

REL

REL
ACOUSTICS LTD.



Operating Instructions for the

No.35/No.36 Reference 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.

15 Minimum distances 10cm around the apparatus for sufficient ventilation.

16 The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains, etc.

17 No naked flame sources, such as lighted candles, should be placed on the apparatus.

18 Attention should be drawn to the environmental aspects of battery disposal.

19 The use of apparatus in moderate climates.

20 Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

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

These apparatus are supplied with a detachable mains cord. For 230V operation a 8A fuse is fitted in the socket of the No.35/No.36, for 120V operation a 15A fuse is fitted for the No.35/No.36. 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.

15 10cm distance minimale autour de l'appareil pour une aération suffisante.

16 Il convient que l'aération ne soit pas gênée par l'obstruction des ouvertures d'aération par des objets tels que journaux, nappes, rideaux, etc.

17 Il convient de ne pas placer sur l'appareil de sources de flammes nues, telles que des bougies allumées.

18 Il convient d'attirer l'attention sur les problèmes d'environnement dus à la mise au déchet des piles.

19 Si l'appareil est destiné à être utilisé sous un climat tempéré.

20 Les batteries ne doivent pas être exposées à une chaleur excessive telle que celle du soleil, d'un feu ou d'origine.

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.

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.***

Sécurité Design
Ces appareils sont fournis avec un cordon secteur détachable. Pour le fonctionnement en 230V, un fusible de 8A est installé dans la prise du No.35/No.36, pour un fonctionnement en 120V, un fusible de 15A est installé pour le No.35/No.36. Si le fusible doit être remplacé, utilisez un fusible de même calibre approuvé selon les normes ASTA ou BSI 362. Ne pas utiliser sans le couvercle de fusible en place. Des couvre-fusibles de rechange sont disponibles chez 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.

Getting Started

Register

An ownership card comes supplied with each No.35/No.36 subwoofer, and this card includes a scannable QR code which will take you to an exclusive online portal. Through this portal you can access owner resources, download a digital copy of this owner's manual, and register your subwoofer. We encourage you to register your Reference Series subwoofer at your earliest possible convenience. This QR code is also provided below.

No.35/No.36 Reference

Here's What You Will Need

Power Source – One grounded AC outlet for each subwoofer.
Connection Cables – A high level cable is included with your Reference subwoofer.
Amplifier System – An amplifier with outputs for the left and right channels.

Connectivity

HIGH LEVEL INPUT

Stereo Amplifier: Connections should be made to the same positive (usually RED) binding posts on your main amplifier as are your main speakers. General guidance is to connect the red wire to amplifier main right speaker + (red) terminal, yellow wire to amplifier main left speaker + (red) terminal. Black (Ground) wire should connect to any chassis ground bolt or screw that results in a solid ground connection, that also results in no hum. Do not connect the Black wire to an amplifier output terminal. Plug the Neutrik® SpeakOn® plug into the HIGH LEVEL SpeakOn® socket.

Mono Block Amplifiers: A single Reference unit should not be connected to a pair of mono block amplifiers as the ground differential resulting from this will, at a minimum, run the risk of creating hum from a ground loop. In some instances, this difference in ground potential can lead to oscillation. Please always use a stereo pair when connecting high level to mono block amplifiers.

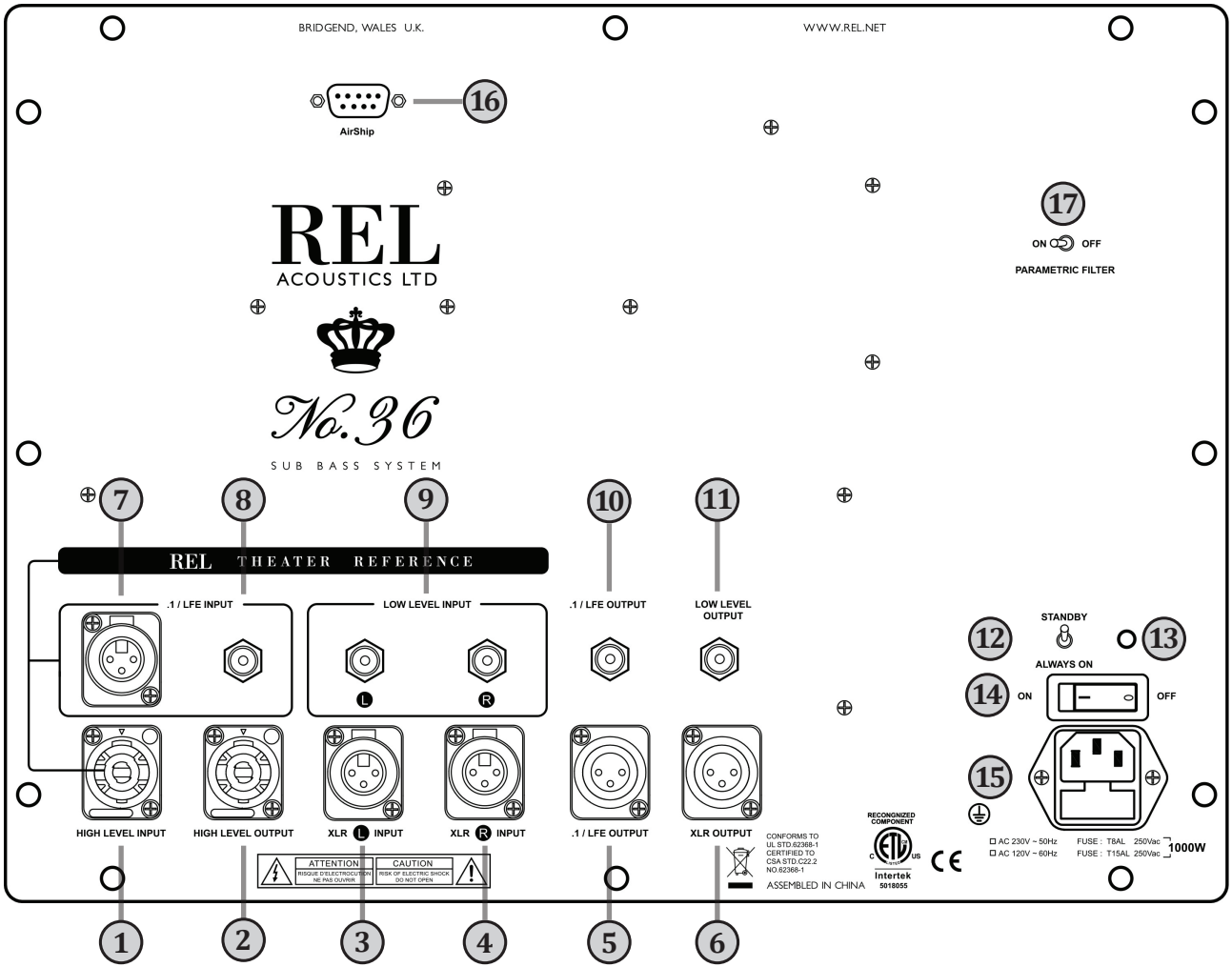
.1/LFE INPUTS

Home Theater Processor: This requires an RCA-to-RCA or XLR-to-XLR cable and is a dedicated .1/LFE channel. Both XLR and RCA .1/LFE inputs are supplied. This circuit bypasses the normal Naturalsound™ Crossover and passes the .1/LFE signal through with only the required 120Hz fourth-order filter.

LOW LEVEL INPUTS

The RCA and XLR Low Level Stereo inputs allow for conventional connection from a preamplifier. Plug one end of the RCA or XLR cables into the LOW LEVEL INPUT jacks of the REL and the other end into the left or right channel output of your preamplifier or powered speaker.

REL NO.35/ NO.36 Rear Panel Connection Legend



High Level

1 HIGH LEVEL INPUT (Neutrik SpeakOn): Used to connect to the main front amplifier speaker terminals.

2 HIGH LEVEL OUTPUT (Neutrik SpeakOn): Used to connect or "daisy chain" another REL No.35/No.36 in tandem.

.1/LFE

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

8 .1/LFE INPUT (RCA): Used to connect to the .1/LFE output of a surround-sound processor.

10 .1/LFE OUTPUT (RCA): Used to connect or "daisy chain" to another REL No.35/No.36 in tandem.

5 .1/LFE OUTPUT (XLR): Used To connect or "daisy chain" to another REL No.35/No.36 in tandem.

Low Level

9 Left & Right Channel LOW LEVEL INPUT (RCA): 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).

3 Left Channel Low level XLR 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 Right Channel Low level XLR 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).

11 LOW LEVEL OUTPUT (RCA): Used to connect or "daisy chain" to another REL No.35/No.36 in tandem.

6 XLR OUTPUT: Used to connect or "daisy chain" to another REL No.35/No.36 in tandem.
For use only with fully balanced cables.

Operation

17 PARAMETRIC FILTER: Used to engage parametric filter into the signal path.

12 STANDBY/ALWAYS ON Switch: Used to enable standby mode.

13 Power Pilot Light: Power On/Off indicator.

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

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

16 AirShip Direct receiver connection.

How to Properly Connect Your REL Reference No.35/No.36

Always switch off your system before disconnecting any wires.

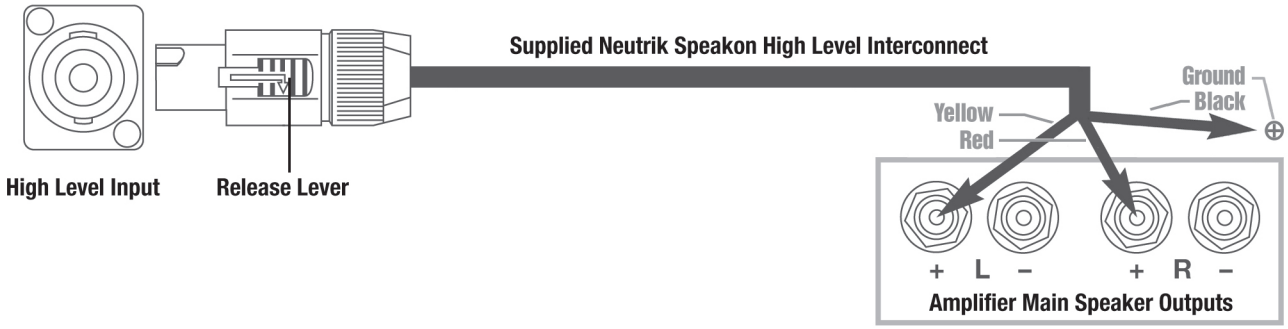
High level connection, using the enclosed cable with the Neutrik® SpeakOn® connector, is always the first choice. This connection can be made without affecting the performance of the amplifier because the REL's input will not impact the speaker load.

There are two XLR and two RCA sockets for low level Left and Right channel connection to the output of a stereo preamplifier or receiver. These may be used in cases where high level input is not an option.

XLR and RCA input connections are provided for input from the .1/LFE channel of a home cinema processor.

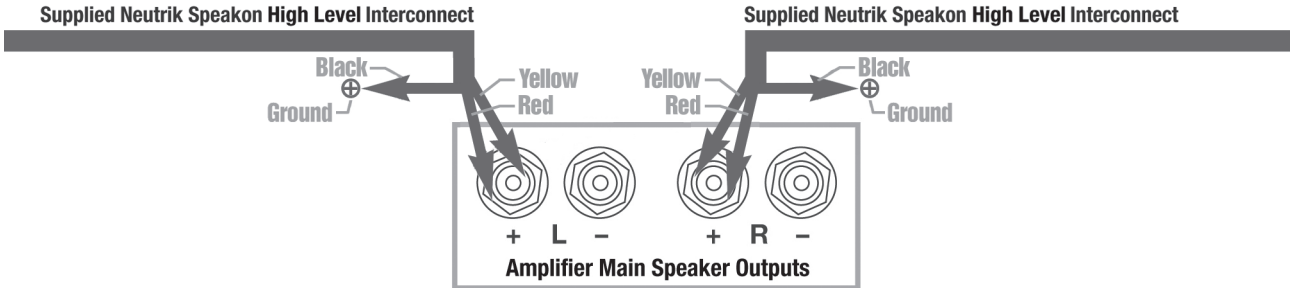
Connecting and Setting Up

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 chassis ground screws or bolts is convenient. If the integrated amplifier or pre-amplifier you are using has a phono ground attach the black wire there; plug the SpeakOn® connector into the Sub-Bass System's high level input.

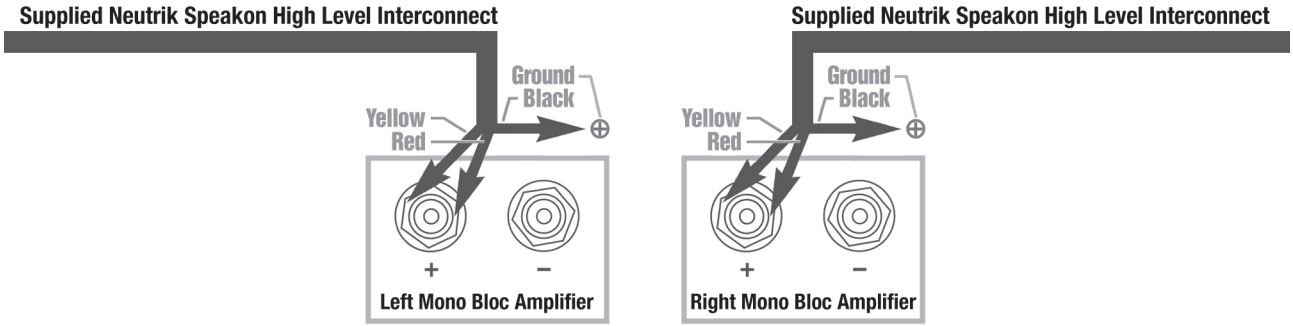


If connecting a REL as a dedicated rear channel sub, connect the same as described above.

A stereo pair is connected so that one REL is dedicated to each output channel. The black wire of each is connected to a chassis ground screw or bolt. 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.



When connecting RELs to Mono Bloc amplifiers (2) RELs, one for each amplifier, must be used. Connect the black wire of each REL to chassis ground screws or bolts of the corresponding amplifier channel. For the left channel the red and yellow wires are connected together to the positive output terminal of the left channel. Then the red and yellow wires of the right channel and connected together to the positive output terminal of the right channel.



Low level connection (via RCA or XLR 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.

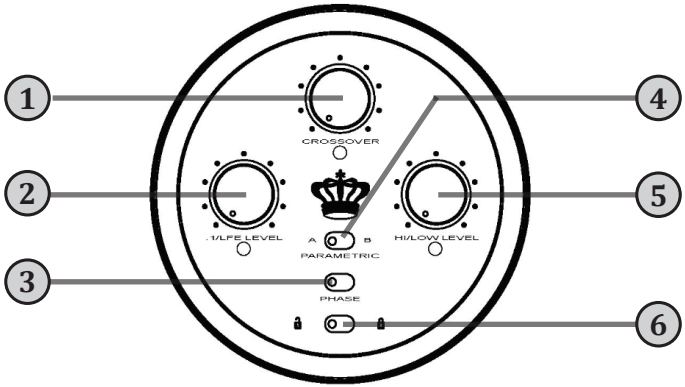
When using a stereo pair of RELs, connect the left output channel to the left REL and the right output channel to the right REL.

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.

Connectivity for Line Arrays of No.35/No.36, Multiple Sub-Bass Systems
To render connectivity simple, No.35/No.36 provides both inputs and outputs for all connections. Thus, each channel's stack of No.35/No.36 can be connected using only one high level main cable from power amp to REL stack. Then each input of the next in the stack can be connected from the last output. This is referred to as "daisy chaining". 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.

Theatre Connectivity for Line Arrays of No.35 or No.36, Multiple Sub-Bass Systems
In a .1/LFE film sound configuration, each channel will require a single.1/LFE cable (either XLR or RCA connections are included) per L/R channel as well, but additional unit's .1/LFE connections in a tower may be daisy chained to minimize clutter. Stacked No.35/No.36 subs have the ability to effortlessly energize even very large theatres with huge wavefronts of air that will carry sound to the full height of the screen, an effect best demonstrated by removing the top level of subs, followed by the middle level to hear on screen events descend in their positioning. No.35/No.36 Line Arrays possess the ability to convey the musical event or film sound spectacularly and with great ease.

Control



Remote Control

1 CROSSOVER: Used to adjust crossover frequency of high/low level input. 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 PHASE: Used to set phase 0-180 degrees.

4 PARAMETRIC: Used to select filter operation.

5 HI/LOW LEVEL: Volume control for High/Low Input. Use to adjust output when using either high level or low level input. Also used to adjust Parametric EQ level.

6 LOCK: 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.

The high level input is controlled by the HI/LOW LEVEL control and the CROSSOVER control. The level is used to set the volume of the high level input and the crossover is used to set the frequency at which the crossover filter is employed. These are the controls for the low level input as well. The .1/LFE is controlled only by the .1/LFE LEVEL control.

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 level and low level inputs. The .1/LFE signal does not pass through the REL Naturalsound™ crossover circuit.

Filter

No.35/No.36 employ a two band parametric EQ filter that is optional in its use. Set the Filter switch on the REL's rear panel to "On" to allow filters to be accessed. Locate the silver selector switch in the center location on the remote marked Parametric. With the switch in the far left position, the .1/LFE Level control on the remote now changes the frequency of EQ filter 1, and the Hi/Low Level control on the remote changes the level of EQ filter 1. With the switch in the far right position, the .1/LFE Level control on the remote changes the frequency of EQ filter 2, and the Hi/Low Level control on the remote changes the level of EQ filter 2. Each filter has a frequency range of 23Hz to 90Hz. The amount of level being increased or decreased for each filter is +/– 4 dB in 1/3 dB increments.

LED Display

An LED display is located on the upper right front of both No.35/No.36. All functions that are user adjustable via the remote control can be viewed 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

Remote Control Battery Installation

No.35/No.36'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 white 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.

Positioning

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

To begin the set-up process, select a piece of music that has a repetitive bass percussion line that is very low in frequency. We exclusively use “Cosmo…Old Friend”, which is track 4 from the soundtrack to ***Sneakers*** (Columbia CK 53146), and is the best REL setup track we’ve ever found and works perfectly for dialing in Position, and later, Phase and Crossover values. This has a repetitively struck bass drum that appears throughout, and that gives one plenty of time to move the woofer around whilst listening and making adjustments.

Positioning Single No.35 and No.36 for Best Results

The optimal position for a single REL No.35/No.36 is in one of the corners behind the main speakers. This position provides 9 dB of room gain and allows for the best low bass extension. Do not simply place it as close to the walls as possible. Starting with Level set to 25 and Crossover to 36, carefully move your REL in small increments whilst using “Cosmo…Old Friend”. Listen for pressure driven nodes. Choose the one that offers the best combination of deep bass with speed and delicacy.

Corner Placement Fine Tuning

The first 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 loaded into the corner, and toed-in toward the listening position, continue to play music while slowly drawing the REL out from the corner on the diagonal. As you do so, note certain points (sometimes a matter of only a few inches, in rare cases a foot or more) where the REL will audibly go lower, or play louder, and, if it truly locks on to the room and is fully pressurizing it, the air around the REL will feel more energized. Stop right there! This is the correct position from the corner for the REL.

Orientation, Fine Tuning Toe-In

Once the position from the corner has been established, the toe-in of the REL must be determined by rotating it from an imagined centre point at the rear of it’s cabinet. As the REL is toed-in 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 sounds both the richest and most focused. If your room is too full sounding, slightly toeing your REL out will result in reduction of richness but may be more desirable in rooms that output too much bass.

Stereo

Positioning Dual No.35/No.36 for Best Results

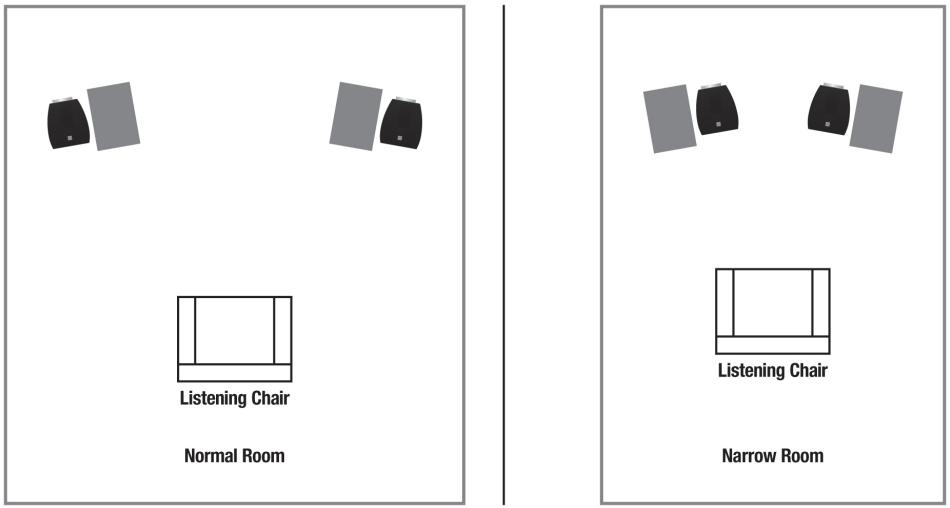
Stereo Sub-Bass is advised for the fastest, clearest deep bass – not simply for more output. Conventional wisdom has it that the use of stereo subs results in between +3 and +6 dB additional output depending upon positioning. In and of itself, this is of only passing interest since, in most instances, even a single No.35/No.36 is capable of profound output.

Set-Up

When setting up stereo No.35s/No.36s, 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.

Depending upon your room's character, it may be preferable to bring the subs further out into the room and place them slightly behind and outboard of the main speakers. Set each side up independently. Disconnect signal cables from the sub that is not being set-up at that moment so your complete focus can be given over to the sub that is being set-up.

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.35/No.36 owner, focusing on connection with and blending with the main speaker becomes the primary focus, not merely raw output.



Positioning Line Array
The line array positioning is the same process as described above for stereo pairs. Once the stereo pair is placed, the remaining units of the line array can be stacked on top.

Stacking
No.35/No.36 are designed to allow multiple units to be used in conjunction either as stereo pairs or, for ultimate performance, in vertical tower stacks of stereo subs 3 per side (or 5/side in exceptionally tall rooms). Stacked towers extend and strengthen the performance remarkably.

REL Couplers are provided to secure the top sub to the next unit below safely. These are made of thick aluminium and bolt the subs together using the hardware provided. The Couplers require a 6mm hex wrench to tighten.

We strongly advise anchoring Line Array stacks of the No.35/No.36 to a wall. Use a quality furniture restraint made of nylon webbing or braided steel cable that may be tied to one of the upper REL Coupler, generally that which is closest to a side or rear wall. Please follow the instructions of the restraint you choose and anchor to a structural portion of your wall.

https://www.consumerreports.org/furniture/how-to-anchor-furniture-to-help-prevent-tip-overs-a4328328212/

Please ensure that the floor is level before stacking REL reference subwoofers and avoid stacking on deep carpet that may not provide a stable surface.

REL Reference subwoofers have rake adjuster disks on the front of the feet to tilt the units back. There are two, one in each foot and they have to be backed out independently. A rake adjustment tool is included to help rotate the adjuster to back out and raise the front of the subwoofer.

Tune

Continue with the use of track “Cosmo…Old Friend”, from the soundtrack to ***Sneakers*** (Columbia CK 53146).

Single

1. **Phase Orientation:** Once in the corner, we need to adjust for phase. This may be the single most critical step, and because it is so simple, it is often over-thought. Keep in mind; the correct phase is whichever setting (0 or 180 degrees) is the loudest or fullest. While playing “Cosmo…Old Friend”, adjust Hi/Low Level to a point where the REL and the speaker appear to blend at the REL. During this process, leave the Crossover at its lowest setting as this ensures that you are correctly achieving a Phase result based on deepest bass. Simply switch between “0” and “180” phase positions listening for whichever position is loudest or fullest. This is the correct position. That is, this is the position that is working in harmony with your main speakers, reinforcing bass, not cancelling it.

2. **Crossover and Level Settings:** To determine the crossover point, take the volume of the REL (using the Hi/Low Level control) all the way down, and set the Crossover to 30Hz as an initial setting. Now, begin adjusting the Hi/Low Level control back up slowly to the point where you have achieved a delicate balance, i.e. the point at which you can just hear the No.35/No.36 even with the main speakers playing. We suggest bringing the crossover point up until it is obviously too high; then gently reducing frequency until the perfect balance has been achieved. For all intents and purposes, this is the correct crossover point. Once this stage has been reached, subtle changes to Level and Crossover may be accomplished to provide the last bit of complete and seamless integration. With that, set-up is complete.

   RELTip: One of the persistent myths regarding sub bass is that “One should never hear the subwoofer if it properly set.” Fair enough, but for those trying to setup their sub, this is useless advice. After all, leaving one’s sub unplugged would satisfy that guidance. Instead, know that proper Crossover setting is achieved when a melding of both deep bass and music from one’s speakers occurs. It actually does change slightly (and with experience, one will find this is for the better and more accurate). When it’s perfectly crossed over, a very slight richness comes over the music. One crossover frequency click lower and this is replaced by a very slightly cool, mechanical quality.

Additional Listening Tips: There is a tendency to set the crossover point too high and the level of your No.35/No.36 too low when first learning how to integrate a REL with the system. The most common fear being one of overwhelming the main speakers with bass. In making this common error, the resulting set-up will be lacking in deep bass, rather overly emphasizing middle bass which will result in lack of integration and a too-thick and plummy quality to your system. 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 will need to be applied. Higher crossover frequencies will require less gain.*

Stereo

The process to tune a stereo pair is the same as above with a single REL, but you focus on one channel at a time. With the stereo system on, unplug the inputs to one REL then tune the other using the guidance above. Then plug the inputs back into the first REL, disconnect the already tuned one, and tune the first REL using the steps above.

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 Level control of each No.35/No.36 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.

Line Array

Tuning of a REL Reference Line Array starts with proper setup and tuning of your system's main loudspeakers. Only after the main speaker channels are performing to their fullest potential will you be able to achieve the full performance potential of a REL Line Array. Next, you can position and tune the bottom stereo pair of subwoofers (the bottom unit in each stack), using the instructions in the stereo pair section above. After the bottom units have been tuned to blend seamlessly with your main loudspeakers, you can then carefully place the additional Reference subwoofers on top of them to form the complete Line Arrays.

The Phase setting for the middle and upper units in each stack will remain the same as the bottom units. Similar to the process for tuning a stereo pair, the Crossover and Level control settings for each subwoofer in the Line Array should be determined with only one subwoofer playing at a time. This means that once the bottom units in each stack are tuned, you will tune the middle right unit on it's own, followed by the middle left, then the upper right, and so on until all units are blending well on their own.

The middle subwoofer in each stack is responsible for mid bass attack. Don't worry about getting the deepest bass or upper bass partials, but focus on achieving crisp mid bass performance. When using "Cosmo…Old Friend", listen for the sound of the mallet hitting the skin of the concert drum, which should have clear and crisp definition.

The upper subwoofer in each stack is responsible for air, openness, and delicacy in the program material. This is the transition between the sub-bass and the low-frequency output of the main loudspeakers. It is expected that the Crossover and Level controls will need to be set slightly higher as you move up in each stack, compared to the below unit.

Once each individual subwoofer in each stack is tuned on it's own, you can connect the necessary cables to daisy-chain the signal. At this point the overall sub-bass output will be too high, and the Level on each subwoofer will need to be lowered equally to restore a match with your main loudspeakers. From there you can make any final adjustments to the Crossover and Level controls as needed to achieve the desired performance and integration.

Home Theater Applications

Your REL Reference Series subwoofer features both a HIGH LEVEL INPUT and a .1/LFE INPUT, and for home theater systems we recommend using both simultaneously. This allows the subwoofer to provide low-frequency support with seamless integration for your choice of main speaker channels, while also delivering the LFE (Low Frequency Effect) channel found in home theater material. In systems which use active speakers, or in other specific scenarios, it is possible to use the REL's Low Level input and the .1/LFE input simultaneously.

Basic AV Receiver/Processor Settings

Each AV receiver or processor will have slightly different setup menu options, but the same general principles will still apply. We recommend setting your main speaker channels to "large" or "full-range" output, which will ensure that you achieve the full performance potential of the High/Low Level connection. If your receiver or processor does not allow for full-range output during multi-channel listening, then please set the main speaker channels' crossover to the lowest possible value. Also check to make sure that you select "Yes" or "On" for the subwoofer output, which will ensure that LFE channel signal reaches your REL.

Single

Please first follow the high level or low level connection instructions, placement instructions, and tuning instructions outlined earlier in this manual. We find that the best results with a single subwoofer or with a stereo pair come by connecting the high level cable(s) to the front left and right speaker channels, which provides the greatest benefit across most listening scenarios.

Once the subwoofer has been connected and tuned to blend with your main loudspeakers, you can then use either an RCA or XLR cable for connecting from the subwoofer output on your receiver/processor to the .1/LFE input on the REL. At this point you will only need to adjust the .1/LFE Level control to taste for achieving the desired amount of LFE channel output. We recommend using a powerful and dynamic action or effect heavy scene when setting the .1/LFE Level, for example Chapter 14 from Iron Man. Set the .1/LFE Level through your Reference Remote so that the sub-bass output is powerful and dynamic but without any strain or distortion being heard from the subwoofer.

Stereo

Again, first follow the high level or low level connection instructions, placement instructions, and tuning instructions outlined earlier in this manual. We find that the best results with a stereo pair come by connecting the high level cable(s) to the front left and right speaker channels, which provides the greatest benefit across most listening scenarios.

Once the stereo pair is integrated into your system, you can then use either an RCA or XLR cables for connecting from the subwoofer outputs on your receiver/processor to the .1/LFE inputs on the RELs. At this point you will only need to adjust the .1/LFE Level control to taste for achieving the desired amount of LFE channel output. We recommend using a powerful and dynamic action or effect heavy scene when setting the .1/LFE Level, for example Chapter 14 from Iron Man. Set the .1/LFE Level through your Reference Remote so that the sub-bass output is powerful and dynamic but without any strain or distortion being heard from the subwoofer.

Line Array

Once the high level or low level connection and tuning is done following the instructions in the POSITIONING and TUNING guides are done the home theater connections can be connected and set up.

From the subwoofer outputs (SUB OUT) of your receiver/ home theater processor, connect to the .1/LFE INPUT of the bottom units of each channel of the line array. Nearly all modern processors have at least two SUB OUT channels in either RCA or XLR type connections. Use just one of these types of connections to connect from the processor to the RELs. Each REL has .1/LFE outputs in both of these types of connections so you can use jumpers to connect out of the first unit of the line array to the next. Then from the second unit to the third unit and so on. Previously, this type of connections has been referred to as “daisy chaining” which means we connect the output of one REL to the input of the next. Repeat this for both channels of the line array and ensure that all of them are connected.

You will now need to adjust the .1/LFE Level for each unit in the line array using the remote control to taste for achieving the desired amount of LFE channel output. We recommend using a powerful and dynamic action or effect heavy scene when setting the .1/LFE Level, for example Chapter 14 from Iron Man. Set the .1/LFE Level through your Reference Remote so that the sub-bass output is powerful and dynamic but without any strain or distortion being heard from the subwoofer.

REL-3D

REL-3D enables you to use multiple REL subwoofers to more closely meet the Dolby Digital specification of full-range output from all speaker channels, in addition to the .1/LFE channel being reproduced. REL-3D involves a single subwoofer (or pair) connected to support the front left and right speaker channels, a subwoofer to support the center channel, and a single subwoofer (or pair) to support the rear surround channels. More information about REL-3D can be found on our REL.net website.

Parametric Equalizers

Your No.35/No.36 is equipped with (2) Parametric Equalizers. It is not recommended that average users attempt to use the parametric equalizers included in No.35/No.36 as mis-application of these filters can produce results detrimental to the average room or in extreme cases, create the slight risk of damage to your REL. No.35/No.36 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 4 dB of boost or cut at any frequency between 23 and 90Hz. Note that the frequencies of each filter cannot be closer than 10Hz apart from each other. This is done to minimize the chances an inexperienced owner could damage their REL accidentally. For example, if E1 is set to 30Hz, E2 cannot be set below 40Hz. This is done to protect the Sub-Bass System.

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.

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 output in the low bass regions, somewhere in the mid-20's to mid-30Hz region. 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. Clearly, this was the result of a slight reduction in mid bass overhang that the 43Hz cut function of – 2 db provided. This is true even though our development studio, like virtually all rooms, has significant energy in the70-90Hz region. Tuning out room boom does not mean turning EQ 2 up to 70-90Hz. Rather, understand that cleaning these up is best accomplished by delicate reduction in output an octave lower, hence the 43Hz reduction in our example.

Resist the temptation to try to affect massive swings in output in certain very narrow frequency ranges (+4 dB at 34Hz and – 4 dB at 44Hz for example) as this will almost certainly prove to be counterproductive.

Warnings

- Do not connect the Black wire to a amplifier output terminal.
- A single Reference unit should not be connected to a pair of mono block amplifiers as the ground differential resulting from this will, at a minimum, run the risk of creating hum from a ground loop.
- We strongly advise anchoring Line Array stacks of the No.35/No.36 to a wall. Use a quality furniture restraint made of nylon webbing or braided steel cable that may be tied to one of the upper REL Coupler, generally that which is closest to a side or rear wall. Please follow the instructions of the restraint you choose and anchor to a structural portion of your wall.

https://www.consumerreports.org/furniture/how-to-anchor-furniture-to-help-prevent-tip-overs-a4328328212/

- It is not recommended that average users attempt to use the parametric equalizers included in No.35/No.36 as mis-application of these filters can produce results detrimental to the average room or in extreme cases, create the slight risk of damage to your REL.
- The No.35/No.36 subwoofers are both large and heavy, and require special care when moving or lifting. We recommend having three people available for moving these subwoofers.

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. REL subwoofers possess very large power supplies which may take several days to fully charge and form their capacitors. Possible damage may be sustained by running in the unit at too high an initial volume. Resist the temptation to try to play one at maximum volume shortly after succeeding in achieving output. 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 cleaner, often referred to as a “spray mist detailer” 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 soft cloth to protect the surface and to avoid the risk of rattles.

Technical

No.35/No.36 employ an advanced input filter circuit which provides exceptional performance when coupled to the rest of the signal chain of the Sub-Bass System. 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. 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.35/No.36 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. 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. Even with SetSafe™ it is possible to damage one's REL by driving it beyond its limits. It is the responsibility of the owner to exercise sound judgement by listening for strain or distortion and reducing level as needed.

A thermal overload device is fitted to all No.35/No.36 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

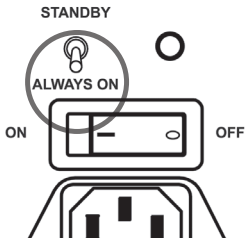
All REL Sub-Bass System designs utilize a true On-Off switch that affords the owner the ability to turn off their unit completely, without having to unplug the A/C mains cord. When a REL No.35/No.36 is switched off using the On-Off switch on the rear panel it draws ZERO power.

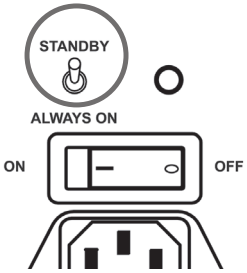
In addition to the efficient power-at-idle exhibited by all REL models, the No.35/No.36 also features an automatic standby mode that is enabled when the power mode switch on the rear of the unit is set to the "STANDBY" position. In this mode, the input signal is constantly monitored for audio activity. If no 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.35/No.36 is ready to react instantaneously to bass transients, whether in music or films.

The REL No.35/No.36 is shipped in the "ALWAYS ON" mode.





During initial setup, please use the REL this way. After initial setup, if you wish to employ the standby mode, simply move the power mode switch into the up position to "STANDBY".

Model	Power Draw at Standby	Power Draw at Standby w/wireless	Power Draw at Idle
No.35/ No.36	>0.5 Watts	>1 Watt	20 Watts

No.36 Specifications:

Type:	Closed box, front firing woofer
Drive Unit:	15 in. (380mm) long throw, carbon fiber cone with inverted carbon fibre centre cap, die cast alloy chassis
Frequency Extension:	– 6 dB at 15Hz in Room
Dual Parametric EQ:	23-90Hz, +/– 4 db in 1/3 dB increments, filters separable by 10Hz minimum
Input Connectors:	HIGH LEVEL Neutrik SpeakOn, Low Level stereo RCA and XLR, LFE RCA, LFE XLR
Output Connectors:	HIGH LEVEL Neutrik SpeakOn, LFE RCA, LFE XLR, Line XLR, Line RCA
Power Output:	1000 watts (RMS) Ultra High-Current Power Supply
Phase Switch:	Yes, 0 or 180 degrees
Amplifier Type:	Class AB/D
Wireless Capability:	Yes - Use with REL AirShip Direct, Sold separately
Protection System Fully Electronic with SET-SAFE:	Yes
DC Fault:	Yes
Output Short:	Yes
Mains Input Voltage:	220-240 volts, 110-120 volts for certain markets
Fuses:	8 Amp semi delay 230 volts operation 15 Amp semi delay 115 volts operation
Dimensions W x H x D, Inc. Feet:	Including feet and rear panel controls, 29 ¼" x 21.3" x 32 1/8" in., (743 x 541 x 816mm) Add 1.75 in (44.5mm) in depth when using high level connector
Net Weight:	202.5 lbs. (91.8 kg)
Shipping Weight:	233 lbs (105.7 kg)
Finish:	Piano Black Lacquer
Supplied Accessories Mains Lead:	Yes
Neutrik SpeakOn	Yes, 10 Meters (32'10") Nominal
Users Manual:	Yes
Remote Control:	Yes
Batteries (AAA x 2):	Yes
Allen Key (2.5mm):	Yes

No.35 Specifications:

Type:	Closed box, front firing woofer
Drive Unit:	12 in. (305mm) long throw, carbon fibre cone with inverted carbon fibre centre cap, die cast alloy chassis
Lower Frequency Response in Room:	– 6 dB at 17Hz
Input Connectors:	HIGH LEVEL Neutrik SpeakOn, Low Level stereo RCA and XLR, LFE RCA, LFE XLR
Output Connectors:	HIGH LEVEL Neutrik SpeakOn, LFE RCA, LFE XLR, Line XLR, Line RCA
Gain Control Range:	80 dB
Power Output:	900 watts (RMS) Ultra High-Current Power Supply
Phase Switch:	Yes, 0 or 180 degrees
Amplifier Type:	Class AB/D
Wireless Capability:	Yes - Use with REL AirShip Direct, Sold separately
Protection System Fully Electronic with SET-SAFE:	Yes
DC Fault:	Yes
Output Short:	Yes
Mains Input Voltage:	220-240 volts, 110-120 volts for certain markets
Fuses:	8 Amp semi delay 230 volts operation 15 Amp semi delay 115 volts operation
Dimensions W x H x D, Inc. Feet:	Including feet and rear panel controls, 25.12 x 17 x 28.5 in., (638 x 435 x 724 mm) Add 1.75 in (44.5 mm) in depth when using high level connector
Net Weight:	130 lbs. (59 kg)
Shipping Weight:	172.5 lbs (78.25 kg)
Finish:	Piano Black Lacquer
Supplied Accessories Mains Lead:	Yes
Neutrik SpeakOn	Yes, Interconnect 10 Meters Nominal
Users Manual:	Yes
Remote Control:	Yes
Batteries (AAA x 2):	Yes
Allen Key (2.5mm):	Yes

In the interest of product improvement, REL Acoustics Limited reserves the right to alter these specifications without notice.

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