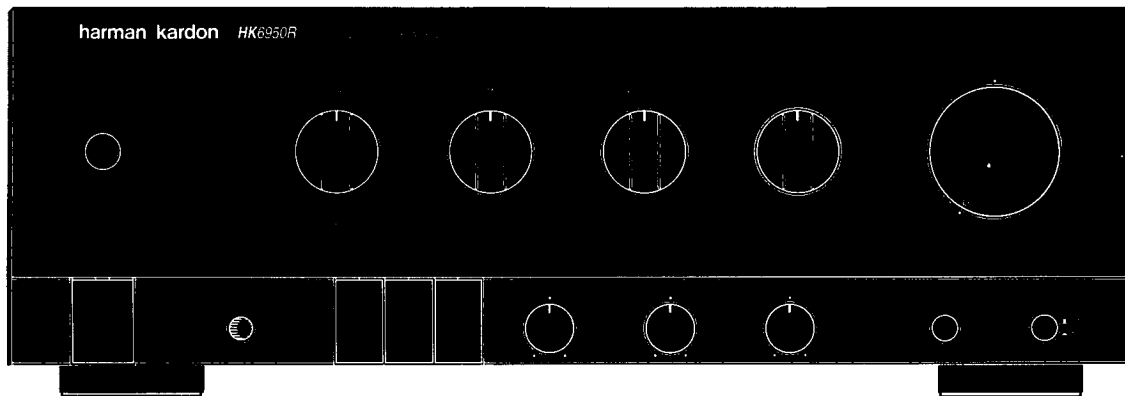


# The Harman Kardon Model HK6950R INTEGRATED AMPLIFIER

Manual 187A

## Technical Manual



The following marks found in the parts list of this manual identify the models as follows.

- BK : North America area model Black version
- G : German model
- GB : German model Black version
- B : International model Black version
- WB : Asia/Oceania model Black version

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**harman/kardon**

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HK6950R

**SPECIFICATIONS**

	Nominal	Limit
Continuous Average Power (FTC)		
20Hz—20kHz, both channels driven		
8Ω, 0.08% RMS	190W	≥ 170W <b>BK WB</b>
	140W	≥ 120W <b>G GB IB</b>
4Ω, 0.1% RMS	195W	≥ 170W
High-instantaneous Current Capability (HCC)	85A	≥ 70A
Half Power Bandwidth	<10Hz~>100kHz	<10Hz~>70kHz
Frequency Response (at -3dB down)	0.16Hz~200kHz <b>BK WB</b>	<1Hz~>160kHz
	0.16Hz~150kHz <b>G GB</b>	<1Hz~>110kHz
Square Wave Rise Time	2 μsec	≤ 2.5 μsec
Input Sensitivity (at 170W output)		
CD	135mV	± 25mV
Phono (MM)	2.0mV	± 0.3mV <b>BK WB</b>
	2.2mV	± 0.3mV <b>G GB</b>
Phono (MC)	110 μV	± 20 μV
	130 μV	± 20 μV <b>G GB</b>
Signal to Noise Ratio		
CD	78dB	≥ 70dB
Phono (MM)	77.6dB	≥ 71dB <b>BK WB</b>
	77.6dB	≥ 75dB <b>G GB</b>
Phono (MC)	74dB	≥ 67dB
Channel Separation (at 10kHz)		
CD	46dB	≥ 40dB
Phono (MM)	48.2dB	≥ 40dB
Phono (MC)	49.6dB	≥ 40dB
IM Distortion Ratio	0.039%	≤ 0.1%
Damping Factor at 1kHz	100	≥ 70

	Nominal	Limit
Tone Control Characteristics		
Bass (at 50Hz)		
Boost		10dB ± 2dB
Cut		10dB ± 2dB
Treble (at 10kHz)		
Boost		10dB ± 2dB
Cut		10dB ± 2dB
Filters		
Subsonic	15Hz, 3dB	± 1dB/Octave
Phase Correct Loudness at 50Hz	6dB	± 2dB
DC Output Voltage		
L channel	0mV	± 60mV
R channel	0mV	± 60mV
RIAA Equalization at Tape Out (20Hz/20kHz) (10kΩ load)	0.2dB	± 0.5dB
Phono Over load (No load)		
Phono (MM)	168mV	≥ 120mV
Phono (MC)	8.5mV	≥ 5mV
Dimensions (W x H x D)	17-3/8" x 6-5/16" x 15-15/16"	
	(443 x 160 x 405mm)	
Weight	37.5lbs	(17.0kg)
Power Supply	AC 120V, 60Hz <b>BK</b>	
	AC 230/240V, 50/60Hz	
	<b>G GB WB IB</b>	
Power Consumption	350W <b>BK</b>	
	400W	

These specifications are service target specs.

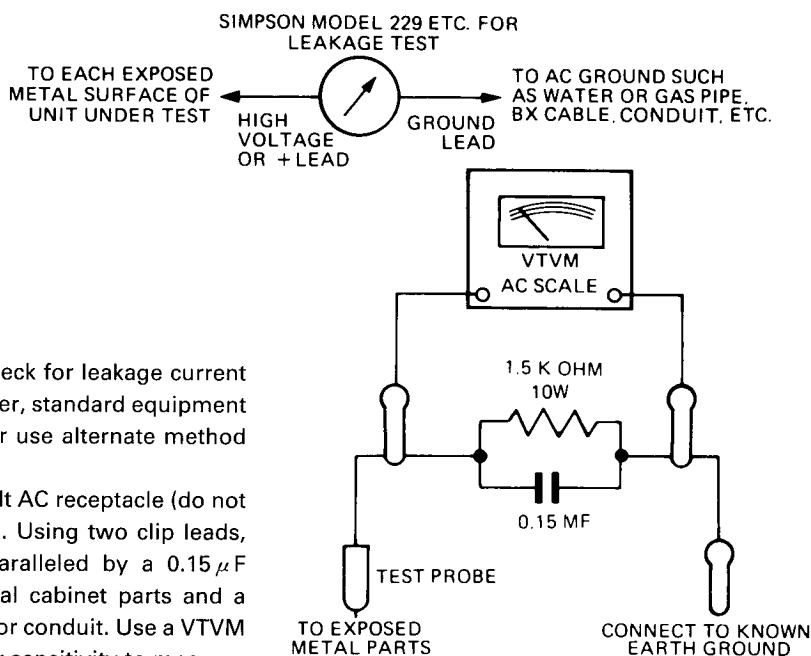
Specifications and components subject to change without notice. Overall performance will be maintained or improved.

**LEAKAGE TEST (FOR SERVICE ENGINEERS IN THE U.S.A.)**

Before returning the unit to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.
2. Replace all protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
3. Be sure that no shock hazard exists; check for leakage current using Simpson Model 229 Leakage Tester, standard equipment item No. 21641, RCA Model WT540A or use alternate method as follows:

Plug the AC line cord directly into a 120-volt AC receptacle (do not use an Isolation Transformer for this test). Using two clip leads, connect a 1500 ohm, 10-watt resistor paralleled by a 0.15 μF capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 ohms per volt, or higher sensitivity to measure the AC voltage drop across the resistor. (See Diagram.) Move the resistor connection to each exposed metal part having a return path to the chassis (antenna, metal, cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor. (This test should be performed with the power switch in both the On and Off positions.) A reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.



**DISASSEMBLY PROCEDURES (REFER TO PAGES 7 AND 26 )**

**1 CABINET TOP (131) REMOVAL**

Remove 10 screws (A) and then remove the Cabinet Top (131).

**2 FRONT PANEL ASS'Y (AA) REMOVAL**

1. Remove the Cabinet Top (131), referring to the previous step 1.
2. Remove 6 screws (B) and then remove the Front Panel Ass'y (AA).

**3 MAIN and DRIVER P.C. BOARDS (PCB-4 to 6) REMOVAL**

1. Remove the Cabinet Top (131), referring to the previous step 1.
2. Disconnect 2 connectors (CW1 and CW504) from 2 connectors (CN405 and CN401) on the Main P.C. Board (PCB-4).
3. Remove 4 screws (C), 4 screws (D) and 2 screws (E) and then remove the Main and Driver P.C. Boards (PCB-4 to 6) with the Heat Sinks (183, 184).

**4 PHONO P.C. BOARD (PCB-1) REMOVAL**

1. Remove the Cabinet Top (131), referring to the previous step 1.
2. Pull out the Shaft (230).
3. Disconnect 2 connectors (W-806 and CW701) from 2 connectors (CN3 and CN701) on the Phono P.C. Board (PCB-1).

4. Remove 1 screw (F) and 4 screws (G) and then remove the Phono P.C. Board (PCB-1).

**5 CONTROL P.C. BOARD (PCB-3) REMOVAL**

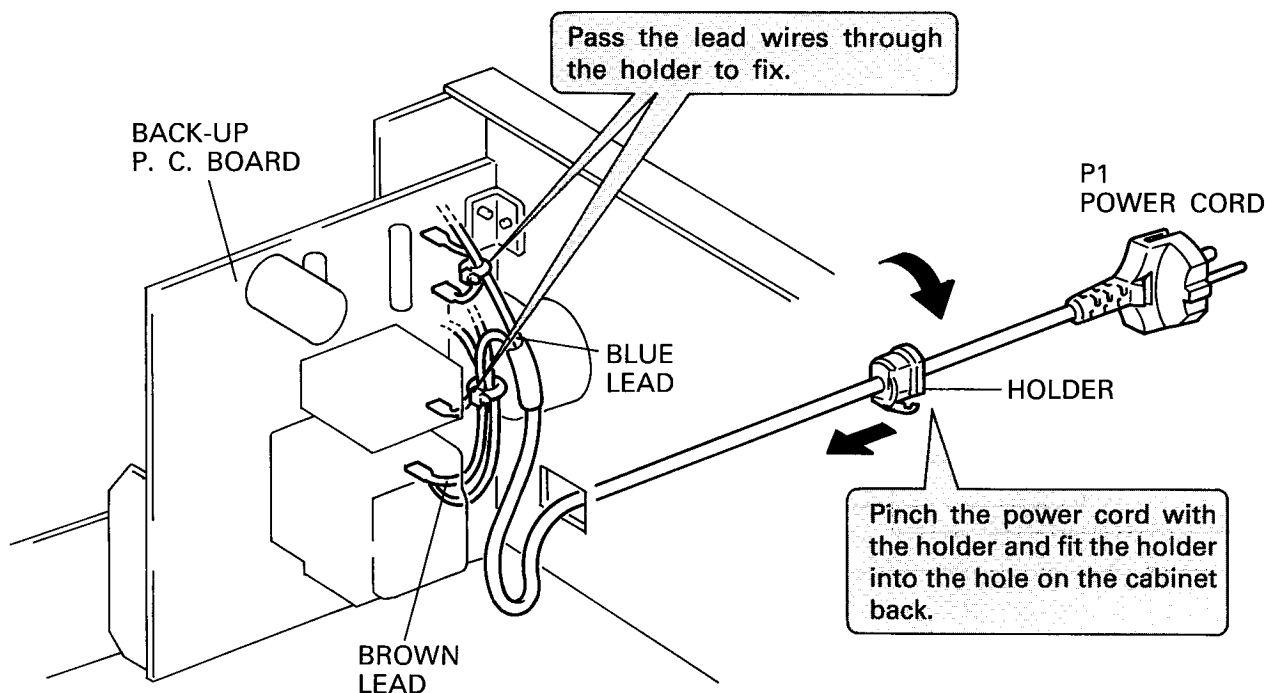
1. Remove the Main and Driver P.C. Boards (PCB-4 to 6), referring to the previous step 3.
2. Remove 4 screws (H) and disconnect 1 connector (W-805) from 1 connector (CN502) on the Control P.C. Board (PCB-3).  
Disconnect 1 connector (W-806) from 1 connector (CN701) on the Phono P.C. Board (PCB-1).

**6 TONE P.C. BOARD (PCB-2) REMOVAL**

1. Remove the Front Panel Ass'y (AA), referring to the previous step 2.
2. Pull out the 6 Rotary knobs (143 and 144).
3. Remove 6 hexagon nuts (I) and remove 3 screws (J).
4. Remove 2 screws (C), 4 screws (G), 7 screws (K), 4 screws (L) and 1 screw (M) and the Chassis (162), then the Tone P.C. Board (PCB-2) can be removed. Unsolder the lead wires if necessary when removing each P.C. Board.

**POWER CORD REPLACEMENT (FOR SERVICE ENGINEERS OTHER THAN NORTH AMERICA)**

In order to prevent fire or shock hazard when replacing the power cord, follow the procedure below to replace the parts with the standard supply parts.



**ALIGNMENT PROCEDURES (REFER TO PAGES 8 , 10 , 11 , 22 AND 25 )**

- **Conditions:**
  - Set the Source selector to the "CD" position.
  - Set the Volume control to minimum.
  - Set the Speaker selector to the "off" position.
  - Make the adjustment at a room temperature of 77°F (25°C).

Use a none metallic tool for adjustments (e.g. Plastic or nylon)

■ **PHONO DRIVER ADJUSTMENT**

Step	Connection Equipments	Adjustment	For
1	Connect the Digital Volt Meter to TP701.	VR601	2.2V
2	Connect the Digital Volt Meter to TP702.	VR602	2.2V

■ **IDLING CURRENT ADJUSTMENT**

Step	Connection Equipments	Adjustment	For
1	Connect the Digital Volt Meter to TP403.	VR405	43mV
2	Connect the Digital Volt Meter to TP404.	VR406	43mV

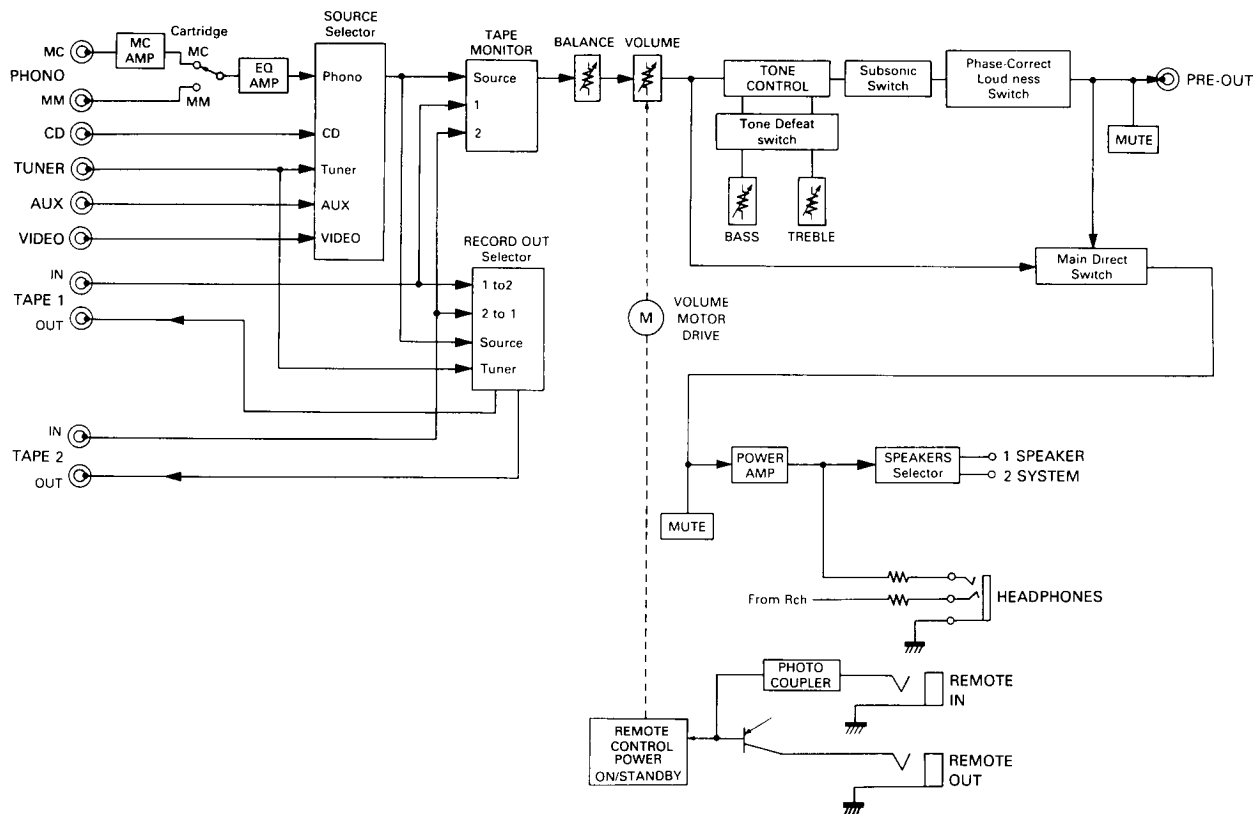
■ **MAIN OFFSET DC BALANCE ADJUSTMENT**

- Set the Speaker Selector switch to the "1" position.

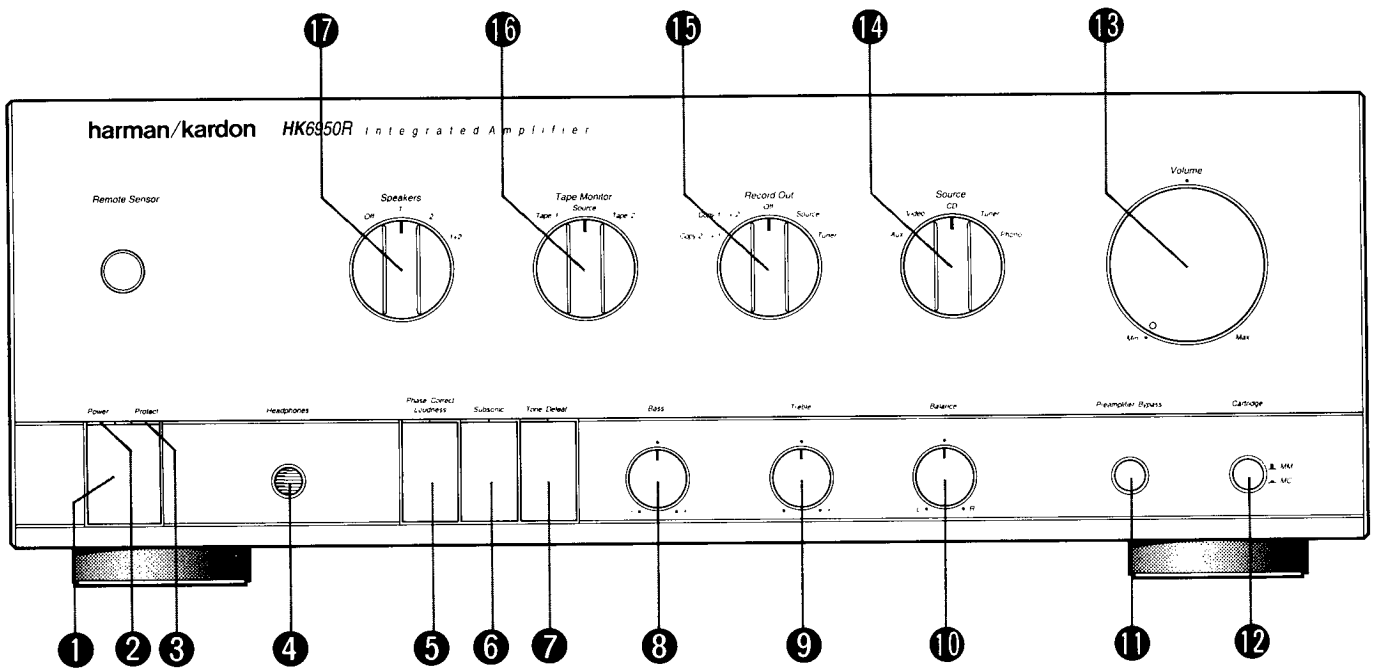
Step	Connection Equipments	Adjustment	For
1	Connect the Digital Volt Meter to TM15 and TM17.	VR401	0mV
2	Connect the Digital Volt Meter to TM16 and TM18.	VR402	0mV

■ After the above adjustment, leave the unit with its power on for longer than 30 minutes and then repeat the same adjustment.

**BLOCK DIAGRAM**



## CONTROLS AND FUNCTIONS



### 1 Power Switch

Press this switch to turn the unit "On". Press it again to turn it "Off". (HK6950R only- While it is in the "On" position, the remote control can switch the unit between the "On" and "Standby" modes. The remote control is inactive when this switch is "Off". Note that this unit will draw a small amount of power when the unit is in the "Off" mode.)

### 2 Power Indicator

HK6950R - This indicator is illuminated in green when the power switch is pressed "On" and is not illuminated when the power switch is "Off". While the power switch is depressed, this indicator is illuminated in amber when the unit is switched off by remote control, indicating the "Standby" mode.

### 3 PROTECT light

This light indicates that the protection circuitry of your amplifier is engaged. The light will come on under two circumstances:

- When you turn the unit on. As the unit prepares itself for operation, a muting circuit temporarily prevents pops or other noise from reaching your speakers. When the unit is ready for operation (in approximately 10 seconds), the light will go off.
- When the unit detects a problem. This light will come on if your speakers wires are touching, causing a short circuit, or if your amplifier overheats. In the case of overheating, a thermal sensor will shut down the unit before damage can occur. Depending on the cause and extent of the overheating, the unit may take some time to cool down, and the protection circuit will remain in operation until the unit is cool enough to operate safely. In the case of a short circuit in the speaker wires, the protection circuitry will attempt to reset itself every 10 seconds, and you may hear a slight click as it does so. The protection circuit will remain in operation until the condition is corrected.

### 4 HEADPHONE jack

Stereo headphones with a standard 6.5 mm (1/4") plug can be connected to this jack. You can listen to headphones regardless of whether your speakers are playing. To listen to headphones only, turn the speaker selector to "OFF".

### 5 PHASE CORRECT LOUDNESS

At low volume levels, your ear is less sensitive to very low bass frequencies than it is at normal listening levels. The loudness button provides a special equalization curve that boosts low frequencies. The loudness button is useful for restoring full frequency balance at low volume levels, and can also be used to improve the bass response of small bookshelf speakers. The indicator light will be lit when PHASE CORRECT LOUDNESS is on.

### 6 SUBSONIC filter

Warped records and turntable resonance can generate sub-audible frequencies that can cause your speaker's woofer cones to visibly flutter. This very low frequency noise, while inaudible, can rob power from your amplifier, can cause feedback through your turntable, can cause intermodulation distortion at audible frequencies, and can actually damage your woofers if the movement is violent enough. The subsonic filter reduces these inaudible frequencies at 6dB per octave below 15Hz. The audible portion of the frequency range will not be affected, so it is useful to leave the subsonic filter on at all times when listening to the turntable. The indicator light will be lit when the SUBSONIC filter is on.

### 7 TONE DEFEAT switch

When TONE DEFEAT is turned on, the bass and treble controls have no effect. The TONE DEFEAT switch internally bypasses the tone control circuitry, resulting in completely unaltered frequency response. If you want to use the bass and treble controls, turn TONE DEFEAT off. The indicator light will be lit when the TONE DEFEAT switch is on.

**8 BASS control**

The BASS control boosts or reduces the low frequency sound level. The BASS control affects only frequencies below 300Hz, and allows changes of up to  $\pm 10$ dB. The BASS tone control, in some circumstances, can help you adjust the overall sound of your system. For example, "boomy" room acoustics may be improved with a slight decrease in the bass, or the sound of smaller loudspeakers lacking in bass may be improved with a bass boost.

**9 TREBLE control**

The TREBLE control boosts or reduces the high frequency sound level. The TREBLE control affects only frequencies above 3000Hz, and allows changes of up to  $\pm 10$ dB. The TREBLE tone control, in some circumstances, can help you adjust the overall sound of your system. For example, an overly shrill recording or "bright" room acoustics may be improved by a reduction in the amount of treble.

**10 BALANCE CONTROL**

The BALANCE control distributes the sound between the right and left speakers. For equal balance in each channel, set the control in the center.

**11 PREAMPLIFIER BYPASS**

When the PREAMPLIFIER BYPASS switch is on, the source signal goes directly to the input of the amplifier, bypassing all tone controls and other preamplifier circuitry and is attenuated only by the volume control.

**12 CARTRIDGE selector**

This switch sets up the gain and input impedance of your amplifier's internal circuitry to match the type of cartridge being used on your turntable. Be sure you connect your turntable to the appropriate PHONO input jacks on the back of the HK6950R (MM for moving magnet cartridges, or MC for moving coil cartridges). Then use this switch to select the type of cartridge mounted on your turntable. Note that you can connect both moving coil and moving magnet cartridge inputs and use this switch to select between them. The MC setting engages a special MC step-up amplifier stage.

**13 VOLUME control**

This knob controls the sound level. Turn the VOLUME control all the way down before you turn on your amplifier or change sound source. This will protect your speakers from being damaged by sudden high-volume sound.

**14 SOURCE selector**

The SOURCE selector controls which program source you are listening to.

- PHONO - Selects a turntable connected to either the MM or MC phone jack.
- TUNER - Selects an AM or FM broadcast from a tuner connected to the tuner jacks.
- CD - Selects a compact disc player connected to the CD jacks.
- VIDEO - Selects sound from an audio/video component such as a camcorder, TV tuner connected to the VIDEO jacks.
- AUX - Selects sound from any component connected to the AUX jacks.

**15 RECORD OUT selector**

This selector controls which program source you can record on the tape deck(s) connected to your unit.

Whatever source you select is sent to all tape decks connected to your HK6950R, so you can record on both decks simultaneously.

- TUNER - In this position, the tuner signal is the source you are recording regardless of the position of the SOURCE selector. This permits you to record the tuner signal while listening to a completely different source (selected on the SOURCE selector, described above).
  - SOURCE - In this setting, whatever source you have selected on the SOURCE selector will be the source you are recording.
  - OFF - Leave the selector in this position when you are not recording. This will ensure the purest sound quality when you listen directly to a source selected with the SOURCE selector.
  - COPY 1  $\rightarrow$  2 - In this position, you are recording *from* the deck connected to the TAPE 1 jacks *to* the deck connected to the TAPE 2 jacks.
  - COPY 2  $\rightarrow$  1 - In this position, you are recording *to* the deck connected to the TAPE 1 jacks *from* the deck connected to the TAPE 2 jacks.
- For example, if you want to make a tape recording of a CD, set the RECORD OUT selector to SOURCE, and set the SOURCE selector to CD.

**16 TAPE MONITOR selector**

The TAPE MONITOR selector enables you to listen to your tape deck. Note that this selector does not select the source for recording. It selects only the deck you are listening to. An important use for this selector is for monitoring during recording. To monitor during recording, select the deck that is recording. For listening to one tape deck while the other deck is recording a different source, select the deck that is not recording.

- TAPE 1 - In this position, you are listening to the deck connected to the TAPE 1 jacks.
- SOURCE - The SOURCE position turns off the output from your deck and returns you to the source you have selected on the SOURCE selector.
- TAPE 2 - In this position, you are listening to the deck connected to the TAPE 2 jacks.

**17 SPEAKER selector**

You can connect either one or two sets of speakers to your HK6950R. This selector enables you to play a single set of speakers by themselves, both sets of speakers at the same time, or to turn both sets of speakers off for headphone-only listening.

- OFF - Select this position to turn off both sets of speakers.
- 1 - Select this position to play the speakers connected to the SPEAKER SYSTEM 1 terminals.
- 2 - Select this position to play the speakers connected to the SPEAKER SYSTEM 2 terminals.
- 1+2 - Select this position to play both sets of speakers at the same time.

**Remote Control System**

Using the remote control- The system remote control can switch the amplifier's power status between "on" and "standby". The amplifier's power switch must be manually set in the "on" position in order for the remote control to function.

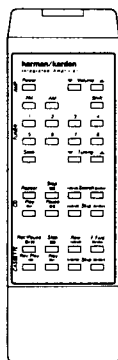
The volume up and down buttons control the position of the amplifier's volume control knob.

In addition to this amplifier, this system remote control can operate many basic functions on the following Harman Kardon tuners, CD players and cassette decks:

HD7450	HD7600II	TD4200*	TD4800	TU9200*
HD7500	TL8500	TD4400*	DC5300*	TU9400
HD7500II	TL8600	TD4500	DC5500	TU9600
HD7600		TD4600	DC5700	

Please refer to the owner's manual for each unit for operating instructions.

\* These units must be connected to the amplifier's remote control units output jacks so that the system remote control can operate them.



**Operating Conditions**

The control unit operates effectively within a distance of 23 feet (7 meters) and an angle of 30° from the amplifier. Using the control near fluorescent lights may shorten this range, as will any dust or dirt that accumulates on the front of the remote control, or the "Remote Sensor" area of the amplifier. Also avoid blocking the line of sight between amplifier and remote.

The control unit is powered by two AA batteries, included with your amplifier.

When you replace weak batteries, replace both at the same time. When the remote is to be unused for an extended period, remove the batteries to prevent damage from corrosion.

If your HK6950R does not operate as expected, first check the items in the following list. If you cannot determine the source of the problem, contact your dealer or authorized Harman Kardon service representative.

**GENERAL UNIT PARTS LIST**

Ref. No.	Part No.	Description
AA	A443-HK6950RA	CABINET FRONT ASSEMBLY (G)
AA	A443-HK6950RB	CABINET FRONT ASSEMBLY (BK GB WB IB)
AB	A424-HK6950RA	CABINET BACK ASSEMBLY (BK)
AB	A424-HK6950RC	CABINET BACK ASSEMBLY (G GB IB)
AB	A424-HK6950RG	CABINET BACK ASSEMBLY (WB)
AC	A424-HK6950RB	CABINET BOTTOM ASSEMBLY (BK)
BA	B216-HK6950RA	SHIELD PLATE ASSEMBLY (BK)
BB	B219-HK6950RA	METAL FITTG ASSEMBLY
BC	B219-HK6950RB	METAL FITTG ASSEMBLY (BK)
023	1756-R01TS122	LABEL, SUB FUSE (x 2) (G GB WB IB)
025	2219-8283	METAL FITTG, TRANS BOTTOM (G GB WB IB)
026	2327-R0130062	SCREW, BND + (3 x 6mm) (G GB WB IB)
027	2459-3003511	RIVET, PLASTIC, BACK UP (x 2) (G GB WB IB)
032	1756-21907	LABEL, DBP.NO. (G GB)
117	1751-01018	LABEL, UL (BK)
118	1756-CSA	LABEL, CSA (BK)
119	1756-11301	LABEL, FUSE CAUTION (BK)
120	1756-05910	LABEL, FUSE CAUTION (BK)
131	1414-14901	CABINET TOP
133	1424-35901	CABINET BACK (BK)
133	1424-35802	CABINET BACK (G GB IB)
133	1424-35803	CABINET BACK (WB)
134	1424-29901	CABINET BOTTOM
136	1443-14103	PANEL, FRONT (G)
136	1443-14104	PANEL, FRONT (BK GB WB IB)
137	1532-21101	WINDOW, REMOTE SENSOR
138	1562-08401	FRAME, L (G)
138	1562-08402	FRAME, L (BK GB WB IB)
139	1562-08501	FRAME, R (G)
139	1562-08502	FRAME, R (BK GB WB IB)
142	1630-04801	ROTARY KNOB, VOLUME (G)
142	1630-04802	ROTARY KNOB, VOLUME (BK GB WB IB)
143	1630-04001	ROTARY KNOB, TAPE MONITOR, RECORD OUT, SOURCE (x 3) (G)
143	1630-04002	ROTARY KNOB, TAPE MONITOR, RECORD OUT, SOURCE (x 3) (BK GB WB IB)
144	1630-04101	ROTARY KNOB, BASS, TREBLE, BALANCE (x 3) (G)
144	1630-04102	ROTARY KNOB, BASS, TREBLE, BALANCE (x 3) (BK GB WB IB)
145	1634-05901	ROTARY KNOB, SPEAKERS (G)
145	1634-05902	ROTARY KNOB, SPEAKERS (BK GB WB IB)
147	1660-01601	PUSH BUTTON, POWER (G)
147	1660-01602	PUSH BUTTON, POWER (BK GB WB IB)
148	1660-01701	PUSH BUTTON, PHASE CORRECT LOUDNESS, SUBSONIC, TONE DEFEAT (x 3) (G)
148	1660-01702	PUSH BUTTON, PHASE CORRECT LOUDNESS, SUBSONIC, TONE DEFEAT (x 3) (BK GB WB IB)
150	1662-67201	PUSH BUTTON, PREAMPLIFIER BYPASS, CARTRIDGE (x 2) (G)
150	1662-67202	PUSH BUTTON, PREAMPLIFIER BYPASS, CARTRIDGE (x 2) (BK GB WB IB)
153	1714-02601	NAME PLATE, BADGE (G)
153	1714-02602	NAME PLATE, BADGE (BK GB WB IB)
155	1732-06901	INDICATOR, POWER, PROTECT, PHASE CORRECT LOUDNESS, SUBSONIC, TONE DEFEAT (x 5)
157	1742-08501	ORNAMENT, POWER, TONE (G)
157	1742-08502	ORNAMENT, POWER, TONE (BK GB WB IB)
158	1742-08401	ORNAMENT, (x 2) (G)
158	1742-08402	ORNAMENT, (x 2) (BK GB WB IB)
159	1319-03901	LEG (x 3)
160	1319-02301	LEG, TRANS
161	2114-71246	BUSHING, AC CORD
162	2211-7308	CHASSIS
163	2218-7038	BRACKET, FIX, MAIN PCB L (x 2)
164	2218-7038	BRACKET, FIX, MAIN PCB R (x 2)
165	2218-7038	BRACKET, FIX, SPEAKER PCB (x 4)
166	2218-89	BRACKET, FIX, HEADPHONES
167	2219-8273	METAL FITTG, HEADPHONES
168	2219-8267	METAL FITTG, PHONO BOTTOM
169	2219-8268	METAL FITTG, HEAT SINK L
170	2219-8269	METAL FITTG, HEAT SINK R
171	2219-8352	METAL FITTG, TRANS BOTTOM
172	2219-8271	METAL FITTG, PHONE TOP
173	2219-8272	METAL FITTG, SPEAKER SWITCH
174	2219-8351	METAL FITTG, POWER SWITCH

Ref. No.	Part No.	Description
175	2219-7093	METAL FITTG, TRANS (x 4)
178	2222-7179	HEAT SINK, TONE
179	2222-7194	HEAT SINK, PHONO (x 2)
180	2222-7266	HEAT SINK, HEAT SINK JOINT
181	2222-7315	HEAT SINK, DRIVER (x 4)
182	2222-7269	HEAT SINK, SCR (x 2)
183	2222-7306	HEAT SINK, MAIN L <b>BK</b>
183	2222-7308	HEAT SINK, MAIN L <b>G GB WB IB</b>
184	2222-7306	HEAT SINK, MAIN R <b>BK</b>
184	2222-7309	HEAT SINK, MAIN R <b>G GB WB IB</b>
186	2222-7310	HEAT SINK, MAIN PCB L
187	2222-7310	HEAT SINK, MAIN PCB R
188	2360-7064	BOSS, SPE, MAIN PCB L (x 2)
189	2360-7064	BOSS, SPE, MAIN PCB R (x 2)
190	2132-7136	SPACER, HEAT METAL (x 6)
191	2224-7138	INSULATOR, SPEAKER OPERATING MODE <b>BK WB</b>
192	2240-7395	HOLDER, PRE OUT/MAIN IN SWITCH
193	2240-7397	HOLDER, TONE SWITCH (x 3)
194	2240-7399	HOLDER, SPEAKER OPERATING MODE <b>BK WB</b>
195	2240-7360	HOLDER, SPEAKER SWITCH SHAFT
196	2240-7361	HOLDER, SPEAKER KNOB SHAFT
197	2240-7362	HOLDER, LINK
198	2240-7363	HOLDER, SHAFT HOLD (FRONT)
199	2240-7364	HOLDER, SHAFT HOLD (REAR)
201	2240-7366	HOLDER, TONE LED (x 2)
202	2240-7369	HOLDER, SUB PCB (x 3)
203	2240-R0101	HOLDER, WIRING (x 46)
206	2360-7019	BOSS, SPE, BOTTOM (x 2)
207	2360-7020	BOSS, SPE, BOTTOM (x 4)
208	2362-961410	BOSS, THREAD, TRANS BOTTOM
209	2363-501724	BOSS, PIPE, TRANS LEG
210	2360-7026	BOSS, SPE, REMOTE SENSOR (x 3)
211	2360-7065	BOSS, SPE, POWER SWITCH
212	2224-7132	INSULATOR, CABINET BACK
213	2216-7184	SHIELD PLATE, CHASSIS
214	2459-3005511	RIVET, PLASTIC, SHIELD PLATE (x 2)
215	2310-7036	SCREW, SPE, GND
216	2410-7018	WASHER, SPE, GND
217	2440-7027	NUT, SPE, GND
218	2440-7016	NUT, SPE, GND
219	2224-7100	INSULATOR, DRIVER PCB
220	2402-0374	WASHER, PLASTIC, DRIVER PCB (x 2)
221	2402-0374	WASHER, PLASTIC, POWER PCB
222	2431-0151	FASTENER, NAME PLATE (x 2)
224	2446-30229	NUT, HEX, SPEAKER KNOB SHAFT
225	2111-1387	FELT, SPEAKER KNOB SHAFT
226	2403-301	WASHER, POLY, SPEAKER KNOB SHAFT
227	2601-7069	SHAFT, SPEAKER JOINT
228	2601-7188	SHAFT, SPEAKER SWITCH
229	2601-7189	SHAFT, SPEAKER KNOB
230	2601-7190	SHAFT, MC
231	2112-11773	SPONGE, PHONO
232	2112-11800	SPONGE, HOLDER
234	2440-7016	NUT, SPE, TRANS BOTTOM
235	2327-R0140102	SCREW, BND + (4 x 10mm) (x 4)
236	2440-60	NUT, SPE, TRANS (x 4)
237	2327-R0126044	SCREW, BND + (2.6 x 4mm) (x 2)
238	2327-R0130062	SCREW, BND + (3 x 6mm)
239	2327-R0130062	SCREW, BND + (3 x 6mm) (x 8)
240	2327-R0130064	SCREW, BND + (3 x 6mm) (x 4) <b>BK WB</b>
241	2347-R0130162	SCREW, BND T + (3 x 16mm)
242	2347-R0130102	SCREW, BND T + (3 x 10mm)
243	2347-R0130082	SCREW, BND T + (3 x 8mm) (x 2)
244	2347-R0130062	SCREW, BND T + (3 x 6mm) (x 18)
245	2347-R0130082	SCREW, BND T + (3 x 8mm) (x 3)
246	2347-R0130082	SCREW, BND T + (3 x 8mm) (x 6)
247	2347-R0130082	SCREW, BND T + (3 x 8mm) (x 6)
248	2347-R0130082	SCREW, BND T + (3 x 8mm) (x 6)
249	2347-R0130122	SCREW, BND T + (3 x 12mm) (x 2)
250	2347-R0130122	SCREW, BND T + (3 x 12mm) (x 2)
251	2347-R0130084	SCREW, BND T + (3 x 8mm) (x 22)
252	2347-R0130062	SCREW, BND T + (3 x 6mm) (x 3)

Ref. No.	Part No.	Description
253	2347-R0130064	SCREW, BND T + (3 x 6mm) (x 24)
254	2347-R0130084	SCREW, BND T + (3 x 8mm) (x 2)
255	2347-R0130124	SCREW, BND T + (3 x 12mm)
256	2347-R0130164	SCREW, BND T + (3 x 16mm) (x 6)
257	2347-R0140064	SCREW, BND T + (4 x 6mm) (x 8)
258	2347-R0126082	SCREW, BND T + (2.6 x 8mm)
259	2347-R0130102	SCREW, BND T + (3 x 10mm) (x 2)
260	2396-300549	SCREW, SK HEX (3 x 5mm) (x 2)
261	2557-300829	SCREW, B SPW + (3 x 8mm) (x 2)
263	2557-300829	SCREW, B SPW + (3 x 8mm) (x 2)
264	2557-300829	SCREW, B SPW + (3 x 8mm) (x 2)
265	2557-300829	SCREW, B SPW + (3 x 8mm) (x 4)
266	2557-300829	SCREW, B SPW + (3 x 8mm) (x 3)
267	2557-300829	SCREW, B SPW + (3 x 8mm) (x 3)
268	2557-301229	SCREW, B SPW + (3 x 12mm)(x 7)
269	2557-301229	SCREW, B SPW + (3 x 12mm) (x 7)
270	2557-301629	SCREW, B SPW + (3 x 16mm)
271	2557-301629	SCREW, B SPW + (3 x 16mm)
273	2218-R0130	BRACKET, FIX, WIRING (x 5)
274	2651-2101733	SPRING, POWER SWITCH (x 4)
275	2412-3022	WASHER, SPRING, DRIVER GND
276	2219-7945	METAL FITTING, DRIVER GND
277	2401-0373	WASHER, METAL, DRIVER GND
278	2401-0373	WASHER, METAL, MAIN PCB L
279	2401-0373	WASHER, METAL, MAIN PCB R
323	2219-8350	METAL FITTG (x 2) <b>G GB WB IB</b>
324	2347-R0130062	SCREW, BND T + (3 x 6mm) (x 2) <b>G GB WB IB</b>
421	2219-8349	METAL FITTG, BACK UP PCB
422	2219-8298	METAL FITTG, REMOTE IN/OUT PCB
425	2240-7396	HOLDER, POWER LED
427	1756-R011N802	LABEL, MAIN FUSE <b>BK</b>
427	1756-R01TS402	LABEL, MAIN FUSE <b>G GB WB IB</b>
431	2347-R0130062	SCREW, BND T + (3 x 6mm) (x 2)
432	2347-R0130062	SCREW, BND T + (3 x 6mm) (x 2)
892	2440-62	NUT, SPE (x 8)

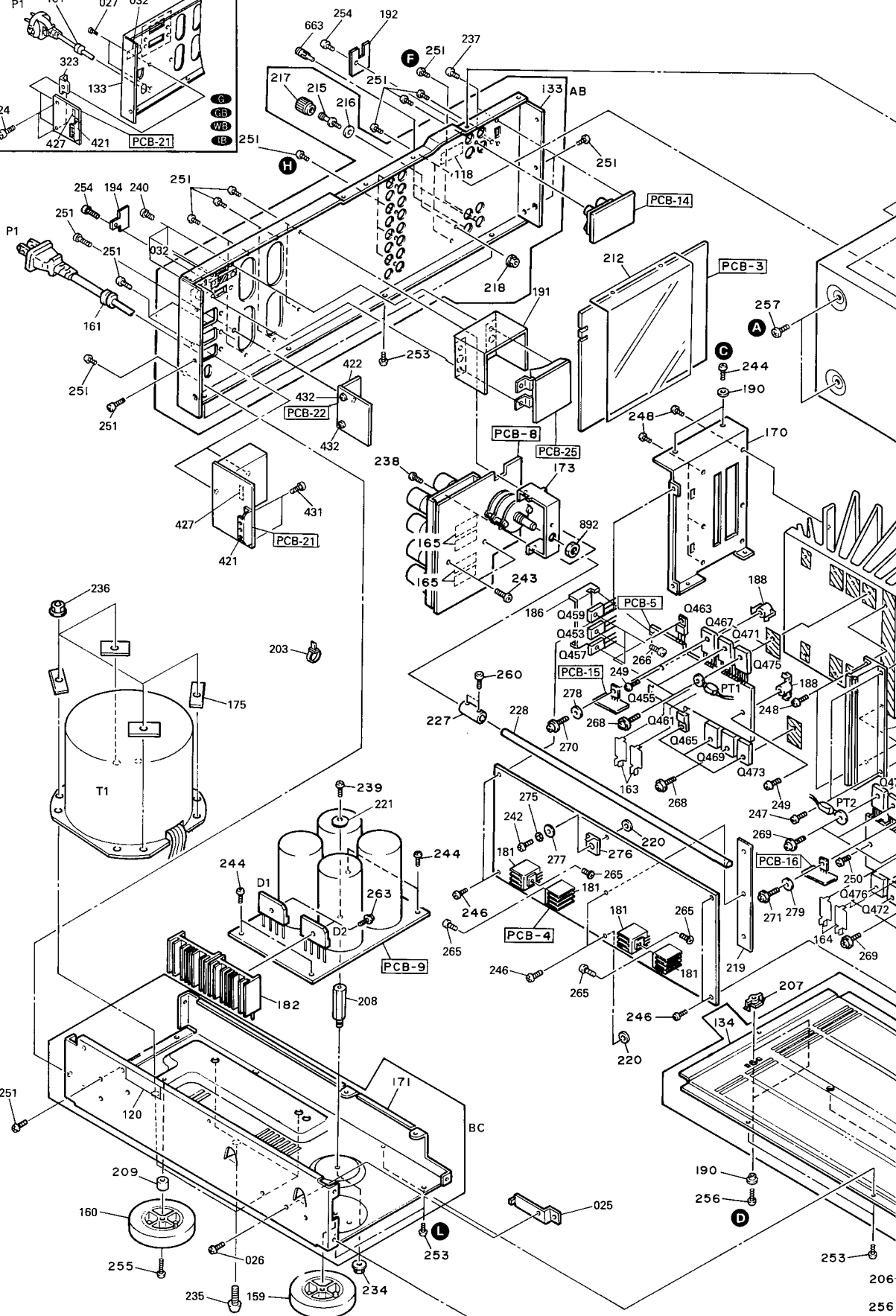
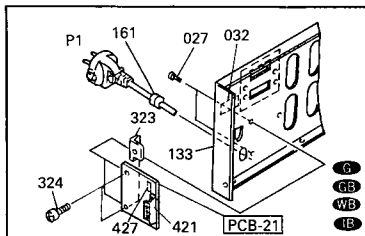
**NOTE**



SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.



**GENERAL UNIT**  
EXPLODED VIEW



1

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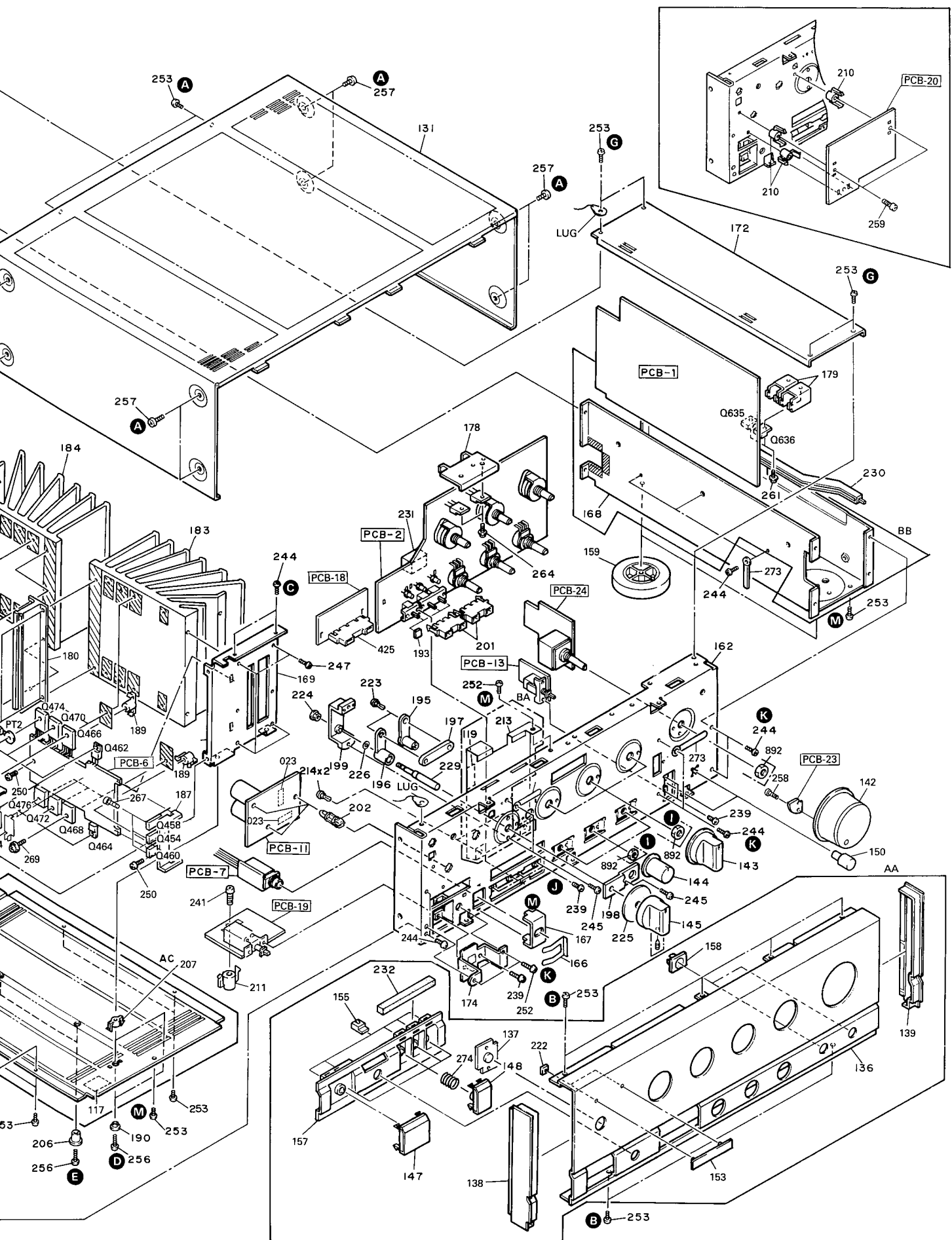
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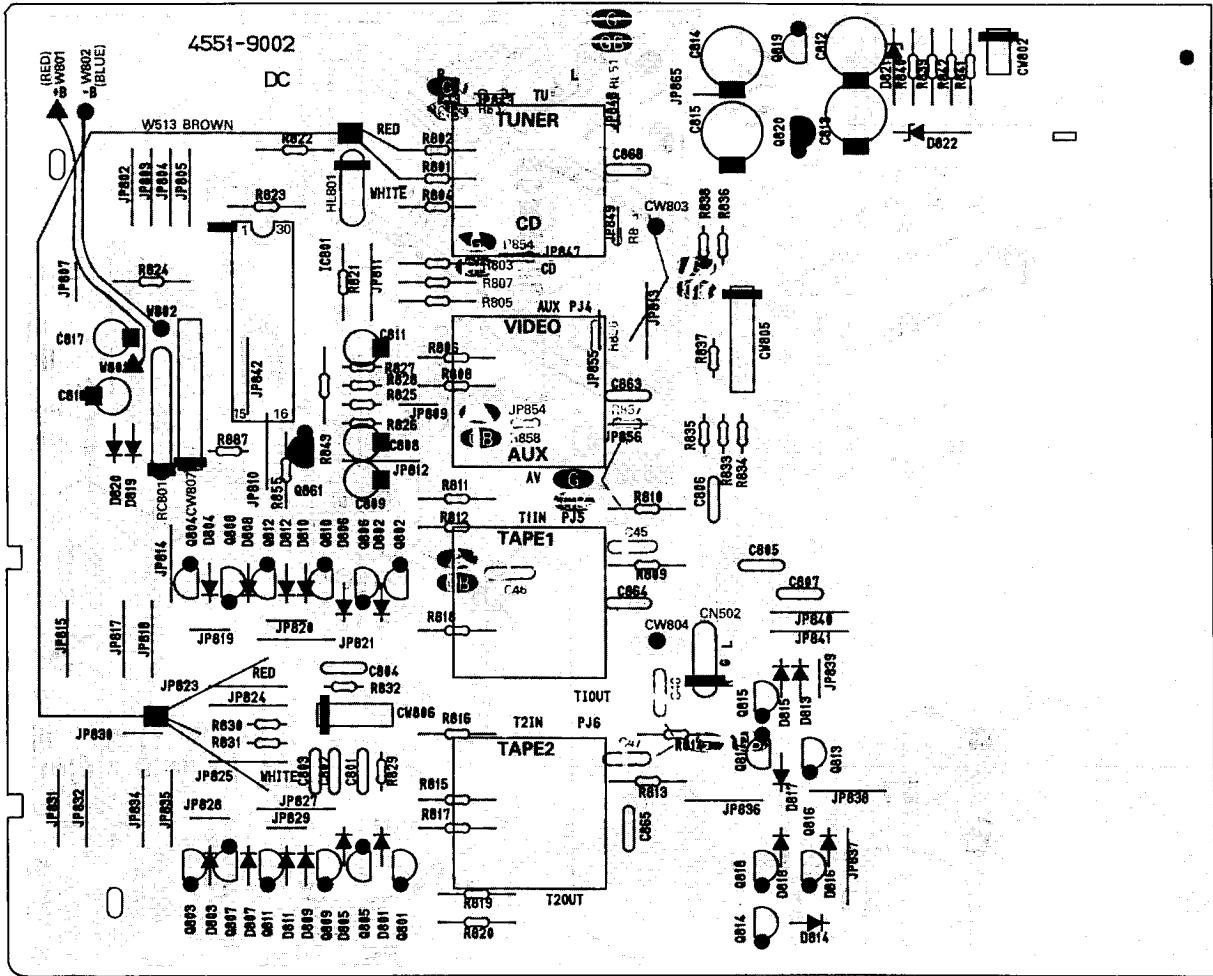
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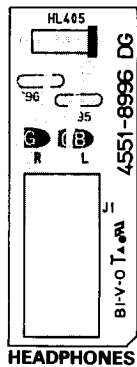




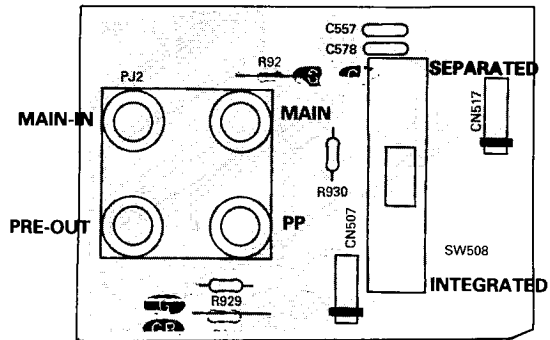
**PCB-3** Control P.C. Board



**PCB-7** Headphones P.C. Board



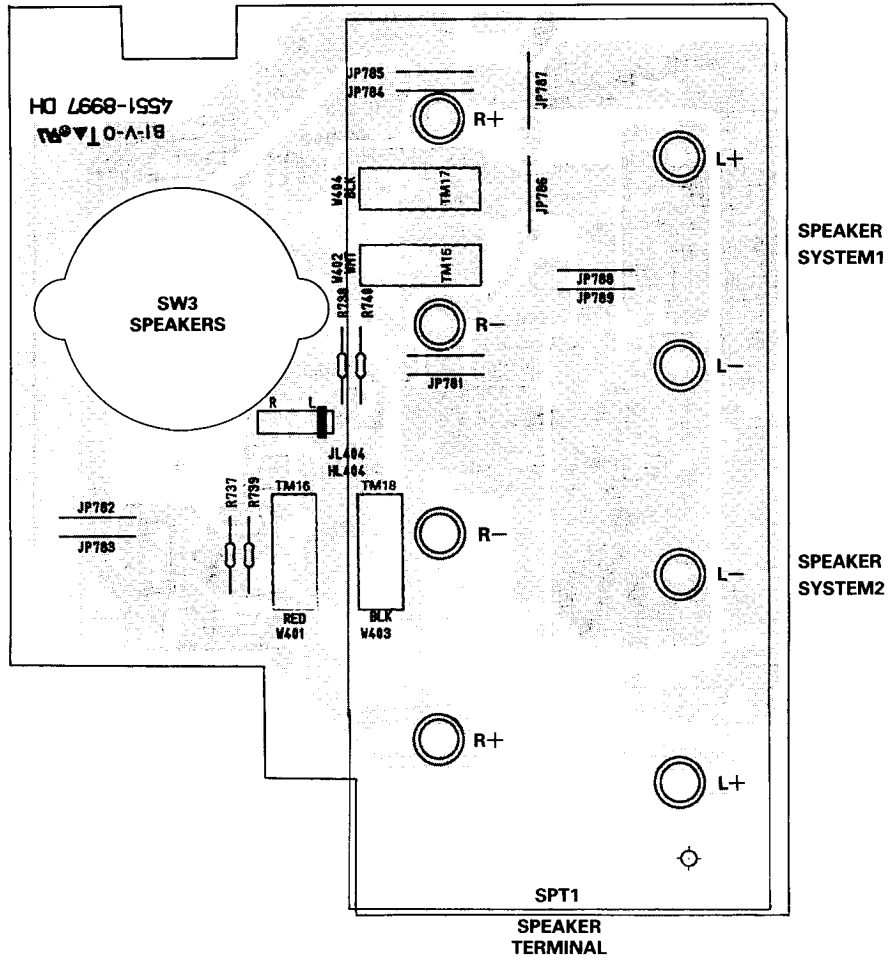
**PCB-14** Pre/Main Separation P.C. Board



P.C. BOARDS

1

PCB-8 Speaker P.C. Board

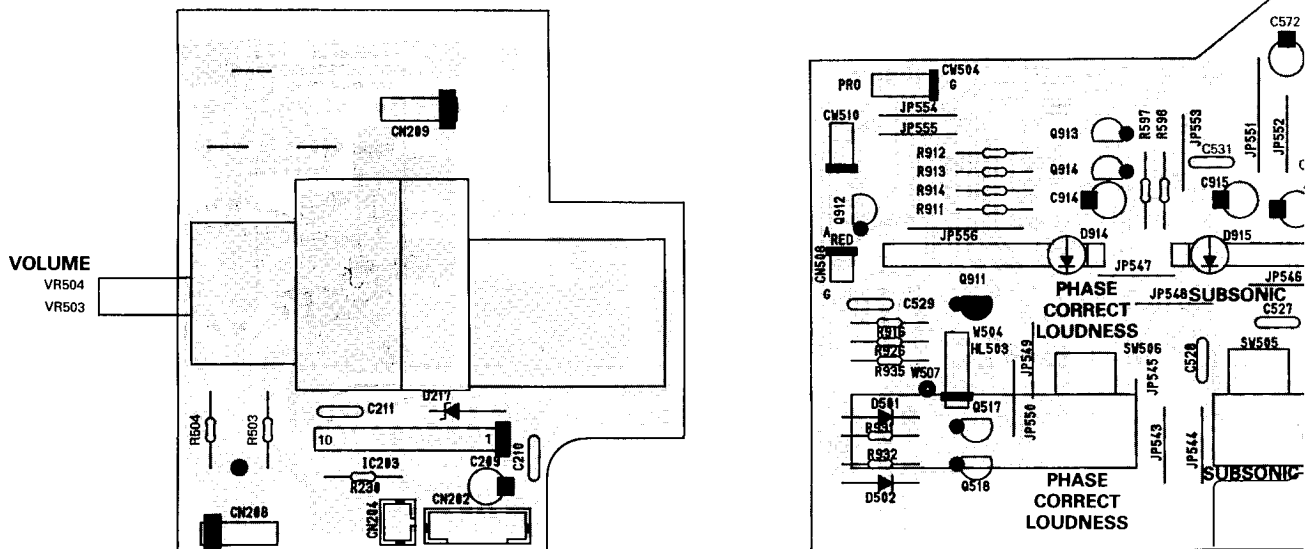


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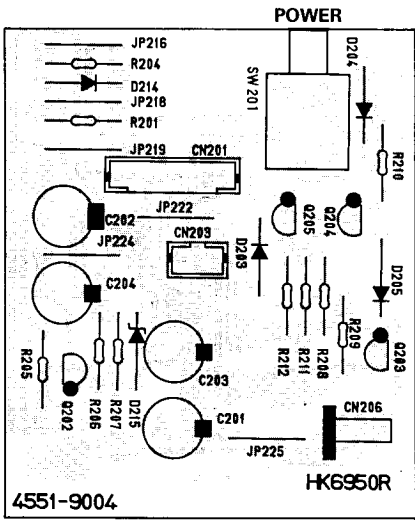
PCB-24 Volume P.C. Board



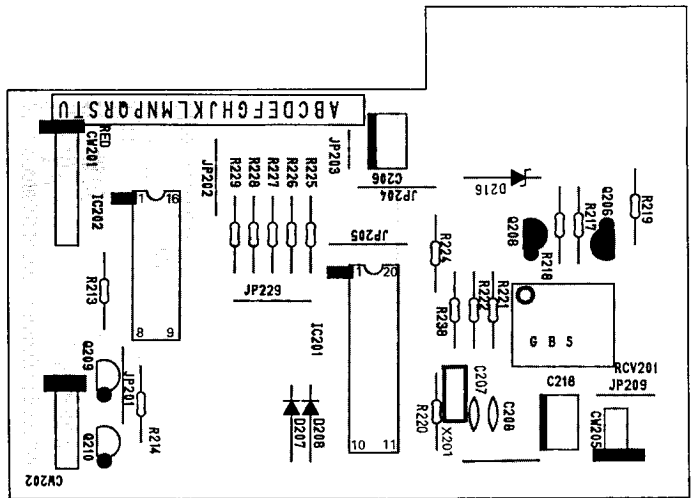
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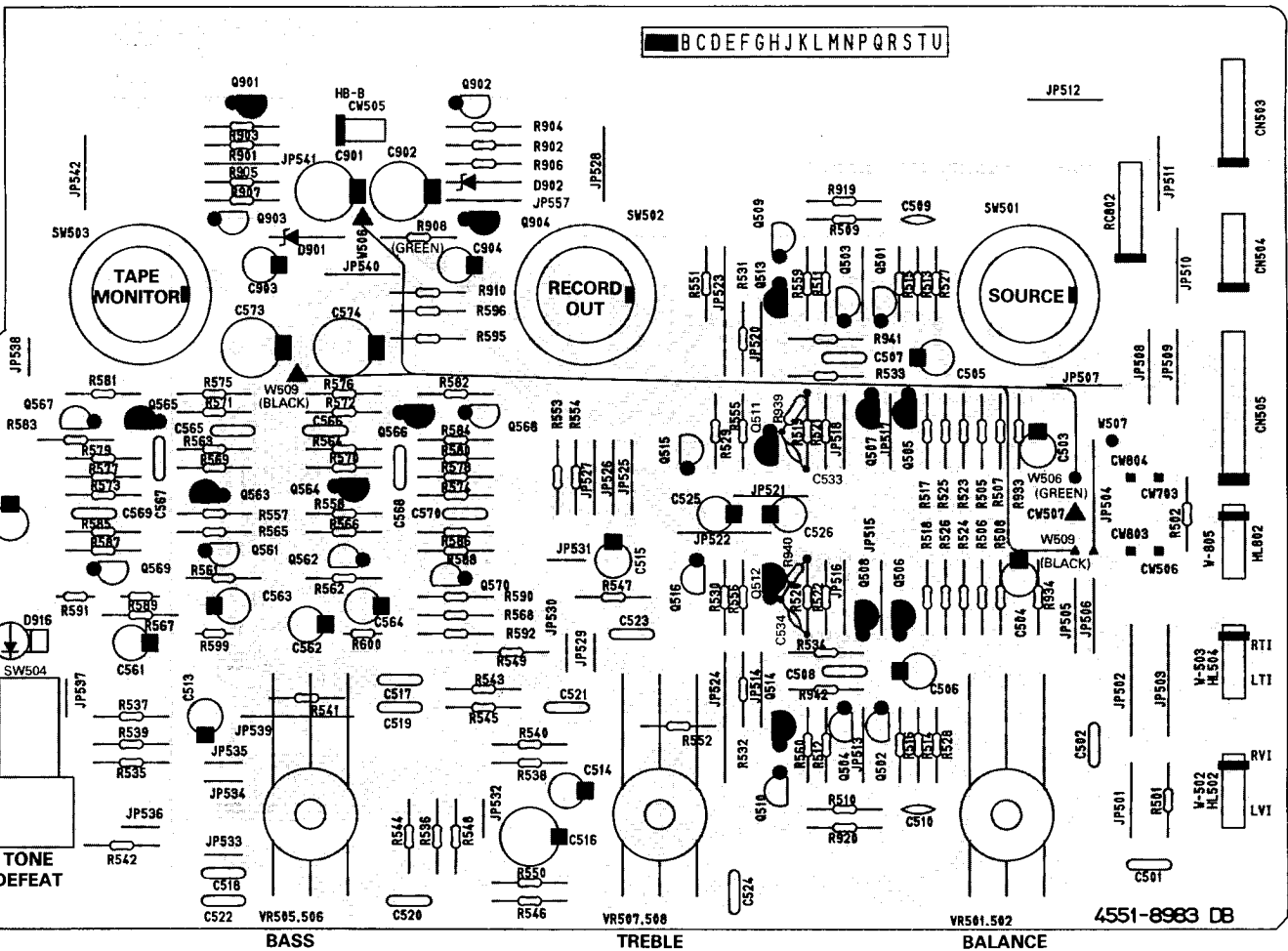
PCB-19 Power Switch P.C. Board



PCB-20 Remote P.C. Board



PCB-2 Tone P.C. Board

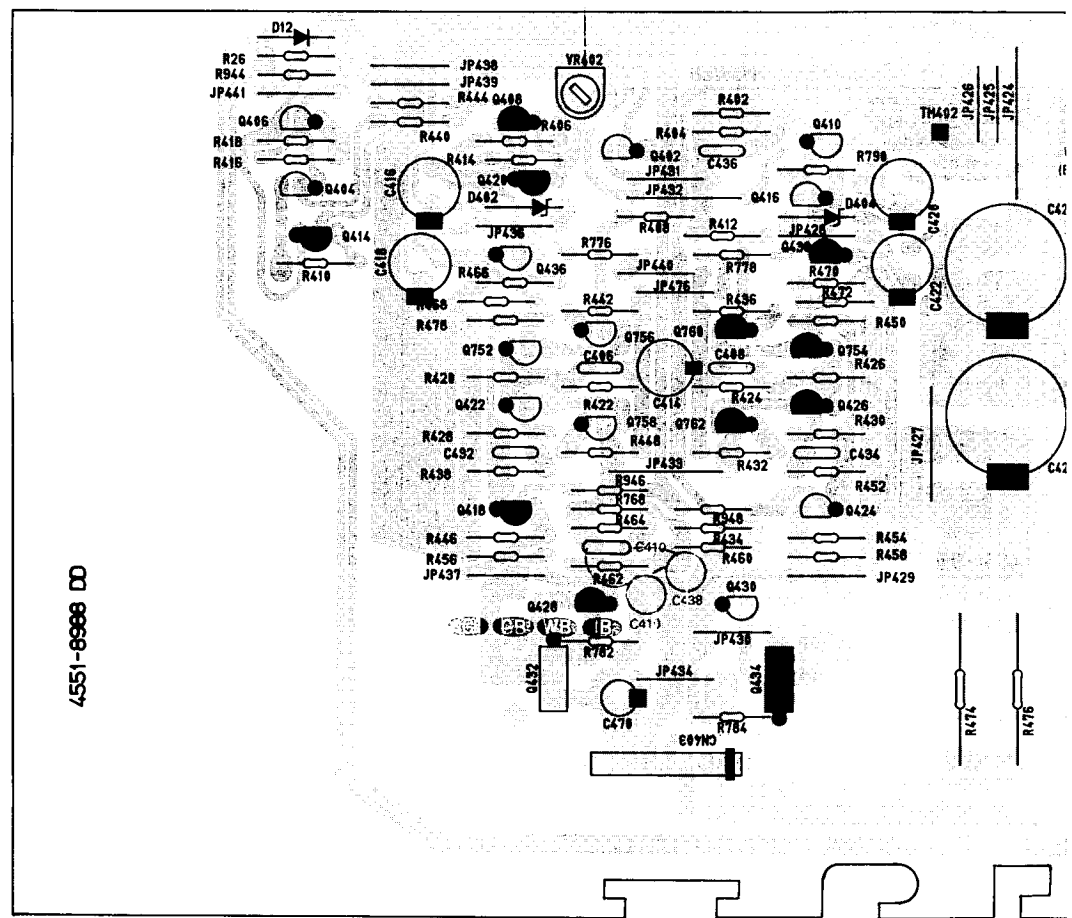


A B C D E

P.C. BOARDS

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PCB-4 Driver P.C. Board

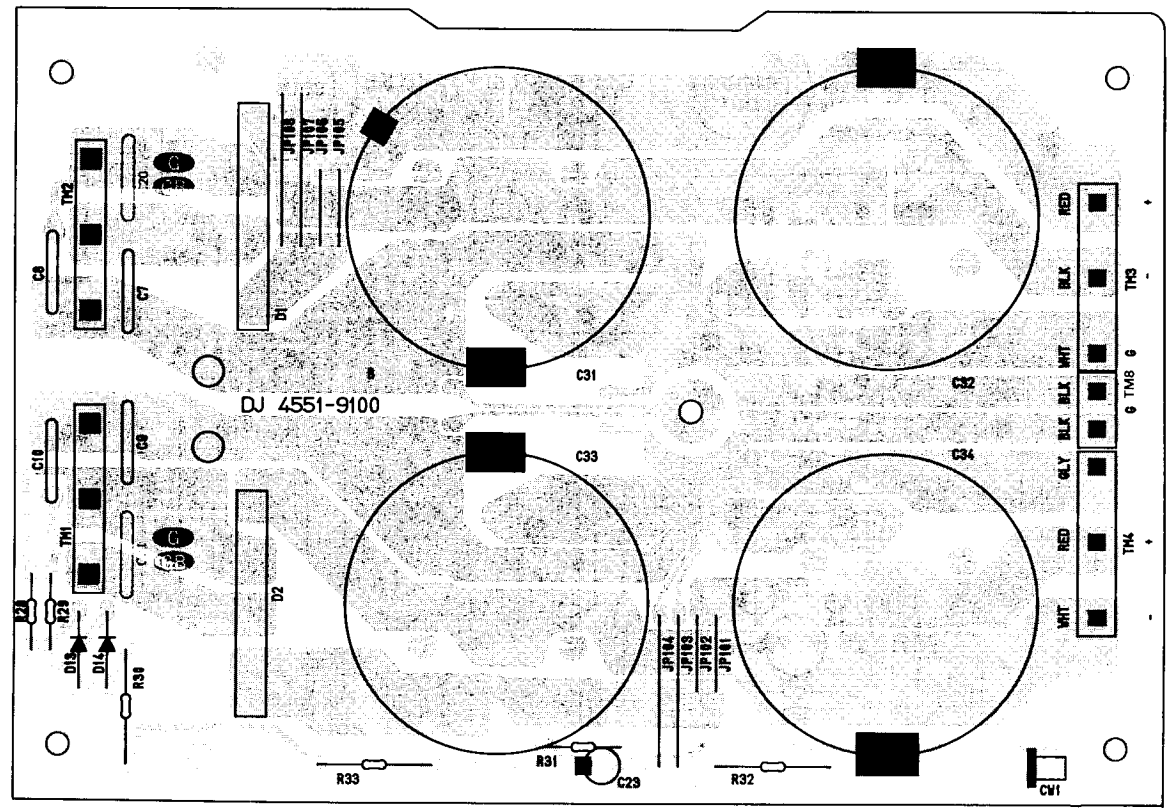


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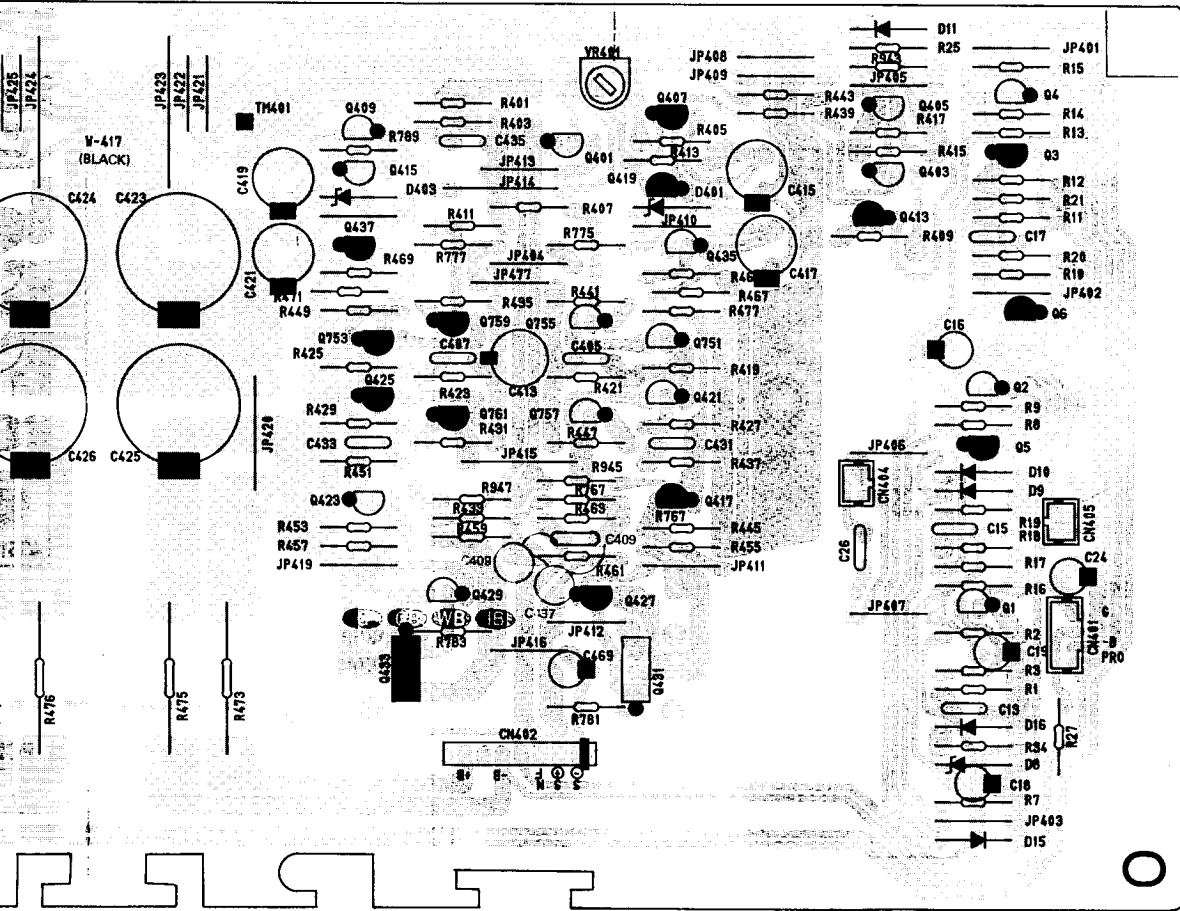
PCB-9 Main Power Supply P.C. Board



5

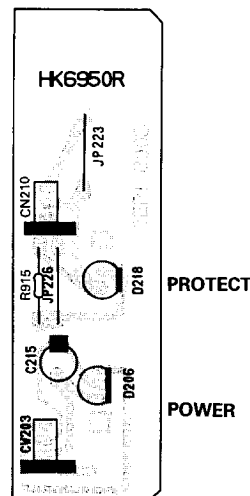
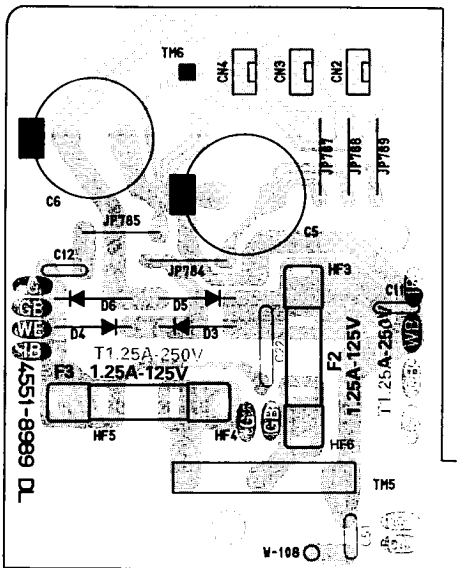
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7



PCB-11 Sub Power Supply P.C. Board

PCB-18 Power LED P.C. Board



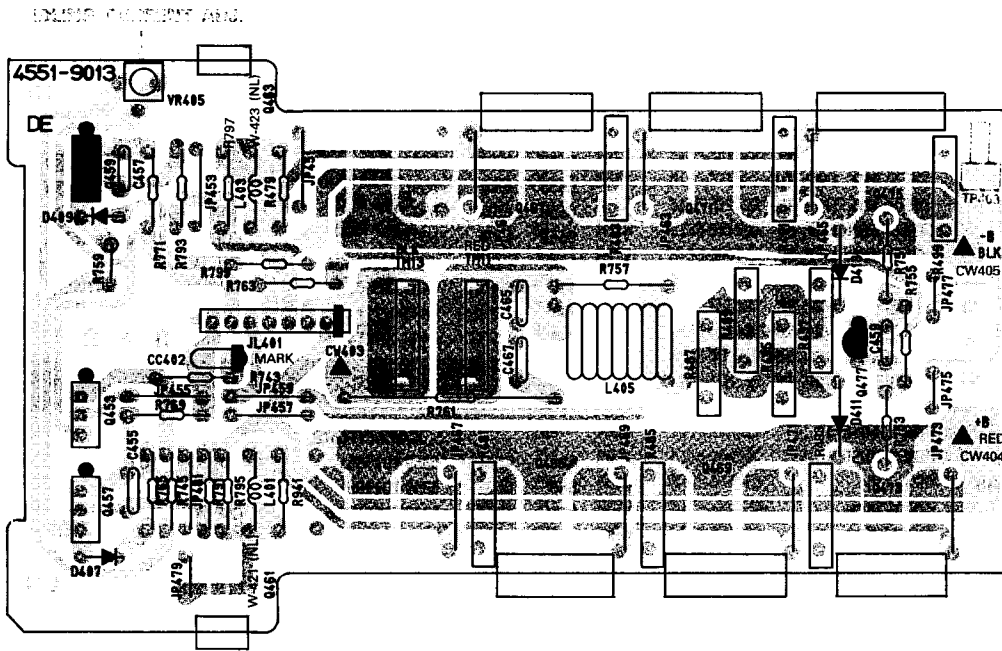
PROTECT

POWER



P.C. BOARDS

PCB-5 Main Rch P.C. Board



F

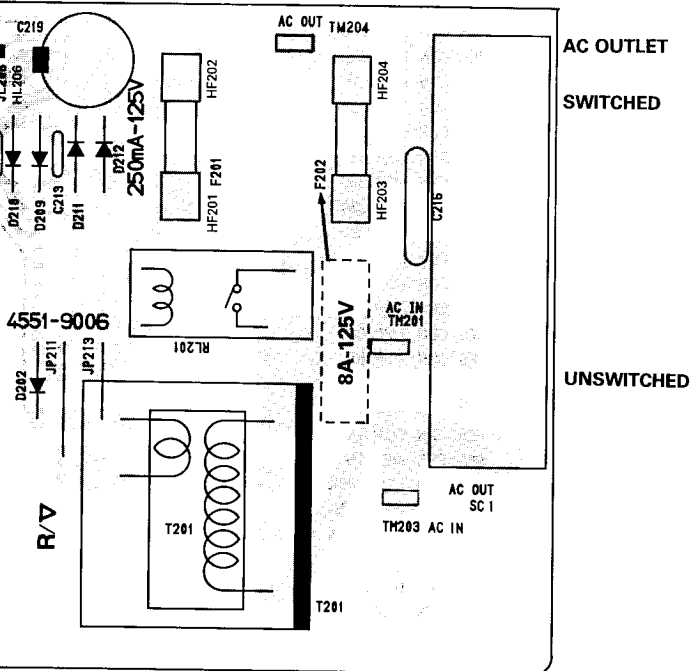
G

H

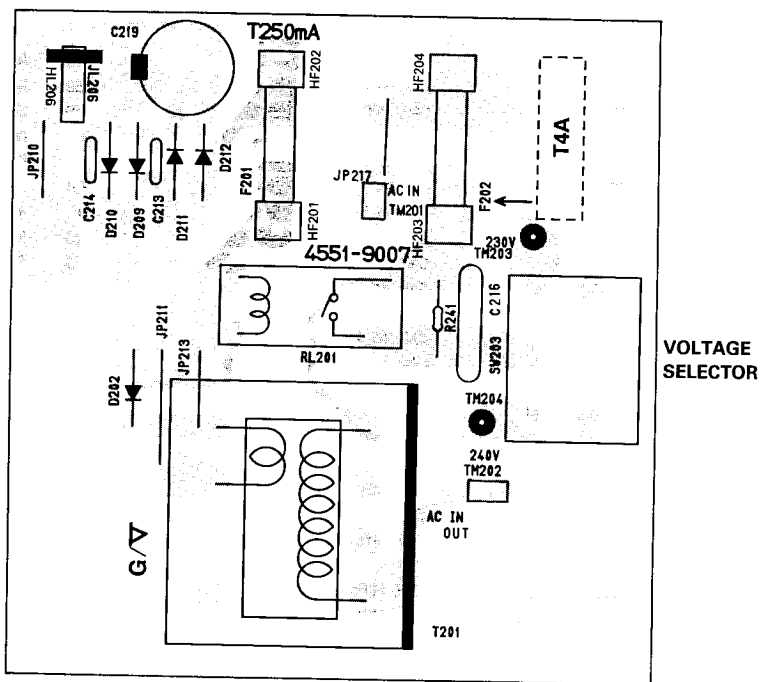
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J

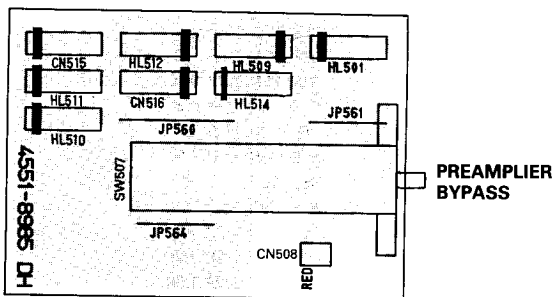
1 Back Up P.C. Board BK



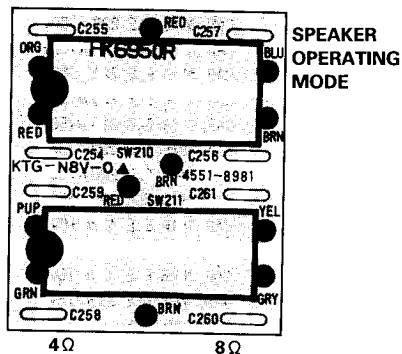
PCB-21 Back Up P.C. Board G GB WB IB



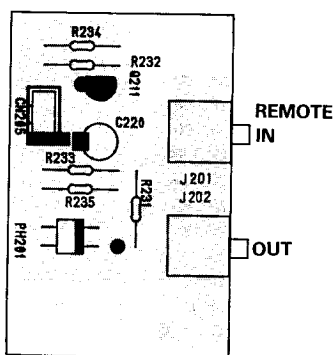
PCB-13 Bypass P.C. Board



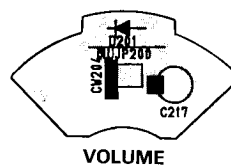
PCB-25 4/8 Switch P.C. Board BK WB



PCB-22 Remote Jack P.C. Board



PCB-23 Volume LED P.C. Board



ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
<b>PCB-1 PHONO P.C. BOARD</b>							
<b>CAPACITORS</b>							
058B	C54	5353-470534	CAP, MCA 47p <b>G GB</b>	363	R605	5174-102381	RES, MTL 1/4P 1K
058B	C55	5353-470534	CAP, MCA 47p <b>G GB</b>	363	R606	5174-102381	RES, MTL 1/4P 1K
060B	C56	5359-1035851	CAP, PPP .01 $\mu$ <b>G GB</b>	363	R607	5174-102381	RES, MTL 1/4P 1K
060B	C57	5359-1035851	CAP, PPP .01 $\mu$ <b>G GB</b>	363	R608	5174-102381	RES, MTL 1/4P 1K
060B	C58	5359-1035851	CAP, PPP .01 $\mu$ <b>G GB</b>	359	R609	5135-221522	RES, CBN 1/2P 220
060B	C59	5359-1035851	CAP, PPP .01 $\mu$ <b>G GB</b>	359	R610	5135-221522	RES, CBN 1/2P 220
061B	C62	5359-1215851	CAP, PPP 120p <b>G GB</b>	359	R611	5135-221522	RES, CBN 1/2P 220
061B	C63	5359-1215851	CAP, PPP 120p <b>G GB</b>	359	R612	5135-221522	RES, CBN 1/2P 220
063B	C64	5361-223ZF	CAP, CER .022 $\mu$ <b>G GB</b>	350	R613	5135-330522	RES, CBN 1/2P 33
063B	C65	5361-223ZF	CAP, CER .022 $\mu$ <b>G GB</b>	350	R614	5135-330522	RES, CBN 1/2P 33
334	C601	5353-121534	CAP, MCA 120p	361	R615	5135-331522	RES, CBN 1/2P 330
334B	C601	5353-820534	CAP, MCA 82p <b>G GB</b>	361	R616	5135-331522	RES, CBN 1/2P 330
334	C602	5353-121534	CAP, MCA 120p	361	R617	5135-331522	RES, CBN 1/2P 330
334B	C602	5353-820534	CAP, MCA 82p <b>G GB</b>	361	R618	5135-331522	RES, CBN 1/2P 330
335	C603	5359-2215851	CAP, PPP 220p	360	R619	5135-680522	RES, CBN 1/2P 68
335	C604	5359-2215851	CAP, PPP 220p	360	R620	5135-680522	RES, CBN 1/2P 68
335	C605	5359-2215851	CAP, PPP 220p	360	R621	5135-680522	RES, CBN 1/2P 68
335	C606	5359-2215851	CAP, PPP 220p	360	R622	5135-680522	RES, CBN 1/2P 68
341	C607	5354-224593	CAP, MYL .22 $\mu$	349	R623	5135-105522	RES, CBN 1/2P 1M
341	C608	5354-224593	CAP, MYL .22 $\mu$	349	R624	5135-105522	RES, CBN 1/2P 1M
341	C609	5354-224593	CAP, MYL .22 $\mu$	349	R625	5135-105522	RES, CBN 1/2P 1M
341	C610	5354-224593	CAP, MYL .22 $\mu$	349	R626	5135-105522	RES, CBN 1/2P 1M
333	C611	5345-477A0952	CAP, MINI ELE 470 $\mu$ /6.3V	351	R627	5135-334522	RES, CBN 1/2P 330K
333	C612	5345-477A0952	CAP, MINI ELE 470 $\mu$ /6.3V	351	R628	5135-334522	RES, CBN 1/2P 330K
336	C613	5359-1035851	CAP, PPP .01 $\mu$	351	R629	5135-334522	RES, CBN 1/2P 330K
336	C614	5359-1035851	CAP, PPP .01 $\mu$	351	R630	5135-334522	RES, CBN 1/2P 330K
340	C617	5359-3315851	CAP, PPP 330p	364	R631	5174-331381	RES, MTL 1/4P 330
340	C618	5359-3315851	CAP, PPP 330p	364	R632	5174-331381	RES, MTL 1/4P 330
337	C621	5359-3325851	CAP, PPP 3300p	362	R633	5135-102522	RES, CBN 1/2P 1K
337	C622	5359-3325851	CAP, PPP 3300p	362	R634	5135-102522	RES, CBN 1/2P 1K
332	C623	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	362	R635	5135-102522	RES, CBN 1/2P 1K
332	C624	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	362	R636	5135-102522	RES, CBN 1/2P 1K
339	C625	5359-5615851	CAP, PPP 560p	354	R637	5135-102522	RES, CBN 1/2P 1K
339	C626	5359-5615851	CAP, PPP 560p	354	R638	5135-102522	RES, CBN 1/2P 1K
331	C627	5345-S19CM476	CAP, MINI ELE 47 $\mu$ /16V	367	R639	5174-394381	RES, MTL 1/4P 390K
331	C628	5345-S19CM476	CAP, MINI ELE 47 $\mu$ /16V	367	R640	5174-394381	RES, MTL 1/4P 390K
392	C631	5345-227F045	CAP, MINI ELE 220 $\mu$ /50V	365	R643	5174-223381	RES, MTL 1/4P 22K
392	C632	5345-227F045	CAP, MINI ELE 220 $\mu$ /50V	365	R644	5174-223381	RES, MTL 1/4P 22K
392	C633	5345-227F045	CAP, MINI ELE 220 $\mu$ /50V	369	R645	5174-221381	RES, MTL 1/4P 220
392	C634	5345-227F045	CAP, MINI ELE 220 $\mu$ /50V	369	R646	5174-221381	RES, MTL 1/4P 220
330	C635	5345-227F045	CAP, MINI ELE 220 $\mu$ /50V	369	R647	5174-221381	RES, MTL 1/4P 220
330	C636	5345-227F045	CAP, MINI ELE 220 $\mu$ /50V	369	R648	5174-221381	RES, MTL 1/4P 220
330	C637	5345-227F045	CAP, MINI ELE 220 $\mu$ /50V	346	R649	5135-683522	RES, CBN 1/2P 68K
330	C638	5345-227F045	CAP, MINI ELE 220 $\mu$ /50V	346	R650	5135-683522	RES, CBN 1/2P 68K
331	C639	5345-S19CM476	CAP, MINI ELE 47 $\mu$ /16V	347	R651	5135-333522	RES, CBN 1/2P 33K
331	C640	5345-S19CM476	CAP, MINI ELE 47 $\mu$ /16V	347	R652	5135-333522	RES, CBN 1/2P 33K
329	C641	5345-S19CM336	CAP, MINI ELE 33 $\mu$ /16V	348	R653	5135-101522	RES, CBN 1/2P 100
329	C642	5345-S19CM336	CAP, MINI ELE 33 $\mu$ /16V	348	R654	5135-101522	RES, CBN 1/2P 100
338	C643	5359-8215851	CAP, PPP 820p	348	R655	5135-101522	RES, CBN 1/2P 100
338	C644	5359-8215851	CAP, PPP 820p	348	R656	5135-101522	RES, CBN 1/2P 100
664	C645	5361-103KB	CAP, CER .01 $\mu$	348	R657	5135-182522	RES, CBN 1/2P 1.8K
664	C646	5361-103KB	CAP, CER .01 $\mu$	355	R658	5135-182522	RES, CBN 1/2P 1.8K
298	C701	5345-S19BM226	CAP, MINI ELE 22 $\mu$ /10V	354	R659	5135-102522	RES, CBN 1/2P 1K
298	C702	5345-S19BM226	CAP, MINI ELE 22 $\mu$ /10V	354	R660	5135-102522	RES, CBN 1/2P 1K
298	C703	5345-S19BM226	CAP, MINI ELE 22 $\mu$ /10V	356	R661	5135-470522	RES, CBN 1/2P 47
298	C704	5345-S19BM226	CAP, MINI ELE 22 $\mu$ /10V	356	R662	5135-470522	RES, CBN 1/2P 47
320	C705	5345-227D041	CAP, MINI ELE 220 $\mu$ /25V	356	R663	5135-470522	RES, CBN 1/2P 47
320	C706	5345-227D041	CAP, MINI ELE 220 $\mu$ /25V	356	R664	5135-470522	RES, CBN 1/2P 47
320	C707	5345-227D041	CAP, MINI ELE 220 $\mu$ /25V	361	R665	5135-331522	RES, CBN 1/2P 330
320	C708	5345-227D041	CAP, MINI ELE 220 $\mu$ /25V	361	R666	5135-331522	RES, CBN 1/2P 330
311	C709	5353-050934	CAP, MCA 5p	358	R669	5135-104522	RES, CBN 1/2P 100K
311B	C709	5353-020934	CAP, MCA 2p <b>G GB</b>	358	R670	5135-104522	RES, CBN 1/2P 100K
311	C710	5353-050934	CAP, MCA 5p	348	R673	5135-101522	RES, CBN 1/2P 100
311B	C710	5353-020934	CAP, MCA 2p <b>G GB</b>	348	R674	5135-101522	RES, CBN 1/2P 100
<b>RESISTORS</b>							
062B	R51	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>	348	R675	5135-101522	RES, CBN 1/2P 100
062B	R52	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>	348	R676	5135-101522	RES, CBN 1/2P 100
344	R601	5135-470522	RES, CBN 1/2P 47	394	R677	5135-182522	RES, CBN 1/2P 1.8K
344B	R601	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>	394	R678	5135-182522	RES, CBN 1/2P 1.8K
344	R602	5135-470522	RES, CBN 1/2P 47	395	R691	5135-102522	RES, CBN 1/2P 1K
344B	R602	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>	395	R692	5135-102522	RES, CBN 1/2P 1K
345	R603	5135-473522	RES, CBN 1/2P 47K	398	$\Delta$ R693	5102-1005116	RES, FUSE 10
345	R604	5135-473522	RES, CBN 1/2P 47K	398	$\Delta$ R694	5102-1005116	RES, FUSE 10
				301	R701	5135-1R0522	RES, CBN 1/2P 1
				301B	R701	5135-5R6522	RES, CBN 1/2P 5.6 <b>G GB</b>
				301	R702	5135-1R0522	RES, CBN 1/2P 1
				301B	R702	5135-5R6522	RES, CBN 1/2P 5.6 <b>G GB</b>
				302	R703	5135-560522	RES, CBN 1/2P 56

Ser. No.	Ref. No.	Part No.	Description
302	R704	5135-560522	RES, CBN 1/2P 56
308	R705	5174-471381	RES, MTL 1/4P 470
308	R706	5174-471381	RES, MTL 1/4P 470
308	R707	5174-471381	RES, MTL 1/4P 470
308	R708	5174-471381	RES, MTL 1/4P 470
303	R709	5135-332522	RES, CBN 1/2P 3.3K
303	R710	5135-332522	RES, CBN 1/2P 3.3K
303	R711	5135-332522	RES, CBN 1/2P 3.3K
303	R712	5135-332522	RES, CBN 1/2P 3.3K
310	R713	5174-390381	RES, MTL 1/4P 39
310	R714	5174-390381	RES, MTL 1/4P 39
309	R715	5174-911381	RES, MTL 1/4P 910
309	R716	5174-911381	RES, MTL 1/4P 910
304	R717	5135-820522	RES, CBN 1/2P 82
304	R718	5135-820522	RES, CBN 1/2P 82
304	R719	5135-820522	RES, CBN 1/2P 82
304	R720	5135-820522	RES, CBN 1/2P 82
305	R723	5135-562522	RES, CBN 1/2P 5.6K
305	R724	5135-562522	RES, CBN 1/2P 5.6K
306	R725	5135-331522	RES, CBN 1/2P 330
306	R726	5135-331522	RES, CBN 1/2P 330
318	△R727	5102-1005116	RES, FUSE 10
318	△R728	5102-1005116	RES, FUSE 10

**TRANSISTORS**

322	Q601	5616-2SK170BL	FET, N-CH
322	Q602	5616-2SK170BL	FET, N-CH
321	Q603	5615-2SJ74 (BL)	FET, P-CH
321	Q604	5615-2SJ74 (BL)	FET, P-CH
326	Q605	5613-1844 (E)	XISTOR, NPN R
326	Q606	5613-1844 (E)	XISTOR, NPN R
325	Q607	5611-991 (E)	XISTOR, PNP R
325	Q608	5611-991 (E)	XISTOR, PNP R
323	Q609	5611-999L (F)	XISTOR, PNP R
323	Q610	5611-999L (F)	XISTOR, PNP R
324	Q611	5613-2320L (F)	XISTOR, NPN R
324	Q612	5613-2320L (F)	XISTOR, NPN R
323	Q613	5611-999L (F)	XISTOR, PNP R
323	Q614	5611-999L (F)	XISTOR, PNP R
324	Q615	5613-2320L (F)	XISTOR, NPN R
324	Q616	5613-2320L (F)	XISTOR, NPN R
327	Q617	5612-646A (C)	XISTOR, PNP A
327	Q618	5612-646A (C)	XISTOR, PNP A
328	Q619	5614-666A (C)	XISTOR, NPN A
328	Q620	5614-666A (C)	XISTOR, NPN A
324	Q625	5613-2320L (F)	XISTOR, NPN R
324	Q626	5613-2320L (F)	XISTOR, NPN R
328	Q627	5614-666A (C)	XISTOR, NPN A
328	Q628	5614-666A (C)	XISTOR, NPN A
327	Q629	5612-646A (C)	XISTOR, PNP A
327	Q630	5612-646A (C)	XISTOR, PNP A
384	Q635	5612-941 (P)	XISTOR, PNP A
385	Q636	5614-1266 (P)	XISTOR, NPN A
387	Q637	5613-2320L (F)	XISTOR, NPN R
386	Q638	5611-999L (F)	XISTOR, PNP R
292	Q701	5613-1844 (E)	XISTOR, NPN R
292	Q702	5613-1844 (E)	XISTOR, NPN R
292	Q703	5613-1844 (E)	XISTOR, NPN R
292	Q704	5613-1844 (E)	XISTOR, NPN R
291	Q705	5611-991 (E)	XISTOR, PNP R
291	Q706	5611-991 (E)	XISTOR, PNP R
291	Q707	5611-991 (E)	XISTOR, PNP R
291	Q708	5611-991 (E)	XISTOR, PNP R
293	Q709	5611-999L (F)	XISTOR, PNP R
293	Q710	5611-999L (F)	XISTOR, PNP R
294	Q711	5613-2320L (F)	XISTOR, NPN R
294	Q712	5613-2320L (F)	XISTOR, NPN R
315	Q713	5614-667A (C)	XISTOR, NPN A
314	Q714	5612-647A (C)	XISTOR, PNP A
316	Q715	5616-SK246GR2	FET, N-CH
316	Q716	5616-SK246GR2	FET, N-CH

**DIODES**

389	D601	5635-HZ24-1L	DIODE, ZENER
389	D602	5635-HZ24-1L	DIODE, ZENER
372	D603	5631-1S2473	DIODE, DET
372	D604	5631-1S2473	DIODE, DET
372	D605	5631-1S2473	DIODE, DET

Ser. No.	Ref. No.	Part No.	Description
372	D606	5631-1S2473	DIODE, DET
317	D701	5635-HZ15-2L	DIODE, ZENER
317	D702	5635-HZ15-2L	DIODE, ZENER
<b>CONTROLS</b>			
343	VR601	5101-S0401202	RES, SEMI FIX 2K, PHONO DRIVER
343	VR602	5101-S0401202	RES, SEMI FIX 2K, PHONO DRIVER
<b>MISCELLANEOUS</b>			
793	CN701	4443-030185	CONNECTOR
792	CW701	4163-S0203551	CONNECTOR W/W
795	CW702	4163-0109040	CONNECTOR W/W
065B	L701	5597-3	CORE, BEADS <b>G GB</b>
065B	L702	5597-3	CORE, BEADS <b>G GB</b>
065B	L703	5597-3	CORE, BEADS <b>G GB</b>
065B	L704	5597-3	CORE, BEADS <b>G GB</b>
658	PJ1	4489-03001004	PIN JACK, MLT, PHONO MM/MC
910	SW701	4431-S0315102	SWITCH, PUSH, CARTRIDGE
794	TP701	4443-027114	CONNECTOR
794	TP702	4443-027114	CONNECTOR

**PCB-2 TONE P.C. BOARD**

**CAPACITORS**

880	C501	5359-1015851	CAP, PPP 100p
880	C502	5359-1015851	CAP, PPP 100p
811	C503	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V
811	C504	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V
807	C505	5345-S19BM107	CAP, MINI ELE 100 $\mu$ /10V
807	C506	5345-S19BM107	CAP, MINI ELE 100 $\mu$ /10V
814	C507	5353-020934	CAP, MCA 2p
814	C508	5353-020934	CAP, MCA 2p
813	C509	5359-3315851	CAP, PPP 330p
813	C510	5359-3315851	CAP, PPP 330p
809	C513	5345-S19CM476	CAP, MINI 47 $\mu$ /16V
809	C514	5345-S19CM476	CAP, MINI 47 $\mu$ /16V
810	C515	5345-S19DM226	CAP, MINI ELE 22 $\mu$ /25V
810	C516	5345-S19DM226	CAP, MINI ELE 22 $\mu$ /25V
818	C517	5354-273J1HM	CAP, MYL .027 $\mu$
818	C518	5354-273J1HM	CAP, MYL .027 $\mu$
816	C519	5354-154593	CAP, MYL .15 $\mu$
816	C520	5354-154593	CAP, MYL .15 $\mu$
819	C521	5354-682J1HM	CAP, MYL 6800p
819	C522	5354-682J1HM	CAP, MYL 6800p
817	C523	5354-393J1HM	CAP, MYL .039 $\mu$
817	C524	5354-393J1HM	CAP, MYL .039 $\mu$
812	C525	5345-107F045	CAP, MINI ELE 100 $\mu$ /50V
812	C526	5345-107F045	CAP, MINI ELE 100 $\mu$ /50V
879	C527	5354-394593	CAP, MYL .39 $\mu$
879	C528	5354-394593	CAP, MYL .39 $\mu$
881	C529	5359-S010J102	CAP, PPP 1000p
844	C531	5359-3315851	CAP, PPP 330p
844	C532	5359-3315851	CAP, PPP 330p
808	C533	5359-3315851	CAP, PPP 330p
808	C534	5359-3315851	CAP, PPP 330p
838	C561	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V
838	C562	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V
837	C563	5345-107C041	CAP, MINI ELE 100 $\mu$ /16V
837	C564	5345-107C041	CAP, MINI ELE 100 $\mu$ /16V
841	C565	5354-104593	CAP, MYL .1 $\mu$
841	C566	5354-104593	CAP, MYL .1 $\mu$
841	C567	5354-104593	CAP, MYL .1 $\mu$
841	C568	5354-104593	CAP, MYL .1 $\mu$
843	C569	5353-050934	CAP, MCA 5p
843	C570	5353-050934	CAP, MCA 5p
839	C571	5345-S19FM225	CAP, MINI ELE 2.2 $\mu$ /50V
839	C572	5345-S19FM225	CAP, MINI ELE 2.2 $\mu$ /50V
836	C573	5345-107F045	CAP, MINI ELE 100 $\mu$ /50V
836	C574	5345-107F045	CAP, MINI ELE 100 $\mu$ /50V
869	C901	5345-107F045	CAP, MINI ELE 100 $\mu$ /50V
869	C902	5345-107F045	CAP, MINI ELE 100 $\mu$ /50V
870	C903	5345-476F041	CAP, MINI ELE 47 $\mu$ /50V
870	C904	5345-476F041	CAP, MINI ELE 47 $\mu$ /50V
878	C914	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V
878	C915	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V
878	C916	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>							
886	R501	5135-331522	RES, CBN 1/2P 330	854	R579	5135-272522	RES, CBN 1/2P 2.7K
886	R502	5135-331522	RES, CBN 1/2P 330	854	R580	5135-272522	RES, CBN 1/2P 2.7K
821	R505	5135-274522	RES, CBN 1/2P 270K	857	R581	5135-101522	RES, CBN 1/2P 100
821	R506	5135-274522	RES, CBN 1/2P 270K	857	R582	5135-101522	RES, CBN 1/2P 100
828	R507	5135-331522	RES, CBN 1/2P 330	854	R583	5135-272522	RES, CBN 1/2P 2.7K
828	R508	5135-331522	RES, CBN 1/2P 330	854	R584	5135-272522	RES, CBN 1/2P 2.7K
826	R509	5135-182522	RES, CBN 1/2P 1.8K	848	R585	5135-153522	RES, CBN 1/2P 15K
826	R510	5135-182522	RES, CBN 1/2P 1.8K	848	R586	5135-153522	RES, CBN 1/2P 15K
826	R511	5135-182522	RES, CBN 1/2P 1.8K	855	R587	5135-471522	RES, CBN 1/2P 470
826	R512	5135-182522	RES, CBN 1/2P 1.8K	855	R588	5135-471522	RES, CBN 1/2P 470
829	R513	5135-271522	RES, CBN 1/2P 270	850	R589	5232-682J16P	RES, CBN 1/6P 6.8K
829	R514	5135-271522	RES, CBN 1/2P 270	852	R590	5135-682522	RES, CBN 1/2P 6.8K
829	R515	5135-271522	RES, CBN 1/2P 270	840	R591	5232-331J16P	RES, CBN 1/6P 330
829	R516	5135-271522	RES, CBN 1/2P 270	856	R592	5135-331522	RES, CBN 1/2P 330
824	R517	5135-103522	RES, CBN 1/2P 10K	846	R593	5135-104522	RES, CBN 1/2P 100K
824	R518	5135-103522	RES, CBN 1/2P 10K	846	R594	5135-104522	RES, CBN 1/2P 100K
826	R519	5135-182522	RES, CBN 1/2P 1.8K	859	△R595	5102-2205116	RES, FUSE 22
826	R520	5135-182522	RES, CBN 1/2P 1.8K	859	△R596	5102-2205116	RES, FUSE 22
826	R521	5135-182522	RES, CBN 1/2P 1.8K	845	R597	5135-224522	RES, CBN 1/2P 220K
826	R522	5135-182522	RES, CBN 1/2P 1.8K	845	R598	5135-224522	RES, CBN 1/2P 220K
829	R523	5135-271522	RES, CBN 1/2P 270	840	R599	5232-331J16P	RES, CBN 1/6P 330
829	R524	5135-271522	RES, CBN 1/2P 270	840	R600	5232-331J16P	RES, CBN 1/6P 330
829	R525	5135-271522	RES, CBN 1/2P 270	835	R838	5135-331522	RES, CBN 1/2P 330
829	R526	5135-271522	RES, CBN 1/2P 270	876	△R901	5102-2R25116	RES, FUSE 2.2
824	R527	5135-103522	RES, CBN 1/2P 10K	876	△R902	5102-2R25116	RES, FUSE 2.2
824	R528	5135-103522	RES, CBN 1/2P 10K	873	R903	5135-331522	RES, CBN 1/2P 330
828	R529	5135-331522	RES, CBN 1/2P 330	873	R904	5135-331522	RES, CBN 1/2P 330
828	R530	5135-331522	RES, CBN 1/2P 330	872	R905	5135-222522	RES, CBN 1/2P 2.2K
830	R531	5135-682522	RES, CBN 1/2P 6.8K	872	R906	5135-222522	RES, CBN 1/2P 2.2K
830	R532	5135-682522	RES, CBN 1/2P 6.8K	877	△R907	5102-1005116	RES, FUSE 10
821	R533	5135-274522	RES, CBN 1/2P 270K	877	△R908	5102-1005116	RES, FUSE 10
821	R534	5135-274522	RES, CBN 1/2P 270K	875	R910	5135-220522	RES, CBN 1/2P 22
822	R535	5135-473522	RES, CBN 1/2P 47K	883	R911	5135-333522	RES, CBN 1/2P 33K
822	R536	5135-473522	RES, CBN 1/2P 47K	884	R912	5135-682522	RES, CBN 1/2P 6.8K
823	R537	5135-153522	RES, CBN 1/2P 15K	887	R913	5135-331522	RES, CBN 1/2P 330
823	R538	5135-153522	RES, CBN 1/2P 15K	887	R914	5135-331522	RES, CBN 1/2P 330
825	R539	5135-272522	RES, CBN 1/2P 2.7K	885	R916	5135-223522	RES, CBN 1/2P 2.2K
825	R540	5135-272522	RES, CBN 1/2P 2.7K	874	R917	5135-101522	RES, CBN 1/2P 100
823	R541	5135-153522	RES, CBN 1/2P 15K	874	R918	5135-101522	RES, CBN 1/2P 100
823	R542	5135-153522	RES, CBN 1/2P 15K	835	R919	5135-331522	RES, CBN 1/2P 330
825	R543	5135-272522	RES, CBN 1/2P 2.7K	835	R920	5135-331522	RES, CBN 1/2P 330
825	R544	5135-272522	RES, CBN 1/2P 2.7K	883	R926	5135-333522	RES, CBN 1/2P 33K
827	R545	5135-122522	RES, CBN 1/2P 1.2K	888	R931	5135-105522	RES, CBN 1/2P 1M
827	R546	5135-122522	RES, CBN 1/2P 1.2K	888	R932	5135-105522	RES, CBN 1/2P 1M
815	R547	5135-121522	RES, CBN 1/2P 120	871	R933	5135-394522	RES, CBN 1/2P 390K
815	R548	5135-121522	RES, CBN 1/2P 120	871	R934	5135-394522	RES, CBN 1/2P 390K
828	R549	5135-331522	RES, CBN 1/2P 330	849	R935	5135-220522	RES, CBN 1/2P 22
828	R550	5135-331522	RES, CBN 1/2P 330	860	R939	5135-331522	RES, CBN 1/2P 330
828	R551	5135-331522	RES, CBN 1/2P 330	860	R940	5135-331522	RES, CBN 1/2P 330
828	R552	5135-331522	RES, CBN 1/2P 330	828	R941	5135-331522	RES, CBN 1/2P 330
820	△R553	5102-2R25116	RES, FUSE 2.2	828	R942	5135-331522	RES, CBN 1/2P 330
820	△R554	5102-2R25116	RES, FUSE 2.2	<b>TRANSISTORS</b>			
830	R555	5135-682522	RES, CBN 1/2P 6.8K	801	Q501	5613-2240 (BL)	XISTOR, NPN R
830	R556	5135-682522	RES, CBN 1/2P 6.8K	801	Q502	5613-2240 (BL)	XISTOR, NPN R
848	R557	5135-153522	RES, CBN 1/2P 15K	801	Q503	5613-2240 (BL)	XISTOR, NPN R
848	R558	5135-153522	RES, CBN 1/2P 15K	801	Q504	5613-2240 (BL)	XISTOR, NPN R
828	R559	5135-331522	RES, CBN 1/2P 330	802	Q505	5611-970 (BL)	XISTOR, PNP R
828	R560	5135-331522	RES, CBN 1/2P 330	802	Q506	5611-970 (BL)	XISTOR, PNP R
846	R561	5135-104522	RES, CBN 1/2P 100K	802	Q507	5611-970 (BL)	XISTOR, PNP R
846	R562	5135-104522	RES, CBN 1/2P 100K	802	Q508	5611-970 (BL)	XISTOR, PNP R
852	R563	5135-682522	RES, CBN 1/2P 6.8K	803	Q509	5613-2320L (F)	XISTOR, NPN R
852	R564	5135-682522	RES, CBN 1/2P 6.8K	803	Q510	5613-2320L (F)	XISTOR, NPN R
852	R565	5135-682522	RES, CBN 1/2P 6.8K	804	Q511	5611-999L (F)	XISTOR, PNP R
852	R566	5135-682522	RES, CBN 1/2P 6.8K	804	Q512	5611-999L (F)	XISTOR, PNP R
848	R567	5135-153522	RES, CBN 1/2P 15K	806	Q513	5612-646A (C)	XISTOR, PNP A
848	R568	5135-153522	RES, CBN 1/2P 15K	806	Q514	5612-646A (C)	XISTOR, PNP A
858	R569	5135-102522	RES, CBN 1/2P 1K	805	Q515	5614-666A (C)	XISTOR, NPN A
858	R570	5135-102522	RES, CBN 1/2P 1K	805	Q516	5614-666A (C)	XISTOR, NPN A
851	R571	5135-122522	RES, CBN 1/2P 1.2K	866	Q517	5616-2SK364BL	FET, N-CH
851	R572	5135-122522	RES, CBN 1/2P 1.2K	866	Q518	5616-2SK364BL	FET, N-CH
852	R573	5135-682522	RES, CBN 1/2P 6.8K	833	Q561	5613-2320L (F)	XISTOR, NPN R
852	R574	5135-682522	RES, CBN 1/2P 6.8K	833	Q562	5613-2320L (F)	XISTOR, NPN R
847	R575	5135-273522	RES, CBN 1/2P 27K	834	Q563	5611-999L (F)	XISTOR, PNP R
847	R576	5135-273522	RES, CBN 1/2P 27K	834	Q564	5611-999L (F)	XISTOR, PNP R
848	R577	5135-153522	RES, CBN 1/2P 15K	832	Q565	5611-970 (BL)	XISTOR, PNP R
848	R578	5135-153522	RES, CBN 1/2P 15K	832	Q566	5611-970 (BL)	XISTOR, PNP R

Ser. No.	Ref. No.	Part No.	Description
831	Q567	5613-2240 (BL)	XISTOR, NPN R
831	Q568	5613-2240 (BL)	XISTOR, NPN R
833	Q569	5613-2320L (F)	XISTOR, NPN R
833	Q570	5613-2320L (F)	XISTOR, NPN R
862	Q901	5612-941 (Q)	XISTOR, PNP A
861	Q902	5614-1266 (Q)	XISTOR, NPN A
863	Q903	5613-2320L (F)	XISTOR, NPN R
864	Q904	5611-999L (F)	XISTOR, PNP R
865	Q911	5611-RN2203	XISTOR, PNP R
865	Q912	5611-RN2203	XISTOR, PNP R
863	Q913	5613-2320L (F)	XISTOR, NPN R
863	Q914	5613-2320L (F)	XISTOR, NPN R

**DIODES**

868	D501	5631-1S2473	DIODE, DET
868	D502	5631-1S2473	DIODE, DET
867	D901	5635-HZ24-1L	DIODE, ZENER
867	D902	5635-HZ24-1L	DIODE, ZENER
908	D914	5637-LT3E47L	LED, PHASE CORRECT LOUDNESS
908	D915	5637-LT3E47L	LED, SUBSONIC
908	D916	5637-LT3E47L	LED, TONE DEFEAT

**CONTROLS**

898	VR501/ 502	5113-S0901503	RES, V CBN 16 50K, BALANCE
902	VR505/ 506	5113-S0903104	RES, V CBN 16 100K, BASS
900	VR507/ 508	5113-S0902503	RES, V CBN 16 50K, TREBLE

**MISCELLANEOUS**

774	CN503	4443-0701141	CONNECTOR
777	CN504	4443-0501141	CONNECTOR
778	CN505	4443-1001141	CONNECTOR
787	CW504	4163-S0204251	CONNECTOR W/W
788	CW505	4163-S0203301	CONNECTOR W/W
790	CW506	4163-0145039	CONNECTOR W/W
791	CW507	4163-0140020	CONNECTOR W/W
772	CW508	4163-S0202501	CONNECTOR W/W
797	CW510	4163-S0203101	CONNECTOR W/W
796	CW703	4163-0160040	CONNECTOR W/W
780	CW803	4163-0155024	CONNECTOR W/W
781	CW804	4163-0150026	CONNECTOR W/W
786	HL502	2240-Z031	HOLDER, W502
786	HL503	2240-Z031	HOLDER, W503
786	HL504	2240-Z031	HOLDER, W504
786	HL802	2240-Z031	HOLDER, W805
882	RC802	5212-104J0401	R COMPOSITE, 100 K (R921 ~ 924)
891	SW501	4411-00303205	SWITCH, ROTARY, SOURCE
891	SW502	4411-00303205	SWITCH, ROTARY, RECORD OUT
893	SW503	4411-00304203	SWITCH, ROTARY, TAPE MONITOR
906	SW504/ 505	4431-S1303210	SWITCH, PUSH, TONE DEFEAT
905	SW506	4431-S1306106	SWITCH, PUSH, PHASE CORRECT LOUDNESS

**PCB-3 CONTROL P.C. BOARD**

**CAPACITORS**

059B	C45	5359-S040K221	CAP, PPP 220p
059B	C46	5359-S040K221	CAP, PPP 220p
059B	C47	5359-S040K221	CAP, PPP 220p
059B	C48	5359-S040K221	CAP, PPP 220p
946	C801	5359-S010J102	CAP, PPP 1000p
946	C802	5359-S010J102	CAP, PPP 1000p
946	C803	5359-S010J102	CAP, PPP 1000p
946	C804	5359-S010J102	CAP, PPP 1000p
947	C805	5354-104593	CAP, MYL .1 $\mu$
947	C806	5354-104593	CAP, MYL .1 $\mu$
947	C807	5354-104593	CAP, MYL .1 $\mu$
944	C808	5345-S19DM106	CAP, MINI ELE 10 $\mu$ /25V
940	C809	5345-108D045	CAP, MINI ELE 1000 $\mu$ /25V
945	C811	5345-S19FM104	CAP, MINI ELE .1 $\mu$ /50V
647	C812	5345-107D041	CAP, MINI ELE 100 $\mu$ /25V
647	C813	5345-107D041	CAP, MINI ELE 100 $\mu$ /25V
647	C814	5345-107D041	CAP, MINI ELE 100 $\mu$ /25V
647	C815	5345-107D041	CAP, MINI ELE 100 $\mu$ /25V
944	C816	5345-S19DM106	CAP, MINI ELE 10 $\mu$ /25V

Ser. No.	Ref. No.	Part No.	Description
944	C817	5345-S19DM106	CAP, MINI ELE 10 $\mu$ /25V
665	C863	5361-103KB	CAP, CER .01 $\mu$
665	C864	5361-103KB	CAP, CER .01 $\mu$
665	C865	5361-103KB	CAP, CER .01 $\mu$
665	C868	5361-103KB	CAP, CER .01 $\mu$

**RESISTORS**

959	R801	5135-102522	RES, CBN 1/2P 1K
959	R802	5135-102522	RES, CBN 1/2P 1K
959	R803	5135-102522	RES, CBN 1/2P 1K
959	R804	5135-102522	RES, CBN 1/2P 1K
959	R805	5135-102522	RES, CBN 1/2P 1K
959	R806	5135-102522	RES, CBN 1/2P 1K
959	R807	5135-102522	RES, CBN 1/2P 1K
959	R808	5135-102522	RES, CBN 1/2P 1K
959	R809	5135-102522	RES, CBN 1/2P 1K
959	R810	5135-102522	RES, CBN 1/2P 1K
959	R811	5135-102522	RES, CBN 1/2P 1K
959	R812	5135-102522	RES, CBN 1/2P 1K
959	R813	5135-102522	RES, CBN 1/2P 1K
959	R814	5135-102522	RES, CBN 1/2P 1K
959	R815	5135-102522	RES, CBN 1/2P 1K
959	R816	5135-102522	RES, CBN 1/2P 1K
959	R817	5135-102522	RES, CBN 1/2P 1K
959	R818	5135-102522	RES, CBN 1/2P 1K
959	R819	5135-102522	RES, CBN 1/2P 1K
959	R820	5135-102522	RES, CBN 1/2P 1K
959	R821	5135-102522	RES, CBN 1/2P 1K
959	R822	5135-102522	RES, CBN 1/2P 1K
959	R823	5135-102522	RES, CBN 1/2P 1K
959	R824	5135-102522	RES, CBN 1/2P 1K
964	R825	5232-224J16P	RES, CBN 1/6P 220K
964	R826	5232-224J16P	RES, CBN 1/6P 220K
964	R827	5232-224J16P	RES, CBN 1/6P 220K
975	R828	5232-124J16P	RES, CBN 1/6P 120K
963	R829	5232-105J16P	RES, CBN 1/6P 1M
963	R830	5232-105J16P	RES, CBN 1/6P 1M
963	R831	5232-105J16P	RES, CBN 1/6P 1M
963	R832	5232-105J16P	RES, CBN 1/6P 1M
963	R833	5232-105J16P	RES, CBN 1/6P 1M
963	R834	5232-105J16P	RES, CBN 1/6P 1M
963	R835	5232-105J16P	RES, CBN 1/6P 1M
965	R836	5232-104J16P	RES, CBN 1/6P 100K
965	R837	5232-104J16P	RES, CBN 1/6P 100K
965	R838	5232-104J16P	RES, CBN 1/6P 100K
649	R839	5102-2205116	RES, FUSE 22
650	R840	5135-272522	RES, CBN 1/2P 2.7K
650	R841	5135-272522	RES, CBN 1/2P 2.7K
649	R842	5102-2205116	RES, FUSE 22
962	R843	5135-223522	RES, CBN 1/2P 22K
070B	R851	5232-102J16P	RES, CBN 1/6P 1K
070B	R852	5232-102J16P	RES, CBN 1/6P 1K
070B	R853	5232-102J16P	RES, CBN 1/6P 1K
070B	R854	5232-102J16P	RES, CBN 1/6P 1K
966	R855	5135-100522	RES, CBN 1/2P 10
070B	R856	5232-102J16P	RES, CBN 1/6P 1K
070B	R857	5232-102J16P	RES, CBN 1/6P 1K
070B	R858	5232-102J16P	RES, CBN 1/6P 1K
973	R887	5232-223J16P	RES, CBN 1/6P 22K

**INTEGRATED CIRCUIT**

928	IC801	5654-LC7818	IC, DIGITAL
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**TRANSISTORS**

936	Q801	5616-2SK246BL	FET, N-CH
936	Q802	5616-2SK246BL	FET, N-CH
936	Q803	5616-2SK246BL	FET, N-CH
936	Q804	5616-2SK246BL	FET, N-CH
935	Q805	5616-2SK364 (V	FET, N-CH
935	Q806	5616-2SK364 (V	FET, N-CH
935	Q807	5616-2SK364 (V	FET, N-CH
935	Q808	5616-2SK364 (V	FET, N-CH
936	Q809	5616-2SK246BL	FET, N-CH
936	Q810	5616-2SK246BL	FET, N-CH
936	Q811	5616-2SK246BL	FET, N-CH
936	Q812	5616-2SK246BL	FET, N-CH
935	Q813	5616-2SK364 (V	FET, N-CH
935	Q814	5616-2SK364 (V	FET, N-CH
936	Q815	5616-2SK246BL	FET, N-CH

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
936	Q816	5616-2SK246BL	FET, N-CH	438	C431	5359-8205851	CAP, PPP 82p
936	Q817	5616-2SK246BL	FET, N-CH	438	C432	5359-8205851	CAP, PPP 82p
936	Q818	5616-2SK246BL	FET, N-CH	438	C433	5359-8205851	CAP, PPP 82p
645	Q819	5614-667A (C)	XISTOR, NPN A	438	C434	5359-8205851	CAP, PPP 82p
644	Q820	5612-647A (C)	XISTOR, PNP A	436	C435	5353-680534	CAP, MCA 68p
933	Q861	5611-933S (S)	XISTOR, PNP R	436	C436	5353-680534	CAP, MCA 68p
<b>DIODES</b>				437E	C437	5353-100534	CAP, MCA 10p <b>G GB WB IB</b>
939	D801	5631-1SS133	DIODE, DET	437E	C438	5353-100534	CAP, MCA 10p <b>G GB WB IB</b>
939	D802	5631-1SS133	DIODE, DET	433	C469	5345-S19CM106	CAP, MINI ELE 10 μ/16V
939	D803	5631-1SS133	DIODE, DET	<b>RESISTORS</b>			
939	D804	5631-1SS133	DIODE, DET	495	R1	5135-473522	RES, CBN 1/2P 47K
939	D805	5631-1SS133	DIODE, DET	488	R2	5135-223522	RES, CBN 1/2P 22K
939	D806	5631-1SS133	DIODE, DET	497	R3	5135-152522	RES, CBN 1/2P 1.5K
939	D807	5631-1SS133	DIODE, DET	500	R7	5135-104522	RES, CBN 1/2P 100K
939	D808	5631-1SS133	DIODE, DET	495	R8	5135-473522	RES, CBN 1/2P 47K
939	D809	5631-1SS133	DIODE, DET	496	R9	5135-334522	RES, CBN 1/2P 330K
939	D810	5631-1SS133	DIODE, DET	494	R10	5135-684522	RES, CBN 1/2P 680K
939	D811	5631-1SS133	DIODE, DET	493	R11	5135-184522	RES, CBN 1/2P 180K
939	D812	5631-1SS133	DIODE, DET	492	R12	5135-225522	RES, CBN 1/2P 2.2M
939	D813	5631-1SS133	DIODE, DET	490	R13	5135-104522	RES, CBN 1/2P 100K
939	D814	5631-1SS133	DIODE, DET	490	R14	5135-104522	RES, CBN 1/2P 100K
939	D815	5631-1SS133	DIODE, DET	491	R15	5135-103522	RES, CBN 1/2P 10K
939	D816	5631-1SS133	DIODE, DET	491	R16	5135-103522	RES, CBN 1/2P 10K
939	D817	5631-1SS133	DIODE, DET	495	R17	5135-473522	RES, CBN 1/2P 47K
939	D818	5631-1SS133	DIODE, DET	488	R18	5135-223522	RES, CBN 1/2P 22K
939	D819	5631-1SS133	DIODE, DET	488	R19	5135-223522	RES, CBN 1/2P 22K
939	D820	5631-1SS133	DIODE, DET	495	R20	5135-473522	RES, CBN 1/2P 47K
646	D821	5635-HZ20-1L	DIODE, ZENER	490	R21	5135-104522	RES, CBN 1/2P 100K
646	D822	5635-HZ20-1L	DIODE, ZENER	487	R25	5135-105522	RES, CBN 1/2P 1M
<b>MISCELLANEOUS</b>				487	R26	5135-105522	RES, CBN 1/2P 1M
779	CN502	4443-030185	CONNECTOR	488	R27	5135-223522	RES, CBN 1/2P 22K
773	CW802	4163-S0203901	CONNECTOR W/W	486	△R34	5102-1015116	RES, FUSE 100
783	CW805	4163-S0207501	CONNECTOR W/W	461	R401	5135-331522	RES, CBN 1/2P 330
784	CW806	4163-S0205451	CONNECTOR W/W	461	R402	5135-331522	RES, CBN 1/2P 330
785	CW807	4163-S0210401	CONNECTOR W/W	451	R403	5135-273522	RES, CBN 1/2P 27K
659	PJ3	4489-02901004	PIN JACK, MLT, TUNER/CD	451	R404	5135-273522	RES, CBN 1/2P 27K
659	PJ4	4489-02901004	PIN JACK, MLT, VIDEO/AUX	457	R405	5135-121522	RES, CBN 1/2P 120
659	PJ5	4489-02901004	PIN JACK, MLT, TAPE 1 IN/OUT	457	R406	5135-121522	RES, CBN 1/2P 120
659	PJ6	4489-02901004	PIN JACK, MLT, TAPE 2 IN/OUT	459	R407	5135-330522	RES, CBN 1/2P 33
948	RC801	5212-223J0601	R COMPOSITE	459	R408	5135-330522	RES, CBN 1/2P 33
782		2240-Z031	HOLDER	462	R409	5135-103522	RES, CBN 1/2P 10K

**PCB-4 DRIVER P.C. BOARD**

<b>CAPACITORS</b>							
482	C13	5354-332J1HM	CAP, MYL 3300p	454	R415	5135-154522	RES, CBN 1/2P 150K
480	C15	5354-334593	CAP, MYL .33 μ	454	R416	5135-154522	RES, CBN 1/2P 150K
483	C16	5345-S19CM336	CAP, MINI ELE 33 μ/16V	452	R417	5135-563522	RES, CBN 1/2P 56K
480	C17	5354-334593	CAP, MYL .33 μ	452	R418	5135-563522	RES, CBN 1/2P 56K
484	C18	5345-S19FM105	CAP, MINI ELE 1 μ/50V	455	R419	5135-105522	RES, CBN 1/2P 1M
485	C19	5345-105J0962	CAP, MINI ELE 1 μ/100V	455	R420	5135-105522	RES, CBN 1/2P 1M
476	C24	5345-226C041	CAP, MINI ELE 22 μ/16V	454	R421	5135-154522	RES, CBN 1/2P 150K
481	C26	5354-104593	CAP, MYL .1 μ	454	R422	5135-154522	RES, CBN 1/2P 150K
434	C405	5354-104593	CAP, MYL .1 μ	454	R423	5135-154522	RES, CBN 1/2P 150K
434	C406	5354-104593	CAP, MYL .1 μ	454	R424	5135-154522	RES, CBN 1/2P 150K
434	C407	5354-104593	CAP, MYL .1 μ	455	R425	5135-105522	RES, CBN 1/2P 1M
434	C408	5354-104593	CAP, MYL .1 μ	455	R426	5135-105522	RES, CBN 1/2P 1M
437	C409	5353-050534	CAP, MCA 5p <b>BK</b>	460	R427	5135-102522	RES, CBN 1/2P 1K
437B	C409	5353-100534	CAP, MCA 10p <b>G GB WB IB</b>	460	R428	5135-102522	RES, CBN 1/2P 1K
437	C410	5353-050534	CAP, MCA 5p <b>BK</b>	460	R429	5135-102522	RES, CBN 1/2P 1K
437B	C410	5353-100534	CAP, MCA 10p <b>G GB WB IB</b>	460	R430	5135-102522	RES, CBN 1/2P 1K
430	C413	5345-S19CM225	CAP, MINI ELE 2.2 μ/16V	463	R431	5135-151522	RES, CBN 1/2P 150
430	C414	5345-S19CM225	CAP, MINI ELE 2.2 μ/16V	463	R432	5135-151522	RES, CBN 1/2P 150
429	C415	5345-227D041	CAP, MINI ELE 220 μ/25V	448	R433	5174-330381	RES, MTL 1/4P 33
429	C416	5345-227D041	CAP, MINI ELE 220 μ/25V	448B	R433	5174-390381	RES, MTL 1/4P 39 <b>G GB IB</b>
429	C417	5345-227D041	CAP, MINI ELE 220 μ/25V	448	R434	5174-330381	RES, MTL 1/4P 33
429	C418	5345-227D041	CAP, MINI ELE 220 μ/25V	448B	R434	5174-390381	RES, MTL 1/4P 39 <b>G GB IB</b>
429	C419	5345-227D041	CAP, MINI ELE 220 μ/25V	463	R435	5135-151522	RES, CBN 1/2P 150
429	C420	5345-227D041	CAP, MINI ELE 220 μ/25V	463	R436	5135-151522	RES, CBN 1/2P 150
429	C421	5345-227D041	CAP, MINI ELE 220 μ/25V	461	R437	5135-331522	RES, CBN 1/2P 330
429	C422	5345-227D041	CAP, MINI ELE 220 μ/25V	461	R438	5135-331522	RES, CBN 1/2P 330
431	C423	5345-477J0962	CAP, MINI ELE 470 μ/100V	453	R439	5135-563522	RES, CBN 1/2P 56K
431	C424	5345-477J0962	CAP, MINI ELE 470 μ/100V	453	R440	5135-563522	RES, CBN 1/2P 56K
431	C425	5345-477J0962	CAP, MINI ELE 470 μ/100V	463	R441	5135-151522	RES, CBN 1/2P 150
431	C426	5345-477J0962	CAP, MINI ELE 470 μ/100V	463	R442	5135-151522	RES, CBN 1/2P 150







Ser. No.	Ref. No.	Part No.	Description
518	R485	5272-S010KR15	RES, CEM 2P .15
517	R487	5272-S010JR22	RES, CEM 2P .22
517	R489	5272-S010JR22	RES, CEM 2P .22
518	R491	5272-S010KR15	RES, CEM 2P .15
518	R493	5272-S010KR15	RES, CEM 2P .15
517	R495	5272-S010JR22	RES, CEM 2P .22
517	R497	5272-S010JR22	RES, CEM 2P .22
518	R499	5272-S010KR15	RES, CEM 2P .15
528	R743	5135-681522	RES, CBN 1/2P 680
525	R745	5135-561522	RES, CBN 1/2P 560
693	R751	5135-562522	RES, CBN 1/2P 5.6K
693	R753	5135-562522	RES, CBN 1/2P 5.6K
694	R755	5135-182522	RES, CBN 1/2P 1.8K
531	R757	5171-100593	RES, MTL 1P 10
526	R759	5135-121522	RES, CBN 1/2P 120
532	R761	5175-100583	RES, MTL 3P 10
695	R763	5135-472522	RES, CBN 1/2P 4.7K
527	R765	5135-150522	RES, CBN 1/2P 15
529	R769	5135-221522	RES, CBN 1/2P 220
529	R771	5135-221522	RES, CBN 1/2P 220
520	△R791	5102-1015116	RES, FUSE 100
520	△R793	5102-1015116	RES, FUSE 100
521	△R795	5102-1005116	RES, FUSE 10
521	△R797	5102-1005116	RES, FUSE 10
527	R799	5135-150522	RES, CBN 1/2P 15
549	R941	5135-100522	RES, CBN 1/2P 10
<b>TRANSISTORS</b>			
505	Q453	5613-3423 (Y)	XISTOR, NPN R
503	Q457	5614-668A (C)	XISTOR, NPN A
502	Q459	5612-648A (C)	XISTOR, PNP A
506	Q461	5611-1306A (Y)	XISTOR, PNP R
507	Q463	5613-3298A (Y)	XISTOR, NPN R
508	Q465	5611-1302 (O)	XISTOR, PNP R
510	Q467	5613-3281 (O)	XISTOR, NPN R
508	Q469	5611-1302 (O)	XISTOR, PNP R
510	Q471	5613-3281 (O)	XISTOR, NPN R
508	Q473	5611-1302 (O)	XISTOR, PNP R
510	Q475	5613-3281 (O)	XISTOR, NPN R
690	Q477	5611-970 (BL)	XISTOR, PNP R
<b>DIODES</b>			
513	D407	5631-1S2471	DIODE, DET
513	D409	5631-1S2471	DIODE, DET
514	D411	5632-10DF2	DIODE, RECT
514	D413	5632-10DF2	DIODE, RECT
<b>COIL</b>			
535	L405	5991-7125	SPRING COIL
<b>CONTROL</b>			
543	VR405	5101-S0401102	RES, SEMI FIX 1K, IDLING CURRENT
<b>MISCELLANEOUS</b>			
742	CC402	4132-R0110121	CORD, 2C
736	CW401	4163-0135021	CONNECTOR W/W
737	CW402	4163-0135023	CONNECTOR W/W
738	CW403	4163-0140022	CONNECTOR W/W
749	JL401	4242-R0507171	JUMPER LEAD
550	L401	5597-45502	CORE, BEADS
550	L403	5597-45502	CORE, BEADS
734	TP403	4443-024116	CONNECTOR

**PCB-6 MAIN LCH P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
594	C456	5353-470534	CAP, MCA 47p
594	C458	5353-470534	CAP, MCA 47p
699	C460	5354-104593	CAP, MYL .1 μ
601	C466	5354-104593	CAP, MYL .1 μ
601	C468	5354-104593	CAP, MYL .1 μ
<b>RESISTORS</b>			
612	R480	5135-100522	RES, CBN 1/2P 10
578	R482	5272-S010KR15	RES, CEM 2P .15
578	R484	5272-S010KR15	RES, CEM 2P .15
578	R486	5272-S010KR15	RES, CEM 2P .15
577	R488	5272-S010JR22	RES, CEM 2P .22
577	R490	5272-S010JR22	RES, CEM 2P .22
578	R492	5272-S010KR15	RES, CEM 2P .15
578	R494	5272-S010KR15	RES, CEM 2P .15

Ser. No.	Ref. No.	Part No.	Description
577	R496	5272-S010JR22	RES, CEM 2P .22
577	R498	5272-S010JR22	RES, CEM 2P .22
578	R500	5272-S010KR15	RES, CEM 2P .15
588	R744	5135-681522	RES, CBN 1/2P 680
585	R746	5135-561522	RES, CBN 1/2P 560
701	R752	5135-562522	RES, CBN 1/2P 5.6K
701	R754	5135-562522	RES, CBN 1/2P 5.6K
702	R756	5135-182522	RES, CBN 1/2P 1.8K
591	R758	5171-100593	RES, MTL 1P 10
586	R760	5135-121522	RES, CBN 1/2P 120
592	R762	5175-100583	RES, MTL 3P 10
703	R764	5135-472522	RES, CBN 1/2P 4.7K
587	R766	5135-150522	RES, CBN 1/2P 15
589	R770	5135-221522	RES, CBN 1/2P 220
589	R772	5135-221522	RES, CBN 1/2P 220
580	△R792	5102-1015116	RES, FUSE 100
580	△R794	5102-1015116	RES, FUSE 100
581	△R796	5102-1005116	RES, FUSE 10
581	△R798	5102-1005116	RES, FUSE 10
587	R800	5135-150522	RES, CBN 1/2P 15
612	R942	5135-100522	RES, CBN 1/2P 10
<b>TRANSISTORS</b>			
565	Q454	5613-3423 (Y)	XISTOR, NPN R
563	Q458	5614-668A (C)	XISTOR, NPN A
562	Q460	5612-648A (C)	XISTOR, PNP A
566	Q462	5611-1306A (Y)	XISTOR, PNP R
567	Q464	5613-3298A (Y)	XISTOR, NPN R
568	Q466	5611-1302 (O)	XISTOR, PNP R
570	Q468	5613-3281 (O)	XISTOR, NPN R
568	Q470	5611-1302 (O)	XISTOR, PNP R
570	Q472	5613-3281 (O)	XISTOR, NPN R
568	Q474	5611-1302 (O)	XISTOR, PNP R
570	Q476	5613-3281 (O)	XISTOR, NPN R
698	Q478	5611-970 (BL)	XISTOR, PNP R
<b>DIODES</b>			
573	D408	5631-1S2471	DIODE, DET
573	D410	5631-1S2471	DIODE, DET
574	D412	5632-10DF2	DIODE, RECT
574	D414	5632-10DF2	DIODE, RECT
<b>COIL</b>			
595	L406	5991-7125	SPRING COIL
<b>CONTROL</b>			
603	VR406	5101-S0401102	RES, SEMI FIX 1K, IDLING CURRENT
<b>MISCELLANEOUS</b>			
739	CC401	4132-R0110121	CORD, 2C
746	CW404	4163-0135021	CONNECTOR W/W
747	CW405	4163-0135020	CONNECTOR W/W
748	CW406	4163-0140022	CONNECTOR W/W
735	CW410	4163-S0202201	CONNECTOR W/W
745	JL403	4242-R0507171	JUMPER LEAD
613	L402	5597-45502	CORE, BEADS
613	L404	5597-45502	CORE, BEADS
606	PT1	5192-00104	POSISTOR
606	PT2	5192-00104	POSISTOR
741	TP404	4443-024116	CONNECTOR
743		2240-Z072	HOLDER

**PCB-7 HEADPHONES P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
075B	C95	5359-3315851	CAP, PPP 330p 
075B	C96	5359-3315851	CAP, PPP 330p 
<b>MISCELLANEOUS</b>			
917	J1	4451-00161	JACK, 1P, HEADPHONES
771		2240-Z031	HOLDER

**PCB-8 SPEAKER P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
679	R737	5135-102522	RES, CBN 1/2P 1K
679	R738	5135-102522	RES, CBN 1/2P 1K
679	R739	5135-102522	RES, CBN 1/2P 1K
679	R740	5135-102522	RES, CBN 1/2P 1K

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
770	JL404	4242-R0303451	JUMPER LEAD
651	SPT1	4214-221	TERMINAL
913	SW3	4411-204715	SWITCH, ROTARY, SPEAKERS
769		2240-Z031	HOLDER

**PCB-9 MAIN POWER SUPPLY P.C. BOARD**

<b>CAPACITORS</b>			
624	C7	5352-S060K274	CAP, MTL .27 $\mu$
624	C8	5352-S060K274	CAP, MTL .27 $\mu$
624	C9	5352-S060K274	CAP, MTL .27 $\mu$
624	C10	5352-S060K274	CAP, MTL .27 $\mu$
051B	C20	5352-1041957	CAP, MTL .1 $\mu$ <b>G GB</b>
051B	C21	5352-1041957	CAP, MTL .1 $\mu$ <b>G GB</b>
683	C23	5345-475J0962	CAP, MINI ELE 4.7 $\mu$ /100V
623	C31	5341-S10JM109	CAP, ELE 10000 $\mu$ /85V
623	C32	5341-S10JM109	CAP, ELE 10000 $\mu$ /85V
623	C33	5341-S10JM109	CAP, ELE 10000 $\mu$ /85V
623	C34	5341-S10JM109	CAP, ELE 10000 $\mu$ /85V

**RESISTORS**

685	$\Delta$ R28	5102-8205116	RES, FUSE 82
685	$\Delta$ R29	5102-8205116	RES, FUSE 82
688	R30	5171-331593	RES, MTL 1P 330
687	R31	5135-103522	RES, CBN 1/2P 10K
689	R32	5171-471593	RES, MTL 1P 470
688	R33	5171-331593	RES, MTL 1P 330

**DIODES**

621	$\Delta$ D1	5685-D5SB40	SILICON, BRIG
621	$\Delta$ D2	5685-D5SB40	SILICON, BRIG
681	$\Delta$ D13	5632-S5566B	DIODE, RECT
681	$\Delta$ D14	5632-S5566B	DIODE, RECT

**MISCELLANEOUS**

754	CW1	4163-S0202201	CONNECTOR W/W
752	TM1	4214-11033	TERMINAL
752	TM2	4214-11033	TERMINAL
752	TM3	4214-11033	TERMINAL
752	TM4	4214-11033	TERMINAL
751	TM8	4214-11021	TERMINAL

**PCB-11 SUB POWER SUPPLY P.C. BOARD**

<b>CAPACITORS</b>			
629	$\Delta$ C5	5345-228F0962	CAP, MINI ELE 2200 $\mu$ /50V
629	$\Delta$ C6	5345-228F0962	CAP, MINI ELE 2200 $\mu$ /50V
630	C11	5354-104593	CAP, MYL .1 $\mu$
630	C12	5354-104593	CAP, MYL .1 $\mu$
052B	C22	5352-1041957	CAP, MTL .1 $\mu$ <b>G GB</b>
057B	C51	5361-223ZF	CAP, CER .022 $\mu$ <b>G GB</b>

**DIODES**

627	$\Delta$ D3	5632-S5566B	DIODE, RECT
627	$\Delta$ D4	5632-S5566B	DIODE, RECT
627	$\Delta$ D5	5632-S5566B	DIODE, RECT
627	$\Delta$ D6	5632-S5566B	DIODE, RECT

**MISCELLANEOUS**

758	CN2	4443-0301140	CONNECTOR
758	CN3	4443-0301140	CONNECTOR
758	CN4	4443-0301140	CONNECTOR
632	$\Delta$ F2	5732-122031	FUSE, 1.25A/125V <b>BK</b>
632B	$\Delta$ F2	5732-122030	FUSE, T1.25A/250V <b>G GB WB IB</b>
632	$\Delta$ F3	5732-122031	FUSE, 1.25A/125V <b>BK</b>
632B	$\Delta$ F3	5732-122030	FUSE, T1.25A/250V <b>G GB WB IB</b>
633	$\Delta$ HF3	4472-0131	HOLDER, FUSE F2
633	$\Delta$ HF4	4472-0131	HOLDER, FUSE F2
633	$\Delta$ HF5	4472-0131	HOLDER, FUSE F3
633	$\Delta$ HF6	4472-0131	HOLDER, FUSE F3
756	TM5	4214-11033	TERMINAL
631	TM6	4214-11013	TERMINAL

Ser. No.	Ref. No.	Part No.	Description
<b>PCB-13 BYPASS P.C. BOARD</b>			

**MISCELLANEOUS**

763	CN508	4443-0201140	CONNECTOR
767	CN515	4443-030185	CONNECTOR
767	CN516	4443-030185	CONNECTOR
764	HL510	2240-Z031	HOLDER
764	HL511	2240-Z031	HOLDER
764	HL512	2240-Z031	HOLDER
764	HL513	2240-Z031	HOLDER
764	HL514	2240-Z031	HOLDER
789	HL515	2240-Z031	HOLDER, W504
904	SW507	4431-S2501106	SWITCH, PUSH, PREAMPLIFIER BYPASS

**PCB-14 PRE/MAIN SEPARATION P.C. BOARD**

**CAPACITORS**

922	C577	5361-103ZF	CAP, CER .01 $\mu$
922	C578	5361-103ZF	CAP, CER .01 $\mu$

**RESISTORS**

921B	R91	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>
074B	R92	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>
919	R929	5135-331522	RES, CBN 1/2P 330
074B	R929	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>
919	R930	5135-331522	RES, CBN 1/2P 330
919B	R930	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>

**MISCELLANEOUS**

760	CN507	4443-030185	CONNECTOR
760	CN517	4443-030185	CONNECTOR
661	PJ2	4489-00202004	PIN JACK, MLT, PRE-OUT/MAIN-IN
907	SW508	4421-02601042	SWITCH, SLIDE, PRE-OUT/MAIN-IN

**PCB-15 TERMINAL R P.C. BOARD**

**RESISTORS**

553	R747	5135-821522	RES, CBN 1/2P 820
554	R749	5135-122522	RES, CBN 1/2P 1.2K

**TRANSISTOR**

557	Q455	5613-3423 (Y)	XISTOR, NPN R
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**PCB-16 TERMINAL L P.C. BOARD**

**RESISTORS**

615	R748	5135-821522	RES, CBN 1/2P 820
616	R750	5135-122522	RES, CBN 1/2P 1.2K

**TRANSISTOR**

618	Q456	5613-3423 (Y)	XISTOR, NPN R
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**PCB-18 POWER LED P.C. BOARD**

**CAPACITOR**

105	C215	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V
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**RESISTOR**

129	R915	5135-221522	RES, CBN 1/2P 220
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**DIODES**

102	D206	5637-GL3ED8	LED, POWER
101	D218	5637-GL3PR47	LED, PROTECTOR

**MISCELLANEOUS**

103	CN210	4443-0301141	CONNECTOR
104	CW203	4163-S0203141	CONNECTOR W/W

**PCB-19 POWER SWITCH P.C. BOARD**

**CAPACITORS**

117	C201	5345-226D041	CAP, MINI ELE 22 $\mu$ /25V
118	C202	5345-337C041	CAP, MINI ELE 330 $\mu$ /16V
116	C203	5345-107B041	CAP, MINI ELE 100 $\mu$ /10V
116	C204	5345-107B041	CAP, MINI ELE 100 $\mu$ /10V

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
113	△R201	5102-2204715	RES, FUSE 22
114	R204	5135-151522	RES, CBN 1/2P 150
112	△R205	5102-3304715	RES, FUSE 33
120	R206	5135-102522	RES, CBN 1/2P 1K
119	R207	5135-271522	RES, CBN 1/2P 270
121	R208	5135-822522	RES, CBN 1/2P 8.2K
122	R209	5135-472522	RES, CBN 1/2P 4.7K
122	R210	5135-472522	RES, CBN 1/2P 4.7K
126	R211	5135-221522	RES, CBN 1/2P 220
125	R212	5135-121522	RES, CBN 1/2P 120

Ser. No.	Ref. No.	Part No.	Description
<b>TRANSISTORS</b>			
108	Q202	5614-667A (C)	XISTOR, NPN A
107	Q203	5613-3246 (H)	XISTOR, NPN R
110	Q204	5613-1740S (S)	XISTOR, NPN R
110	Q205	5613-1740S (S)	XISTOR, NPN R

Ser. No.	Ref. No.	Part No.	Description
<b>DIODES</b>			
106	D203	5636-1S2473	DIODE, SWITCH
106	D204	5636-1S2473	DIODE, SWITCH
106	D205	5636-1S2473	DIODE, SWITCH
106	D214	5636-1S2473	DIODE, SWITCH
109	D215	5635-HZ682L	DIODE, ZENER

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
124	CN201	4443-0801141	CONNECTOR
111	CN203	4443-0301141	CONNECTOR
111	CN206	4443-0301141	CONNECTOR
115	SW201	4431-S2601102	SWITCH, PUSH, POWER

**PCB-20 REMOTE P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
145	C206	5345-476B041	CAP, MINI ELE 47μ/10V
146	C207	5361-101JCH	CAP, CER 100p
146	C208	5361-101JCH	CAP, CER 100p
140	C218	5345-107B041	CAP, MINI ELE 100μ/10V

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
147	R213	5135-103522	RES, CBN 1/2P 10K
147	R214	5135-103522	RES, CBN 1/2P 10K
142	R217	5135-102522	RES, CBN 1/2P 1K
142	R218	5135-102522	RES, CBN 1/2P 1K
147	R219	5135-103522	RES, CBN 1/2P 10K
149	R220	5135-105522	RES, CBN 1/2P 1M
148	R221	5135-473522	RES, CBN 1/2P 47K
148	R222	5135-473522	RES, CBN 1/2P 47K
143	R224	5135-472522	RES, CBN 1/2P 4.7K
143	R225	5135-472522	RES, CBN 1/2P 4.7K
148	R226	5135-473522	RES, CBN 1/2P 47K
148	R227	5135-473522	RES, CBN 1/2P 47K
148	R228	5135-473522	RES, CBN 1/2P 47K
148	R229	5135-473522	RES, CBN 1/2P 47K
139	R238	5135-101522	RES, CBN 1/2P 100

Ser. No.	Ref. No.	Part No.	Description
<b>INTEGRATED CIRCUITS</b>			
133	IC201	5654-M761281P	IC, DIGITAL
134	IC202	5654-TC4028BP	IC, DIGITAL

Ser. No.	Ref. No.	Part No.	Description
<b>TRANSISTORS</b>			
132	Q206	5611-933S(R)	XISTOR, PNP R
131	Q208	5611-A124ES	XISTOR, PNP R
135	Q209	5613-C144ES	XISTOR, NPN R
135	Q210	5613-C144ES	XISTOR, NPN R

Ser. No.	Ref. No.	Part No.	Description
<b>DIODES</b>			
136	D207	5636-1S2473	DIODE, SWITCH
136	D208	5636-1S2473	DIODE, SWITCH
137	D216	5635-RD2R7EB2	DIODE, ZENER

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
123	CW201	4163-S0208251	CONNECTOR W/W
150	CW202	4163-S0206401	CONNECTOR W/W
141	CW205	4163-S0203501	CONNECTOR W/W
144	RCV201	6143-00804	RECEIV BLOCK
138	X201	5693-CSB400P	OSC, CER

Ser. No.	Ref. No.	Part No.	Description
<b>PCB-21 BACK UP P.C. BOARD</b>			

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
169	C213	5354-274593	CAP, MYL .27μ
169	C214	5354-274593	CAP, MYL .27μ
170	△C216	5352-S010M472	CAP, MTL 4700p
166	C219	5345-477D041	CAP, MINI ELE 470μ/25V

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTOR</b>			
054B	R241	5135-335522	RES, CBN 1/2P 3.3M <b>G GB WB IB</b>

Ser. No.	Ref. No.	Part No.	Description
<b>DIODES</b>			
161	D202	5636-1S2473	DIODE, SWITCH
162	D209	5632-S5566B	DIODE, RECT
162	D210	5632-S5566B	DIODE, RECT
162	D211	5632-S5566B	DIODE, RECT
162	D212	5632-S5566B	DIODE, RECT

Ser. No.	Ref. No.	Part No.	Description
<b>TRANSFORMERS</b>			
173	△T201	5584-001479	XFORMER, POWER, BACK UP <b>BK</b>
173B	△T201	5584-T1101	XFORMER, POWER, BACK UP <b>G GB WB IB</b>

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
172	△F201	5732-251031	FUSE, 250mA 125V <b>BK</b>
172B	△F201	5732-251030	FUSE, T250mA 250V <b>G GB WB IB</b>
171	△F202	5732-802031	FUSE, 8A 125V <b>BK</b>
171B	△F202	5732-402030	FUSE, T4A 250V <b>G GB WB IB</b>
174	△HF201	4472-04501	HOLDER, FUSE
174	△HF202	4472-04501	HOLDER, FUSE
174	△HF203	4472-04501	HOLDER, FUSE
174	△HF204	4472-04501	HOLDER, FUSE
163	HL206	2240-Z031	HOLDER
167	JL206	4242-R0403251	JUMPER LEAD
165	△RL201	4331-02601	RELAY, DC
188	△SC1	4474-04301	SOCKET, AC OUTLET <b>BK</b>
053B	△SW203	4411-00501102	SWITCH, ROTARY, VOLTAGE SELECTOR <b>G GB WB IB</b>
175	TM201	4214-122	TERMINAL
175B	TM202	4214-122	TERMINAL <b>G GB WB IB</b>
175	TM203	4214-122	TERMINAL <b>BK</b>
175	TM204	4214-122	TERMINAL <b>BK</b>

**PCB-22 REMOTE JACK P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITOR</b>			
180	C220	5345-S19CM226	CAP, MINI ELE 22μ/16V

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
181	R231	5135-271522	RES, CBN 1/2P 270
184	R232	5135-101522	RES, CBN 1/2P 100
185	R233	5135-392522	RES, CBN 1/2P 3.9K
183	R234	5135-470522	RES, CBN 1/2P 47
182	R235	5135-473522	RES, CBN 1/2P 47K

Ser. No.	Ref. No.	Part No.	Description
<b>TRANSISTOR</b>			
176	Q211	5611-A143ES	XISTOR, PNP R

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
179	CN205	4443-0301141	CONNECTOR
186	J201	4451-00184	JACK, 1P
186	J202	4451-00184	JACK, 1P
177	PH201	5624-PC817	PHOTO COUPLR

**PCB-23 VOLUME LED P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITOR</b>			
192	C217	5345-S19CM106	CAP, MINI ELE 10μ/16V

Ser. No.	Ref. No.	Part No.	Description
<b>DIODE</b>			
191	D201	5637-S2410E1	LED, VOLUME

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
193	CW204	4163-S0202161	CONNECTOR W/W

Ser. No.	Ref. No.	Part No.	Description
<b>PCB-24 VOLUME P.C. BOARD</b>			
<b>CAPACITORS</b>			
200	C209	5345-106C041	CAP, MINI ELE 10 $\mu$ /16V
199	C210	5354-104593	CAP, MYL .1 $\mu$
201	C211	5359-S010J103	CAP, PPP .01 $\mu$
<b>RESISTORS</b>			
198	$\Delta$ R230	5102-2205116	RES, FUSE 22
197	R503	5135-472522	RES, CBN 1/2P 4.7K
197	R504	5135-472522	RES, CBN 1/2P 4.7K
<b>INTEGRATED CIRCUIT</b>			
194	IC203	5653-LB1641	IC, LINEAR
<b>DIODE</b>			
195	D217	5635-HZ5A3	DIODE, ZENER
<b>CONTROLS</b>			
202	VR503/ 504	6161-00302	VR BLOCK, VOLUME (MOTOR DRIVE)
<b>MISCELLANEOUS</b>			
196	CN202	4443-0601141	CONNECTOR
206	CN204	4443-0201140	CONNECTOR
205	CN208	4443-030185	CONNECTOR
205	CN209	4443-030185	CONNECTOR

Ser. No.	Ref. No.	Part No.	Description
<b>PCB-25 4/8 SWITCH P.C. BOARD</b>			
<b>CAPACITORS</b>			
128	C254	5354-104593	CAP, MYL .1 $\mu$ <b>BK WB</b>
128	C255	5354-104593	CAP, MYL .1 $\mu$ <b>BK WB</b>
128	C256	5354-104593	CAP, MYL .1 $\mu$ <b>BK WB</b>
128	C257	5354-104593	CAP, MYL .1 $\mu$ <b>BK WB</b>
128	C258	5354-104593	CAP, MYL .1 $\mu$ <b>BK WB</b>
128	C259	5354-104593	CAP, MYL .1 $\mu$ <b>BK WB</b>
128	C260	5354-104593	CAP, MYL .1 $\mu$ <b>BK WB</b>
128	C261	5354-104593	CAP, MYL .1 $\mu$ <b>BK WB</b>
<b>MISCELLANEOUS</b>			
127	SW210	4464-00102022	SWITCH, SEESW, SPEAKER OPERATING MODE <b>BK WB</b>
127	SW211	4464-00102022	SWITCH, SEESW, SPEAKER OPERATING MODE <b>BK WB</b>
153	W-405	4163-S4901350	CONNECTOR <b>BK WB</b>
153	W-406	4163-S4901350	CONNECTOR <b>BK WB</b>
154	W-407	4163-S5001350	CONNECTOR <b>BK WB</b>
154	W-408	4163-S5001350	CONNECTOR <b>BK WB</b>

Ser. No.	Ref. No.	Part No.	Description
<b>CHASSIS MISCELLANEOUS</b>			
<b>MISCELLANEOUS</b>			
034B	LUG	4211-4	LUG, W-107 <b>G GB</b>
034B	LUG	4211-4	LUG, W-108 <b>G GB</b>
077B	LUG	4211-4	LUG, C51 <b>G GB</b>
654	$\Delta$ P1	4161-04801252	CORD W/PLUG <b>BK</b>
654B	$\Delta$ P1	4161-71150	CORD W/PLUG <b>G GB WB IB</b>
674	$\Delta$ T1	5584-T1901	XFORMER, POWER <b>BK</b>
674B	$\Delta$ T1	5584-T1902	XFORMER, POWER <b>G GB IB</b>
674D	$\Delta$ T1	5584-T1903	XFORMER, POWER <b>WB</b>
663		4442-14	PIN PLUG (x 2)

Ser. No.	Ref. No.	Part No.	Description
<b>PACKAGE PARTS LIST</b>			
021B		1756-06304	LABEL, 230V/50Hz <b>G GB WB IB</b>
022B		1756-03124	LABEL (G), (x 2) <b>G GB</b>
022D		1756-03101	LABEL (W), (x 2) <b>WB</b>
022E		1756-03108	LABEL (I), (x 2) <b>IB</b>
024B		1111-J30235	OWNER GUIDE, POWER SWITCH CAUTION <b>G GB IB</b>
028D		1111-0370J152	OWNER GUIDE, VOLTAGE SELECTOR ADDENDUM <b>WB</b>
107		1111-0310J152	OWNER GUIDE <b>BK WB</b>
107B		1111-0320J152	OWNER GUIDE <b>G GB IB</b>
108		1113-02501	OWNER CARD, REPLAY CARD <b>BK</b>
109		1116-03801	GUARANT CARD, WARRANTY <b>BK</b>
110		1119-04501	ATTACH SHEET, SERVICE GUIDE <b>BK</b>
111		1119-01201	ATTACH SHEET, UL <b>BK</b>

Ser. No.	Ref. No.	Part No.	Description
113		1241-R0123351	POLYETHY BAG, OG
122		1241-R0165751	POLYETHY BAG, SET
123		1222-7392	CUSHION, CARTON REAR SPACER (x 2)
124		1221-31401	CARTON BOX, ACCESSORY
125		1221-31503	CARTON BOX <b>G</b>
125A		1221-31504	CARTON BOX <b>BK GB WB IB</b>
126		1222-7357	CUSHION, L
127		1222-7358	CUSHION, R
128		1223-11747	SOFT SHEET, SET
129		1223-11115	SOFT SHEET, AC CORD
981		6142-06805	REMOTE CONTROL ASSEMBLY
982		4191-0355	BATTERY, DRY
985		4161-08201102	CORD W/PLUG, REMOTE IN/OUT (x 3)

**ABBREVIATIONS IN PARTS LIST**

<b>CAPACITORS</b>	<b>RESISTORS</b>
CAP, MINI ELE : Electrolytic	RES, CBN 1/6P : Carbon 1/6W
CAP, CER : Ceramic	RES, FUSE : Fuse
CAP, PPP : Polypropylene	RES, CEM 5P : Cement 5W
CAP, MYL : Mylar	RES, MTL 1P : Metal 1W
CAP, MCA : Mica	2.2K : 2.2k $\Omega$
CAP, MINI BP : Bipolar	220 : 220 $\Omega$
CAP, ELE BP : Electrolytic Bipolar	<b>TRANSISTORS</b>
CAP, STY : Polystyrene Film	XISTOR : Transistor
CAP, SPE : Special	FET : Field Effect Transistor
CAP, TAN : Tantalum	<b>CONTROLS</b>
470 $\mu$ : 470 $\mu$ F	RES, V CBN : Variable Carbon Resistor
6800p : 6800pF	RES, SEMI FIX : Semi-fixed Resistor
.047 $\mu$ : 0.047 $\mu$ F	

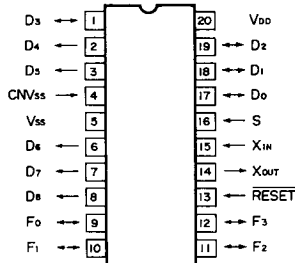
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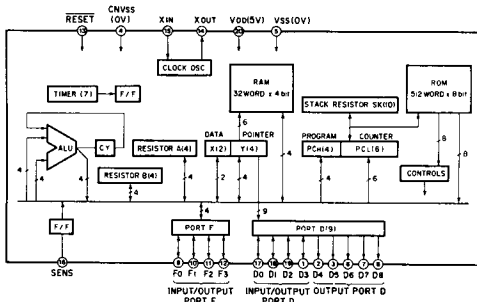
SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

# SCHEMATIC DIAGRAM (REMOTE CONTROL & BACK UP SECTION)

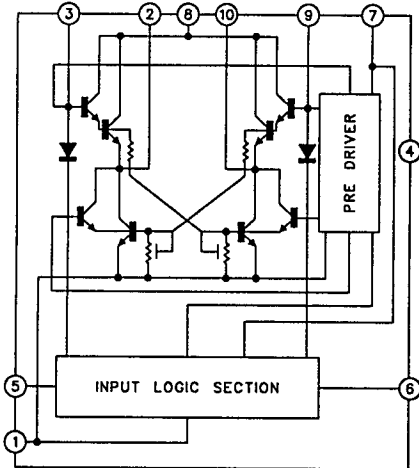
IC201  
M50761-281P



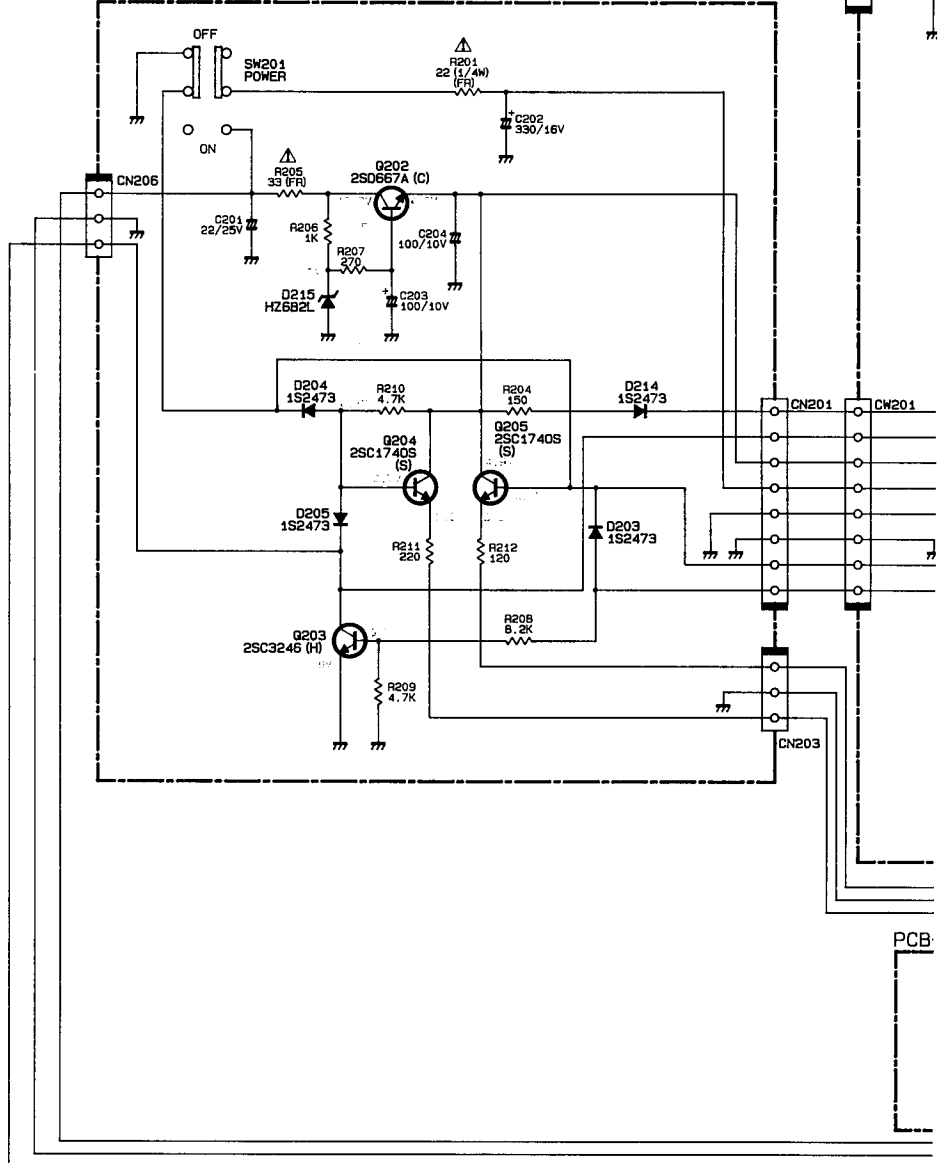
Pin No.	Pin Name	I/O	Function
1		I/O	9-bit terminal having output function on an independent bit basis. Output is open drain circuit for N channel transistor. Port D0 to D3 terminals have 4-bit input function. Programming output latch to "1" sets the output to floating (high impedance) state so that the terminals may be used as input port.
17	I/O		
18	PORT D		
19	I/O		
2		O	OUT PORT D
3		O	
6		O	
7		O	
8		O	
4	CNVss (0V)	—	Connect to Vss. Low input (0V) must be applied.
5	Vss (0V)	—	GND terminal
9		I/O	4-bit I/O terminal with output latch. Output is open drain circuit for N channel transistor. Programming port F output latch to "1" sets the output to floating (high impedance) state so that port F may be used as input port.
10	I/O		
11	PORT F		
12	I/O		
13	RESET	I	Sets to reset state by applying low level signal for two or more machine cycles.
14	XOUT	O	Connect external resistor R for oscillation CR in the clock generation circuit. Ceramic resonator may be connected.
15	XIN	I	
16	SENSE INPUT S	I	Sense input terminal active on leading edge. Sets flag to "1" when terminal S signal changes from low to high. Allows test and flag clear to be performed by command.
20	VDD (5V)	—	Positive power supply terminal.



IC203  
LB1641



PCB-19



PCB-2

J201  
REMOTE  
IN

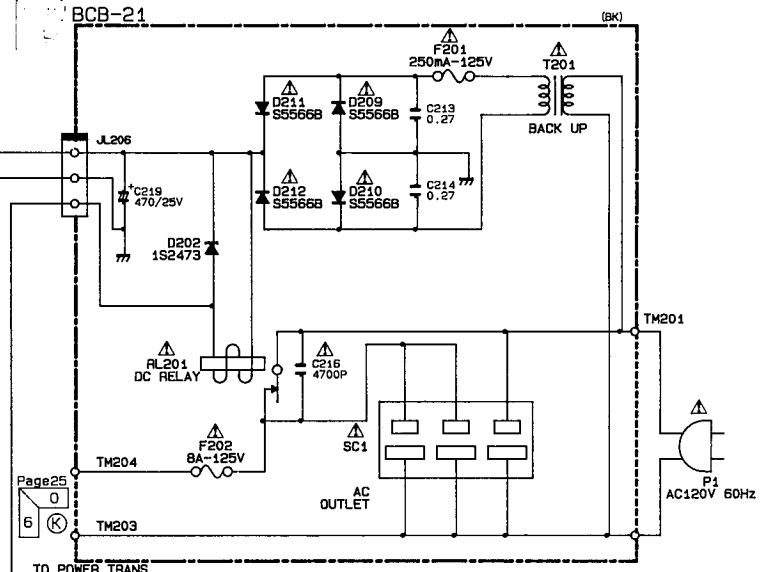
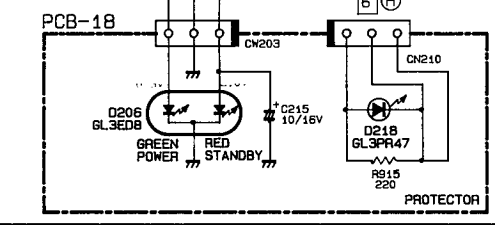
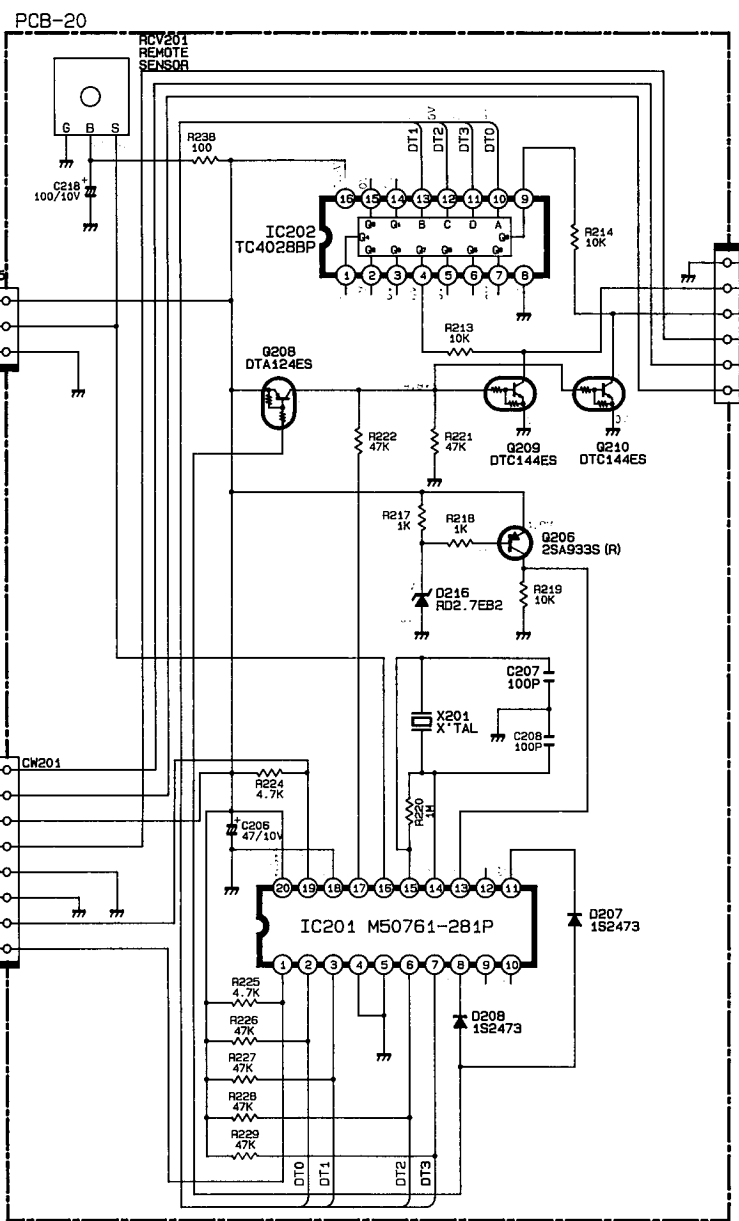
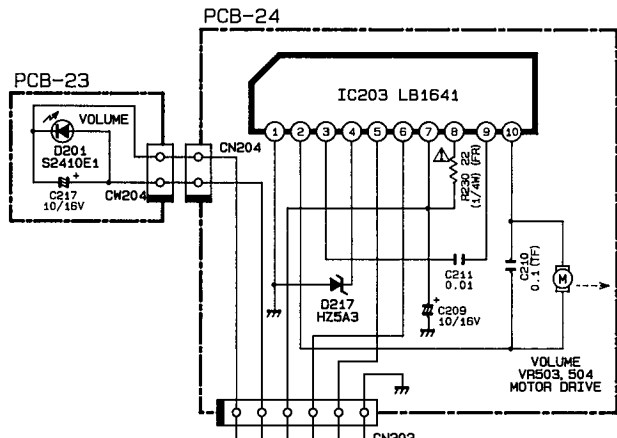
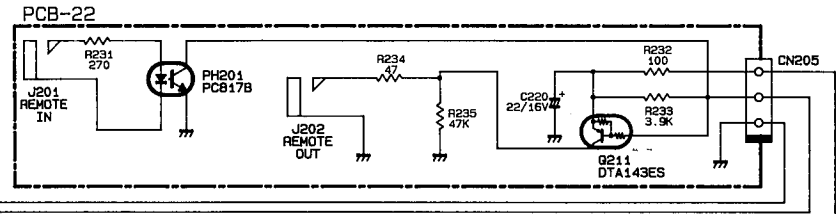
PCB-2C

G  
C218  
100/10V

CW205

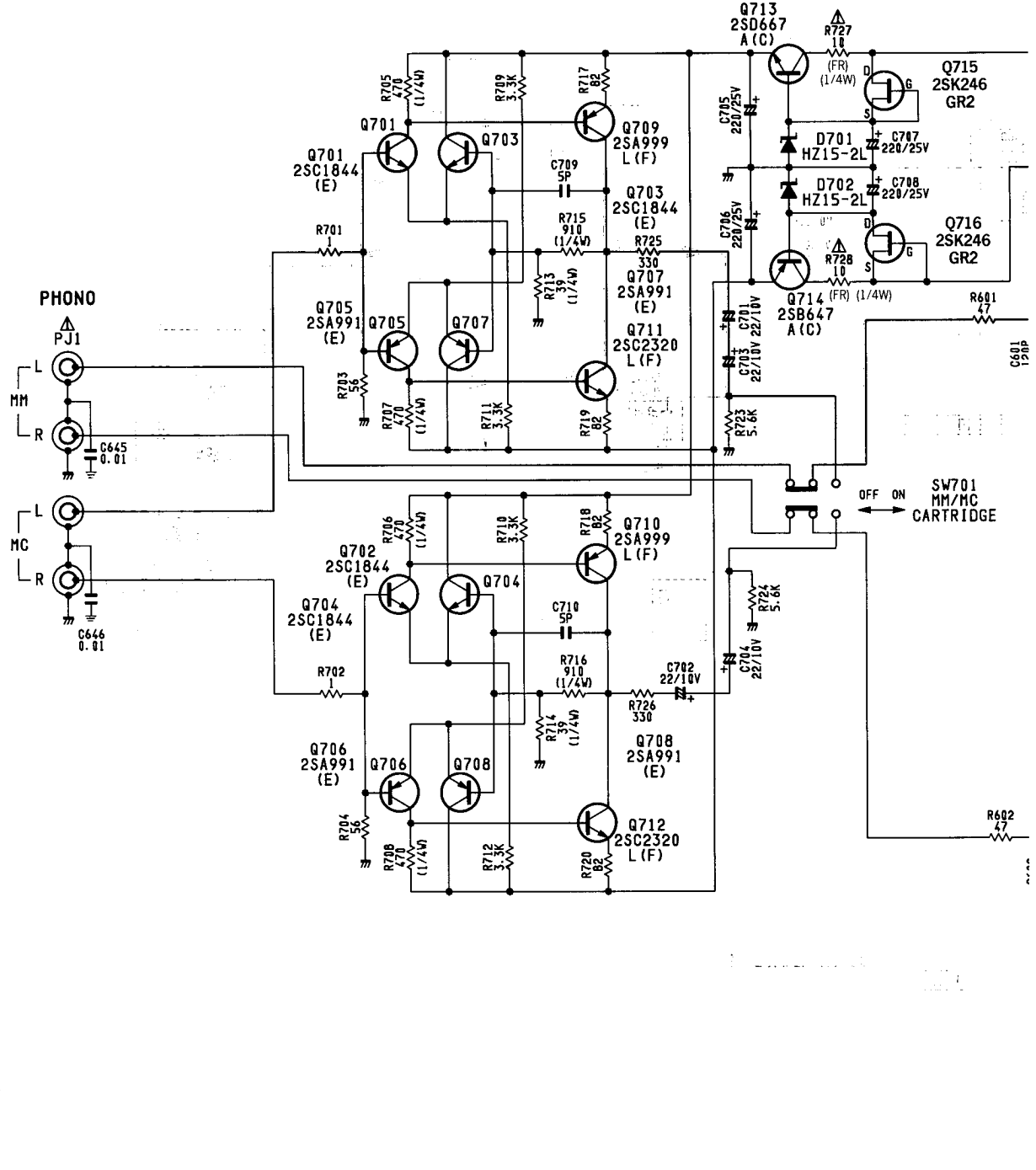
PCB

E F G H I J



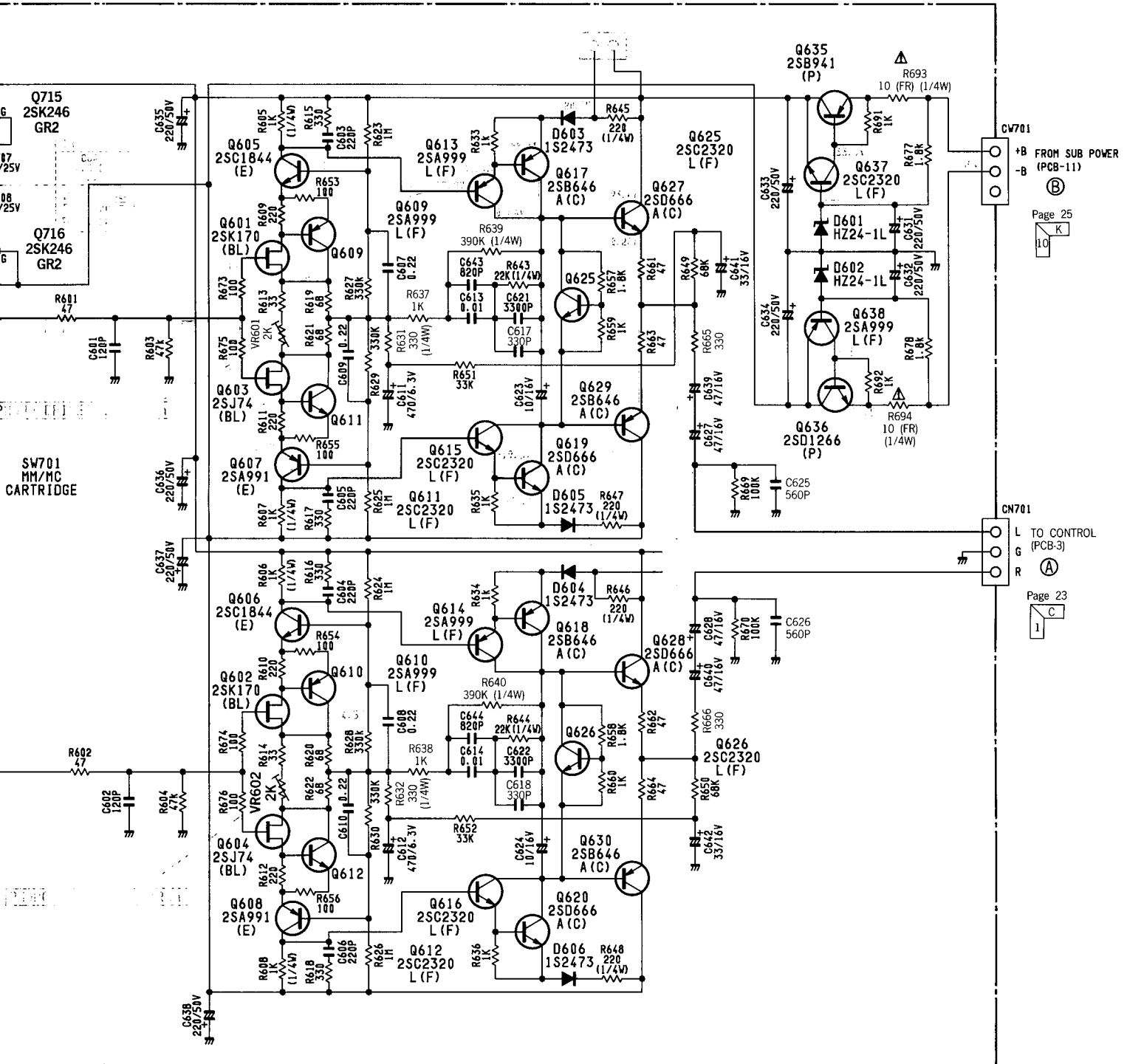
SCHMATIC DIAGRAM (PHONO AMP SECTION)

PCB-1



NOTE:

1. ALL RESISTANCES VALUES ARE IN  $\Omega$ .  
K $\Omega$ =1000 $\Omega$ , M $\Omega$ =1000K $\Omega$ .
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN  $\mu$ F UNLESS OTHERWISE NOTED. P= $\mu$ F.
4. ...V:DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.



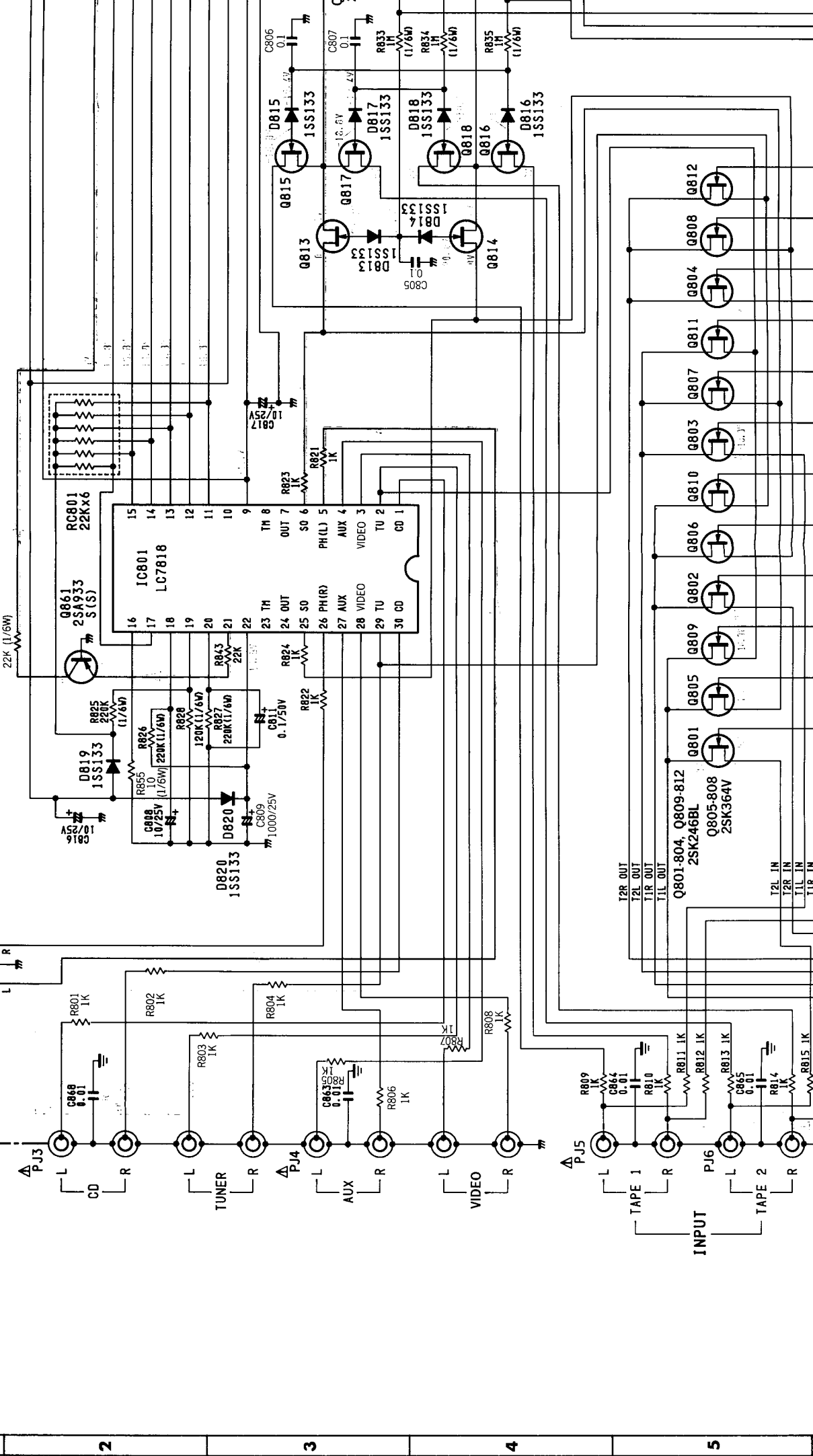
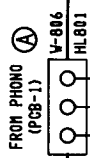
Page 25  
K  
10

Page 23  
C  
1

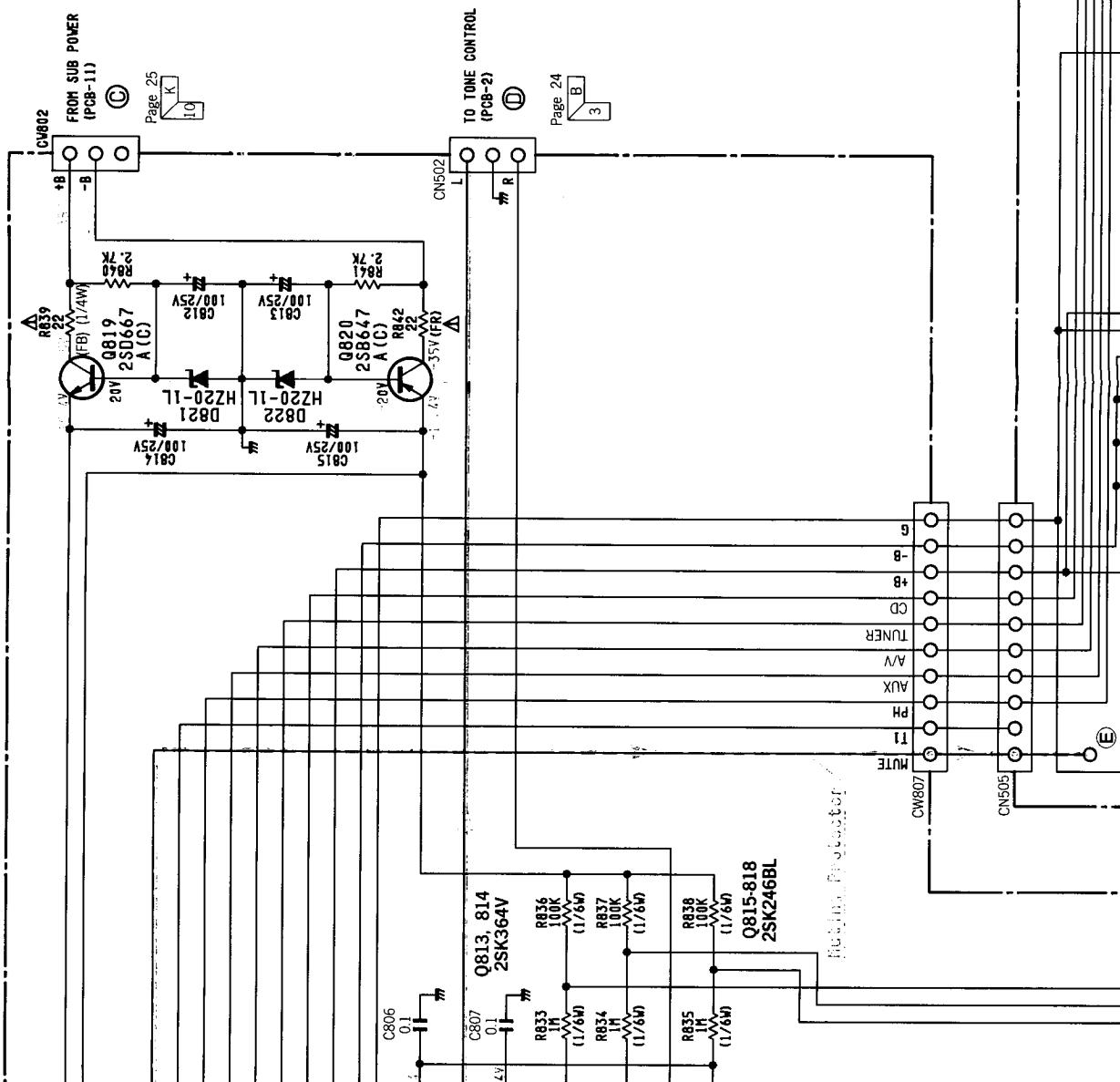
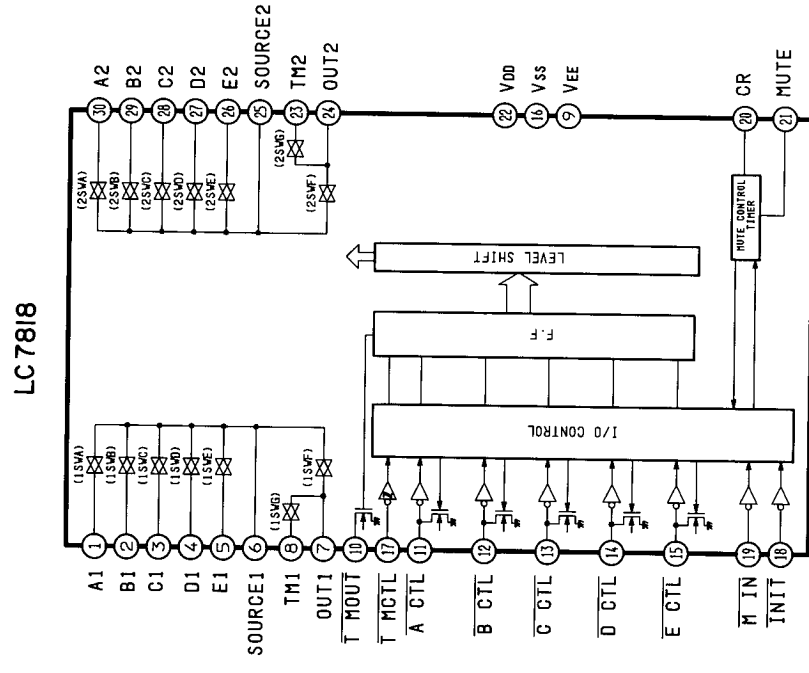


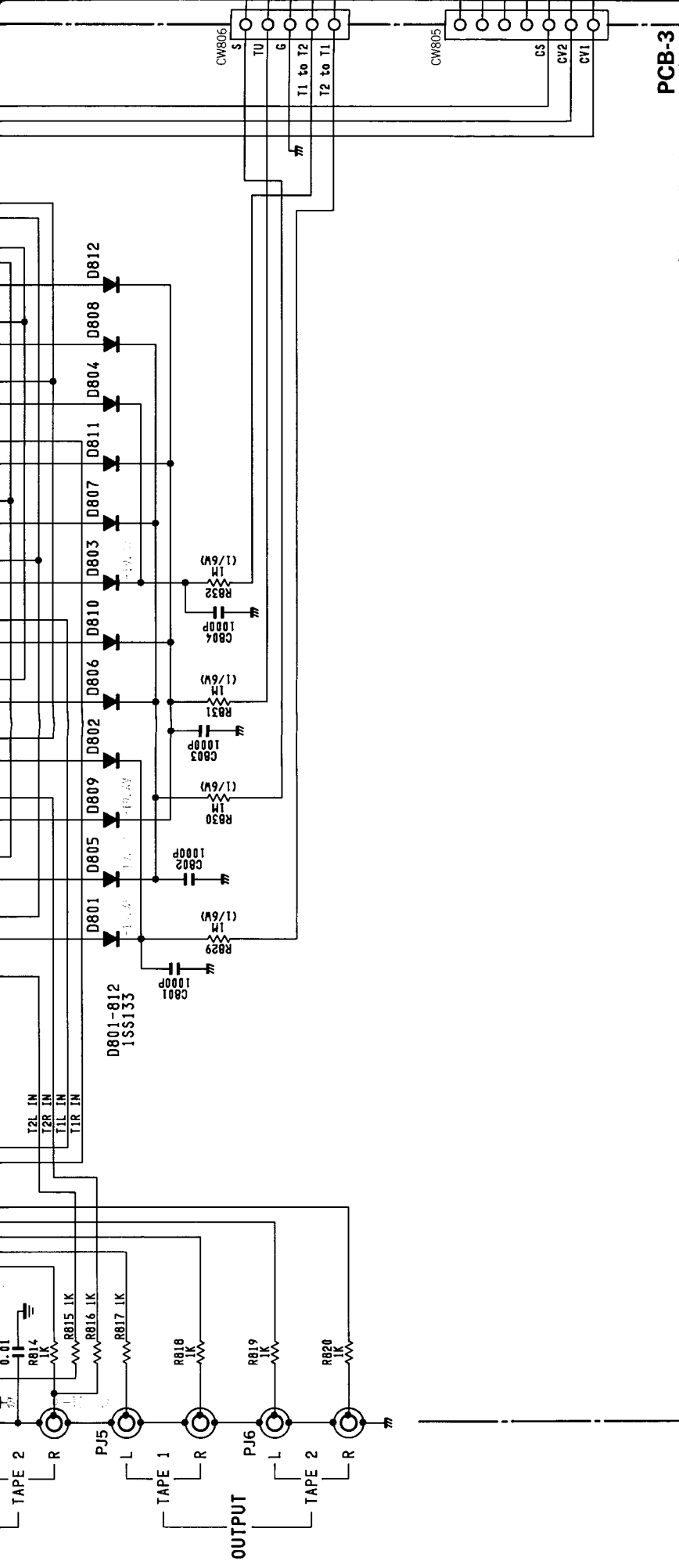
SCHMATIC DIAGRAM (FUNCTION & VIDEO SECTION)

Page 22



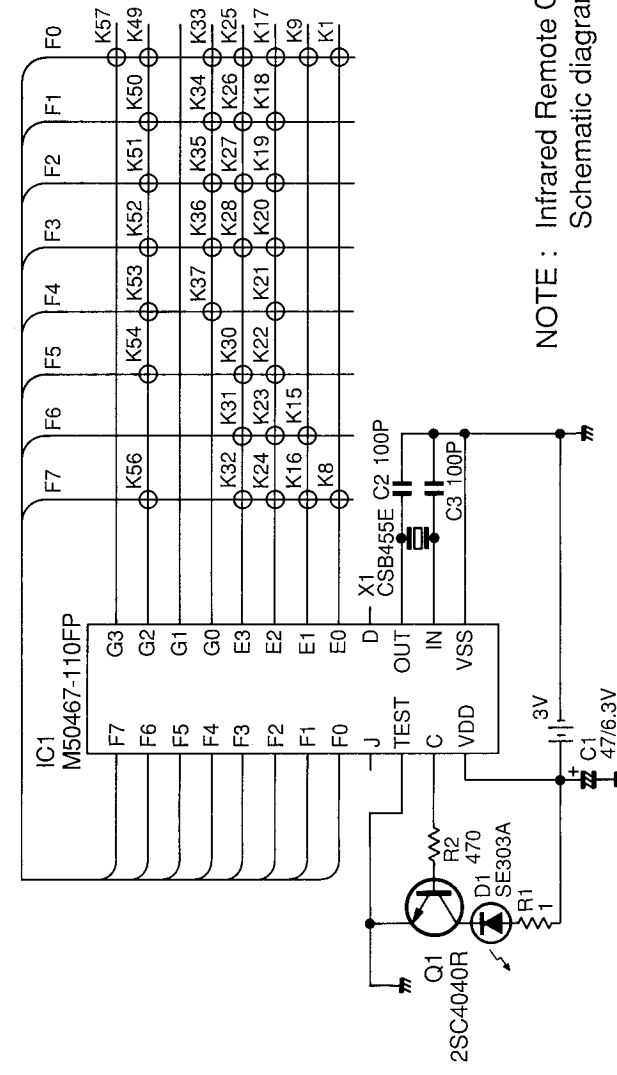
N M L K J I H





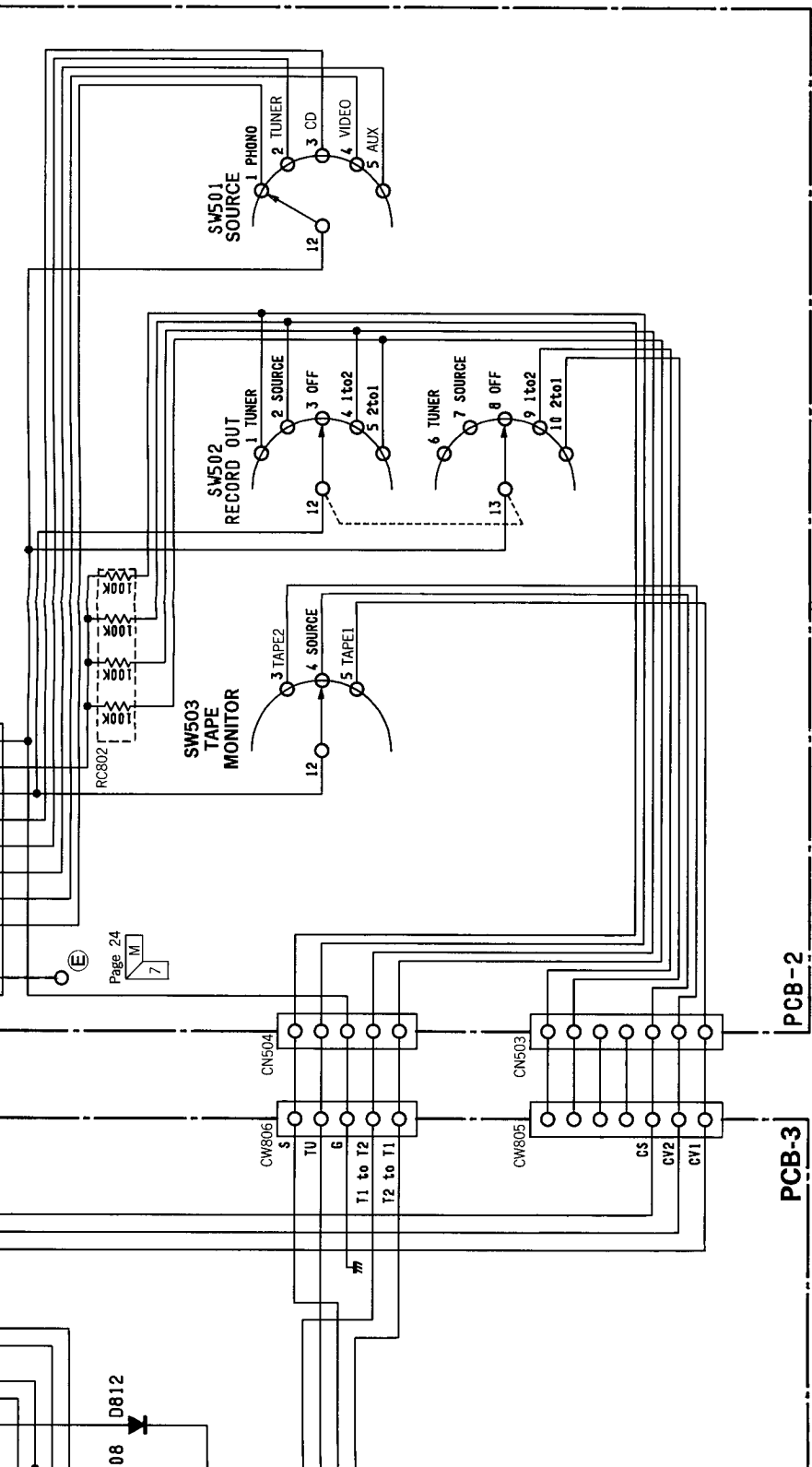
PCB-3

### INFRARED REMOTE CONTROL SCHEMATIC DIAGRAM



NO.	FUNCTION	NO.	FUNCTION
K1	AMP POWER	K30	CD STOP
K2		K31	CD PLAY
K3		K32	CD PAUSE
K4		K33	CD SKIP
K5		K34	CD SKIP
K6		K35	CD SEARCH
K7		K36	CD SEARCH
K8	AMP VOLUME	K37	CD REPEAT
K9	AMP	K38	
K10		K39	
K11		K40	
K12		K41	
K13		K42	
K14		K43	
K15	TUNER FM	K44	
K16	TUNER AM	K45	
K17	TUNER TUNING	K46	
K18	TUNER TUNING	K47	
K19	TUNER 1	K48	
K20	TUNER 2	K49	CASSETTE PLAY
K21	TUNER 3	K50	CASSETTE REV. PLAY
K22	TUNER 4	K51	CASSETTE STOP
K23	TUNER 5	K52	CASSETTE F. FWD
K24	TUNER 6	K53	CASSETTE REW
K25	TUNER 7	K54	CASSETTE RECIPAUSE
K26	TUNER 8	K55	
K27	TUNER SHIFT	K56	CASSETTE SKIP
K28	TUNER SEEK	K57	CASSETTE
K29			

NOTE : Infrared Remote Control parts are not available.  
Schematic diagram is supplied for reference only.



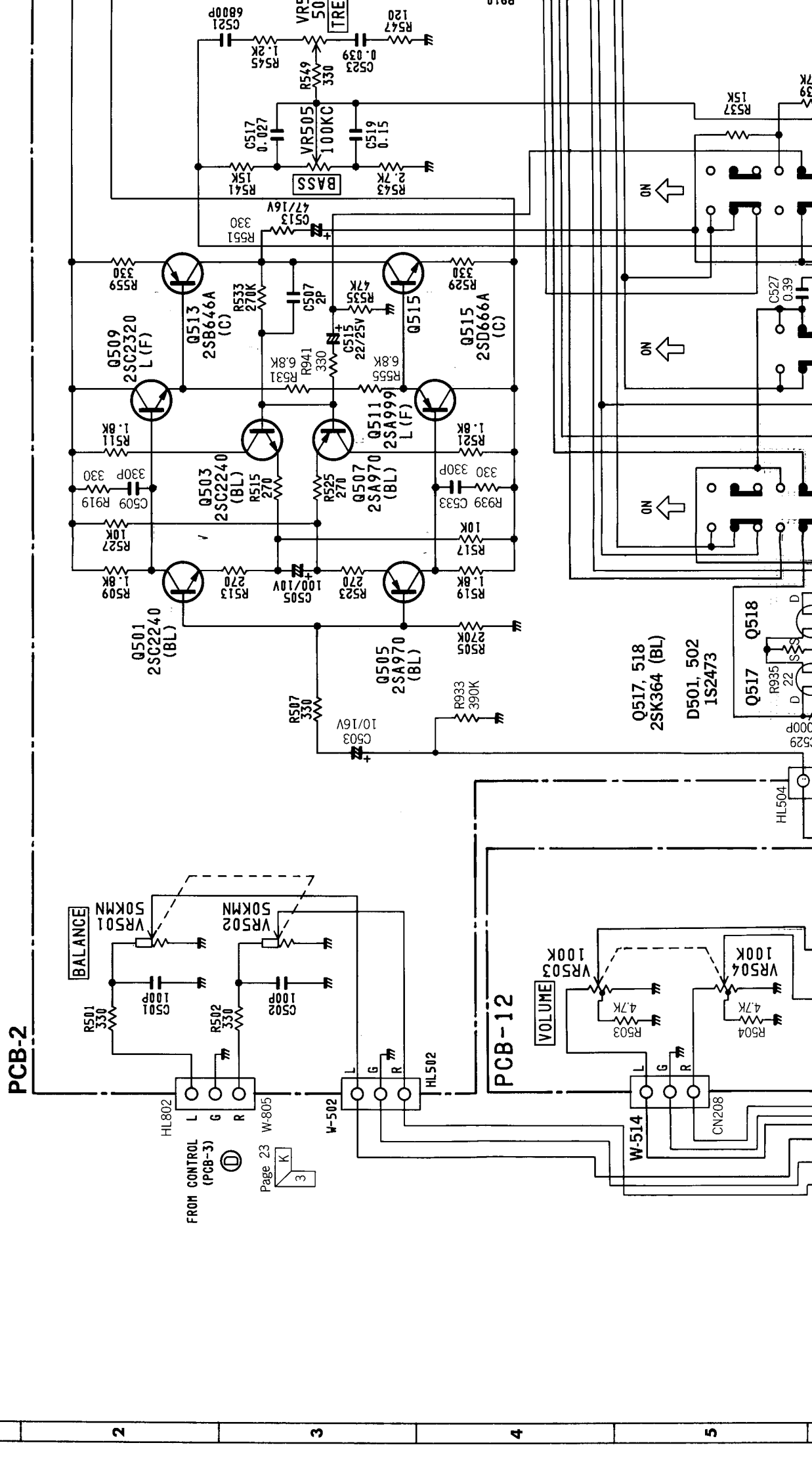
NOTE:

1. ALL RESISTANCES VALUES ARE IN  $\Omega$ .  
 $K\Omega=1000\Omega$ ,  $M\Omega=1000K\Omega$ .
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN  $\mu F$  UNLESS OTHERWISE NOTED. P=# $\mu F$ .
4. ... V: DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS. THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.



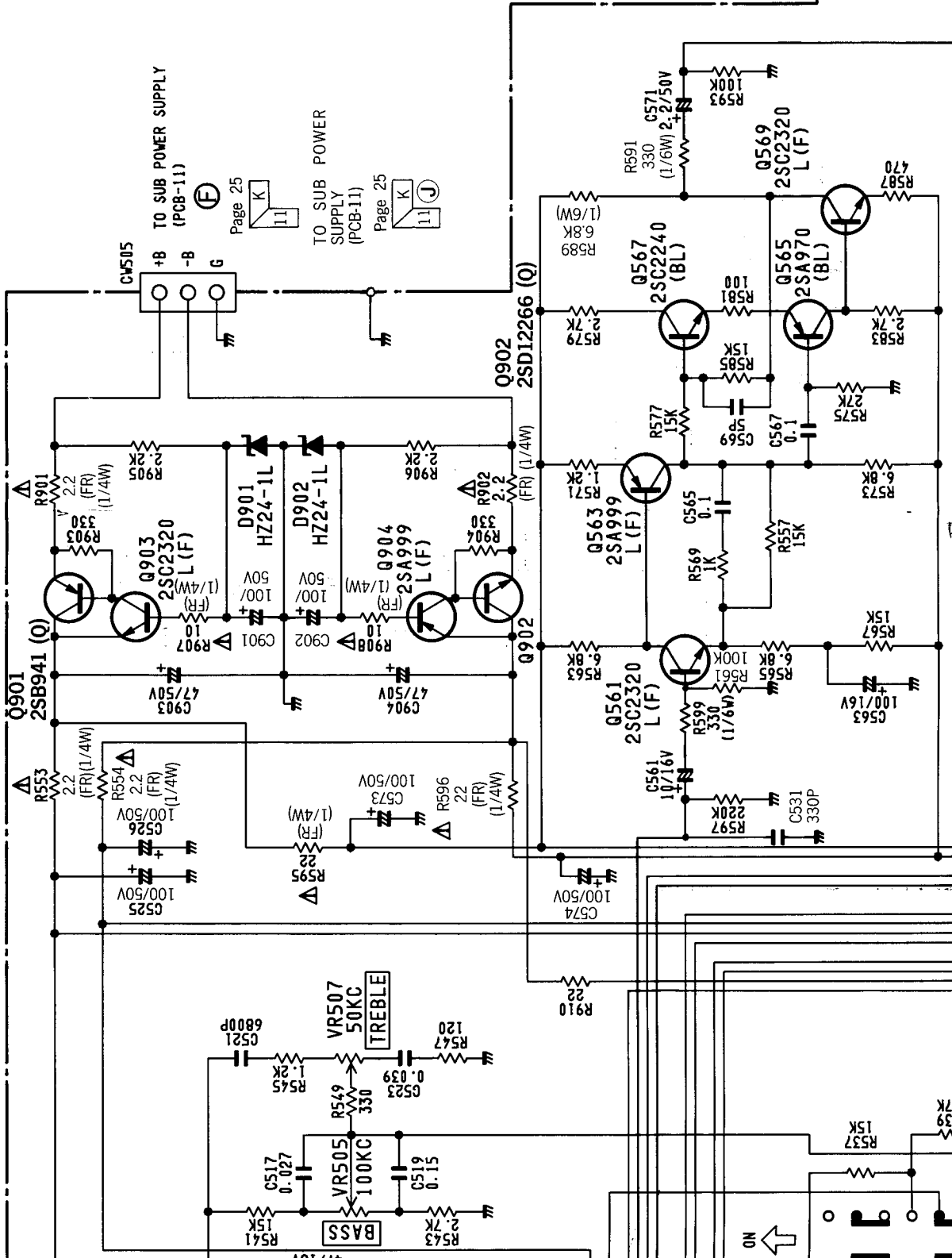
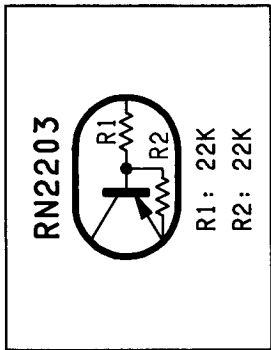
A B C D E F G

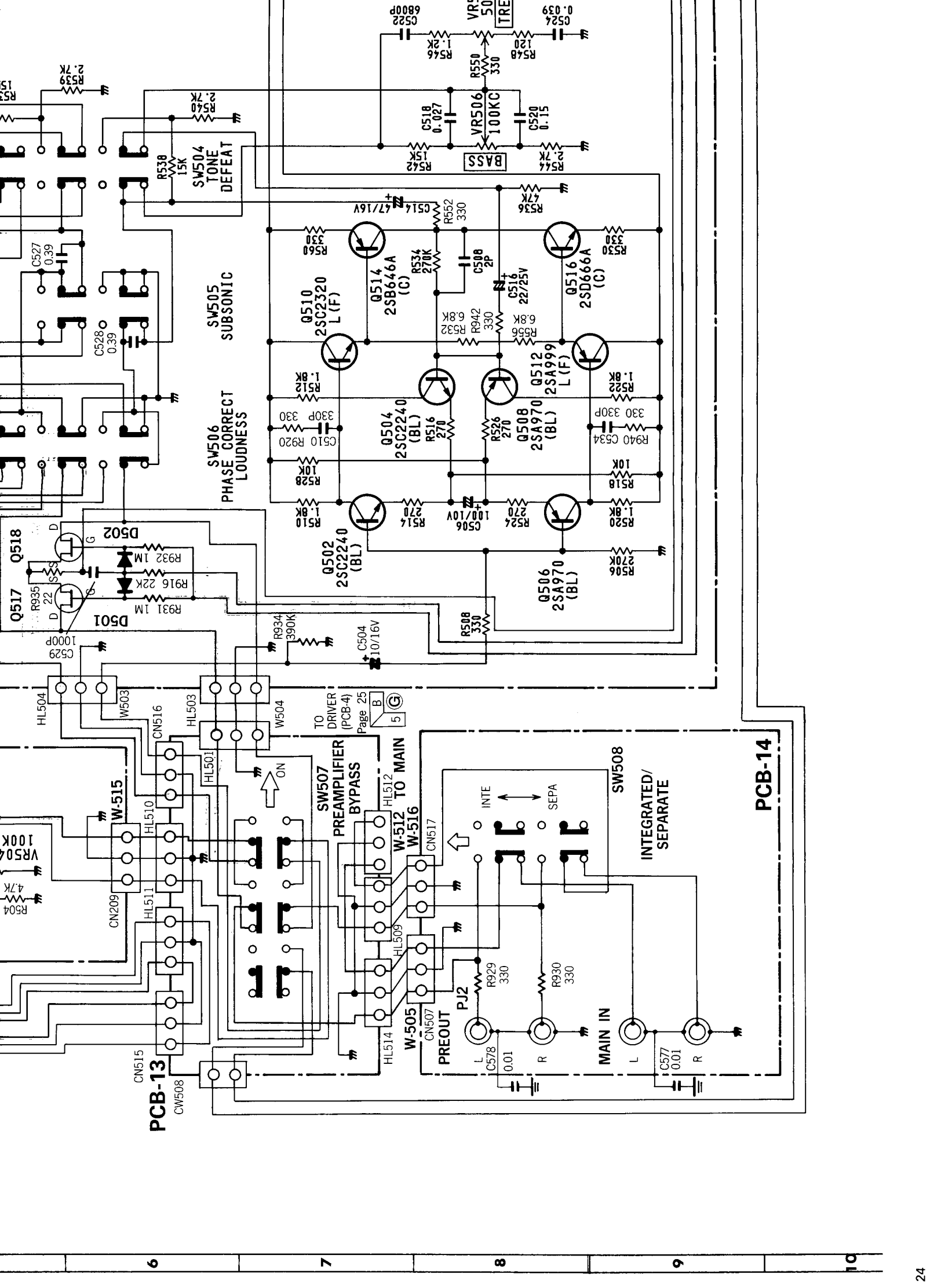
SCHEMATIC DIAGRAM (TONE CONTROL SECTION)

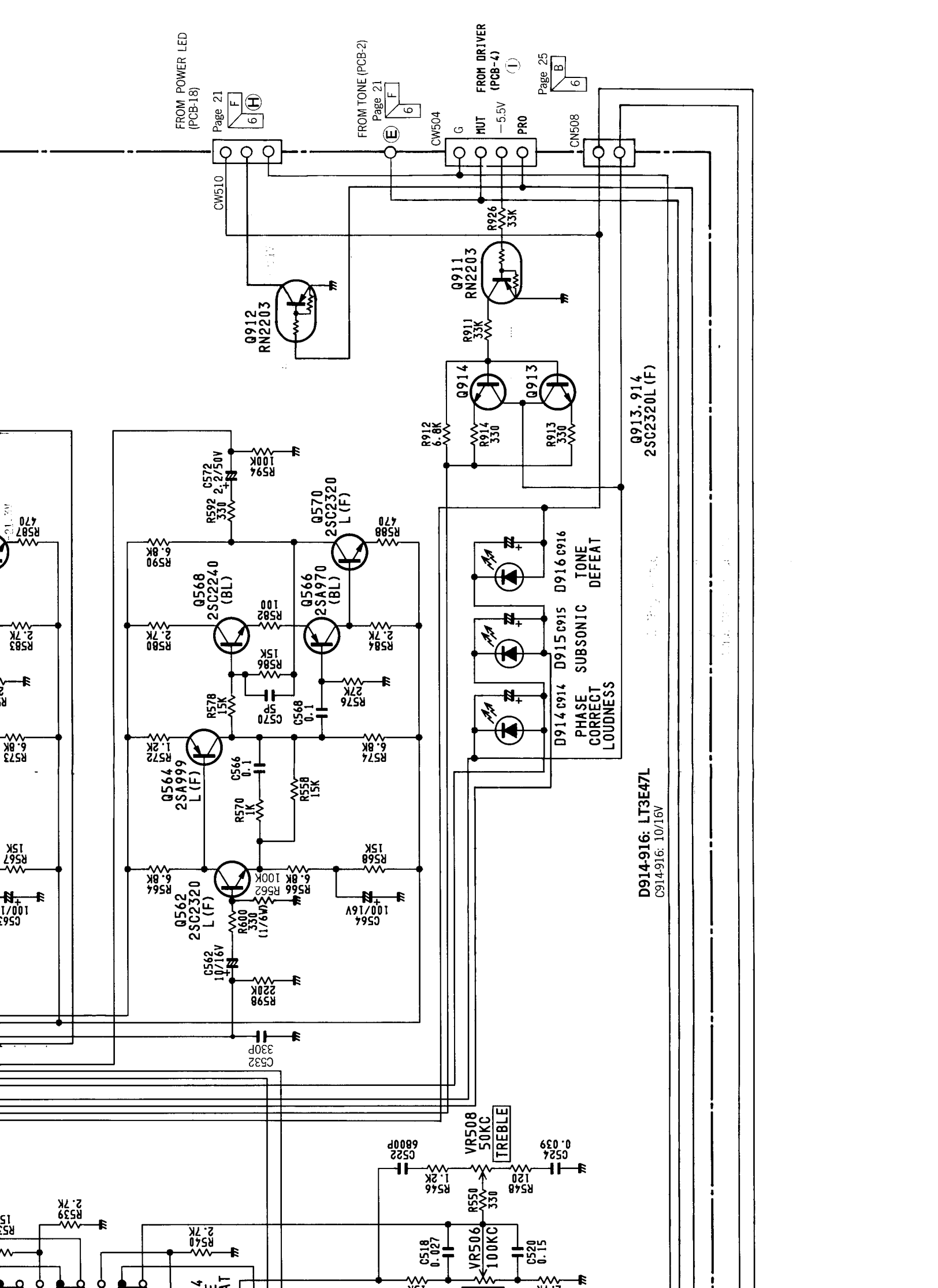


1 2 3 4 5

G H I J K L M N







FROM POWER LED  
(PCB-18)

Page 21

FROM TONE (PCB-2)

Page 21

FROM DRIVER  
(PCB-4)

(1)

Page 25

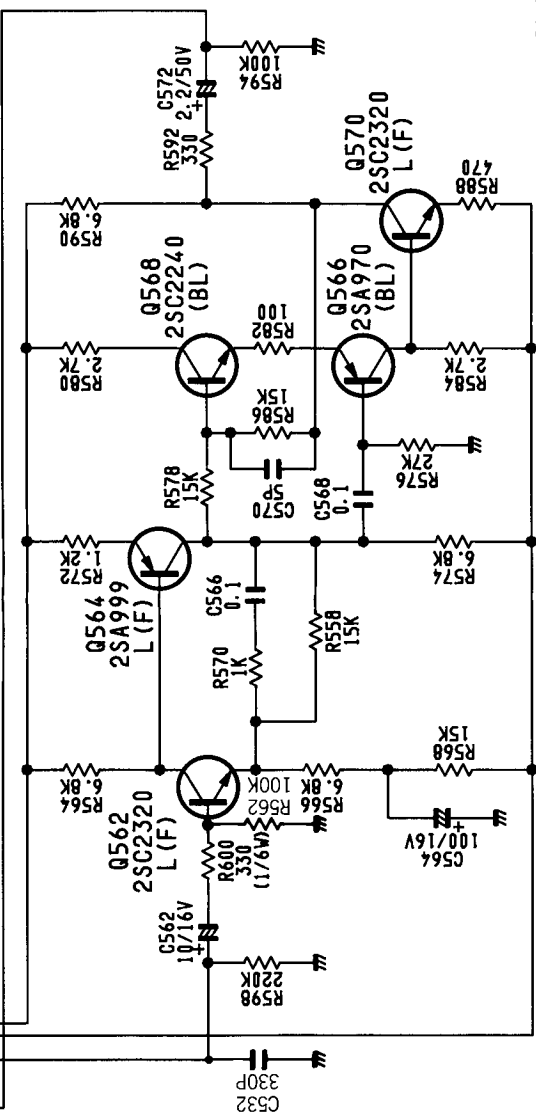
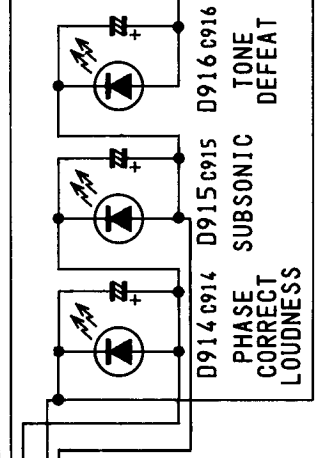
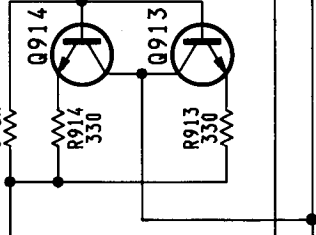
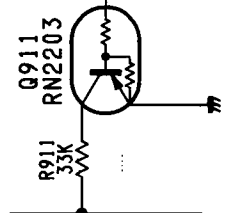
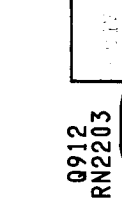
**D914-916: LT3E47L**  
C914-916: 10/16V

**Q913, 914**  
2SC2320L (F)

TREBLE

VR508  
50KC

VR506  
100KC





SCHEMATIC DIAGRAM (POWER AMP SECTION)

1

2

3

4

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7

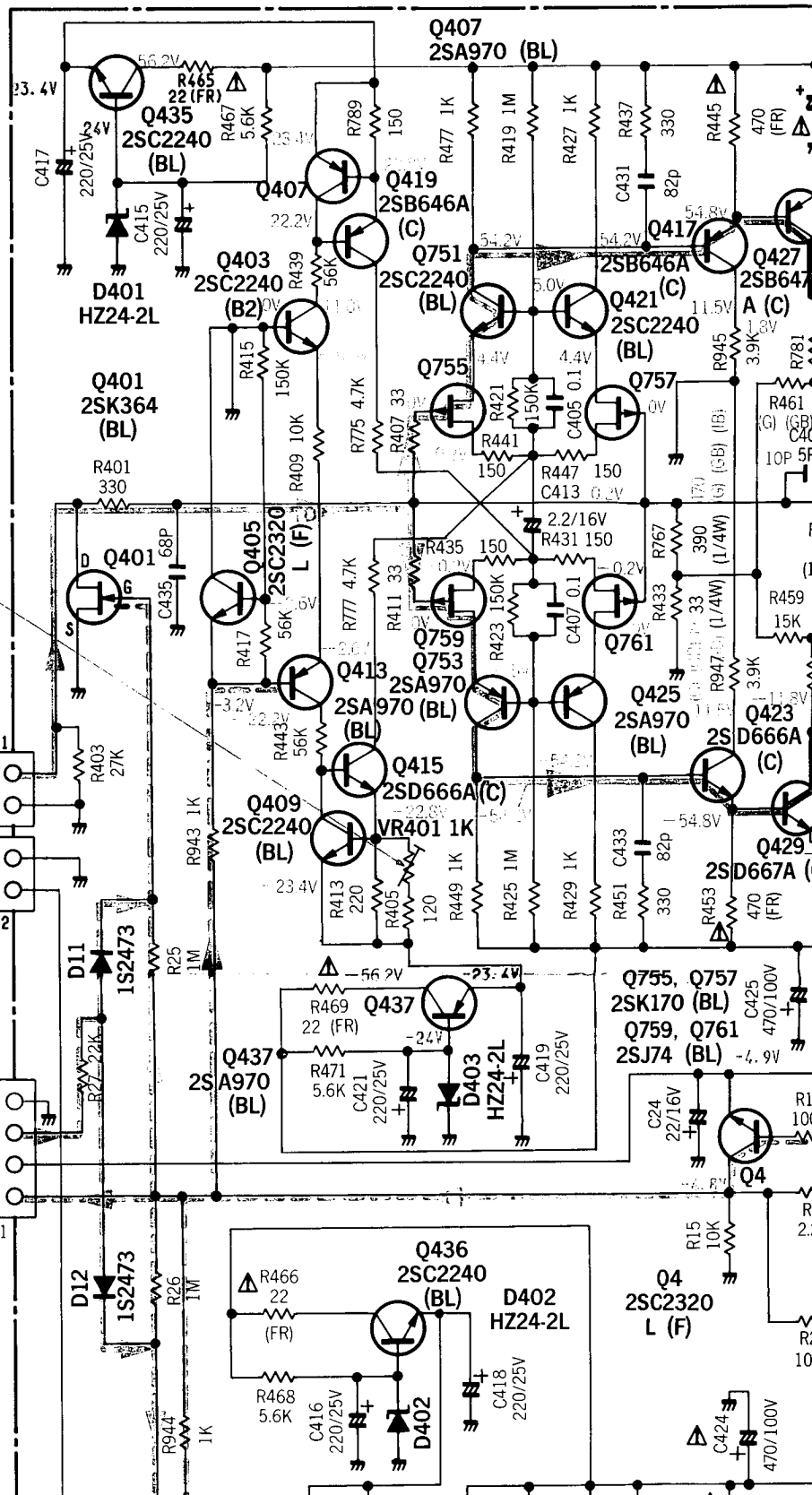
MAIN OFFSET  
DC BALANCE  
ADJ. (Lch)

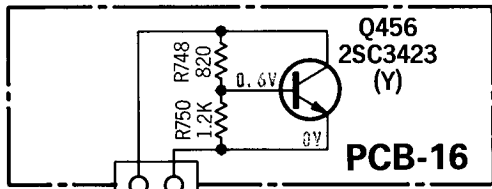
FROM BYPASS  
(PCB-13)

Page 24  
C  
7

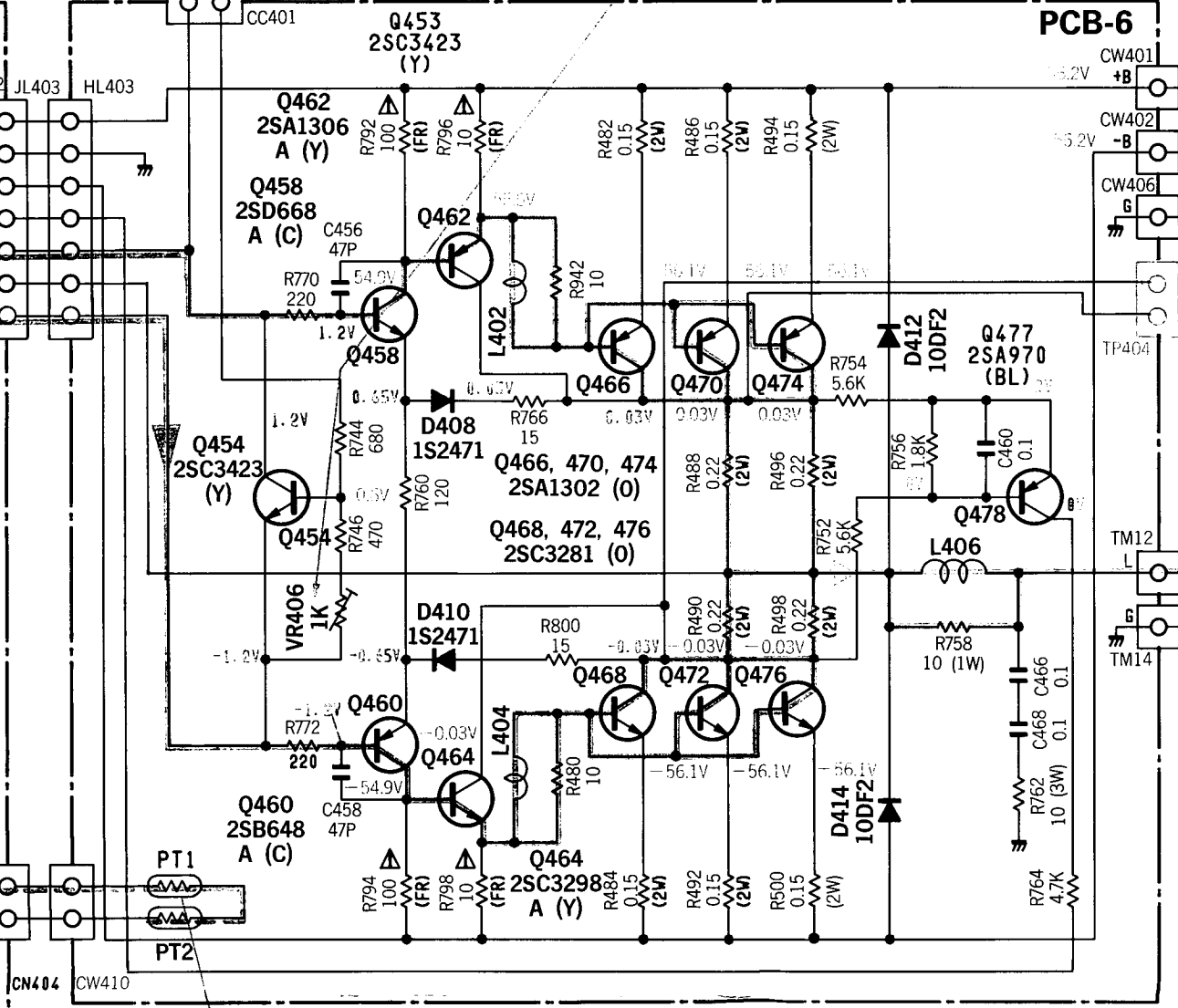
FROM PRE/MAIN  
SEPARATION  
(PCB-14)

TO TONE  
(PCB-2)  
-B  
PRO  
Page 24  
N  
8

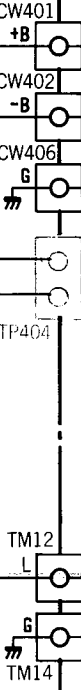




IDLING CURRENT ADJ. (L6P)

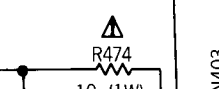
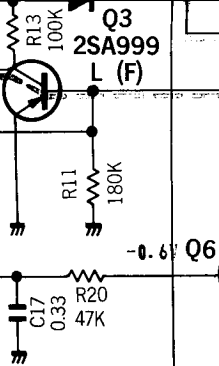
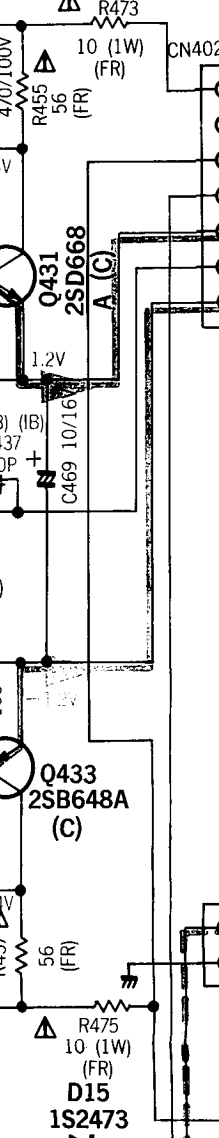


PCB-6

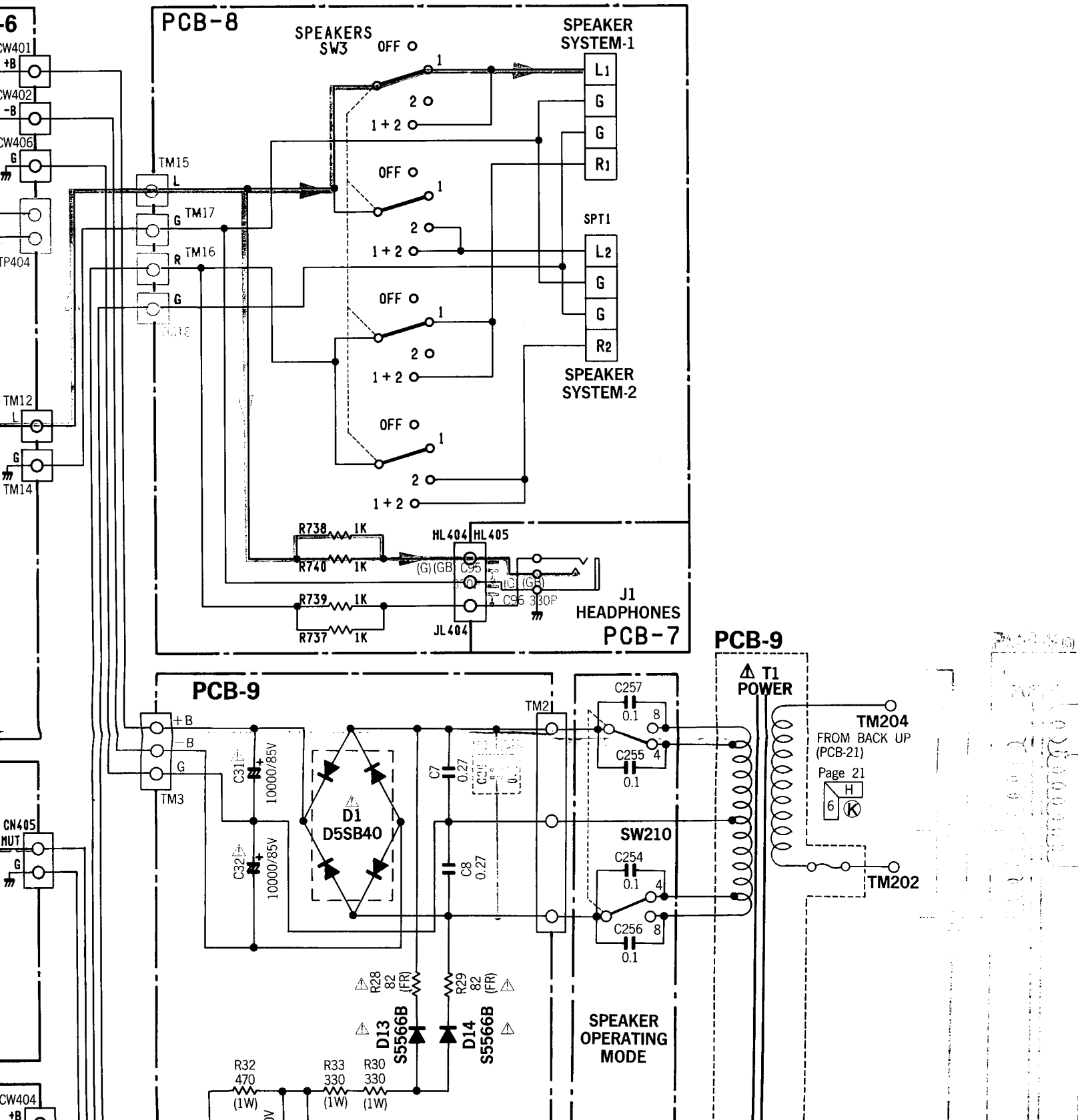


Thermal Protector

Timing Signal



PCB-6



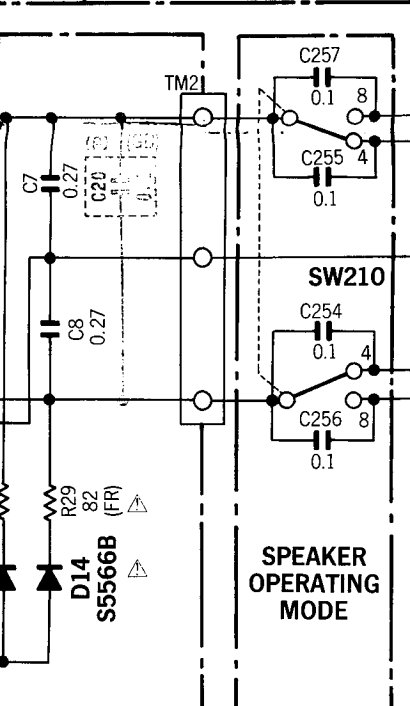
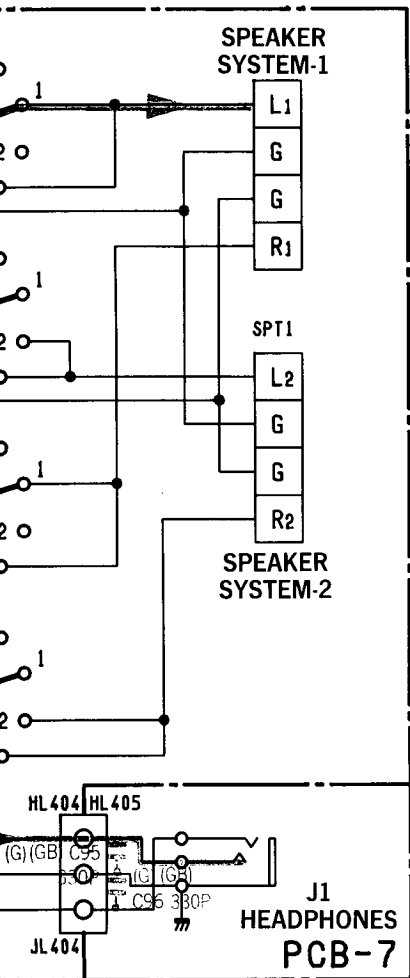
M

N

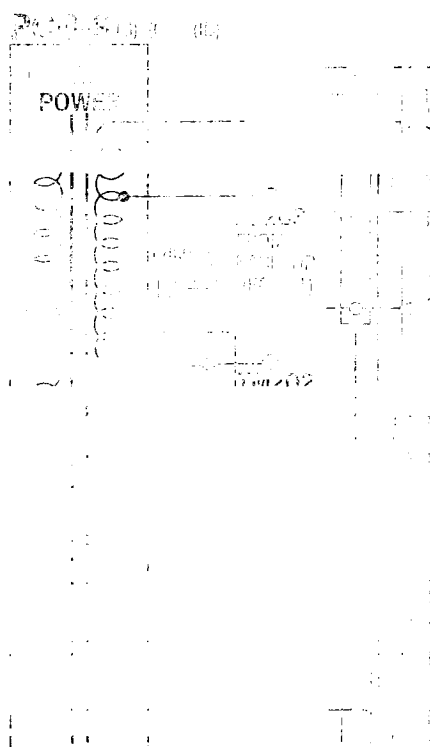
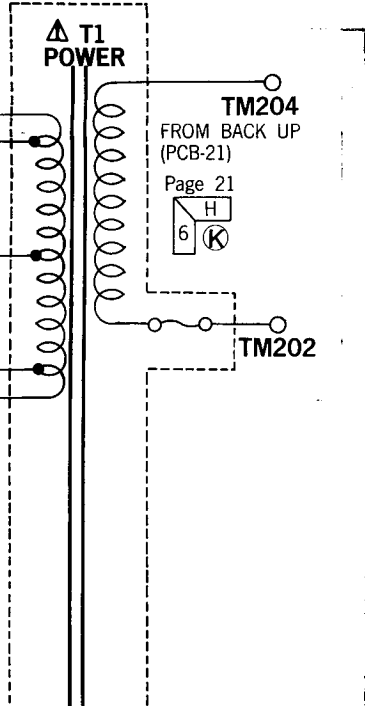
O

P

Q



PCB-9

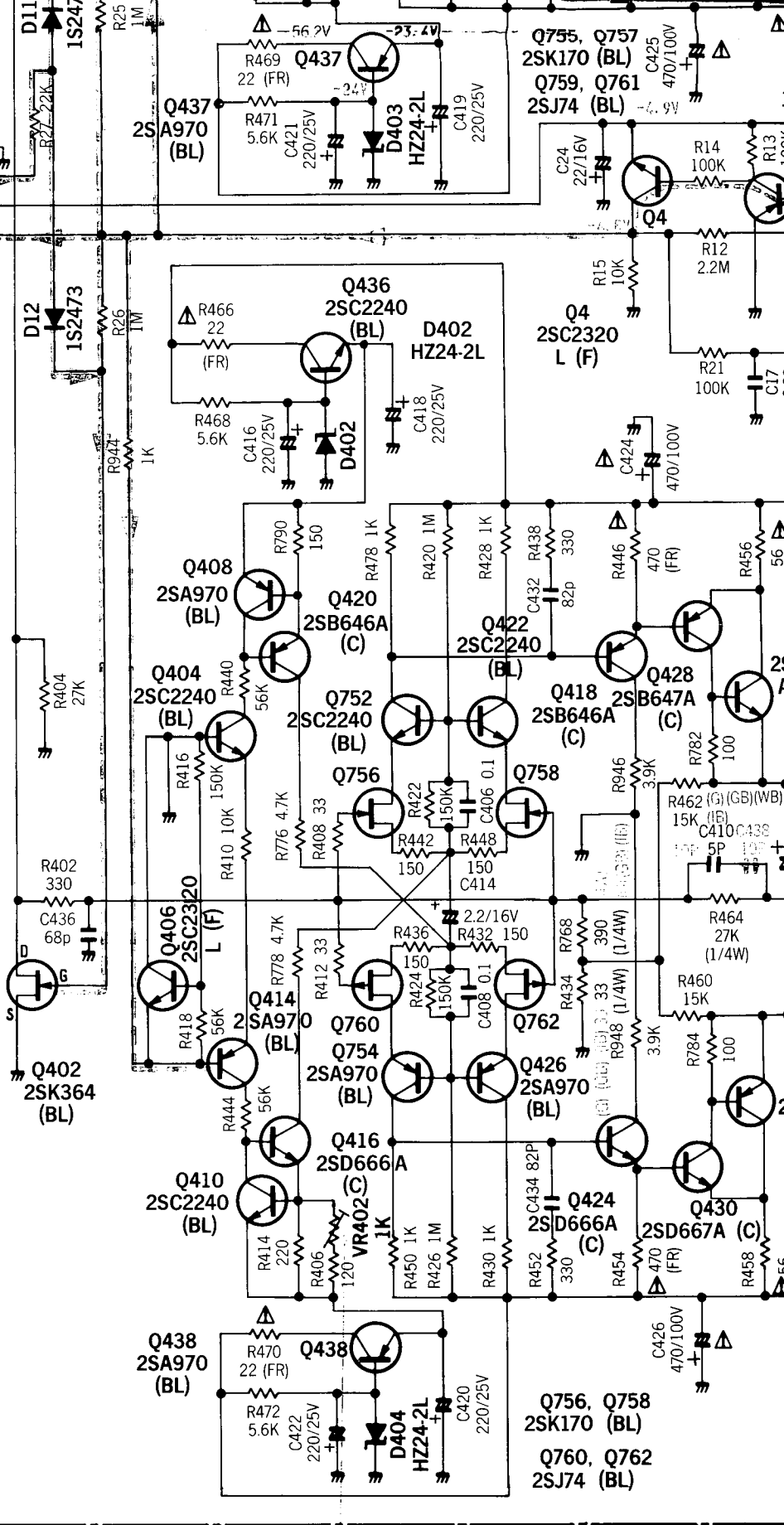


FROM PRE MADE  
REPARATION  
(PCB-14)

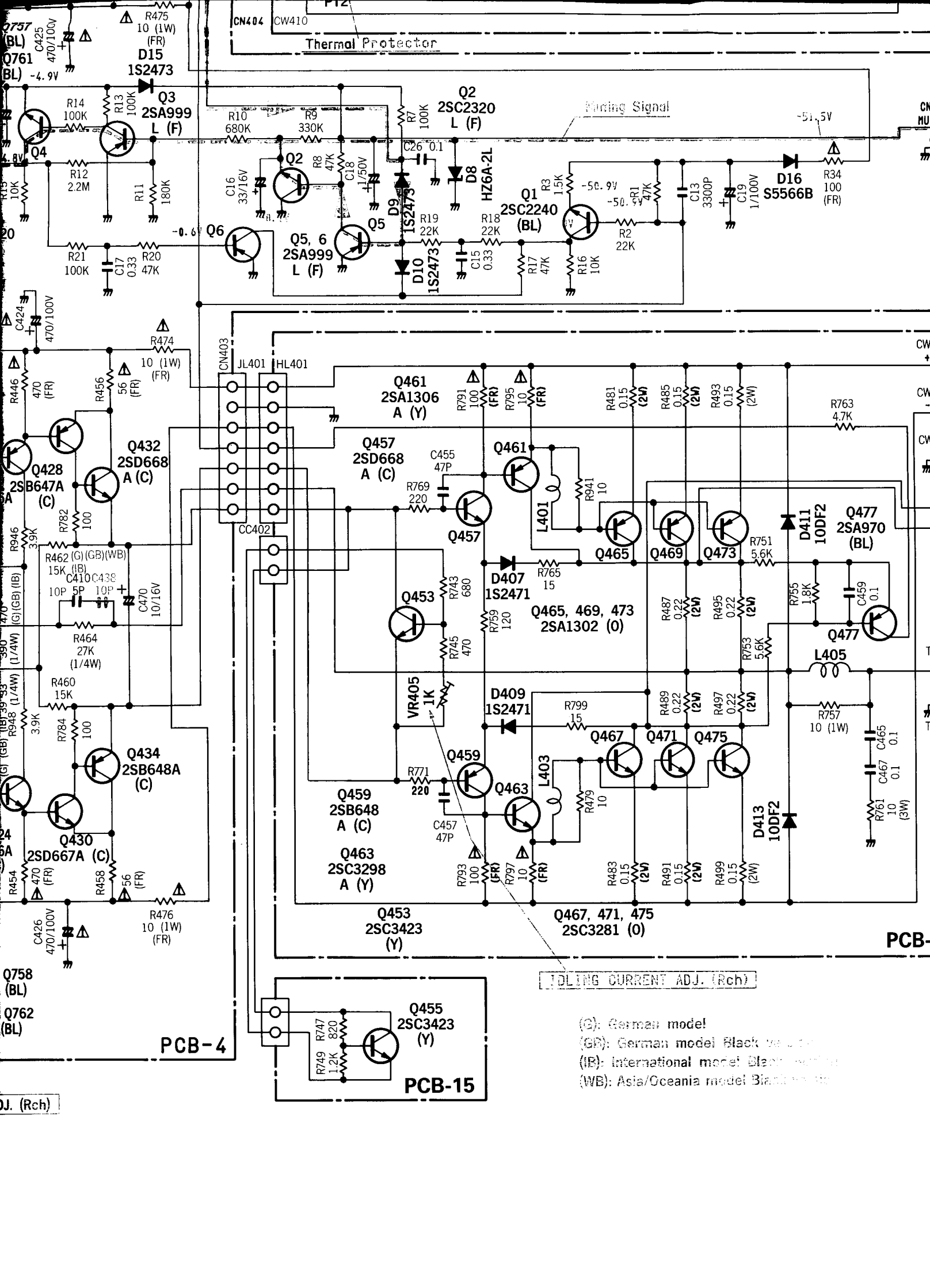
TO TONE  
MUT  
-B  
PRO

Page 24  
8

CN401



ME ADJ. ERM



Thermal Protector

Ring Signal

-51.5V

PCB-4

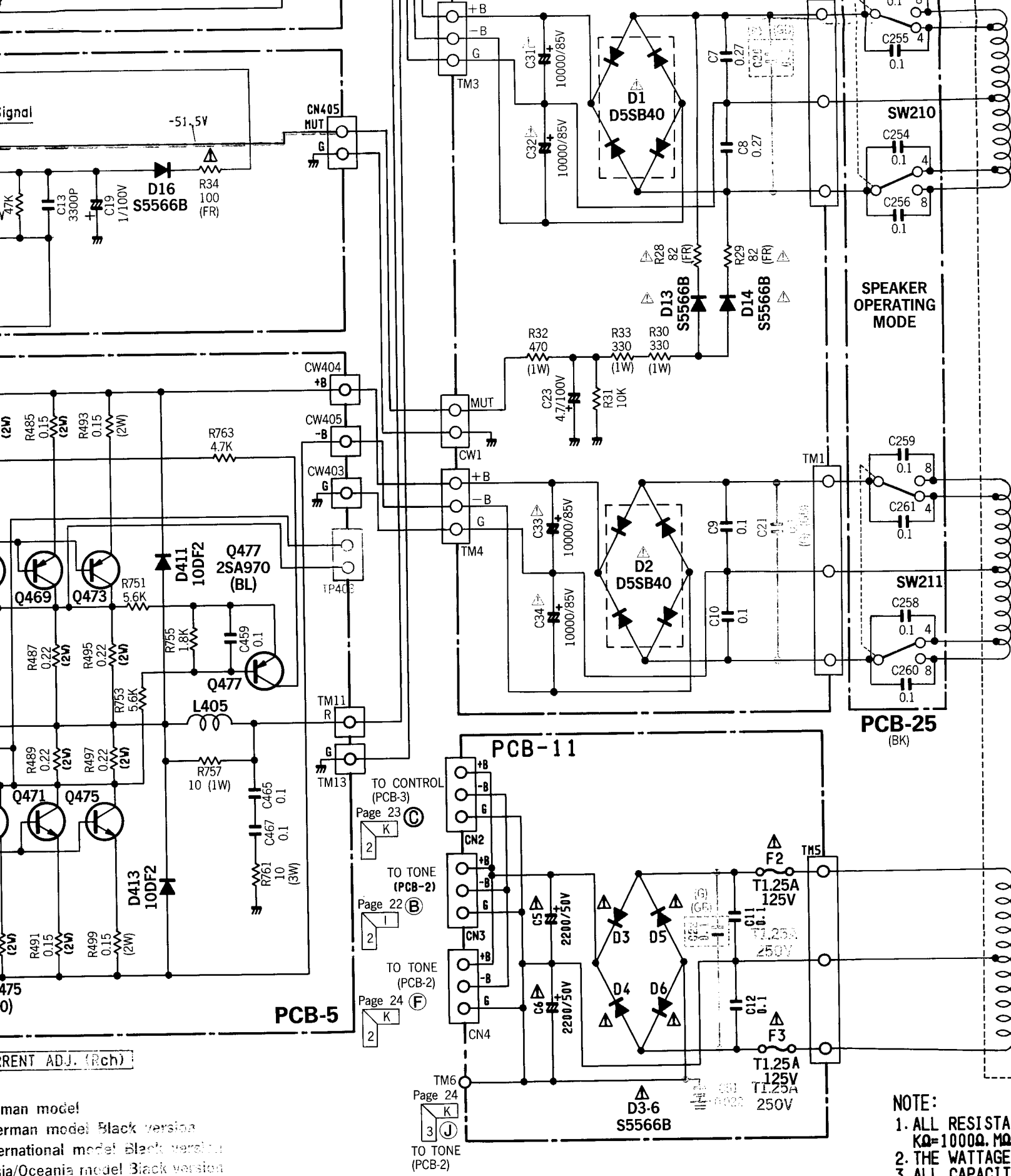
PCB-1

IDLING CURRENT ADJ. (Rch)

- (C): German model
- (GB): German model Black version
- (IR): International model Black version
- (WB): Asia/Oceania model Black version

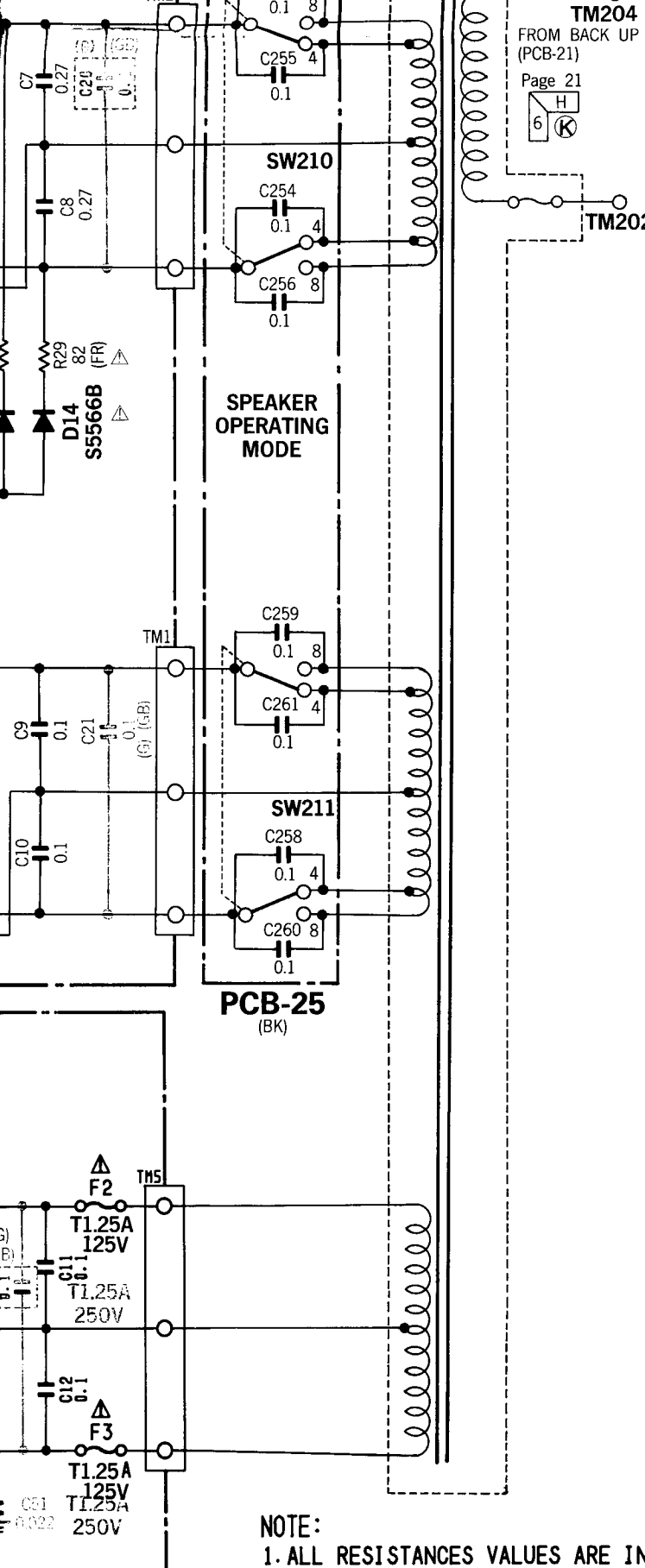
DJ. (Rch)

PCB-15



PRESENT ADJ. (Rch)  
 man model  
 rman model Black version  
 ernational model Black version  
 ia/Oceania model Black version

**NOTE:**  
 1. ALL RESISTANCE VALUES IN OHMS UNLESS OTHERWISE SPECIFIED  
 2. THE WATTAGE RATING OF RESISTORS SHOULD BE MET  
 3. ALL CAPACITANCE VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED  
 4. ... V:DC VOLTAGE  
 5. SAFETY BY ORIGINAL DESIGNER



**NOTE:**

1. ALL RESISTANCES VALUES ARE IN  $\Omega$ .  
 $K\Omega=1000\Omega$ ,  $M\Omega=1000K\Omega$ .
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN  $\mu F$  UNLESS OTHERWISE NOTED. P=# $\mu F$ .
4. ...V:DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS. THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

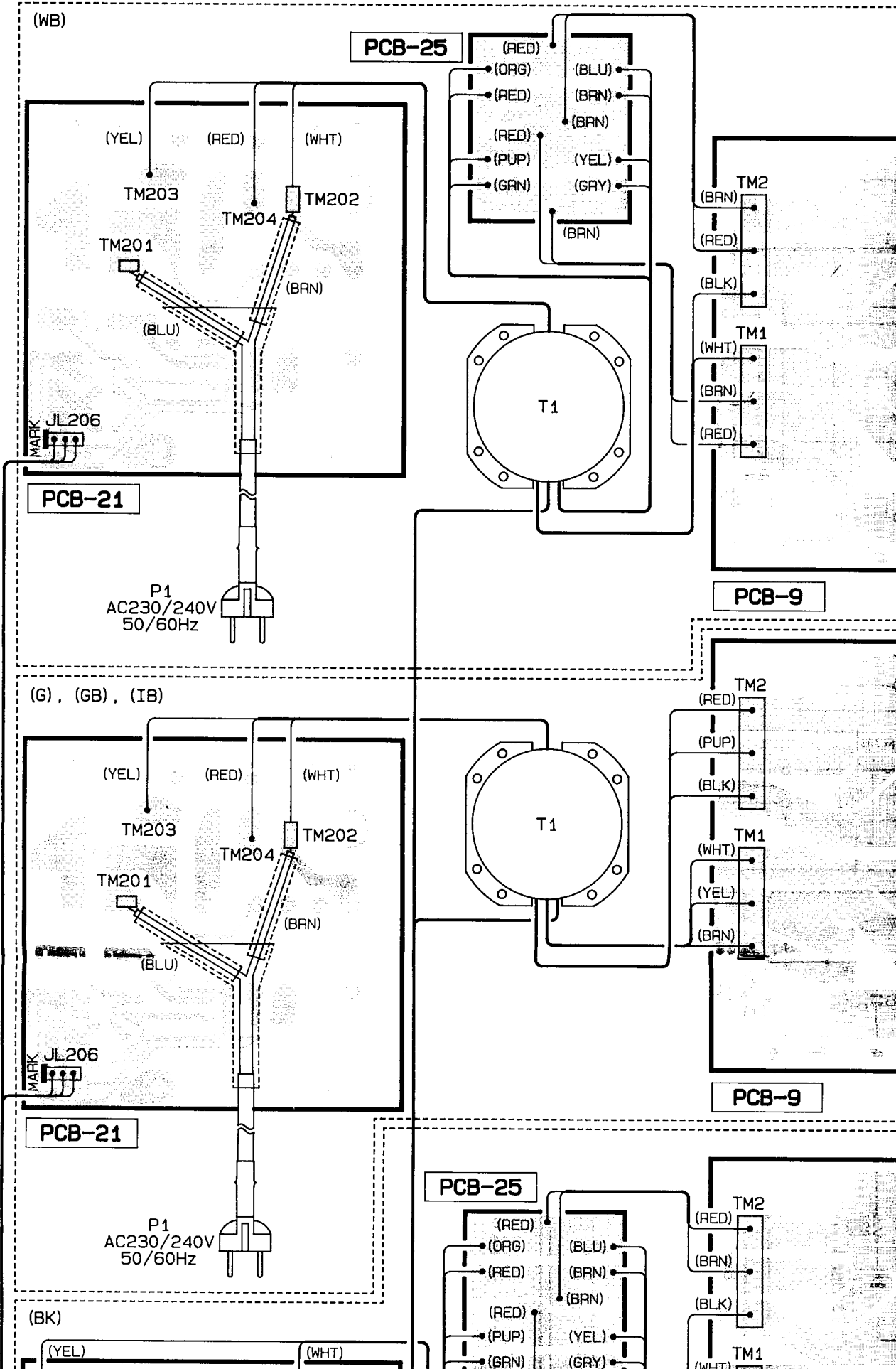




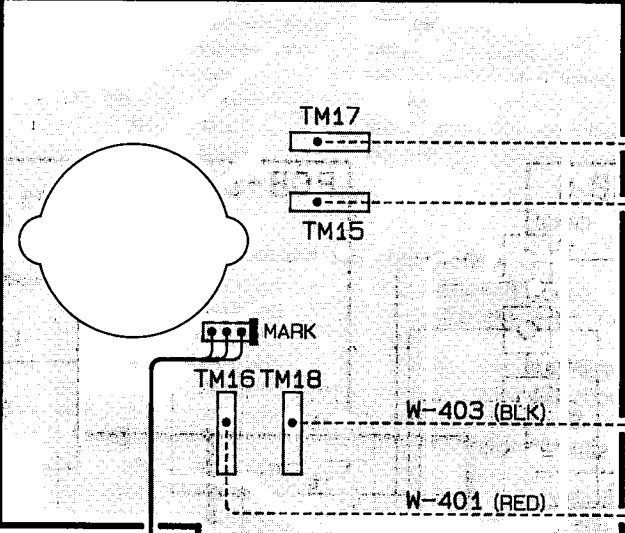
# WIRING DIAGRAM

1  
2  
3  
4  
5  
6  
7

A B C D E



PCB-8



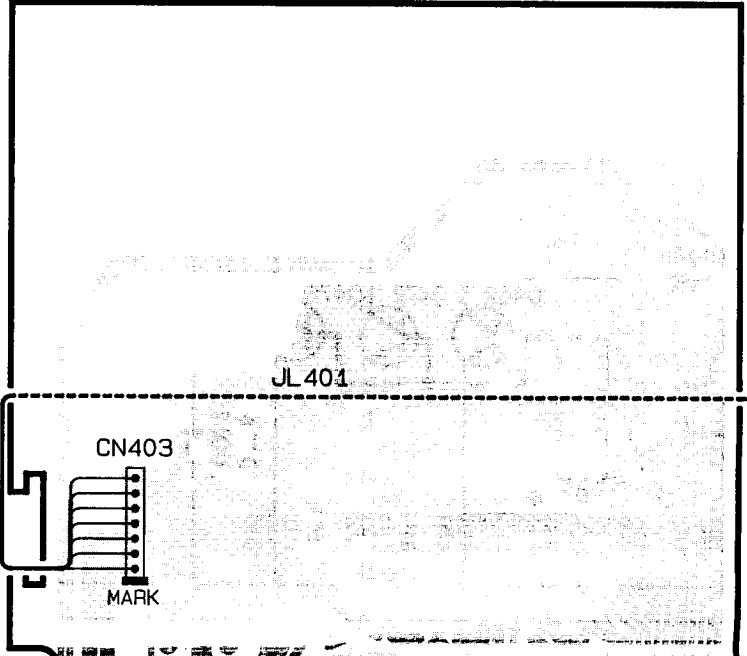
W-404 (BLK)

W-402 (WHT)

W-403 (BLK)

W-401 (RED)

PCB-4



JL 401

CN403

MARK

PCB-7



JL 404

MARK

W-415 (BLK)  
W-416 (BLK)

W-417 (BLK)

RED

W-512 (BRN)

TM402

TM401

CW507

CW404

TM3

CW405

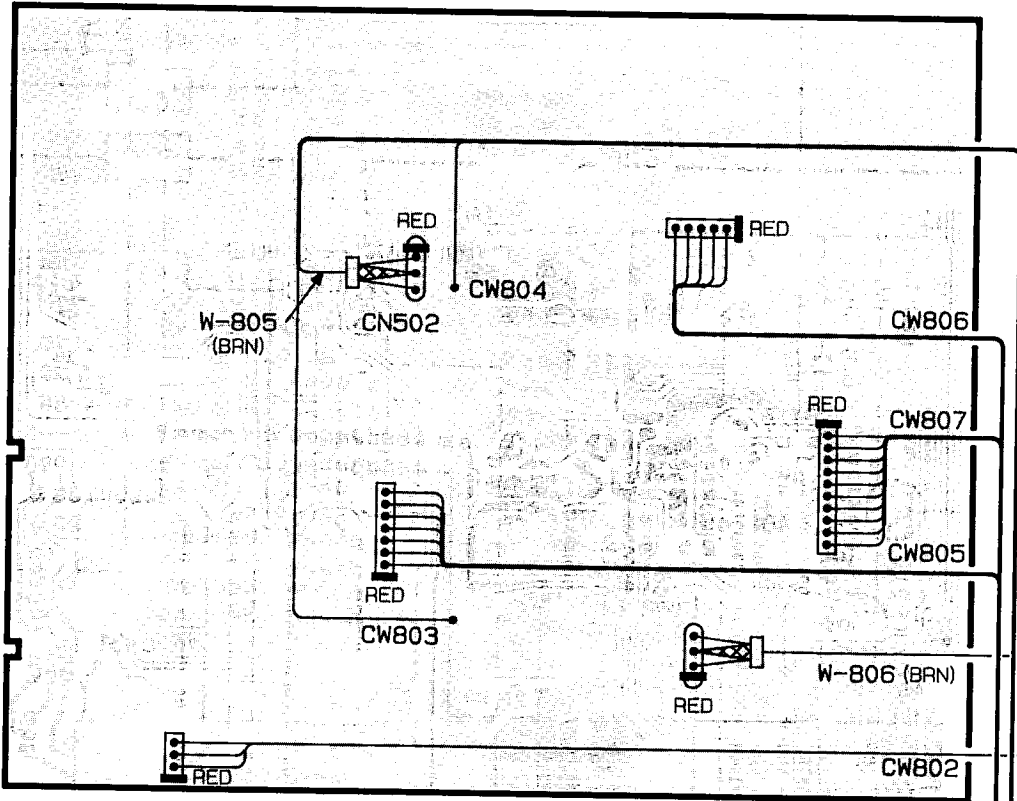
CW406

CN402

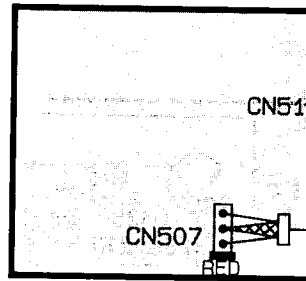
9

9

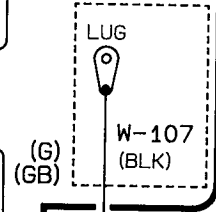
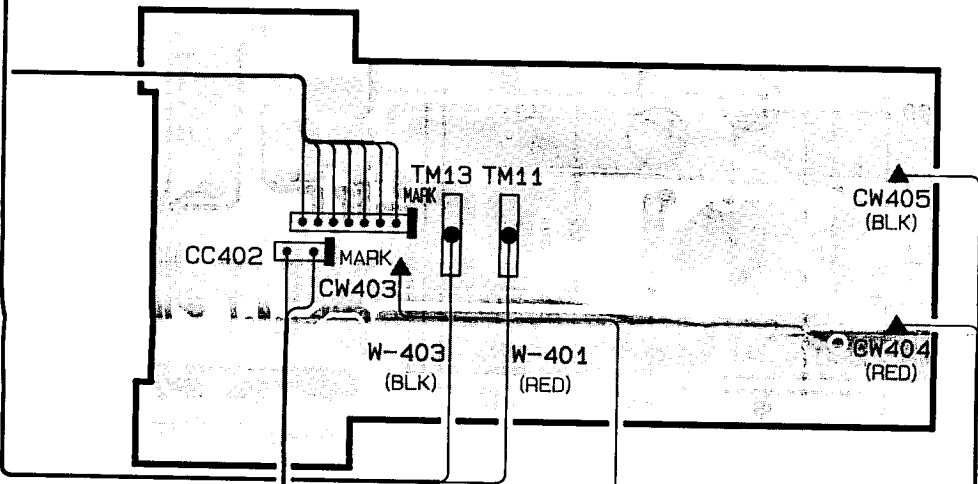
PCB-3



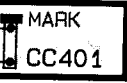
PCB-14



PCB-5



- W-416
- W-415
- CW507
- W-417
- CW512 (GND)



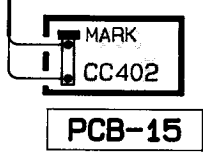
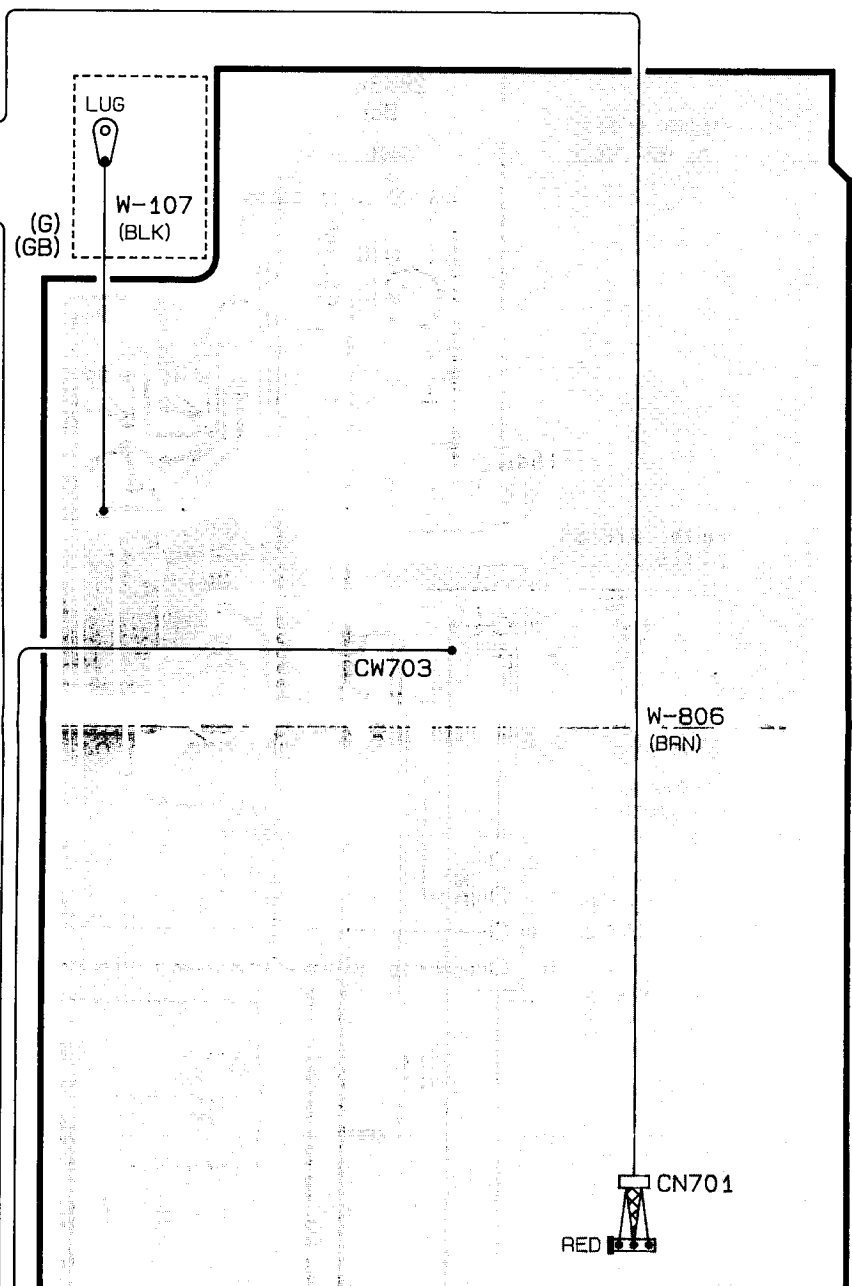
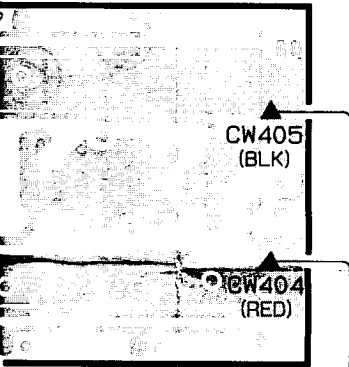
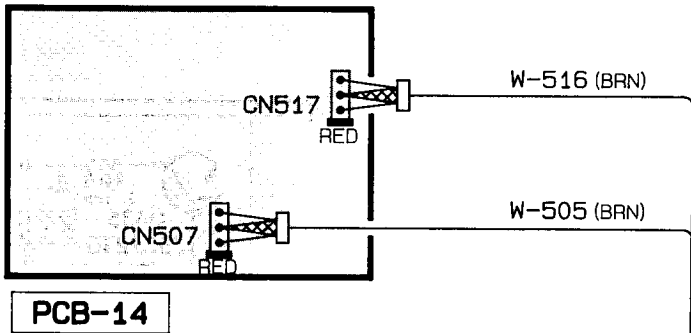
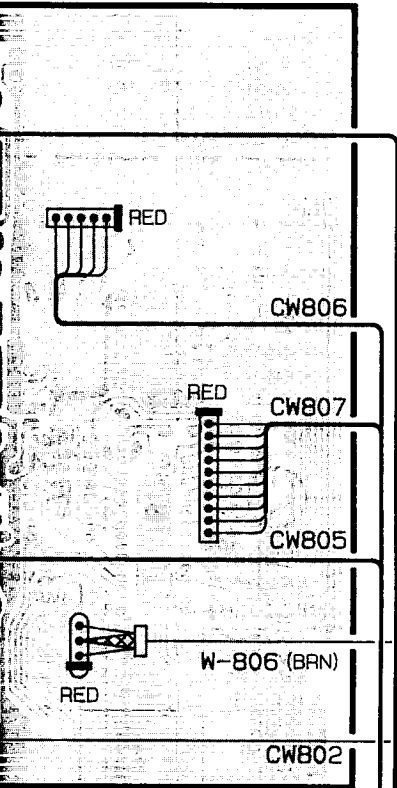
PCB-16



PCB-15

PCB-6

CW703



6

7

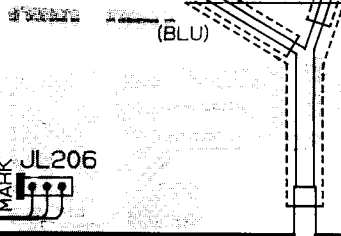
8

9

10

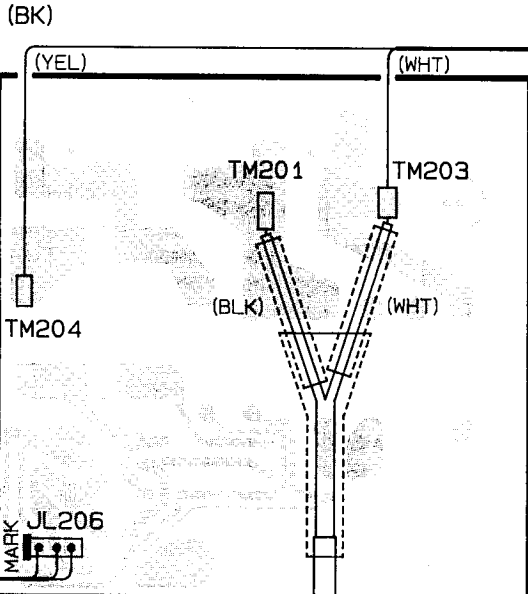
11

12



PCB-21

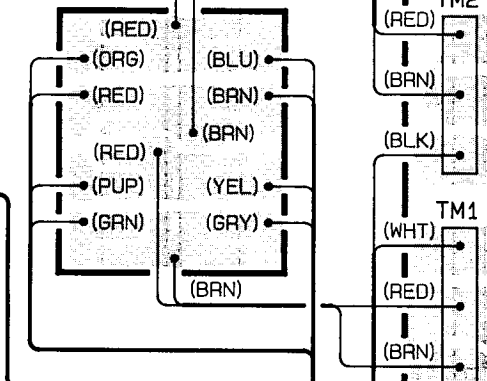
P1  
AC230/240V  
50/60Hz



PCB-21

P1  
AC120V/60Hz

PCB-25

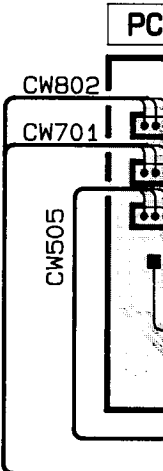


TM2

TM1

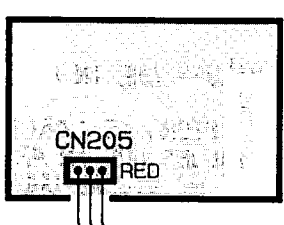
T1

PCB-9



PCB-20

PCB-22



RED

CW205

CW205

CN205

RED

WIRE COLOR ABBREVIATIONS

- RED: RED
- BLU: BLUE
- WHT: WHITE
- BLK: BLACK
- BRN: BROWN
- YEL: YELLOW
- GRY: GRAY
- PUP: PURPLE
- ORG: ORANGE
- GRN: GREEN

