

Wharfedale Crystal² Series Installation and User Guide

Care and Maintenance

Hiding Cables

When mounting a loudspeaker on a wall the connecting cables may be unacceptably obvious. Whilst cables can be routed from the loudspeaker to the floor, it may be less obtrusive to route cables from the loudspeaker to the ceiling and then within the ceiling (or possibly coving) or immediately underneath the ceiling (or coving). The cable may then return to floor level at a convenient room corner.

Running In

Loudspeakers are electro-mechanical and, like all mechanical systems, they need a 'running in' period. For the first 50 hours or so exercise care and play your system at reasonable volume levels. After running in, you will notice a significant sonic improvement.

Cleaning

The loudspeaker cabinets can be cleaned with a damp cloth or with a spray furniture polish and a soft cloth. Apply the spray sparingly to the cloth and then polish the cabinet. Never apply spray directly to the cabinet. Grilles should be removed and gently brushed with a soft brush.

Guarantee & Service

In the unlikely event that your unit develops a fault you should return it to your Wharfedale dealer using the original packing to ensure safe shipping.

The terms of your guarantee may vary in different countries but in all cases the guarantee excludes:

All damage caused through accident, misuse, wear and tear, neglect, incorrect installation, adjustment or repair by unauthorised personnel.

Liability for damage or loss occurring in transit to or from the purchaser.

Wharfedale will not be liable for any consequential damage, loss or injury, arising from or in conjunction with this equipment.

Conclusion

The Crystal² series is just one of an extensive and world-acclaimed range from Wharfedale, one of the world's oldest and most distinguished loudspeaker manufacturers. Thank you for purchasing Wharfedale; we hope this product brings you many years of reliable service and good music.

Specifications	Crystal CR ² -8	Crystal CR ² -10	Crystal CR ² -20	Crystal CR ² -30	Crystal CR ² -40	Crystal CR ² -CEN
Nominal Impedance	6 Ohms	6 Ohms	6 Ohms	6 Ohms	6 Ohms	6 Ohms
Recommended Amplifier Power	25-60 Watts	25 -100 Watts	25 -100 Watts	25 -100 Watts	30 -150 Watts	25 - 100 Watts
Sensitivity (1W@1m)	84 dB	86 dB	86 dB	86 dB	86 dB	86 dB
Frequency Response	60 - 20 kHz	55 - 20 kHz	50 - 20 kHz	40 - 20 kHz	30- 20 kHz	60 - 20 kHz
Bass Unit	100 mm	125 mm	165 mm	165 mm	165 mm	2 x 100 mm
Auxiliary Bass Radiator				165 mm (ABR)		
Midrange Unit					165 mm Bass-Mid	
Treble Unit	25mm Textile	25mm Textile	25mm Textile	25mm Textile	25mm Textile	25mm Textile
Dimensions Overall						
H x W x D mm	207 x 149 x 160	277 x 192 x 234	450 x 217 x 236	832 x 217 x 236	975 x 217x 236	149 x 362 x 160
H x W x D inches	8.1 x 5.8 x 6.3	10.9 x 7.5 x 9.2	17.7 x 8.5 x 9.3	32.8 x 8.5 x 9.3	38.4 x 8.5 x 9.3	5.9 x 14.2 x 6.3

Wharfedale Crystal² series speakers are compatible with most currently available audio amplifiers

	Crystal CR ² -SUB 150
Bass Unit	10" 250mm
Amplifier power	150W rms
Line input sensitivity	250mv for 75w
Freq Range -6 dB (Boundary Position)	28Hz - 170 Hz
Average max o/p @ 1m	108 dB
Crossover Range	70 Hz - 170 Hz
Dimensions Overall	
H x W x D mm	340 x 368 x 385
H x W x D inches	13.4 x 14.5 x 15.2
Height (with feet)	390 mm (15.4")

Authorised Wharfedale Service Centres

UK	USA
Wharfedale International Ltd. IAG House, Sovereign Court, Ermine Business Park, Huntingdon, Cambs PE29 6XU, England Tel: + 44 (0)1480 447700 Fax: + 44 (0)1480 43176	IAG America, Inc. 8440 154th Avenue NE Redmond, Washington 98052 USA Tel: +1 425 861 3909 Fax: +1 425 861 3906

For information on other authorised service centres worldwide contact Wharfedale International in the U.K.

A worldwide distributor list is available on the Wharfedale website: www.wharfedale.co.uk

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Wharfedale has a policy of continuous product development and reserves the right to change specification without notice.

Wharfedale is a member of the International Audio Group.

Crystal² Series

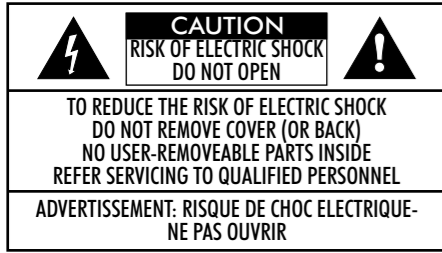
Instruction Manual



Wharfedale
BRITAIN'S MOST FAMOUS LOUDSPEAKERS

Wharfedale Crystal² Series Installation and User Guide

Important Safety Precautions - Please Read Carefully



- This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.
- This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

Read these instructions.
 Keep these instructions.
 Heed all warnings.
 Follow all instructions.
 Do not use this apparatus near water.
 Clean only with dry cloth.
 Do not block any ventilation openings.
 Install in accordance with the manufacturer's instructions.
 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
 Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding

prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Use only attachments/accessories specified by the manufacturer.



Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

Unplug this apparatus during lightning storms or when unused for long periods of time.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Warning: To reduce the risk of fire or electrical shock, do not expose this product to rain or moisture.

The product must not be exposed to dripping and splashing and no object filled with liquids such as a vase of flowers should be placed on the product. No naked flame sources such as candles should be placed on the product.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.

IMPORTANT NOTE

The means by which the subwoofer is disconnected from the mains supply is the ON/OFF switch on the rear panel. This switch must not be obstructed in any way and must be freely operable at all times.

ESSENTIAL INFORMATION FOR UK USERS

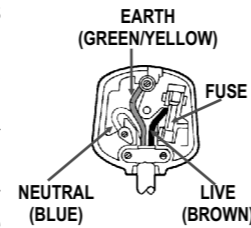
The power cord on your subwoofer may be supplied with a plug incorporating a fuse, the value of which is indicated on the pin face of the plug. Should the fuse need to be replaced, an ASTA or BSI approved BS1362 fuse must be used of the same rating. If the plug is cut off it must NOT be re-used. Dispose of any such plug safely. There is a danger of electric shock if a cut-off plug is inserted into a mains socket.

The wires in the mains lead are coloured in accordance with the following code:

Green and Yellow - Earth: Blue - Neutral: Brown - Live.

As the colours of the wires in the mains lead may not correspond with the markings identifying the terminals in the replacement mains plug, proceed as follows:

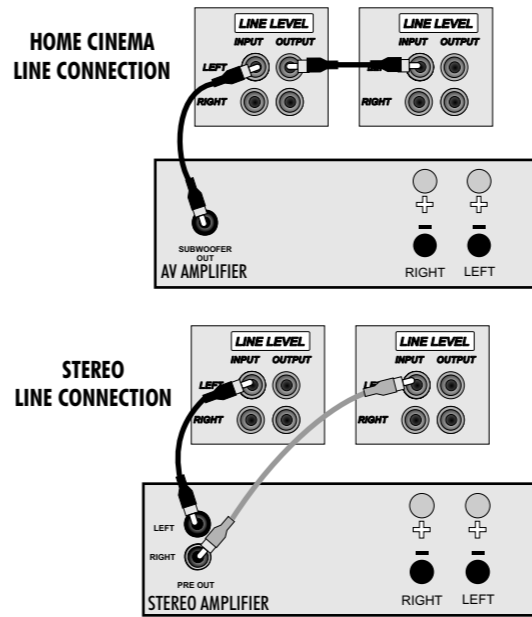
The wire coloured Blue must be connected to the terminal marked with the letter 'N' or coloured Black. The wire coloured Brown must be connected to the terminal marked with the letter 'L' or coloured Red. The wire coloured Green and Yellow must be connected to the terminal marked with the letter 'E', or coloured Green, or Green and Yellow, or marked with the Earth symbol



Setting Up Two Subwoofers

Two subwoofers offer considerable advantages. Points to note are:

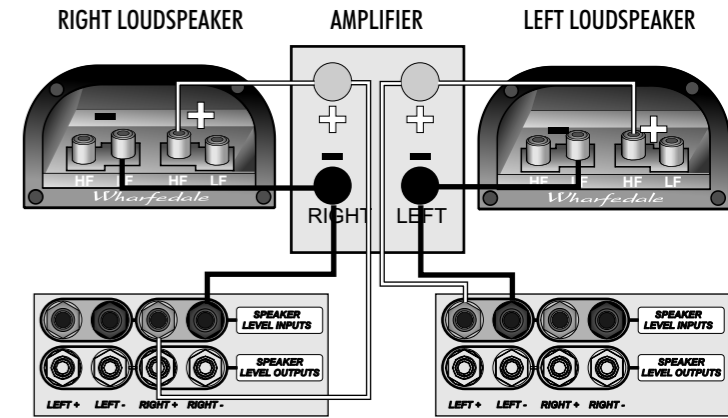
- A well-sited pair of subwoofers for stereo use will be adequately sited for Home Cinema applications.
- A second subwoofer raises the bass output level 6dB when operating in Home Cinema but not in Stereo



HOME CINEMA: Although AV processors have one subwoofer channel, properly spaced subwoofers help to fill in troughs caused by standing waves, smoothing the bass and giving it greater intensity.

STEREO: Each subwoofer should be located as near as possible to its partnering loudspeaker. The smaller the main speakers, the more necessary this becomes.

HIGH LEVEL (LOUDSPEAKER) CONNECTION



Introduction

The Wharfedale Crystal² Series is a range of versatile loudspeakers using advanced materials and precision drive units. The CR²-10 and CR²-20 are small stand mounting loudspeakers. The CR²-30 and CR²-40 are floor-standing models. The range includes a centre channel, CR²-CEN. The CR²-8 may be used as surround sound speakers in Home Theatre applications, or as the main speakers in a small stereo system. The range is complemented by the CR² SUB powered subwoofer for the perfect Home Cinema experience. Thank you for purchasing Wharfedale. We hope your loudspeakers will give you a rewarding listening experience for many years.

Please read these instructions carefully before installing your Wharfedale loudspeakers.

Before making connections to your sound system switch off the amplifier and all connected sources.

When you switch on your system or change sources, set the volume at minimum. Turn up the level slowly.

DO NOT use your amplifier at full volume. The position of the Volume Control is NOT a reliable guide as to the maximum volume level or capabilities of your sound system. Playing the system with extreme high settings of volume and tone controls will result in distorted sound and may damage the amplifier and loudspeakers and your hearing.

DO NOT connect loudspeaker terminals to the mains supply.

Ensure that all loudspeakers in the system are correctly wired and are in phase.

NEVER touch the drive units which are easily damaged. If you wish to play your loudspeakers with their grilles removed be careful to protect the drive units from children and pets.

DO NOT attempt to dismantle the loudspeaker. You will invalidate the warranty.

Site regular loudspeakers at least 0.5m away from TV sets and magnetic storage media. The drive units of the CR²-CEN loudspeaker are screened and may be safely used close to a TV set.

Unpacking the Speakers

Carefully remove each loudspeaker from its packing carton. Be especially careful when removing the polythene bag. DO NOT lift the loudspeaker by the polythene bag. Retain the packing for future use. If you dispose of the packing, do so safely and in accordance with recycling provisions in your area.

Fitting the Spikes (CR²-30, CR²-40)

Carefully invert each loudspeaker. Protect the top surface from scratches or damage when the loudspeaker is in the inverted position.

Each loudspeaker has four spikes. Prepare the spikes as shown and screw into the threads on the base of the loudspeaker. Return the loudspeaker to its normal position taking care not to cause damage with the spikes.

Adjust the spikes in and out until the speaker sits firm and level. Use a spirit level to assist you. When the speakers are level tighten the nuts securely.

When moving speakers, do not let the spikes pierce objects which may be concealed under a carpet. Never drag loudspeakers. If you cannot lift them easily, get someone to assist.

Stands and Brackets

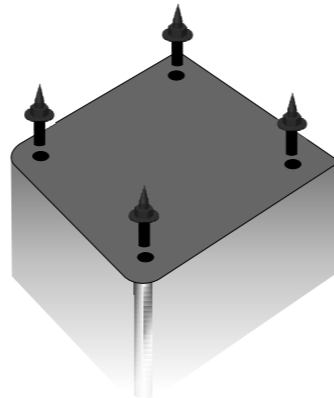
The CR²-8, CR²-10 and CR²-20 are intended primarily for stand mounting, though they can be mounted on wall brackets or even on sturdy shelves. The quality of loudspeaker stands makes a considerable difference to the performance of your loudspeakers so do not use flimsy inferior products.

CR²-8 Loudspeaker

The CR²-8 is supplied with port bungs which should be inserted when the unit is used as a surround speaker and flush mounted on a wall.

CR²-CEN Centre Channel Loudspeaker

A set of self adhesive pads is provided. Peel off the backing material and fix a pad close to each corner of the bottom surface of the loudspeaker.



Troubleshooting

If your system appears not to be working as well as you expect, the following notes may be of some help.

Before investigating the cause of a problem, always switch off the system at the mains.

Please bear in mind that Home Theatre systems can be quite complex and there is often a variety of factors involved.

Please read this manual together with all the manuals concerning the rest of your system.

If, having attempted to resolve the problem, the trouble still persists, consult your dealer for assistance.

Do NOT try to remove any covers on the product or attempt to dismantle it in any way. There are no user serviceable parts inside and you will invalidate any warranty.

Symptom	Possible Cause
No Sound	System not switched on Wrong source selected
Indistinct sound Poor localisation of effects	One or more loudspeakers is out of phase (See the relevant pages of this manual for the correct connection procedure)
Sound lacks bass content Bass reproduction muddy or indistinct	Loudspeakers wired incorrectly Front speakers set to 'Small' with no subwoofer connected
Television picture is distorted or there is colour distortion	Front loudspeakers or subwoofer too close to the TV. (Switch off the system and TV. Move loudspeaker away. Leave 15 mins. Switch on again)
Excessive bass distortion at low volume levels	Bass level set too high LFE level set too high
Excessive or distorted bass at high volume levels	System level set too high Front loudspeakers or subwoofer too close to room corners
Distorted or rattling sounds at high volume levels	System level set too high Objects placed on Front loudspeakers or subwoofer
Popping sounds or thumps from Front speakers or subwoofer	System level set too high LFE level set too high: Subwoofer level set too high

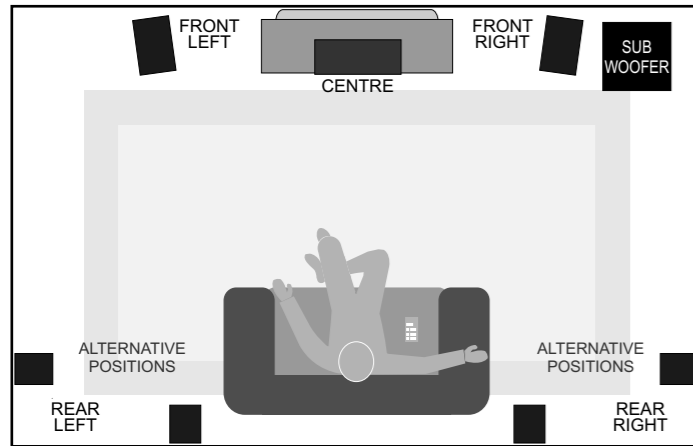
The Home Theatre Environment

Front and Centre Channels

The front loudspeakers are placed on either side of the television screen, 2 to 3 metres apart. The speakers should be angled slightly so they are aimed towards the listeners.

Most of the dialogue comes from the centre loudspeaker. Speech should appear to originate from the actors' mouths. Operating height is important. Ideally the front and centre channel speakers should be at the same height. For this reason the centre channel speaker is best operated on top of the TV monitor. The front faces of the centre and surround loudspeakers should also be in line as far as possible.

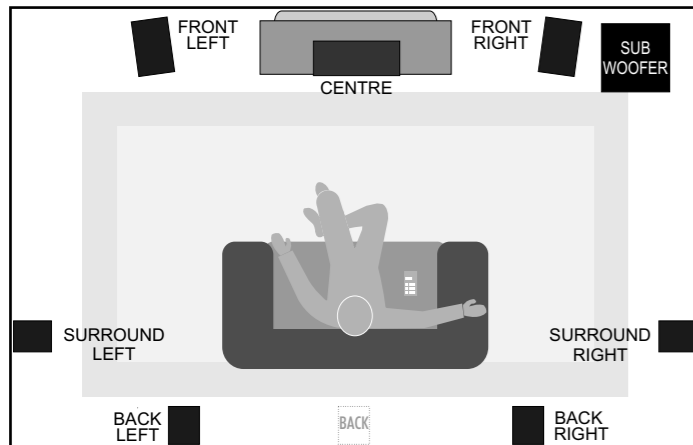
Surround Channels in 5.1 Configurations



As the rear channels are the "effects" channels the reproduced sound should be as room filling as possible. To aid this we recommend placing the speakers in a high position, slightly behind the listener's head. Angled towards the listener and positioned high, the rear speakers give a good rear perspective combined with a diffused sound field. Two possible placements are indicated in the diagram.

Note: If the rear wall is more than 1 metre behind the listening seat, the side wall position should be used. If the side or rear walls are inconveniently located, you should consider stand mounting the loudspeakers.

Surround Channels in 6.1 and 7.1 Configurations



These formats divide the effects channels into 'Surround' and 'Back'.

The *Surround* channels are designed to be placed on either side of the listening seat and slightly behind the listening position.

A further channel or channels called the *back* or *rear* surrounds are placed behind the listener to further enhance the surround sensation. Many modern games feature 6.1 sound and some of the most recent Home Cinema systems feature full 7.1 operation.

Note: While it is possible for 5.1 multichannel sound to be enjoyed with the listening seat close to the rear wall, this placement is not advisable when listening to 6.1 or 7.1 sources. The listening position must be further into the room to enable proper operation of the rear channel loudspeaker/s.

Subwoofer

As the ear is unable to detect the direction from which deep bass originates, this allows you freedom to position the unit. Varying the distance from the wall alters the bass. Placing the subwoofer across a corner boosts the bass but may impair clarity.

The performance of Home Theatre systems can often be enhanced by using a pair of subwoofers.

Setting Loudspeaker Sizes

Many digital AV Processors require you to specify the size of speakers in all channels.

Always choose 'Small' for the Surround channels and Centre channel whether you are using a subwoofer or not.

If you are not using a subwoofer: Set the Front Speakers to 'Large'. Set the 'Subwoofer' option on the processor to 'Off' or 'No'. The Front channels will now receive all the system bass.

If you are using a subwoofer: When set to 'Small' all the system bass will go into the subwoofer. If you choose 'Large' the Front channel bass will be reproduced from the Front speakers. Bookshelf speakers should be set to 'Small', large floor standing units may be set to 'Large'.

Setting Levels

Once the loudspeaker settings have been finalised, put the AV amplifier into its "Test" mode (see instructions supplied with your processor). Adjust the level of each channel in turn until all channels are reproduced at equal loudness.

On some programme material the surround channel may seem lower than the front. Do not readjust this level. You may, however, need to adjust the subwoofer output level. Avoid setting too high a level or you will swamp the sound with bass which is tiring to listen to and may limit the subwoofer's ability to respond to large bass transients. You should also set a sensible level going into the subwoofer from the AV processor.

Delay Settings

Many AV processors feature delay settings to enable surround and dialogue information to arrive at the listener's ears at the same time as the Front channels, even when the listening seat is in a non-ideal position.

Rear Delay: If the listening position is equidistant from the Front and Rear speakers, set a low delay setting. The closer the listener is to the Rear speakers the higher should be the delay setting used.

Centre Delay: If the Centre speaker is level with (or slightly behind) the Front speakers, set the delay to zero. If the Centre speaker is forward of the Front speakers, increase the delay.

LFE

In the cinema the Low Frequency Effects channel is an extra bass channel with its own subwoofer and not a regular subwoofer channel. In domestic systems the LFE channel typically feeds into the subwoofer. Where no subwoofer is used, the LFE signal is combined with Front Channel information. When you set the LFE level at your AV processor, use care as the powerful low frequencies can overload domestic loudspeakers.

If you hear popping or thumping noises coming from the front loudspeakers or subwoofer, immediately turn the AV Processor's volume level down and then back off the LFE level. This should cure the problem. If it does not, back off the volume level at the subwoofer (if you are using one) until the problem disappears.

Please read the relevant sections of your AV amplifier manual and familiarise yourself with the various issues. If you are unsure, consult your dealer for help.

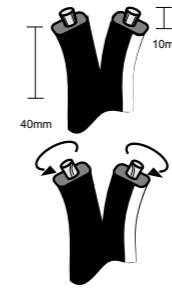
Phase

A Home Theatre system should have a precise front stage, a diffuse rear stage and good localisation of dialogue. If the colours on the loudspeaker terminals do not correspond with those on the amplifier, the sound will appear poorly focussed or 'out of phase'. For this reason it is essential that the speakers are connected according to the wiring diagrams in this manual.

Choosing and Preparing Cables

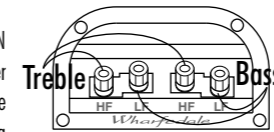
Specialist audio cable usually offers better performance than general purpose 'bell' or 'zip' wire. Choose a cable of suitable diameter - cable that is too thin will limit the dynamics of the sound and may impair the bass response. Audio cable is polarised, with two cores of different colours, or often a raised rib or coloured tracer in the case of twin cable.

Split the twin cores to a depth of about 40mm. Carefully strip the insulation from each end, leaving about 10mm of bare wire. If the cable is stranded, lightly twist to gather any loose strands.



Crossover Networks

The CR²-10, CR²-20, CR²-30, CR²-40 and CR²-CEN loudspeakers use a specially designed bi-wireable crossover panel with four terminal binding posts. As supplied, the treble terminal pair is connected to the bass terminal pair via removable metal straps. These should be left in place for standard installations.



The CR²-8 loudspeaker uses a conventional twin terminal crossover panel with an integral keyhole mounting.

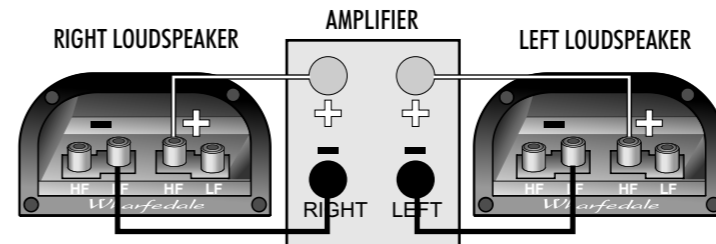
Connecting Loudspeaker Terminals

Unscrew the terminal. Thread the bared end of each cable through the hole in the bottom of the terminal post. Ensure that there are no loose strands which may touch adjacent terminals. Retighten the terminal securely.

NOTE: The cables connecting left and right channels should be of equal length, regardless of the distance of the speakers from the amplifier. This applies to front and rear channels.

Connecting your Loudspeakers: Standard Connections

Choose equal lengths of twin core speaker cable for each channel, and prepare the ends. Unscrew each terminal a few turns but leave the straps in place. Connect the red, positive (+) terminal of the Left loudspeaker to the corresponding red, positive (+) amplifier terminal. Connect the black, negative (-) terminals similarly. Tighten the terminals securely. Repeat this procedure for the Right Channel.

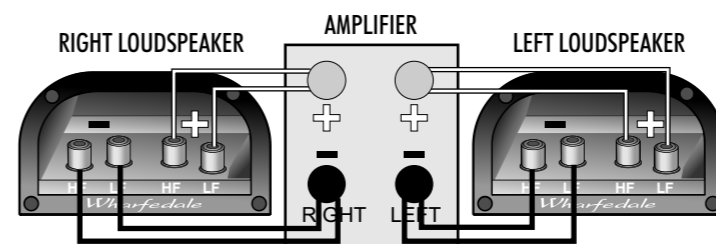


Connecting Your Loudspeakers: Bi-Wiring

Using separate cables for treble and bass units in a Bi-Wiring configuration reduces intermodulation effects and improves headroom and clarity. To bi-wire, you will need to install two lengths of twin core cable between the amplifier and each loudspeaker.

Unscrew each terminal a few turns and remove the metal straps. Connect the cables between the amplifier and the loudspeakers as indicated above and re-tighten all the terminals securely.

A few amplifiers have two pairs of output terminals to facilitate bi-wiring but this is not essential. The advantages of bi-wiring are fully retained if your amplifier has only one pair of terminals per channel.

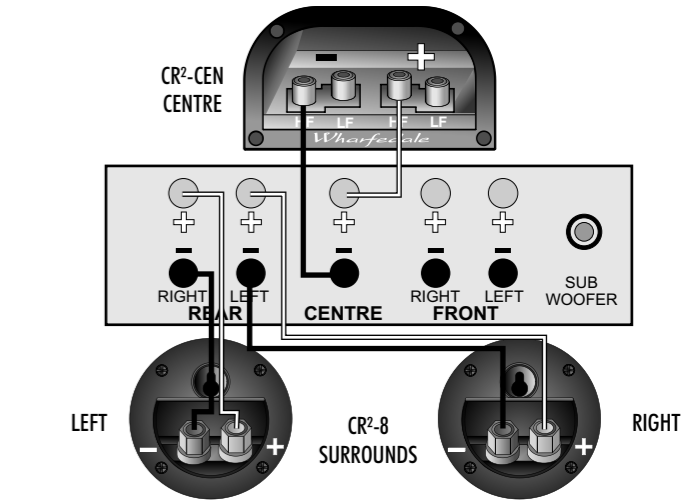


Bi-Amplifying (Bi-Amping)

By connecting each loudspeaker drive unit to its own dedicated amplifier the advantages of Bi-Wiring can be extended. If you own two identical stereo power amplifiers, your Crystal speakers may be Bi-Amped. For further details please consult your dealer.

Centre Channel and Surround Connections

The CR²-CEN and CR²-8 loudspeakers are intended for use specifically with Audio Visual equipment having Centre and Rear loudspeaker outputs. Connect these loudspeakers as shown, again observing polarity. The Centre speakers may be connected as shown, or bi-wired.

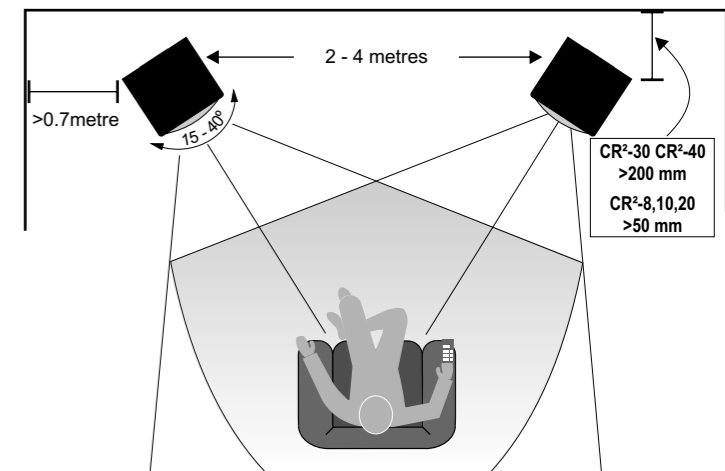


Positioning Your Front Loudspeakers

The CR²-30 and CR²-40 are designed to be floor standing. We suggest that they are positioned at least 200 mm from the rear walls and 700 mm from the side walls, facing slightly inwards. The CR²-8, CR²-10 and CR²-20 should ideally be stand or wall mounted though they may be placed on a rigid shelf. The bass extension will improve if these speakers are operated closer to the rear walls. A useful rule of thumb is that the listener should be as far from the loudspeakers as they are from each other.

NOTE: The CR²-8 is supplied with port bungs which should be inserted when the unit is used as a surround speaker and flush mounted on a wall.

If the loudspeakers are placed too close to the walls the bass will increase but may be boomy and indistinct. If the loudspeakers are placed further away from the walls, the inward angle may be increased by up to 40%, although this may restrict the width of the optimum listening position. The speakers should ideally be positioned so that the treble units are roughly at ear level to a seated listener. As personal taste plays a large role, experiment with different configurations and play a wide range of programmes before finalising the position of your speakers.



When connecting loudspeakers, avoid trailing cables across open floor spaces where they can be a source of danger. Route cables safely under carpets or along room boundaries.

CR²-CEN Centre Loudspeaker

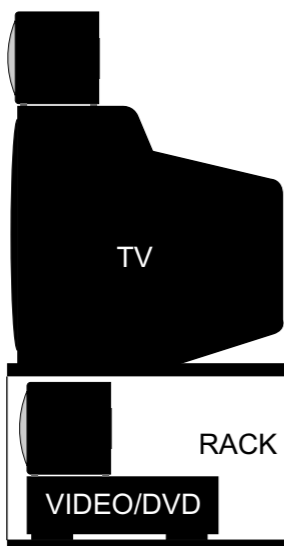
The loudspeaker should be positioned centrally between the loudspeakers close to the television and mounted either above or below the screen.

The loudspeaker should be located on a stable flat surface to avoid any danger of the cabinet moving when it is vibrated by high sound levels. If you mount the unit on top of the television, move it forward so that the front face is level with or slightly in front of the screen to reduce reflections.

Although you can place the centre channel loudspeaker under the TV monitor, this should be regarded as second best. The preferred position is above the monitor, as shown.

The CR²-CEN uses screened drive units and may be placed close to a TV screen without ill-effects.

Conventional loudspeakers should not be operated within 500mm of a TV screen as the drive unit magnets may interfere with the picture and cause colour distortion.



Using the CR²-8 as a wall mounted surround loudspeaker

The CR²-8 may be wall mounted and used either as a conventional pair of loudspeaker or as a surround unit.

The speakers should be sited 600 mm-1.5 metres above the listening position and 2.5-3.5 metres apart, central to the listener on a rear wall or opposite side walls and behind the listening position.

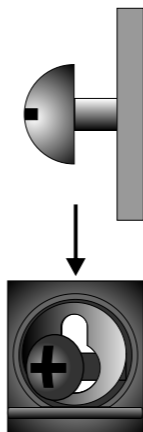
Before hanging the CR²-8:

Insert the supplied port bungs. Connect the cable to the speakers. Connect the speakers first, then connect the cable to the amplifier.

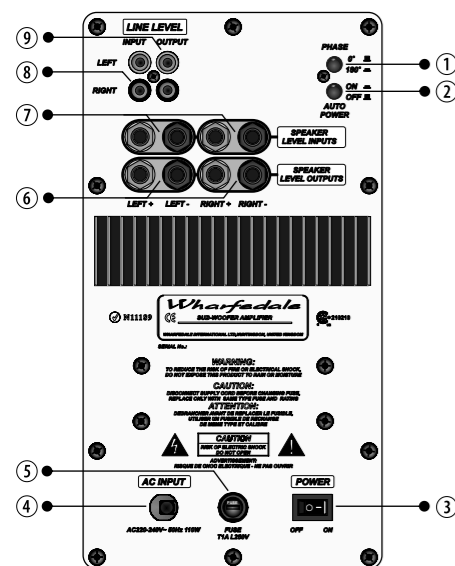
Attaching the speakers to the wall.

Ensure the wall is sound and can support the weight of the loudspeakers. Drill and fix a No. 8 screw and suitable wall plug at each chosen location. The screw should protrude about 5mm from the wall.

To attach the speaker to the wall, align the keyhole slot over the screw. Pull gently down to secure the speaker.



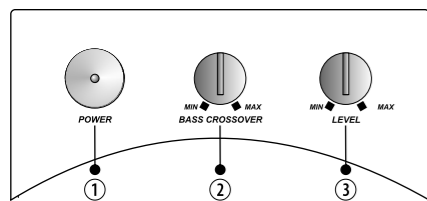
The CR²-SUB 150 Subwoofer



REAR PANEL VIEW

REAR PANEL GUIDE

- ① Phase Control Switch
- ② Auto Power Switch
- ③ Power On-Off Switch
- ④ Mains Cable
- ⑤ Mains Fuse
- ⑥ Speaker Level Outputs
- ⑦ Speaker Level Inputs
- ⑧ Line Level Inputs
- ⑨ Line Level Outputs



FRONT PANEL VIEW

FRONT PANEL GUIDE

- ① Status Indicator
- ② Bass Crossover Control
- ③ Subwoofer Level Control

Preliminaries

Open the carton and remove all the packing pieces. Lift the subwoofer out taking care not to damage the cabinet. When lifting the unit from the carton support it from the bottom. DO NOT attempt to lift the subwoofer out of the carton using the polythene bag. The unit is heavy; if you cannot manage it easily, get someone to assist you.

Retain the packing materials for future use. If you decide not to keep the packing, please dispose of it having regard to any recycling regulations in your area.

Positioning the Subwoofer

Although the subwoofer may be placed almost anywhere in the room, even behind the sofa or the TV set, we recommend that it is placed in front of the listening position. The subwoofer should not be operated within 500mm of a television set as the magnet may interfere with the colour picture.

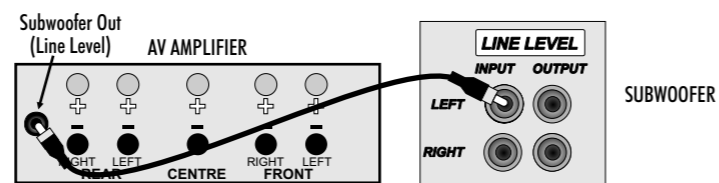
Placing the subwoofer close to the wall will enhance the bass. Placing it across the corner of the room will increase the bass further but the bass may become boomy and indistinct. Be prepared to experiment with a variety of locations and sources before making a final decision.

Subwoofer Connections

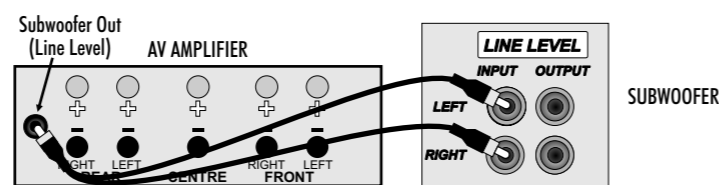
Before making or changing any connections switch all system units off at the mains. Check that the mains voltage of your subwoofer corresponds to the mains voltage in your home.

Line Connections to an A/V Processor

Your subwoofer has been designed for optimum performance with a Digital processor. If your AV processor has a line level or LFE subwoofer output you should use this connection. You will need to purchase a single screened RCA phono lead from your dealer. Connect this lead to the Left line input of the Subwoofer as shown below.

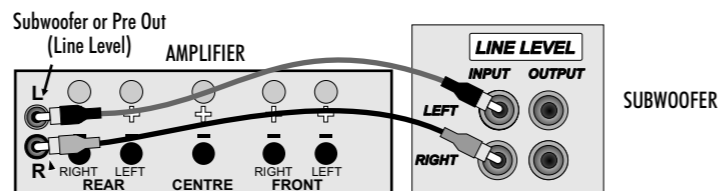


Alternatively, you may use a split mono lead from the processor to both inputs of the subwoofer. In this case the input level at the subwoofer will be slightly higher.



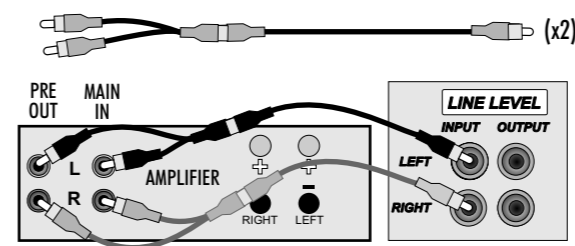
Stereo Line Output Connections

If your amplifier has a spare preamplifier output or a stereo sub-woofer output, connect the sub-woofer as shown. You will need a stereo screened RCA phono cable.

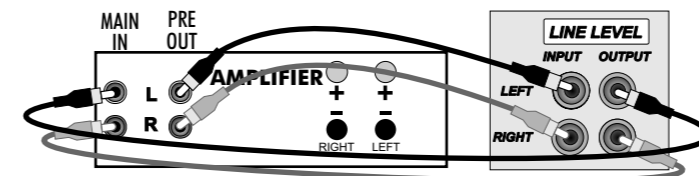


Pre Out - Main In Connections for Stereo Amplifiers

If you use a separate pre-power amplifier, or an integrated amplifier where pre and main amplifier can be separated. Remove the Pre-Main links on your amplifier. Connect the socket (common) of an RCA 'Y' adaptor to one of the mono cables. Connect one leg of the 'Y' adaptor to the Left Channel Pre Out socket on the amplifier and the other leg to the Left Channel Main In socket. Connect the remaining plug on this combination to the Left Channel Line Level Input on the sub-woofer. Repeat this for the Right Channel.



Alternative Method: (You will need two stereo RCA phono cables): Connect a Stereo cable from the Line Level Inputs of the subwoofer to the Pre Out sockets of the amplifier. Now connect a second Stereo cable from the Line Level Outputs of the sub-woofer to the Main In sockets of the amplifier. Do not mix Right and Left Channels up!



Speaker Level Connections

The high level Speaker connections should be used only if your amplifier does not have a line level subwoofer output. In this connection the subwoofer is fed together with the Front loudspeakers. For this you will need two extra twin core cables.

Operating the Subwoofer

Check that all system connections are correct. Set the Subwoofer Level Control to minimum and the Power switch to OFF. Connect the power lead of the subwoofer to the mains.

Switch on the power to the subwoofer and check that the Status Indicator on the front panel glows. Connect the power to the rest of the system. The system is now operational.

Play a programme with extended bass and set the system volume to a reasonable level. Adjust the subwoofer controls as below to produce the desired level and quality of bass. Do not overdo things!

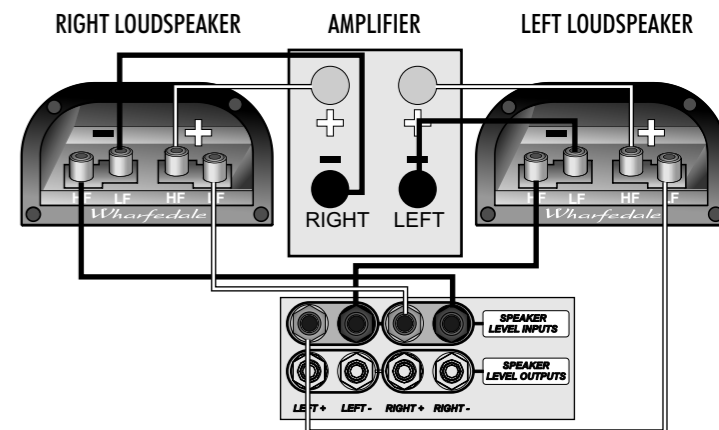
Subwoofer Level Control

The Level control is located on the front panel. Set this control initially at midway (12 o'clock). When the other controls have been set, this can be re-adjusted if needed. Do not set too high a level or the sound will be bass heavy.

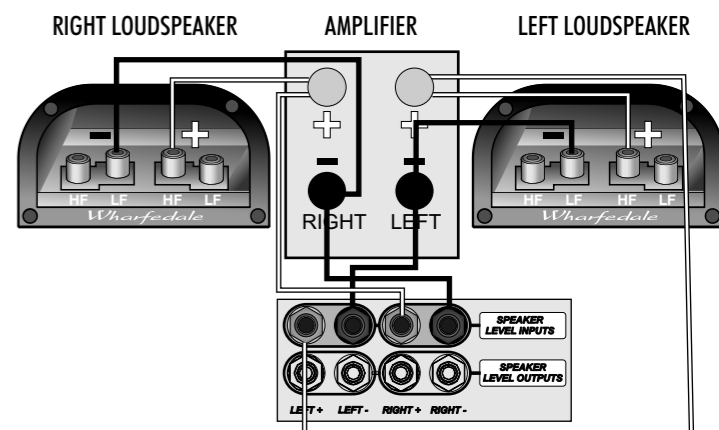
Bass Crossover Control

The Bass Crossover control on the front panel adjusts the blend between the subwoofer and the main speakers, and enables the system to be set up for optimum bass performance. The higher settings are for use with small bookshelf loudspeakers, the lower settings for large floorstanding models. If you choose too low a setting with small speakers, there will be a 'hole' in the bass response; too high a setting with large speakers will result in the upper bass becoming bloated. Set this initially midway. This can be fine tuned by listening to the overall sound and adjusting the bass to a suitable level.

A The Subwoofer may be fed either from the speaker terminals on the amplifier.



B As an alternative you may connect the subwoofer to the Front speakers instead of to the amplifier.



Phase Switch

If the bass is indistinct or lacks depth, the Phase switch may need adjustment. Set the switch to 0° and listen carefully to some music with extended bass. If there is insufficient bass output from the sub-woofer set the Phase switch to 180°. Select the position which offers the most natural, extended bass as judged from the listening position.

Auto Power Switch

Depress the Auto Power switch to select this facility and release the switch to defeat it.

In normal mode the subwoofer is permanently on. This may result in low level hum or noise from the subwoofer if the rest of the system is switched off and the subwoofer is left switched on. Setting the AUTO switch to ON will automatically turn the subwoofer on when a signal is detected at any of the inputs and turn it off (Standby Mode) after about 30 seconds of inactivity. We recommend that the AUTO switch be set to ON for normal operation. The Status Indicator on the front panel glows yellow in Standby and red when operational.

Fine Tuning

Switch on the subwoofer power switch and check that the power indicator on the front of the cabinet glows. Now switch on the system. Play a programme with extended bass and set the system volume to a reasonable level. Adjust the subwoofer volume control to produce the desired level of bass. Do not overdo things!

After Use

If the system is not in use for extended periods, switch off the subwoofer to protect it from switching noise and mains borne interference. Always turn the main volume control to minimum when you switch the system on or off.