



*Our mission is to innovate,
design and deliver superior
audio products that form the
bridge between an artistic
vision and a realized dream.*

KRK SYSTEMS, LLC
www.krksys.com



PART #

V SERIES II POWERED SUBWOOFERS USER GUIDE



IMPORTANT SAFETY INSTRUCTIONS



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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



The lightning flash with an arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated (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 product.



Do not place this unit on an unstable cart, stand or tripod, bracket or table. The unit may fall, causing serious injury to a child or adult and serious damage to the unit. Use only with a cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the unit. Any mounting of the device on a wall or ceiling should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.

1. "An apparatus with Class I construction shall be connected to a mains sockets outlet with protective earthing connection."
2. "Where the mains plug or an appliance coupler is used as the disconnect device, the disconnection device shall remain readily operable"
3. "1A fuse is used to US market, voltage will be set to 115V before shipment; 500mA fuse is used to European market, voltage will be set to 230V before shipment."

Read and follow all the safety and operating instructions before connecting or using this unit. Retain this notice and the owner's manual for future reference.

All warnings on the unit and in its operating instructions should be adhered to.

Do not use this unit near water; for example, near a bath tub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool.

The unit should be installed so that its location or position does not interfere with its proper ventilation. For example, it should not be situated on a bed, sofa, rug or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet, that may impede the flow of air through its ventilation openings.

The unit should be situated from heat sources such as radiators, heat registers, stoves or other devices (including amplifiers) that produce heat.

The unit should be connected to a power supply outlet only of the voltage and frequency marked on its rear panel.

The power supply cord should be routed so that it is not likely to be walked on or pinched, especially near the plug, convenience receptacles, or where the cord exits from the unit.

Unplug the unit from the wall outlet before cleaning. Never use benzine, thinner or other solvents for cleaning. Use only a soft damp cloth.

The power supply cord of the unit should be unplugged from the wall outlet when it is to be unused for a long period of time. Care should be taken so that objects do not fall, and liquids are not spilled into the enclosure through any openings.

This unit should be serviced by qualified service personnel when:

- A. The power cord or the plug has been damaged; or
- B. Objects have fallen, or liquid has been spilled into the unit; or
- C. The unit has been exposed to rain or liquids of any kind; or
- D. The unit does not appear to operate normally or exhibits a marked change in performance; or
- E. The device has been dropped or the enclosure damaged.

ATTENTION
POUR ... VITER LES CHOC ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

CAUTION
TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT FULLY INSERT.

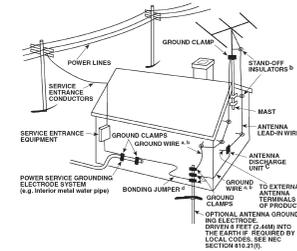
If an indoor antenna is used (either built into the set or installed separately), never allow any part of the antenna to touch the metal parts of other electrical appliances such as a lamp, TV set etc.

CAUTION
POWER LINES
Any outdoor antenna must be located away from all power lines.

OUTDOOR ANTENNA GROUNDING
If an outside antenna is connected to your tuner or tuner-preamplifier, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.

- a. Use No. 10 AWG (5.3mm²) copper, No. 8 AWG (8.4mm²) aluminium, No. 17 AWG (1.0mm²) copper-clad steel or bronze wire, or larger, as a ground wire.
- b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4-6 feet (1.22 - 1.83 m) apart.
- c. Mount antenna discharge unit as close as possible to where lead-in enters house.
- d. Use jumper wire not smaller than No.6 AWG (13.3mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. see NEC Section 810-21 (j).

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 - RADIO AND TELEVISION EQUIPMENT.



NOTE TO CATV SYSTEM INSTALLER: This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electrical Code that provides guidelines for proper grounding and, in particular, specifies that the ground cable shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

DO NOT ATTEMPT SERVICING OF THIS UNIT YOURSELF. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Upon completion of any servicing or repairs, request the service shop's assurance that only Factory Authorized Replacement Parts with the same characteristics as the original parts have been used, and that the routine safety checks have been performed to guarantee that the equipment is in safe operating condition. REPLACEMENT WITH UNAUTHORIZED PARTS MAY RESULT IN FIRE, ELECTRIC SHOCK OR OTHER HAZARDS.

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Introduction

Congratulations on your KRK purchase! And welcome to the growing family of KRK owners.

KRK's V Series II powered studio monitors are precision speakers designed to forever change the way you handle your most demanding jobs. V Series II monitors are hallmarked by defined low end, articulate midrange and precise highs, delivering clarity and accuracy on a par with many world class speakers costing far more.

In addition, V Series II monitors feature several key design elements that have made the KRK sound a "studio standard". These include radiused edges for improved imaging and slotted ports that greatly reduce port turbulence. What's more, we've also added some valuable and practical enhancements like a speaker protection circuit for added confidence, an auto-on/off feature for improved convenience and upgraded driver and amplifier components to ensure peak performance in even the most demanding professional environments

Whether you are making critical mixing decisions or need to capture the subtle nuances of a unique sound, you'll quickly discover that the V Series II Monitors are as precise about your work as you are.

Section 2 – Unpacking

Your V Series 2 subwoofer has been carefully inspected and tested before packing and shipping. After unpacking your subwoofer, carefully inspect it for exterior damage and immediately report any physical damage during transit to your shipping carrier. Save the shipping boxes and all packaging materials in case the unit needs to be returned to your local dealer or KRK Systems, LLC.

Please read the warranty card that was included in the shipping carton for your product before shipping to KRK Systems. A return authorization number from KRK Systems is also required before shipping a product to KRK Systems for repair. After obtaining a return authorization number from KRK Systems, all KRK Systems products in need of repair can be returned to the dealer where they were purchased or sent directly to KRK Systems.

- For the safest possible return to KRK, please use the shipping carton and packaging that your monitor was originally shipped in.
- KRK cannot be responsible for any damages incurred during the shipping process due to poor packing. Make certain to insure your shipment.
- If your monitor is out of warranty and you would like a quotation before servicing your product, please include a note with your contact information on it and we will contact you with a service quote. Service will be performed once your method of payment has been established and approved.
- Replacement carton and packaging can be purchased from KRK Systems, LLC for \$18.00 each.
- For replacement part quotes call KRK Customer Service at 805-584-5244.

Design Philosophy

A studio monitor is really a tool used to aurally “measure” the changes in an audio path. Ask any pro or semi-pro recordist what they think makes a great studio monitor and you’ll get basically the same answers: “Accuracy, transparency, “flat response”, and “the truth”.

Everybody is saying the same thing – they want the electrical signal going into a monitor to be reproduced mechanically by the transducers and they want that to happen without any degradation to the original signal. Professionals need to trust a speaker to deliver their artistic vision in a way that will translate to a variety of audio mediums. How you get there from a technical stand point is by designing a speaker that eliminates or minimizes several damaging conditions. The KRK design philosophy is manifested by paying very close attention to what we call the three cornerstones:

1. Spectral Balance (Timbre)

What people tend to think sounds good is not necessarily “flat response.” A perfectly flat monitor tends to sound harsh and abrasive – technically correct but not very musical. Research shows us that a speaker with the proper spectral balance is most often considered “a great studio monitor”.

Spectral balance is defined by:

- Smooth on-axis (not necessarily flat) response
- Smooth octave to octave response, free of coloration
- Smooth off-axis response (not flat)

From years of listening to feedback from some of the top engineers and producers we’ve come to understand how a properly tuned monitor can become a valuable recording tool.

2. Distortion Management – Physical (Non-linear) and Electronic

Distortion: Any loss or addition to the audio signal is a distortion. Various amplifier distortions have been identified; the most commonly measured being intermodulation, transient intermodulation and harmonic distortion.

Distortion can be present in an amplifier circuit but can really be a problem when the waveform is impacted by physical conditions such as port turbulence and driver non-linearity. KRK engineers implement design concepts that eliminate or minimize these damaging conditions.

3. Resonance Management – Axial, Conical, Standing Waves, Cabinet edges, Speaker frames, Cabinet geometry

Resonance: The prolonging of the sound at a certain frequency and the tendency of something to vibrate at a particular frequency after the source of energy is removed.

Resonances also play a major role in impacting the performance of a speaker. KRK design elements minimize cabinet vibration, speaker frames resonating or standing waves inside the cabinet that impact the performance in a negative way.

Design Elements

Active Filter Crossovers - The V-Series 2 power amplifier contains three active filters. (Subsonic, low-pass and high-pass filter) These three filters work together to provide a seamless integration of the driver components ensuring a smooth spectral balance.

Amplifier Design– KRK’s amplifier consists of audiophile grade components and a simple audio path for transparency. Output power is balanced to match LF and HF driver sensitivities and power handling. Your V Series 2 Subwoofer uses a toroidal power transformer for low hum and minimum noise.

Resonant Free Enclosure Design - The cabinetry of your V Series 2 subwoofer is constructed from inert “ ” medium density fiberboard. It is internally braced and carefully damped to minimize cabinet resonance.

Radiused Edges - All cabinet edges and port openings are heavily radiused to reduce diffraction resulting in better detail and stereo imaging.

Slotted Ports – Slotted ports reduce the port turbulence and distortion commonly found in poorly designed round ports.

Custom Made Drivers - KRK is renowned for designing high performance studio monitor drivers. Your V Series 2 is no exception. A woven Kevlar® LF driver was custom-designed specifically for each model. Kevlar® is one of the strongest, lightest, most rigid materials that can be used in modern speaker cone construction. Kevlar’s unique physical properties minimize axial or conical break up modes.

Defeatable Limiter - Your V Series 2 subwoofer contains a very musical limiter circuit designed to mitigate the negative effects of over driving the amplifier or the speaker. The limiter, when engaged, can greatly reduce the risk of harming a driver. It can however be defeated using the “Clip Off/Limiter Switch” on the rear panel. This is only recommended if you are using the product well within a listenable volume range. Use the indicators on the front baffle to help determine the optimum level without audible distortion.

Low Frequency Defeat

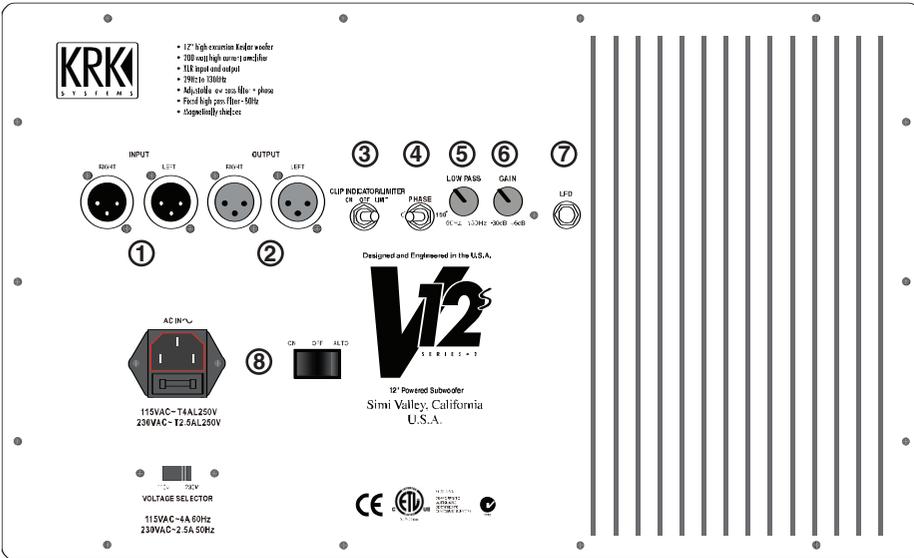
Your KRK subwoofer is engineered to work in harmony with any KRK V-Series monitor. It is an ideal addition in applications where precise, low frequency reproduction and flexible monitoring and control options are required.

The LFD™ footswitch allows for ultimate monitoring flexibility by enabling the end user to defeat the subwoofer, and run the main/satellite monitors full-range during a mix or playback. When the footswitch is activated the subwoofer amplifier output is muted and the LEFT and RIGHT outputs pass a full-range signal to the main/satellite speakers. This unique feature is incredibly useful for applications where low frequency playback comparisons are necessary. The LFD Switch can also be useful when determining subwoofer placement, the actual level of the subwoofer, and/or the crossover points between the satellites and the subwoofer. This is accomplished by comparing the system with the subwoofer engaged to the system with the sub-

woofer disengaged. A properly adjusted subwoofer/satellite system should result in a transparent transition between the satellite and subwoofer when compared to the satellites alone.

Section 3 – Back Panel Overview

1. Input (Right/Left) — XLR line-level (Pin 1 = Ground; Pin 2 = High; Pin 3 = Low)
2. Output (Right/Left) — XLR line-level (Pin 1 = Ground; Pin 2 = High; Pin 3 = Low) with fixed 80-Hz, High-Pass filter
3. Clip Indicator/Limiter
4. Phase Switch (0° - 180°)
5. Low-Pass Filter Control (50 Hz – 130 Hz)

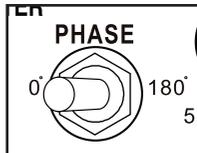


6. Gain Control
7. Low Frequency Defeat (LFD)
8. IEC Power Entry Module: On/Off switch; Fuse block/Voltage selector (100-120/VAC - 4 A 50/60 Hz; 220-240/VAC - 2 A 50/60 Hz; use only with 250-volt fuses); IEC Power Connector.

Section 4 – System Controls and AC Power Requirements

Phase Switch (0° or 180°)

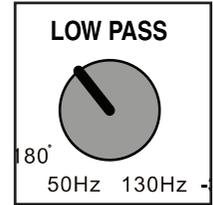
This "Phase" switch, technically, is a polarity inversion switch. However, since its position affects the phase relation of the subwoofer output to the other speakers in the room, it has been labeled phase. The proper switch position of 0 or 180 degrees depends on a number of variables. These variables include, the distance of the subwoofer from the listening position and monitors, as well as the system's absolute polarity and the bass response of the room. (See Section 7, Subwoofer Setup and Placement, on how to determine the correct switch position for your monitoring system and room.)



Note: In the interest of accuracy, please note that the words "phase" and "polarity" often are used interchangeably by many engineers. Polarity, though, technically is the total inversion of the signal. Phase has to do with the distance and/or timing relationship between two signals, which then may be in or out of phase by varying degrees at a given frequency. When set to 0°, a positive voltage on pin 2 of the XLR connector will produce an outward cone movement of the woofer and a positive pressure in the room. When set to 180°, the same voltage will produce an inward cone movement and negative pressure in the room.

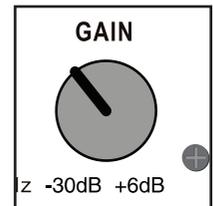
Low-Pass Filter (variable 20Hz-130Hz)

When rotated fully counterclockwise, there is a 50-Hz, 24-dB-per octave, low-pass filter inserted before the amplifier. When rotated fully clockwise, the low-pass filter frequency is 130 Hz. The 12 o'clock position corresponds to 80 Hz, which matches the output of the high-pass filters on the XLR output jack. Note that this control does not affect the signal level or filtering of the XLR output connectors. (See Sections 5 & 6 — Hooking Up Your Subwoofer.)



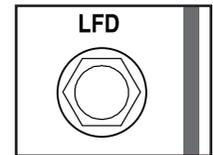
Gain Control (-30 dB to +6 dB)

When the gain control is rotated fully counterclockwise, the input signal is attenuated by 30 decibels from nominal sensitivity. When rotated fully clockwise, the input signal is boosted by 6 decibels from nominal sensitivity. At unity gain, a +4 dBV signal will drive the amplifier section to full power output. This control does not affect the level of the XLR output connectors.



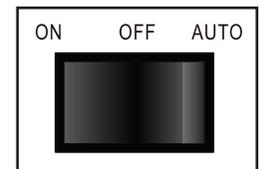
LFD™ (Low Frequency Defeat)

LFD™ (Low Frequency Defeat) footswitch removes the sub from the signal path allowing you to evaluate impact of your subwoofer on your mix.



Auto On/OFF Switch

The Auto On/Off feature allows you to either choose between manually powering up the speaker or selecting the Automatic On feature. The Auto circuit detects a signal, turns the power on allowing it to pass a signal and shuts the power off after 20 minutes of silence.

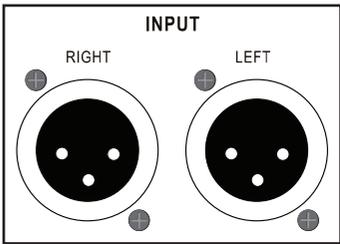


AC Power Requirements

Make sure that the subwoofer is connected with an IEC power cable with proper ground, and that the voltage is set to the appropriate value. In order to avoid ground loop induced hum, the subwoofer should be powered from the same electrical circuit as the circuit powering other monitor speakers and mixing console. All connections should be made, all console faders and controls should be set at minimum levels and all other equipment should be powered on before powering on your subwoofer.

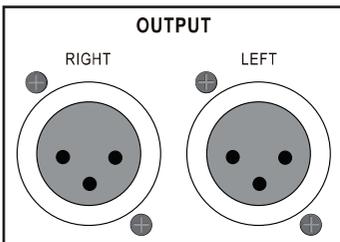
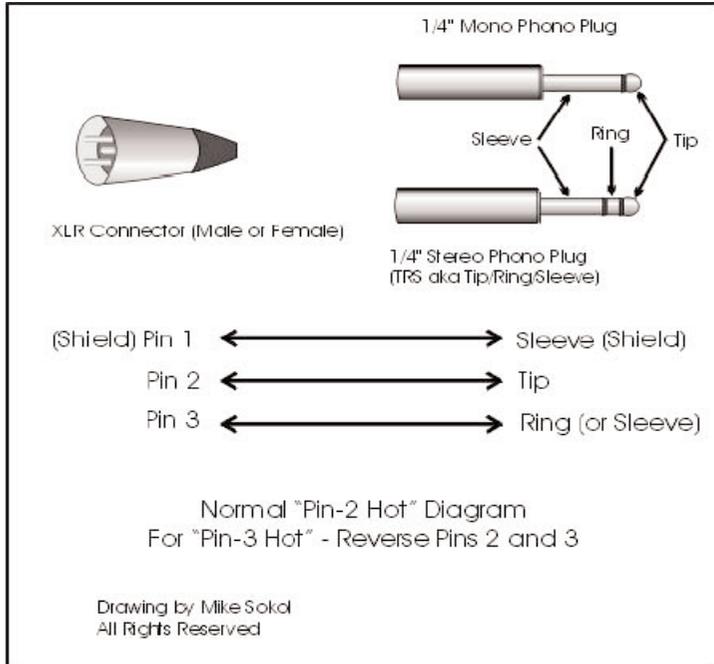
NOTE: MAKE SURE THAT THE VOLTAGE INDICATOR FOUND IN THE MIDDLE-PORTION OF THE IEC MAINS CONTROL IS SET TO THE CORRECT VOLTAGE SETTING FOR YOUR VOLTAGE.

Section 5 — Hooking Up Your Subwoofer: Stereo Systems



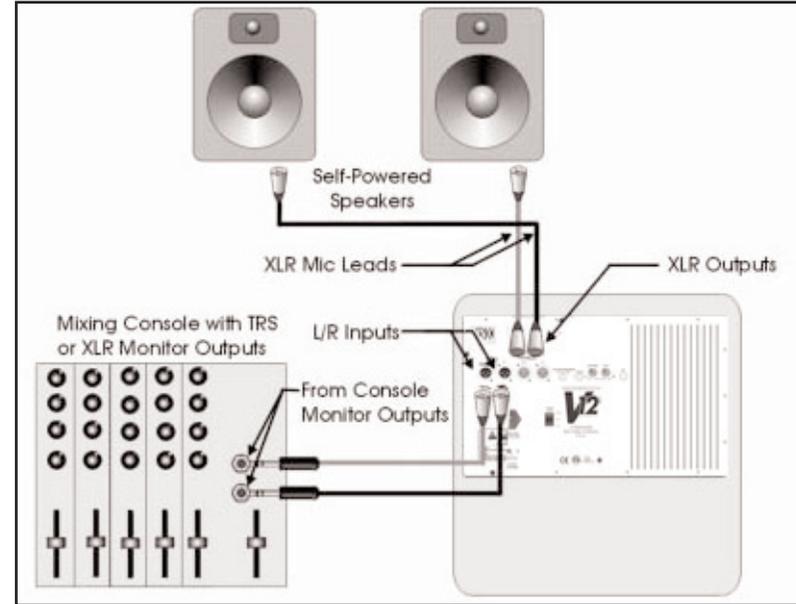
Hooking Up Your Subwoofer (Stereo)

The KRK subwoofers include a built-in crossover and amplifier, so you only need the appropriate hookup cables to integrate it into your existing monitor system. First, you need to connect a pair of cables from the stereo monitor outputs of your console to the left and right XLR input jacks on the subwoofer.



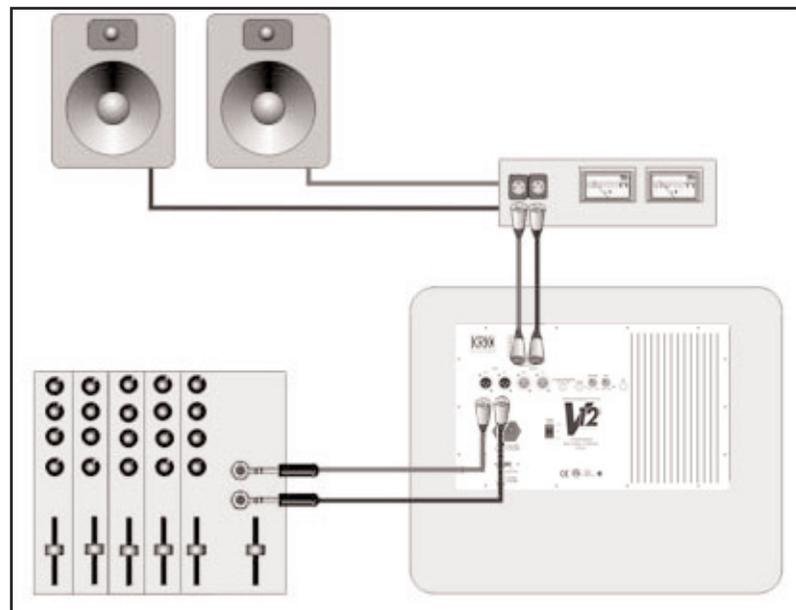
If your console outputs are 1/4 inch TRS jacks, then you will need a pair of TRS to XLR adapter cables. (Note the TRS to XLR wiring diagram included here.) Next, if you are using the internal 80-Hz high-pass filter built into the subwoofer for the existing full-range monitors (and most of you will), hook the XLR output jacks on the subwoofer to the line-level inputs of your full-range speaker

Hookup with Active Speakers



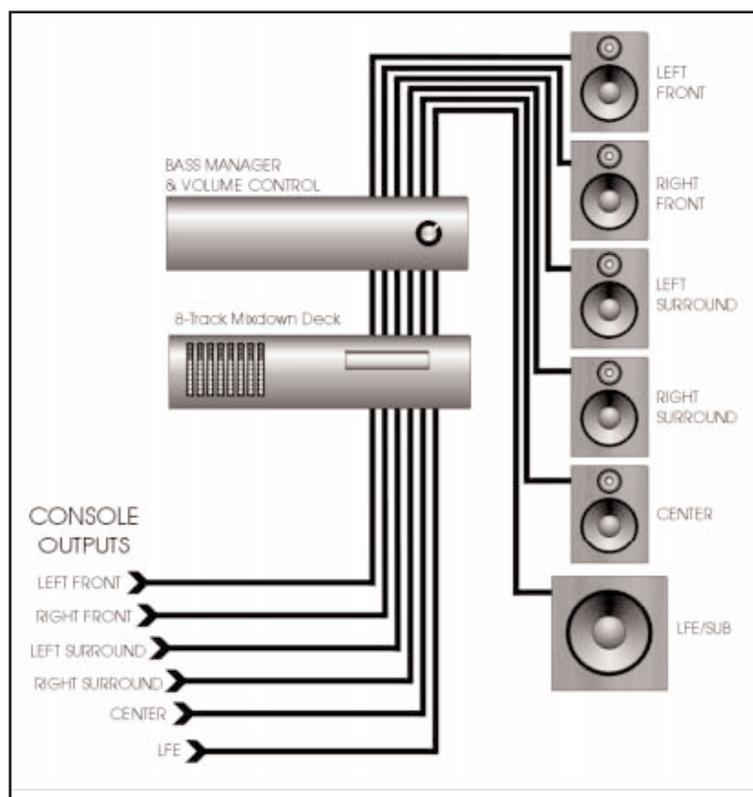
If you are using active (powered) speakers, simply use an XLR male to female "mic lead" to connect the output of the subwoofer directly to the input of the speaker. The output marked "Left" should go to your left speaker, and the output marked "Right" should go to your right speaker

Hookup with Passive Speakers



If, on the other hand, you are using passive (non-powered) monitor speakers that require an external amplifier, hook the two outputs of the subwoofer up to the inputs of the stereo monitor amplifier. Typically this would also be an XLR connector, but if need be, you could use another XLR to TRS adapter cable if the amplifier uses 1/4-inch TRS inputs. Connect the power amplifier to the speakers as you normally would. **Do not attempt to hook the speaker output of the monitor amplifier to the input of the subwoofer, you run the risk of damaging the equipment.**

Rotate the subwoofer's gain control counterclockwise and set the low-pass filter control to the 12 o'clock position. Power up the subwoofer along with your other speakers; note that the power light is illuminated. Play back some music and turn the console output up to a moderate listening volume. At this point, the bass should sound quiet. Then, slowly rotate the gain control until the bass seems appropriate for the mix. If you are used to using near-field monitors with limited bass response, the difference will be quite startling. Once you have the system up and running, go to the section on subwoofer placement and adjustment (Section 7 — Subwoofer Placement and Setup and Section 8 — Bass Management Theory) and learn some of the finer points of subwoofer application.



Section 6 — Hooking Up Your Subwoofer for 5.1 Surround

This is a bit more complicated than a stereo hookup since there are now six speakers involved — as well as something called Bass Management (see Section 8 — Bass Management Theory). Note from the diagram that for professional use a separate 6-channel level control box is required between the mix-down deck and the monitor speakers. This is because few small format mixing consoles have provisions to switch and level-manage a 6-channel audio signal. The simplest and perhaps best way to accomplish this is to use an external, 5.1 level controller. It is placed between the outputs of the mix-down deck and the monitor speakers, allowing it to control the playback level while the mix-down deck receives full-level recording signal.

Another option is to use a consumer, home-theater receiver in place of a professional level controller. Many of the current generation receivers have separate analog inputs that can be used for directly monitoring your mix from the console. If you are using unpowered, full-range speakers, then you can utilize the onboard power amps in the receiver itself to power them. If, on the other hand, you are using self-powered speakers for the full-range monitors, be sure to pick out a receiver that has preamp line-level outputs in addition to speaker-level outputs. Be aware that some inexpensive home theatre receivers disable bass management for the analog line inputs.

Section 7 — Subwoofer Placement and Setup

A properly set up subwoofer system extends the bass response of the main speakers (Either stereo or 5.1 surround) down into the 30-Hz range, but without exaggerating bass response in the room. Improper setup may cause an exaggeration of bass response in the room, which in turn may cause the engineer to mix in less bass energy than desired.

There are three basic steps to take to ensure you have a subwoofer operating in top form: 1) Room treatment; 2) Proper placement of the sub in the room; and 3) Proper electrical settings. The first step (which is beyond the scope of this manual) means you should hire a qualified studio acoustical consultant who can identify and rectify the acoustical shortcomings of your control room. You will hear a lot of talk about standing waves, flutter, decay time, absorption and reflection, and it may be expensive, but if you run a commercial recording space, consider it the cost of doing business. If, of course, you dealt with the necessary room treatment before purchasing a subwoofer, then you are already in great shape to move forward.

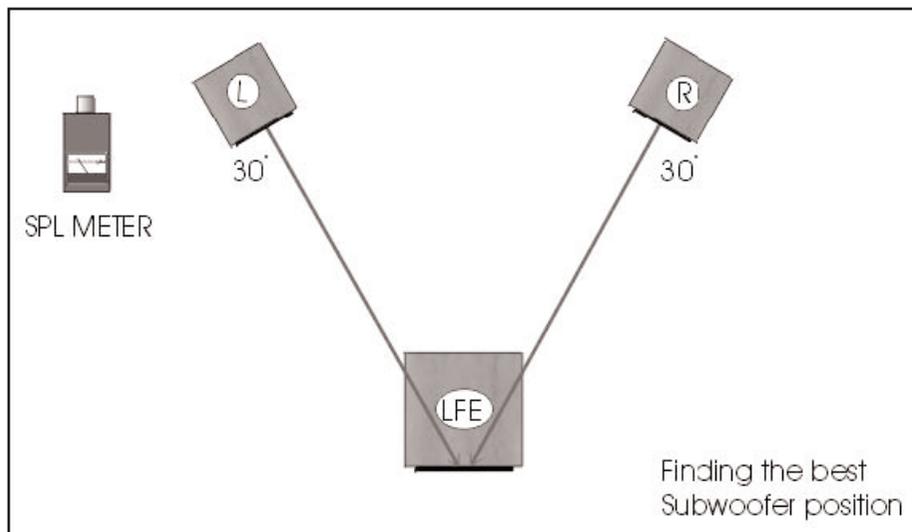
If room treatment is not in your plans, then focus on the other two basic ways to accomplish proper setup of your subwoofer. These are: 1) via proper subwoofer placement within the room; and 2) via electrical settings that affect levels, low-pass filter frequency and phase

Proper Physical Placement of Subwoofer

Just because bass frequencies are largely non-directional does not mean that you can ignore the subwoofer's placement in the room. In fact, a sub's physical position in the room in relation to the floor, walls and other surfaces radically influences its bass response. In a monitoring situation, it is desirable to place the subwoofer so

that it produces the smoothest frequency response at the listening position. In addition, since the subwoofer's output will interact with the other monitor speakers in the room, it is important to consider the subwoofer and near-field speakers as a total system. If you have access to a Real Time Analyzer and a calibration microphone, then setting up the room can be fairly painless. However, it can also be done with a generic SPL meter, or even your own ears, once you know what to listen for.

At this stage, you have only the subwoofer operating. Once you find its optimum position and settings, then it will be time to turn on the complete monitoring system to see that all components interact properly. What you are attempting to do is find a place in the room where the subwoofer interacts smoothly with the acoustics to even out the bass response at the listening position. One novel way to do this is to reverse the normal position of the subwoofer and listening spot by temporarily mov-



ing the subwoofer to your seat position in front of the console. Then play back pink noise in the 30 to 80 Hz range or music with robust bass information. Now by moving the SPL meter (or your ears) around the various potential speaker positions in the room, you can listen for where the bass sounds the loudest. That is where the speaker loading would potentially be at its greatest.

Once you find the optimal spot, place the subwoofer at that position and listen to it from the console position. Even without an SPL meter you can then use stepped band-pass, pink noise and sine-wave sweeps to evaluate how even the bass response is as even as possible at the listening position. Remember that you do not want any single frequency to be exaggerated during monitoring, as that will result in the final music mix having too little bass. One caveat: if your subwoofer's optimum position is under your console, make sure to protect it from your (and your client's) feet. You do not want to repeatedly kick holes in the sub....

Finally, go to the next section on setting the level and determining the proper position of the phase switch on the subwoofer.

Setting Subwoofer Levels

Once the subwoofer is in position, its level needs to be matched with the near-field speakers. For stereo systems, the process is straightforward. Obtain an SPL (Sound Pressure Level) meter. Set the low-pass filter on the KRK subwoofer back plate to 80 Hz (12 o'clock position) — if you will be using the internal high-pass filtered outputs from the subwoofer to the near-field speakers.

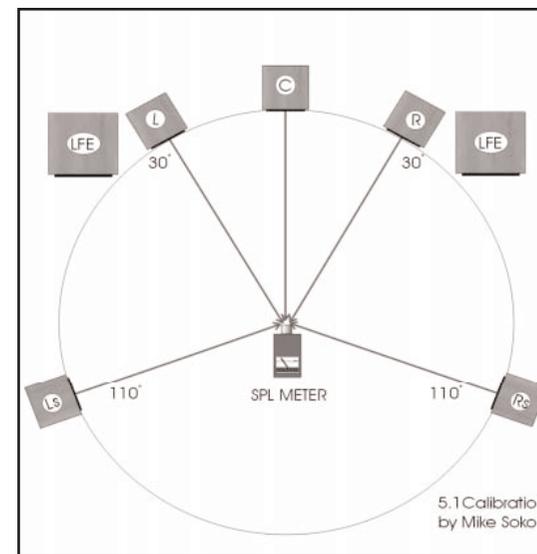
Now, route 1-octave wide, band-pass pink noise to the monitor system, which will be sent to the main speakers through the subwoofer or bass-management filters. A good choice is 500 to 1,000 Hz band-passed pink noise, which is within the fundamental frequency range of many vocalists, and minimizes high-frequency problems but doesn't excite the subwoofer. Set this to a comfortable monitoring level. (Typically 85 decibels SPL using the C response curve on the SPL meter)

Next, route 1-octave, band-passed, bass pink noise to the subwoofer via the same filter path. A good noise choice is 35 to 70 Hz, which is below the 80-Hz frequency of the subwoofer high-pass filter, but sufficiently high enough that most subwoofers will have adequate response in that band. Set the gain of the subwoofer level control until it matches the same 85-decibel SPL level.

Then, turn up the low-pass filter control on the subwoofer to 130 Hz. This allows the bass energy between the near-field speakers and subwoofer to overlap. While listening to it from the console mixing position, route pink noise with a band-pass of 80 Hz to 130 Hz to the speaker system. Have someone flip the phase switch between 0 and 180 degrees, and then back, and note which position sounds loudest. The loudest position is correct and in phase. Now return the low-pass filter to the 80-Hz position (or another frequency if you are using external high-pass filters for the near-field speakers). Your subwoofer should now be properly aligned for phase, level and spectral response.

Beyond Stereo to 5.1 Surround

When using a subwoofer for the LFE channel in a 5.1 surround monitoring system, note that the LFE channel is set with an additional 10 dB of monitoring gain. To set this level, we recommend using 2-octave-wide, band-passed, pink noise from 20 to 80 Hz for the LFE channel and 500 Hz to 2,000 Hz for the near-field speakers. After adjusting each near-field speaker one at a time to 85 dB SPL, adjust the LFE channel 10-dB louder or 95 dB SPL. Use the LFE level trim for this adjustment rather than the subwoofer gain control, which would corrupt the subwoofer bass management levels set in the previous section.



Section 8 — Bass Management Theory

Bass Management

Bass management is a method for extending the bass response of small, near-field speakers used in 5.1 surrounds sound systems (familiarily called Home Theatre systems). This is done by routing frequencies below a cutoff point to a separate subwoofer (Sometimes called "bass redirection" in home-theater receivers, the process can usually be enabled by selecting "Small Speakers" from a speaker-setup menu.). This process places a group of two-way filters in the speaker output path, typically at 80 Hz. (See Figure 1.) These filters route all sonic energy above this given frequency (e.g., 80 Hz) to the Left, Center, Right, Left Surround and Right Surround speakers. In turn, the process redirects the low-frequency energy from the five full-range channels to a single subwoofer, which also reproduces the separate LFE channel.

Bass management is used in practically every consumer home-theater system. Therefore, audio engineers mixing for modern listeners should realize that their studio monitoring systems must be able to reproduce sufficient low frequencies so they can avoid recording undesirable subsonic information. Without such studio monitoring, it is possible to release a mix with infrasonic problems, such as plosive pops, air conditioner rumble, traffic noise, footsteps, etc. These subsonic noises will be eliminated (masked) by the natural high-pass filter effect of using near-field monitors with a response that goes down only as low as 40 or 50 Hz. Thus, infrasonic problems may not be recognized (heard) in the studio. Since, however, virtually all home-theatre systems use subwoofers with bass management; consumers will hear these infrasonic problems at high volume levels in their home.

Bass management effectively extends the low-frequency response of near-field monitors down into the 20-30 Hz range (depending on the subwoofer used). This allows the engineer to take evasive action in the studio, such as engaging high-pass filters on input channels and microphones, adding pop filters and suspension mounts to microphones and correcting HVAC and other rumble problems.

Section 11— System Troubleshooting

Problem: If there is no power, check to see if...

- The power cord is plugged into both the IEC socket on the rear panel of the unit and into the AC mains
- The AC mains voltage is matched to the operating voltage requirements (See Changing Voltage in the Connecting the System section on page 3). If the AC mains voltage is higher than the selected voltage it is possible that the fuse needs to be replaced.
- The power light is illuminated on the front panel of the V8. If not, turn the power switch OFF and check the A/C mains fuse(s). NEVER USE A LARGER AMPERAGE FUSE THAN IS SPECIFIED! Turn the power switch back on. The power light should illuminate.
- If the fuse blows on power-up after a fuse change, the monitor needs to be returned to the dealer you purchased it from or to KRK for servicing.

Problem: If you can't hear any sound...

- Repeat steps in the previous troubleshooting section above before continuing to the next steps.
- Check to see if other audio devices using the same AC outlet are still operating.
- Make sure that:
 - The audio source cable is plugged into both the source output and the monitor input.
 - The System Gain pot is turned up fully clockwise (+ 6 dB).
 - The signal source (E.g. mixing console, work station, CD player, etc.) is turned up to a level that can properly send a signal to the monitors.
- If one of the monitors is working. Exchange the audio input cable from the non-working monitor to the working unit. This will determine whether it's really the monitor, a faulty cable, or some other glitch in the audio chain.
- If the monitor is still not responding, it should be returned to the dealer that you purchased it from or to KRK for servicing.

Problem: If the monitor suddenly stops working...

- Turn the monitor send down or off.
- Repeat steps in the troubleshooting sections above before continuing to the next steps.
- Carefully check to see if the amplifier's back plate is hot! If the monitor has been running at highest power output for an extended period of time, it could be that the unit has become overheated and the protection circuitry has shut the system down momentarily. The V-Series 2 subwoofers provide maximum circuitry protection against AC power surges, amplifier overdrive, and overheating of the amplifiers. Turn the monitor off then wait 30 minutes to allow the back plate to cool down. Turn the power switch back on.
- Increase the volume to check for normal operation.
- If the monitor is still not responding, it should be returned to the dealer that you purchased it from or to KRK for servicing.

Problem: The sound quality changes...

- Repeat steps in the previous troubleshooting section above before continuing to the next steps.
- Disconnect the signal cable at the input of the monitor. With the power on, place your ear close to each driver (tweeter/woofer) and listen for noise (i.e., a slight hiss or hum). If there's absolutely no sound whatsoever, it could be that one or more of the drivers (woofer or tweeter or both) is at fault. It's also possible that the problem lies some where in the electronics.
- Play some non-distorted source material at a low volume. Carefully cover the tweeter (to block the sound) without touching the diaphragm. Is the woofer producing a clean sound? If there is not a clear tonal quality or any sound at all then the woofer probably needs to be replaced.
- Cover the woofer so you can hear mostly the tweeter. Is the tweeter producing a clear sound? If there is not a clear tonal quality or any sound at all then the tweeter probably needs to be replaced.
- Once you have a better idea of what may be at fault then call us and speak with someone in the service department. They will help you determine the best solution to correct your monitors. The service department can be reached at (805)584-5224,

Problem: The monitor hisses, hums or makes other loud noises...

Here are some suggestions that will help you eliminate these undesirables from your system:

- Make sure that the power cord is plugged snugly into the IEC socket on the rear of the monitor.
- Check the connections between the signal source and the monitor. The Neutrik® Combo connector is a completely balanced system. If you're connecting an unbalanced output to the monitor, be sure that you're using PIN 2 for signal and have PIN 1 and PIN 3 tied together at the source end.
- Refer to the Connecting the System section on page 4 of this manual to ensure that the AC mains is matched to the operating voltage requirements.
- All audio equipment should use the same ground point. Check all other devices using the same AC output in the building like dimmers, neon signs, TV screens, and computer monitors. These devices should not be using the same circuit. .

For updated Troubleshooting information please visit our Web Site www.krksys.com

Please read the warranty card that was included in the shipping carton of your monitor prior to shipping it back to KRK Systems, LLC. All products in need of repair can be returned to the dealer where it was purchased or to KRK Systems, LLC. Before shipping your unit back to KRK for service you must acquire an "RMA" from KRK. Your unit will not be received by the company, nor will any work be done on your unit without this very important number. Please call KRK at 805-584-5277

Shipping Instructions

- For the safest possible return to KRK, please use the shipping carton and packaging that your V Series 2 was originally shipped in.
- KRK cannot be responsible for any damages incurred during the shipping process due to poor packing. Make sure to insure your shipment.
- If your monitor is out of warranty and you would like a quotation prior to servicing your product, please call for an "RMA" number. No service will be performed on your unit without this number.
- Replacement carton and packaging can be purchased from KRK Systems, LLC. for \$26.50 each.
- For replacement part quotes call (805) 584-5277.

Specifications

THE V-SERIES II POWERED Subwoofer



	KRK V8S	KRK V12 S
Model	KRK V8S	KRK V12 S
Drivers	LF, 8-inch woven Kevlar®	LF, 12-inch woven Kevlar®
Input Type	2 Channels XLR, 10 Ohm Balanced, Pin-1 Ground, Pin-2 High, Pin-3 Low	2 Channels XLR, 10 Ohm Balanced, Pin-1 Ground, Pin-2 High, Pin-3 Low
Output Type	2 Channels XLR – 600-Ohm Balanced Pin-1 Ground, Pin-2 High, Pin-3 Low	2 Channels XLR – 600-Ohm Balanced Pin-1 Ground, Pin-2 High, Pin-3 Low
Controls	System Gain - +6 dB to -30 dB Variable, Low-Pass Variable Filter, 70 Hz – 130 Hz	System Gain +6 dB to -30 dB Variable Σ Low-Pass Variable Filter, 50 Hz – 130 Hz
Phase Adjust Switch	0° or 180° High-Pass Filter: 80-Hz 24dB/oct fixed on XLR Outputs Amplification: 150 Watts	0° or 180° High-Pass Filter: 80-Hz 24dB/oct fixed on XLR Outputs Amplification: 200 Watts
Frequency Responce	40-70 Hz to 130 Hz Variable	29-50 Hz to 130 Hz Variable
Sensitivity (1W@1M)		
Max SPL (each)	106 dB Music; 109 dB Peak	114 dB Music; 117 dB Peak
Dimensions(HxWxD)	10-1/2" H x 14- 3/4" W x 12-5/8" D 26.7 cm H x 37.5 cm W x 32.1 cm D	15" H x 22" W x 20" D 38.1 cm H x 55.9 cm W x 50.8 cm D
Shipping Weight (ea.)	34 lbs. (16 kg) each	72 lbs. (33 kg) each