REL

REL
ACOUSTICS LTD.

Operating Instructions for the

No.25 Sub-Bass System

Caution Marking Explanation

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Important Safety Instructions

1 Read all of these instructions.

2 Save these instructions for future use.

3 Heed all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with automotive polish and micro fiber cloth.

7 Install in accordance with the manufacturer's instructions.

8 Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.

9 Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult and electrician for replacement of the obsolete outlet.

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

11 Only use attachments/accessories specified by the manufacturer.

12 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.

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

14 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 rail or moisture, does not operate normally, or has been dropped.

Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Warning

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on apparatus.

The mains plus is used as disconnect device. The mains plug of the apparatus should not be obstructed OR should be easily accessed during intended use. To be completely disconnected from the power input, the mains plug of the apparatus shall me disconnected from the mains.

An appliance with a protective earth terminal should be connected to a mains outlet with a protective earth connection.

Design Safety

This apparatus is supplied with a detachable mains cord. For 240V operation a 3.15/S/2, 5A/S/3, 5A/S/5 fuse is fitted in the socket, for 120V operation a 6.3A/S/2, 9A/S/3, 9A/S/5 fuse is fitted. Should the fuse need to be replaced use a similar rated fuse approved to ASTA or BSI 362 standards. Do not use without the fuse cover in place. Replacement fuse covers are available from your distributor.

Attention Explication Marquage

L'éclair avec le symbole de pointe de flèche dans un triangle équilatéral est destiné à alerter l' utilisateur de la présence de non isolée tension dangereuse à l'intérieur de l'enceinte du produit qui peut être d'une ampleur suffisante pour constituer un risque d'électrocution pour les personnes.

Le point d'exclamation dans un triangle équilatéral est destiné à alerter l'utilisateur de la présence d'instructions dans la documentation accompagnant l'appareil exploitation et de maintenance (entretien).

Informations Importantes Relatives a la Securite

1 Lisez attentivement ces instructions.

2 Conservez ces instructions.

3 Respectez tous les avertissements.

4 Suivez toutes les instructions.

5 Ne pas utiliser cet appareil près de l'eau.

6 Nettoyez seulement avec du vernis automobile et tissu microfibre.

7 Installer conformément aux instructions du fabricant.

8 Ne pas installer près de sources de chaleur telles que des radiateurs, registres de chaleur, poêles ou autres appareils (y compris les amplificateurs) qui produisent de la chaleur.

9 Ne pas contourner le dispositif de sécurité de la prise de terre. Une fiche de terre a deux lames et une troisième broche de mise à la terre. La troisième broche est fournie pour votre sécurité. Si la fiche fournie ne rentre pas dans votre prise, consultez un électricien pour le remplacement de la prise obsolète.

10 Protégez le cordon d'alimentation ne soit piétiné ou pincé, en particulier au niveau des fiches, des prises de courant, et le point de sortie de l'appareil.

11 Utilisez uniquement des fixations/accessoires spécifiés par le fabricant.

12 Utilisez seulement avec un chariot, stand, trépied, support ou table spécifié par le fabricant, ou vendu avec l'appareil. Lorsque vous utilisez un chariot, soyez prudent lorsque vous déplacez l'ensemble chariot/appareil pour éviter les blessures en cas de chute.

13 Débranchez cet appareil pendant un orage ou lorsqu'il est inutilisé storsm pour de longues périodes de temps.

14 Confiez toute réparation à un personnel qualifié. Une réparation est nécessaire lorsque l'appareil a été endommagé de quelque façon que ce cordon d'alimentation ou la fiche est endommagé, du liquide a été renversé ou des objets sont tombés dans l'appareil, l'appareil a été exposé à rail ou à l'humidité, ne fonctionne pas normalement, ou a été échappé.

Attention: Tout changement ou modification non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement.

Avertissement

Cet article est lourd. Pour éviter tout risque de blessure, prendre soin lors de la manipulation.

L' appareil ne doit pas être exposé à des éclaboussures et aucun objet rempli de liquide, comme des vases, ne doit être placé sur l'appareil.

Les conduites Plus est utilisé comme dispositif de déconnexion. La fiche de l'appareil ne doit pas être obstruée OU doit être facilement accessible pendant l'utilisation. Pour être complètement déconnecté de l'alimentation électrique, le cordon d'alimentation de l'appareil doit me débranché.

Un appareil avec une borne de terre doit être branché sur une prise de courant en étant relié à la terre.

Sécurité Design

Cet appareil est livré avec un cordon amovible cordon. Pour le fonctionnement d'un fusible de 220V 3.15/S/2, 5A/S/3, 5A/S/5 est montée dans la douille, pour le fonctionnement de 120V un fusible de 6.3A/S/2, 9A/S/3, 9A/S/5 est monté. Si le fusible doit être remplacé utilisation un fusible similaire approuvé pour ASTA ou BSI normes 362. Ne pas utiliser sans le couvercle de fusible en place. Les couvercles de rechange sont disponibles auprès de votre distributeur

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: *This equipment has been tested and found to comply with the limits for a Class B digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.*

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Dear No.25 Owner

Thank you for purchasing your new REL No.25, this unit is produced with great pride and operates as the standard bearer summarizing a journey that has taken REL 25 years to achieve. As the commemorative unit marking 25 successful years, the No.25 takes all the best technologies developed over the past quarter century and adds a few important design improvements to create a new standard to carry us on to the next 25 years.

Scale and Power: There is, as the saying goes, no replacement for displacement. Our development of a super, light, fast 15 inch driver was no easy task and it took quite some time to find a manufacturer capable of building to our standard. Anyone can build a big, loud 15 inch driver; the hard part lies in keeping it lightweight and yet stiff enough to hold up to the rigors our customers regularly put their units through.

160 square inches, capable of moving 2" fore and aft (total stroke of 100mm or approx. 4") of specially prepared, woven carbon fibre allows for massive wave-fronts to be developed. And yet, what will surprise serious students of the infra bass art is the speed, texture and liquidity this driver expresses. But for the effortless extension and power it produces in spades, it sounds even faster than a great 10" driver.

Un-corruptible Power: REL required serious power to unlock the performance potential of the No.25 driver and so we turned to our newest amplifier design, a specially developed Class D amplifier that produces a continuous 1,000 watts and can deliver yet higher output on peaks. Naturally, this amplifier has already proven itself to be rugged and reliable in the field so feel comfortable trusting our commemorative design to this beast of an amp.

It All Begins Up Front: To this bulletproof amplifier and driver combination, we applied the legendary filter set we developed for the No.25; these are the fastest filters we have ever measured at just 4 ms and a crossover that begins as low as 20Hz. Beyond simply technical bragging rights, they are the most natural sounding filters we have ever experienced.

Taming the Room: We don't believe in room correction, too often this is the bastion of those who would rather not get it right in room design nor set-up, but believe they can "correct" it all with an enormously complicated filter called room correction. There is no free lunch in high end audio and the price that must be paid is loss of impulse response (speed and dynamics)—not to mention highly variable results using these computerized attempts to fix all.

We have chosen to include not 1 but 2 parametric equalizers using specially developed REL-fast filters. Each filter permits boost or cut of 6 dB, a perceived doubling or halving of output in a narrow frequency range. REL Parity™ allows the advanced set-up artist the ability to identify room modes, both peaks and dips, and

smooth out the overall in-room response. While it takes a little practice (and generally a gentle hand on the controls is highly recommended) the results are highly gratifying. Use it to gently fill in an area that requires more output and then gently cut bass in the upper range that is too exuberant.

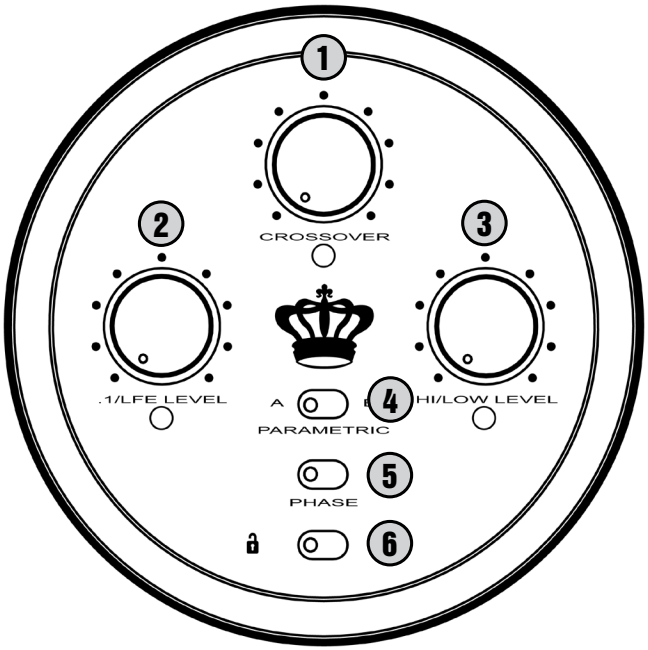
A Beautiful Body: The curvaceous cabinet is designed to push further the experience of minimizing internal cabinet resonances by creating a curvilinear cabinet that does not permit any single frequency from building up a dominant mode. It is this stiff, fully-braced like a fine musical instrument design that allows the full palette of tonal colors to emerge from No.25 along with the prodigious dynamics for which it is quickly becoming known. Even the Bass String™ grille has been designed with an eye to beauty and airflow, allowing enormous displacement of air to pass through without restriction, where a conventional grille would muddy the sound.

In sum, the No.25 puts into practice all the many lessons – and more – learnt by REL along its 25 year journey-to-date. We look forward to enjoying the next 25 with you, many thanks for allowing us to serve you.

Sincerely,

John Hunter

REL No.25 Remote Control and Rear Panel Legends



Remote Control

1 Crossover: Used to adjust crossover frequency. Variable between 20-90Hz.

2 .1/LFE Level: Used to adjust output level when using .1/LFE input from a surround-sound processor. Also used to adjust Parametric EQ frequency.

3 High/Low Level: Volume control for High/Low Input. Use to adjust output when using either High Level or Low Level input. Also used to a adjust Parametric EQ level.

4 Filter: Used to select filter operation.

5 Phase: Used to set phase 0-180 degrees.

6 Security: Used to lock remote settings. To extend battery life of the remote, always leave the toggle switch in the locked position when not in use.

REL No.25 Rear Panel Connection Legend

1 .1/LFE RCA Input: Used to connect to the .1/LFE output of a surround-sound processor.

2 .1/LFE RCA Output: Used to connect or “daisy chain” another REL No.25 in tandem.

3 Left & Right Channel Low-Level RCA Input: Used to connect low-level signals to the sub-bass system from the output of a preamplifier, integrated amplifier or receiver. (For home cinema use, use .1/LFE input).

4 High Level Input (Neutrik Speakon): Used to connect to the main front amplifier speaker terminals.

5 High Level Output (Neutrik Speakon): Used to connect or “daisy chain” another REL No.25 in tandem.

6 .1/LFE Balanced Input: Balanced (XLR connector) version of .1/LFE Input. For use only with fully balanced cables.

7 .1/LFE Balanced Output: Balanced (XLR connector) version of .1/LFE Output. For use only with fully balanced cables.

8 Ambient Trig: Used to turn ambient light on the underside of the sub on and off by a 12VDC trigger

9 Ambient Control: Used to pre-set the amount of ambient light from the underside of the sub.

10 Parametric Filter: Used to engage parametric filter into the signal path.

11 Antenna Connector: Used with REL Longbow™ transmitter.

12 Pair Pilot Light: Indicates if unit has been paired with REL Longbow™ transmitter.

13 Pair Switch: Used to initiate pair sequence with REL Longbow™ transmitter.

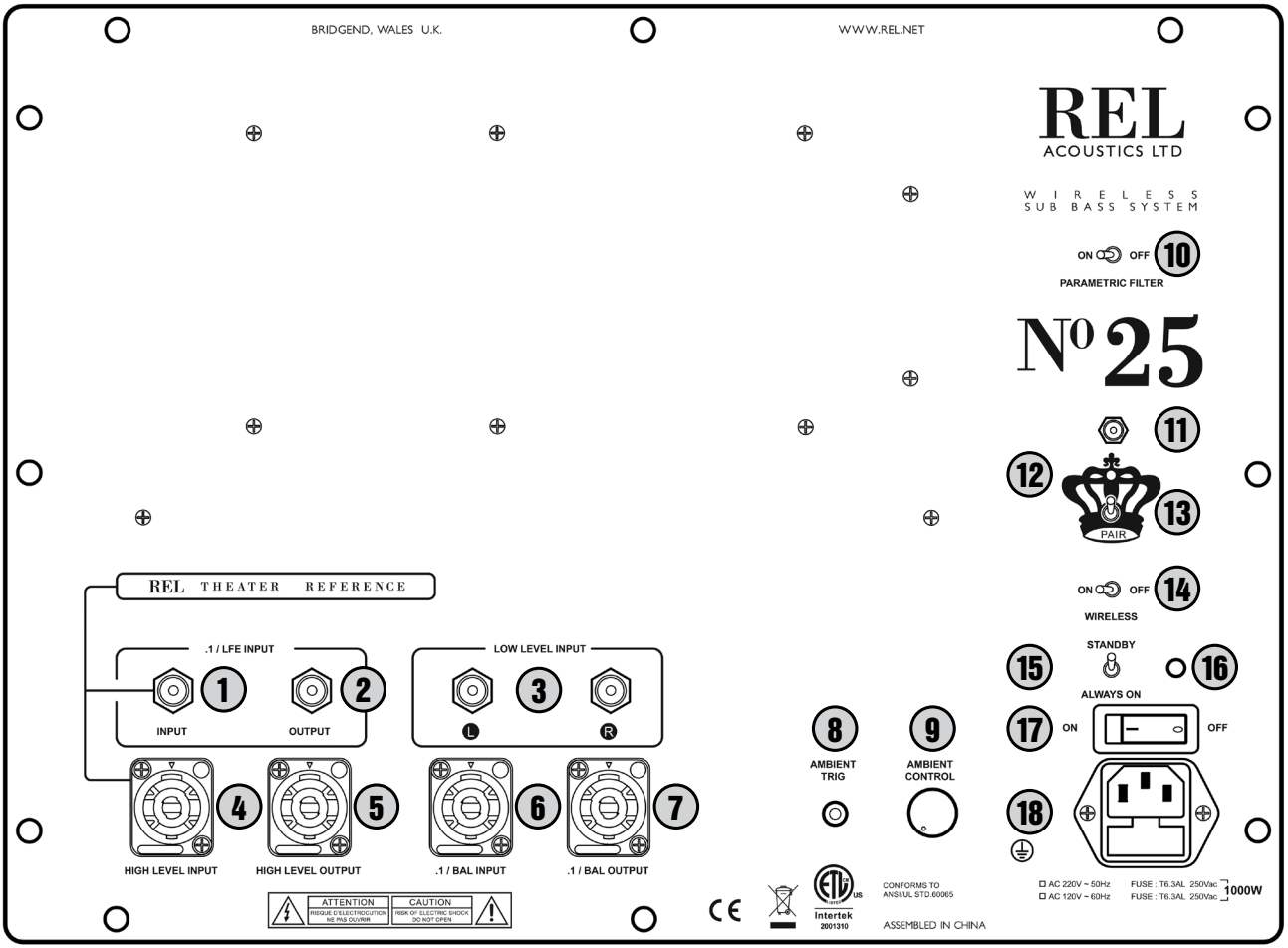
14 Wireless enable switch:Used to turn on wireless receiver when connected to REL Longbow(TM) wireless transmitter.

15 Standby/Always On Switch: Used to enable standby mode.

16 Power Pilot Light: Power On/Off indicator.

17 Power On/Off Switch: Use to turn unit on or off.

18 IEC Mains Socket: Fused mains (AC) input socket that accepts detachable power cord.


BRIDGEND, WALES U.K.
WWW.REL.NET
REL
ACOUSTICS LTD
WIRELESS
SUB BASS SYSTEM
ON OFF 10
PARAMETRIC FILTER
Nº25
11
12
13
PAIR
ON OFF 14
WIRELESS
STANDBY
15
16
ALWAYS ON
17
ON
OFF
18
REL THEATER REFERENCE
.1 / LFE INPUT
1
INPUT
2
OUTPUT
LOW LEVEL INPUT
3
L
R
8
AMBIENT TRIG
9
AMBIENT CONTROL
4
5
6
7
HIGH LEVEL INPUT
HIGH LEVEL OUTPUT
.1 / BAL INPUT
.1 / BAL OUTPUT
ATTENTION
RISQUE D'ELECTROCUTION NE PAS OUVRIR
CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
CONFORMS TO ANSI/UL STD.60065
Intertek 2001310
ASSEMBLED IN CHINA
AC 220V ~ 50Hz
AC 120V ~ 60Hz
FUSE : T6.3AL 250Vac
FUSE : T6.3AL 250Vac
1000W

Connectivity and Functionality

High-Level Input
Connections should be made to the same binding post on main amplifier as the main speakers. Red to amplifier main right speaker red terminal, yellow to amplifier main left speaker red terminal and black to amplifier main speaker black terminal, right or left but not both. Plug the Neutrik® Speakon® plug into the HI LEVEL Speakon® socket.

.1 Input
This requires a RCA to RCA or XLR to XLR cable and is a dedicated true .1 channel. This circuit therefore eliminates the normal Natural RollOff™ Crossover and passes the .1 low-level signal through with only the required 120Hz fourth-order filter.

Low-Level Input
The RCA inputs allow for conventional connection from a preamplifier and should be used in the rare event that a high-level connection proves incompatible. Plug one end of the RCA to RCA cables into the LOW LEVEL INPUT jacks of the REL and the other end into the left and right channel output of your preamplifier.

Phase Switch
Used to set phase. Phase Switch on remote control is momentary. Refer to display for 0 or 180 degree status. Phase selection affects High Level, Low Level and .1/LFE inputs.

PHASE SELECTION AFFECTS BOTH HIGH AND LOW LEVEL INPUTS
Crossover is always engaged for high and low level inputs. The .1/LFE signal does not pass through the crossover circuit.

Filter
The No.25 can employ a two band parametric EQ filter. With the top Filter switch in the center location the remote acts in normal operation. With the switch in the far left position, the .1/Level control on the remote changes the frequency of EQ filter 1, and the Hi/Lo Level control on the remote changes the level of EQ filter 1. With the switch in the far right position, the .1/Level control on the remote changes the frequency of EQ

filter 2, and the Hi/Lo Level control on the remote changes the level of EQ filter 2. Each filter has a frequency range from 20Hz to 90Hz. The level set of each filter is +/- 6 dB in 1/3 dB increments.

LED Display

An LED display is located on the upper right front of No.25. All functions that are user adjustable via the remote control can be seen here. The display reverts to off a few seconds after adjustment. The top three characters indicate the parameter being controlled by the remote and the bottom two numbers indicate the value of the parameter controlled.

Parameter	Display
High/Low Level	HL
.1 Level	.1
Crossover Frequency	CO
Phase	PH
Parametric EQ1	E1
Parametric EQ2	E2

Ambient Control

No.25 has an array of ambient lights on each side, outboard of the feet. The intensity of these lights can be controlled with the 4 position AMBITET CONTROL switch. Starting with the switch in the far counter clockwise position, the lights are off, as the switch in moved to the next three positions, the intensity will increase. The ambient lights can be triggered off for theater viewing with a common 12VDC trigger. 0V at AMBIENT TRIG keeps the lights ON, +12V at this trigger input turns them OFF.

Remote Control Battery Installation

No.25's Remote Control Unit requires two AAA batteries. These are not installed but are supplied. To install or replace batteries in the Remote Control Unit, first remove the bottom aluminum cover by using the supplied 2.5mm Hex key to loosen the two visible screws. With the bottom cover removed, you will see a battery holder, which will accept two AAA batteries. Follow the images on the holder for proper orientation of the batteries. After installing the batteries, test the unit by setting the SECURITY switch to UNLOCK and turning one of the knobs. If the batteries are installed properly, you will see one of the red LEDs on the remote control's front panel illuminate. Replace the bottom cover and tighten the two screws using the supplied Hex key. Battery life can be extended if the SECURITY toggle switch is left in the LOCK position when the Remote Control is not in use.

Connecting Up

Always switch off your system before disconnecting any wires.

To increase the versatility of connecting up, the No.25 models have three separate inputs. A high-level input socket, a .1/LFE input consisting of both RCA and XLR connectors, and a low-level input that includes two RCA sockets for stereo input. This is to facilitate use with both two-channel stereo systems and AV surround sound systems.

The high-level, unbalanced, dual-channel (stereo) input is via a Neutrik® Speakon® connector is designed to accept the stereo (two-channel) signals from the speaker terminals of your receiver, integrated amplifier or basic amplifier. This has the advantage of ensuring that your subwoofer receives exactly the same signal as the main speakers, which means that the character of the bass from the main system is carried forward into the Sub-Bass System.

This is a very important point and together with REL's Natural RollOff™ circuitry, ensures far superior system integration of the Sub-Bass System with the main system.

To engage the Neutrik® Speakon® plug, insert fully into socket and rotate clockwise until locked.

To remove the Neutrik® Speakon® plug, grip body of plug, place thumb on chrome lever, move lever backwards, rotate plug anticlockwise quarter turn and withdraw.

There are two RCA sockets for low-level connection to the output of a stereo preamplifier or receiver. Another single RCA socket connects to the .1/LFE output of a home cinema processor.

HIGH LEVEL and .1/LFE inputs can be used simultaneously. The benefits are two-fold when used with a home cinema processor. The low-level input reproduces the .1/LFE channel and the high-level connection underpins the main front speakers. The main front speakers should be set to the 'large' option on the processor. See "theatre Applications" for more information.

REL Set-Up Made Simple

REL products are not traditional subwoofers, but true Sub-Bass Systems. A REL is designed to augment the performance of "full range" speaker systems in order to provide, in certain cases, linear response below 15Hz. Therefore, for the moment, please set aside everything you've been taught about subwoofers and how they are integrated into a stereo or home cinema system. REL Sub-Bass Systems set-up and positioning differs from conventional subwoofers. A REL will take advantage of physics and room acoustics to provide deep pressurization as no traditional subwoofer can. It is important that you bring to the set-up process a willingness to do things a little differently in order to obtain these superior results. The end result of your labors will be an utterly seamless integration of true deep bass to a sound system, regardless of the main speakers' low bass capability.

Basic set-up should take no more than ten to fifteen minutes to accomplish once connected.

Two Things Before You Begin

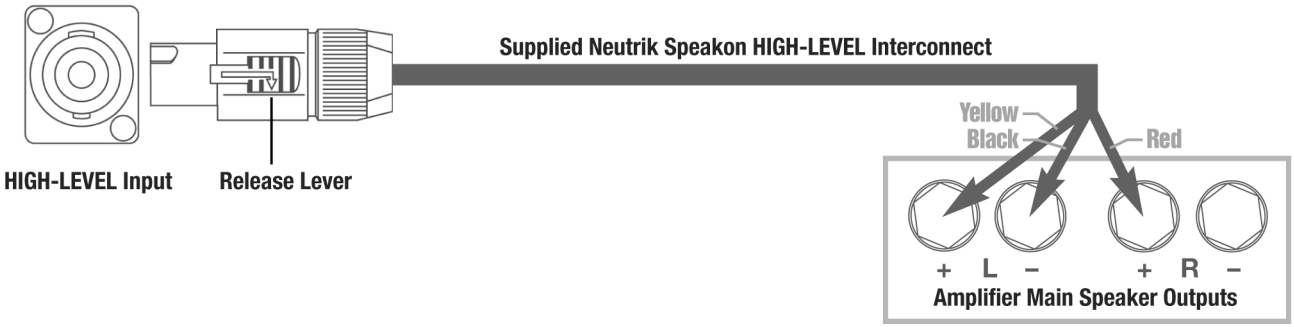
1. It is helpful to know that you will almost always connect the REL to the input on the rear panel labeled "HIGH-LEVEL INPUT." This connection is made using the supplied 32' 10" (10 meters) cable, the bare leads of which connect to the speaker output terminals of the power amplifier. The easy and foolproof connection at the REL is done with a Neutrik® Speakon® connector. The purpose of connecting to the speaker output terminals is one of the unique secrets of REL's success. By connecting to the High Level input on the REL from the amplifier, you build forward the sonic signature of your main system, including the tonal balance and timing cues of the entire electronics chain. In this way, the REL is fed the exact signal that is fed to the main speakers.
2. When possible, the REL should be placed in one of the corners behind the speakers. Remember, we are dealing with true LOW bass pressurization with RELs. Low bass pressurization below 40Hz is best derived from corner placement, where the most linear and efficient low bass can be produced because the subwoofer is able to take advantage of the tangential (corner-to-corner) axis which is typically the longest axis in a room.

Connecting and Setting Up

High-level connection, using the enclosed cable with the Neutrik® Speakon® connector, is always the first choice. This connection can be made without affecting the performance of the amplifier because the REL's amplifier input impedance is 150,000 ohms, in effect producing NO additional load on the rest of your system.

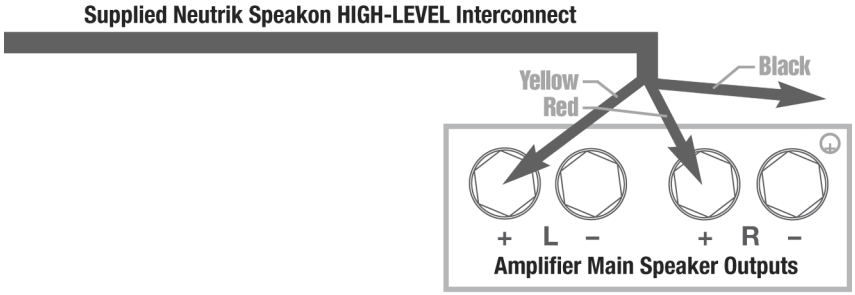
- The standard high-level hook up procedure is: attach the red wire to the amplifier's right positive speaker output terminal; attach the yellow wire to the amplifier's left positive speaker output terminal; attach the black wire to whichever of the amplifier's ground output terminals is convenient; plug the Speakon® connector into the Sub-Bass System's high-level input.

Standard High-level



- For differential (i.e. fully balanced) amplifiers using one REL, simply use the standard connecting scheme with the exception of NOT connecting the black wire to a negative speaker terminal. Instead, it should first be allowed to "float" or hang down without connection to ANY terminal. Should hum occur using this method, please try connecting to an unused RCA connector on the rear of a preamp or amplifier. Please contact your dealer should there be any questions concerning this or any other hookup procedure.

Differential (i.e. Fully Balanced)

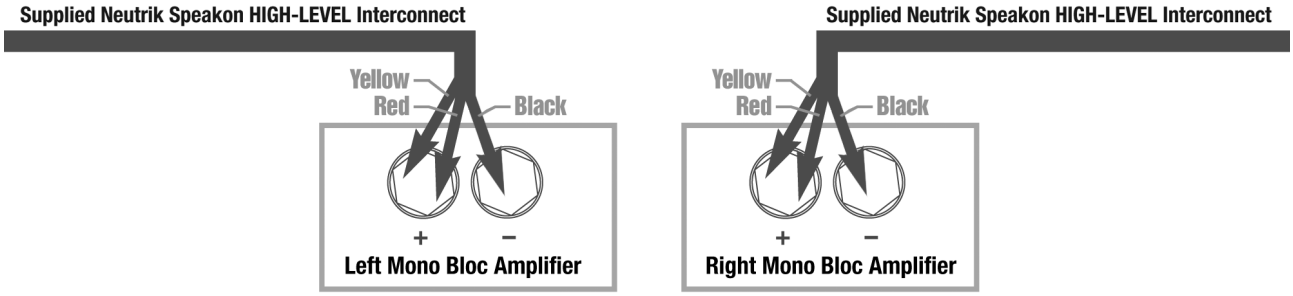


NOTE: *No.25 models are equipped with internal circuitry to allow connection to many Class-D (digital) amplifiers. Warning: Do NOT connect the Black wire to the main Class D power amplifier's speaker ground terminal. Some Class D amplifiers produce positive voltage at the amplifier's speaker ground terminal (black)*

and connecting the REL's ground will produce an undesirable shorting to ground. If connecting to a Class-D amplifier, follow the above connection procedure for differential amplifiers.

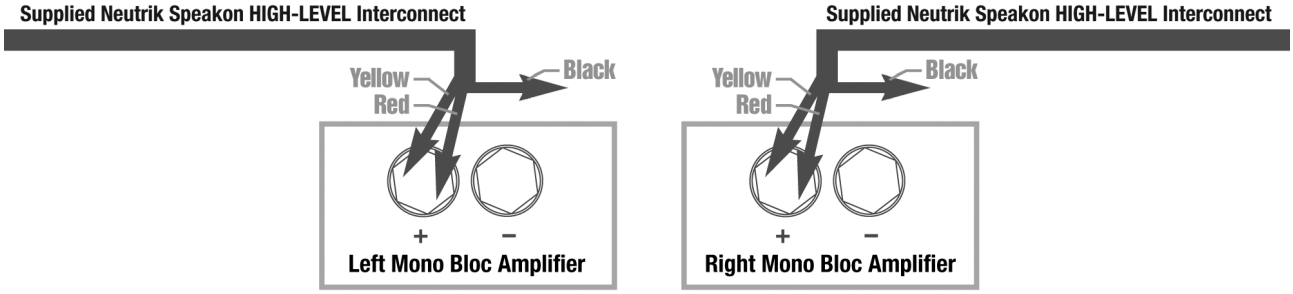
- When connecting RELs to Mono Bloc amplifiers (2) RELs, one for each amplifier, must be used. Connect the black wire of each REL to the negative speaker terminal of the corresponding amplifier channel; twist together the red and yellow wires of each REL separately and connect each pair to the positive speaker terminal of the corresponding amplifier channel. In some instances, this will result in exceptionally high gain (output) from the RELs. If it seems simply too high in gain, please remove either the red or yellow wire from the twisted pair. This will reduce output by half and restore a natural dynamic.

Mono Bloc



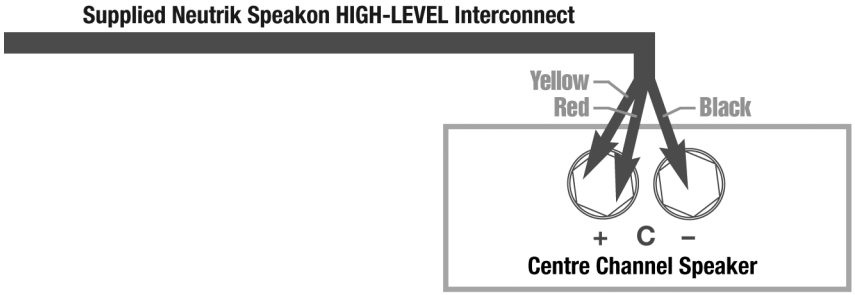
If the amplifier is of balanced differential design, please follow the instructions in the section above labeled Differential Connection.

Mono Bloc Differential



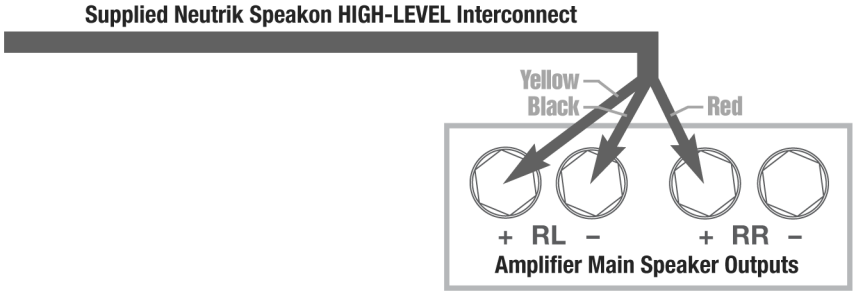
- If connecting a single REL as a dedicated centre channel sub, an insider tip is to consider connecting to the rear of the speaker, rather than routing the REL High Level enable all the way back to the amplifier. Connect the black wire of the REL to the negative centre channel speaker terminal; twist together the red and yellow wires and connect this paired cable (red/yellow paired together) to the positive centre channel speaker terminal.

Dedicated Centre Channel



- If connecting a REL as a dedicated rear channel sub, connect the black wire of the REL to either the left rear or right rear negative speaker terminal; connect the yellow wire to the left rear positive speaker terminal; connect the red wire to the right rear positive speaker terminal. If the amplifier is of balanced differential design, please follow the instructions in the section above labeled Differential Connection.

Dedicated Rear Channel



Low-level connection (via RCA connectors) is always an option if high-level connection is not possible. When connecting to the low-level inputs in a system in which high-level connection is not possible, such as if using internally-amplified speakers, connect left and right RCA cables between the LOW LEVEL INPUT jacks of the REL and the left and right channel outputs of your preamplifier.

When connecting to a home cinema system where there is a .1/LFE channel output, connect a single RCA to RCA or XLR to XLR cable between the sub output of the processor/receiver and the .1/LFE input jacks on the REL.

1 **Positioning:** The optimal position for a single REL No.25 is in one of the corners behind the main speakers. This position provides 9 dB of mechanical amplification and allows for the most linear true low bass wave launch, owing to the ability to tune the REL's crossover to the longest distance in the room in order to produce the longest, therefore lowest frequency, bass waves.

1a. Stereo Set-Up of No.25: (see page 21 through 23 for Stereo Set-Up procedure). When this step has been completed, proceed to Number 2, immediately below.

2 **The Process:** To begin the set-up process, choose a piece of music that has a repetitive bass line that is very low in frequency. We suggest track 4 from the soundtrack to Sneakers (Columbia CK 53146). This has a repetitive bass drum throughout that gives you plenty of time to move the woofer around, but more importantly, the venue was quite large for this recording, and therefore it has a very deep and large-scale bass signature. This track is perfect for the set-up process and should be played at the highest reasonable level expected for system playback.

Working with a partner, one in the listening position and one at the REL manipulating the controls, is the most effective and efficient way to set up the REL. If working alone, the initial steps in the set-up can be very effectively carried out from the location of the REL. Trying to ignore all other music in the track, listen for the bass drum and its effect on the listening room.

3 **Phase Orientation:** Once in the corner, we need to adjust for phase. This may be the single most critical step, and because it really is quite simple, it is often over-thought. Keep in mind; the right phase is whichever position is the loudest or fullest. While playing music with true low bass, adjust the crossover to a point where the REL and the speaker are sure to share frequencies at 50Hz on the crossover control, or slightly higher for smaller speakers. At this point turn the HI/LO LEVEL control up so that both the REL and speaker are roughly equal in volume and then switch, using the phase switch, from "0" to "180" phase positions. Again, whichever position is loudest or fullest is the correct position. That is, when the position is working in harmony with your main speakers, reinforcing bass, not canceling it.

4 **Corner Fine Tuning:** (When Setting up for Stereo No.25 it is Possible that Placement is Not Corner Loaded and this Step May be Omitted). The next step is to determine precisely how far from the corner the sub should be placed to achieve the most efficient output, as well as the lowest frequency extension. With the REL fully into the corner, and pointing straight out along the diagonal coming out of the corner, continuing to play the music, slowly pull the REL from the corner on the diagonal, equidistant from both side and rear wall. At a certain point (sometimes a matter of only a few inches, in rare cases a foot or more) the REL will audibly go lower, play louder, and, if it truly locks on to the room and is fully pressurizing it, the air around the REL will seem to be energized, stop right there! This is the correct position from the corner for the REL.

5 **Orientation:** Once the position from the corner has been established, the orientation of the woofer must be determined by rotating the REL from an imagined centre point at the rear of the REL. As the REL is moved from one side to the other listen for the greatest level of output and bass linearity. In effect, the REL should be left in the position where it is playing the loudest and lowest.

6 **Crossover and Level Settings:** To determine the crossover point, take the volume of the REL (using the HI/LO Level control) all the way down, and put the crossover to 30Hz. At this point, bring the REL's volume back up slowly to the point where you have achieved a subtle balance, i.e. the point at which you can just hear the No.25 even with the main speakers playing. First, bring the crossover point up until it is obviously too high; now gently reduce frequency to the appropriate setting. For all intents and purposes, this is the correct crossover point. Once this stage has been reached, subtle changes to volume and crossover may be accomplished to provide the last bit of complete and seamless integration. With that, set-up is complete.

HINT: *There may be a tendency to set the crossover point too high and the volume of the Sub-Bass System too low when first learning how to integrate a REL with the system, the fear being one of overwhelming the main speakers with bass. In making this common error, the resulting set-up will be lacking in bass depth and dynamics. The proper crossover point and volume setting will increase overall dynamics, allow for extended bass frequencies, and improve soundstage properties. Note, volume adjustments may need to be made to offset the effects of crossover changes. In general, when selecting a lower crossover point, more volume may need to be applied. Higher crossover frequencies will generally necessitate less gain.*

Parametric Equalizers

It is not recommended that average users attempt to use the parametric equalizers included in No.25 as miss-application of these filters can produce results detrimental to the average room. No.25 provides for 2 parametric filters that may be used to cure certain room acoustics challenges. Use of these should very much be seen as optional, and engaging either requires physically turning on the toggle switch on the rear panel that supplies power to BOTH parametric EQ's. These 2 filters provide for up to 6 db of boost or cut at any frequency between 20 and 90Hz.

Attempting to use any filter to produce perfectly flat response is a fool's errand. Best results will be achieved by gentle application of gain or cut functions with +/- 3 dB or less to be considered a normal operating range.

Application: Most rooms produce room gain--higher output--in the upper bass region, typically in the 70-80Hz region. Generally speaking, most rooms have reduced gain in the low bass regions, somewhere in the mid-20's to mid-30's area. For this reason, we provide you the ability to produce noteworthy improvements in both trouble regions by gently cutting the higher bass frequencies and gently boosting the lower region.

To share our own experiences; while developing this filter set in our own studios, we found +2 dB at 25Hz and -2 dB at 43Hz (crossover frequency was set to 34Hz) produced evenness of output and the overall result was found to be much more consistent across the entire bass range. More impressive in long term listening were improvements in clarity extending all the way up into the upper midrange. This is clearly the result of a slight reduction in mid bass overhang that the 43Hz cut function provided.

Resist the temptation to try to affect massive swings in output in certain very narrow frequency ranges (+6 dB at 34Hz and -6 dB at 38Hz) as this will almost certainly prove to be counterproductive.

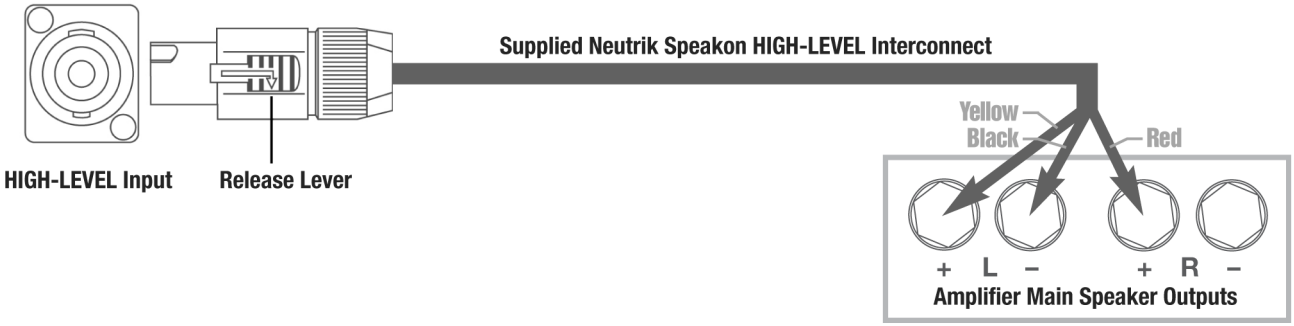
Stereo Set-Up of REL No.25

Stereo Sub-Bass is advised for the fastest, clearest, deep bass—not for more output. Conventional wisdom has it that stereo subs results in between +3 and +6 db additional output depending upon positioning. In and of itself, this is of only passing interest in most instances since even a single No.25 is capable of profound output. What then, is the point to adding a second stereo sub bass No.25?

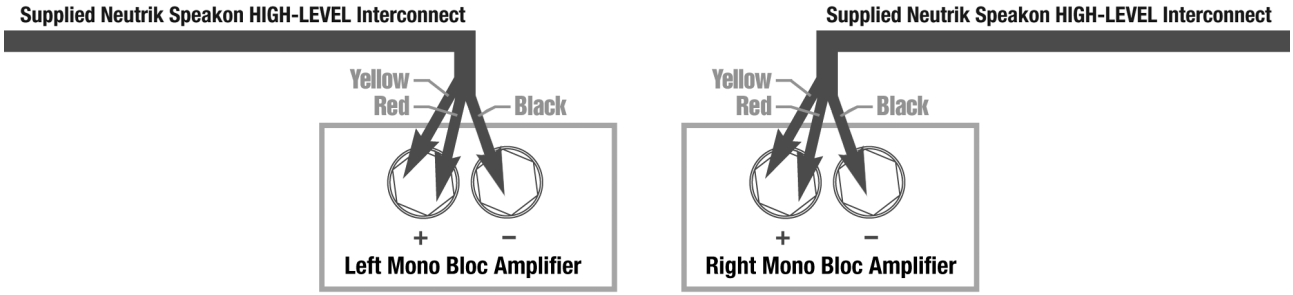
In a word, clarity. Clarity that permits "seeing" back into the farthest reaches of the sound stage. Clarity that illuminates all dimensions of the musicians and the space that they inhabit equally and enhances the natural reality of a great full range system, as only RELs can. Stereo No.25s and vertical stacks, often referred to as 6-Packs, produce clarity, transparency, speed and low level detail NOT just in the bass but throughout the entire spectrum of music.

Set-Up: When setting up stereo No.25s, it is possible to place both units in the front corners of the room, carefully toed-in and placed per normal guidance in this manual. Connect each sub to the speaker terminal outputs based on the following diagrams for standard stereo amp, non-balanced mono blocks or balanced differential mono blocks.

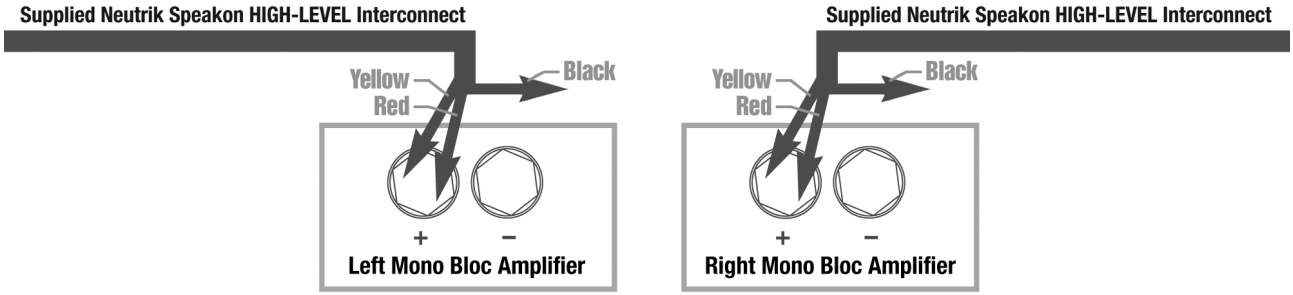
Standard High-level



Mono Bloc



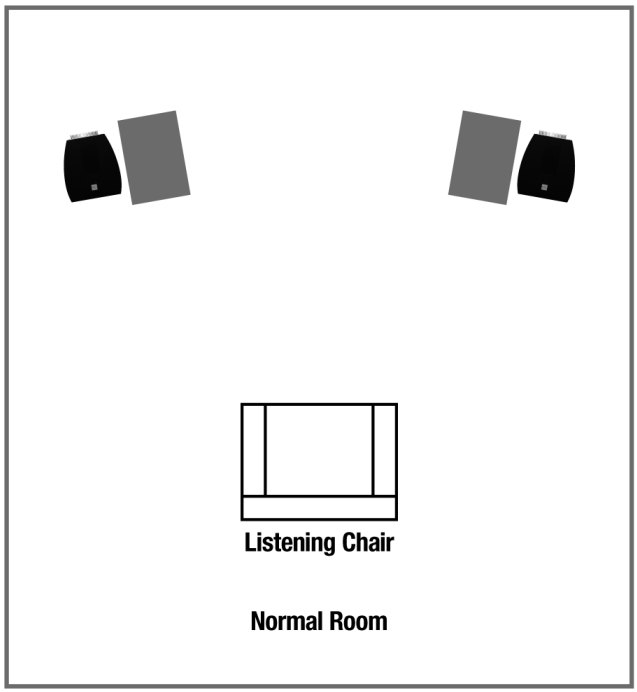
Mono Bloc Differential

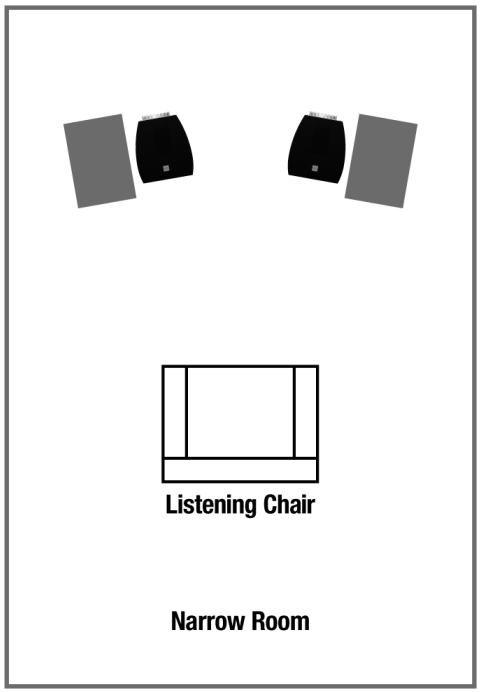


Expert Set-Up: Preferable is to bring the subs further out into the room and place them slightly behind and outboard of the main speakers.

1 Set each side up independently. Disconnect the sub that is not being set-up so your complete focus can be given over to the sub that is being set-up. Carefully follow the guidance provided in standard set-up if you are unfamiliar with standard REL set-up procedure for gain, phase and crossover settings .
(See page 17 for standard set-up procedure).

2 Carefully fine-tune the position of the sub in its recommended location (slightly behind and to the outside of the main speaker) listening for rich powerful room nodes, but focusing on speed and connection with the main speaker. Since there will be a preponderance of output available to a stereo No.25 owner, focusing on connection with and blending with the main speaker becomes the primary focus, not merely raw output.





3 Once each sub has been carefully tuned, attach the cables for both subs. At this point, the output achieved will be too loud and will require re-setting the volume/gain control of each No.25 lower. This is normal as the combined output is likely to be at least 3 db louder with both subs now being used. Using the supplied remote, carefully turn down each sub until perfect balance is achieved. While turning the left or right sub gain down, it is helpful to turn slightly and even lean slightly toward the side that is being adjusted to better achieve focus and a balanced sound level more quickly.

No.25 is designed to allow multiple units to be used in conjunction either as stereo pairs, or the ultimate: vertical tower stacks of stereo subs. Stacked towers extend and strengthen the performance.

Connectivity for Towers of No.25, Multiple Sub-Bass Systems

To render connectivity simple, No.25 provides both inputs and outputs for all connections. Thus, a stack of No.25 can be connected using only one high-level main cable from power amp to REL stack. In a .1 film sound configuration each channel will require a single main.1 cable as well, but additional units' .1/LFE connections in a tower may be daisy chained to minimize clutter. Stacked No.25 subs have the ability to effortlessly energize even the largest of salons with huge wavefronts of air, from the most delicate cello pizzicato to the most crushing of pipe organs played at triple forte, No.25 possesses the ability to convey the musical event or film sound spectacularly and with ease.

This connectivity allows for the same amplifier output signal to easily feed multiple sub-bass systems.

Simply use the optional cable (Speakon-to-Speakon) to connect from the "HIGH LEVEL OUTPUT" of the first sub-bass system to the "HIGH LEVEL INPUT" of the second unit.

When "daisy chained" each sub-bass system retains its autonomy and each will need to have its output level, crossover point, phase, etc. adjusted individually.

For multi-channel home cinema systems, the same procedure is followed except a RCA-to-RCA cable is also used to connect the first sub-bass system ".1/LFE OUTPUT" to the ".1/LFE INPUT" of the second unit. As is typical for REL, both high-level and .1/LFE inputs can be used together and adjusted independently offering the ability to blend both signals to your taste.

Stacking Kit
The kit contains instructions for stacking, as well as a Speakon-to-Speakon high-level jumper cable for daisy-chaining.

Theatre Applications
For Dolby Digital AC3 or other 5.1 theatre systems, once the standard set-up for two-channel outlined above is complete, the LFE output from the processor or receiver should be connected to the .1/LFE INPUT and appropriate volume adjustments made using the .1/LFE level control. For this configuration, you must set the processor to the “large” or “full range” setting for the left and right speakers in order for the REL to receive the bass signal via the high-level cable. In this configuration, the REL provides support for both the left and right speakers for two-channel listening, and support for the LFE when movies are playing. Most processors will allow you to defeat the subwoofer output when listening in the two-channel mode. The effect of this set-up is one of greatly increased dynamics in the mid-bass range, no bass bloat, and a greater degree of space and timing from the special audio effects. For an even greater sense of space and impact, a second REL connected in parallel to the centre channel will prove to be a dramatic improvement as well. And if that is not enough, a rear REL, both to support the rear channel speakers as well as to evenly distribute LFE through the room, truly completes the full-range sonic picture for state-of-the-art film reproduction.

Running In
Care taken during run in will be rewarded by many years of pleasurable use. Both the electronics and the drive unit will benefit from an initial period of carefully controlled use. Possible damage may be sustained by running in the unit at too high a volume setting over an extended period. On the other hand, by taking a little care over this initial period, about 24 hours of actual use, a longer life with a higher potential eventual performance is assured.

Care and Polishing
The cabinets are best maintained by using an automobile polish made by reputable manufacturers. Our favorites are those made by Meguiars and Mother’s. If objects are to be placed upon the top, it is advisable to use a small mat to protect the surface and to avoid the risk of rattles.

Technical

No.25 employs an advanced filter circuit which provides exceptional performance when coupled to the rest of the signal chain of the Sub-Bass System. A second-order variable low-pass filter approximating a Bessel function was chosen for its linear phase response, which equates to flat group delay. This means that, unlike other filter functions, the amount of delay the signal is subjected to during processing is constant through the entire pass-band, which improves the frequency response and allows for better integration of the sub with the main speakers. An additional fixed second-order Bessel filter follows the variable filter, removing unwanted midrange signals that, if left unfiltered, cause the midrange of the main speakers to become muddy or congested. All filtering is performed in the analog domain using high-quality components with tight tolerances to ensure the highest possible performance and consistency.

The amplifier is inherently stable and will retain its characteristics over very long periods of time – important in a unit designed for an exceptionally long working life. These amplifiers are designed to withstand reasonable abuse and overloads. If in doubt, please contact your dealer.

We believe that the importance of the electronics, cabinet and drivers being designed to work in harmony is paramount. This belief allows No.25 to achieve the highest possible level of fidelity.

Overload Protection

All REL Sub-Bass Systems are designed as true sub bass speakers. They are designed to reproduce those exceptionally deep notes that are felt as well as heard. This it will attempt to do at whatever volume level you set. If set too high no damage should result because the built-in electronics will limit the cone movement. This electronic control is called Set-Safe™. It constantly and instantaneously monitors the output from the power amplifier and is totally transparent in operation until required. This means it has absolutely no effect on the sound quality of your REL until an overload is detected.

Ordinarily an overload would cause the power amplifier to go into clipping with resultant loss of control over the drive unit. This can cause drive unit damage, and always sounds nasty. Set-Safe™ detects the point of incipient clipping and gently soft-clips the waveform of the signal to ensure actual clipping does not occur.

This is a necessarily simplified description of what actually happens, but in effect, Set-Safe™ controls the amplifier and ensures there is minimum risk of amplifier and driver damage caused by over-driving.

A thermal overload device is fitted to all No.25 Sub-Bass Systems. If the unit is deliberately over-driven this device will sense the temperature rise and cut the output; recovery time is approximately five minutes. If this happens, it is a warning that the unit is being over-driven and the volume level control should be reduced to a safe level.

Although everything possible has been done to minimize risk of thermal overload failure, there can be no defense against those individuals who deliberately abuse the device. Such damage is NOT covered by warranty. Please remember your REL is there to supplement your main system, not overwhelm it!

Power Saving Efficiency

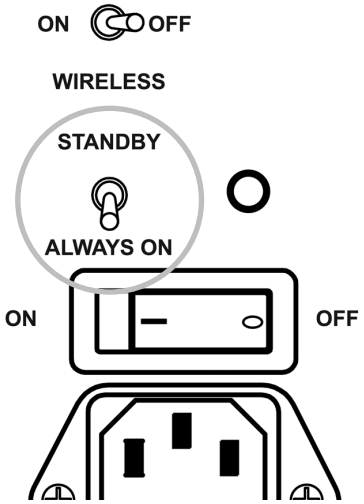
All REL sub bass system designs utilize a true On-Off switch that affords the owner the ability to turn off their unit completely, without having to unplug the A/C mains cord. When a REL sub bass system is switched off using the On-Off switch on the rear panel it draws ZERO power.

In addition to the efficient power-at-idle exhibited by all REL models, the No.25 also features an automatic standby mode that is enabled when the power mode switch on the rear of the unit is set to the “STANDBY” position. In this mode, the input signal is constantly monitored for audio activity. If not audio information is detected over a period of 30 minutes, the unit will enter a low power standby mode in which less power is consumed. When input signal activity is detected, the unit resumes normal operation. By using the standby mode, you can ensure that there is no unnecessary power draw when the unit is not in use.

NOTE: *Due to variations in program material, it is impossible to produce a perfectly reliable standby circuit. Bass rich music or effects will consistently trigger our standby circuit whilst content that is low in volume and possesses little or no bass cannot be relied upon to trip the standby function.*

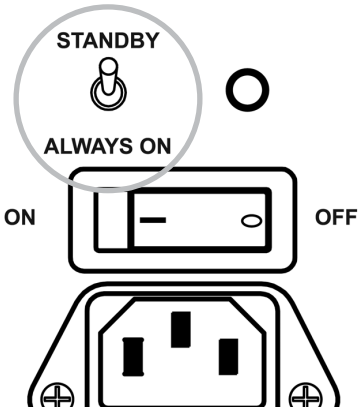
Alternatively, the user has the option to leave the unit in the normal operation mode at all times by selecting the “ALWAYS ON” position of the power mode switch. Leaving a REL on, produces the best sonic performance and the most reliable operation. In this mode, the unit will not enter standby regardless of whether or not there is activity at the input. Using this setting ensures that the No.25 is ready to react instantaneously to bass transients, whether in music or films.

The REL No.25 is shipped in the “ALWAYS ON” mode with the wireless receiver disabled.



During initial setup, use the REL this way. If you are using a REL Longbow™ transmitter for initial setup, the wireless switch must be enabled, please follow instructions for pairing included in the REL Longbow™ transmitter manual.

After initial setup, if you wish to employ the standby mode, simply move the power mode switch into the up position to “STANDBY”.



Power Draw			
Model	**Standby**	**Standby w/ wireless**	**Idle**
No.25	> 0.5 Watts	> 1 Watt	40 Watts

No.25 Specifications

Type:	Closed box, front firing woofer
Drive Unit:	15 in., 100mm long throw, carbon fiber cone with inverted carbon fibre centre cap
LF Response in Room:	-6 dB at 15Hz
Input Connectors:	High Level Neutrik Speakon, Low Level stereo RCA, LFE RCA, LFE XLR
Output Connectors:	High Level Neutrik Speakon, LFE RCA, LFE XLR
Gain Control Range:	80 dB
Power Output:	1000 watts (RMS) Ultra High-Current Power Supply
Phase Switch:	Yes, 0 or 180 degrees
Amplifier Type:	Next Gen II Class D
Wireless capability:	Yes – REL Longbow™ transmitter [required] – sold separately
Protection System	
Fully Electronic with SET-SAFE:	Yes
D.C. Fault:	Yes
Output Short:	Yes
Mains Input Voltage:	220-240 volts, 110-120 volts for certain markets
Fuses:	7 Amp semi delay 230 volts operation 15 Amp semi delay 115 volts operation
Dimensions (WHD):	Including feet and rear panel controls 29 x 21.3 x 30 in., (736.5 x 540 x 762 mm) Add 1.75 in (44.5 mm) in depth when using high level connector
Net Weight:	168 lbs. (76 kg)
Finish:	Piano Black Lacquer
Supplied Accessories	
Mains Lead:	Yes
Neutrik Speakon Interconnect:	Yes (10 Meters Nominal)
Users Manual:	Yes
Remote Control:	Yes
Batteries (AAA x 2):	Yes
Allen Key (2.5mm):	Yes

In the interest of product development, REL Acoustics Limited reserve the right to vary these specifications without notice

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REL Acoustics Limited
North Road, Bridgend industrial Estate . Bridgend, CF31 3TP . United Kingdom
Telephone: +44 (0)1 656 768 777 . Fax: +44 (0) 1 656 766 093
Web: www.rel.net