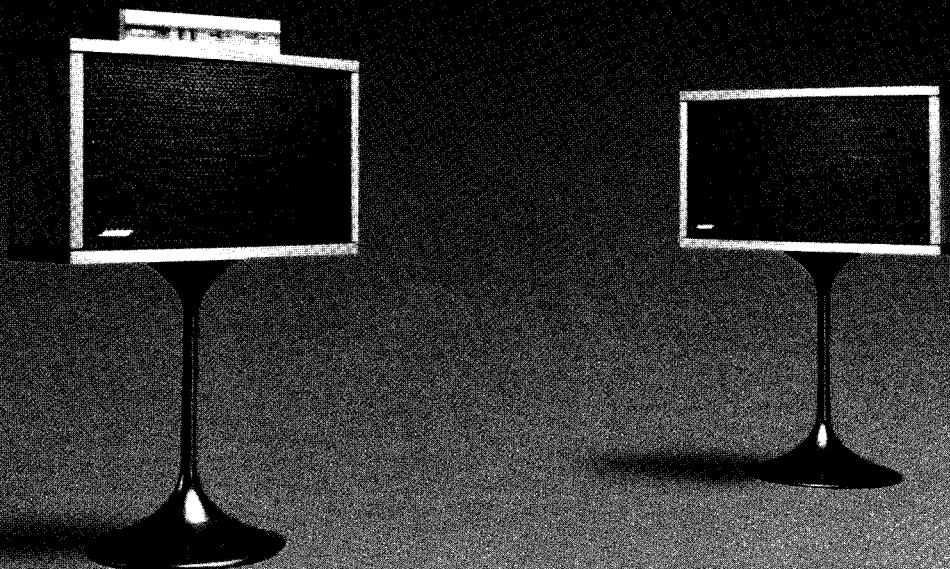


BOSE® 901® SERIES III

Direct/Reflecting® Speaker System



SPECIFICATIONS GENERAL

The 901 Series III retains the original design concepts of the correct balance of Direct to Reflected sound, Active Equalization, Flat Power Radiation, Multiple Full Range Drivers and incorporates further technological innovations that make possible a significant improvement in its performance.

- A newly-designed full range driver combining high precision assembly techniques with a helical voice coil assembly, a new cone and suspension, and a new injected molded frame, that provides an increase in efficiency of nearly 6 dB.
- A completely new equalizer with more accurate equalization of the audio spectrum, new controls increasing the performance of the speaker system in a wide variety of room positions, and precise filtering of frequencies beyond 18 kHz and below 30 Hz.
- An Acoustic Matrix™ Enclosure incorporating three Reactive Air Columns that reduce cone motion at low frequencies and improve bass response and distortion characteristics.

EQUALIZER

Treble Frequency Contour
Continuously adjustable slider with center detent. Shelving control with range ± 3 dB above 4 kHz.

Mid-Bass Frequency Contour

Continuously adjustable slider with center detent $+3$ dB, -5 dB adjustment from 80 Hz to 260 Hz.

Below Forty Decrease

Two position switch with 8 dB decrease at 40 Hz, adjusting the lowest octave (30-60 Hz) of bass energy without affecting the mid-bass response.

Tape Monitor

Replaces tape monitor switch on receiver or amplifier when the 901 Equalizer is connected in the tape monitor circuit.

ELECTRONIC SPECIFICATIONS

Input Impedance 60 K ohms

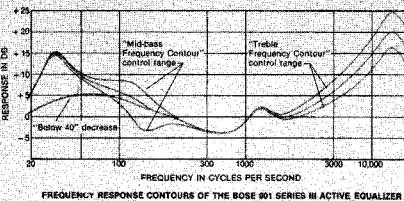
Minimum Load Impedance 5 K ohms

Harmonic Distortion $<0.3\%$ at one volt output at 1000 Hz.

Noise ("A" weighted) 85 dB below one volt.

Maximum Gain 20 dB at 16 kHz Normal (dotted) setting.

Maximum Output Voltage 2.5 volts to 4.0 volts, depending on frequency. Maximum output voltage at 700 Hz is 2.5 volts.



POWER REQUIREMENTS

Voltage 105-130 Vac or 210-260 Vac

Frequency 50-60 Hz

Maximum Power Consumption 2.5 watts

SPEAKER SPECIFICATIONS

Speaker Impedance 8 ohms

Speaker DC Resistance 5.5 ohms

Minimum Recommended Power 10 watts rms per channel at 8 ohms.

Maximum Recommended Power 70 watts continuous with musical peaks up to 250 watts per channel at 8 ohms.

DRIVER SPECIFICATIONS

Driver Diameter 4-1/2 inches

Weight of Magnet 9.4 ounces

Impedance 0.9 ohms

Driver DC Resistance 0.6 ohms

Voice Coil Assembly High-efficiency aluminum edge-wound helical voice coil.

MECHANICAL

Equalizer
Dimensions 2-1/2" high 11" wide, 5" deep.

Weight 1-1/2 lbs.

Speaker
Dimensions 21" wide x 12-5/8" high x 13" deep

Weight 35 lbs.

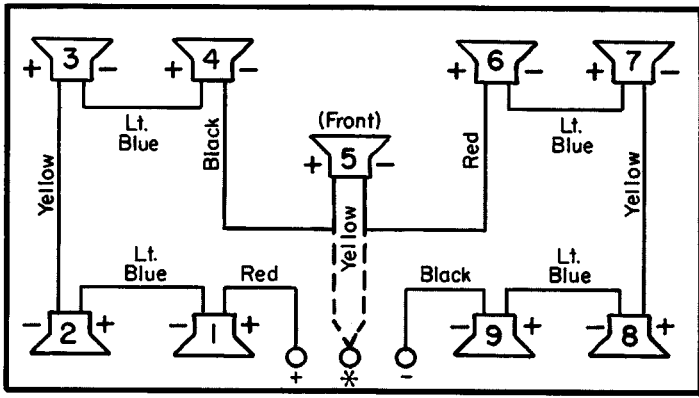


Figure 1 Speaker Schematic

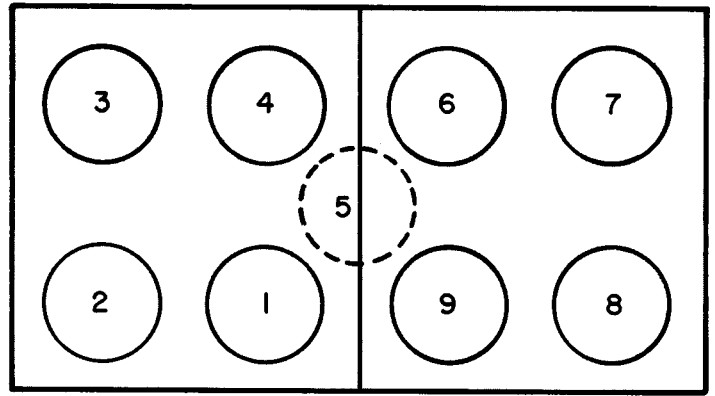


Figure 2 Driver Placement (Rear View)

DISASSEMBLY PROCEDURE

- 1. REMOVING THE REAR GRILLE** — The rear grille assembly is secured in 10 locations with double-sided tape. (See Figure 4). This tape is designed to allow grille panel removal once or twice. Carefully lift the panels out, starting at the "V" of the speaker cabinet taking care not to scratch the air columns. The rear panels can be reattached using the double-sided tape. Additional tape (Bose P/N 108645) can be ordered if necessary.
- 2. REMOVING THE FRONT GRILLE** — The front grille of the 901 Series III speaker system is secured by staples located in six positions along the front grille. (See Figure 3). Remove the staples and lift the grille panel away from the cabinet assembly. The grille panels can be reattached using colored finishing nails.

TEST PROCEDURE

- 1. CONTINUITY CHECK** — An open driver may be detected by using an ohmmeter and checking continuity. Carefully penetrate the black cement covering the flexible conductor on the surface of each cone with the ohmmeter lead. Check continuity between each driver and the speaker terminals until the open driver is detected. (See Figures 1 and 2).
- 2. POWER CHECK** — Using a 50 watt (20 volt) sine wave signal, sweep the range between 40 and 200 Hz. Check for rattles, buzzing or voice coil rub. Reduce the output to 5 watts (6.5 volts), and continue to sweep the range between 200 and 18,000 Hz.
Note: When using a sine wave on the 901 Series III speaker system, do not operate the speaker below 40 Hz at levels greater than 20 watts (12.6 volts) as possible damage to the drivers can occur.
- 3. PHASING CHECK** — Using a 6 to 20 watt battery or DC Power Supply, check that all speakers are in phase (moving together). Connect the positive portion of the power supply to the "plus" terminal of the 901 and the ground connection of the supply to the "minus" terminal of the speaker system. This will produce an outward motion of all drivers (including the front driver). (See Figure 1).

SERVICE NOTES

- Early Production Series III drivers are secured by Torxhead screws (Apex Tool No. 440TX15). Authorized service agencies have been provided with this tool. If unavailable, a 3/32 Allen wrench or a 3.7 mm hex metric wrench can be used.
If necessary a #8 Tinnerman clip (C13178-8) (Bose P/N 88M) can be used to secure the drivers in the 901 Acoustic Matrix™ enclosure. A 3/4 inch #8 sheet metal screw (Bose P/N 103126-12) is used to secure the drivers when using the Tinnerman clip.
- The "*" terminal is provided for future product innovations designed to operate with the 901 Series III. Only use the terminals marked "plus" and "minus" for connection to amplifiers or receivers. However, service of the loudspeaker can be facilitated when checking continuity by using the "*" terminal. (See Figure 1 and Test Procedure 1).
- The Part I 901 speakers are wired with front speaker (5) connected in series with speakers 6, 7, 8 and 9. The "plus" terminal of the front speaker is connected to the "*" terminal. (See Figure 1).
The Part II 901 speakers are wired with front speaker (5) connected in series with speakers 1, 2, 3 and 4. The "minus" terminal of the front speaker is connected to the "*" terminal. (See Figure 1).
- 901 III speakers have been manufactured using both American and metric threaded speaker terminal posts. When replacing terminal knurled nuts, be certain to use the correct knurled nut. (See Parts List).

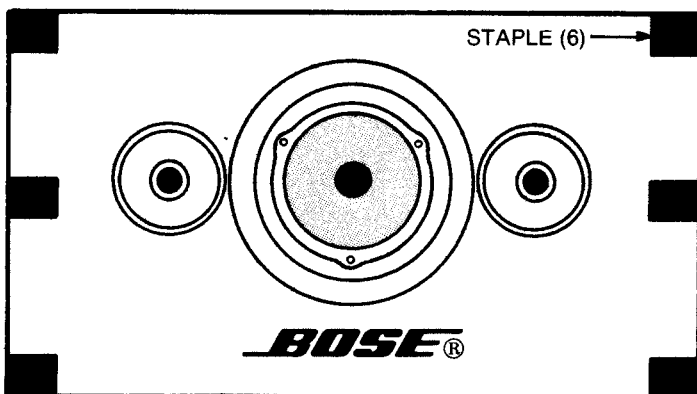


Figure 3 Front Grille Attachment

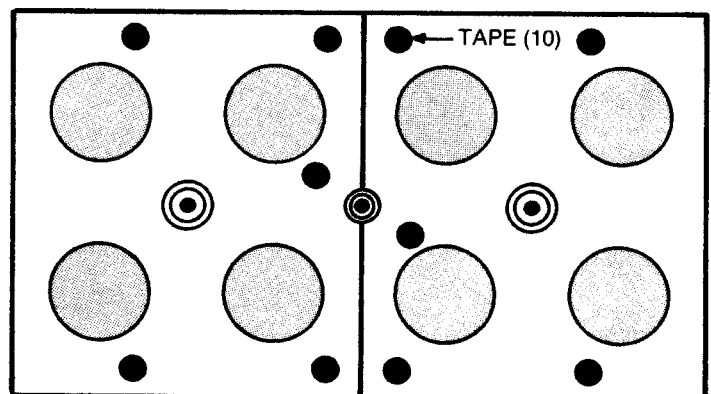
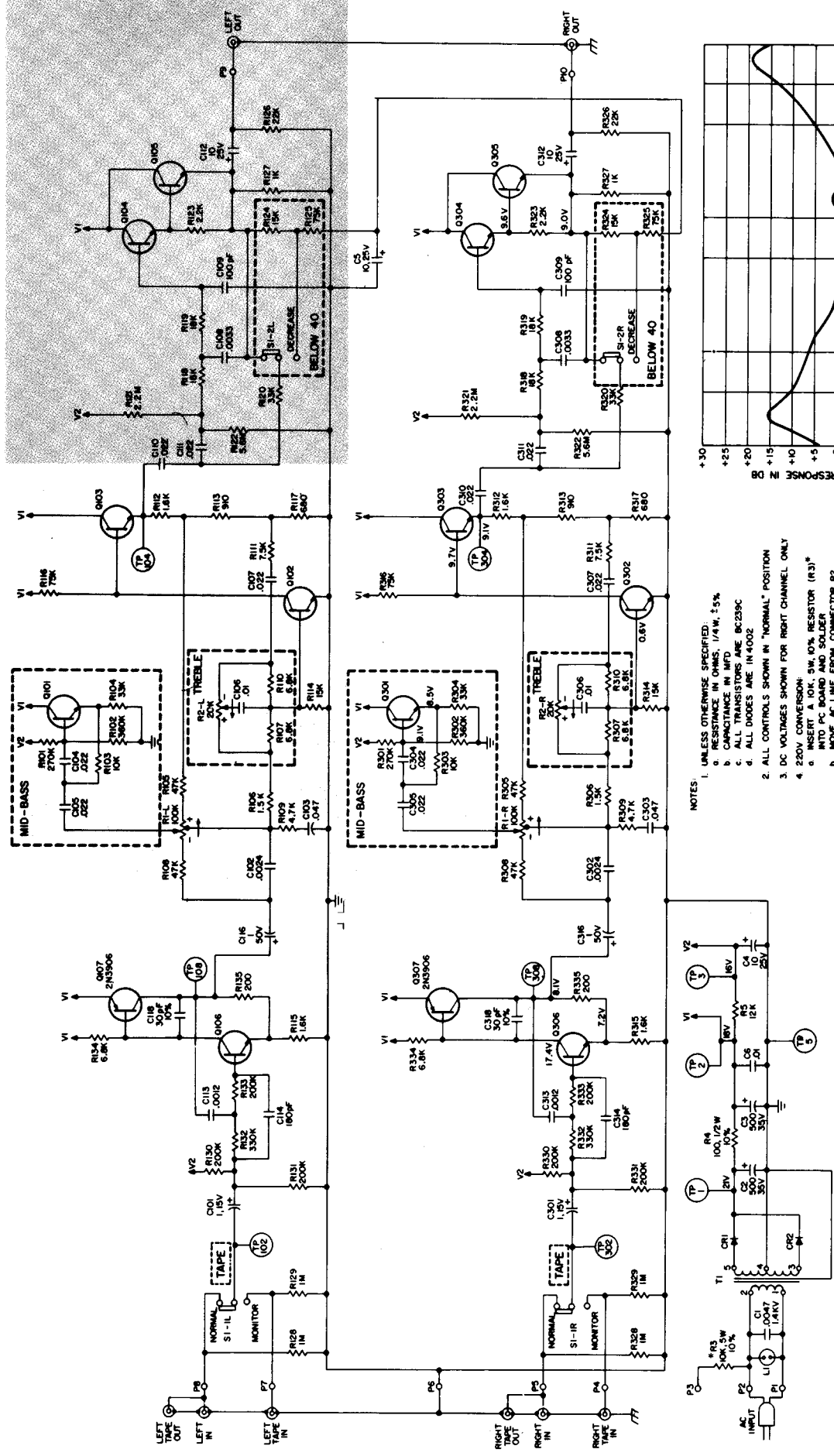
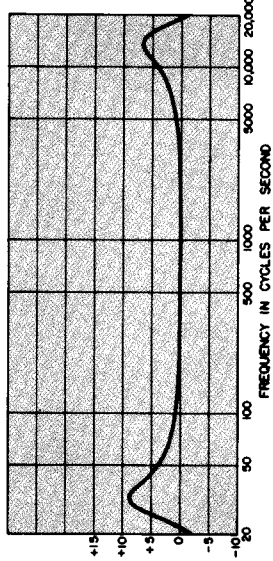
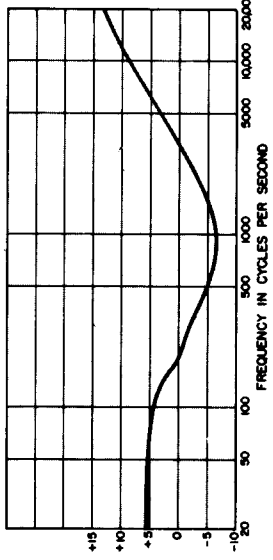
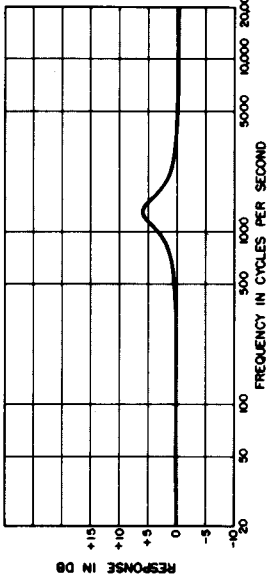


Figure 4 Rear Grille Attachment

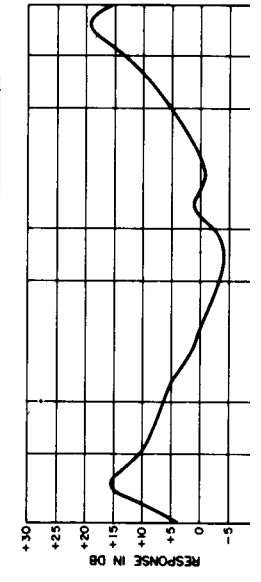
PARTS LIST

901 SERIES III EQUALIZER

SYMBOL	DESCRIPTION	PART NUMBER	SYMBOL	DESCRIPTION	PART NUMBER
Resistors			Capacitors		
R1	Slide Control 100 K Mid-Bass	107460-104	C101, 301	Elctc. 1 μ F 15 V	100260-3
R2	Slide Control 20 K Treble	107460-203	C4, 5, 112, 312	Elctc. 10 μ F 25 V	106777
R5	.25 W 5% 12 K ohms	107170-123	C2, 3	Elctc. 500 μ F 35 V	107534
R130, 131, 133, 330, 331, 333	.25 W 5% 200 K Ohms	107170-204	C1	Cer. .0047 μ F 20% 1.4 KV	103447
R132, 332	.25 W 5% 330 K Ohms	107170-334	Semiconductors		
R107, 110, 134 307, 310, 334	.25 W 5% 6.8 K Ohms	107170-682	CR1, 2	Diode IN 4002	100259-1
R135, 335	.25 W 5% 200 Ohms	107170-201	Q101-106, 301-306	Transistor-NPN Low Noise BC239C	102437-2
R109, 309	.25 W 5% 4.7 K Ohms	107170-472	Q107, 307	Transistor-PNP Low Noise 2N3906	102426
R105, 108, 305, 308	.25 W 5% 47 K Ohms	107170-473	Miscellaneous		
R111, 311	.25 W 5% 7.5 K Ohms	107170-752		Front Panel	107430
R113, 313	.25 W 5% 910 K Ohms	107170-911		Cabinet	111652
R117, 317	.25 W 5% 680 K Ohms	107170-681		Line Cord (110 V)	111672
R114, 124, 314, 324	.25 W 5% 15 K Ohms	107170-153		Line Cord (220 V)	113608
R116, 125, 316, 325	.25 W 5% 75 K Ohms	107170-753		Strain Relief Bushing	106346
R112, 115, 312, 315	.25 W 5% 1.6 K Ohms	107170-162		Indicator Jewel	103460
R101, 301	.25 W 5% 270 K Ohms	107170-274		Rubber Foot	103593
R102, 302	.25 W 5% 360 K Ohms	107170-364		Knob	107502
R103, 303	.25 W 5% 10 K Ohms	107170-103		Nameplate	108206
R104, 120, 304, 320	.25 W 5% 33 K Ohms	107170-333		Slider Hider	107491
R118, 119, 318, 319	.25 W 5% 18 K Ohms	107170-183		Switch Swatch	108212
R123, 323	.25 W 5% 2.2 K Ohms	107170-222		Multiple Phono Jack	107501
R127, 327	.25 W 5% 1 K Ohms	107170-102	T-1	Transformer	100099
R126, 326	.25 W 5% 22 K Ohms	107170-223	S-1	2 Switch-Push-Button 2 Position DPDT	107461
R106, 306	.25 W 5% 1.5 K Ohms	107170-152		Indicator Assembly (100 V)	116328
R3	Wirewound 5 W 10 K Ohms (220 Volt Units Only)	102537		Indicator Assembly (110 V)	116327
R4	CC .50 W 10% 100 Ohms	102944-101		Indicator Assembly (220 V)	116326
R128, 129, 328, 329	CC .25 W 5% 1 M Ohms	102939-105	<hr/>		
R121, 321	CC .25 W 5% 2.2 M Ohms	102939-225	901 SERIES III SPEAKER		
R122, 322	CC .25 W 5% 5.6 M Ohms	102939-565	Driver		111939
Capacitors			Driver Screw (Phillips)		108877
C104, 105, 107, 110, 111, 304, 305, 307, 310, 311	Film .022 μ F 5% 100 V	106510-223	Driver Gasket		104794-02
C106, 306	Film .01 μ F 5% 100 V	106510-103	Front Grille Panel		116520
C113, 313	Cer. .0012 μ F 5% 100 V	106537-122	Rear Grille Panel		107440
C116, 316	Elctc. 1 μ F 50 V	104015	Bose Nameplate		111084-5
C103, 303	Film .047 μ F 5% 100 V	106510-473	Terminal Washer		100426-1
C118, 318	Cer. 30 pF 10% 100 V	104423	Knurled Nut-American		100424-1
C114, 314	Cer. 180 pF 5% 100 V	106767-181	Knurled Nut Metric		108635
C102, 302	Film .0024 μ F 5% 100 V	106510-242	Owners Manual		108911
C108, 308	Film .0033 μ F 5% 100 V	106510-332	Literature Kit		107453
C109, 309	Cer. 100 pF 5% 100 V	106767-101	Audio Cables		102876
C6	Cer. .01 μ F 100 V	103730	Speaker Feet		102430
			Speaker Feet Screw		103744-8
			Double Sided Tape, 1 in.		124245
			Carton & Fillers		107462



- NOTES:
1. UNLESS OTHERWISE SPECIFIED:
 2. RESISTANCE IN OHMS, 1/4W, ±5%
 3. CAPACITANCE IN MFD
 4. ALL TRANSISTORS ARE BC239C
 5. ALL DIODES ARE IN-4002
2. ALL CONTROLS SHOWN IN "NORMAL" POSITION
 3. DC VOLTAGES SHOWN FOR RIGHT CHANNEL ONLY
 4. 220V CONVERSION:
 - a. INSERT A 10K, 5W, 10% RESISTOR (R3) INTO PC BOARD AND SOLDER TO CONNECTOR P3
 - b. MOVE AC LINE FROM CONNECTOR P2 TO CONNECTOR P3
 5. DC VOL TAPE'S MEASUREMENT AT 10V VOL 1 MF



Component Side

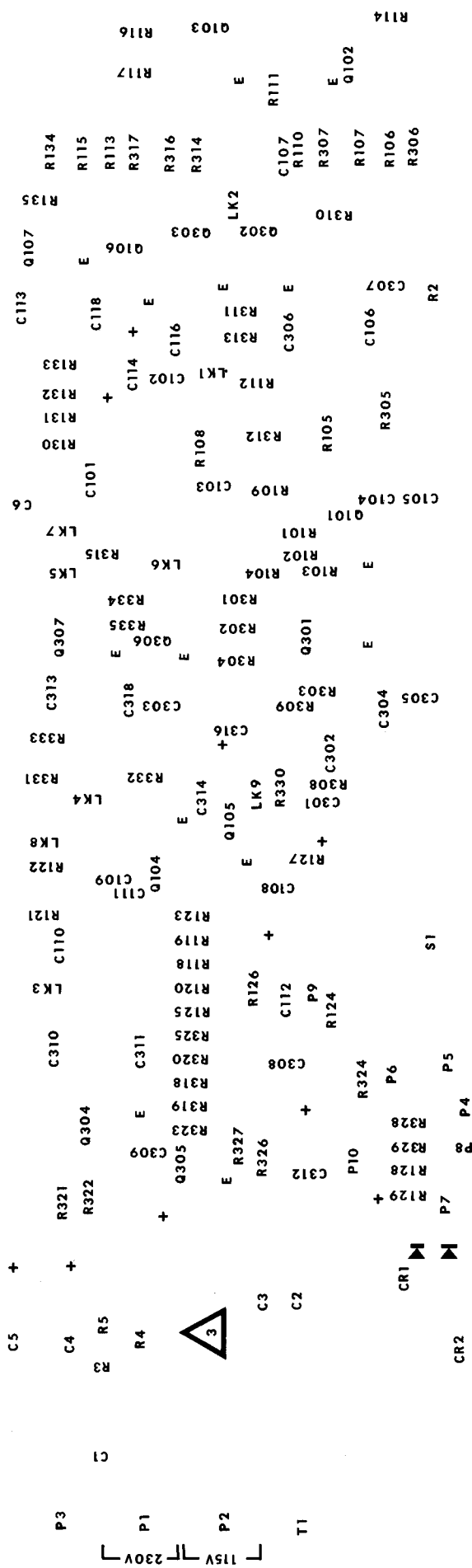
0101-0106, 0301-0306 BC239C

FREQUENCY IN CYCLES PER SECOND
 901 SERIES III
 EQUALIZER FREQUENCY RESPONSE
 (Controls Set of Normal)

V_{4B} IS REFERENCED TO AN EQUALIZER INPUT
 VOLTAGE OF 800 mV USING A 250 Hz SINE WAVE.
 DO NOT USE TEST SIGNALS HIGHER THAN 300 mV
 AS POSSIBLE OVERLOAD (DEPENDENT ON FREQUENCY)
 CAN OCCUR. MAXIMUM OUTPUT VOLTAGE (A 0 VOLT)
 OF EQUALIZER OCCURS AT 30 Hz AND 16 kHz.
 MAXIMUM OUTPUT VOLTAGE AT 750 Hz IS 2.5 VOLTS.

2N3906

0407,0307



R1