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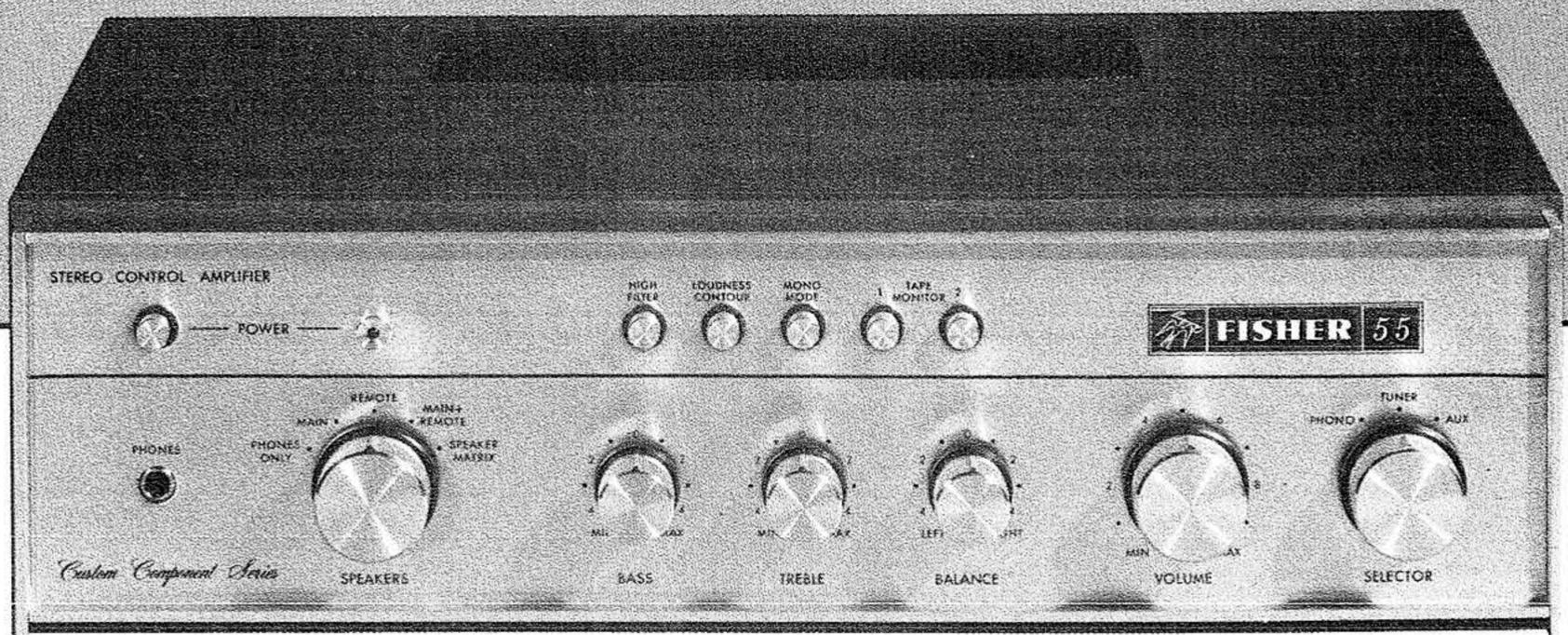
**SERVICE MANUAL**

# The Fisher®

# TX55

**STEREO**

**CONTROL AMPLIFIER**



*WORLD LEADER IN HIGH QUALITY STEREO*

## PRECAUTIONS

1. Always disconnect the chassis from power line when soldering. Turning the power switch OFF is not enough. Power line leakage passing through the heating element may destroy the transistors.
2. Never attempt to do any work on the transistor amplifiers without first disconnecting the AC line cord and waiting until the power supply filter capacitors have discharged.
3. Replacement for output and driver transistors, if necessary, must be made from the same beta group as the original type.
4. If one output transistor burns out (open or short) always remove all the output transistors in that channel and

check the bias adjustment, the control and other parts in the network with an ohm-meter before inserting a new transistor. All transistors in one channel will be destroyed if the base biasing circuit is open on the emitter end.

5. When mounting a replacement power transistor, be sure that the bottom of the flange, the mica insulators and the surface of the heat sink are free of foreign matter, for they may cause transistors failure.
6. Silicon grease must be applied between the transistor and the mica insulator, and between the mica insulator and the heat conduction.

## POWER AMPLIFIER ADJUSTMENT

### PREDRIVER/DRIVER ADJUSTMENT

1. Set Balance, Bass and Treble controls to mid-position.
2. All Push Button switches "OUT". Speaker switch to MAIN, and Selector switch to "AUX" position.
3. Connect 8-ohm, 50-watt resistor across Left channel speaker terminals. In parallel with the load resistor, connect the vertical input leads of the oscilloscope.
4. Connect an audio generator, set for 1,000Hz (sine wave), to Left channel AUX input.
5. Connect AC power cord and rotate volume control to clockwise position (full volume). Increase generator out-

put until sine wave on scope just starts clipping. Adjust DC Balance potentiometer VR601 (on Power Amp PCB) for equal clipping on the positive and negative half cycles of the signal. See Fig. 1. Position volume control fully ccw.

6. Adjust idling current using a DC millivolt meter across R614 resistor (Test Point Pin 5 and E3), rotate VR602 on Main Amp PCB to obtain a 7.5mV reading on DC millivoltmeter (no signal input).
7. Repeat the steps 3 thru 6 as above for Right channel. (Use VR603, 604 and R612 [Test Point Pin 6 and E3])

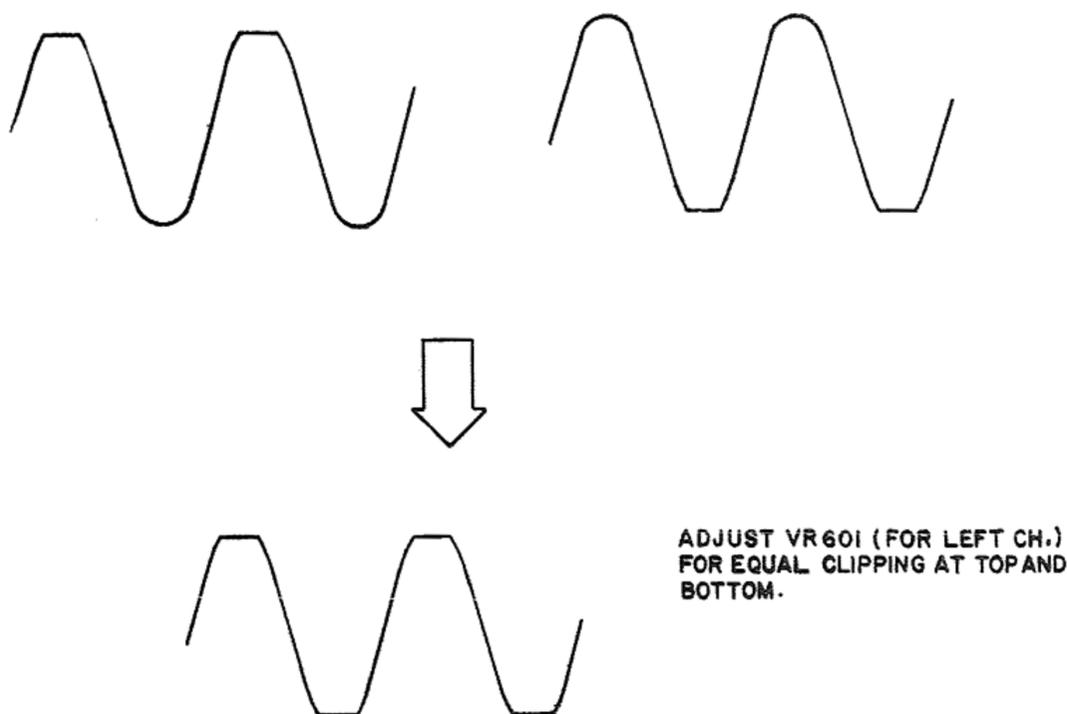


FIG. 1. DC BALANCE ADJUSTMENT WAVEFORM

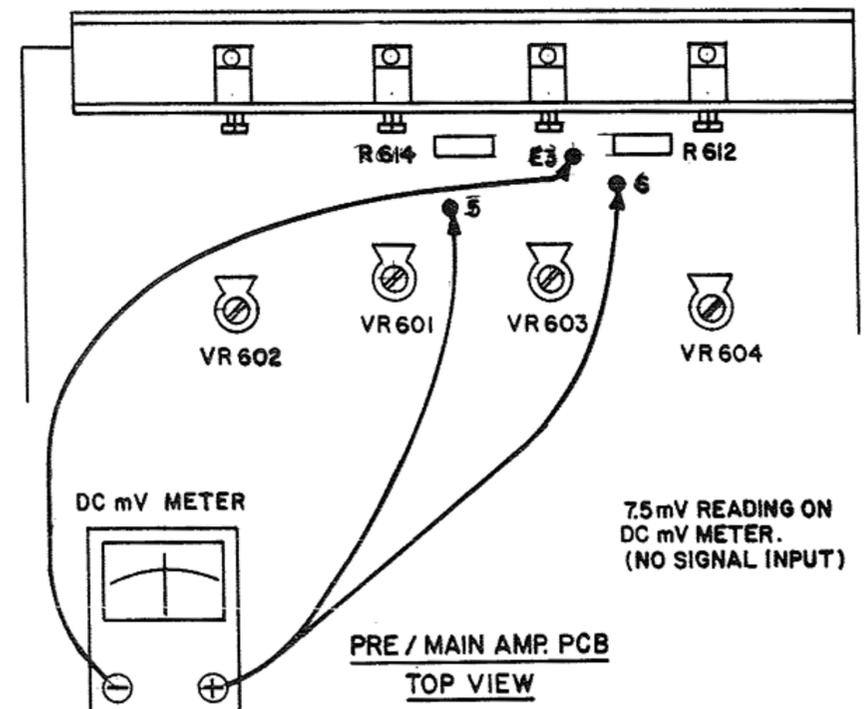


FIG. 2 IDLING CURRENT ADJUSTMENT HOOK-UP

# HARMONIC DISTORTION TEST

**CAUTION:** Limit the following tests to no more than ten minutes each. Use 8-ohm resistors with a minimum power rating of 50 watts when connecting a load across the SPEAKER terminals. Short all 1.5A fuses with jumper leads while performing this test.

## CONTROL SETTINGS:

Unplug the AC power cord and set the front panel controls as follows:

BASS, TREBLE, and BALANCE controls to center positions

SPEAKERS switch to MAIN

SELECTOR switch to AUX

All pushbuttons not depressed

VOLUME control to MIN

### ONE CHANNEL DRIVEN:

(1) Connect a low distortion frequency generator

to AUX IN LEFT jack. Set generator frequency to 1kHz and output to minimum.

(2) Connect an 8-ohm load resistor between MAIN SPEAKER LEFT and COM terminals. Connect a Harmonic Distortion analyzer and an AC VTVM in parallel across the 8-ohm load.

(3) Connect the AC power cord and depress POWER switch. Increase VOLUME control to MAX.

(4) Increase generator to 20 watts RMS (12.6VAC across the 8-ohm load). Harmonic Distortion analyzer meter should read less than 1%.

(5) Repeat steps 1 through 4 for RIGHT SPEAKER.

### ALL CHANNELS DRIVEN:

Connect an 8-ohm load resistor across all of the MAIN SPEAKER output terminals. Depress the MODE SELECTOR "MONO" pushbutton and check for distortion of 1.0% or less at 12 watts (10VAC) on each channel with all channels driven simultaneously. Upon completion of test remove the jumpers from across the 1.5A fuses.

# CHASSIS PARTS LIST

Ref. No.	Part Number	Description
	E51172	Feet, Cabinet
	EK116310116	Knob, Speakers/Volume/Selector
	EK116310115	Knob, Bass/Treble/Balance
	EK116210021	Push Knob, Power/Filter/ Contour/Mode/Dub 1/Dub 2
J003	JK626110023	Headphone Jack
S-3	SR601011260	Switch, Selector
S-2	SR601011226	Switch, Speaker
S-1	SP614010106	Switch, Power
S-4 thru 8	SP614051007	Switch, 5-Gang Push
	JK624100208	8 Pin RCA Pin Jack Board -- Rear accessory panel
J004	JK625001112	5 Pin Din Jack
	ET642400204	4 Pin Push Terminal, Speakers
J001, 002	JK648211126	AC Outlet
	EA648211134	Fuse, Holder
F001	FL51313-41	Fuse, 2A Normal Blow
F002, 003	FL51313-40	Fuse, 1.5A Normal Blow
T001	TD205001343	Power Transformer
	SS648211121	Multivoltage Selector
PL-1	LM351080015	Pilot Lamp, 8V 150ma
R003	RP554022073	Resistor 5W 22
R001, 002	RC20BF331J	Resistor 1/2W 5% 330
R005, 006	RF25DC823J	Resistor 1/4W 5% 82K
R004, 007	RF25DC334J	Resistor 1/4W 5% 330K
	W2740241	AC Cord
	AS111911290	Dress Panel Assembly
	KK131011257	Cabinet
	PB141610258	Power Supply/Amplifier PCB
	PB141610257	Tone Control PCB

# POWER SUPPLY/POWER AMPLIFIER PARTS LIST

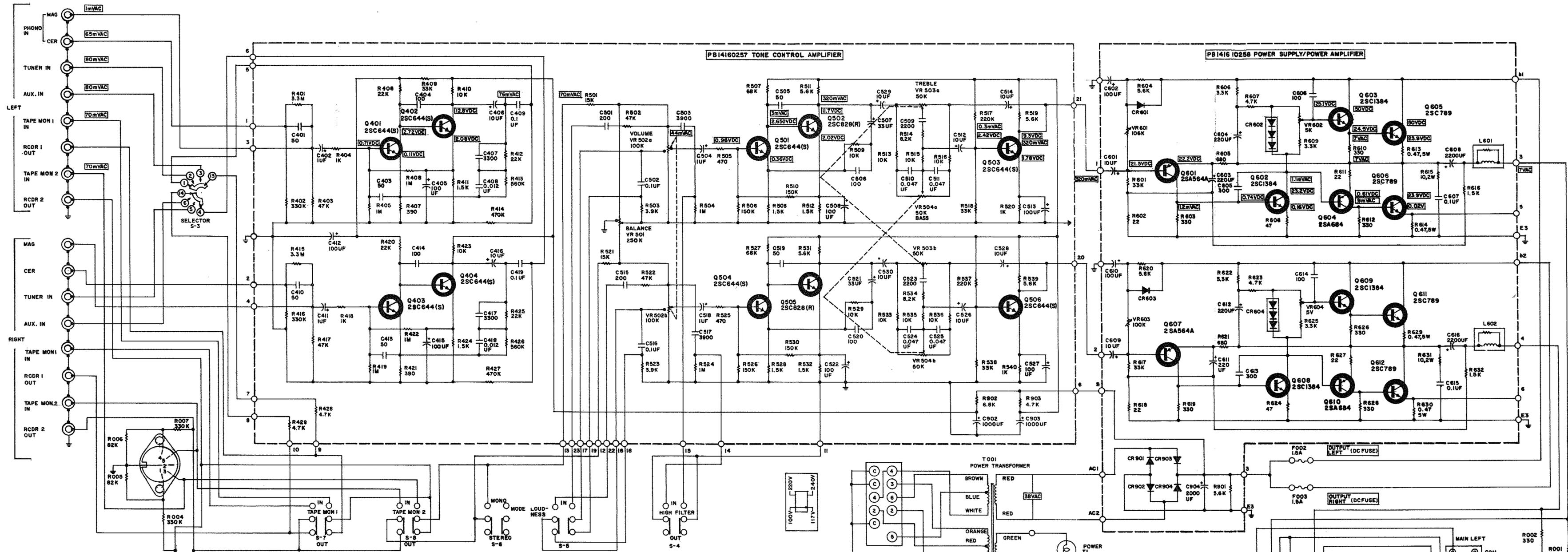
PB141610258

Ref. No.	Part Number	Description
Q601, 607	TR301001117	Transistor 2SA564A, PNP
Q602, 603, 608, 609	TR301201132	Transistor 2SC1384, NPN
Q604, 610	TR301001123	Transistor 2SA684, PNP
Q605, 606, 611, 612	TR301201142	Transistor 2SC789, NPN
CR601, 603	TR300919016	Diode SM-1-08
CR602, 604	TR300212006	Varistor KB-369
CR901, 902, 903, 904	TR300919017	Rectifier
C901	CE0250139	Capacitor Electrolytic 2000uf 63V
C601, 609	CE1252621	Capacitor Electrolytic 10uf 25V
C602, 610	CE22342-9	Capacitor Electrolytic 100uf 50V
C603, 604, 611, 612	CE22342-14	Capacitor Electrolytic 220uf 25V
C608, 616	CE1252742	Capacitor Electrolytic 2200uf 35V
C607, 615	CY22335-18	Capacitor Mylar 0.1uf 100V
C605, 613	CK22350-5	Capacitor Ceramic 300pf 250V
C606, 614	CK22347-1	Capacitor Ceramic 100pf 250V
R601, 617	RF25DC333J	Resistor 1/4W 5% 33K
R602, 618	RC20BF220J	Resistor 1/2W 5% 22
R603, 619	RF25DC331J	Resistor 1/4W 5% 330
R604, 620	RF25DC562J	Resistor 1/4W 5% 5.6K
R605, 621	RF25DC681J	Resistor 1/4W 5% 680
R606, 622	RC20BF332J	Resistor 1/4W 5% 3.3K
R607, 623	RC20BF472J	Resistor 1/2W 5% 4.7K
R608, 624	RF25DC470J	Resistor 1/4W 5% 47
R609, 625	RF25DC332J	Resistor 1/4W 5% 3.3K
R610, 612, 626, 628	RC20BF331J	Resistor 1/2W 5% 330
R611, 627	RC20BF220J	Resistor 1/2W 5% 22
R613, 614, 629, 630	RP554142973	Resistor 5W 0.47
R615, 631	RW553110053	Resistor 2W 10
R616, 632	RC20BF152J	Resistor 1/2W 5% 1.5K
VR602, 604	RV510502128	Potentiometer 5K (Idling Current)
VR601, 603	RV510502130	Potentiometer 100K (Balance Adj.)
L601	LC220401121	Coil, Choke

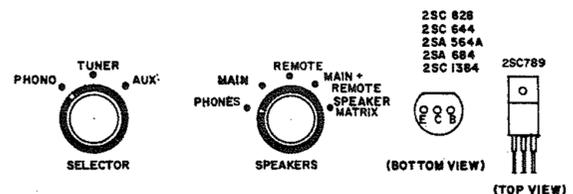
# TONE CONTROL AMPLIFIER PARTS LIST

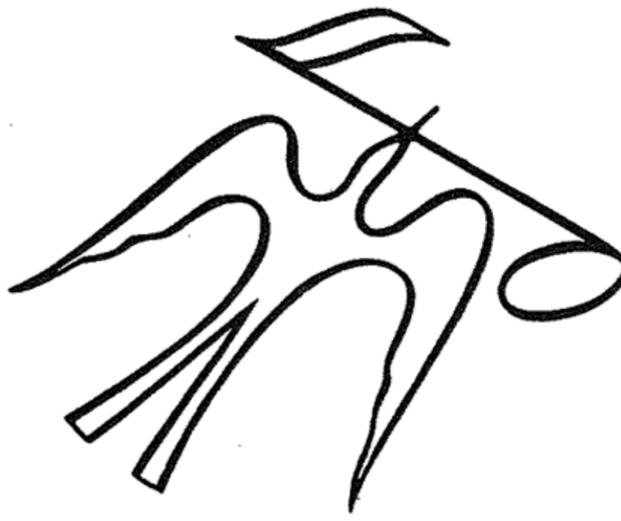
PB141610257

Ref. No.	Part Number	Description
Q401, 402 403, 404, Q501, 503, 504, 506	TR301201114	Transistor 2SC644 (S), NPN
Q502, 505	TR301201115	Transistor 2SC828 (R), NPN
C401, 403, 505, 410, 413, 519	CK22344-23	Capacitor Ceramic 50pf 250V
C402, 504, 411, 518	CE22342-2	Capacitor Electrolytic 1uf 50V
C404, 506, 414, 520	CK22347-1	Capacitor Ceramic 100pf 250V
C405, 508, 513, 415, 522, 527	CE22342-12	Capacitor Electrolytic 100 uf 10V
C406, 529, 512, 514, 416, 530, 526, 528	CE1252621	Capacitor Electrolytic 10uf 25V
C407, 417	CY22335-7	Capacitor Mylar .0033uf 100V
C408, 418	CY22335-10	Capacitor Mylar .012uf 100V
C409, 502, 419, 516	CY22335-18	Capacitor Mylar .1uf 100V
C501, 515	CK22347-5	Capacitor Ceramic 200pf 50V
C503, 517	CY22335-4	Capacitor Mylar .0039uf 100V
C507, 521	CE1252323	Capacitor Electrolytic 33uf 10V
C509, 523	CY22335-21	Capacitor Mylar .0022uf 100V
C510, 511, 524, 525	CY22335-22	Capacitor Mylar .047uf 100V
C902, 903	CE1252741	Capacitor Electrolytic 1000uf 35V
R401, 415	RF25DC335J	Resistor 1/4W 5% 3.3M
R404, 520, 418, 540	RF25DC102J	Resistor 1/4W 5% 1K
R405, 408, 504, 419, 422, 524	RF25DC105J	Resistor 1/4W 5% 1M
R402, 416	RF25DC334J	Resistor 1/4W 5% 330K
R403, 502, 417, 522	RF25DC473J	Resistor 1/4W 5% 47K
R406, 412, 420, 425	RF25DC223J	Resistor 1/4W 5% 22K
R407, 421	RF25DC391J	Resistor 1/4W 5% 390
R411, 508, 512, 424, 528, 532	RF25DC152J	Resistor 1/4W 5% 1.5K
R409, 518 538	RF25DC333J	Resistor 1/4W 5% 33K
R410, 509, 513, 515, 536, 516, 423, 529, 533, 535	RF25DC103J	Resistor 1/4W 5% 10K
R413, 426	RC07BF564J	Resistor 1/4W 5% 560K
R414, 427	RF25DC474J	Resistor 1/4W 5% 470K
R428, 429	RF25DC472J	Resistor 1/4W 5% 4.7K
R501, 521	RF25DC153J	Resistor 1/4W 5% 15K
R503, 523	RF25DC392J	Resistor 1/4W 5% 3.9K
R505, 525	RF25DC471J	Resistor 1/4W 5% 470
R506, 510, 526, 530	RF25DC154J	Resistor 1/4W 5% 150K
R507, 527	RF25DC683J	Resistor 1/4W 5% 68K
R511, 519, 531, 539	RF25DC562J	Resistor 1/4W 5% 5.6K
R514, 534	RF25DC822J	Resistor 1/4W 5% 8.2K
R517, 537	RF25DC224J	Resistor 1/4W 5% 220K
R902	RC20BF682J	Resistor 1/2W 5% 6.8K
R903	RC20BF472J	Resistor 1/2W 5% 4.7K
VR501	RV515121115	Balance Control 250K
VR502	RV525121113	Volume Control 100K
VR503, 504	RV525101121	Bass, Treble Controls 50K



NOTES:  
 1-LINE VOLTAGE AUTOTRANSFORMER OR VOLTAGE REGULATOR SET TO 120VAC FOR ALL VOLTAGE MEASUREMENTS.  
 2-ALL VOLTAGES ALL ARE PLUS-MINUS 20% UNLESS OTHERWISE NOTED.  
 3-XXXX DENOTES DC VOLTAGES MEASURED WITH DCVTVM TO CHASSIS.  
 4-SIGNAL TRACING WITH VOLUME MAXIMUM, ALL OTHER CONTROLS NORMAL, REFERENCE AT SPEAKER JACKS IS TVMS, NO LOAD CONNECTED-USE 1kHz AUDIO GENERATOR-XXXXmVAC DENOTES SIGNAL LEVELS MEASURED WITH ACVTVM TO CHASSIS.  
 5-ALL CAPACITOR VALUES ARE PICO FARAD UNLESS OTHERWISE NOTED.  
 6-ALL RESISTOR VALUES ARE OHMS, ± 5% 1/4 WATT UNLESS OTHERWISE NOTED.





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