APOGEE ACOUSTICS, INC.

SCINTILLA

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Full Range Ribbon Speaker System

Apogee Acoustics has resolved fundamental problems inherent to ribbon acoustical transducer design.

Clarity, speed and power are provided over the entire music spectrum in our mid-size ribbon speaker, *SCINTILLA*.

The three element woofer, midrange and tweeter ribbons coupled with internal seamless crossovers provide:

- unparalleled clarity
- precise imaging over a wide listening area
- time alignment and phase coherency
- rise time consistent with the fastest amplifiers
- dynamic impact of 110 db SPL @ 4 meters on axis

FEATURES:

A trapezoidal woofer ribbon designed to provide a broad non-resonant frequency response.

A unique integrated, coalescent midrange/tweeter ribbon utilizing patent filed magnetic and electromagnetic constraints. This technique affords a combination of unprecedented power and clarity along with excellent imaging and soundstage.

Extremely low mass permits almost instantaneous acceleration for unexcelled transient response.

SPECIFICATIONS:

Three Element System:	Tweeter, Midrange, and Woofer Ribbons
Frequency Response:	Below 30 Hz to over 25 KHz
Crossover:	Seamless 6 db per Octave Internal Crossovers
Amplification:	Mono or Biamplification
Sound Pressure Level:	110 db @ 4 Meters using a 100 watt Stereo Amplifier *(14 x 27 foot room, geometry dependent)
Nominal Impedance:	4 or 1 Ohms
Dimensions:	57" x 30" x 3½"
Weight:	140 lbs. per Speaker
Warranty:	3 Year Limited

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APOGEE ACOUSTICS SCINTILLA

FULL RANGE RIBBON SPEAKER SYSTEM

APOGEE ACOUSTICS, INC., designers and manufacturers of the world's first full range ribbon speaker system, are pleased to announce the debut of the SCINTILLA, their second generation full range ribbon loudspeakers. The SCINTILLA offers full range ribbon technology in a product of moderate cost and size. The speaker utilizes ribbon technology across the full audio spectrum by incorporating three ribbon transducer elements: woofer, midrange and tweeter.

Full range ribbon design provides exceptional clarity and imaging. Rugged dynamic range is evidenced by 110 db sound pressure levels at a comfortable four meter listening position in a large 14 x 27 foot room. The minimum recommended power is a stereo 100 watt high quality amplifier.

The musical quality of the speaker is further enhanced by the use of seemless 6 db per octave internal crossovers. The sonic advantage of the ribbons is therefore available from the very lowest to the highest reproduced frequencies without a hint of driver-to-driver separation.

The clarity, resolution and wide dispersion of the midrange and tweeter are provided by the use of a freely supported ribbon element. This is the theoretically perfect solution to sound reproduction; a limp conductor placed in a magnetic field. A force is generated uniformly across the area of the ribbon when the amplifier drives current through the ribbon. Hence, sound is reproduced without the normal structural coloration of speakers that do not have a pure force over area mechanization. The woofer is a unique constrained ribbon that provides the clarity and resolution of ribbon technology for the bass frequency region.

The woofer and midrange ribbons operate as long narrow dipoles while the tweeter operates as a classical line source. The midrange and tweeter are physically integrated and have a common radiating line. This coalescent midrange/tweeter geometry provides precise imaging, soundstage and depth. Designed to harmonize with a variety of room interiors, the SCINTILLAs are sleek and architectural in appearance. They stand 57" high, 30" wide, and 3½" deep, weighing 140 pounds for each speaker. They are available in two colors: Grey and Taupe.

The geometry of the ribbons has been scaled to provide a combination of good power handling capacity, dispersion and a balanced tonal quality over the bass, midrange and upper frequencies. The woofer averages 12 inches in width and 53 inches in height while the integrated midrange tweeter incorporates two inch and multiple one/half inch ribbons.

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SCINTILLA

FULL RANGE RIBBON SPEAKER SYSTEM

OWNER'S MANUAL
AND
ASSEMBLY INSTRUCTIONS

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SPEAKER SET-UP

The APOGEE speakers' performance is affected by the quality and compatibility of the front end equipment such as the turntable, cartridge, electronics, cable and connections. The room acoustics and the placement of the speakers also have an important affect on the quality of sound. Care in selection of high quality compatible equipment and placement of the speakers within the room will be very rewarding in terms of the sonic quality of your music system.

ASSEMBLY

The SCINTILLA full range ribbon speaker system is packed in two cartons. Before opening the cartons be sure there is no visible sign of damage and the boxes are placed with "THIS SIDE UP" marking facing up.

Check for two speaker boxes 8" x 62" x 36" designated SCINTILLA-LEFT and SCINTILLA-RIGHT.

(1) SETTING UP PACKAGED SPEAKERS WITHIN ROOM (See Diagram 1)

Clear a 8 ft. by 8 ft. area near the final speaker location to permit assembly of the speakers. Locate the shipping boxes as shown in Diagram 1. The Left Speaker container is oriented on the right side of the room with the base toward the final Right Speaker location and "THIS SIDE UP" in the UP position. The Right Speaker container is oriented in a similar fashion on the left side of the room.

CAUTION --- USE CARE -- DO NOT ALLOW ANY OBJECT TO TOUCH THE RIBBONS!!

(2) Remove outer Right SCINTILLA packing box banding or tape. Take top cover off and remove and read OWNER'S MANUAL before proceeding further. Remove tools and base plates from top of inner cover. Remove the top inner corrugated cover exposing the back side of the speaker. Note the name plate and terminals located on the bottom half of the back of the speaker. (See Diagram 2)

(3) REMOVAL AND PLACEMENT OF SPEAKER

Remove Right SCINTILLA from inner container. (Ribbon Down/ Name Plate Up) Two people are required. Grip at the top and bottom steel cross angle irons and lift straight up. (Diagrams 2 and 3) Stay clear of ribbon areas. Place speaker on top of Left Speaker packing box as shown in Diagram 3. Be sure surface of Right Speaker box is clean and clear of any foreign objects or Pertuberences.

(4) ATTACHMENT OF BASE PLATE AND BACKBRACE TO SPEAKER

Remove right base plate from its container and prepare to attach speaker and base plate as shown in Diagram 4. (BE SURE TO USE BASE PLATE MARKEED "RIGHT")

a. Use the large L-Handle wrench to attach the base plate using three, 1¼" long ¼-20 Flat Head Socket Screws. The base plate is oriented as shown in Diagram 4 with the bottom of the base plate seen from the Right Speaker position.

b. Align holes by eye. Two people are required, one to hold the base plate, the other to start screw. Assemble Allen Screw and wrench together. Start all screws 2 - 3 turns.

c. Remove backbrace from plastic wrapper and attach to speaker and base plate. Bolt it to the speaker using a 2½" long ½" socket head bolt. Bolt it to base plate using a ¼-20 by ½" flat head bolt. Tighten the bolts which attach the base plate to the speaker.

CAUTION --- DO NOT LIFT OR MOVE SPEAKER UNLESS BACKBRACE AND BASE PLATE ARE SECURELY BOLTED IN POSITION!!

(5) ORIENTING SPEAKER TO UPRIGHT POSITION (See Diagram 5)

Be sure hands are clean before proceeding. A rubber mat should be placed between the front edge of the base plate to protect the floor and prevent slippage. Lift speaker from top end and gently tilt it upwards to stand it up on its base.

(6) PLACING SPEAKER IN ROOM (See Diagram 6)

Move speaker to the nominal Right Speaker position in the room as shown in Diagrams 6 and 8. Speaker may be readily moved by a series of rotations about the vertical axis of the speaker. Slowly remove poly bag after initial placement.

(7) REPACKAGE SPEAKER CONTAINER (See Diagram 7)

Repackage the Right Speaker box and locate as shown in Diagram 7.

Repeat the procedure for assembly of the Left Speaker.

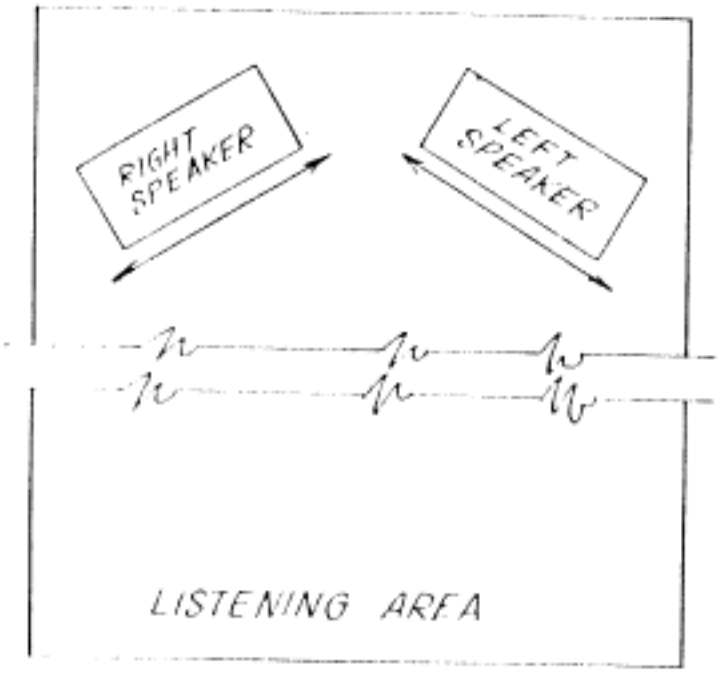


DIAGRAM NO 1

1. PLACE THE BOXED SPEAKERS AS SHOWN IN DIAGRAM NO.1 — ABOUT 3'-4' FROM THE BACK WALL. POSITION THE BOXES SO THAT LONG SIDE RUNS IN THE SAME DIRECTION AS THE ARROWS.

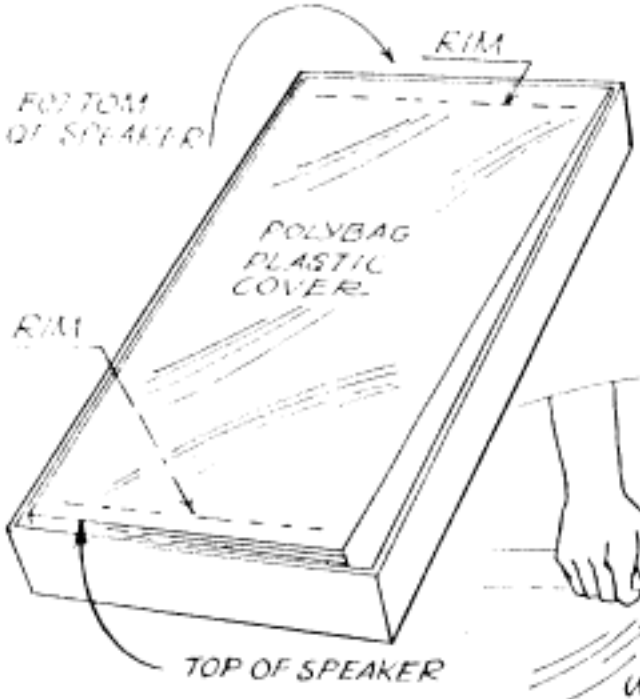
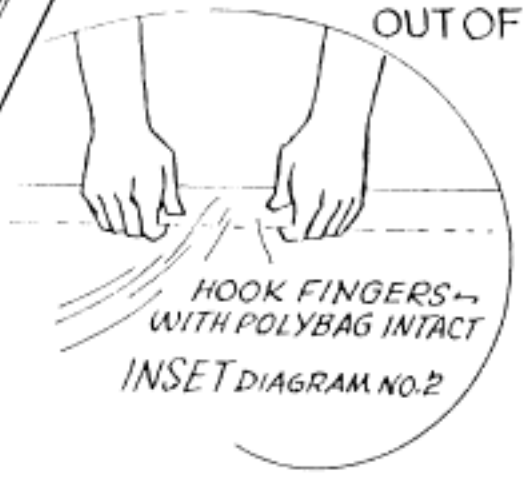


DIAGRAM NO.2

2. CUT BANDS — AND OPEN RIGHT SPEAKER BOX. SET COVER ASIDE FOR FUTURE USE. THE SPEAKER IS IN A POLYBAG — FACE DOWN. *DO NOT OPEN PROTECTIVE POLYBAG.* HOOK FINGERS UNDER TOP AND BOTTOM RIMS AS SHOWN IN *INSET DIAGRAM NO.2* LIFT SPEAKER OUT OF BOX.



INSET DIAGRAM NO.2

CAUTION: AVOID CONTACT WITH SPEAKER RIBBONS BY HANDS, TOOLS or FOREIGN BODIES

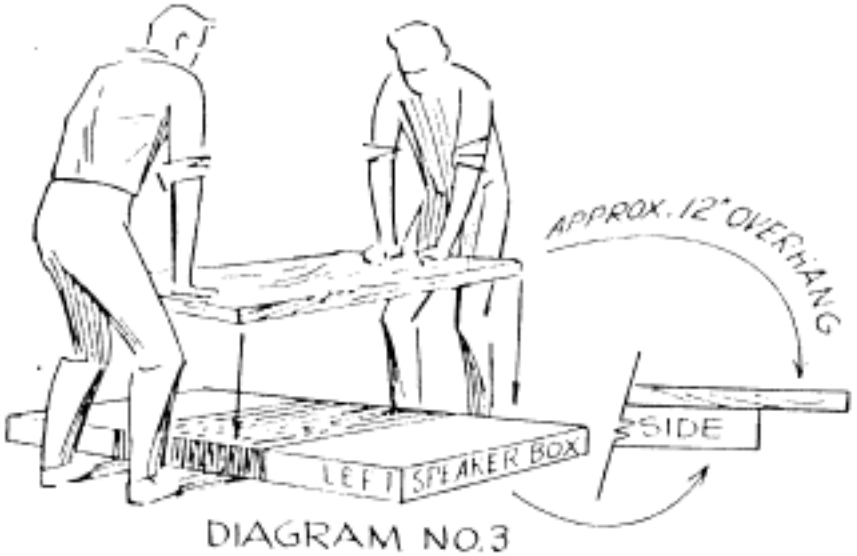
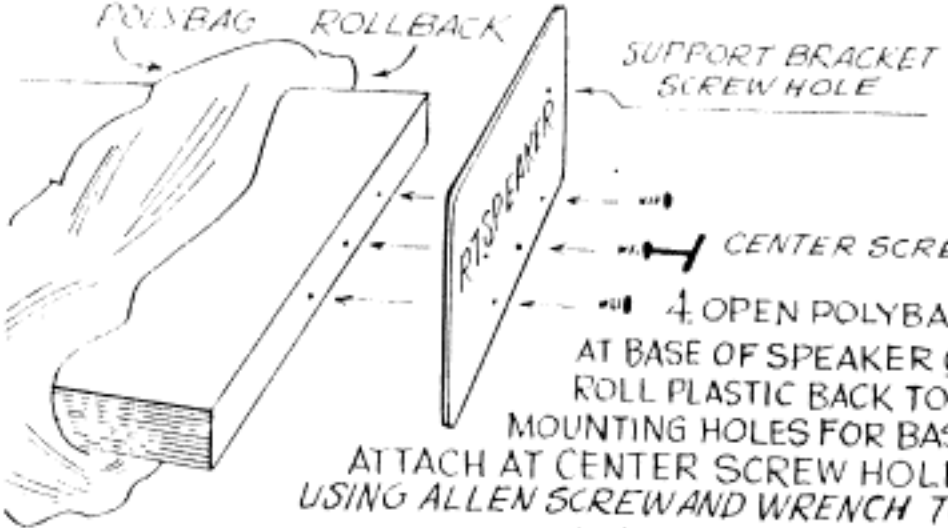


DIAGRAM NO. 3

3. CARRY THE SPEAKER (FACE DOWN) TO BOX CONTAINING LEFT SPEAKER - AND CAREFULLY LOWER SPEAKER *ACROSS THE WIDTH* OF THE BOX ALLOWING THE BASE TO OVERHANG THE BOX BY ABOUT 12".



4. OPEN POLYBAG *carefully* AT BASE OF SPEAKER ONLY. ROLL PLASTIC BACK TO EXPOSE MOUNTING HOLES FOR BASE PLATE. ATTACH AT CENTER SCREW HOLE FIRST - *USING ALLEN SCREW AND WRENCH TOGETHER.* ALSO ATTACH SUPPORT BRACKET.

DIAGRAM NO. 4

5. MAKE CERTAIN THAT THE POLYBAG IS CLEAR OF THE BASE PLATE, *WITHOUT REMOVING THE POLYBAG* - LIFT THE SPEAKER FROM THE TOP END AND GENTLY TILT IT UPWARD TO STAND IT ON ITS BASE.

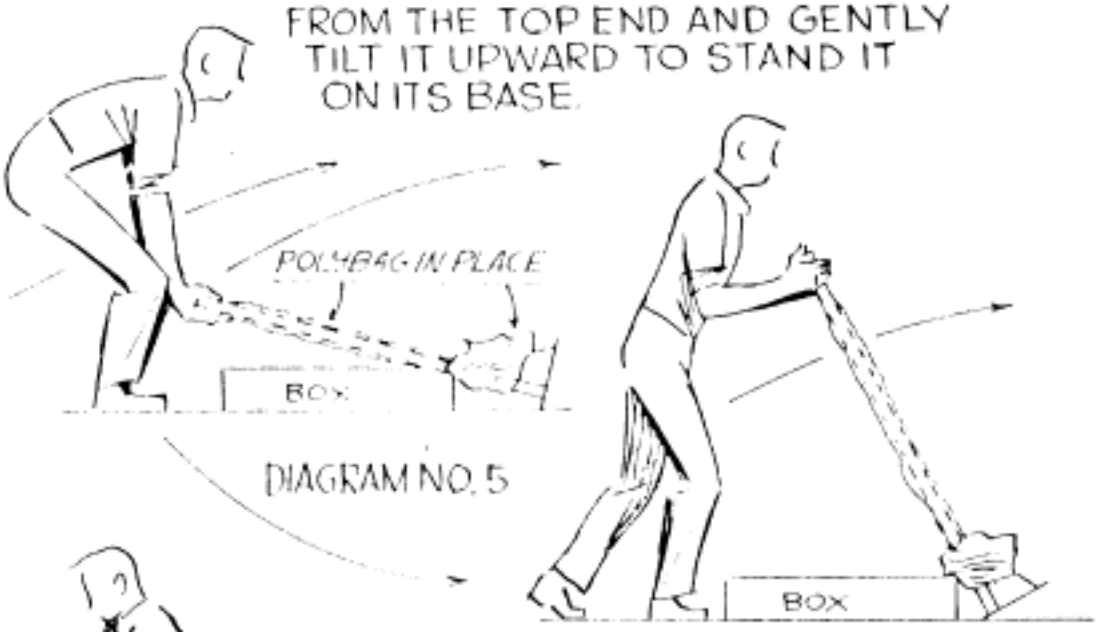


DIAGRAM NO. 5

DIAGRAM NO. 6

6. WITH THE POLYBAG STILL IN PLACE, SLIDE THE SPEAKER TO AND FRO ON ITS BASE - USING A ROTATING MOTION - TILL SPEAKER IS POSITIONED.

NOTE: IT IS NOT NECESSARY TO GRASP THE SPEAKERS. JUST CLASP THE EDGES FIRMLY WITH THE PALMS OF THE HANDS, ONE HAND LOWER THAN THE OTHER (WHATEVER IS MOST COMFORTABLE) → PRESS FIRMLY, AND ROTATE GENTLY

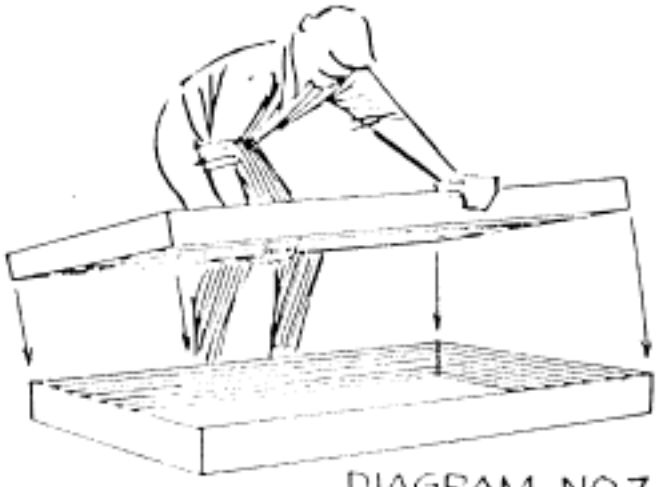


DIAGRAM NO.7

7: REPLACE THE COVER ON THE EMPTY RIGHT SPEAKER BOX. ADJUST THE POSITION OF THE BOX TO FACILITATE THE ASSEMBLY OF THE BASE PLATE AND THE POSITIONING OF THE LEFT SPEAKER. FOLLOW THE PREVIOUS INSTRUCTIONS. *YOU MAY REMOVE BOTH POLYBAGS AFTER BOTH SPEAKERS ARE POSITIONED.*

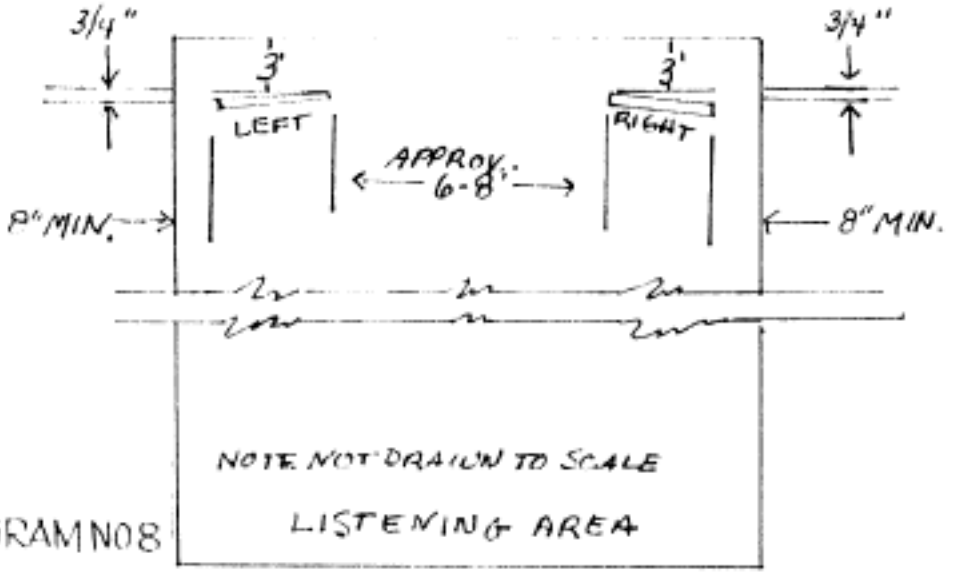


DIAGRAM NO8

8: *NOTE, THIS DIAGRAM SHOWS RECOMMENDED STARTING SPEAKER LOCATIONS BEFORE POSITIONING ADJUSTMENT.*

ELECTRICAL CONNECTIONS

There are two different amplifier configurations for driving the speakers. The SCINTILLA may be operated utilizing a single stereo amplifier capable of driving a one ohm load. The speaker can also be operated in a Bi-Amplified mode with amplifiers capable of driving a one ohm load.

CAUTION !! -- DO NOT OPERATE AT LOW (ONE OHM) IMPEDANCE BEFORE VERIFYING AMPLIFIER COMPATIBILITY WITH YOUR DEALER

AMPLIFIER TO SPEAKER WIRING

Mono Amp Stereo Operation Bi-Wired

Connect the high end of the amplifier drive to Red Binding Post and the White Binding Post. Connect the Low end to the Black Binding Post and the Blue Binding Post. (See Bi-Wired Mono Amp Operation Diagram, Page 10)

Note: If Bi-Wiring is not feasible then proceed as follows:

(1) Unbolt speaker name plate.

(2) Reconnect the wires from the White Binding Post to the Red Binding Post.

(3) Reconnect the wires from the Blue Binding Post to the Black Binding Post.

The Binding Post wiring for Bi-Wiring and Single Cable Wiring is shown on Page 11. Be sure that all electrical conductive surfaces are clean and corrosion free before connections are made. Further, torque down nuts and/or screws for good contact but be careful not to over torque screws to avoid damage (i.e. stripping thread).

You may now operate with one pair of speaker wires in the Mono Amp stereo mode.

The power amplifier is now connected to the Red and Black Binding Posts only. The Amplifier plus (+) to Red and the low (-) to the Black.

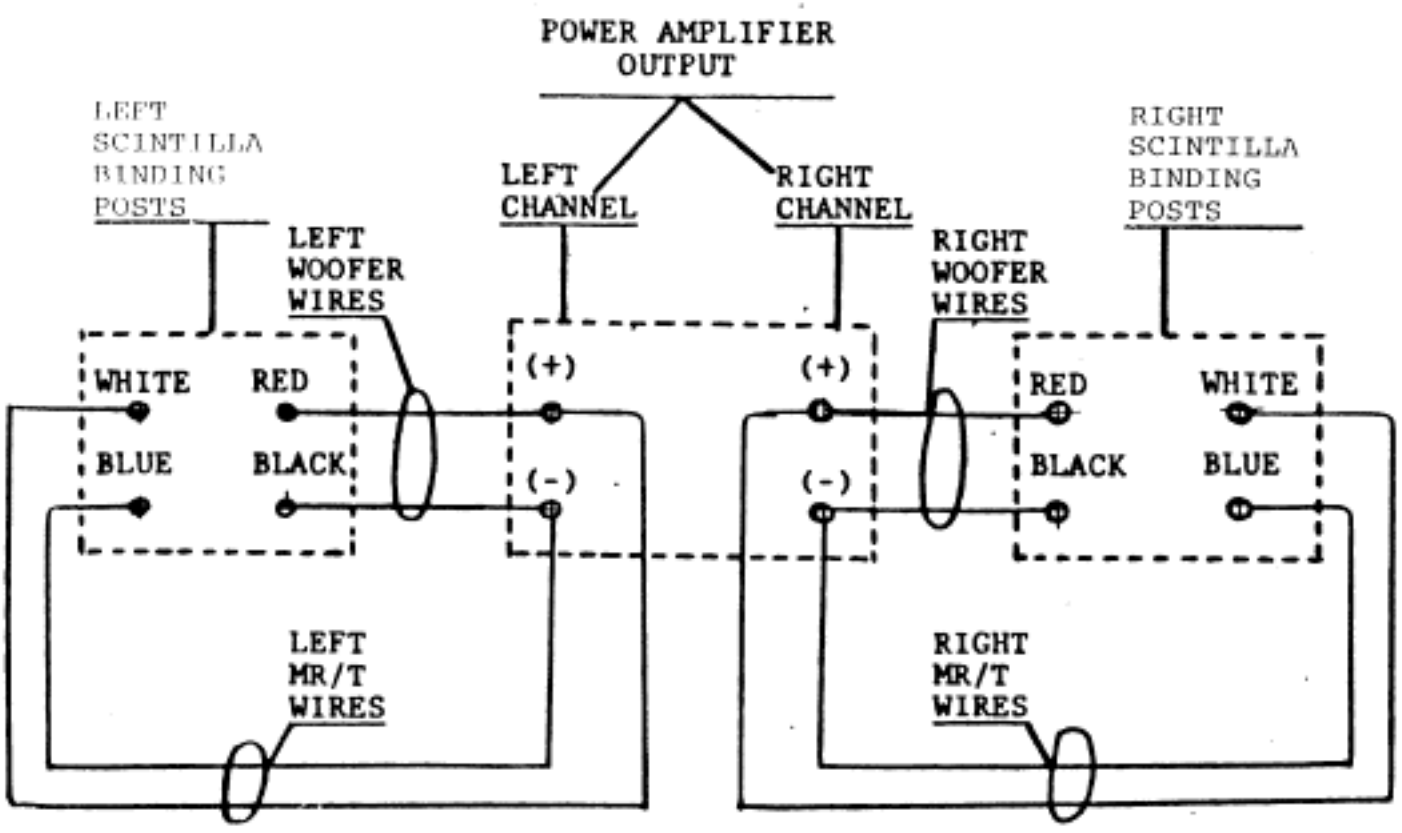
BI-WIRED MONO AMP OPERATION

The Bi-Wired Mono Amplifier configuration can sonically improve the performance of your audio system over the simpler single cable configuration.

Bi-Wiring is simply providing two sets of power wires from the power amplifier output to the speaker. One set of wires drive the woofer while the other set of wires drive the midrange tweeter. The simpler single wired configuration utilizes one set of power wires from the power amplifier output to the speaker for both the woofer and midrange tweeter speaker drives.

The speaker wiring for the Bi-Wired Mono Amplifier configuration is the same as for the Power-Bi-Amplified configuration. Use a power amplifier(s) approved for low impedance (1 ohm) operation.

The following schematic diagram shows the Bi-Wired Mono Amplifier wiring. Observe carefully.



Power Bi-Amp Operation with Amplifiers of Equal Gain Only !!

Connect high end of woofer amplifier drive to Red Binding Post and the low end to the Black Binding Post of each speaker. The amplifier left channel output connects to the left speaker and right channel drives the right speaker. The midrange tweeter amplifier connects to the White and Blue speaker Binding Posts, the high end output of the amplifier is connected to the White Binding Post and the low end to the Blue Binding Post of each speaker. The amplifier's left channel output connects to the left speaker and the right channel drives the right speaker.

Before amplifier or amplifiers are hooked up to speaker, double check speaker wiring, amplifier compatibility, and amplifier to speaker wiring.

BI-AMPED OPERATION WITH A SIGNAL LEVEL CROSSOVER NETWORK

The SCINTILLA may be operated in a normal bi-amped mode utilizing a crossover network in the signal path between the preamplifier output and the power amplifier input. The internal speaker wiring is shown in the Binding Post Wiring Table for the Normal BI-AMPED operation with a signal level crossover network. The system wiring is shown in Diagram 9.

The internal speaker wiring, for use with the signal level crossover network, removes the speaker's internal woofer and midrange power crossover networks. This configuration consequently provides a resistive speaker load to the amplifier in the bass and midrange audio regions and subsequently improved amplifier performance and head room.

The signal crossover should be a high quality component so as not to degrade overall system performance. The woofer crossover is at 305 hertz with a minimum 6 db per octave slope. The midrange tweeter crossover is at 700 hertz with a positive slope of 6 db per octave.

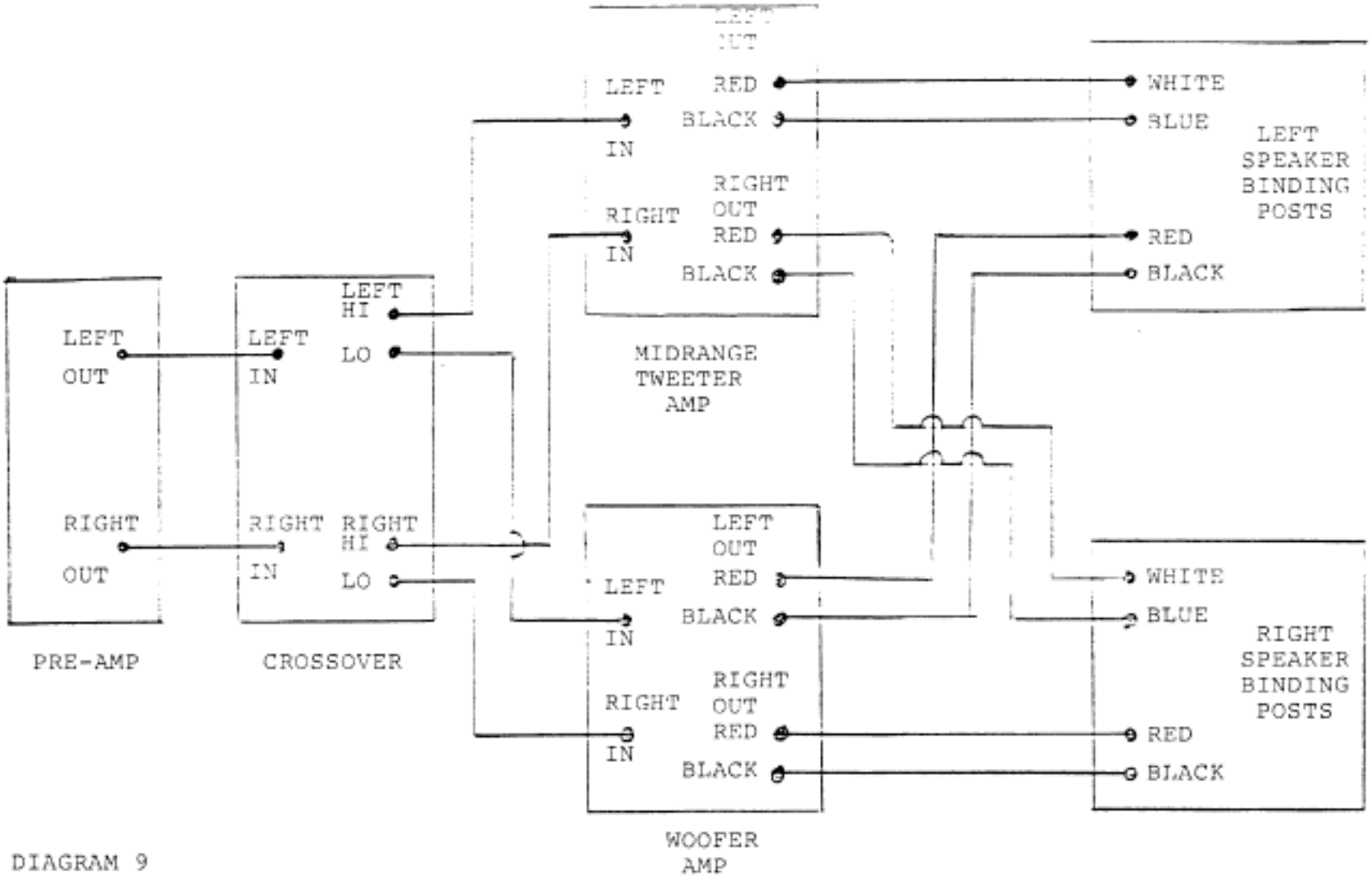


DIAGRAM 9

SYSTEM WIRING DIAGRAM

FOR NORMAL BI-AMPED OPERATION

BINDING POST WIRING

BI-WIRED OR POWER BI-AMPED

BINDING POST	SPEAKER WIRE
Red	Green
Black	Black
White	Orange, Purple
Blue	Blue

SINGLE CABLE WIRING

BINDING POST	SPEAKER WIRE
Red	Green, Orange, Purple
Black	Black, Blue
White	-
Blue	-

NORMAL BI-AMPED OPERATION WITH SIGNAL LEVEL CROSSOVER

BINDING POST	SPEAKER WIRE
Red	Green with Black Shrink
Black	Black
White	Grey, Orange
Blue	Blue

Note: Speaker wire lugs that are not terminated at the Binding Posts should be covered with the enclosed plastic tubing. Be certain that the lug is properly covered and that it will not short out. If the plastic tubing is not available, use electrical tape to cover the lugs that are not terminated at the Binding Posts.

SPEAKER PLACEMENT

The SCINTILLA loudspeakers are dipoles and require care and consideration in their placement. Of course, every listening room has varying room anomalies, thus experimentation with speaker placement is well advised in order to achieve optimum results for your music enjoyment.

Outlined below are parameters which should be followed; although room size and other variables must be considered.

SPEAKER LOCATION WITHIN THE LISTENING ROOM

- Place SCINTILLA speakers 3 ft. or greater from the rear wall. (See Diagram 8) Experimentation is advised.
- Rear wall should have no damping or very light drapery. Experimentation with amount of acoustical damping is advised although it is of our opinion that corner damping treatment can help significantly in improving music reproduction. Avoid heavy acoustical damping directly placed behind the speakers as this can create a lifeless quality.
- Separation of speakers should be approximately 6 ft. or greater depending on the width of your room. Experimentation is advised.
- Toe-in should begin at approximately 3/4" off horizontal axis. Depending on your room characteristics, experimentation with degree of toe-in is advised. You may prefer speakers placed with virtually no toe-in.
- The SCINTILLA speakers should never touch the side walls. Allow them to breathe with at least 8 inches or more from the side walls. This figure will change, however, with respect to room size.
- Placement of speakers on carpeting as opposed to bare floors is preferable.