

~~APOGEE~~ACOUSTICS, INC.



CENTAURUS

SLANT 8

SLANT SERIES LOUDSPEAKERS

OWNER'S MANUAL

—APOGEEACOUSTICS, INC.



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Congratulations on your purchase of the SLANT 8 loudspeaker system. We are sure that the SLANT 8 will bring you many years of superb performance.

The SLANT SERIES is a new line of hybrid loudspeakers from Apogee Acoustics, Inc. These systems incorporate three key technologies: Open Dipole Ribbon midrange/tweeter elements, advanced crossover design, and dynamic high power woofers in computer optimized enclosures. Many of the design advancements made during the development of the Grand Series have been incorporated into the SLANT SERIES.

The major features and benefits of this new speaker line are as follows:

- * Deeper bass extension and a more dynamic sound with excellent impact.
- * Ribbons have suspension control to allow louder playback levels with lower distortion.
- * Slanted cabinets reduce internal standing waves for cleaner bass and midrange.
- * Slanted cabinets also provide the ribbon midrange with a trapezoidal rear acoustic path for smoother midrange and treble response.
- * Seamless crossovers assure a wide stable sound stage with excellent image depth.

Drivers:

Midrange-tweeter units are classic line-source dipole ribbons using high energy strontium ferrite ceramic magnets and a kapton backed composite ribbon structure. Ribbons also feature suspension control to reduce distortion at high playback levels.

Woofers are a long throw type with composite cones and high loss rubber surrounds for improved linearity and transient characteristics.

Their design incorporates a progressive suspension feature that improves low frequency performance at high levels. All woofers feature cast baskets and large magnet structures for increased dynamics as well as large diameter motor structures to improve power handling.

Cabinets:

The woofer operates into a computer optimized ported enclosure to extend bass response and improve low frequency dynamics. The enclosures are constructed using high loss fiberboard and are heavily braced to reduce wall vibrations and tonal coloration.

Warranty:

Three year limited.

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SPECIFICATIONS

WOOFER TYPE :

8" Woofer with a 2" high power voice coil and very large magnet structure. The woofer has been optimized for a ported cabinet.

MIDRANGE TWEETER :

Classic 40" tall dipole ribbon with suspension control.

CABINET :

The cabinet is a 1.7 cubic foot (48 liter) heavily braced, slanted, slot loaded enclosure.

FREQUENCY RESPONSE :

26Hz to above 20kHz

CROSSOVER :

12dB per octave for both woofer and midrange-tweeter using only high quality air-core inductors and polypropylene film capacitors. A three position switch is provided to optimize the woofer level and dynamics for correct room matching. Dual gold plated binding posts are provided for Bi-wire operation.

RECOMMENDED AMPLIFIER POWER :

70 Watts per channel minimum, 250 Watts per channel maximum.

SOUND LEVEL :

107 dB (Peak Weighted) peak @ 4 meters using a 70 watt amplifier.

NOMINAL IMPEDANCE :

6 ohms nominal (3 ohm minimum)

DIMENSIONS :

59 1/2" H x 17 1/8" W x 17 1/8" D (151cm H x 43cm W x 43cm D)

WEIGHT :

132 pounds per speaker (60 kg)

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Hardware package contents:

- 8) Short levelers & locking nuts.
- 1) Mirror

SPEAKER SET-UP

Apogee speaker's performance is affected by the quality and compatibility of the front end equipment such as the turntable, cartridge, compact disc or laser disc player, surround sound processor, electronics, cable and connections. The room acoustics and the placement of the speakers also have a highly important effect on the quality of the sound. Care in the selection of high quality compatible equipment and placement of the speakers within the room will be very rewarding in terms of the sonic qualities of your music or home theater system.

INSPECT BEFORE UNPACKING

The SLANT 8 speaker system is packaged in two cartons. Be sure there are no visible signs of damage to the shipping cartons. If shipping damage is apparent, contact your dealer immediately. Place the cartons so that they are oriented correctly with the THIS SIDE UP designation. Clear an 8 ft. by 6 ft. area near the final speaker location to permit unpacking of the speakers.

CAUTION

REMOVE ALL OBJECTS FROM SHIRT POCKET SUCH AS PENS, PENCILS AND LIGHTERS. THE MAGNETIC FIELDS FROM THE MIDRANGE/TWEETER UNIT ARE STRONG! DO NOT PLACE MAGNETICALLY ATTRACTED OBJECTS NEAR THE SPEAKERS. REMOVE YOUR WRISTWATCH WHICH MAY BE SUBJECT TO DAMAGE SHOULD YOU APPROACH MAGNETS. APOGEE ACOUSTIC, INC. ASSUMES NO LIABILITY SHOULD DAMAGE BE INCURRED TO TELEVISIONS, MONITORS, WRISTWATCHES OR ANY MAGNETIC MEDIA.

CAUTION

TELEVISIONS AND MONITORS HAVE VARYING SENSITIVITIES TO MAGNETIC FIELDS. CAUTION MUST BE EXERCISED WHEN PLACING SPEAKERS ADJACENT TO A TELEVISION OR MONITOR. SEE NOTE AT THE END OF THIS MANUAL.

ASSEMBLY

The first box to be opened should be labeled: Tools and Manual Enclosed. Remove the tool and hardware package. Remove the speaker from the carton.

Leave the plastic bag on the speaker to protect it during assembly. Lie the speaker down on its back side near the final placement position. Attach four leveling spikes and locking nuts (included) to the inserts on the speaker base.

We recommend that you start with each of the levelers screwed all the way into the inserts.

DO NOT OVER TIGHTEN! Repeat this procedure for the other speaker.

SPEAKER PLACEMENT

Carefully lift the speakers up to their upright positions. Move the speakers to the nominal right and left positions in the room as shown in Fig. 1.

NOTE: The woofer drivers should be closest to their respective side walls and the midrange/tweeter ribbons should be approximately six feet apart. Final placement will depend on room dimensions, seating proximity to the center stage of the speakers and general room acoustics. Outlined below are parameters which should be followed, although room size and other variables must be considered.

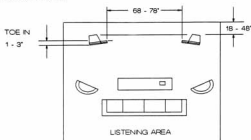


FIGURE 1
NOTE: THIS DIAGRAM SHOWS RECOMMENDED STARTING
SPEAKER LOCATIONS BEFORE POSITIONING ADJUSTMENT

SPEAKER LOCATION WITHIN THE LISTENING ROOM

Place the SLANT 8 speakers 1 1/2 to 4 feet from the rear wall. We strongly recommend accurate measurement using a tape measure or similar tool when installing speakers. The rear wall should have little or no damping material. Experimentation with the degree of damping is advised. Our own experience has taught us that too much damping can cause upper frequency midrange/tweeter suck-out resulting in a somewhat lifeless quality. Corner treatment with acoustical damping can work well depending on room acoustics. This can also help to eliminate corner loading of excessive bass energy should your room be inherent of this characteristic.

Speaker separation should be approximately six feet, measured from the speakers' inside edge to inside edge. We recommend a starting toe-in of about 1 1/2 inches. The SLANT 8 has exceptional dispersion and focus; stage and imaging can be improved by experimenting with the degree of toe-in.

A slight tilt back angle will also improve the imaging characteristics of the SLANT 8. Have an assistant hold a small mirror on the front of the speaker, near the midrange, 36" up from the top of the base. The tilt back angle of each speaker can be adjusted so that the listener can see a reflection of their face while sitting directly in front of each speaker. Further fine tuning may be done after this to suit the listener's needs.

Never place the SLANT 8 in a position in which the speakers touch the side walls. Allow them to breathe by maintaining at least a distance of eight inches from the side walls. This figure will change, however, with respect to room size.

Placement of speakers on carpeting is preferable to hard flooring. Adjust the leveling spikes to provide the correct tilt back for optimum performance at your listening position. Make sure the leveling spikes make secure contact with the floor and that the speakers do not rock back and forth.

SPEAKER BREAK IN PERIOD

The SLANT 8 loudspeaker requires at least 50 hours of break in to obtain optimum performance. This is best accomplished by allowing the speakers to play in the background as continuously as possible. After this period you should notice considerable improvement in midrange transparency and smoothness as well as bass definition.

WOOFER CONTOUR SWITCH; NORMAL - LOW - HIGH

One three position switch is available on the rear panel of the SLANT 8 to contour the levels and dynamics of the woofer. This switch is labelled "NORMAL", "LOW" and "HIGH". Use this switch to fine tune the SLANT 8 to your listening room's acoustics and your personal taste.

The woofer switch serves two functions. By switching to the various positions, you are altering both the level and low frequency dynamics of the woofer. The "HIGH" position adjusts the woofer output 2 dB above "NORMAL" and increases its apparent Q. The low position lowers the woofer output by 2 dB and decreases its apparent Q. Use this switch to adjust for more or less bass and lower mid-range level, and reduce any overhang or "boominess" characteristics resulting from the speaker-room interaction.

ELECTRICAL CONNECTIONS

There are two recommended amplifier configurations for driving the SLANT 8 speakers. They may be operated utilizing a single stereo amplifier or operated in a power bi-amplified mode. A high quality amplifier with a nominal rating of 70 to 250 watts is recommended. Room characteristics and desired listening levels will determine the amount of power required.

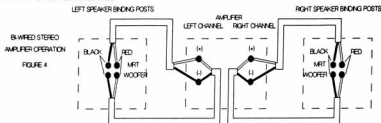
THE MAXIMUM AMPLIFIER RATING - WHEN USING HIGH POWER AMPLIFIERS (OVER 250 WATTS): REMEMBER THAT THE EXTRA POWER IS NOT FOR PLAYING THE SPEAKERS AT TREMENDOUS SOUND PRESSURE LEVELS. EXTRA POWER IS FOR TRANSIENT HEADROOM SO THAT SUDDEN MUSICAL DYNAMIC PEAKS DO NOT CLIP THE AMPLIFIER AND IN TURN DAMAGE THE LOUDSPEAKERS.

SINGLE STEREO AMPLIFIER OPERATION

Connect the high end of the amplifier output (+ or red) to the RED binding post and the low end output (- or black) to the BLACK binding post on the back of the speaker. The shorting bars connect the two RED binding posts to each other and the two Black binding posts to each other. Make sure the connections at the amplifier and speaker are tight and secure.

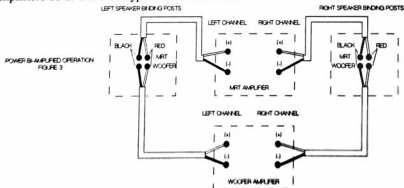
BI-WIRE, SINGLE STEREO AMPLIFIER OPERATION

The bi-wired configuration affords significant sonic benefits. Two sets of speaker cable are required. See Fig. 2. Remove both RED binding post nuts and then remove the shorting bar. Replace the binding post nuts. Repeat this procedure for the BLACK binding posts. Connect the first cable set from the high end of the amplifier drive to the right speaker's RED binding post for the mid-range/tweeter. The low end of the amplifier is connected to the right speaker's BLACK binding post for the mid-range/tweeter. The second cable set is connected in a similar fashion from the same amplifier terminals to the respective RED and BLACK woofer binding posts of the right speaker also. No shorting bars should be used. Make amplifier to speaker connections for the left speaker in a similar fashion. This wiring arrangement provides a separate cable set for the operation of the woofer and operation of the mid-range/tweeter. **WE STRONGLY RECOMMEND BI-WIRING FOR OPTIMIZATION OF THE SLANT 8 SPEAKERS.**



POWER BI-AMP OPERATION

Two stereo amplifiers or a dual set of mono-amplifiers are required. See Fig. 3. Remove both RED binding post nuts and then remove the shorting bar. Replace the binding post nuts. Repeat this procedure for the BLACK binding posts. Connect the high end of the woofer amplifier (right channel) to the right speaker's woofer RED binding post, and the low end of the woofer amplifier output to the right speaker's woofer BLACK binding post. Connect the left speaker's woofer binding post to the woofer amplifier output in a similar fashion. The mid-range/tweeter amplifier connects to the mid-range/tweeter binding posts of each respective channel in a similar fashion to the woofer above. Be sure not to use the shorting bars in this application. It is strongly suggested that both woofer and mid-range/tweeter amplifiers be of the same type and manufacturer.



GENERAL CAUTIONARY NOTES

1. Do not turn power on to amplifier before double checking to verify the correctness of all system wiring. Be sure all connections are clean and tightly secure.
2. System volume control should be set low and slowly increased to desired listening levels.
3. Do not use vacuum cleaners to clean the speakers.
4. Solid coverings may be cleaned by using a sponge or damp cloth with a mild detergent.
5. Grille guards may be cleaned by gentle use of a feather duster or soft cloth.
6. Keep any objects containing steel away from the speaker to avoid damage due to magnetic attraction.

ATTENTION!

POSITIONING LOUDSPEAKERS NEAR VIDEO EQUIPMENT OR MAGNETIC SENSITIVE MEDIA

Almost all loudspeakers manufactured today use very powerful magnets. Care must be taken when positioning your loudspeakers near video monitors, television sets, VCR tapes, floppy disks, etc. An improper installation may result in irreparable damage to your magnetic sensitive equipment.

Experimentation is the only way to determine where to position your loudspeakers. Video monitors and televisions have different sensitivity levels to external magnetic fields and are usually the most sensitive devices overall when magnetic fields are present. Storage devices such as VCR tapes and floppy disks are usually more tolerant. When you determine the desired placement of your loudspeakers relative to your video equipment, etc., you should start with the loudspeakers approximately three feet away from your monitor. Tune a stable picture on your monitor with as much solid background color as possible. If the speaker is too close to the monitor you will notice the color start to bleed or change tone. If the color is fine you may move the speaker closer until you do see picture distortion. When you have reached this point, move the speaker at least six inches farther away from the monitor. Repeat this procedure for the other loudspeaker as well, and be sure the video picture is undisturbed. When you have determined the safe distance from each speaker to the video monitor, you may use this as a guide for positioning your VCR, tapes, etc. as well.

Please be sure you have carried out your positioning carefully. Every installation is unique and the above guidelines are meant to assist you only. You have the responsibility to determine the final safe positioning of your loudspeakers relative to any other magnetic sensitive device.

NOTE:

Some installations near video equipment, etc. may not allow positioning of the speakers far enough away to obtain satisfactory results. In these instances it may be necessary to reverse the left and right speakers so the midrange/tweeter units are on the outside. This type of positioning can result in very good performance from the loudspeaker, although more toe in adjustment may be required.