplifier. Please be aware that some low cost zone amplifiers will produce high amounts of distortion well within their operating range and this will be ruthlessly revealed by Amina loudspeakers.

Sound Transmission

As with any speaker designed to be fixed to a structure within a wall or ceiling, careful consideration should be given to sound transmission into adjacent rooms or properties. We recommend specialist advice is taken if sound transmission into adjacent rooms needs to be minimised. Please talk to the Amina technical team for advice on reducing sound transmission as a starting point.

100/70V Option

For multi-speaker commercial installations, please contact Amina for their range of invisible loudspeakers supplied with 100V or 70V line transformers fitted.

Installation

IMPORTANT: Read this section carefully before attempting to install an Amina Edge*iB* loudspeaker.

To avoid any possible damage to Amina invisible loudspeakers they must be connected using the correct accessories, supplied by Amina. The tables to follow list these accessories.

Speaker protectors

Amina APU series speaker protectors are specifically designed to work with Amina invisible loudspeakers. They provide essential safe operating functions and include protection elements that constantly monitor the power fed to the speaker keeping it within safe limits should the need arise.

An Amina speaker protector should be wired in-line with each Amina speaker, preferably in an accessible place, allowing this device to be replaced as necessary.



APU devices are designed to work with a single speaker. Never connect more than one speaker onto a single APU protection device.

However, common sense should always prevail. Your product should never be operated at repeated or consistently high audio levels. Never operate your Amina speaker at a level where audio reproduction appears distorted.

For the ultimate in protection and performance, use the Amina A100Q multi-channel amplifier, with in-built digital protection circuitry.

Refer to the table on the next page for more detail of protection options for short to medium periods of time.

Installation

Speaker protectors

There are four types of protector.

Type	Application	Image
APU-RS8iC	Flexible 8 channel high pass filter and protection unit in a 1U case for optional rack mounting. Internal jumper settings provide protection for installations of up to 8 Amina Edge <i>iB</i> loudspeakers of any type.	
APU-RS16iC	16 channel high pass filter and protection unit in a single 1U case. Internal jumper settings provide protection for up to 16 Amina Edge <i>iB</i> loudspeakers of any type.	
APUiC	Single channel high pass filter and protection for wiring in-line with each Amina speaker. APUiC crossovers are available in different versions and must be ordered to match the speaker being installed.	
A100Q amplifier Ultimate speaker protection	Absolute protection of a loudspeaker is possible by sensing and controlling output voltages within the amplifier driving that loudspeaker. The Amina A100Q amplifier integrates clean and powerful amplification (4 channels at 100W each) with sophisticated digital sensing and control technology to deliver the ultimate protection for your Amina invisible speaker. It both prevents excessive audio signals from ever reaching the speakers whilst allowing them to perform at their absolute peak at all times. This is achieved thanks to some clever internal digital signal processing software that knows exactly how to get the best from each speaker.	

Installation

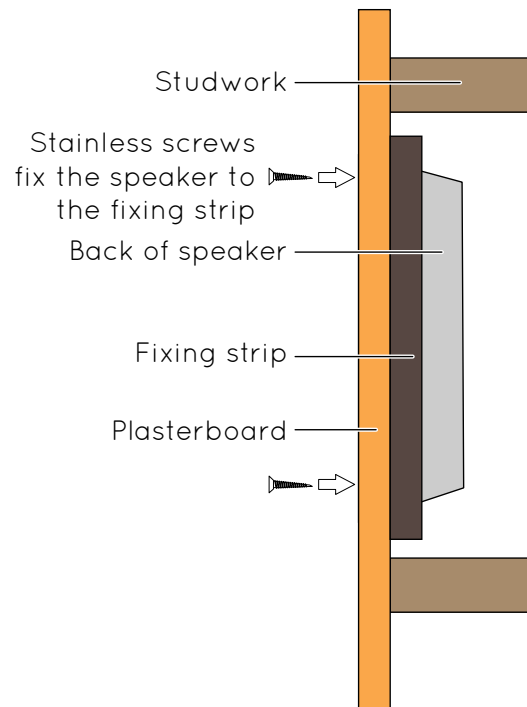
Cutting the opening for the speaker



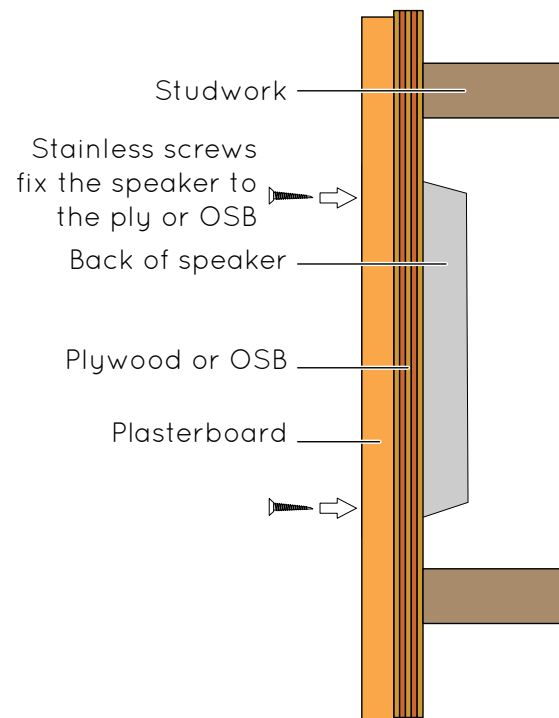
IMPORTANT:

The Edge*iB* must be fixed to the plasterboard only, using the supplied mounting strips or suitable alternatives. It can also be attached through the plasterboard into stud work or other supporting structures.

Top view of plasterboard wall



Top view of plasterboard wall backed with plywood



If your wall or ceiling structure involve a timber layer (ply or OSB) as shown, no mounting strips will be necessary.

Simply screw through the plasterboard and into the timber layer.

Installation

Cutting the opening for the speaker

Locating joist work

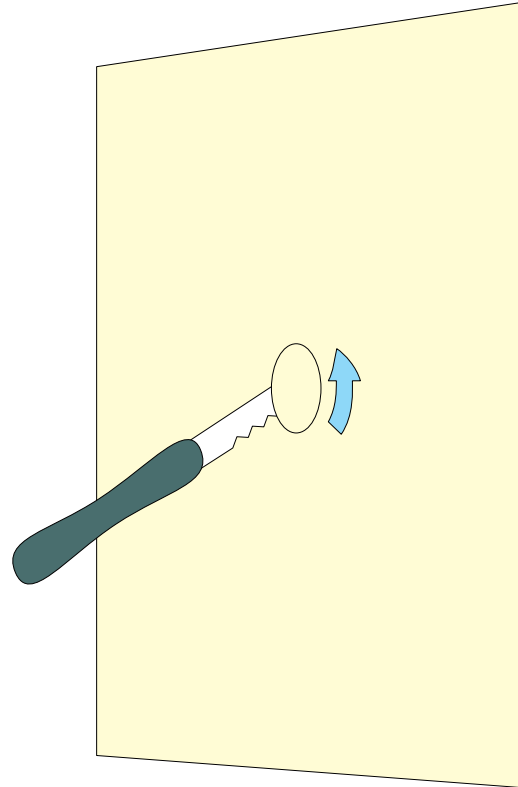
When you have chosen your speaker locations, and before cutting into the plasterboard, it is important that you locate the position of the wall studs.

Ensure the spacing between them is at least 5mm greater than the width of the Edge*iB* speaker.

The following method is highly recommended to measure the distance between the joists.

Check the width between the joists

Using a padsaw or sharp knife, cut an opening in the centre of the area where the speaker will mount.



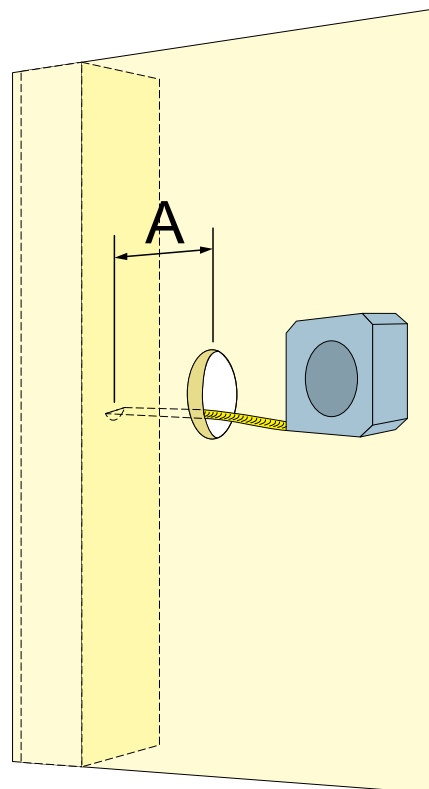
Installation

Cutting the opening for the speaker

Check the width between the joists

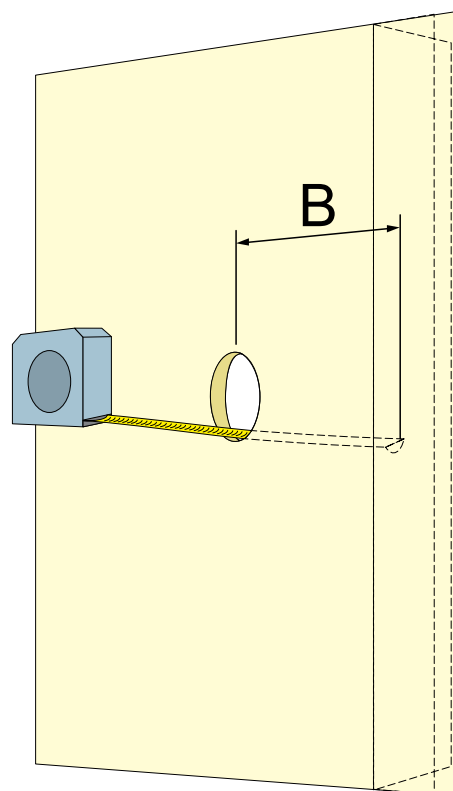
Measure from the centre of the opening to the joist on the left (A in the top image) and the joist on the right (B in the bottom image).

From these measurements you can establish the width and centre of the space between the joists.



Check that the total distance $A + B$ is greater than the dimension in the table to allow clearance for the speaker you are installing.

Speaker	Distance A+B
Edge7iB	355mm (14")
Edge5iB	355mm (14")
Edge3B	310mm (12 ³ / ₁₆ ")
Edge1iB	210mm (8 ¹ / ₄ ")



Installation

Cutting the opening for the speaker

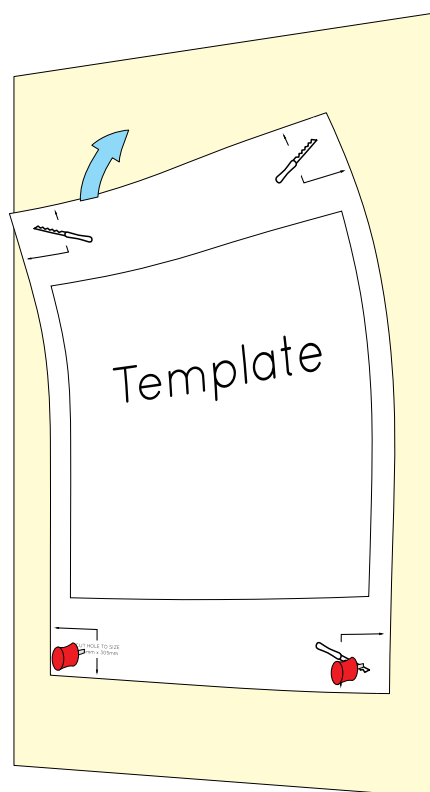


CAUTION:

We strongly advise that joists are not cut to make space for the speaker. Any activity of this sort may well influence the structural integrity of your property.

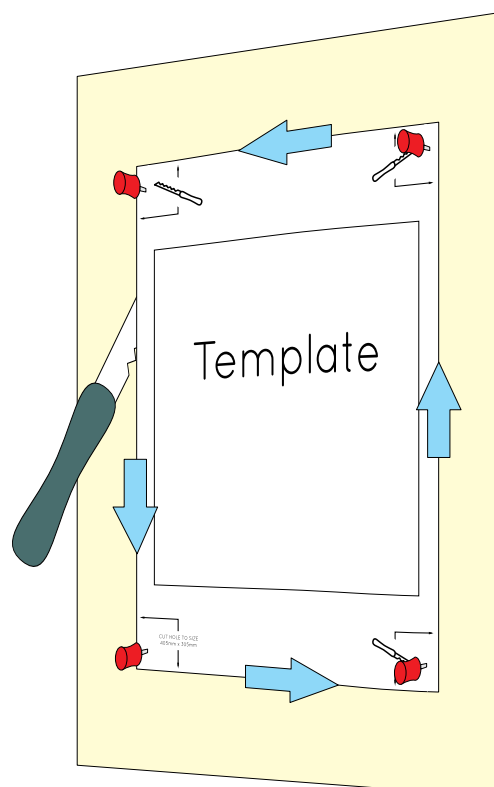
Fix the template to the wall

The speaker is supplied with a template. Tape or pin the template to the wall in the space between the joists.



Cut around the template

Neatly cut around the mark on the template using a knife or padsaw.



Installation

Cutting the opening for the speaker

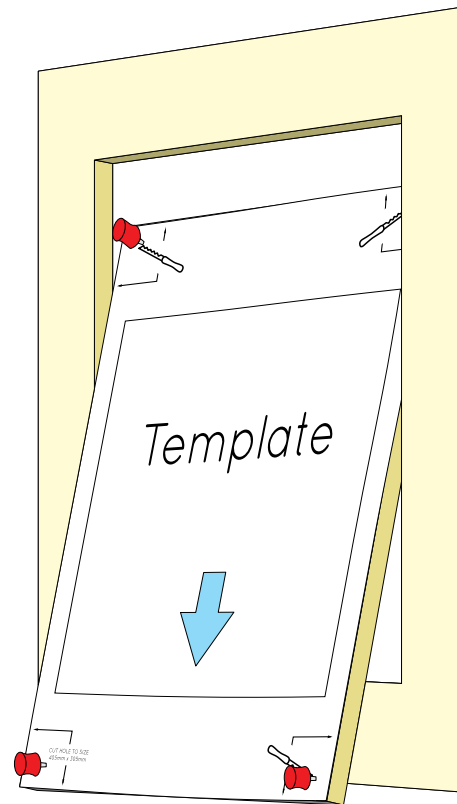
Remove the cut section

Lift out the cut section of the wall.

Check the size of the opening.

This should measure -

Speaker	Opening size
Edge7iB	456mm x 355mm (18" x 14")
Edge5iB	456mm x 355mm (18" x 14")
Edge3B	406mm x 310mm (16" x 12 ³ / ₁₆ ")
Edge1iB	456mm x 210mm (18" x 8 ¹ / ₄ ")



Installation

Mounting the speaker

Fitting the mounting strips

The Edge*iB* is supplied with two plastic mounting strips. These are for use if you do not have a ply or OSB backing sheet behind your plasterboard. The strips are secured behind the upper and lower edges of the opening cut for the speaker. The mounting screws for the speaker will fasten into these.

- Mark the position for two screws, centred and spaced by approximately 100mm (4") above the opening to fix the upper mounting strip as shown in the image.
- Hold one of the mounting strips in position behind the upper edge of the opening.
- Secure it in place. Regular plasterboard screws are suitable for fixing the strips.

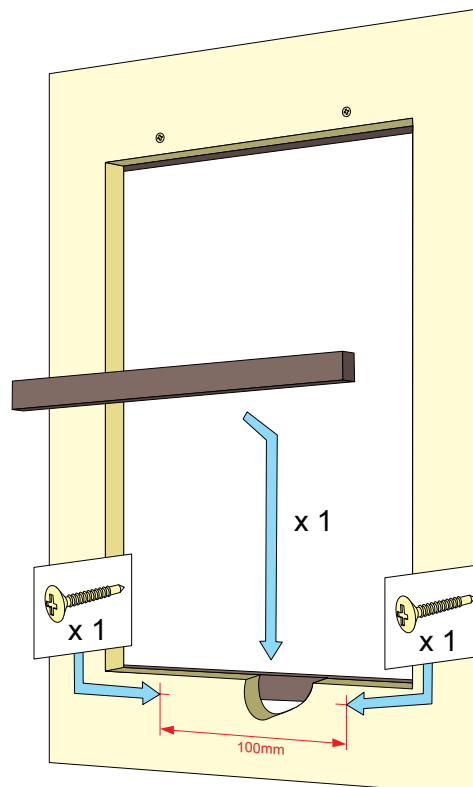
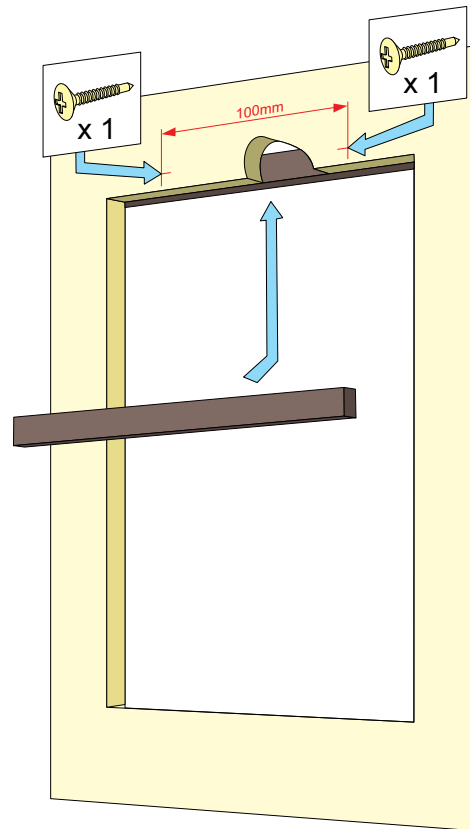


CAUTION:

Tighten the screws into the plastic mounting strips by hand to avoid stripping through the plastic.

NOTE: The screws supplied with the speaker are stainless steel and should be used to secure the speaker. Surplus stainless steel screws can also be used to secure the mounting strips.

- Mark the position for a screw, centred and spaced by approximately 100mm (4") below the opening to fix the lower mounting strip as shown in the image.
- Hold the remaining mounting strip in position behind the lower edge of the opening.
- Secure it in place with two screws.



Installation

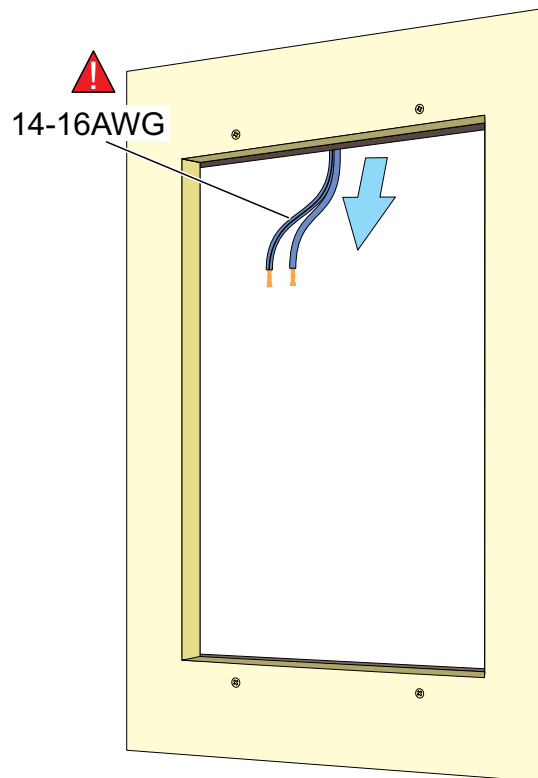
Preparation for speaker fitting

Prepare the cable

Prepare the cable running from the amplifier to the opening where the speaker will fit.

NOTE: Cable gauge must be either 14AWG or 16AWG to ensure compatibility with the connector splices provided with the loudspeaker. Alternatively, you will need to source a suitable connector for your cable diameter.

14AWG is advised for longer cable runs.



Installation

Connecting the speaker

Splice options

Amina Edge*iB* speakers may be supplied with a choice of different connector options to join the cable from the amplifier to the speaker wires.

The instructions on this page show connection using lever splices. If you prefer to use other types of splice, refer to the leaflet supplied with the splices.

Prepare the wires

- Strip the insulation from the ends of the cable and speaker wires and twist the strands together.
- Identify the polarity of your cable. This will be indicated by a stripe or rib to indicate the positive wire.

Connecting the positive wires

The positive wire will connect to the red wire from the speaker.

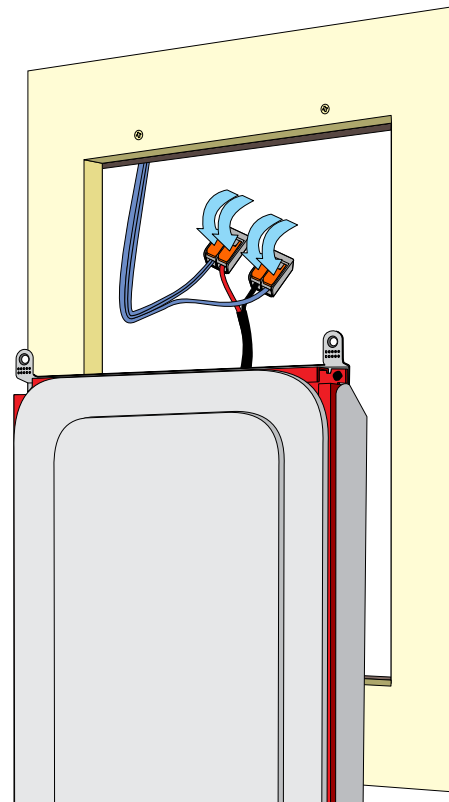
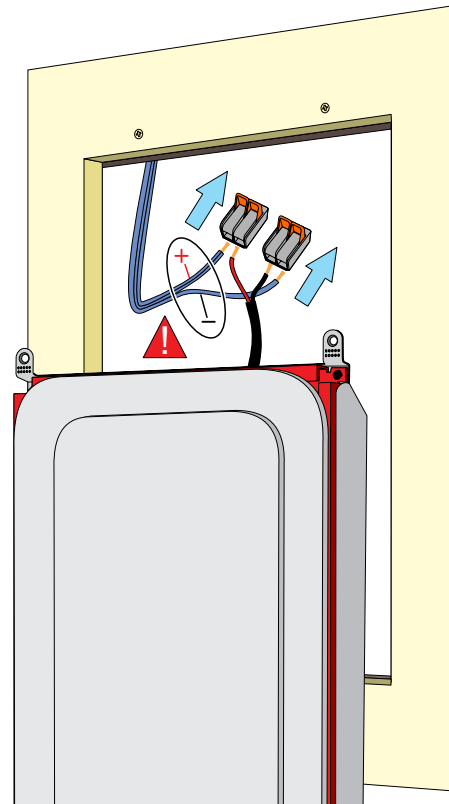
- Feed the positive wire from your cable and the red wire from the speaker into one of the lever splices as shown.
- Push the wires fully into one of the lever splices.

Secure the positive wires

- Press down the latches on the lever splice to lock the positive wires in place.

Connecting the negative wires

- Repeat the last two steps to connect the negative wire from your cable to the black speaker wire using the second lever splice.
- Check that all wires are securely retained in the splices.



Installation

Fitting the speaker

Fit the speaker into the wall/ceiling

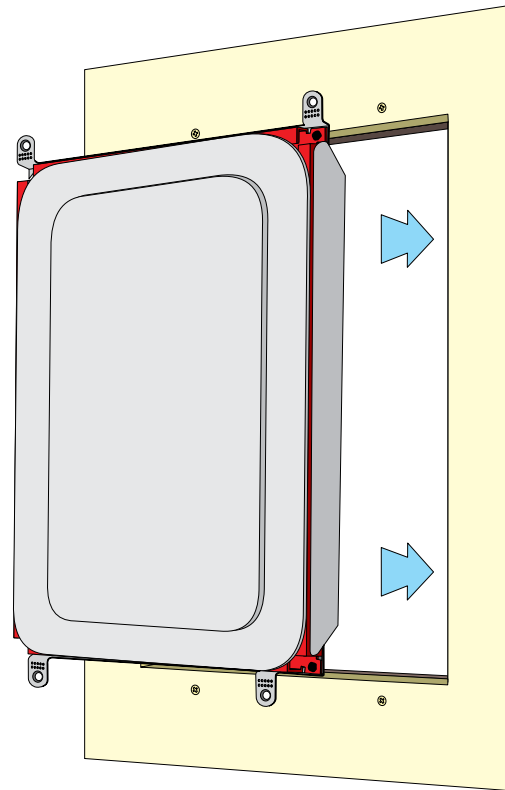


CAUTION:

Before fitting the speaker, check the routing of your speaker cable. The cable and connector block should be positioned clear of the speaker back box.

It may be necessary to prevent the cable and connector from touching the backbox by using soft wadding or insulation material.

- Secure the cable to an adjacent joist if necessary.
- Fit the speaker into the opening.



Installation

Fitting the speaker

Fix the speaker in place

The speaker fixings penetrate through the plasterboard and into the ply sheet or the mounting strips behind the opening.

- Secure the speaker in place with the four stainless steel, countersunk screws (supplied).

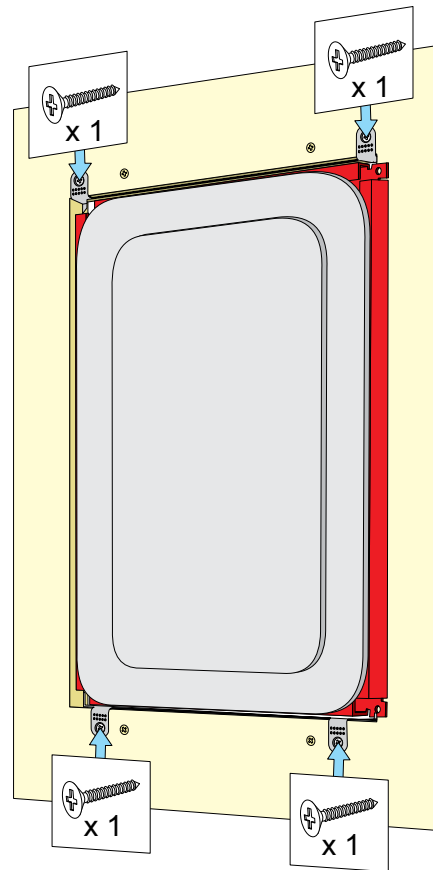


CAUTION:

Ensure that the screws remain perpendicular to the wall as they are driven in.

Tighten the screw sufficiently to pull the countersunk section of the fixing tabs into the plasterboard or plaster surface of the wall/ceiling. Ensure that the rear of the tab sits fully down onto the surface of the plasterboard and the screw head sits below the top surface of the tab.

It is recommended that screws are tightened by hand to avoid stripping the rear ????????



Check the screw fixings

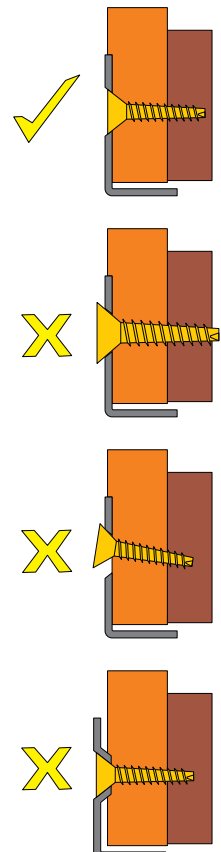
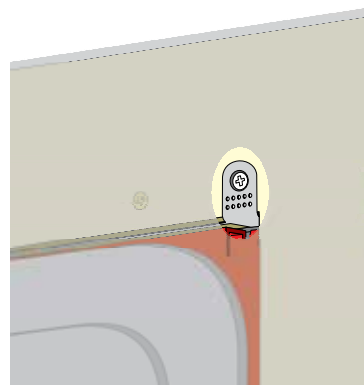
- Check that the screw heads are fully located into the recesses in the fixing tabs.



CAUTION:

If the screws used to fix the speaker are too large or screwed into the wall at a slight angle, this may cause the screw head to protrude.

If you find that the screw heads are protruding or that the tab is not fully seated to the surface of the wall, rectify the problem before proceeding. A protruding screw or tab may show through the final skim coat when the installation is finished.



Testing

Testing the speaker

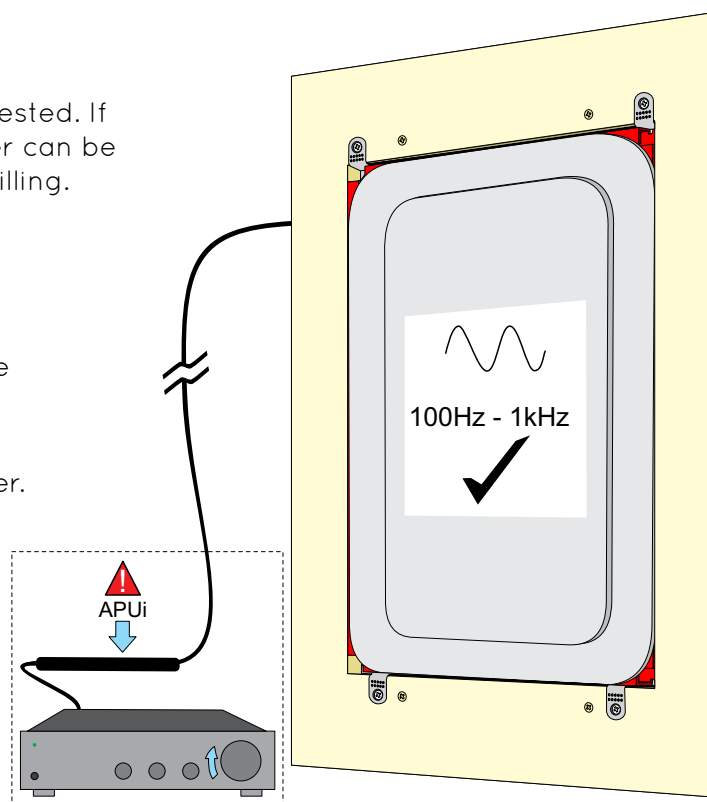
At this stage the speaker must be tested. If any problems are found the speaker can be easily removed before taping and filling.



CAUTION:

Do not use a battery or DC voltage supply to check continuity or phase as there is no forward or backward movement of the panel.

DC voltage can damage the speaker.



Resistance test

Using a multimeter and without the APU protection device connected, check the nominal impedance (DC resistance) of the speaker at the amplifier end of the speaker cable.

Allowing for approx. +10% for cable resistance, the measured impedance should coincide with the values on the respective loudspeaker datasheets.

If it measures significantly differently, check for breaks or shorts in your cable.



CAUTION:

Connect the APU protection device

Once the resistance test is successfully completed, connect the APU protection unit at the amplifier end of the cable before proceeding with further tests.

Sweep test

Amina recommends a tone sweep be used at a moderate volume level (0.5 Vrms). Such a test will quickly highlight any buzzes or rattles that could be caused by loose screws, cables touching the speaker or loose elements/studs within the wall/ceiling itself.

NOTE: A tone sweep test must be run initially as it is the most reliable test for buzz and rattle. Music tests are useful, optional tests for final confirmation.

Music test

Play music to check for buzzes and rattles during transient peaks: if these are apparent, check the above points again. The overall speaker performance must be clean and distortion free.

Problems during test

If the tests reveal any rattles or buzzes, refer to the next section for help to find the cause.

Testing

Problems during test

If you encounter any rattling or buzzing problems during test, check the following section to resolve these issues.



CAUTION:

Never proceed with plastering until the speaker has passed both sweep and music tests.

The following list may help you trace the cause of any rattling or buzzing problems.

Insecure drywall

If the drywall is not securely fastened to the joists, this could create a buzz or a rattle. Apply more screws to secure the drywall if necessary - particularly around the speaker location.

Metal studs

If metal studs are used, ensure all crossover points within the studs are secured together. This can be achieved by applying drywall screws through the wall surface and through the metal crossover points.

If they are not secure this may well lead to audible vibrations and rattles.

Cable buzzing

Ensure that the speaker cable is not touching any part of the speaker as this can lead to buzzes and rattles. To avoid this it is advised to lay the cable behind mineral wool, recycled cotton or other wadding.

Lighting fixtures

Ensure lighting fixtures, especially those closer to the loudspeakers are of a solid construction and are firmly fixed in place.

Finishing

Preparing the speaker for plastering

Filling the perimeter

- Before proceeding, check that the gap around the speaker is approximately 2mm all the way around.
- Fill the gap with joint filler to bond the edge of the panel to the edge of the plasterboard.



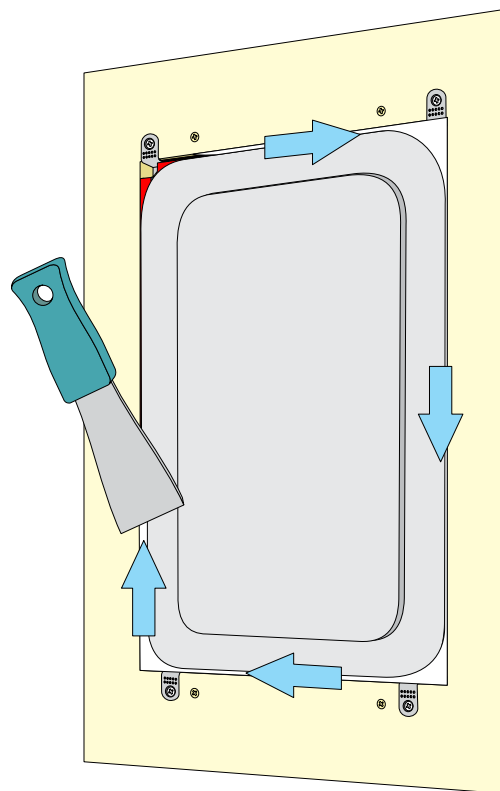
The joint filler should significantly penetrate the edge gap.

- Wipe away filler from the panel surface.

Use a low shrinkage repair plaster such as British Gypsum Gyproc-Joint-Filler or other similar joint compound.

Allow the joint to dry thoroughly before proceeding, as shrinking over the joint depth whilst drying could create a slight embossed outline in the finished and decorated surface.

NOTE: The joint may take some days to dry fully.



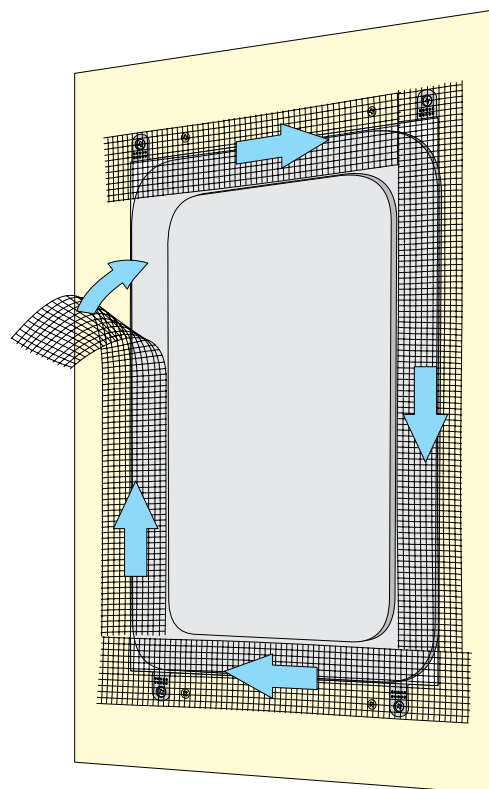
Taping the seam

Using 50mm (2") plaster jointing scrim tape, tape across the perimeter of the speaker frame as shown.

Prior to taping, wipe the surface clean with a damp cloth and allow to dry.

Scrim tape is preferred, but paper tape can also be used. Use usual methods to apply paper tape (wetted if necessary and set into wet joint compound).

NOTE: Place the joint scrim as close to the raised front surface of the speaker as possible.



Finishing

Plastering

Filling the seam

Use joint filler to fill the zone between the raised section of the speaker and the edge of the new plaster.



CAUTION:

Never proceed with filling until the speaker has passed both sweep and music tests.

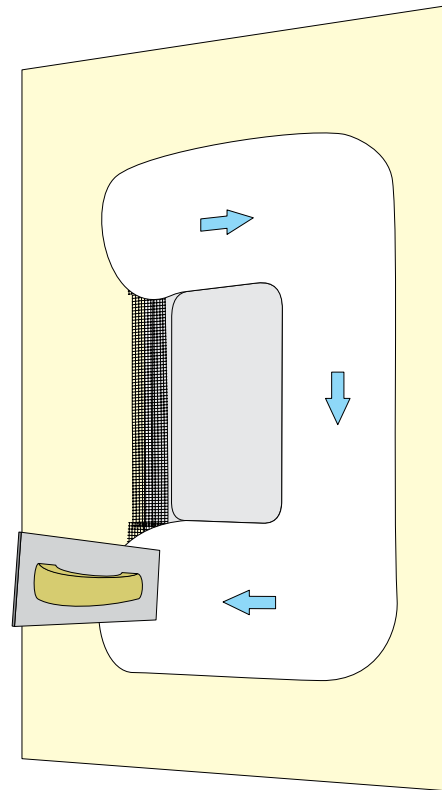


CAUTION:

The working environment must be dry enough to allow the plaster finish coat to dry within hours, not days.

Allow the filler to dry fully.

Sand flat as required.

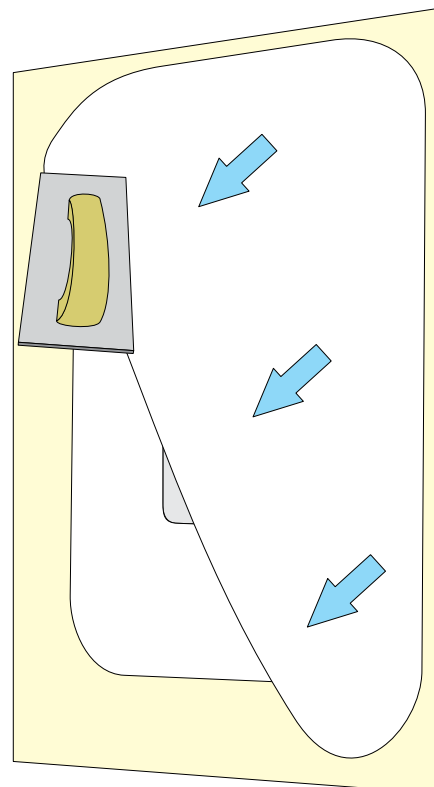


Fine surface finishing (optional)

To finish the installation, a very light coat of fine surface filler, less than 0.5mm (1/64") may be used over the entire front surface of the speaker to blend the panel appearance with the surrounding plaster.

Amina recommend using Toupret® ready mixed fine surface filler.

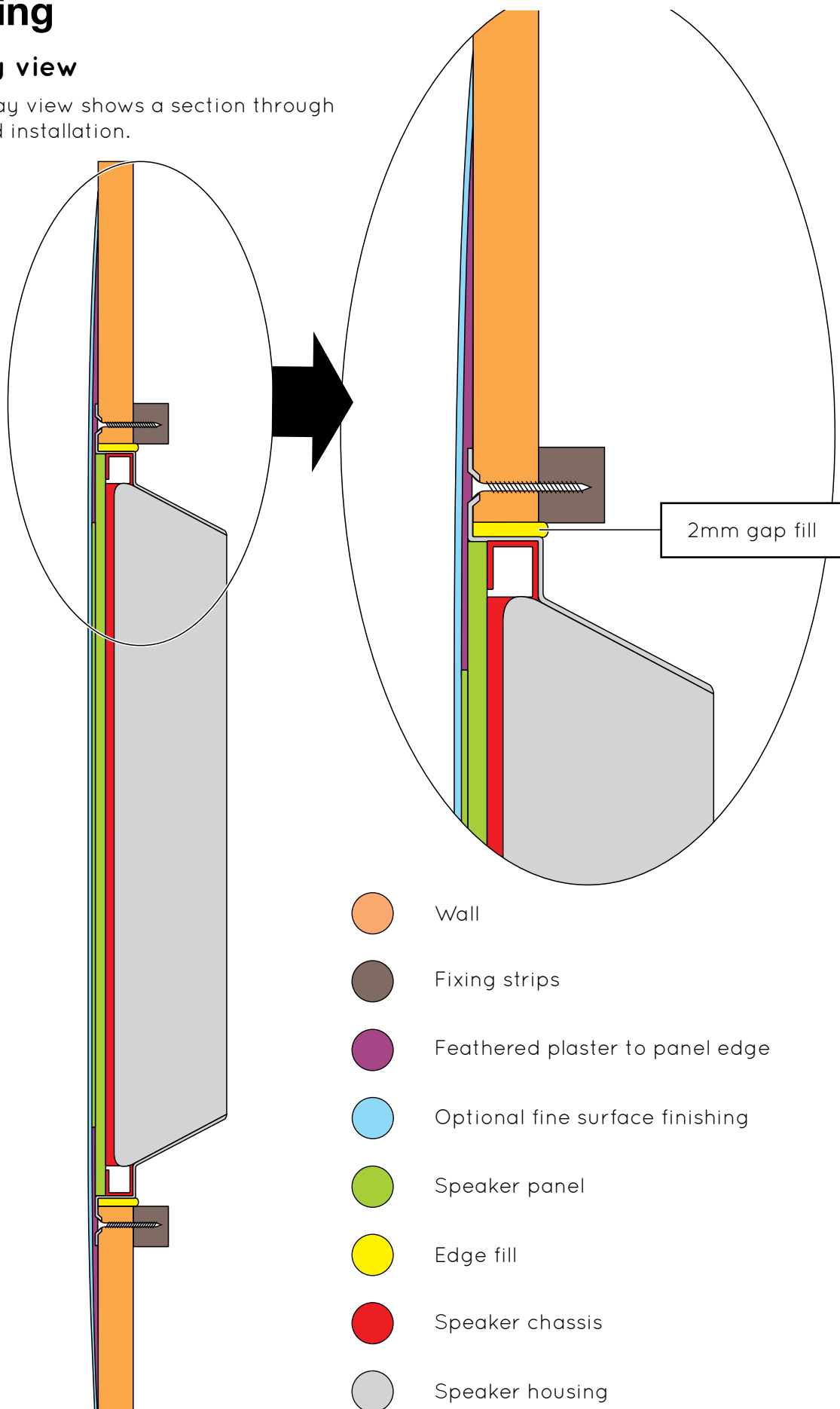
Filler can be sanded/wiped smooth to achieve the correct texture. Care should be taken not to sand any exposed paper panel surface.



Finishing

Cutaway view

This cutaway view shows a section through the finished installation.



Decorating

Drying

Allow your plasterwork to dry completely.

Re-test

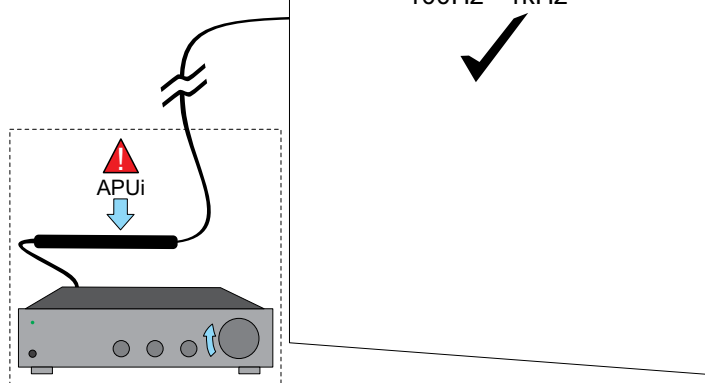
Before decorating, test the speaker again with a frequency sweep and music.



CAUTION:

Do not use a battery or DC voltage supply to check continuity or phase check as there is no forward or backward movement of the panel.

DC voltage can damage the speaker.



You can then paint the surface or hang wallpaper in the usual manner.

Decorating

Decorating

Completed and fully dried plaster surfaces should be finished with permeable coatings / materials to allow moisture in that coating or the adhesives used to apply those materials, to dry into the environment quickly.



CAUTION:

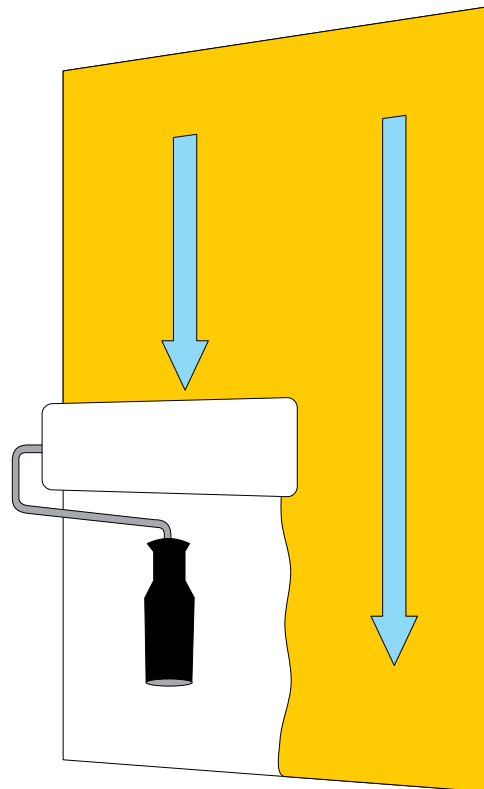
Non-permeable coatings

The use of impermeable coatings and materials should be considered carefully and with caution.

Oil based coatings and other non-permeable surfaces will trap moisture in the plaster surface for many days and even weeks. This has the potential to work its way back to the Amina loudspeakers exposing them to an unacceptably damp environment for an extended period.

Bare plaster surfaces must be pre-treated with a primer / sealing coat that is permeable during its drying process. The entire surface must then be fully dry (this may take some weeks) before applying the impermeable coating or material.

Ensure the building is environmentally sealed, de-humidified (to a max of RH 50%) and at a stable temperature of at least 16°C (61°F).



Final Test

Checking the completed installation

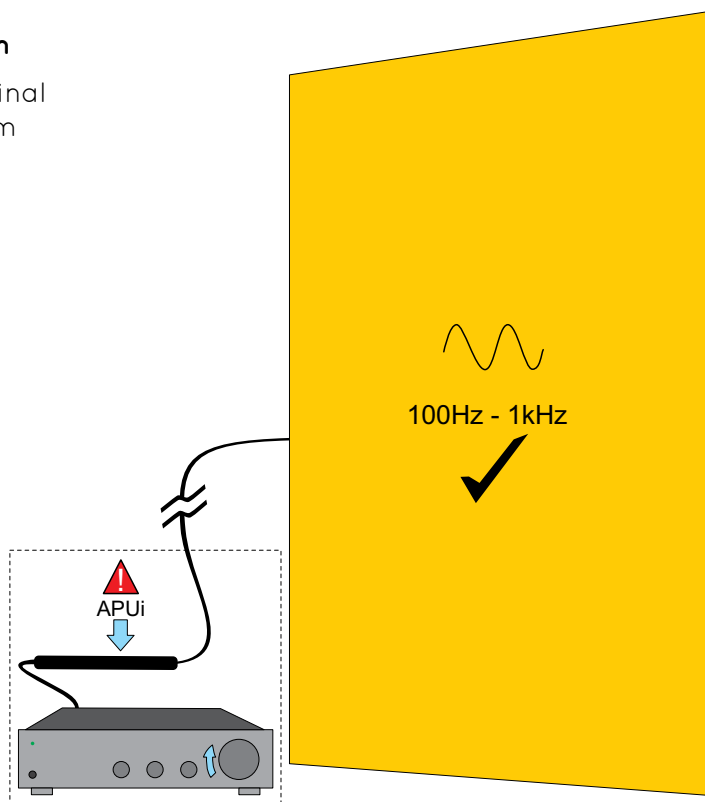
With decorating completed, run a final test of all the speakers in the system independently.



CAUTION:

Do not use a battery or DC voltage supply to check continuity or phase check as there is no forward or backward movement of the panel.

DC voltage can damage the speaker.



Maintenance and cleaning

Once your speaker is plastered into your wall or ceiling, it requires no physical maintenance. Your wall or ceiling can be cleaned with products appropriate to the finish finally applied to the plaster surface.

Re-decoration

The wall or ceiling can be painted or redecorated any number of times, but please be aware that sound output will reduce very slightly with each coat.

Extreme care should be taken when removing wallpaper type coverings to ensure the panel surface is not damaged.

If damage to the plaster work occurs, use repair plaster to restore the plaster surface prior to re-decorating. Amina Technologies Ltd recommends British Gypsum Gyproc-Joint-Filler as a repair plaster.

Avoid pushing the wall or ceiling surface immediately in front of the speaker. Excessive excursion can cause the plaster to crack around its perimeter and can damage the loudspeaker.

Accessories

Subwoofers

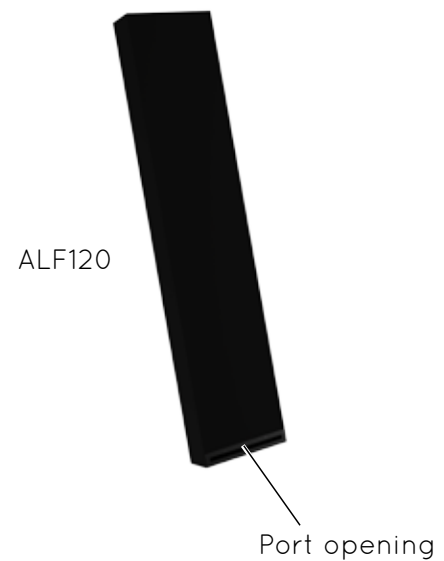
ALF80

150W passive subwoofer with unique adjustable port design allowing the product to be installed within joinery, behind kick boards or within ceilings or other voids. Highly discrete, powerful and deep bass response is achieved with only a small opening for the port required within the room.



ALF120

Amina have developed an astonishing subwoofer technology dubbed 'distributed transmission line' (DTL), which allows the design of a subwoofer thin enough to be built into a stud wall, venting through a simple slot in the skirting board, to create an impressively low 27Hz audio output at 111dB loudness using only 50W of power.



Troubleshooting

Thorough testing of the loudspeakers should be carried out both prior to and after plastering to avoid time consuming repairs or modifications at a later stage. Should you encounter any problems at either of the test stages the following guide is designed to help determine possible problem areas.



CAUTION:

Do not use a battery or DC voltage supply to check continuity or phase check as there is no forward or backward movement of the panel.

DC voltage can damage the speaker.

Advice for testing

- When testing always use a basic sound system (amp, source, loudspeakers) to eliminate the possibility of faults with other, more sophisticated components, such as control systems.
- Test at low and medium volumes and be careful not to exceed the specific speaker model's recommended power. Using tone sweeps or music as test material, listen for distortion, buzzing or rattles at appropriate levels. Using test discs or music, confirm that all channels are in-phase.
- Ideally professional test equipment should be used to record a full frequency response of the loudspeaker before and after plastering.

No or low sound output

- Check continuity of all cables.
- Check that all cables and connections are made correctly, are intact and that all channels have the correct polarity (+ to + and - to - from amp to speaker).
- APU is an in-line high-pass filter and over-voltage protection unit that protects the speaker, and is designed to reset automatically when the voltage applied to the speaker is reduced. APU may fail if exposed to extreme power levels for extended periods of time, and present a constant high impedance or open circuit. Both conditions will protect the loudspeaker panel. To check, bypass the APU and test the speaker at low volume or meter as below. If speaker works or measures properly, replace the APU by ordering an appropriate replacement from Amina.
- Using an impedance meter, check the nominal impedance of the speaker (APU must not be connected) both at the loudspeaker and the amp end of the cable. Do these measurements match each other? (Allowing for the small impedance increase of less than 1 ohm along the wire length) Do they match the stated nominal impedance on the loudspeakers specification label? If the nominal impedance, measured at the loudspeaker is dramatically different to the product's stated impedance, a speaker driver may be open circuited or short circuited. If so, the product may need to be returned to Amina for repair or replacement.
- If the nominal impedance at the end of the cable is very different to the impedance at the speaker, check your cables. Cuts or nicks in the cable along its length can dramatically increase impedance or create a short circuit, dramatically lowering the impedance.

Troubleshooting

Distortion, buzzing or rattles at modest volumes

- Try to identify the location of the buzz or rattle. It may be caused by a loose screw or other mechanical object. Check the wall or ceiling and speaker assembly and ensure screws and fixings are tight.
- If the rattle persists, remove the speaker from the wall and check your wiring to the product. Ensure that wires, with the speaker in the final location, are not resting against the back box of the speaker, causing vibrations.
- With no audio signal applied, lightly push the speaker face in and out at its centre. Feel and listen carefully for rubbing on the driver, which may sound like scratching. This may indicate the speaker has been over driven and subsequently damaged. The speaker will need to be sent to Amina for repair or replacement.

Low level, distortion with volume turned up/intermittent high volume/ low volume/distortion

APU might be over-driven or has been subjected to abuse. Reduce power level into APU, and see if sound returns to normal levels. If problem persists, change APU out with appropriate replacement.

Very low output after speaker passes electrical tests

- With no audio signal applied, lightly push the panel in and out at its center. Feel and listen carefully for rubbing voice coils on the driver, which may sound like scratching. This may indicate the speaker has been over driven and subsequently damaged. The speaker will need to be sent to Amina for repair or replacement.

Distortion at higher volume levels

- Diffuse source panel loudspeakers of this type have an extremely fast response, articulating the signal from your audio system very accurately. Take your system back to the bare minimum (amplifier, source and loudspeakers) to eliminate distortions introduced by other components.
- When using your amplifier at maximum power levels, or if the input of your amplifier is being overloaded, the signal level may be 'clipping'. With some conventional loudspeakers this may not be evident, but with a diffuse source panel speaker you are much more likely to hear the distortion. Consider adjusting or upgrading your system.



NOTE: Excessive pressure on the front of the speaker panel may cause cracking in the plaster which may need to be filled.

Specifications

Edge series - Plaster up to products

Model number	Edge1iB	Edge3iB
Dimensions (excluding fixing tabs)	452mm x 204mm x 80mm (17 ³ / ₄ " x 8" x 3 ³ / ₈ "	402mm x 304mm x 80mm (15 ⁷ / ₈ " x 12" x 3 ³ / ₈ "
Weight	2.3kg	2.4kg
Nominal impedance	8Ω	8Ω
Frequency response	90Hz - 30kHz	80Hz - 30kHz
Sensitivity (@ 1m/2.83Vrms)	86dB	86dB
In-line protection unit (single channel)	APUi30C	APUi30C
In-line protection unit (multi-channel)	APU-RS8iC/ APU-RS16iC	APU-RS8iC/ APU-RS16iC
Power handling (continuous)	??W	30W
Power handling (peak)	??W	60W
Operating temperature range	16°C - 40°C	16°C - 40°C
Manufacturer limited warranty	10 years (residential systems), 5 years (commercial systems)	10 years (residential systems), 5 years (commercial systems)

Model number	Edge5iB	Edge7iB
Dimensions	452mm x 349mm x 80mm (17 ³ / ₄ " x 13 ³ / ₄ " x 3 ³ / ₈ "	452mm x 349mm x 80mm (17 ³ / ₄ " x 13 ³ / ₄ " x 3 ³ / ₈ "
Weight	2.8kg	3kg
Nominal impedance	4Ω	4Ω
Frequency response	55Hz - 26kHz	50Hz - 27kHz
Sensitivity (@ 1m/2.83Vrms)	90dB	90dB
In-line protection unit (single channel)	APUi50C_2	APUi70C_2
In-line protection unit (multi-channel)	APU-RS8iC/ APU-RS16iC	APU-RS8iC/ APU-RS16iC
Power handling (continuous)	50W	75W
Power handling (peak)	100W	150W
Operating temperature range	16°C - 40°C	16°C - 40°C
Manufacturer limited warranty	10 years (residential systems), 5 years (commercial systems)	10 years (residential systems), 5 years (commercial systems)

Fire resisting installation

Fire resisting installation is generally required in multi-level buildings such as offices, apartments and flats where the ceiling and any fittings in the ceiling must maintain a 60 minute barrier to fire.

The standard installations described in this guide for Amina Edge*iB* series invisible speakers will not meet the requirements of an installation that requires fire resistance.

If an installation does require fire resistance then it will be necessary to create a fire-resisting compartment to the rear of the loudspeaker. Amina can supply optional fire rated hoods for this purpose.

If you are in any doubt concerning the selection or installation of Amina speakers or accessories in an installation that requires fire resistance, contact Amina Technical Support.



Warranty information

Limited Warranty:

Amina loudspeakers are designed to operate reliably for many years. Correctly installed in accordance with these instructions, Amina warrants the loudspeakers against defective materials and manufacturing workmanship for a period of ten years in residential and five years in commercial applications.

At the end of the speaker's useful life and in compliance with the European directive on waste electrical and electronic equipment (WEEE), this product is to be returned to your supplier, or directly to Amina for recycling. If you have any questions please contact Amina Technologies Ltd.

* Please refer to our full warranty statement for details, available on our website, or alternatively contact us via email.

Important Note: This product has not been tested to European Construction Products Regulations EN 54-24 and therefore must not be used in voice evacuation systems located within the European Union.

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Toupret is a registered trademark of Toupret S.A., France.

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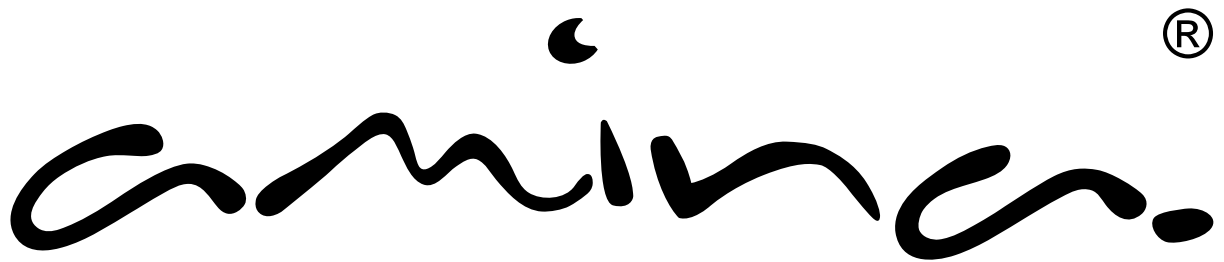
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Edge*i*B drywall V1.2
