

**The Harman Kardon
Model hk750**

Integrated Amplifier

Technical Manual

harman/kardon

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 ohmmeter 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 transistor failure.
6. Silicon grease must be applied between the transistor and the mica insulator, and between the mica insulator and the heat sink for better heat conduction.
7. Fuses must be replaced with size and type indicated. Use of other types can expose components to destructive current levels.

ALIGNMENT PROCEDURES

DC VOLTAGE BALANCE ADJUSTMENT

Equipment Required: DC VTVM

- Notes:**
1. Set function selector switch to AUX position.
 2. Set volume control to minimum position.
 3. Press in speaker 1 push button to ON (button in) position.

Step	Connect Output Meter To	Adjust	Adjust For
1	DC VTVM to Lch terminal of speaker system 1	VR408	0V \pm 10mV
2	DC VTVM to Rch terminal of speaker system 1	VR407	0V \pm 10mV

ALIGNMENT PROCEDURES

IDLING CURRENT ADJUSTMENT

Equipment Required: DC VTVM

- Notes: 1. Set function selector switch to AUX position.
2. Set volume control to minimum position.

Step	Connect Output Meter To	Adjust	Adjust For
1	DC VTVM to TP1 (+) and TP2 (-)	VR460	33mV
2	DC VTVM to TP3 (+) and TP4 (-)	VR459	33mV

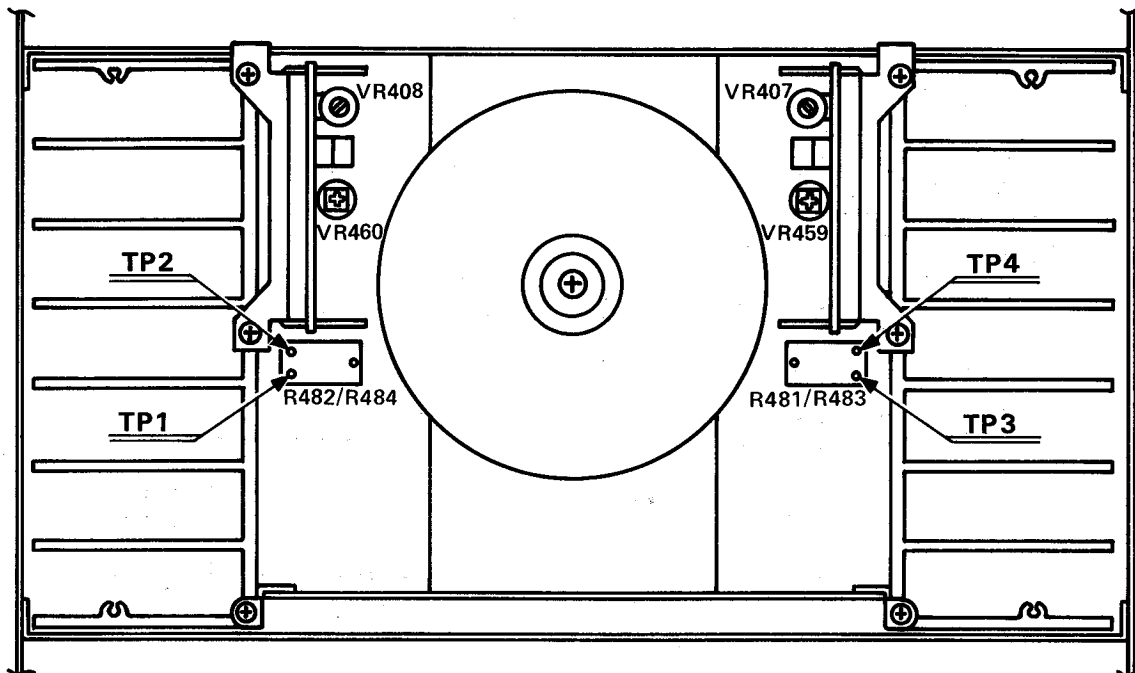



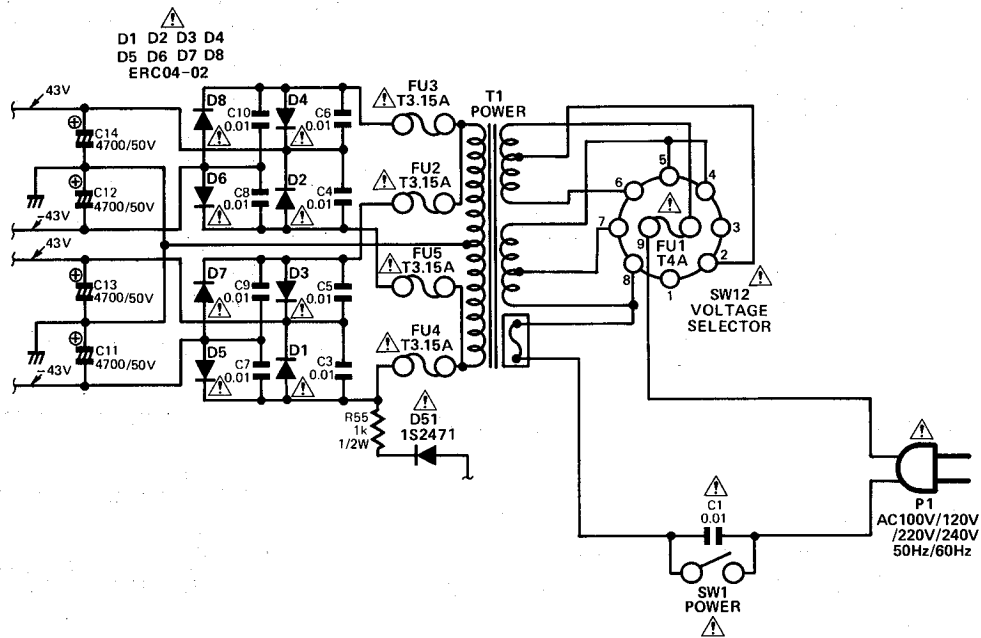
Fig. 1 – Alignment Points Location

SCHEMATIC DIAGRAM

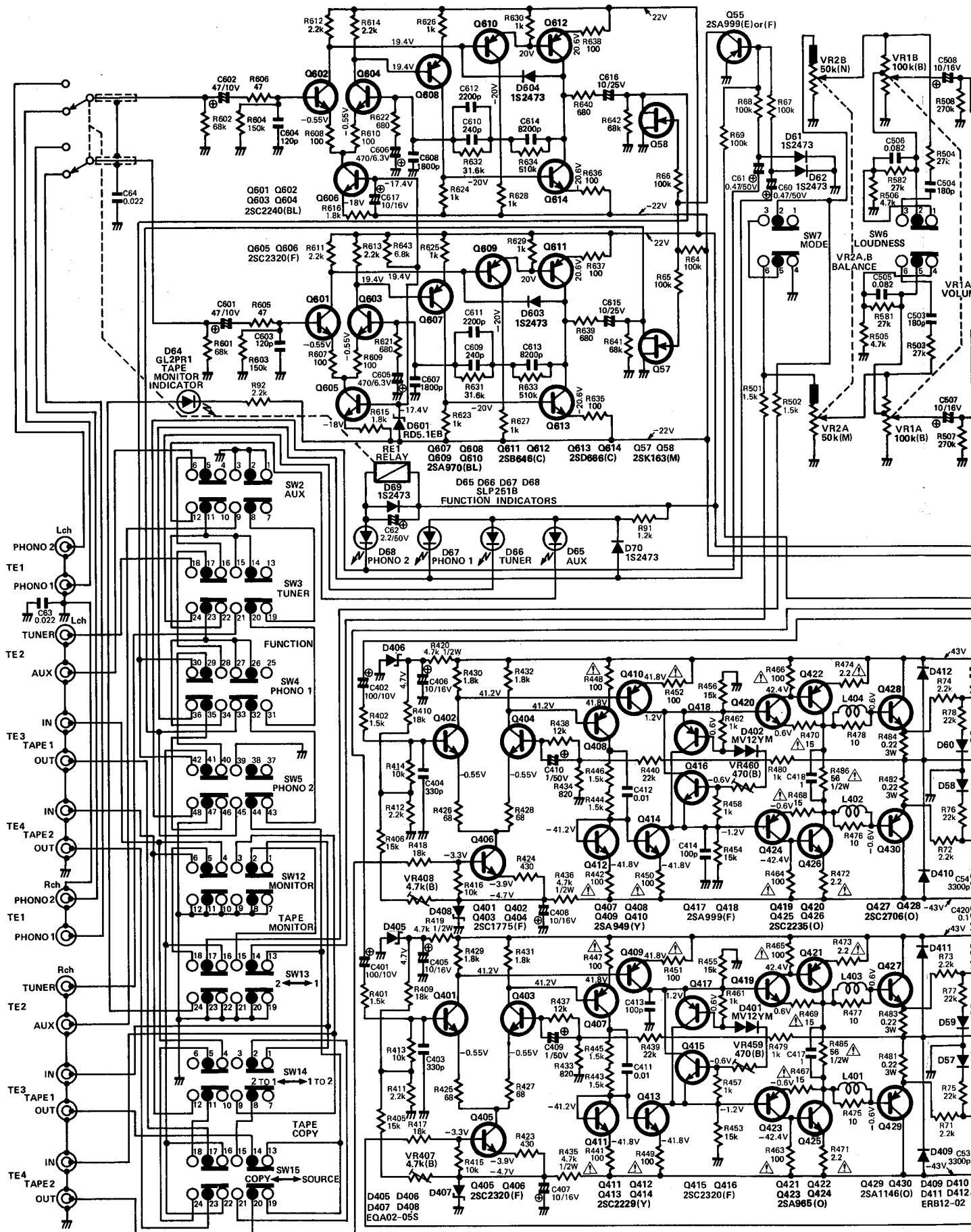
NOTES:

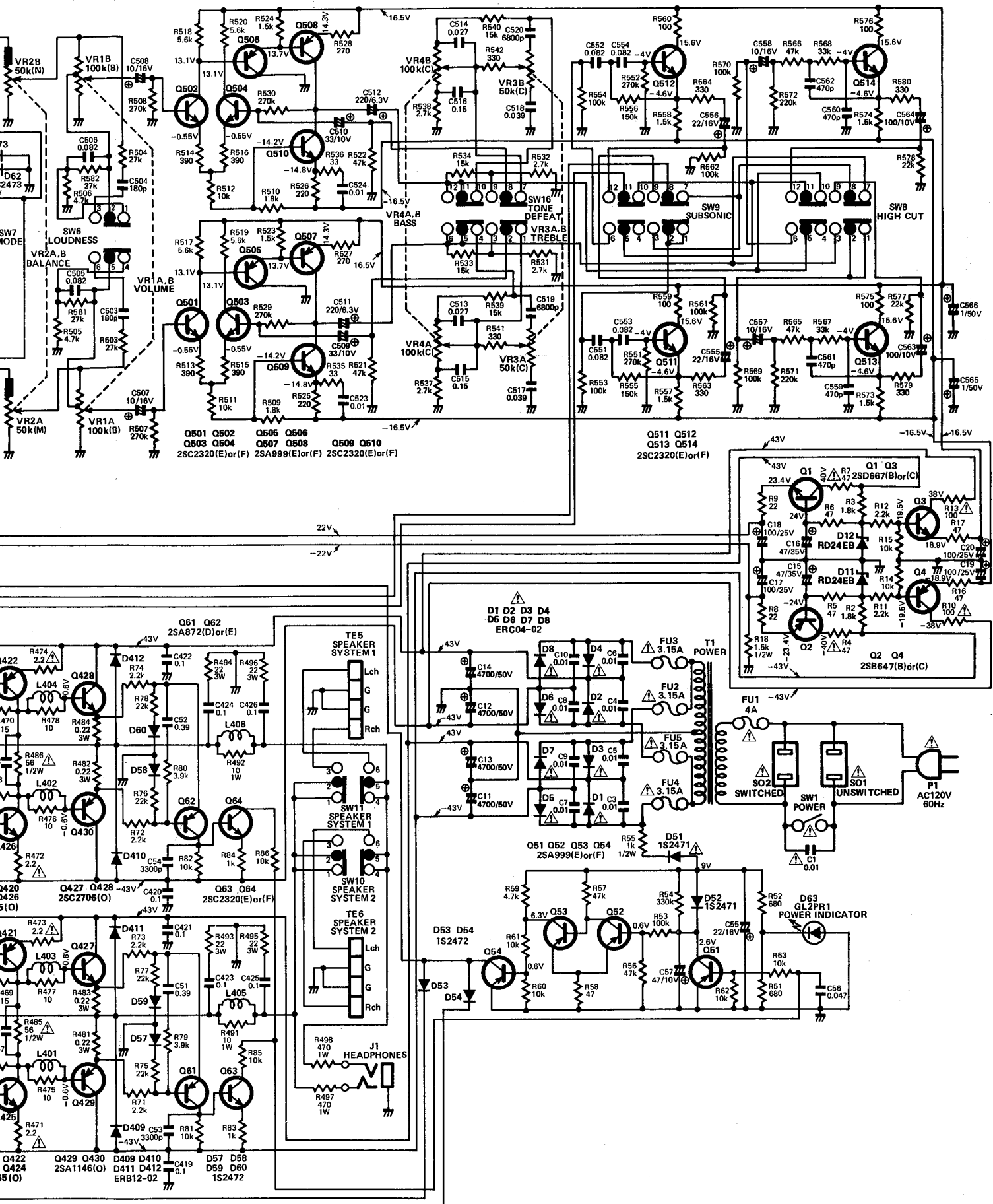
1. ALL RESISTANCES ARE 1/4 WATTS, UNLESS OTHERWISE NOTED, VALUES ARE IN Ω .
K = 1000 Ω , M = 1000K Ω
2. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTHERWISE NOTED. pF = $\mu\mu\text{F}$
3. ALL VOLTAGES READING FROM CHASSIS ARE MEASURED WITH V.T.V.M. UNDER NO SIGNAL CONDITIONS.
4.  SAFETY-REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

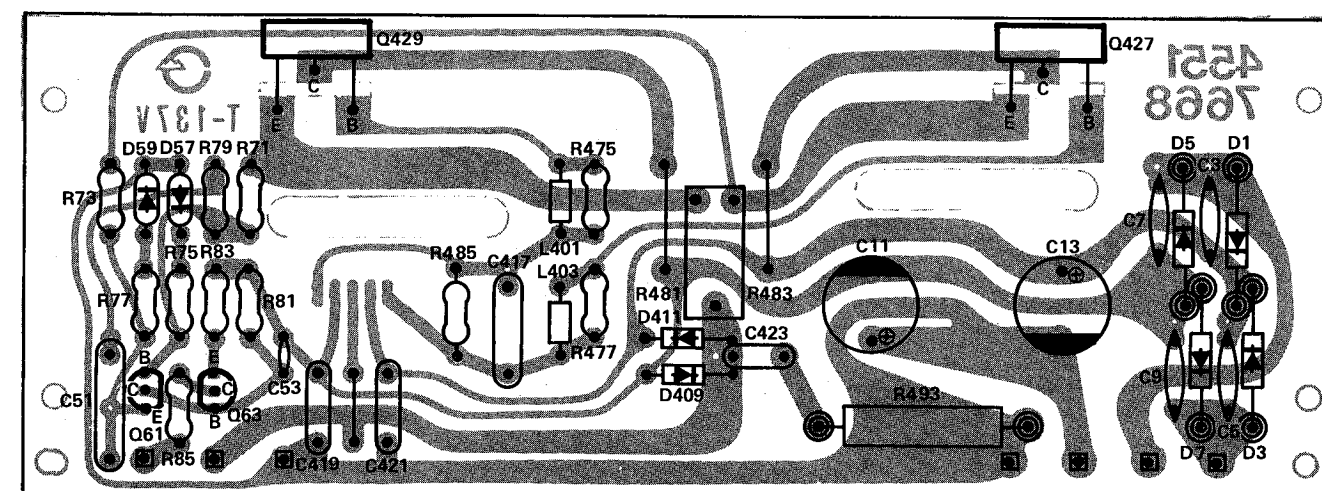
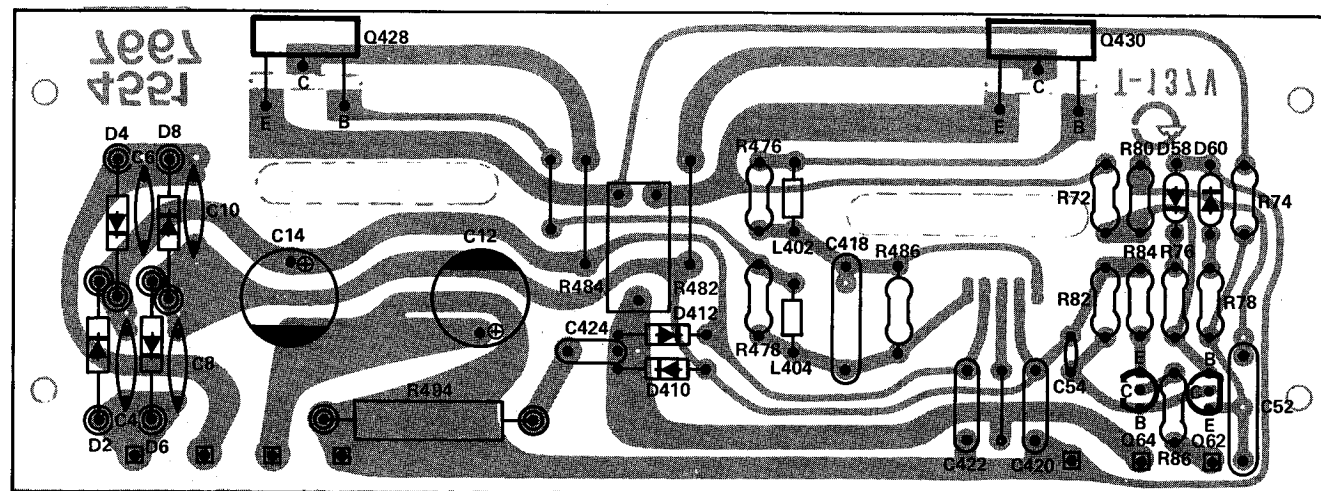
THE FOLLOWING SCHEMATIC DIAGRAM IS APPLIED TO MULTI VOLTAGE UNIT.



SCHEMATIC DIAGRAM

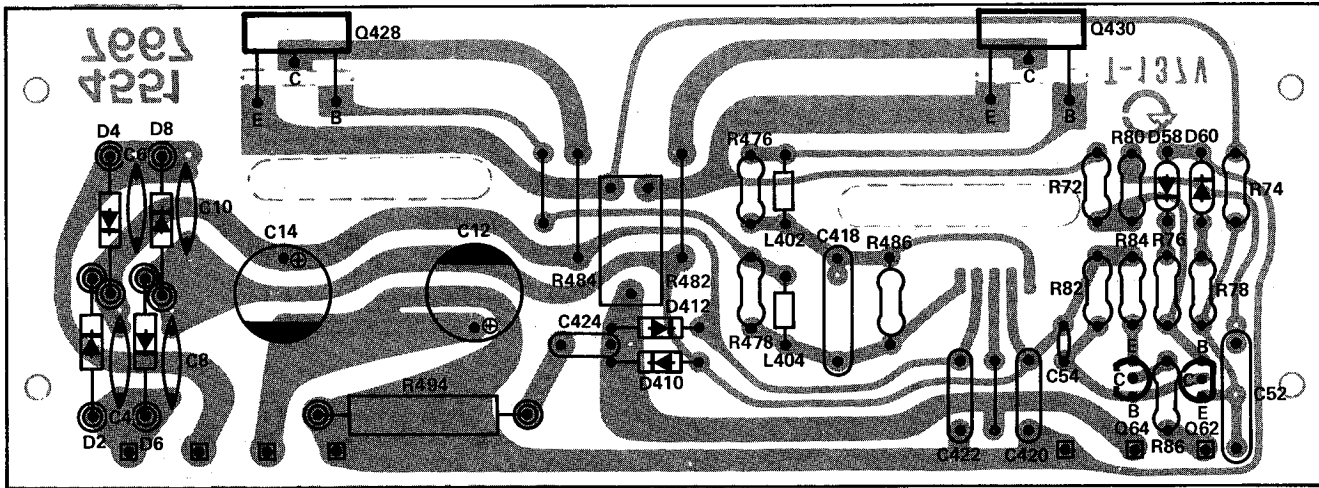






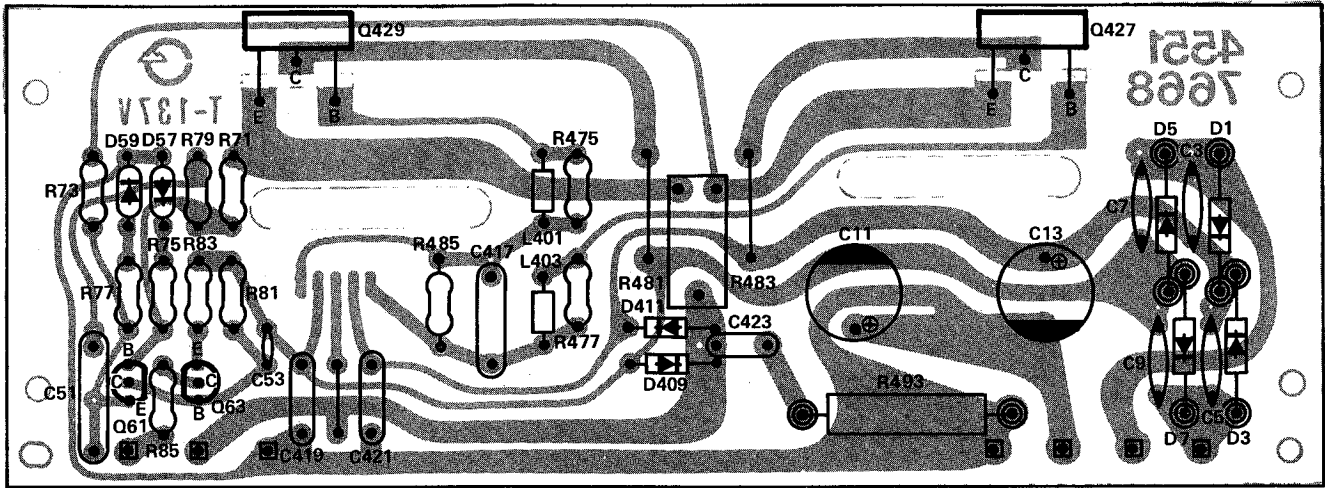
Ref. No.	Part No.	Description
RESISTOR, FUSE		
R486	5102-5605114	56Ω ±5% 1/2W
CAPACITORS, ELECTROLYTIC		
C12, 14	5341-478F0955	4700μF ±20% 50V
TRANSISTORS		
Q62	5611-872(D)	2SA872(D)or(E) } Overload Detector
Q64	5613-2320(E)	
Q428	5613-2706(O)	2SC2706(O) } Power Amp.
Q430	5611-1146(O)	
DIODES		
D2, 4, 6, 8	5632-ERC04-02	ERC04-02
D58, 60	5636-1S2472	1S2472
D410, 412	5632-ERB12-02	ERB12-02
MISCELLANEOUS		
L402, 404	5597-35502	Ferrite Bead

Ref. No.	Part No.	Description
RESISTOR, FUSE		
R485	5102-5605114	56Ω ±5% 1/2W
CAPACITORS, ELECTROLYTIC		
C11, 13	5341-478F0955	4700μF ±20% 50V
TRANSISTORS		
Q61	5611-872(D)	2SA872(D)or(E) } Overload Detector
Q63	5613-2320(E)	
Q427	5613-2706(O)	2SC2706(O) } Power Amp.
Q429	5611-1146(O)	
DIODES		
D1, 3, 5, 7	5632-ERC04-02	ERC04-02
D57, 59	5636-1S2472	1S2472
D409, 411	5632-ERB12-02	ERB12-02
MISCELLANEOUS		
L401, 403	5597-35502	Ferrite Bead



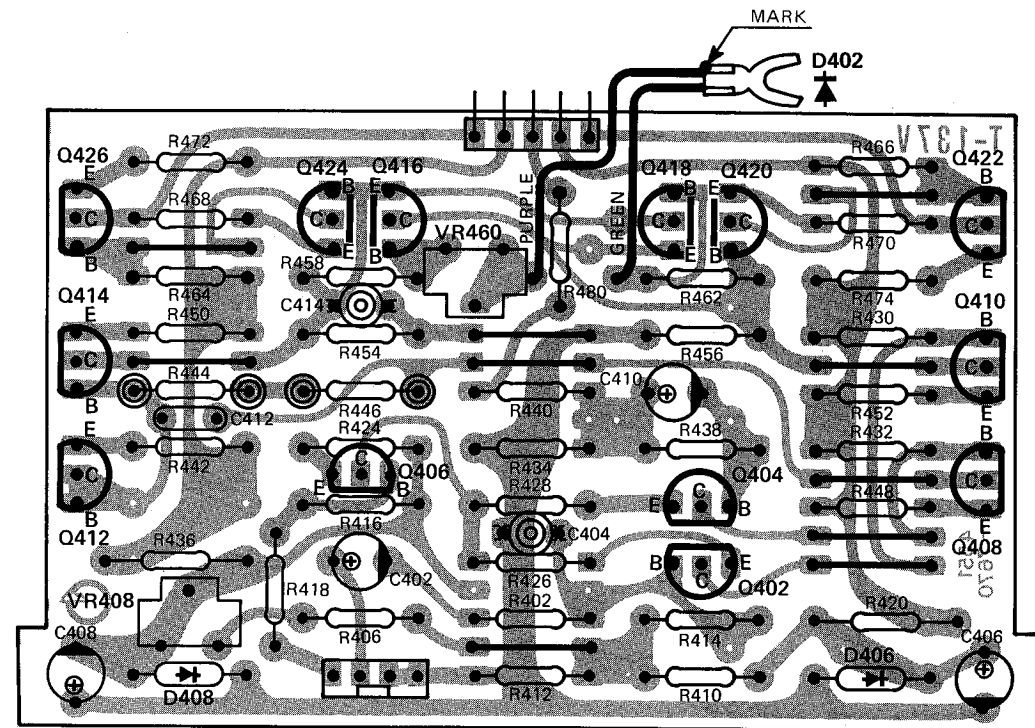
Ref. No.	Part No.	Description
RESISTOR, FUSE		
R486	5102-5605114	56Ω ±5% 1/2W
CAPACITORS, ELECTROLYTIC		
C12, 14	5341-478F0955	4700μF ±20% 50V
TRANSISTORS		
Q62	5611-872(D)	2SA872(D)or(E) } Overload Detector
Q64	5613-2320(E)	
Q428	5613-2706(O)	2SC2706(O) } Power Amp.
Q430	5611-1146(O)	
DIODES		
D2, 4, 6, 8	5632-ERC04-02	ERC04-02
D58, 60	5636-1S2472	1S2427
D410, 412	5632-ERB12-02	ERB12-02
MISCELLANEOUS		
L402, 404	5597-35502	Ferrite Bead

R CH. POWER SUPPLY P.C. BOARD



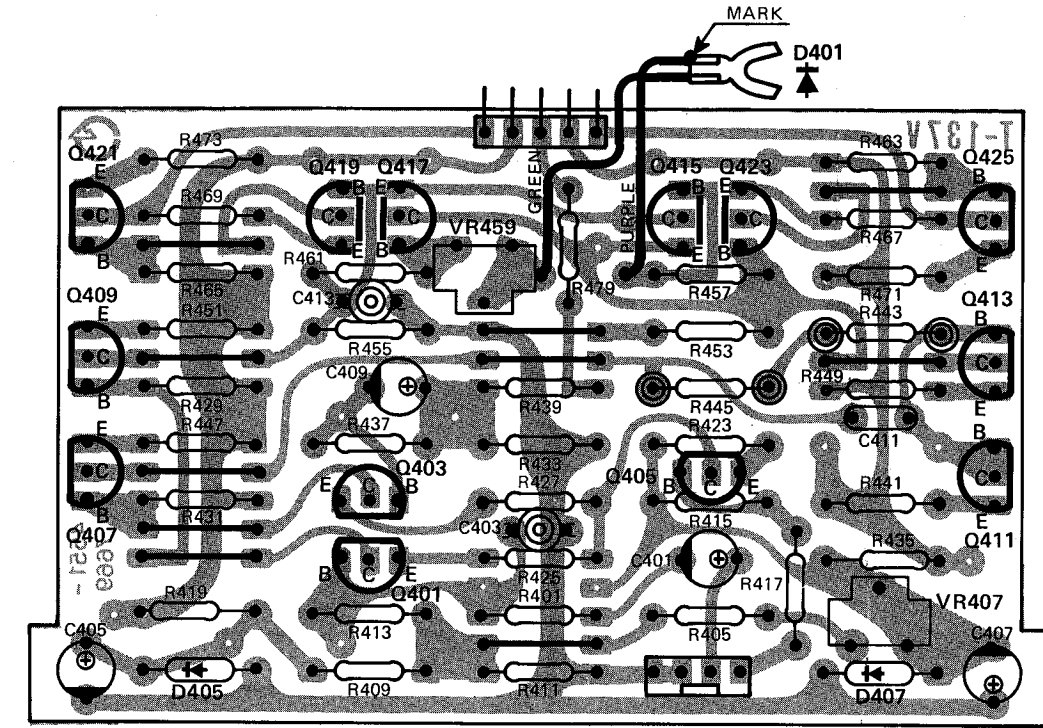
Ref. No.	Part No.	Description
RESISTOR, FUSE		
R485	5102-5605114	56Ω ±5% 1/2W
CAPACITORS, ELECTROLYTIC		
C11, 13	5341-478F0955	4700μF ±20% 50V
TRANSISTORS		
Q61	5611-872(D)	2SA872(D)or(E) } Overload Detector
Q63	5613-2320(E)	
Q427	5613-2706(O)	2SC2706(O) } Power Amp.
Q429	5611-1146(O)	
DIODES		
D1, 3, 5, 7	5632-ERC04-02	ERC04-02
D57, 59	5636-1S2472	1S2472
D409, 411	5632-ERB12-02	ERB12-02
MISCELLANEOUS		
L401, 403	5597-35502	Ferrite Bead

L CH. POWER DRIVER P.C. BOARD



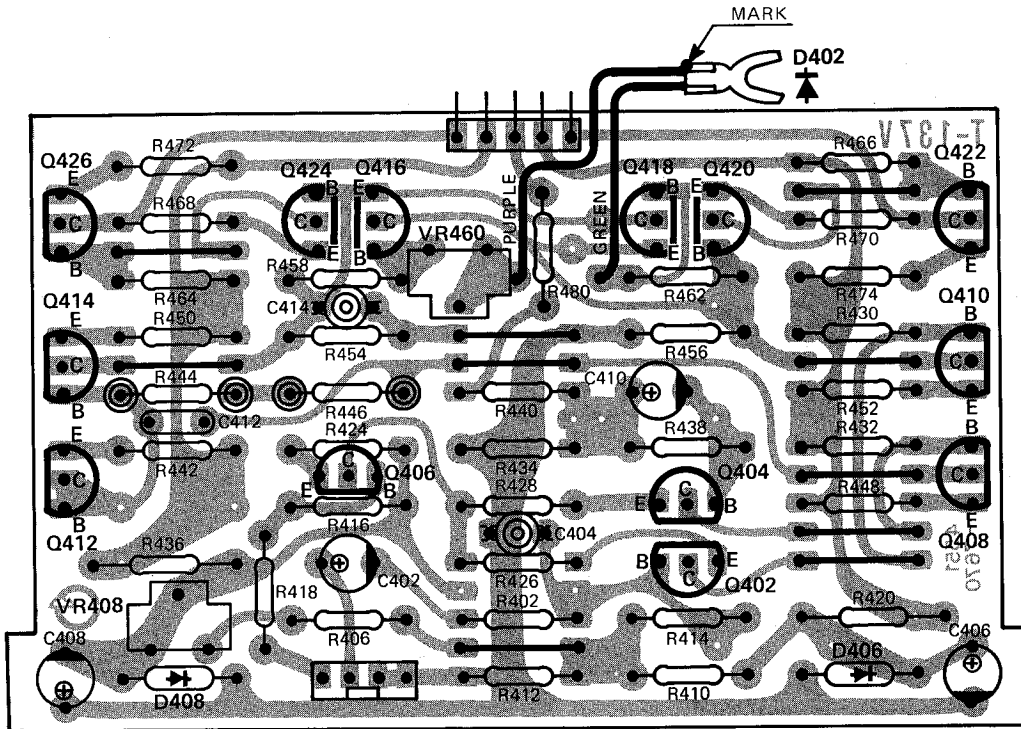
Ref. No.	Part No.	Description
RESISTORS		
R442, 448, 450, 452, 464, 466	5102-1014713	100Ω ±2% 1/4W Fuse
R468, 470	5102-1504713	15Ω ±2% 1/4W Fuse
R472, 474	5102-2R2579	2.2Ω ±5% 1/4W Fuse
VR408	5101-4728175	Variable Resistor, 4.7kΩ(B)
VR460	5101-4717675	Variable Resistor, 470Ω(B)
CAPACITORS, ELECTROLYTIC		
C402	5345-107B0951	100μF ±20% 10V
C406, 408	5345-106-16	10μF +50%—10% 16V
C410	5345-105-50	1μF +75%—10% 50V
TRANSISTORS		
Q402, 404	5613-1775(F)	2SC1775(F)
Q406, 416	5613-2320(F)	2SC2320(F)
Q408, 410	5611-949(Y)	2SA949(Y)
Q412, 414	5613-2229(Y)	2SC2229(Y)
Q418	5611-999(F)	2SA999(F)
Q420, 426	5613-2235(O)	2SC2235(O)
Q422, 424	5611-965(O)	2SA965(O)
		} Power Amp.
DIODES		
D402	5641-MV12YM	Varistor, MV12YM
D406, 408	5635-EQA0205S	Zener, EQA02-05S

R CH. POWER DRIVER P.C. BOARD



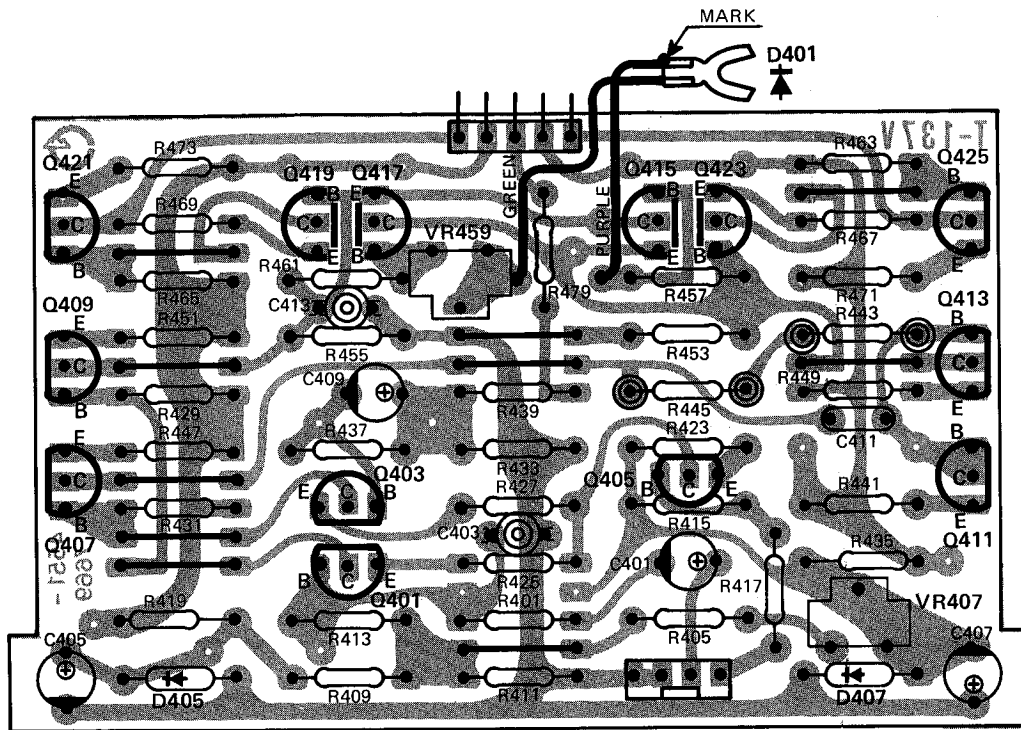
Ref. No.	Part No.	Description
RESISTORS		
R441, 447, 449, 451, 463, 465	5102-1014713	100Ω ±2% 1/4W Fuse
R467, 469	5102-1504713	15Ω ±2% 1/4W Fuse
R471, 473	5102-2R2579	2.2Ω ±5% 1/4W Fuse
VR407	5101-4728175	Variable Resistor, 4.7kΩ(B)
VR459	5101-4717675	Variable Resistor, 470Ω(B)
CAPACITORS, ELECTROLYTIC		
C401	5345-107B0951	100μF ±20% 10V
C405, 407	5345-106-16	10μF +50%—10% 16V
C409	5345-105-50	1μF +75%—10% 50V
TRANSISTORS		
Q401, 403	5613-1775(F)	2SC1775(F)
Q405, 415	5613-2320(F)	2SC2320(F)
Q407, 409	5611-949(Y)	2SA949(Y)
Q411, 413	5613-2229(Y)	2SC2229(Y)
Q417	5611-999(F)	2SA999(F)
Q419, 425	5613-2235(O)	2SC2235(O)
Q421, 423	5611-965(O)	2SA965(O)
		} Power Amp.
DIODES		
D401	5641-MV12YM	Varistor, MV12YM
D405, 407	5635-EQA0205S	Zener, EQA02-05S

L CH. POWER DRIVER P.C. BOARD



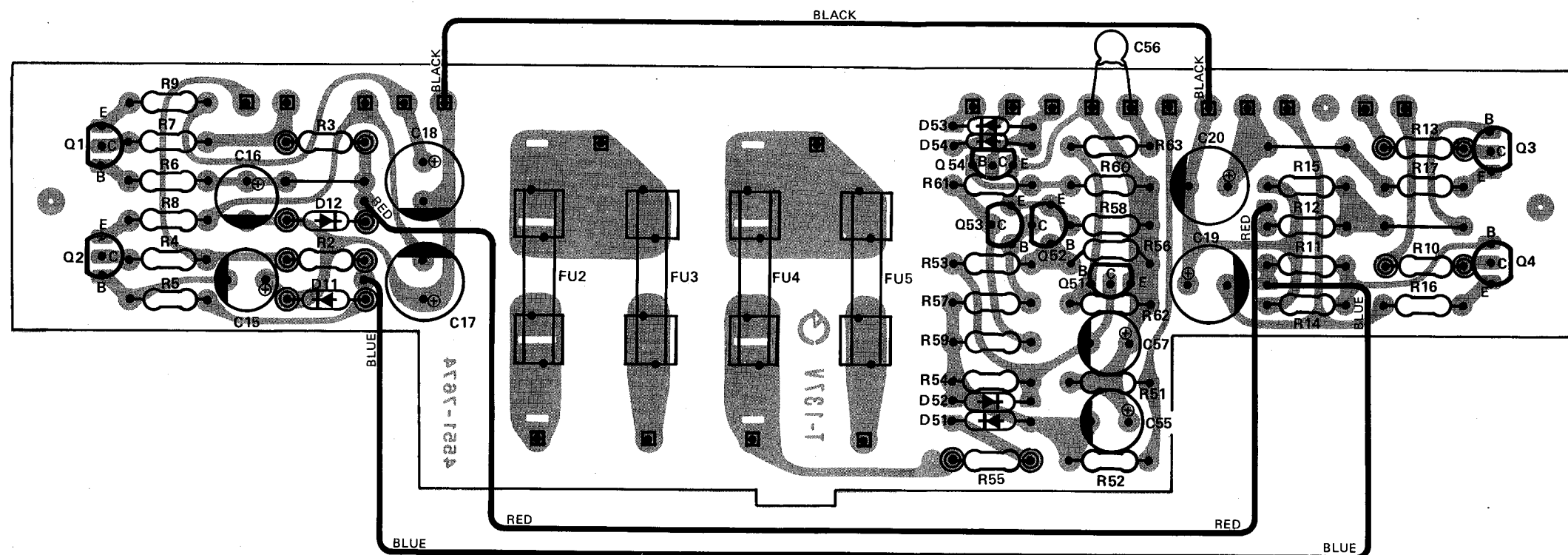
Ref. No.	Part No.	Description
RESISTORS		
R442, 448, 450, 452, 464, 466	5102-1014713	100Ω ±2% 1/4W Fuse
R468, 470	5102-1504713	15Ω ±2% 1/4W Fuse
R472, 474	5102-2R2579	2.2Ω ±5% 1/4W Fuse
VR408	5101-4728175	Variable Resistor, 4.7kΩ(B)
VR460	5101-4717675	Variable Resistor, 470Ω(B)
CAPACITORS, ELECTROLYTIC		
C402	5345-107B0951	100μF ±20% 10V
C406, 408	5345-106-16	10μF +50% -10% 16V
C410	5345-105-50	1μF +75% -10% 50V
TRANSISTORS		
Q402, 404	5613-1775(F)	2SC1775(F)
Q406, 416	5613-2320(F)	2SC2320(F)
Q408, 410	5611-949(Y)	2SA949(Y)
Q412, 414	5613-2229(Y)	2SC2229(Y)
Q418	5611-999(F)	2SA999(F)
Q420, 426	5613-2235(O)	2SC2235(O)
Q422, 424	5611-965(O)	2SA965(O)
		} Power Amp.
DIODES		
D402	5641-MV12YM	Varistor, MV12YM
D406, 408	5635-EQA0205S	Zener, EQA02-05S

R CH. POWER DRIVER P.C. BOARD

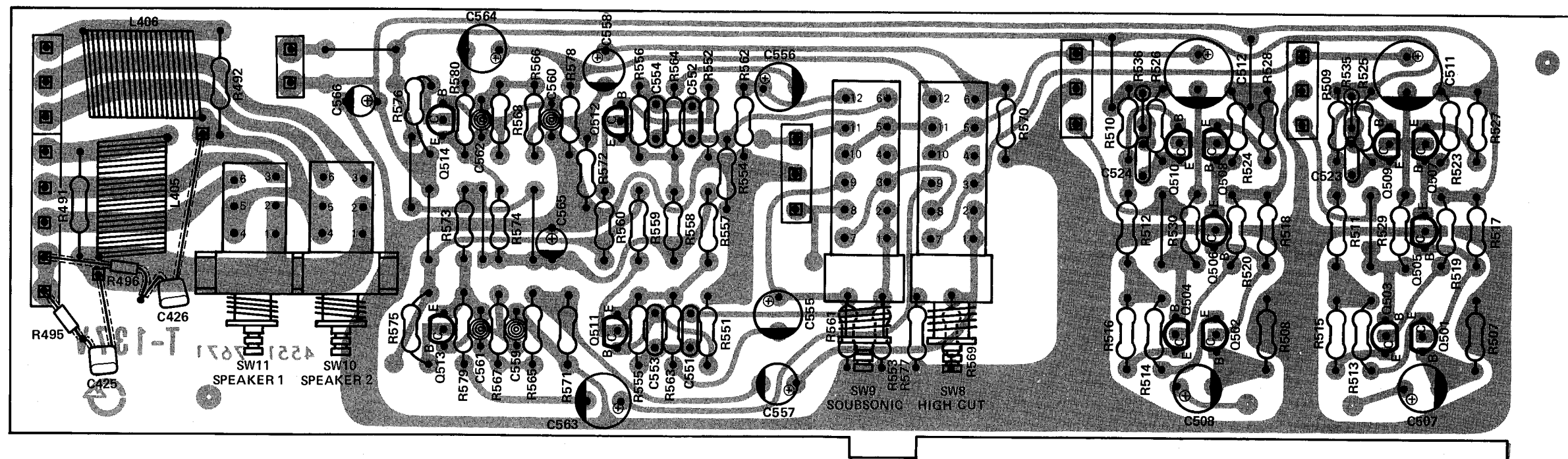


Ref. No.	Part No.	Description
RESISTORS		
R441, 447, 449, 451, 463, 465	5102-1014713	100Ω ±2% 1/4W Fuse
R467, 469	5102-1504713	15Ω ±2% 1/4W Fuse
R471, 473	5102-2R2579	2.2Ω ±5% 1/4W Fuse
VR407	5101-4728175	Variable Resistor, 4.7kΩ(B)
VR459	5101-4717675	Variable Resistor, 470Ω(B)
CAPACITORS, ELECTROLYTIC		
C401	5345-107B0951	100μF ±20% 10V
C405, 407	5345-106-16	10μF +50%—10% 16V
C409	5345-105-50	1μF +75%—10% 50V
TRANSISTORS		
Q401, 403	5613-1775(F)	2SC1775(F)
Q405, 415	5613-2320(F)	2SC2320(F)
Q407, 409	5611-949(Y)	2SA949(Y)
Q411, 413	5613-2229(Y)	2SC2229(Y)
Q417	5611-999(F)	2SA999(F)
Q419, 425	5613-2235(O)	2SC2235(O)
Q421, 423	5611-965(O)	2SA965(O)
		} Power Amp.
DIODES		
D401	5641-MV12YM	Varistor, MV12YM
D405, 407	5635-EQA0205S	Zener, EQA02-05S

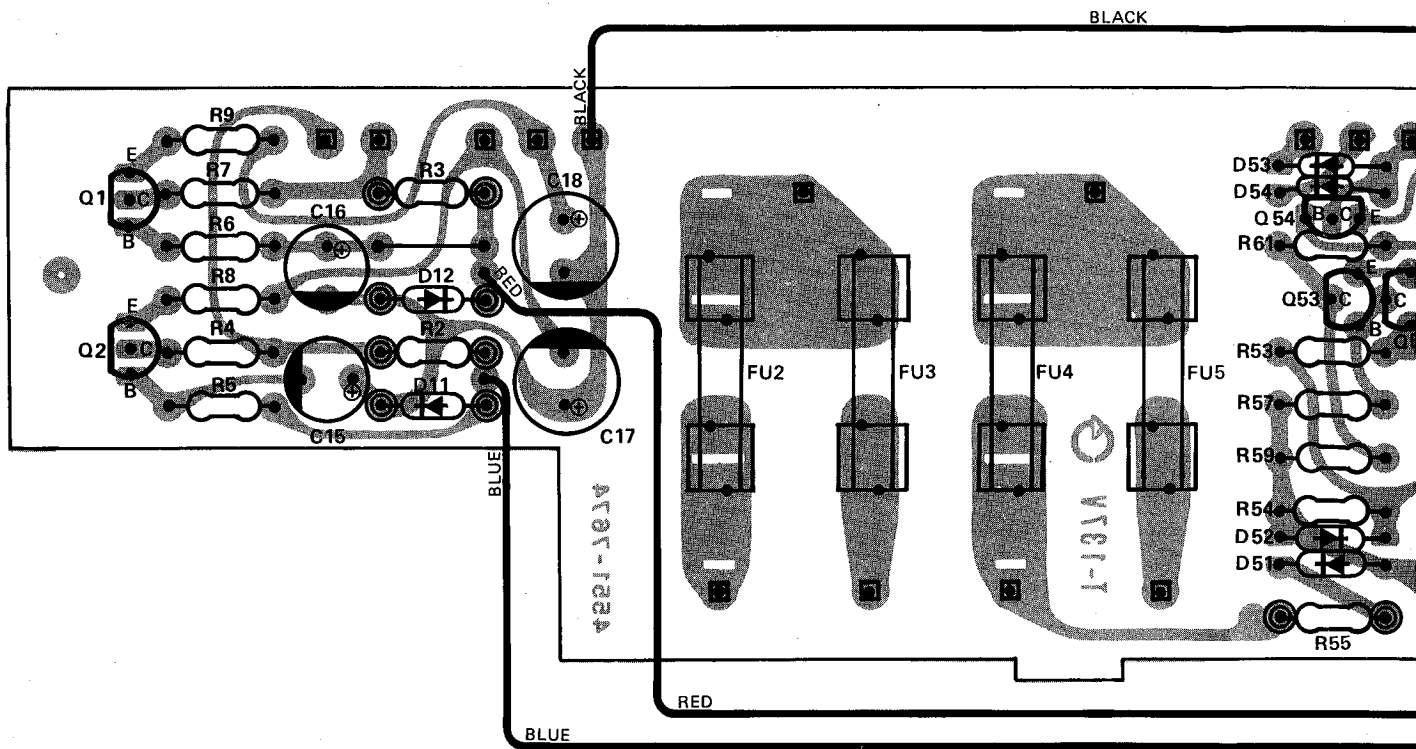
SUB POWER SUPPLY P.C. BOARD



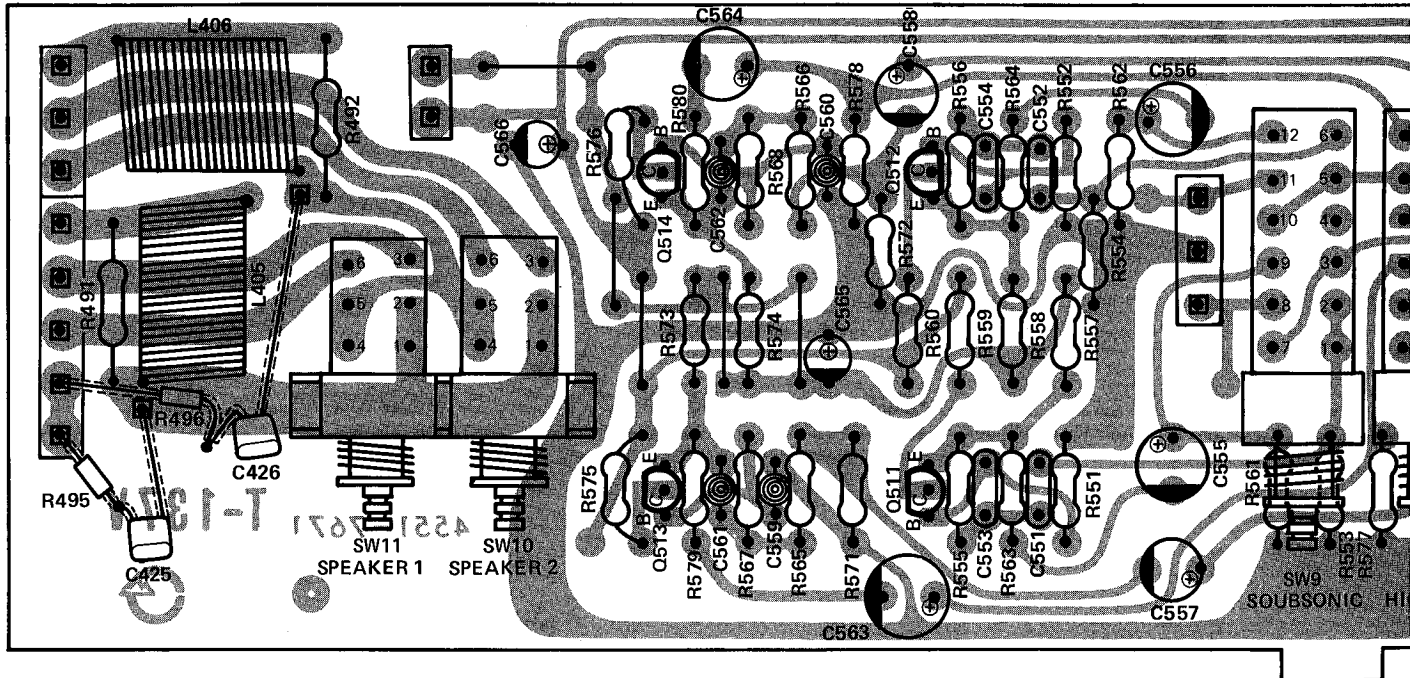
TONE & FILTER P.C. BOARD



SUB POWER SUPPLY P.C. BOARD



TONE & FILTER P.C. BOARD



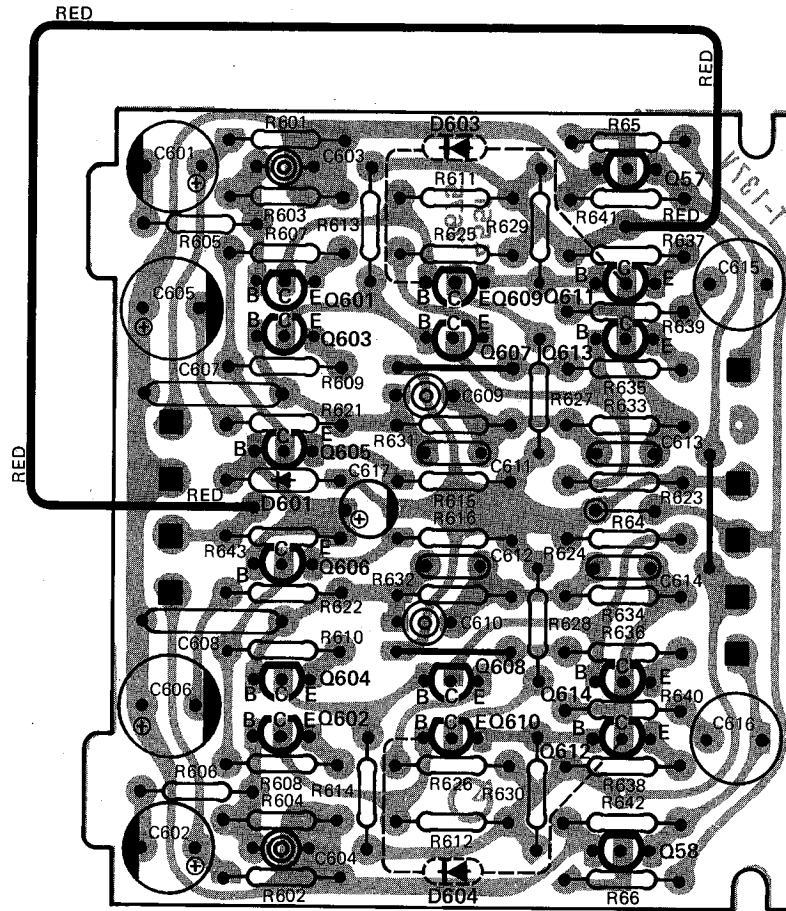
SUB POWER SUPPLY P.C. BOARD

Ref. No.	Part No.	Description
RESISTORS, FUSE		
R4, 7	5102-4704713	47Ω ±2% 1/4W
R10, 13	5102-1014713	100Ω ±2% 1/4W
CAPACITORS, ELECTROLYTIC		
C15, 16	5345-476-35	47μF +50%—10% 35V
C17, 18, 19, 20	5345-107-25	100μF +50%—10% 25V
C55	5345-226-16	22μF +50%—10% 16V
C57	5345-476-10	47μF +50%—10% 10V
TRANSISTORS		
Q1, 3	5614-667(B)	2SD667(B)or(C) Voltage Regulator
Q2, 4	5612-647(B)	2SB647(B)or(C) Voltage Regulator
Q51, 52, 53, 54	5611-999(E)	2SA999(E)or(F) Audio Muting/Overload Protection
DIODES		
D11, 12	5635-RD24EB	Zener, RD24EB
D51, 52	5636-1S2471	1S2471
D53, 54	5636-1S2472	1S2472
FUSE		
FU2, 3, 4, 5	5732-312031	3.15A 125V

TONE & FILTER P.C. BOARD

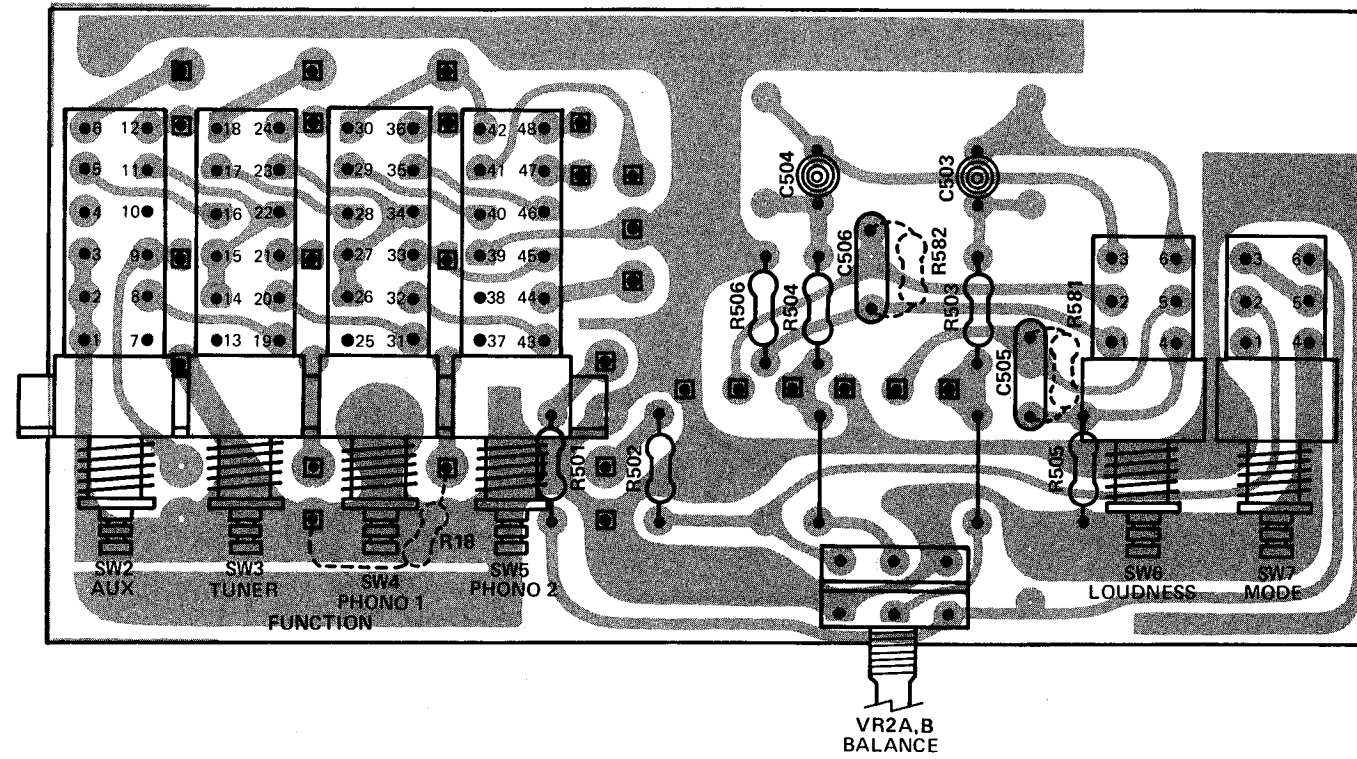
Ref. No.	Part No.	Description
CAPACITORS, ELECTROLYTIC		
C507, 508, 557, 558	5345-106C0951	10μF ±20% 16V
C511, 512	5345-227-06	220μF +50%—10% 6.3V
C555, 556	5345-226C0951	22μF ±20% 16V
C563, 564	5345-107-10	100μF +50%—10% 10V
C565, 566	5345-105-50	1μF +75%—10% 50V
TRANSISTORS		
Q501, 502, 503, 504, 509, 510	5613-2320(E)	2SC2320(E)or(F)
Q505, 506, 507, 508	5611-999(E)	2SA999(E)or(F)
Q511, 512, 513, 514	5613-2320(E)	2SC2320(E)or(F) Subsonic Filter, High-Cut Filter
COILS		
L405, 406	5991-7125	RF Choke
MISCELLANEOUS		
SW8, 9	4431-01047297	Push Switch, High Cut, Subsonic
SW10, 11	4431-02047455	2-Gang Push Switch, Speakers

PHONO EQUALIZER P.C. BOARD

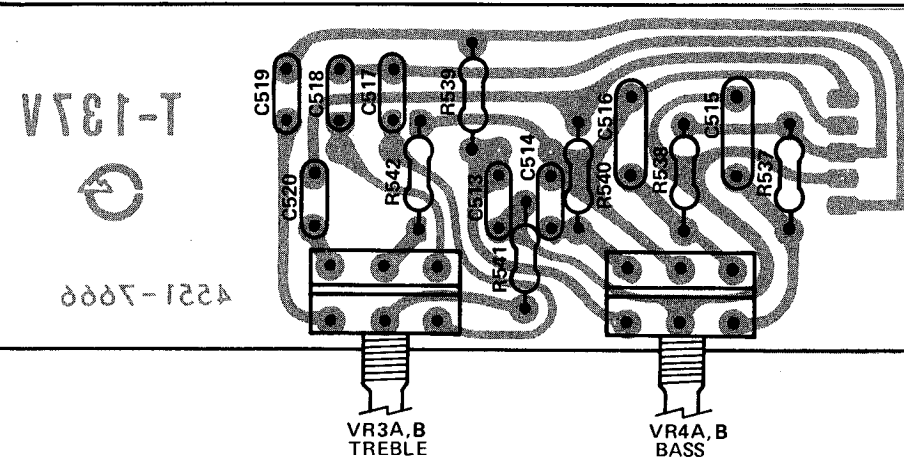


Ref. No.	Part No.	Description
CAPACITORS, ELECTROLYTIC		
C601, 602	5345-476B0951	47 μ F \pm 20% 10V
C605, 606	5345-477A0951	470 μ F \pm 20% 6.3V
C615, 616	5342-106D023	10 μ F \pm 20% 25V
C617	5345-106-16	10 μ F +50% -10% 16V
TRANSISTORS		
Q57, 58	5616-2SK163(M)	FET, 2SK163(M) Equalizer Muting
Q601, 602, 603, 604	5613-2240(BL)	2SC2240(BL)
Q605, 606	5613-2320(F)	2SC2320(F)
Q607, 608, 609, 610	5611-970(BL)	2SA970(BL)
Q611, 612	5612-646(C)	2SB646(C)
Q613, 614	5614-666(C)	2SD666(C)
} Equalizer Amp.		
DIODES		
D601	5635-RD5R1EB	Zener, RD5.1EB
D603, 604	5636-1S2473	1S2473

TONE CONTROL P.C. BOARD

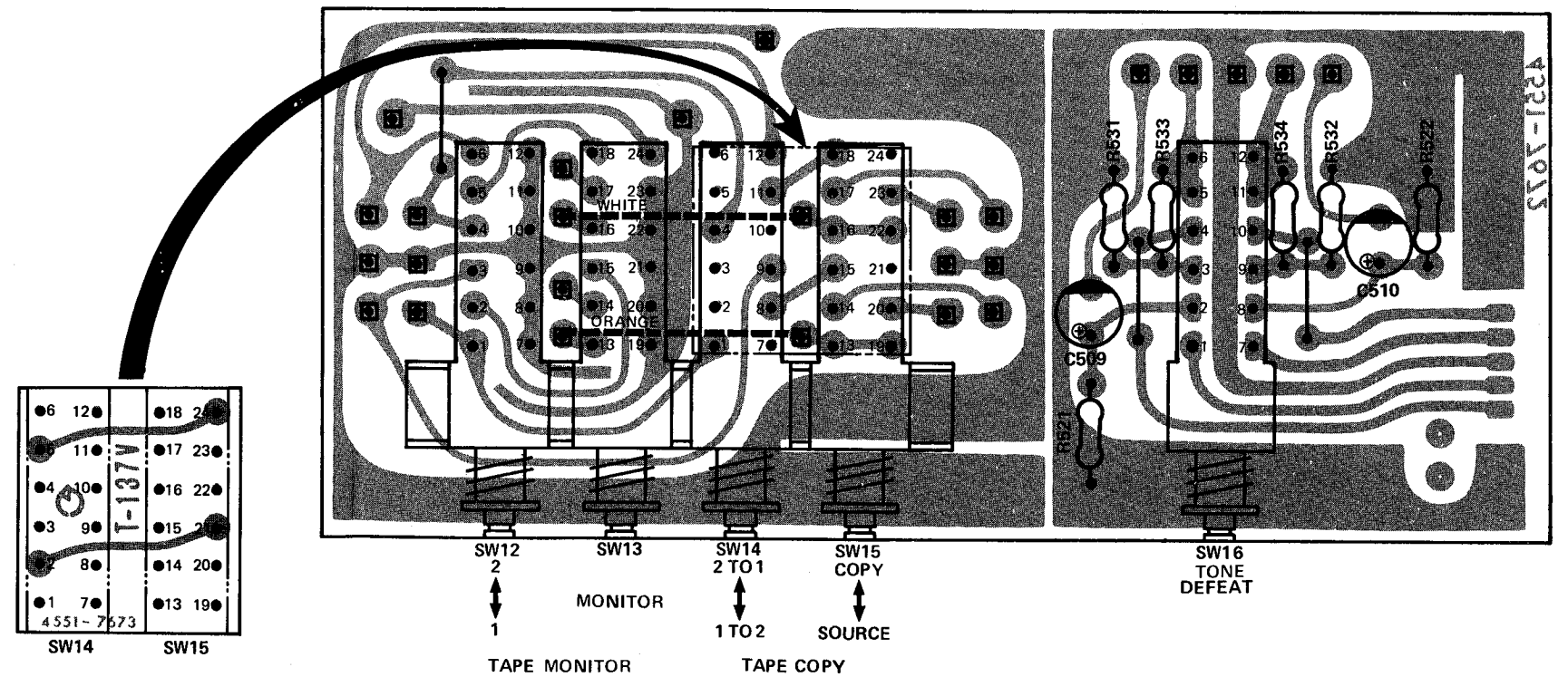


Ref. No.	Part No.	Description
VR2A, B	5113-50371122	Variable Resistor, 50kΩ(M)(N) Balance Control
VR3A, B	5113-50372122	Variable Resistor, 50kΩ(C) Treble Control
VR4A, B	5113-10473122	Variable Resistor, 100kΩ(C) Bass Control
SW2, 3, 4, 5	4431-04167160	4-Gang Push Switch, Function Selector
SW6, 7	4431-01027196	Push Switch, Loudness, Mode Selector

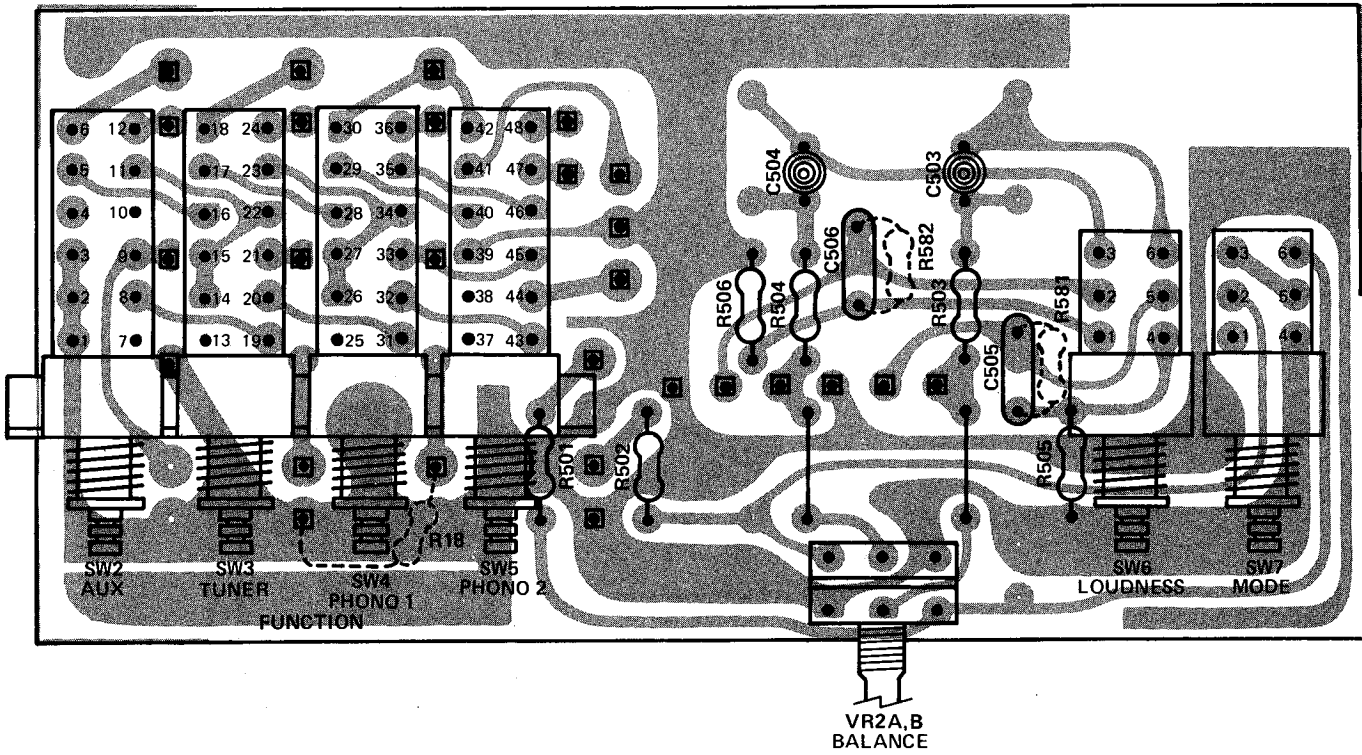


TAPE MONITOR & COPY P.C. BOARD

Ref. No.	Part No.	Description
C509, 510	5345-336B0951	Capacitor, 33μF ±20% 10V Electrolytic
SW12, 13, 14, 15	4431-04167260	4-Gang Push Switch, Tape Monitor, Tape Copy
SW16	4431-01047197	Push Switch, Tone Defeat

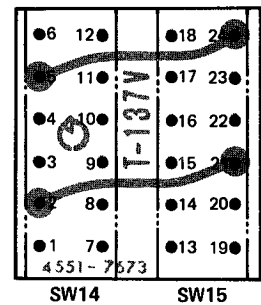


TONE CONTROL P.C. BOARD



TAPE MONITOR & COPY P.C. BOARD

Ref. No.	Part No.	Description
C509, 510	5345-336B0951	Capacitor, 33 μ F \pm 20% 10V Electrolytic
SW12, 13, 14, 15	4431-04167260	4-Gang Push Switch, Tape Monitor, Tape Copy
SW16	4431-01047197	Push Switch, Tone Defeat



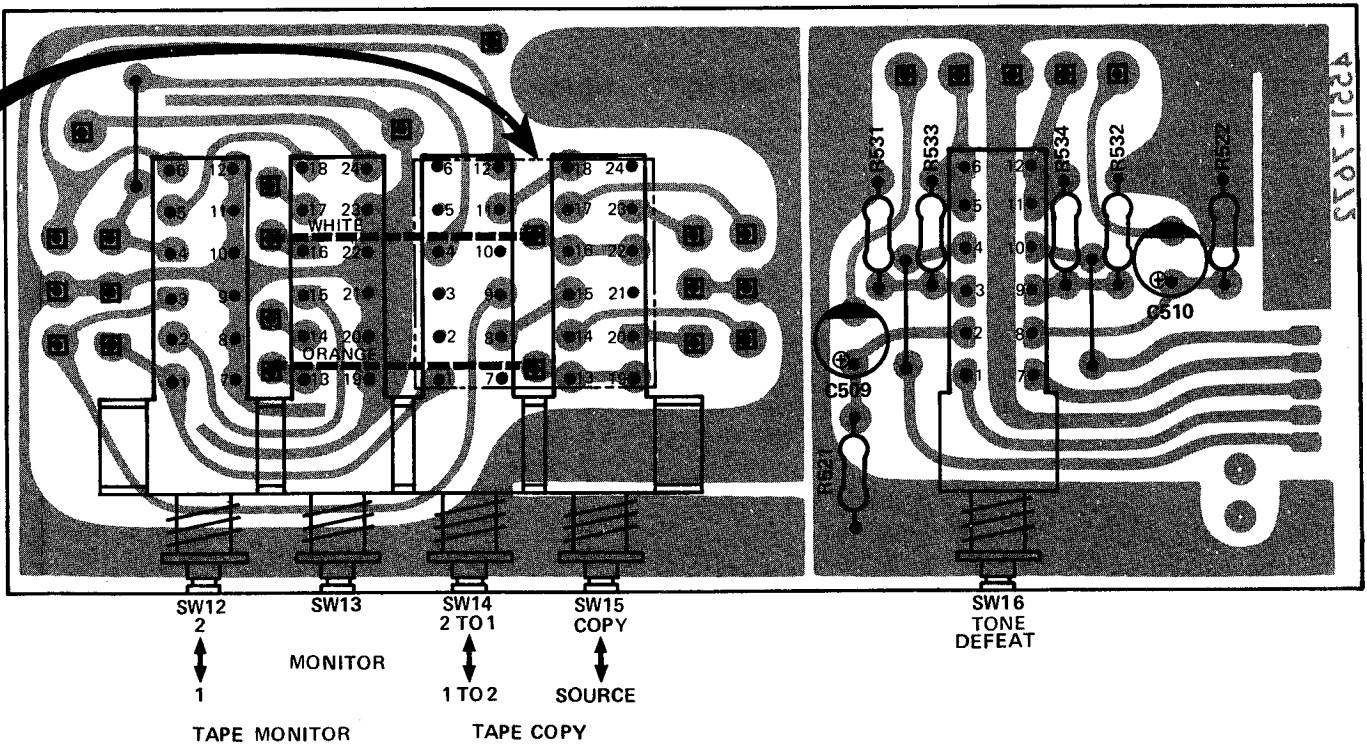
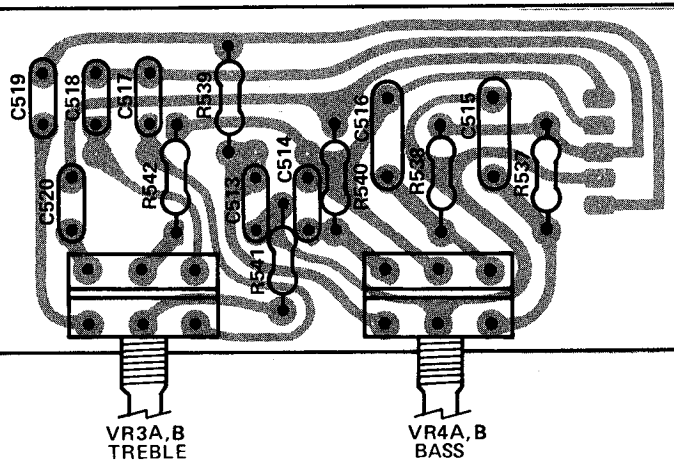
Ref. No.	Part No.	Description
VR2A, B	5113-50371122	Variable Resistor, 50kΩ(M)(N) Balance Control
VR3A, B	5113-50372122	Variable Resistor, 50kΩ(C) Treble Control
VR4A, B	5113-10473122	Variable Resistor, 100kΩ(C) Bass Control
SW2, 3, 4, 5	4431-04167160	4-Gang Push Switch, Function Selector
SW6, 7	4431-01027196	Push Switch, Loudness, Mode Selector



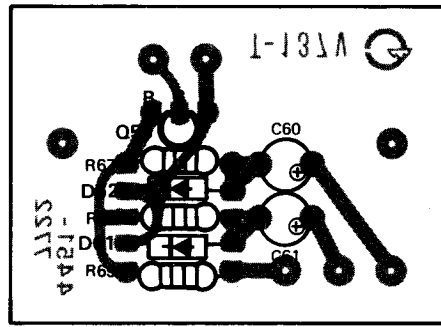
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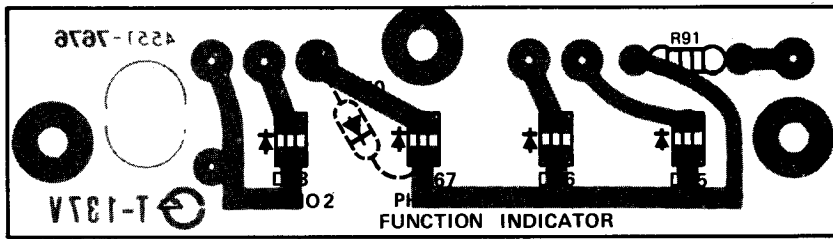


PHONO MUTE P.C. BOARD



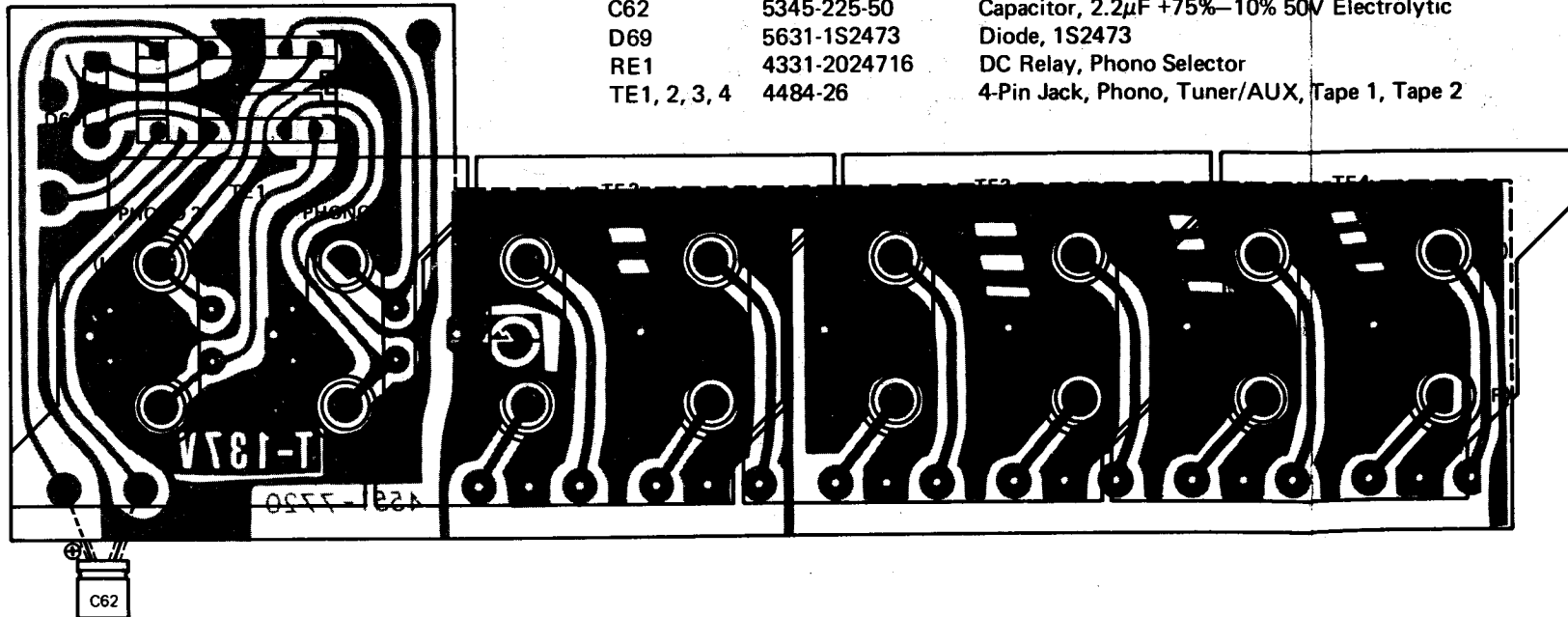
Ref. No.	Part No.	Description
C60, 61	5345-474-50	Capacitor, 0.47 μ F +75%–10% 50V Electrolytic
Q55	5611-999(E)	Transistor, 2SA999(E)or(F) Equalizer Muting
D61, 62	5631-1S2473	Diode, 1S2473

FUNCTION INDICATOR P.C. BOARD



Ref. No.	Part No.	Description
D65, 66, 67, 68	5637-SLP251B	Light Emitting Diode, SLP251B Green AUX, Tuner, Phone 1, Phono 2 Indicator
D70	5631-1S2473	Diode, 1S2473

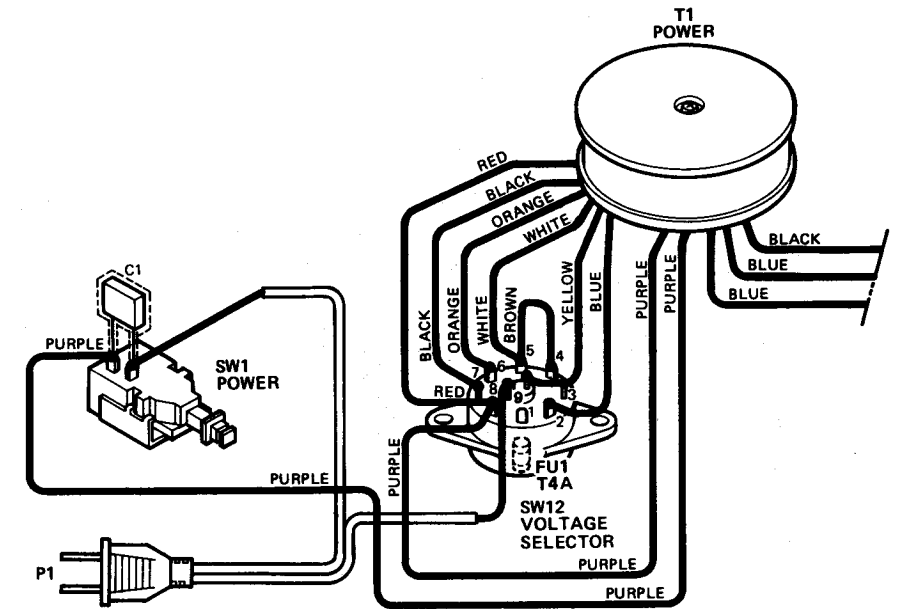
INPUT & OUTPUT JACKS P.C. BOARD



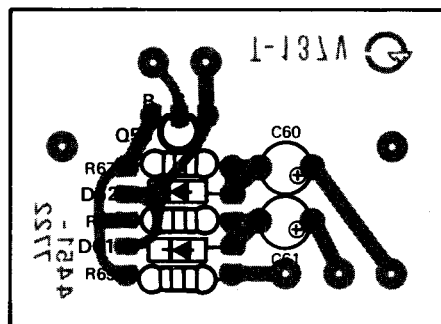
Ref. No.	Part No.	Description
C62	5345-225-50	Capacitor, 2.2 μ F +75%–10% 50V Electrolytic
D69	5631-1S2473	Diode, 1S2473
RE1	4331-2024716	DC Relay, Phono Selector
TE1, 2, 3, 4	4484-26	4-Pin Jack, Phono, Tuner/AUX, Tape 1, Tape 2

WIRING DIAGRAM

THE FOLLOWING WIRING DIAGRAM IS APPLIED TO MULTI VOLTAGE UNIT.

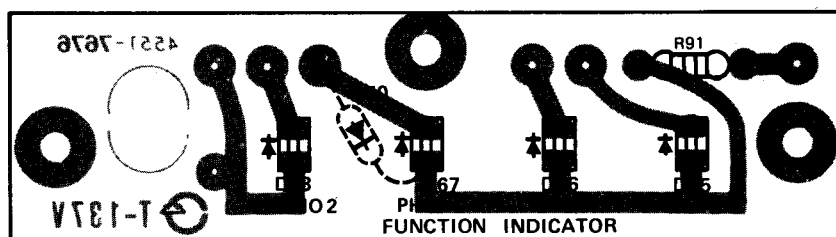


PHONO MUTE P.C. BOARD



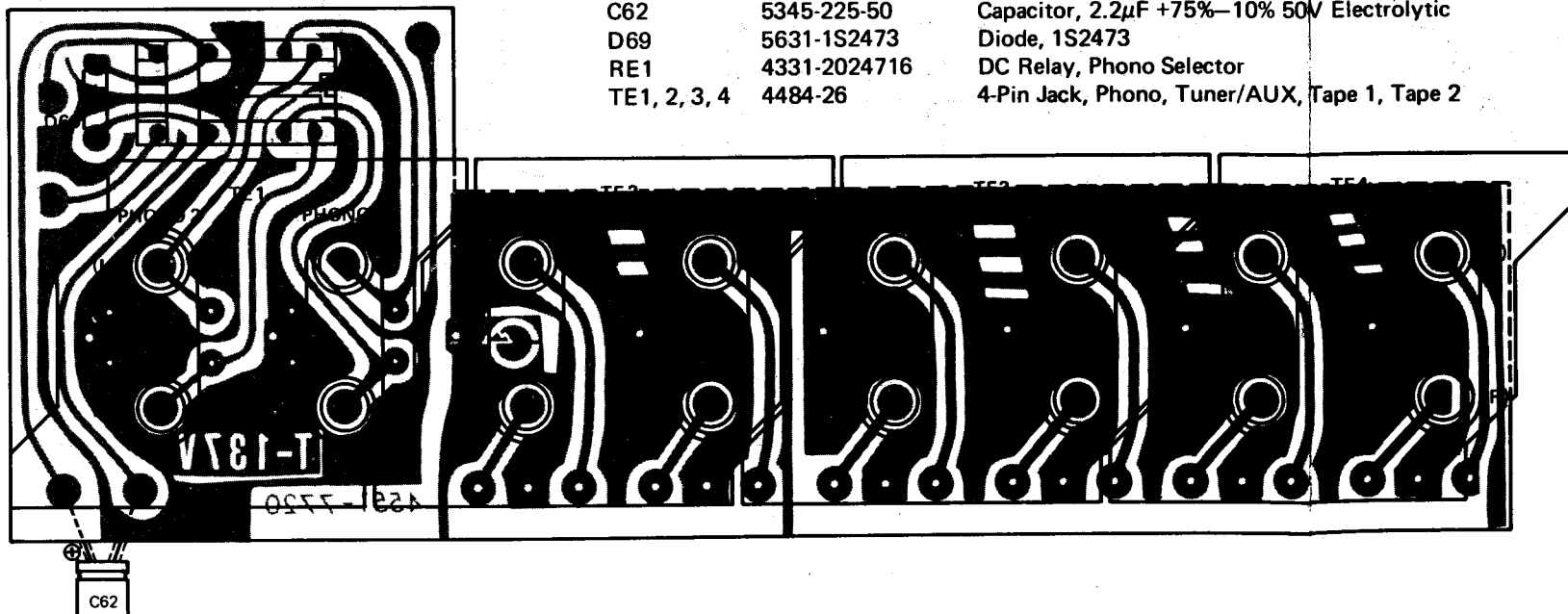
Ref. No.	Part No.	Description
C60, 61	5345-474-50	Capacitor, 0.47 μ F +75%–10% 50V Electrolytic
Q55	5611-999(E)	Transistor, 2SA999(E)or(F)
D61, 62	5631-1S2473	Equalizer Muting Diode, 1S2473

FUNCTION INDICATOR P.C. BOARD



Ref. No.	Part No.	Description
D65, 66, 67, 68	5637-SLP251B	Light Emitting Diode, SLP251B Green AUX, Tuner, Phone 1, Phono 2 Indicator
D70	5631-1S2473	Diode, 1S2473

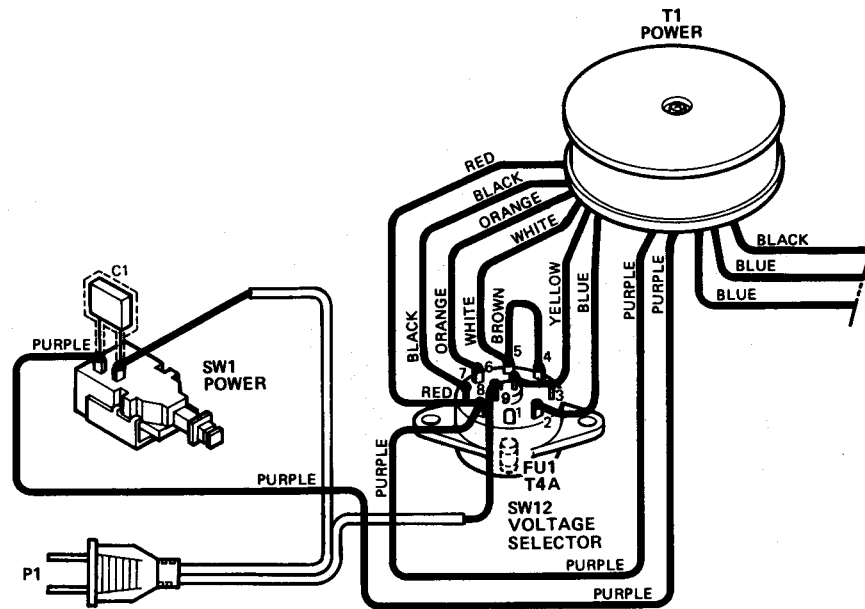
INPUT & OUTPUT JACKS P.C. BOARD



Ref. No.	Part No.	Description
C62	5345-225-50	Capacitor, 2.2 μ F +75%–10% 50V Electrolytic
D69	5631-1S2473	Diode, 1S2473
RE1	4331-2024716	DC Relay, Phono Selector
TE1, 2, 3, 4	4484-26	4-Pin Jack, Phono, Tuner/AUX, Tape 1, Tape 2

WIRING DIAGRAM

THE FOLLOWING WIRING DIAGRAM IS APPLIED TO MULTI VOLTAGE UNIT.



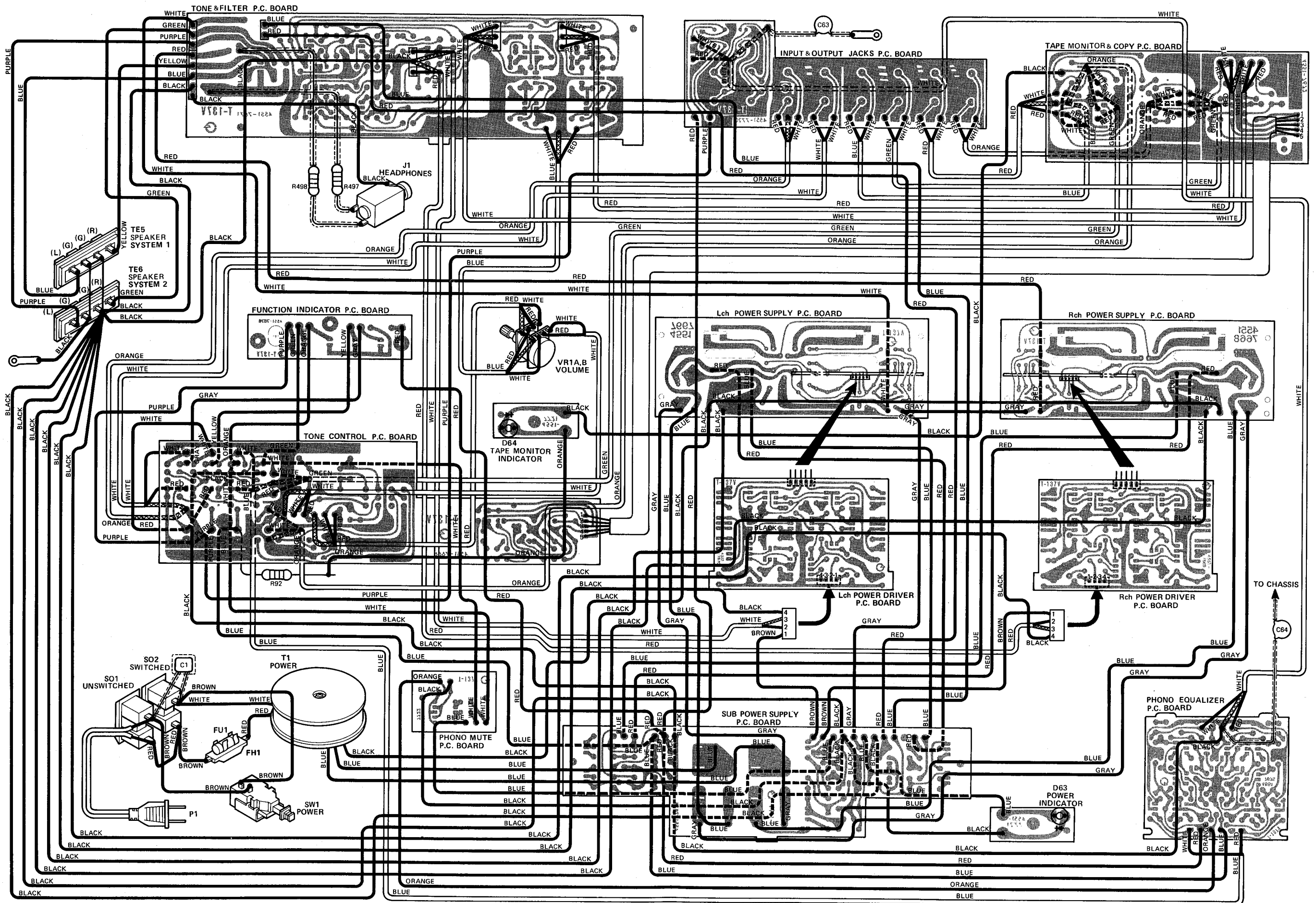
LP251B Green
1, Phono 2

ic

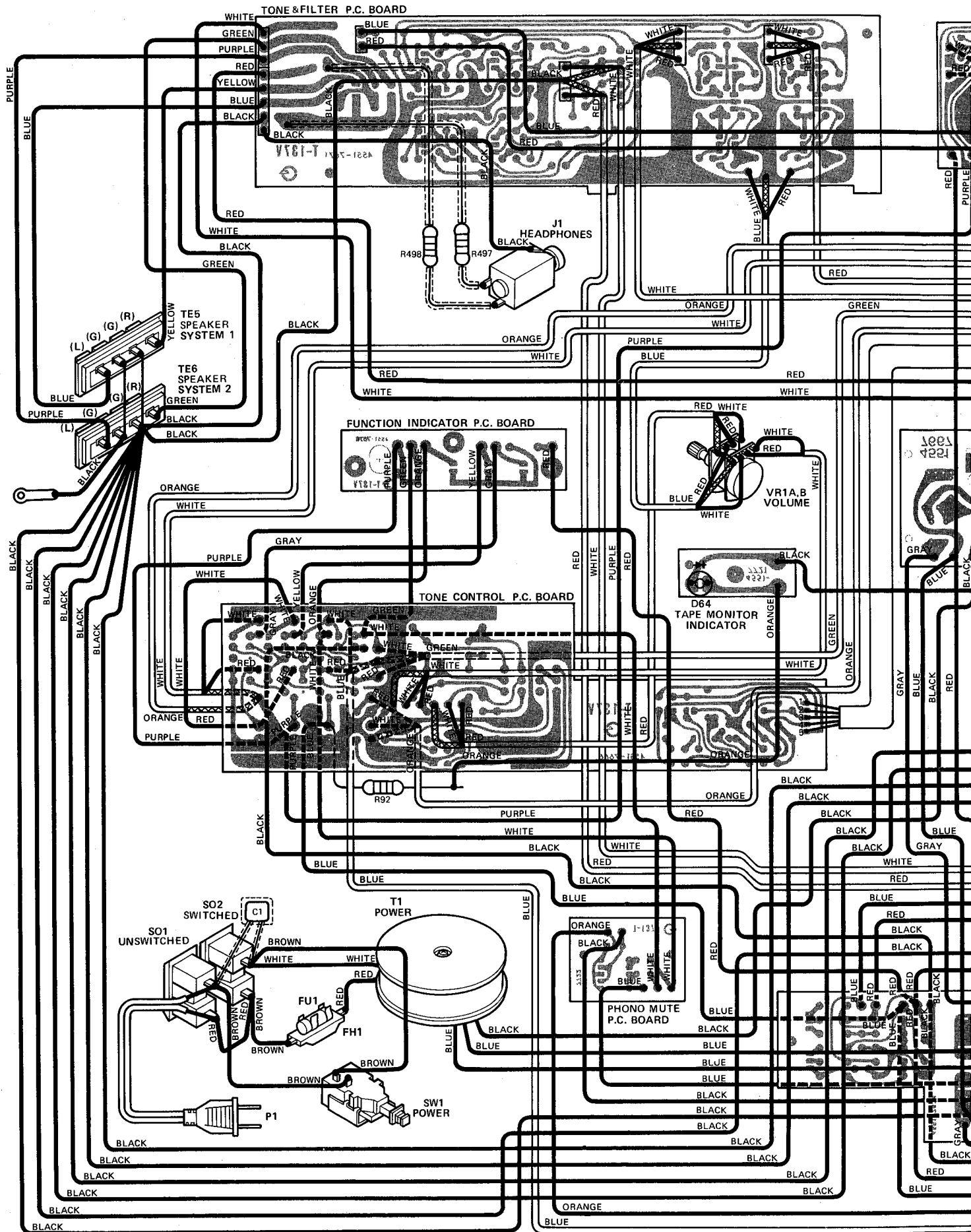
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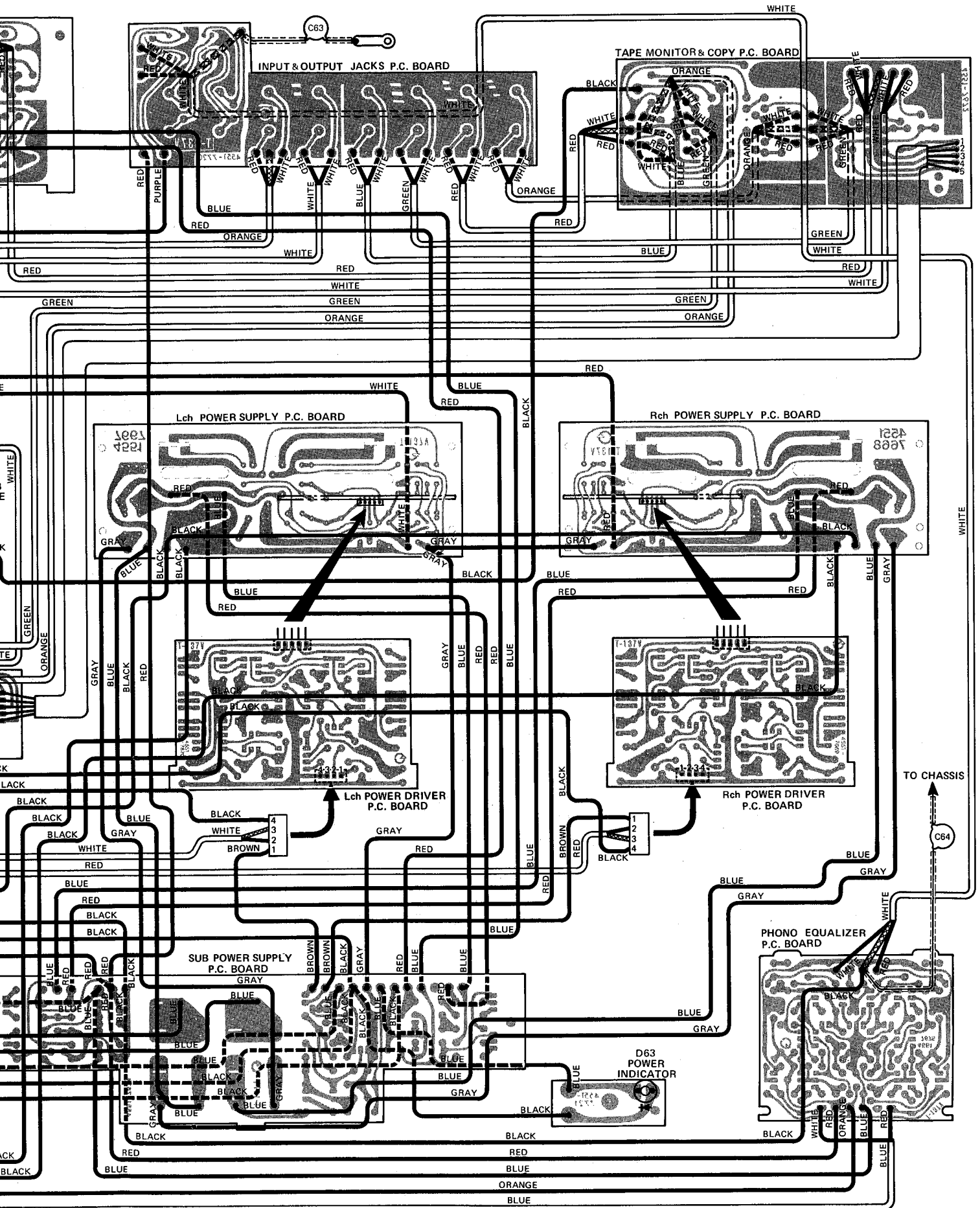


WIRING DIAGRAM

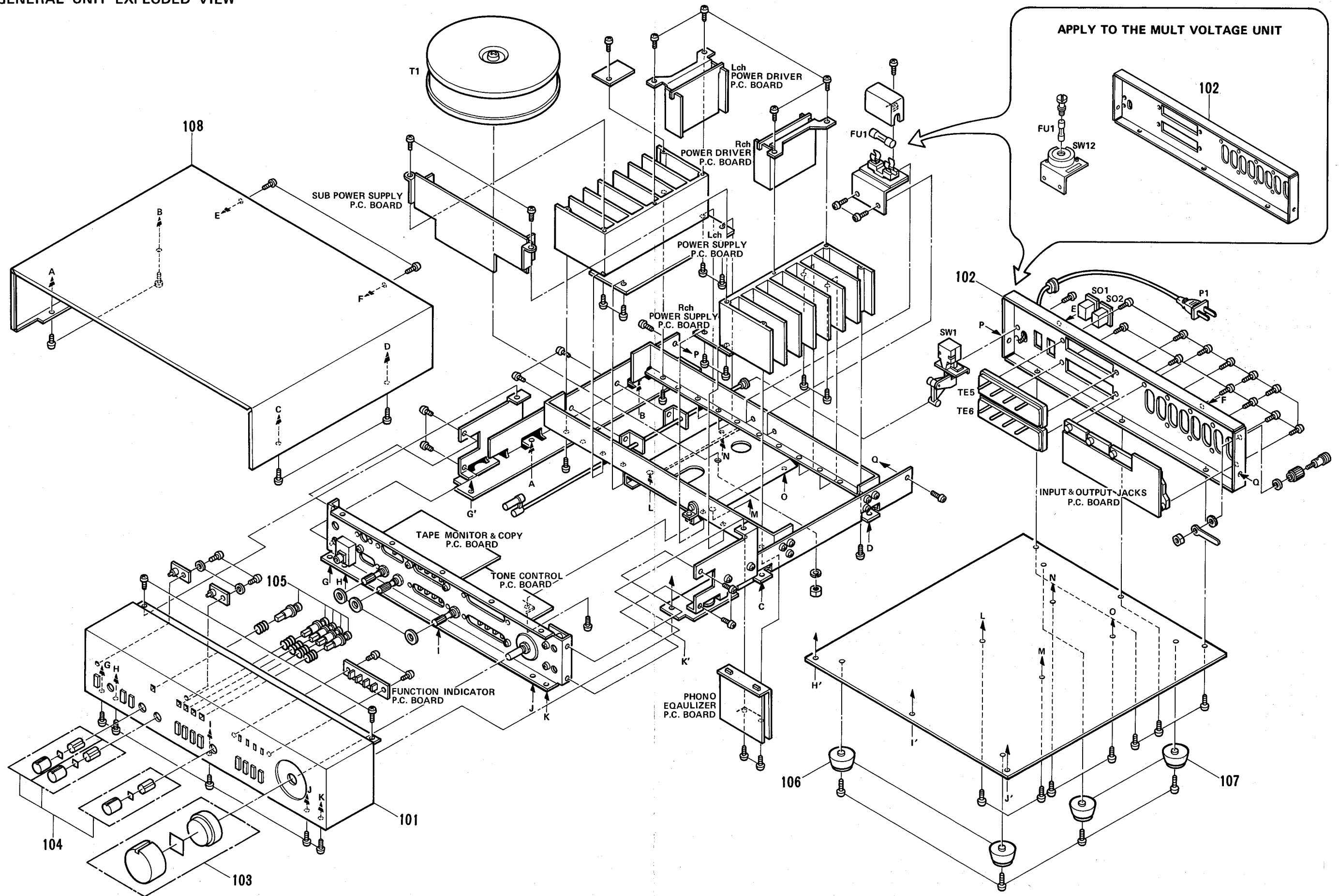


WIRING DIAGRAM

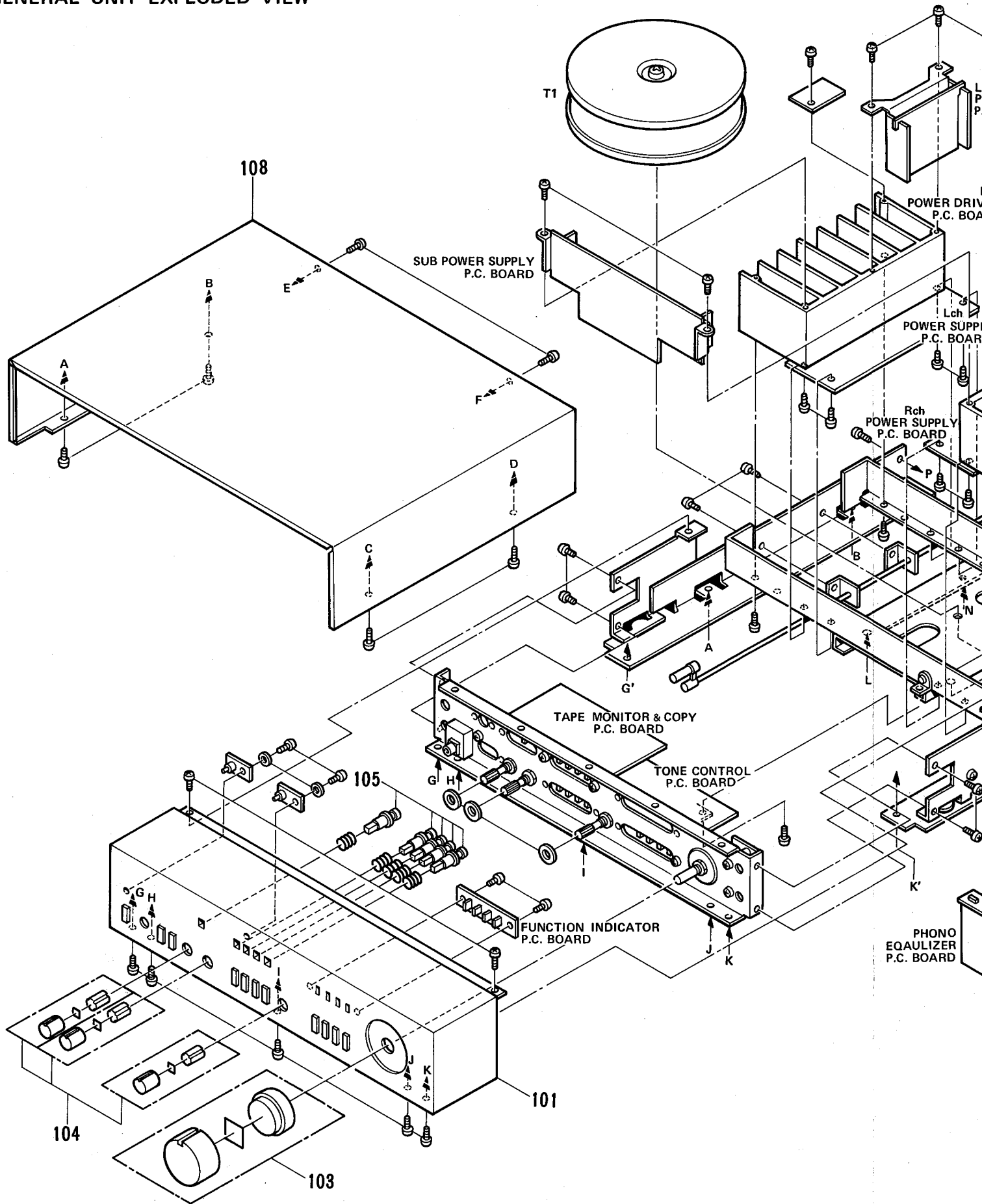


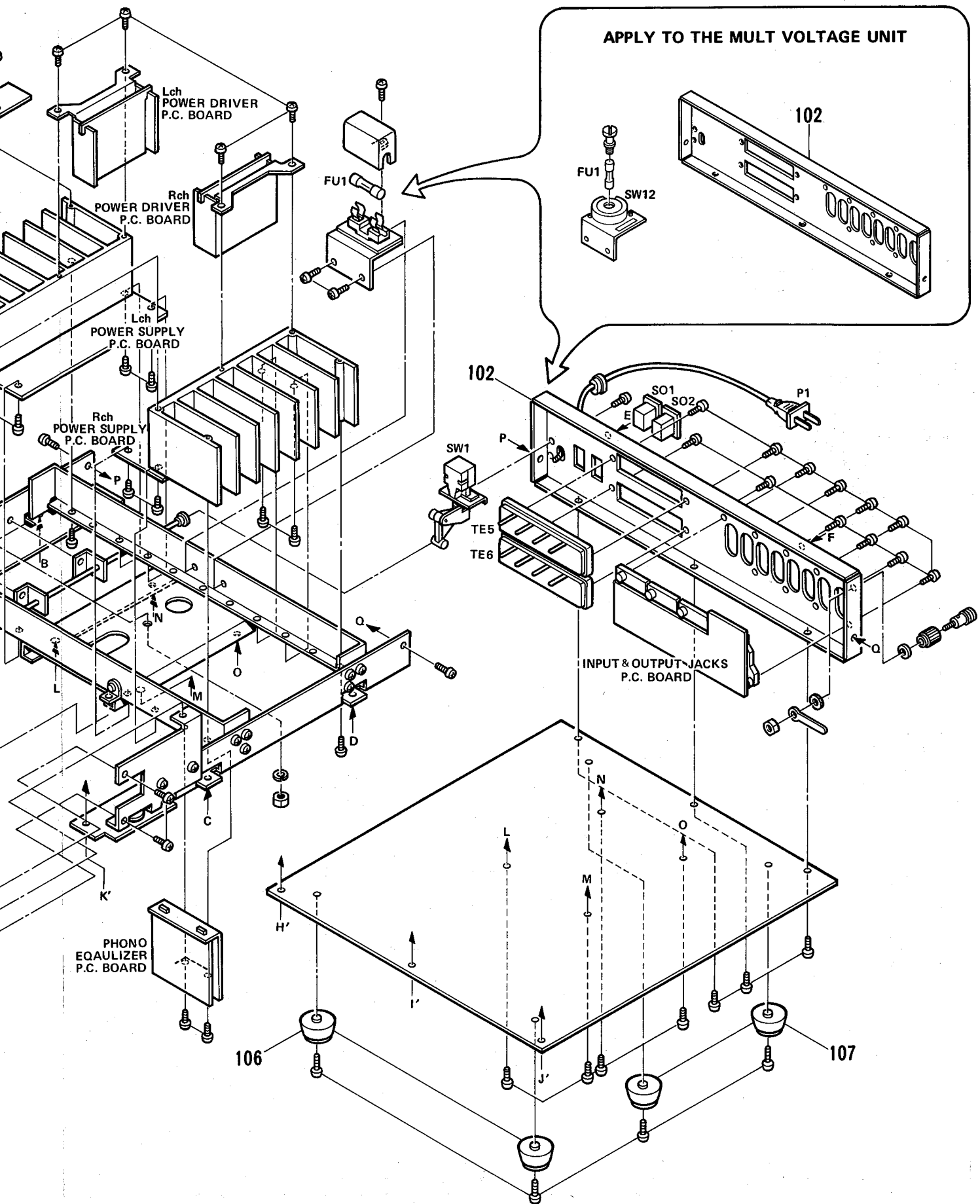


GENERAL UNIT EXPLODED VIEW



GENERAL UNIT EXPLODED VIEW





CHASSIS PARTS LIST

Ref. No.	Part No.	Description
GENERAL UNIT		
101	A443-HK750	Front Panel Assembly
102	A424-HK750-B	Cabinet Back Assembly
103	A634-HK750-A	Knob Assembly, Volume
104	A634-HK750-B	Knob Assembly, Balance, Treble, Bass
105	A662-HK750	Push Button Assembly, Tape Monitor, Tape Copy, Tone Defeat
106	1319-7330	Foot, Cabinet Bottom Front
107	1319-7230	Foot, Cabinet Bottom Rear
108	1414-01901	Cabinet Top
ELECTRICAL		
P1	4161-7187	AC Line Cord
SO1, 2	4474-108	External AC Socket, Unswitched, Switched
SW1	4431-01017358	Push Switch, Power
T1	5584-701321	Power Transformer
FU1	5732-402031	Fuse, 4A 125V
FH1	4472-0125	Fuse Holder, FU1
VR1A, B	5116-1047343	Variable Resistor, 100k Ω (B) Volume Control
J1	4451-0085	Jack, Headphones
TE5, 6	4214-7027	Speaker Output Terminal, Speaker System 1, Speaker System 2
D63, 64	5637-GL2PR1	Light Emitting Diode, GL2PR1 Red
	4442-14	Power, Tape Monitor Indicator Short Pin, Phono Jack Insert

MULTI VOLTAGE VERSION PARTS LIST

AS FOR ALL OTHER PARTS EXCEPT THE FOLLOWING PARTS IN REF. NO.,
REFER TO REGULAR VOLTAGE UNIT.

Ref. No.	Part No.	Description
PART NO. CHANGE		
102	A424-HK750-F	Cabinet Back Assembly
P1	4161-7256	AC Line Cord
SW1	4431-01017658	Push Switch, Power
T1	5584-701322	Power Transformer
FU1	5732-402030	Fuse, T4A 250V
FU2, 3, 4, 5	5732-312030	Fuse, T3.15A 250V
ADDITIONAL USAGE		
SW12	4467-1	Power Source Voltage Selector