

C I T A T I O N

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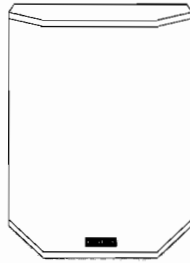
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Introduction

Thank you for selecting the Citation 7.3 Dual Drive Surround Dipole Speaker as part of your audio system. It has been carefully designed to deliver the best possible sonic performance for home theater and critical listening applications. In order to obtain the maximum enjoyment from your new speaker, please take a few minutes to read the information contained in this manual. This brief investment of time will yield major dividends by making certain that your speaker is properly installed and optimized for the specifics of your system.

Welcome to the Citation family. We wish you many years of listening pleasure!



Description

The Citation 7.3 is a specialized loudspeaker, designed for use in home theater and multi-channel audio applications. Unlike conventional surround speakers, it uses a dual speaker array approach, with two separate speaker systems within one housing, one for the front of the surround sound field, and another for the back of the surround system. Dipolar surrounds are recommended for use in Home THX systems, and the Citation 7.3 is fully certified for Home THX applications.

Conventional THX certified dipole speakers have two separate speaker systems, which share a common audio signal. They are wired internally from one crossover, but they are connected in an out-of-phase arrangement. This results in a nulling of the radiated sound field between the front and back sides of the speaker system. The speakers are mounted on the side walls of the listening room, rather than the rear walls, so that listeners are seated within a “null area” (Figure 1). This helps present surround information in an enhanced and diffused manner that is free from localization effects.

While the out-of-phase arrangement of conventional THX dipoles delivers impressive performance with surround encoded programs, some listeners may object to the lack of localization obtained with non-encoded programs. In conjunction with a Citation surround processor, or previous Jim Fosgate designed products such as the Fosgate •Audionics Model Three or Three-A, the Harman Kardon AVP-1 or AVP-1a, or the Synthesis™ SP, the Citation 7.3’s patented Dual Drive circuitry comes into play. By addressing each side of the dipole individually, the combination of speaker and processor can create either a diffuse sound (where the sides are out of phase) or a point source effect (with the sides in phase) (Figure 2). This capability is unique, and it can add measurably to your listening enjoyment, no matter what type of recordings you listen to.

Figure 1 Null Area

Using Dipole Speakers in a Diffuse Sound Mode, the listener is in a "null" area. Sound is directed around rather than at a listener's ears to simulate the arrangement of multiple surround speakers in a movie theater.

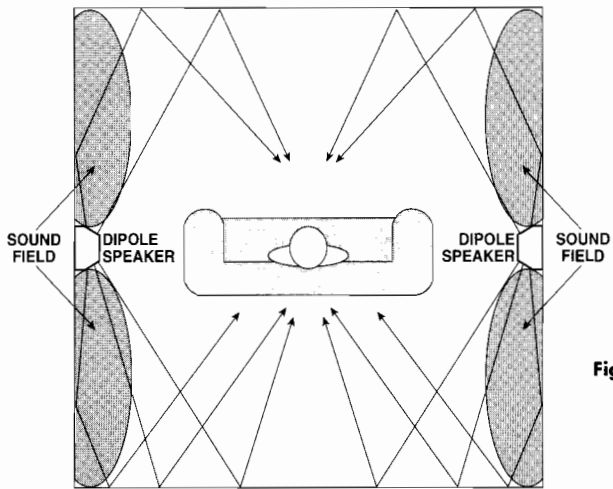
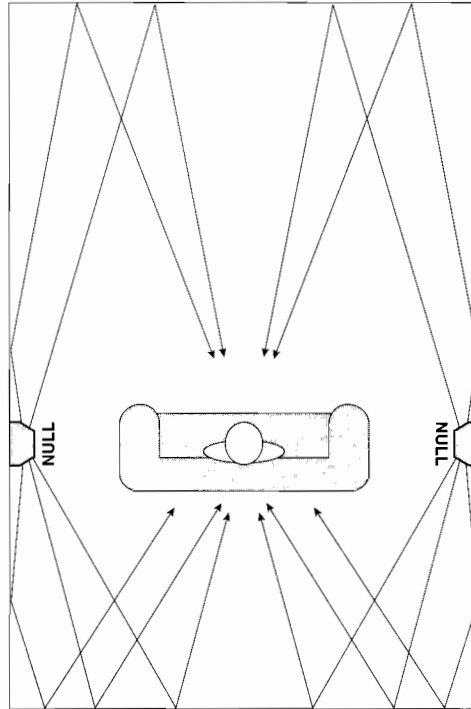
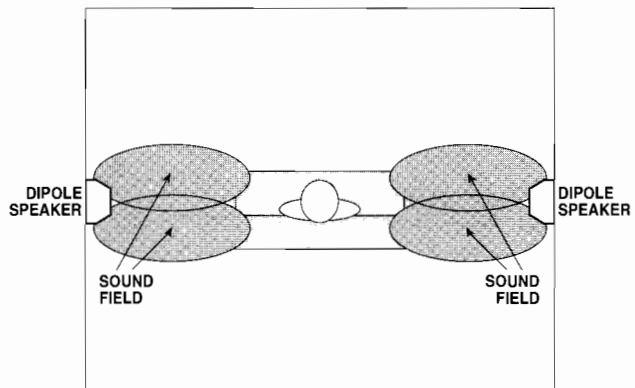


Figure 2 Diffuse vs. Point Source

Diffuse Sound: Reflected sound reaches the listener.



Point Source Sound: Direct sound reaches the listener.

The Citation 7.3 Dual Drive Dipoles are user configurable so that they may be used in any of three applications. In addition to use in the exclusive Dual Drive Mode with Jim Fosgate designed equipment, they may also be used with conventional THX processors or any Dolby Pro Logic surround processor or AV receiver in either a diffuse or point source mode.

Just as important, the ability to send separate audio information to the “front” and “back” sides of the Dual Drive Dipole enable the speaker to be much more precisely tuned to the listening room’s environment. For example, with a compatible surround processor, the level for the front half of the speaker system may be set higher than that going to the rear, depending on the specifics of speaker placement. The overall result is a much more enjoyable sound for all listeners in a room, regardless of the room shape or their seating location.

Unpacking

The carton and shipping materials used in protecting your new speaker was specially designed to cushion it from the shocks and vibration of shipping. We suggest that you save the carton and packing materials for use in shipping if you move or should the unit ever need repair.

To minimize the size of the carton when in storage, you may wish to flatten it. This may be done by carefully slitting the tape seams on the bottom and collapsing the carton down to a more two-dimensional appearance. Other cardboard packaging and protective materials may be stored in the same manner. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag.

Speaker Placement

In order to assure optimal performance of your Citation 7.3 speakers, careful placement of the speakers is of great importance. If you are in doubt as to the proper location for speakers in a specific installation, please consult with your dealer or installer. They know your installation best, and will be able to assist you.

Ideally, the speakers should be located on the side walls of the room with the center portion of the speaker facing directly toward the listening area. The speakers should be placed along the side wall that is between one-half and two-thirds the distance from the viewing screen or the front of the room to the listening position. The bottom of the speaker cabinet should be at least two feet higher than the listeners’ ears when seated in the desired listening area. (Figure 3a/3b)

If side wall mounting is not practical, the speakers may be placed on a rear wall, behind the listening position. Again, they should be located so that the bottom of the cabinet is at least two feet higher than the listeners’ ears. The speakers should be no more than six feet behind the rear of the seating area.

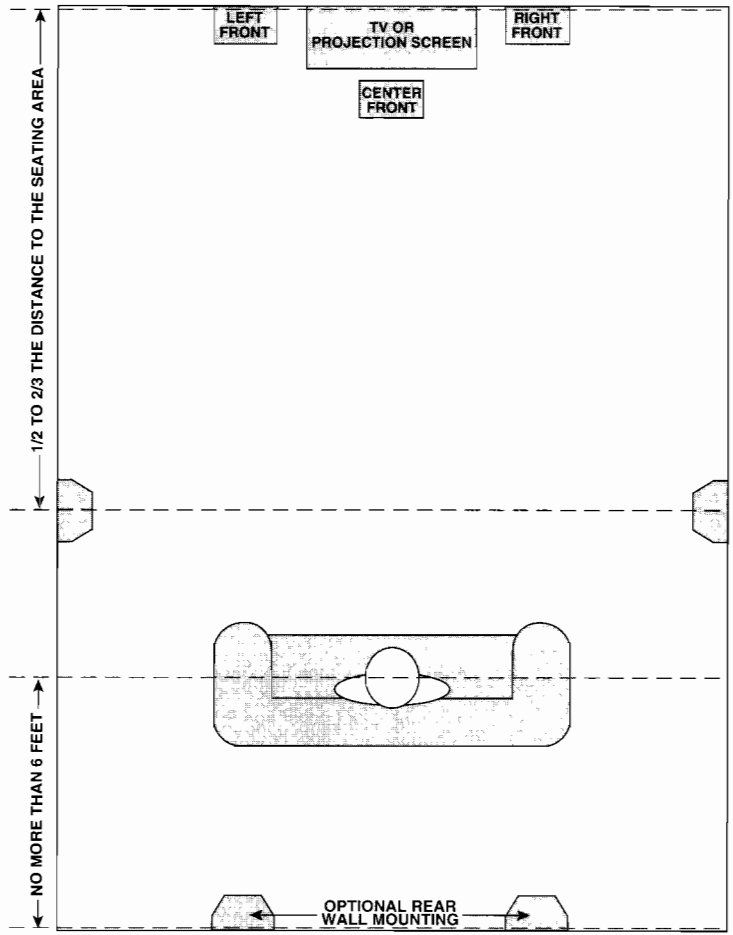


Figure 3a *Speaker Placement, Top View*

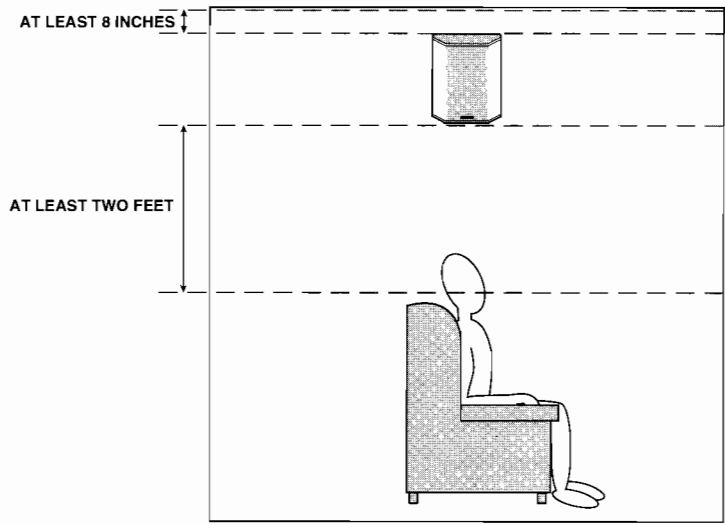


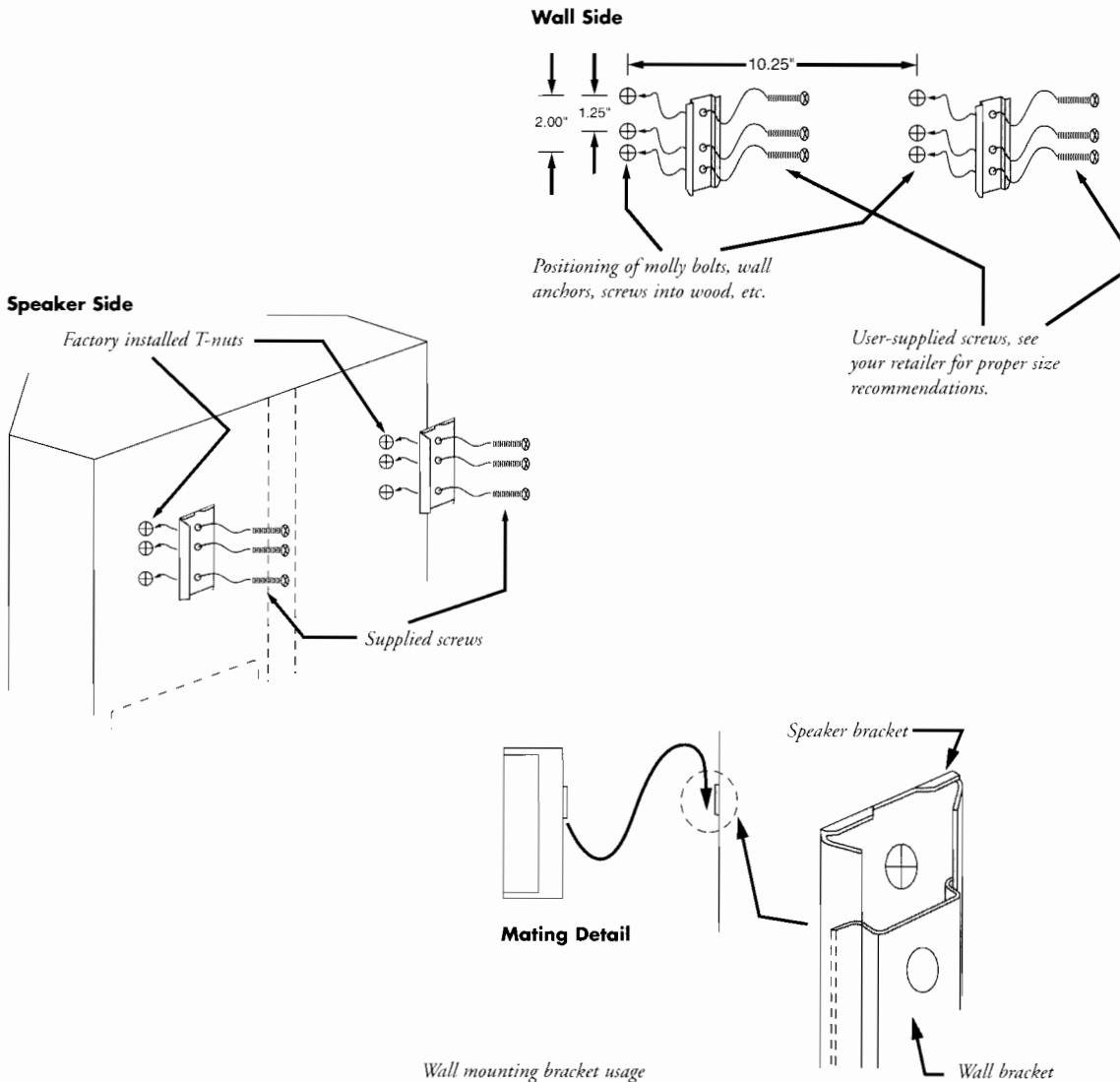
Figure 3b *Speaker Placement, Side View*

Installation

The Citation 7.3 is supplied with special brackets for on wall mounting. **The use of other mounting systems is not recommended, as they may not properly support the weight of the speakers.**

To install the mounting brackets, use the dimensions specified in the diagrams below. Mount the brackets to the wall using anchor bolts rated to vertically support a load of at least 50 pounds. The anchor bolts should be mounted to walls, structural supports or studs only. Do not mount these speakers using plastic expansion type mounts in stucco or plaster walls.

To assure that there is sufficient room to permit mounting of the speakers, the brackets should be placed at least eight inches (8") from the ceiling. **If you are in doubt as to the proper physical installation or wall mounting of your speakers, have the work done by your dealer, custom installer or a licensed contractor or professional.**



Once the brackets have been secured to the wall, the speaker mounts to the wall by slipping it over the wall brackets so that the brackets mounted to the speaker mate with those on the wall. A wire channel is provided in the rear of the cabinet so that the speaker may be placed flush with the wall surface.

It is important to note that the Citation 7.3 is shipped in matched pair sets, with a specific speaker for the left and right sides of your room. Be certain to look on the serial number label on the speaker for indication of left or right side speakers. (Figure 4)

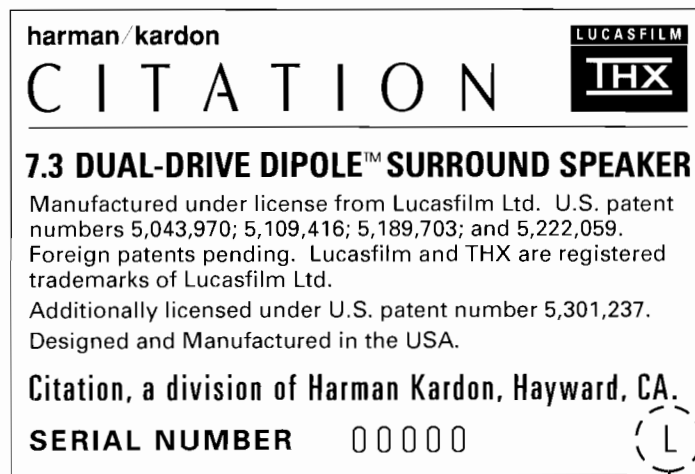


Figure 4 Correct mounting of the left and right speakers is essential to ensure proper phase and polarity match with your front speakers, or when used with other THX controllers.

Serial number and "L" or "R" suffix.

System Connections

Note: When making connections between an amplifier and the Citation 7.3, be certain that both the surround processor and the amplifier are turned off. To assure that there will be no unwanted signal transients that can damage equipment or speakers, it is always best to unplug all equipment before making any connections. Modern electronic products often have a "standby" mode that may be activated even though the product may appear to be turned off.

As a general rule, avoid running any input signal or speaker wire connections in parallel with each other, or with AC power cords. This can result in undesired hum or other interference that will greatly degrade signal performance.

Cables or Connecting Wire

To assure that high quality signals are carried to your speakers without loss of clarity or resolution, we recommend the use of high quality speaker cable. Many brands of cable are available, and the choice of cable may be influenced by the distance between your speakers and the amplifier, the type of speakers you use, personal preferences, and other factors. Your dealer or installer is a valuable resource to consult in selecting the proper cable for connections between your amplifier and speakers.

Regardless of the brand or type of cable selected, we recommend that you use a cable constructed of fine, multi-strand copper with a gauge of 14 or larger. Remember, that in specifying cable, the lower the number, the thicker the cable.

Cable with a gauge of 16 may be used for short runs of less than thirty (30) feet. We do not recommend that you use any cables with an AWG equivalent of 18 or higher due to the power loss and degradation in performance that will occur.

One way to insure that cables will deliver a predictable level of performance is to use cables that are Home THX certified. This certification assures that the cables have met a rigorous set of specifications designed for home theater applications. Since two separate pairs of wires (four conductors) are required when the 7.3 speakers are used in the Dual Drive mode, it may simplify installation to use specialized wire that contains two pairs within a single covering jacket.

Cables that are run inside walls should have the appropriate markings to indicate listing with UL, CSA or other approved testing agency standards for that application. Questions about running cables inside walls should be referred to your installer or a licensed electrical contractor who is familiar with the NEC and/or the applicable local building codes in your area.

Connections to Speakers

Regardless of the type of system used, the following tips apply to the connection of speakers to your amplifier. **Be sure to make the proper connections for the model of surround processor you are using. There are different connections for Dual Drive (Citation and Fosgate•Audionics) systems than for all other THX and Pro Logic systems. The following instructions will guide you to the preparation of wires and their connection to the speaker. The precise information as to which terminals should be used is contained in the following sections.**

Connections to the speakers from an amplifier may be made using bare wire, banana plugs or spade lugs.

If bare wire is used for the connections, strip approximately 1/2 inch to 3/4 inch (20mm) of insulation from the end of each wire and carefully twist the strands of each conductor together. Be careful not to cut the individual strands or twist them off; for optimal performance all strands must be used.

Before connecting the wires to the speaker, note that the terminals have black and red colored rings on the gold-plated binding posts. These colored rings are your keys to maintaining correct phasing with the amplifier and processor.

Loosen the speaker binding posts far enough so that the pass-through hole is revealed. Note that one conductor of the speaker cable will have no markings, and the other will have a red line, brand name markings, a colored thread, or some other positive indication. Place the wire with the "+" sign, thread or markings through the hole in the terminal with the red colored ring. This is the "positive" conductor. Place the wire with no markings, or a "-" sign through the terminal with the black colored ring. This will be the "negative" conductor. Twist the binding posts back so that a positive connection is made, but do not overtighten or use tools, as this may break the delicate wire strands and decrease system performance.

If you are using spade lugs, connect them to the wire using the manufacturer's instructions, and then loosen the caps on the binding posts. Place lugs between the screw terminal and the back of the binding post, as if it were a horseshoe on the game's post. Be sure to observe proper polarity, by placing the "-" or blank wire to the black post, and the "+" or marked conductor to the red post. Tighten with your fingers to obtain a positive contact.

Banana plugs may simply be inserted into the jack provided on the speaker terminal connection. Before inserting the plugs, make certain that the binding post's screw cap is tightened down by turning it in a clockwise direction. This makes certain that the maximum contact area is available. Also, be certain that the plugs are firmly inserted so that a proper connection is made.

Finally, run the cables to the amplifier, and connect the cables using the instructions provided by the amplifier's manufacturer. It is highly recommended that the length of cable connecting any two pairs of speakers be identical. For example, make certain that the cable length connecting left and right front, or left and right rear (surround) speakers are identical, even though one speaker may be physically closer to the amplifier than the other. When making connections at the amplifier end, be certain to observe proper polarity, connecting the "black" wire to the negative terminal and the "red" wire to the positive terminal. If one speaker has excess wire in its lead to maintain equal length, make certain the extra cable is NOT coiled in a circle, as this may create an artificial inductor that will affect the frequency response of the system.

System Installation for Use with Citation THX or Dual Drive Processors

The following instructions are to be used when the speakers are installed in a system with a Citation 7.0 or other Jim Fosgate designed surround processors compatible with Dual Drive Dipoles.

Speaker Connections

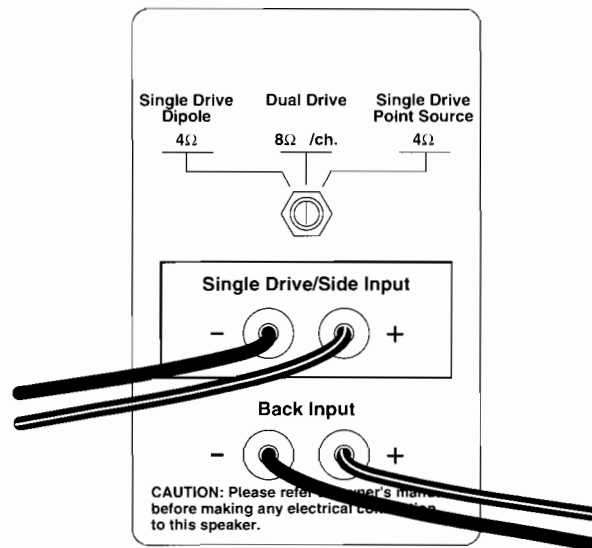


Figure 5 *Switch and Terminal Cup*

On the rear of the speaker, inside the terminal cup, there are two sets of binding posts, marked "Single Drive/Side Input" and "Back Input." Connect the **Single Drive/Side Input** terminals to the amplifier channel which is connected to the **Side Output** of your Citation 7.0 processor. Connect the **Back Input** terminals to the amplifier channel which is connected to the **Back Output** of the Citation 7.0 processor.

Follow the instructions detailed above with regard to the preparation of wire leads, and their connection to the binding posts and the amplifier. **Be sure to observe proper polarity. Red is "+" or Positive; Black is "-" or Negative.**

A three-position rotary switch is inside the terminal cup, next to the speaker connections. It has been set at the factory for this type of installation, but double-check to make certain that the switch is in the "**Dual Drive**" position. If necessary, change the switch setting using a small flat-bladed screwdriver. (Figure 5)

System Calibration

First, verify that the speakers are connected to the proper processor and amplifier channels. Put your processor in the “test” mode, which will circulate a pink noise signal to each speaker. If you are using a Citation 7.0 processor, this must be done in the “Manual Calibration” mode. Correct sound channel connections may also be verified using the THX “WOW!” disc. Chapter 7 on Side 2 of the disc contains a circulating test signal.

Listen carefully, and make sure that the sound travels in a clockwise manner around the room as you face the viewing screen. After the front right speaker, the test signal will go to the right “side” array of the 7.3 mounted on the right side of your room, (the “front” portion of that 7.3), and then move to the “back” array of the same speaker. Next the tone should be heard from the left side 7.3 speaker, first from the “back” array, and then from the “side” (“front”) array before moving to the front speakers. If any channel is being fed out of sequence, correct the wiring error. Remember to turn the system off before making any wiring changes. Then, reconnect the speaker cables at the amplifier so that the channels circulate in the proper order.

Once the channels are connected in the proper sequence, the processor must be adjusted so that each side of the dipole system measures an output of 72 dB. When the two sides are operated together in actual use, they will produce the required 75 dB sound pressure level (SPL).

For most surround processors and controllers this will require the use of the built-in test signal generator or the Alignment Test Signals in Chapter Seven on Side Two of the THX “WOW!” disc, along with a sound pressure level meter such as the Radio Shack 32-2050 or 32-2055. Consult your processor’s manual for complete instructions on adjusting output levels.

When manually calibrating the system with any processor, locate the sound pressure level meter at the seating position, in the null area between the two sides of the dipole array. Point the meter toward the ceiling and set it to the “C Weighting - Slow Mode” position. Place the processor in the “test” position, and adjust the output level so that each side of the dipole array produces a reading of 72 dB.

If the speakers are mounted behind the seating area, rather than on the side walls, it is critical that the back half of each dipole operate at a higher level than the front side of the array. For an initial adjustment, set the back halves to an output level between 75 and 78 dB. The front half of each dipole should be set to an output level of 68 to 72 dB. It may be necessary to vary the levels one or two dB in either direction due to the specifics of your room’s size and its reverberant characteristics.

If you are using a Citation 7.0 processor, system calibration may be performed using the “Auto Calibrate” function in that processor. Consult the instruction manual included with the processor for further instructions on this process.

System Installation for Use with Other THX Controllers

The following instructions are to be used when Citation 7.3 speakers are installed with THX processors not equipped for Dual Drive capability. They may also be used with non-THX surround processors if you prefer a “diffuse” surround sound field.

A three-position rotary switch is inside the terminal cup, next to the speaker connections. Using a small, flat-blade screwdriver, carefully change the switch so that it is in the “**Single Drive Dipole**” position. (Figure 6)

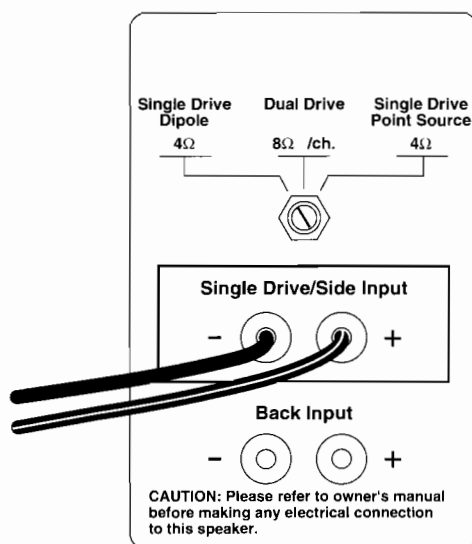


Figure 6

On the rear of the speaker, inside the terminal cup, there are two sets of binding posts, marked “Single Drive/Side Input” and “Back Input”. **In this type of installation the connections marked “Back Input” are not used.** Connect the left or right rear (surround) channel outputs of your system to the **Single Drive/Side Input** binding post terminals inside the speaker connection cup.

Follow the instructions detailed above with regard to the preparation of wire leads, and their connection to the binding posts and the amplifier. **Be sure to observe proper polarity. Red is “+” or Positive; Black is “-” or Negative.**

System Calibration

First, verify that the speakers are connected to the proper processor and amplifier channels. Put your processor in the “test” mode, which will circulate a pink noise signal to each speaker. If you are using a Citation 7.0 processor, this must be done in the “Manual Calibration” mode. Correct sound channel connections may also be verified using the THX “WOW!” disc. Chapter 7 on Side 2 of the disc contains a circulating test signal.

Listen carefully, and make sure that the sound travels in a clockwise manner, from the front speakers, to the right rear 7.3, then to the left rear 7.3, and it then returns back to the front speakers. If any channel is being fed out of sequence, correct the wiring error. First, turn the system off before making any wiring changes. Then, reconnect the speaker cables at the amplifier output so that the channels circulate in the proper order.

Once the channels are connected in the proper sequence, the processor must be set so that each speaker delivers a sound pressure level (SPL) of 75 dB.

For most surround processors and controllers this will require the use of the built-in test signal generator or the Alignment Test Signals in Chapter Seven on Side Two of the THX “WOW!” disc, along with a sound pressure level meter such as the Radio Shack 32-2050 or 32-2055. Consult your processor’s manual for complete instructions on adjusting output levels.

When manually calibrating the system with any processor, place the sound pressure level meter at the seating position, in the null area between the two sides of the dipole array. Point the meter toward the ceiling and set it to the “C Weighting - Slow Mode” position. Place the processor in the “test” position, and adjust the output level so that each speaker registers a reading of 75 dB.

If you are using a Citation 7.0 processor, system calibration may be performed using the “Auto Calibrate” function in that processor. Consult the instruction manual included with the processor for further instructions on this process.

System Installation for Use with Dolby Pro Logic Controllers

The following instructions are to be used when Citation 7.3 speakers are installed with conventional Dolby Pro Logic surround controllers. In this configuration, the combination of your processor and the speakers will produce a “point source” surround field. This configuration may also be used with non-Dual Drive THX processors should you desire a point source, rather than diffuse sound field.

A three-position rotary switch is inside the terminal cup, next to the speaker connections. Using a small, flat-blade screwdriver, carefully change the switch so that it is in the **“Single Drive Point Source”** position. (Figure 7)

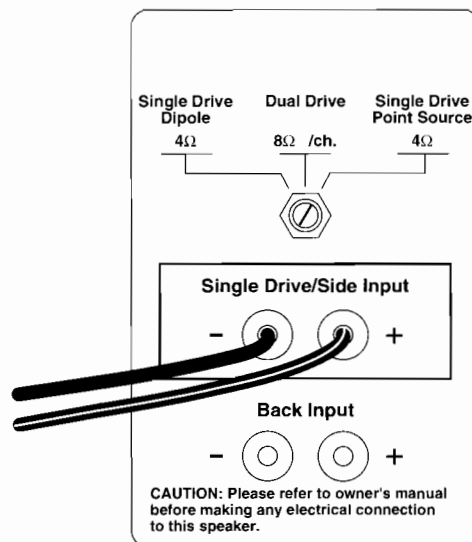


Figure 7

On the rear of the speaker, inside the terminal cup, there are two sets of binding posts, marked “Single Drive/Side Input” and “Back Input.” **In this type of installation the connections marked “Back Input” are not used.** Connect the left or right rear (surround) channel outputs of your system to the **Single Drive/Side Input** binding post terminals inside the speaker connection cup.

Follow the instructions detailed above with regard to the preparation of wire leads, and their connection to the binding posts and the amplifier. **Be sure to observe proper polarity. Red is “+” or Positive; Black is “-” or Negative.**

System Calibration

First, verify that the speakers are connected to the proper processor and amplifier channels. Put your processor in the “test” mode, which will circulate a pink noise signal to each speaker.

Listen carefully, and make sure that the sound travels in a clockwise manner, from the front speakers, to the right rear 7.3, to the left rear 7.3, and then back to the front speakers. If any channel is being fed out of sequence, correct the wiring error. First, turn the system off before making any wiring changes. Then, reconnect the speaker cables at the amplifier output so that the channels circulate in the proper order.

Once the channels are connected in the proper sequence, the processor must be set so that each speaker delivers a sound pressure level (SPL) of 75 dB.

For most surround processors and controllers this will require the use of the built-in test signal generator or the Alignment Test Signals in Chapter Seven on Side Two of the THX “WOW!” disc, along with a sound pressure level meter such as the Radio Shack 32-2050 or 32-2055. Consult your processor’s manual for complete instructions on adjusting output levels.

When manually calibrating the system with any processor, place the sound pressure level meter at the seating position, in the null area between the two sides of the dipole array. Point the meter toward the ceiling and set it to the “C Weighting - Slow Mode” position. Place the processor in the “test” position, and adjust the output level so that each speaker registers a reading of 75 dB.

If you are using a Citation 7.0 processor, system calibration may be performed using the “Auto Calibrate” function in that processor. Consult the instruction manual included with the processor for further instructions on this process.

Operation

Once installed and calibrated there are no operating controls on your speakers. Any switching and sound level adjustments required are made by your surround processor.

Service Information

If your installation has followed the suggestions in this manual you should enjoy many years of trouble-free operation and high quality listening enjoyment. If you suspect that there is a problem that requires assistance, contact your dealer, installer, or the Citation Center at 800-787-6766. The Citation 7.3 does not contain any user serviceable parts.

It is important that any repairs be carried out only by an authorized Citation service agent to assure proper service and to preserve the protection of your Limited Warranty. It is a good idea to keep your sales slip or receipt in a safe place with this manual so that it will be available to verify the purchase date for warranty claims.

Use & Care

For black oak finish: The high quality wood veneer of your Citation 7.3 may be cleaned with any furniture-grade wood polish. Do not use petroleum-based cleaners or abrasives.

For white pebble finish: Use a velveteen cloth, or any other soft, lint-free cloth lightly dampened with clean, cool water to remove any smudges or dust. Do not use any petroleum-based cleaners or abrasives.

Any dust that accumulates on the grille cloth may be lightly brushed away by hand, taking care not to put too much pressure on the grille.

Specifications

Frequency Response:	80 Hz - 18 kHz \pm 3 dB
Driver Complement:	Woofers/Mid Range: Two (2) 5" drivers
High Frequency:	Two (2) 1" Soft Dome Tweeters
Nominal Impedance:	8 ohms in Dual Drive Mode 4 ohms in Single Drive Mode
Sensitivity:	91 dB SPL/1 watt @ 1 meter
Power Handling Capability:	Over 200 watts
Dimensions (HxWxD):	18 x 14 x 8 inches 457 x 355 x 203 mm
Weight:	28 lbs/12.7 kg

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Dolby and Pro Logic are registered trademarks of Dolby Laboratories Licensing Corp.

Synthesis is a trademark of JBL, Incorporated.

THX and Home THX are registered trademarks of Lucasfilm Ltd.

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