



Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for RANE AC 23B. You'll find the answers to all your questions on the RANE AC 23B in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual RANE AC 23B
User guide RANE AC 23B
Operating instructions RANE AC 23B
Instructions for use RANE AC 23B
Instruction manual RANE AC 23B

RANE OPERATORS MANUAL AC 23 B ACTIVE CROSSOVER



QUICK START

Labels above the controls refer to the unit being operated in the 2- or 3-Way Stereo mode. Labels below the controls refer to the unit being operated in the 4- or 5-Way Mono mode.

The AC 23B is a fully balanced version of the popular AC 23 and is equipped with 3-pin (XLR-type) connectors instead of the standard 1/4" TRS jacks. A STEREO/MONO switch has been added to the AC 23B and should be set appropriately. Switching jacks are not provided. All other specifications and operation are identical.

To operate the unit in Stereo 3-Way mode, be sure the rear panel switches are set for STEREO 3-WAY. Following the labels above the controls and jacks in logical order, you will find CHANNEL 1 INPUT, LOW OUT, MID OUT, and HIGH OUT, with the same for CHANNEL 2. The fact that the AC 23B is a multiple function unit means the outputs are switched around in Mono mode. To use the unit as a Mono 5-Way, first check that the CHANNEL 1 and 2 switches are set to 3-WAY, and the other switch is set to MONO. Connect the INPUT source to CHANNEL 1 only. Following the labels below the jacks, look at SUB OUT, then look over at LOW OUT, now go back to MID OUT, then over to HI MID OUT and then proceed to the HIGH OUT. An internal jumper determines 4- or 5-Way mode. Our apologies to 4-Way users: We must ship the units in the 5-Way mode since normal Stereo 3-Way operation demands it; a fact not the least bit obvious, but nevertheless, a fact it remains. Pity. See page Manual-6 for Mono 4-Way configuration.

CAUTION: Never connect anything except an approved Rane Power supply to the thing that looks like a red telephone jack on the rear of the AC 23B. This is an 18 VAC center tapped power input. Consult the Rane factory for a replacement or substitute.

AC 23 B CONNECTION

In agreement with IEC and AES/ANSI standards, AC 23B wiring convention is pin 2 Positive, pin 3 Negative (return), pin 1 Signal ground (for unbalanced use), with the connector case or shell tied to chassis ground.

Balanced Operation

Use only when driving from a true balanced source and driving to a true balanced destination—either transformer coupled or active drive. Connect the input to pins 2 and 3 with pin 2 positive. Do not connect pin 1. Terminate the shield to the case or shell. Connect the output to pins 2 and 3 with pin 2 positive. Do not connect pin 1. Connect the shield to the case or shell.

Unbalanced Operation

Connect the input between pins 2 and 1 with pin 2 positive and pin 1 Signal ground. Short pin 3 to pin 1. Terminate the shield to the case or shell. Connect the output between pins 2 and 1 with pin 2 Positive. Leave pin 3 open—do not short it to pin 1. Connect the shield to the case or shell.

Combination Operation

For combined balanced and unbalanced operation, use whichever half of the above instructions apply for each end. See the "Sound System Interconnection" RaneNote included with this manual for more information on cabling and grounding requirements.

WEAR PARTS: This product contains no wear parts.

Manual-1



[You're reading an excerpt. Click here to read official RANE AC 23B user guide](http://yourpdfguides.com/dref/3395131)
<http://yourpdfguides.com/dref/3395131>

Manual abstract:

All other specifications and operation are identical. To operate the unit in Stereo 3-Way mode, be sure the rear panel switches are set for STEREO 3-WAY. Following the labels above the controls and jacks in logical order, you will find CHANNEL 1 INPUT, LOW OUT, MID OUT, and HIGH OUT, with the same for CHANNEL 2. The fact that the AC 23B is a multiple function unit means the outputs are switched around in Mono mode. To use the unit as a Mono 5-Way, first check that the CHANNEL 1 and 2 switches are set to 3WAY, and the other switch is set to MONO. Connect the INPUT source to CHANNEL 1 only.

Following the labels below the jacks, look at SUB OUT, then look over at LOW OUT, now go back to MID OUT, then over to HI MID OUT and then proceed to the HIGH OUT. An internal jumper determines 4 or 5-Way mode. Our apologies to 4-Way users: We must ship the units in the 5-Way mode since normal Stereo 3-Way operation demands it: a fact not the least bit obvious, but nevertheless, a fact it remains. Pity.

See page Manual-6 for Mono 4-Way configuration. CAUTION: Never connect anything except an approved Rane Power supply to the thing that looks like a red telephone jack on the rear of the AC 23B. This is an 18 VAC center tapped power input. Consult the Rane factory for a replacement or substitution. AC 23B CONNECTION In agreement with IEC and AES/ANSI standards, AC 23B wiring convention is pin 2 Positive, pin 3 Negative (return), pin 1 Signal ground (for unbalanced use), with the connector case or shell tied to chassis ground.

Balanced Operation Use only when driving from a true balanced source and driving to a true balanced destination--either transformer coupled or active drive. Connect the input to pins 2 and 3 with pin 2 positive. Do not connect pin 1. Terminate the shield to the case or shell. Connect the output to pins 2 and 3 with pin 2 positive.

Do not connect pin 1. Connect the shield to the case or shell. Unbalanced Operation Connect the input between pins 2 and 1 with pin 2 positive and pin 1 Signal ground. Short pin 3 to pin 1. Terminate the shield to the case or shell. Connect the output between pins 2 and 1 with pin 2 Positive. Leave pin 3 open--do not short it to pin 1. Connect the shield to the case or shell. Combination Operation For combined balanced and unbalanced operation, use whichever half of the above instructions apply for each end. See the "Sound System Interconnection" RaneNote included with this manual for more information on cabling and grounding requirements.

WEAR PARTS: This product contains no wear parts. Manual-1 FRONT PANEL: STEREO 2-WAY CONFIGURATION Observe the labels screened above the controls for stereo operation. NOTE: In the 2-Way mode, the AC 23B crossover range is from 190 Hz to 7 kHz. The model AC 22 crossover in stereo 2-Way mode is recommended when the crossover point needs to be outside of this range. * Not used in 2-Channel 2-Way Mode POWER switch: Two guesses.

POWER indicator: When this yellow LED is lit the unit is ready to operate. CHANNEL 1 MASTER LEVEL control: Sets the overall Level of Channel 1 without altering the relative settings of the Low and High frequency Outputs. Unity gain for all level controls is at "7". LOW LEVEL control: Sets the Level of signal going to the Low Frequency output in this channel. Refer to 'Setting the Output Level Controls' on page Manual-15.

LOW MUTE switch: When pressed to the in position, all signal is removed from the Low Frequency Output. This eases tune-up procedures as described on pages Manual-11-16. LOW DELAY control: Adds from 0 to 2 ms of time Delay to the Low Frequency Output only. This allows a low frequency driver to be electronically phase-aligned with a mid frequency driver whose diaphragm is situated behind the low frequency diaphragm. Refer to 'Time Delay Adjustment Procedure' on page Manual-10.

LOW/HIGH crossover frequency selector: This 41-detent selector sets the crossover frequency between the Low and High frequency Outputs. Refer to 'Selecting Crossover Frequencies' on page Manual-10. HIGH LEVEL control: Sets the Level of signal going to the High frequency Output only. CHANNEL 2 MASTER LEVEL control: Sets the overall Level of Channel 2 without altering the relative settings of the Low and High Outputs. Manual-2 REAR PANEL: STEREO 2-WAY INSTALLATION Observe the labels above the Inputs and Outputs for Stereo operation.

CHANNEL 1 INPUT: Plug the left output of the mixer, equalizer or other signal source to this Input. See 'AC 23B Connection' on page Manual-1 for wiring details. CHANNEL 2 INPUT: Plug the right output of the mixer, equalizer or other signal source to this Input.. HIGH FREQUENCY OUTPUTS: Connect the CHANNEL 1 HIGH OUT to the left channel input of the high frequency amp, and the CHANNEL 2 HIGH OUT to the right channel input of the high frequency amp. MID FREQUENCY OUTPUTS: Connect the CHANNEL 1 MID OUT to the left channel input of the low frequency amplifier, and the CHANNEL 2 MID OUT to the right channel input of the low amplifier. 2-WAY/3-WAY switch: Converts the outputs from 3-Way to 2-Way. This switch removes the Low frequency crossover from the signal path. Low frequencies are now routed to the Mid frequency Output. Be sure to slide the switches to the 2-WAY position.

Note: The Low frequency outputs are still active and may be used as additional subwoofer outputs. STEREO/MONO switch: Set this switch to the STEREO "out" position. POWER input connector: Use only a model RS 1 or other power supply approved by Rane. This unit is supplied with a remote power supply suitable for connection to this input jack. This is not a telephone jack. The power requirements call for an 18-24 VAC center-tapped transformer only. Using any other type of unapproved supply may damage the unit and void the warranty. Two years parts and labor is worth safeguarding. Chassis ground point: A #6-32 screw is used for chassis grounding purposes. Always connect crossover chassis ground to amplifier chassis ground.

See 'Chassis Grounding' on page Manual-7 for details. Manual-3 FRONT PANEL: STEREO 3-WAY CONFIGURATION Observe the labels screened above the controls for stereo operation. POWER switch: Two guesses. POWER indicator: When this yellow LED is lit, the unit is ready to operate. CHANNEL 1 MASTER LEVEL control: Sets the overall Level of Channel 1 without altering the relative settings of the Low/Mid/High frequency Outputs.

Unity gain for all Level controls is at "7". LOW FREQUENCY LEVEL control: Sets the Level of signal going to the Low frequency Output only in this Channel. Refer to page Manual-15 for guidance with the Level control settings. LOW MUTE switch: When pressed to the in position, all signal is removed from the Low frequency Output. This eases tune-up procedures as described on pages Manual-11-16.

LOW DELAY control: Adds from 0 to 2 ms of time delay to the Low Frequency Output only. This allows a low frequency driver to be electronically phase-aligned with a mid frequency driver whose diaphragm is situated behind the low frequency diaphragm.



[You're reading an excerpt. Click here to read official RANE AC 23B user guide](http://yourpdfguides.com/dref/3395131)

<http://yourpdfguides.com/dref/3395131>

Refer to page Manual-10. **LOW/MID crossover frequency selector:** This 41-detent selector sets the crossover frequency between the Low and Mid Outputs. Refer to page Manual-10. **MID LEVEL control:** Sets the Level of signal going to the Mid Output in this Channel only. **MID MUTE switch:** Removes all signal from the Mid Frequency Output when pressed to the in position. **MID DELAY control:** Adds from 0 to 2 ms of time Delay to the Mid Output only. **MID/HIGH crossover frequency selector:** Sets the crossover frequency between the Mid and High Outputs in this Channel. **HIGH LEVEL control:** Sets the Level of signal going to the High Output only.

CHANNEL 2 MASTER LEVEL control: Sets the overall Level of Channel 2 without altering the relative settings of the Low/Mid/High Outputs. **Manual-4 REAR PANEL: STEREO 3-WAY INSTALLATION** Observe the labels above the Inputs and Outputs for Stereo operation. **CHANNEL 1 INPUT:** Plug the left output of the mixer, equalizer or other signal source to this Input. Refer to 'AC 23B Connection' on page Manual-1 for wiring details. **CHANNEL 2 INPUT:** Plug the right output of the mixer, equalizer or other signal source to this Input. **HIGH FREQUENCY OUTPUTS:** Connect the CHANNEL 1 HIGH OUT to the left channel input of the high frequency amp, and the CHANNEL 2 HIGH OUT to the right channel input of the high frequency amp. **MID FREQUENCY OUTPUT:** Connect the CHANNEL 1 MID OUT to the left channel of the mid frequency amp, and the CHANNEL 2 MID OUT to the right channel of the mid frequency amp. **LOW FREQUENCY OUTPUTS:** Connect the CHANNEL 1 and 2 LOW OUTS to the left and right channels of the low frequency amplifier, respectively. **STEREO/MONO switch:** Set this switch to the STEREO position. **2-WAY/3-WAY switch:** Converts the outputs from Stereo 3-Way to Stereo 2-Way.

Be sure the switches are in the 3-WAY position. **POWER input connector:** Use only a model RS 1 or other power supply approved by Rane. This unit is supplied with a remote power supply suitable for connection to this input jack. This is not a telephone jack. The power requirements call for an 18-24 VAC center-tapped transformer only.

Using any other type of unapproved supply may damage the unit and void the warranty. Two years parts and labor is worth safeguarding. **Chassis ground point:** A #6-32 screw is used for chassis grounding purposes. Always connect the crossover chassis to the amplifier chassis. See 'Chassis Grounding' on page Manual-7 for details.

Manual-5 FRONT PANEL: MONO 4-WAY AND 5-WAY CONFIGURATION Observe the labels screened below the controls for Mono operation. **POWER switch:** Two guesses. **POWER indicator:** When this yellow LED is lit, the unit is ready to operate. **MASTER LEVEL control:** Sets the overall Level of the entire unit in Mono mode, without changing relative settings of the individual Sub/Low/Mid/High Outputs. Unity gain for all Level controls is "7". **SUBWOOFER LEVEL control:** Sets the Level of signal going to the Sub Output. See page Manual-15. **SUBWOOFER MUTE switch:** Removes all signal from the Sub Output when pressed to the in position. This eases the system tune-up procedure, as described on pages Manual-11-16. **SUBWOOFER DELAY control:** In Subwoofer applications this control has virtually no effect and will normally be set to minimum (MIN).

Refer to page Manual-10. **SUB/LOW crossover frequency selector:** This 41-detent selector sets the crossover frequency between the Subwoofer and Low Outputs. Refer to page Manual-10 to determine the proper setting for your system. **LOW LEVEL control:** Sets the Level going to the Low frequency Output.

LOW MUTE switch: Removes all signal from the Low Output when pressed in. **LOW DELAY control:** Adds from 0 to 2 ms of time Delay to the Low Frequency Output only. Refer to page Manual-10 for alignment procedure. **LOW/MID crossover frequency selector:** Sets the crossover frequency between the Low and Mid frequency Outputs. **MID LEVEL control:** Sets the Level of signal going to the Mid Output only. **MID MUTE switch:** Removes all signal from the Mid Output when pressed in.

MID DELAY control: Adds from 0 to 2 ms of time Delay to the Mid frequency Output only. **MID/Hi MID crossover frequency selector:** Sets the crossover frequency between the Mid and Hi Mid Outputs. * NOTE: Both the CHANNEL 1 HIGH LEVEL control and CHANNEL 2 MASTER LEVEL control are automatically bypassed when the AC 23B is switched to "MONO" on the back panel. Adjusting these controls has no effect in the Mono mode. **Hi MID LEVEL control:** This controls the Level of signal going to the Hi Mid Output only in 5-Way Mode.

****NOTE TO Manual-6 4-WAY MONO USERS:** An internal jumper determines 4 or 5-Way mode. Our apologies: We must ship the units in the 5-Way mode since normal Stereo 3-Way operation demands it: a fact not the least bit obvious, but nevertheless, a fact it remains. See the section below for Mono 4-Way Jumper Instructions. The Hi MID LEVEL control, Hi MID MUTE switch, Hi MID DELAY control and Hi MID/HIGH FREQUENCY control are out of circuit and will have no effect regardless of their settings in 4-Way Mode. **Hi MID MUTE switch:** Removes all signal from the Hi Mid Output when pressed to the in position.

This control is disabled in 4-Way mode. **Hi MID DELAY control:** This control adds from 0 to 2 ms of time Delay to the Hchassis. See the CHASSIS GROUNDING note on page Manual-7 for details. **Manual-8 REAR PANEL: ALTERNATE MONO 4-WAY INSTALLATION** Note: The switching in the AC 23B will result in a Mono 4-Way configuration with the crossover ranges SUB, LOW, MID & HIGH from left to right across the front panel. By connecting a patch cable from the CHANNEL 1 HIGH OUT to the CHANNEL 2 INPUT, the LOW/MID crossover range changes from 70 Hz-1 kHz to a higher range of 190 Hz-7 kHz. Switch CHANNEL 1 to 3-Way, and CHANNEL 2 to 2-Way. Note: DO NOT follow the Mono 4-Way Jumper Instructions on page Manual-7. **MONO INPUT:** Connect the output from your mixer or other signal source only to the CHANNEL 1 INPUT for Mono operation; do not use the Channel 2 Input. Note: For this alternate Mono 4-Way installation, connect a patch cord from the CHANNEL 1 HIGH OUT to the CHANNEL 2 INPUT as shown. **SUBWOOFER OUTPUT:** Connect the SUB OUT to the input of the subwoofer amplifier (or bass bin amp).

LOW FREQUENCY OUTPUT: Connect the MID OUT to the input of the low frequency amplifier. **MID FREQUENCY OUTPUT:** Connect the Hi MID OUT to the input of the mid frequency amplifier. Be sure the CHANNEL 1 HIGH LEVEL and the CHANNEL 2 MASTER LEVEL controls are set at "7" for unity gain between Channels. **Hi FREQUENCY OUTPUT:** Connect the HIGH OUT to the input of the high frequency amplifier. **STEREO-MONO switch:** Be sure this switch is in the STEREO out position. Yes, STEREO. A Mono circuit is created when Channel 1 is patched into Channel 2, and the correct signal flow depends on this switch. **2-WAY/3-WAY switches:** Converts each channels outputs from 3-Way to 2-Way. For this configuration, set CHANNEL 1 to 3-Way, and CHANNEL 2 to 2-Way. **POWER input connector.**

Use only a model RS 1 or other power supply approved by Rane.



[You're reading an excerpt. Click here to read official RANE AC 23B user guide](http://yourpdfguides.com/dref/3395131)
<http://yourpdfguides.com/dref/3395131>

This unit is supplied with a remote power supply suitable for connection to this input jack. Chassis ground point. A #6-32 screw is used for chassis grounding purposes. Always connect the crossover chassis to the amplifier chassis.

See the CHASSIS GROUNDING note on page Manual-7 for details. Manual-9 OPERATING INSTRUCTIONS Selecting Crossover Frequencies Most speaker manufacturers supply low and/or high frequency cut-off points for each driver, especially if these are supplied in a system. These cut-off frequencies are based on each driver's performance at and beyond this point, with a certain safety margin to accommodate more gentle filter roll-offs and resultant higher output beyond the recommended performance range. The AC 23B utilizes 41-detent crossover frequency selectors which are precision potentiometers. The detents will assure consistent accuracy from Channel to Channel and unit to unit.

This is a distinct advantage over the continuously variable designs with low-tolerance parts, possible knob misalignment and panel screening variations. Even with 41 choices it is possible that the exact recommended crossover frequency may not fall on one of the detents on the selector. Not to panic, for these sound reasons: 1. The AC 23B possesses 24 dB/octave roll-off, so the crossover points may be set to the nearest detent above or below the recommended limit with virtually no hazard to the driver or degradation in sound quality. If extremely high power levels are expected, it is safer to defer to the high frequency drivers and shift the crossover point up in frequency rather than down. 2. Detents do not rely on knob alignment, silk-screen accuracy, parallax and other variables which erode the accuracy of continuously variable designs. Chances are that even careful visual alignment on these will often yield a frequency error greater than a full detent on the AC 23B. 3. If it is absolutely critical to obtain the exact crossover frequency (Mil Spec.

, P.A., etc.), the selector can be positioned between detents if necessary. This of course will require the aid of a precision signal generator and other equipment to verify the exact setting. For best overall system results, try to choose the speaker components so that each operates well within its recommended limits. This will provide valuable leeway so that you may move crossover points in order to fine-tune the system, and will also yield higher system reliability. If at all possible, beg, borrow or best yet always use some kind of realtime analyzer to tune your crossover and fine-tune the system for each different location with an equalizer. Refer to the following pages for further alignment details. Time Delay Adjustment Procedure Before jumping feet first into the realm of time delay and how to adjust it, it might help to spend a moment here to re-affirm why on earth this delay is really necessary.

For a short course on time delay, Linkwitz-Riley and other mouth-watering details, we urge you to pick up a free copy of the "Linkwitz-Riley Crossovers" RaneNote. Ask your dealer, call us here at the factory, or download it from Rane's web site. Problems pop up when two different speakers emit the same frequency as occurs in the crossover regions of two, three, four and five way systems. Because the two drivers are displaced vertically, cancellation occurs somewhere off-axis because the sound waves have to travel different distances from the two speakers and hence, will arrive out of phase. This forms a "lobe" or radiation pattern, bounded on either side by cancellation lines or axes, which narrow the dispersion pattern or listening area of the speaker. Fine. So we put up with it. But to make matters worse, when the two drivers are horizontally displaced that is, one is in the front of or behind the other, this "lobe" or dispersion pattern gets tilted (usually upward) toward the driver that is further behind. This gets hard to put up with, because the end result is that your speaker system will have two, three, four or more tilted radiation patterns and only two or three people in the house will have decent seats. And we're not talking trivial pursuits here--this rampant lobing error can make a sound system a real headache to listener and operator alike.

The idea, then, is to be sure that all drivers are vertically aligned and that all components are always in phase. Then all the main lobes are on-axis, well behaved, and the system enjoys the widest possible dispersion pattern so that everyone gets good sound. The one catch is that in many cases it is physically or otherwise impossible to get all the drivers vertically lined up at the sound source. This is where time delay comes in. By electronically delaying the signal going to the front driver, enough time allows the sound from the rear driver to literally catch up to the forward driver's voice coil, so that signal from both drivers is emitted in phase--and it works! Time delay makes an appreciable improvement in overall sound. The trick is finding the proper time delay amount: hence the rest of this section. Unfortunately the amount of time delay is a function of two factors (life ceased to be simple after age 9, right?): the amount of horizontal displacement between driver voice coils, and the actual crossover frequency involved. Setting delay controls by ear is supposedly possible, but very tricky and unreliable. The following methods are a couple of (but by no means all) means of setting time delay. Manual-10 STEP BY STEP PROCEDURE A 3-Way mode consisting of High, Mid and Low drivers is used here as an example.

@@NOTE: If you are running two separate channels on the crossover, tune up only one channel at a time, using the same procedure for both. 1. Place the analyzer microphone about 15 feet in front of the speaker stack and at a height about midway between the high and mid drivers. Turn all crossover LEVEL controls fully down. 2. Connect the pink noise source to the INPUT of the crossover (or mixer or wherever is convenient). Turn up the crossover MASTER LEVEL control and the MID OUT control until noise is heard only from the mid driver at a comfortable volume. 3. With a healthy but not uncomfortable volume of noise from the mid driver, set the analyzer DISPLAY LEVEL control so the LED's corresponding to the high crossover frequency are reading 0 dB (this would be a green LED at the crossover frequency with any of the Rane analyzers). For example, if your high crossover frequency is 2 kHz, set the RA 27 in the ± 1 dB mode and then adjust the RTA LEVEL control until the green LED is lit in the 2 kHz band.

There...easy. 4.

Now press in the MID MUTE switch on the crossover so that the tone is removed from the mid driver. Without re-adjusting either the meter or the crossover Input or Mid Level controls, turn up the HIGH LEVEL control until the tone coming from only the high driver reads 0 dB (a green LED at the crossover frequency). 5. Now release the MID MUTE switch on the crossover so that pink noise is heard from both the high and mid drivers.



[You're reading an excerpt. Click here to read official RANE AC 23B user guide](http://yourpdfguides.com/dref/3395131)

<http://yourpdfguides.com/dref/3395131>

Once positioned, make sure that the SPL meter remains in the exact same location for the rest of the procedure. Minimize all background noise (fans, air conditioners, traffic, wild animals, etc.) to get accurate readings. Set the SPL meter to "C-weighting" "Slow" if switches are present. 4. Slowly turn the LOW LEVEL of the crossover up until there is a healthy rumble coming from the bass speakers (For this example the 3-Way configuration is used--the same procedure applies to all configurations, starting with the lowest frequency and ending with the highest). Adjust the SPL meter and/or crossover output until you get a 0 dB reading on the meter. After this point do not change the controls on the SPL meter.

5. While leaving the LOW LEVEL control at the 0dB adjustment just obtained, press the LOW MUTE switch on the crossover so that the pink noise disappears from the bass speakers (revel in the silence...). 6. Now slowly turn up the MID LEVEL control so that pink noise is heard from the mid frequency speakers. Without changing any settings on the SPL meter, adjust the crossover MID LEVEL control until you obtain a 0 dB reading on the SPL meter. Now the low and mid speakers are set at the same level. 7.

Now press the MID MUTE switch on the crossover so that the pink noise again disappears. 8. Repeat this process for each frequency section of the crossover, ending with the highest frequency. NOTE: It is possible that you may turn one of the frequency section output LEVEL controls all the way up and still not have enough volume for a 0 dB reading (as determined by previous section levels). This is probably due to different sensitivities of amps, speakers and other level controls in the system.

When this happens, re-set the SPL meter so that it reads 0 dB on this frequency section (you may have to "down range" the meter and re-adjust the crossover level control). Now go back and re-adjust the previous crossover level controls, turning these down to get a 0 dB reading on the meter. 9. Once the HIGH LEVEL control is set for 0 dB on the meter, disengage all of the MUTE switches on the crossover, and check that noise is emitting from all the speaker components. The crossover should now be aligned.

Make any overall level adjustments with the MASTER LEVEL controls and leave the output level controls unchanged. Fig. 4 Configuration with Long Throw Horn Fig. 5 Configuration with Constant Directivity Horn Manual-16 Time Delay Transplant Modification There are modification jumpers inside the AC 23B. These jumpers permit the transplanting of the Delay circuits from one output to another. As the units are shipped, the Delay circuit is not installed on the High Frequency outputs. When the AC 23 was first designed, long throw horns were more common than Constant Directivity horns (CD horns). The long throw horn's diaphragm was the farthest sound emitter from the front of the speaker enclosure, (see Fig. 4) so no delay was needed. The mid frequency and low frequency drivers were always in front of the high frequency drivers, therefore, the mid and low frequency drivers needed the Delay circuits for proper time alignment.

Now, with the use of CD horns becoming more common, occasionally there is a need to delay the CD horn as its diaphragm is usually in front of the other drivers in the enclosure (see Fig. 5). If you are using CD horns, you should also read the CD horn EQ modification as described on page 18. With the AC 23 it is a little difficult to figure out which Delay to move to the High Frequency Output. The normal configuration for a speaker enclosure is shown in Fig. 3. The long throw horn's driver is the farthest back in the enclosure, so no Delay is needed for this driver. Some Delay is needed on the Low and Mid drivers. The enclosure with the CD Horn, shown in Fig. 5, needs the Delay circuit transplanted from the Low to the High frequencies Outputs.

As can be seen from the dashed line in the drawing, the CD Horn's driver is in front of the mid and low drivers. Of the three drivers, the low frequency driver will need no Delay, the mid frequency driver will need some Delay, and the CD Horn will need the most Delay. Soldering is required. @ @STEP BY STEP PROCEDURE Transplanting the Low Frequency Delay to the High Frequency Output. CHANNEL ONE: 1.

Refer to the board assembly layout on page Schematics-1. 2. Behind the Channel 1 LF DELAY pot find the jumper labeled W8. Behind the Channel 1 LF LEVEL pot find the jumper labeled W4. 3.

To remove the Delay 1 circuit from the Low Frequency output, remove both the W8 and W4 jumpers. 4. To get the Low Frequency output to work again, install a long jumper from W8 Pin 1 to W4 Pin 2. 5. The Delay 1 circuit is now removed from all circuits. 6. To install the Delay 1 circuit into the Channel 1 High Frequency Output, find the jumper W19 behind the Channel 1 MF MUTE switch and remove it. 7. Install a long jumper from W4 Pin 1 to W19 Pin 2, and install a long jumper from W8 Pin 2 to W19 Pin 1. The Delay 1 circuit is now installed into Channel 1 High Frequency Output.

CHANNEL TWO: 1. Refer to the board layout on page Schematics-1. 2. Behind the Channel 2 LF DELAY pot find the jumper labeled W44. Behind the Channel 1 LF LEVEL pot find the jumper labeled W42. 3. To remove the Delay 3 circuit from the Low Frequency output, remove both the W42 and W44 jumpers. 4. To get the Low Frequency output to work again, install a long jumper from W44 Pin 1 to W42 Pin 2. 5.

The Delay 3 circuit is now removed from all circuits. 6. To install the Delay 3 circuit into the Channel 2, High Frequency Output, find the jumper W51 behind the Channel 2 MF MUTE and remove it. 7. Install a long jumper from W42 Pin 1 to W51 Pin 2, and install a long jumper from W44 Pin 2 to W51 Pin 1.

The Delay 3 circuit is now installed into Channel 2 High Frequency Output. STEP BY STEP PROCEDURE Transplanting the Mid Frequency Delay to the High Frequency Output CHANNEL ONE: 1. Refer to the board layout on page Schematics-1. 2. Behind the Channel 1 MF DELAY pot find the jumper labeled W26.

Behind the Channel 1 MF LEVEL pot find the jumper labeled W18. 3. To remove the Delay 2 circuit from the Mid Frequency output, remove both the W26 and W18 jumpers. 4. To get the Mid Frequency output to work again, install a long jumper from W26 Pin 1 to W18 Pin 2. 5. The Delay 2 circuit is now removed from all circuits. 6. To install the Delay 2 circuit into the Channel 1, High Frequency output, find the jumper W19 behind the Channel 1 MF MUTE switch and remove it. 7.

Install a long jumper from W26 Pin 2 to W19 Pin 1, and install a long jumper from W18 Pin 1 to W19 Pin 2. The Delay 2 circuit is now installed into Channel 1 High Frequency Output. CHANNEL TWO: 1. Refer to the board layout on page Schematics-1. 2. Behind the Channel 2 MF DELAY pot find the jumper labeled W55. Behind the Channel 2 MF LEVEL locate the jumper labeled W50. 3. To remove the Delay 4 circuit from the Mid Frequency output, remove both the W50 and W55 jumpers. 4.

To get the Mid Frequency output to work again, install a long jumper from W55 Pin 1 to W50 Pin 2.



[You're reading an excerpt. Click here to read official RANE AC 23B user guide](http://yourpdfguides.com/dref/3395131)

<http://yourpdfguides.com/dref/3395131>

5. The Delay 4 circuit is now removed from all circuits. 6. To install the Delay 4 circuit into the Channel 2 High Frequency output, find the jumper W51 behind the Channel 2 MF MUTE switch and remove it.

7. Install a long jumper from W55 Pin 2 to W51 Pin 1, and install a long jumper from W50 Pin 1 to W51 Pin 2. The Delay 4 circuit is now installed into Channel 2 High Frequency Output. Manual-17 Constant Directivity Horn Equalization Modification Constant Directivity (or CD) horns need additional equalization to help cover the same area a long throw horn can cover. Additional circuitry has been added to the AC 23B for the additional equalization of the High Frequency outputs for the CD Horns.

@@@ Find the frequency at the bottom of the chart of this point--an approximate is fine, you don't have to be exact. Find the closest frequency in the table below to determine the correct value capacitor to install in the AC 23B to correct for this high frequency roll off. STEP BY STEP PROCEDURE The following procedure is for CD horn EQ on the High output in Stereo 3-Way mode. For a Mono 4- or 5-Way system with a CD horn on the high output, only place C16 in Channel 2. 1. Remove the top and bottom covers of the AC 23B. 2. Locate the positions for C15 and C16 on page Schematics1 and on the circuit board. C15 (for Channel 1) is located behind the CH 1 MF MUTE switch. C16 (for Channel 2) is located behind the CH 2 MF MUTE switch.

3. Clean the solder pad on the underside of the board so that the appropriate capacitor can be inserted. Install the capacitor, and solder the leads from the underside using fresh solder. Clip the excess leads. 4. Replace the top and bottom covers. Monoing the Low Frequency Outputs It is possible to mono the Low Frequency Outputs of the AC 23B by an internal jumper modification. This requires that the Delay 1 and Delay 3 circuits be removed from the signal path, and that R33 be removed. The following procedure will assist you through the modification. Soldering is required.

@@ DELAY ONE REMOVAL 1. Refer to the board layout on page Schematics-1 and on the circuit board. 2. Behind the Channel 1 LF LEVEL pot find the jumper labeled W4. Behind the Channel 1 LF DELAY pot find the jumper labeled W8.

3. To remove the Delay 1 circuit from the Low Frequency output, remove both the W4 and W8 jumpers. 4. To get the Low Frequency output to work again, install a long jumper from W8 Pin 1 to W4 Pin 2. The Delay 1 circuit is now removed from all circuits.

DELAY THREE REMOVAL 1. Refer to the board layout on page Schematics-1 and on the circuit board. 2. Behind the Channel 2 LF DELAY pot find the jumper labeled W44. Behind the Channel 1 LF LEVEL pot find the jumper labeled W42. 3. To remove the Delay 3 circuit from the Low Frequency output, remove both the W42 and W44 jumpers. 4. To get the Low Frequency output to work again, install a long jumper from W44 Pin 1 to W42 Pin 2. The Delay 3 circuit is now removed from all circuits.

REMOVING R33 AND SUMMING THE LOW FREQUENCY OUTPUTS 1. Refer to the board layout on page Schematics-1 and on the circuit board. 2. Behind the Channel 2 LF LEVEL pot find the resistor R33, and remove it, in any way your heart desires, though violence will void your warranty. 3. Behind the Channel 1 HF LEVEL pot find the jumper W29. 4. Install a short jumper wire from W29 Pin 1 to W29 Pin 2. Solder in place. The Low Frequency Outputs are now summed.

3 dB Down Frequency 2.0 kHz 2.5 kHz 3.0 kHz 3.7 kHz 4.

0 kHz 5.0 kHz 6.4 kHz Capacitor .0015 μ f .0012 μ f.

001 μ f 820 pf 750 pf 620 pf 470 pf ©Rane Corporation 10802 47th Ave. W., Mukilteo WA 98275-5098 TEL (425)355-6000 FAX (425)347-7757 WEB <http://www.rane.com> Manual-18 103045 .



[You're reading an excerpt. Click here to read official RANE AC 23B user guide](#)
<http://yourpdfguides.com/dref/3395131>