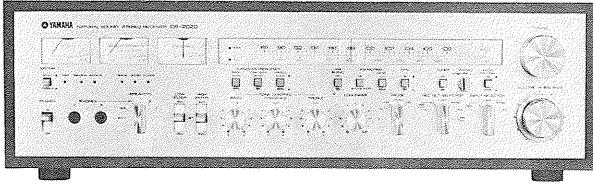


43

SERVICE MANUAL

CR-2020

FM/AM STEREO RECEIVER



SINCE 1887

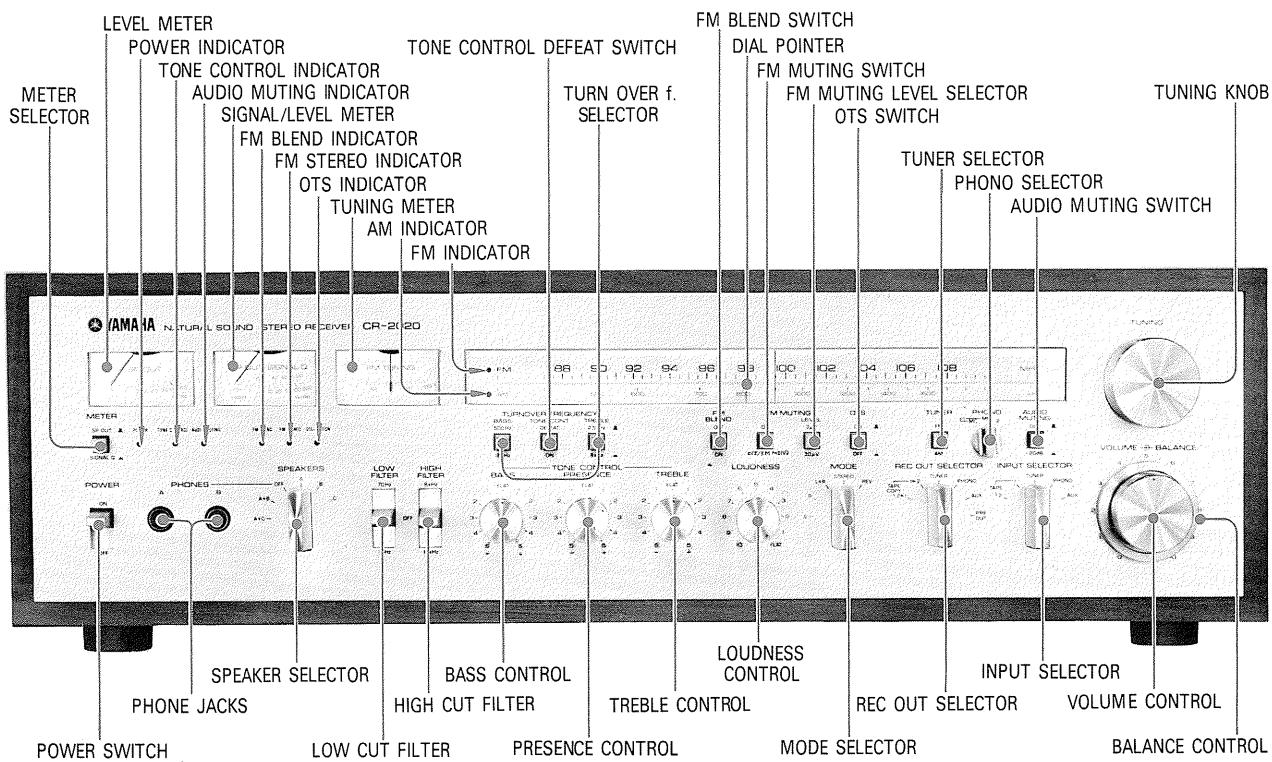
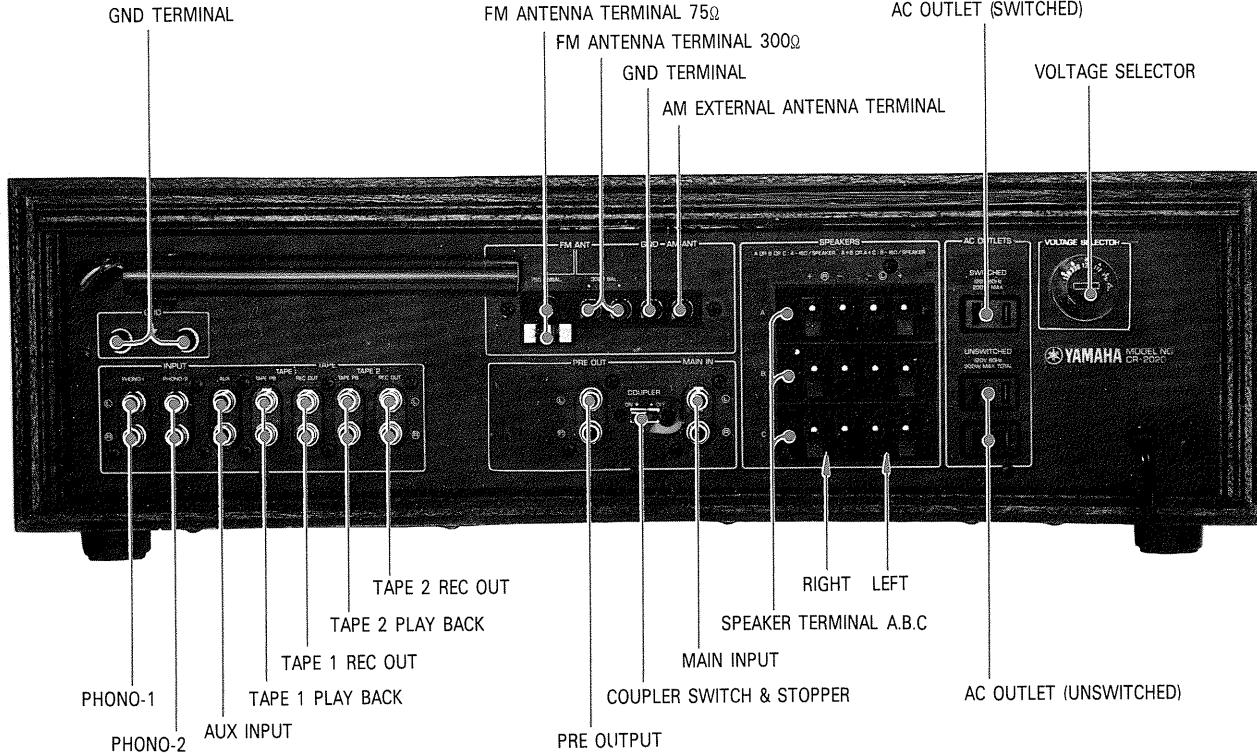


YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

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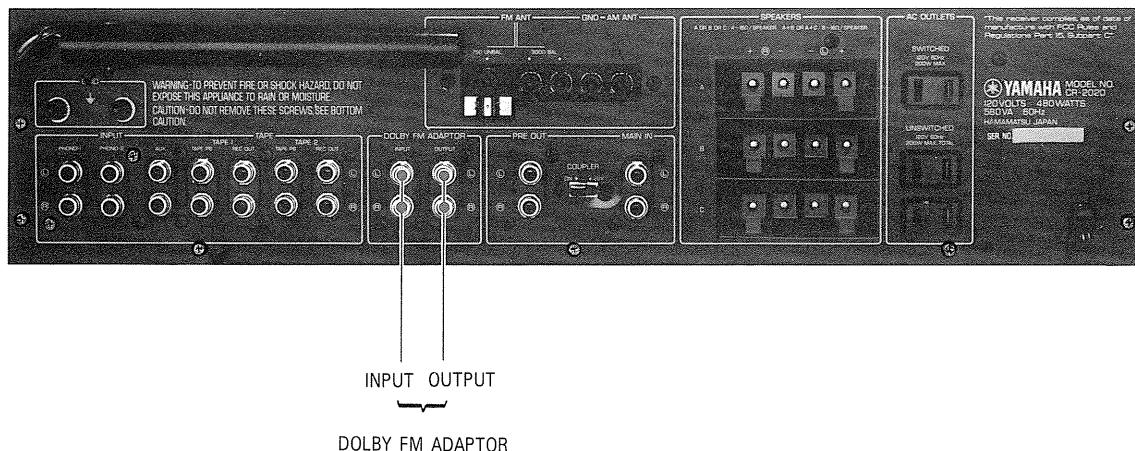
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PANEL OPERATION**FRONT PANEL****REAR PANEL****GENERAL MODEL**

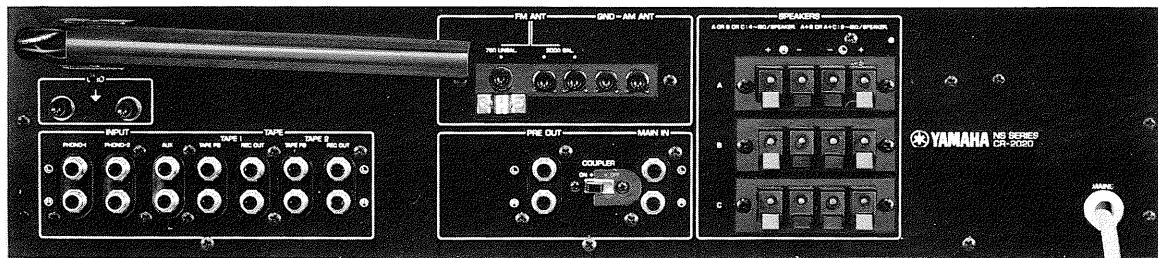
PANEL OPERATION

REAR PANEL

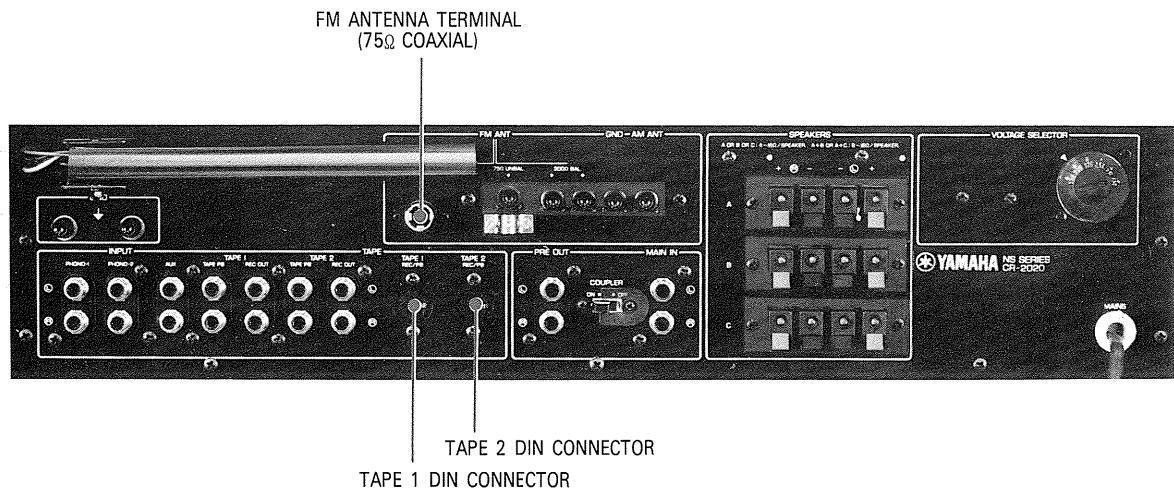
US & CANADIAN MODEL



UK & AUSTRALIAN MODEL



EUROPEAN MODEL



SPECIFICATIONS**AMPLIFIER SECTION****Input Sensitivity/Impedance**

Phono 1, 2(MM) : 2mV-1kHz/47kΩ, max. 230V
 Phono 1(MC) : 50μV-1kHz/10Ω, max. 5mV
 AUX, Tape 1, 2 : 120mV/45kΩ
 DIN 1, 2 : 120V/45kΩ(European model only)
 Main In : 775mV/100kΩ

Output Level/Impedance

REC. OUT 1.2 : 120mV/500Ω(Phono) 6kΩ(Tuner)
 max. 15V(Phono, 1kHz)
 DIN OUT 1, 2 : 30mV/52kΩ(European model only)
 PRE OUT : 775mV (0 to 2kΩ) max. 5V

Frequency Response

Phono 1(MM, MC), 2 RIAA Deviation: ±0.2dB
 AUX, Tape 1, 2 to SP. out: ±2.5dB(10Hz to 100kHz)
 Main in to SP. out: ±2.5dB(10Hz to 100kHz)

Tone Control Characteristics

BASS : Turnover 125,500Hz Variable Range
 ±15dB/50Hz
 TREBLE : Turnover 8, 2.5kHz Variable Range
 ±10dB/20kHz
 PRESENCE : Center 3kHz 2kHz±6dB

Filter Characteristics

Low Filter : fc=15Hz, 70Hz 12dB/oct
 High Filter : fc=8kHz, 12kHz 12dB/oct

Loudness Characteristics

According to the Fletcher and Munson curve

Signal-to-Noise Ratio and Noise Level

Phono 1(MM), 2 : (2mV) 81dB (IHF A Network, Input
 Short Circuited)
 AUX : 100dB (IHF A Network, 5.1kΩ Short
 Circuited)
 Tape : 100dB (-do- -do-)
 Main : 112dB (-do- -do-)
 Residual Noise : 100μV (IHF A Network, Vol. min)

Total Harmonics Distortion

Phono 1(MM), 2 : 0.01%(20 to 20kHz) REC OUT 7.5V
 Phono 1 (MC) : 0.05%(-do-) REC OUT 3.0V
 AUX, Tape : 0.02%(-do-) SP. OUT 50W/8Ω
 Main In : 0.015%(-do-) SP. OUT 50W/8Ω
 Phono 1(MM), 2 : 0.1%(0.1 to 100W/8Ω) Vol. -20dB
 IM Distortion AUX: 0.02% SP. OUT 50W/8Ω

Rating Output and etc.

8Ω Both ch. driven: 100W(20 to 20kHz) 0.05% T.H.D
 110W(1kHz) 0.05% T.H.D
 4Ω Both ch. driven: 120W(20 to 20kHz) 0.05% T.H.D
 (Except E & BS) 140W(1kHz) 0.05% T.H.D
 Power Band Width: 10 to 50kHz
 Dumping Factor: 40 or more, 1kHz/8Ω

TUNER SECTION-FM**Tuning Range**

88 to 108MHz

Usable Sensitivity, 98MHz

IHF mono : 1.8μV (300Ω) 10.3dBf
 0.9μV (75Ω) 10.3dBf
 DIN mono: 1.3μV (Dev: 40kHz, S/N: 26dB)
 stereo: 40μV (Dev: 40kHz, S/N: 46dB)

50-dB Quieting Sensitivity

mono: 3.2μV, 15.3dBf
 stereo: 40μV, 37.2dBf

Signal-to-Noise Ratio

mono: 77dB, DIN (Dev: 40kHz) 71dB
 stereo: 73dB, DIN (Dev: 40kHz) 67dB

Image Interference Ratio (98MHz) : 85dB
IF Interference Ratio (98MHz): 90dB
Spurious Interference Ratio (98MHz): 100dB
Amplitude Suppression Ratio IHF: 65dB
Capture Ratio: 1dB
Alternate-Channel Selectivity 80dB
 DIN (Dev: ±300kHz, 40kHz): 60dB

Total Harmonics Distortion
 mono : 100Hz, 0.08%
 1kHz, 0.08%
 6kHz, 0.15%
 stereo : 100kHz, 0.15%
 1kHz, 0.1%
 6kHz, 0.2%

Cross Modulation Distortion
 IHF mono : 0.05%
 stereo : 0.1%

Stereo Separation 50Hz : 35dB
 1kHz : 50dB
 10kHz: 45dB
Frequency Response 50 to 10kHz : ±0.3dB
 30 to 15kHz : ±0.5dB
 10 to 18kHz : +0.5 -3dB
Sub Carrier Suppression 60dB
Muting Signal Level 3μV (14.8dBf), 30μV (34.8dBf)

TUNER SECTION-AM**Tuning Range** 525 to 1605kHz**Usable Sensitivity (Used Bar antenna)**

IHF:	300μV/m (49dB/m)
Selectivity	1000kHz: 30dB
Signal-to-Noise Ratio	80dB/m: 50dB
Image Interference Ratio	1000kHz: 55dB
IF Interference Ratio	1000kHz: 40dB
Sporious Interference Ratio	1000kHz: 55dB
Total Harmonics Distortion	80dB/m: 0.4%

Output Level/Impedance
 FM(Mod. 100%) : 450mV/6.5KΩ(REC OUT)
 FM(Mod. 30%) : 120mV/6.5KΩ(REC OUT)

GENERAL**Used Semi Conductors**

109 Transistors	58 Diodes
6 ICs	7 Zener Diodes
3 FETs	5 LEDs
	4 CFs

Rated Voltage

120V/60Hz (US. and CANADA)
 240V/50Hz, (UK. and AUSTRALIA)
 110, 120, 130, 220, 230 and 240V/50, 60Hz
 (EUROPE and General export models)

Rated Power Consumption

480W, 580VA (US., CANADA and General export models)
 690W (UK., EUROPE and AUSTRALIA)

Dimensions

540(W) x 167(H) x 415(D)mm
 21-1/4 x 6-9/16 x 16-5/16 in (US., CANADA and General
 export models)
 521(W) x 146.5(H) x 415(D)mm
 20-1/2 x 5-3/4 x 16-5/16 in (UK. and EUROPE)

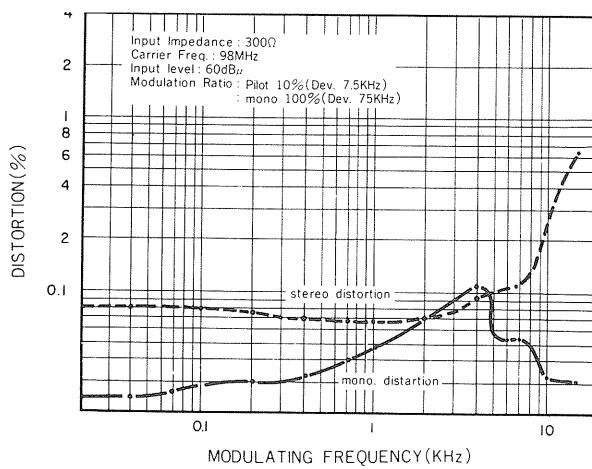
Weight

19.3kg 42.5 lbs (US., CANADA, AUSTRALIA and
 General export models)
 18.6kg 40.9 lbs (UK. and EUROPE)

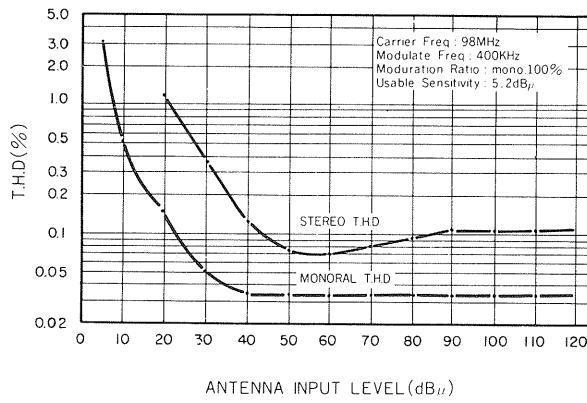
CHARACTERISTIC CHARTS

TUNER SECTION-FM

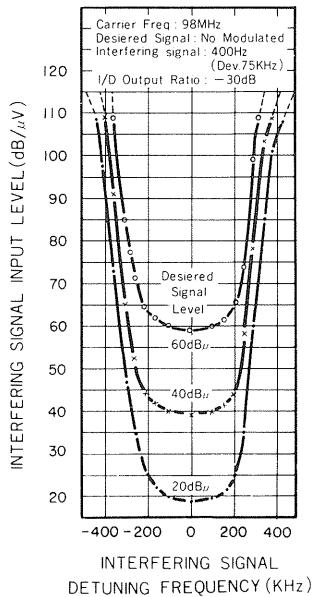
DISTORTION V. MODULATING FREQUENCY



T.H.D. V. INPUT LEVEL

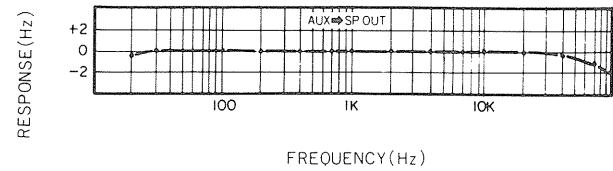


FM 2 SIGNALS EFFECTIVE SELECTIVITY

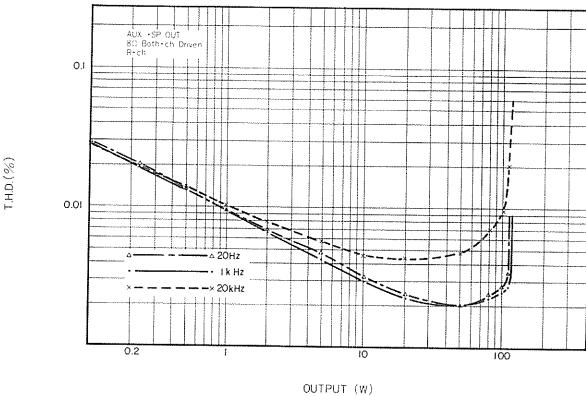


AMPLIFIER SECTION

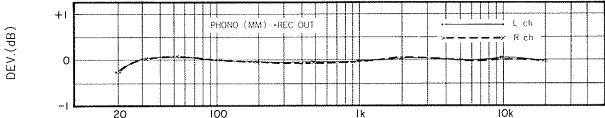
FREQUENCY RESPONSE



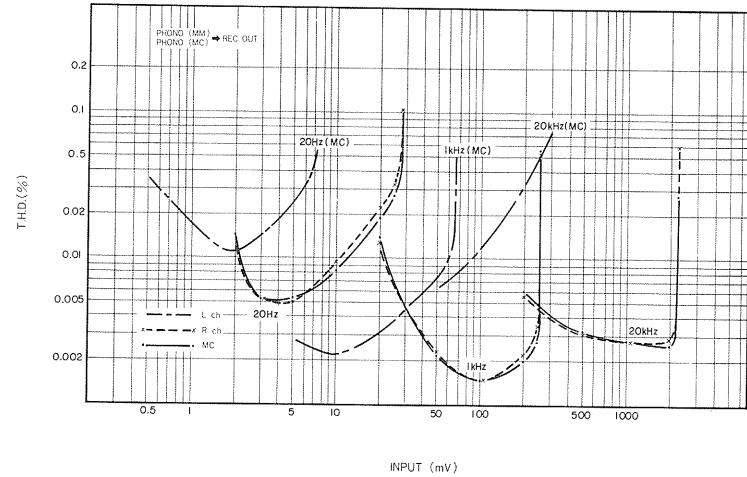
T.H.D.V. OUTPUT



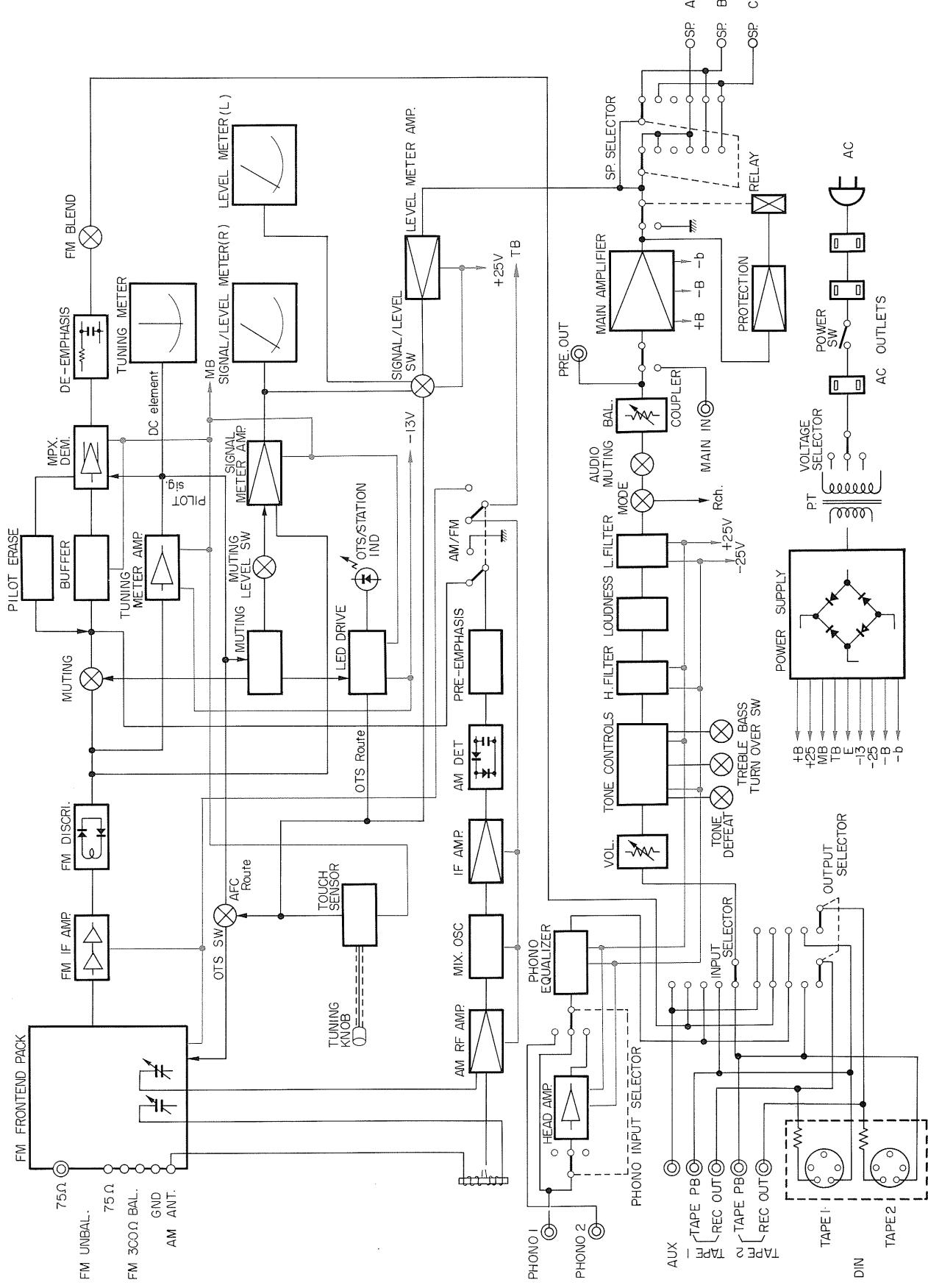
RIAA DEVIATION



T.H.D. V. PHONO INPUT

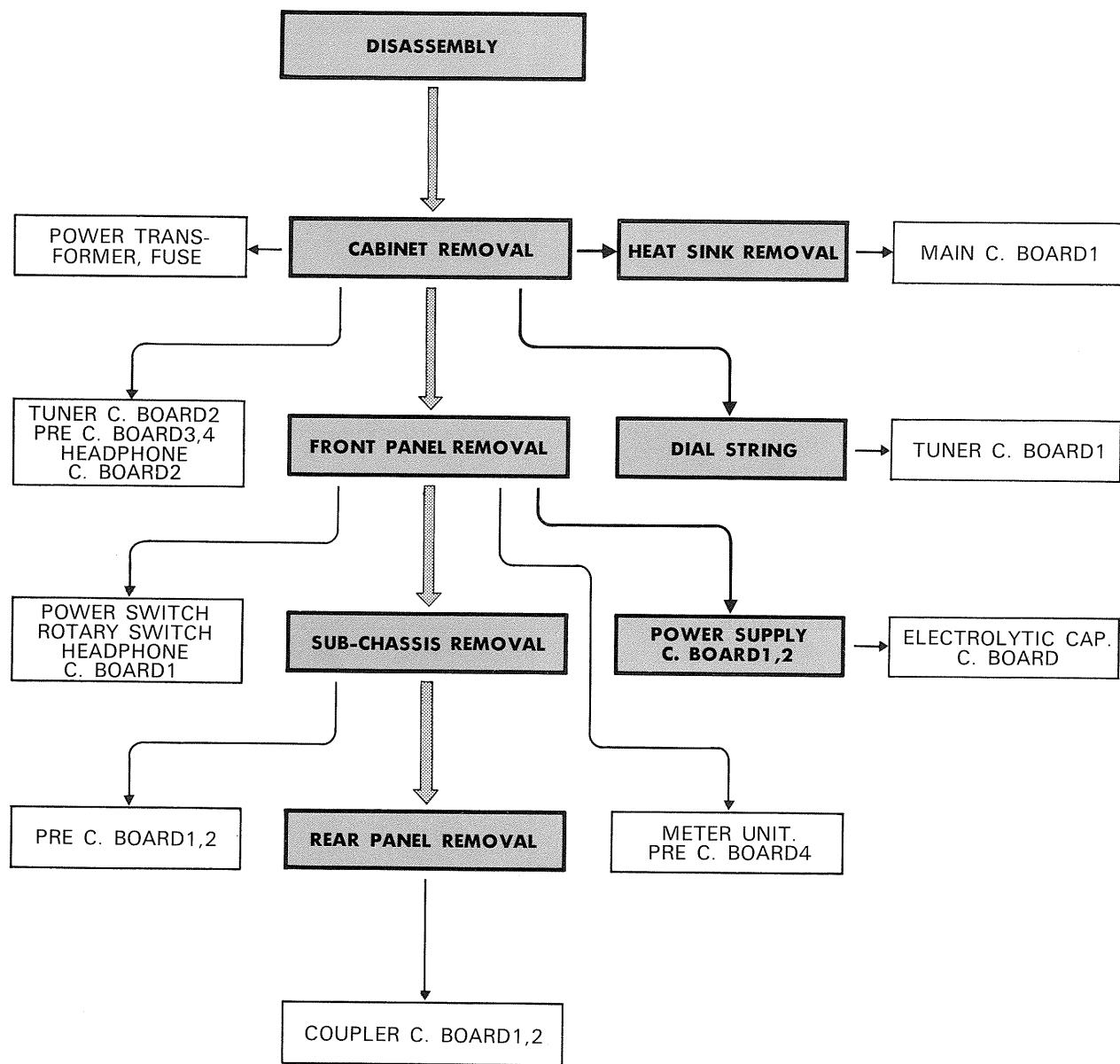


BLOCK DIAGRAM



FLOW CHART FOR DISASSEMBLY PROCEDURES

Disassembly procedures are shown in accordance with U.S. model.



Note

TUNER C. BOARD 2:

FM BLEND, FM MUTING, OTS AND AM-FM SWITCHES

PRE C. BOARD 1:

LOW AND HIGH FILTER SWITCHES, TONE AND LOUDNESS CONTROLS, MODE, REC OUT AND INPUT SELECTORS

PRE C. BOARD 2:

VOLUME AND BALANCE CONTROLS

PRE C. BOARD 3:

AUDIO MUTING SWITCH

PRE C. BOARD 4:

TURNOVER FREQUENCY SWITCHES

HEADPHONE C. BOARD 1:

HEADPHONE JACKS

HEADPHONE C. BOARD 2:

AM-FM INDICATORS

COUPLER C. BOARD 1:

ANTENNA TERMINALS

COUPLER C. BOARD 2:

COUPLER SWITCH AND PIN JACKS

POWER SUPPLY C. BOARD 2:

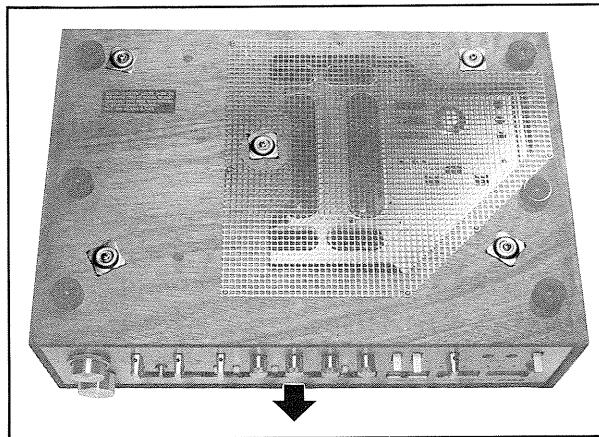
METER SELECTOR

DISASSEMBLY PROCEDURES

1. CABINET REMOVAL

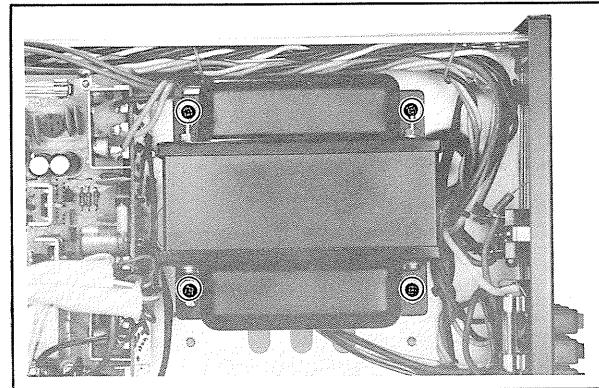
Remove 5 screws, then pull out the chassis in arrow direction.

Since the cabinet used for UK and European models are different from the photo shown below, refer to "EXPLODED VIEW" as shown in page 1 of the PARTS LIST.



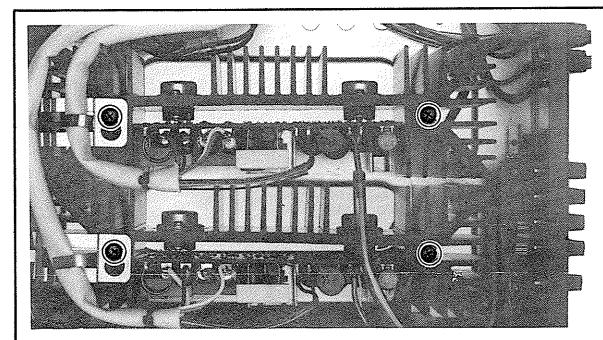
2. POWER TRANSFORMER REMOVAL

Remove 4 screws.

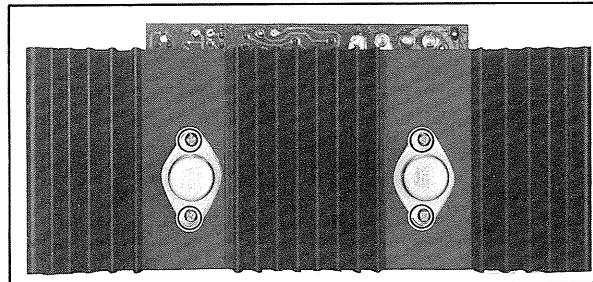


3. HEAT SINK AND MAIN CIRCUIT BOARD 1 REMOVAL

Step 1. Remove 4 screws, then dismantle the heat sink.



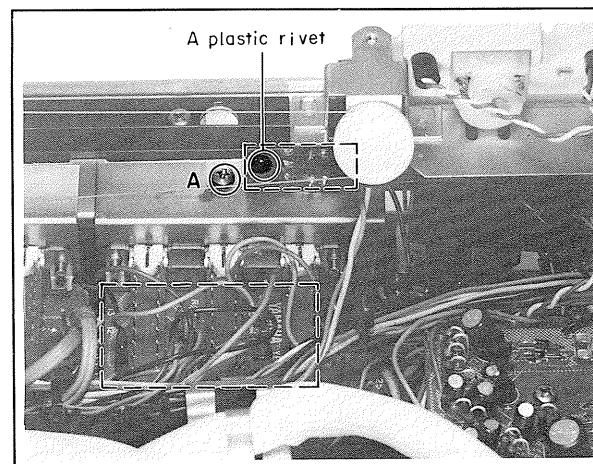
Step 2. Remove 4 screws fixing 2 power transistors.



4. HEADPHONE CIRCUIT BOARD 2 and PRE CIRCUIT BOARD 4 REMOVAL

Remove a plastic rivet, then detach the Headphone Circuit Board 2 from dial scale.

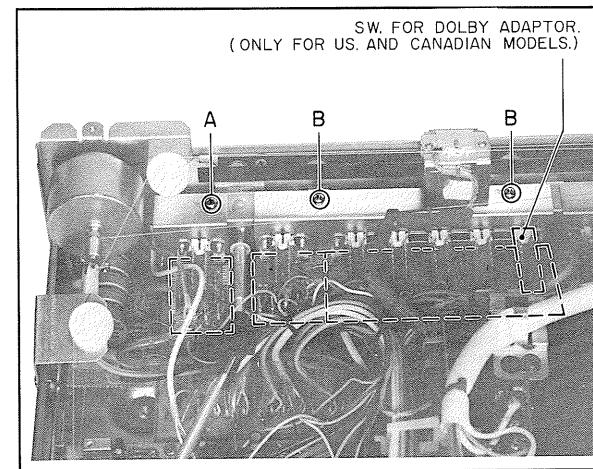
Remove a screw shown in A.



5. PRE CIRCUIT BOARD 3 AND TUNER CIRCUIT BOARD 2 REMOVAL

Screw A is for fixing the Pre Circuit Board 3.

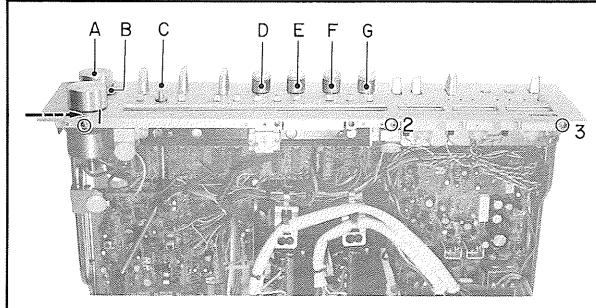
Screws B are for fixing the Tuner Circuit Board 2.



DISASSEMBLY PROCEDURES

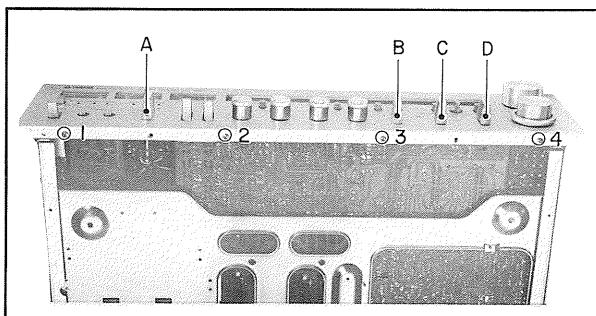
6. FRONT PANEL REMOVAL

- Step 1.**
- 1) Remove 3 screws 1 to 3, and pull off 7 knobs A to G.
 - 2) Insert a hexagonal allen wrench in arrow direction and loosen 2 screws fixing the tuning knob, then withdraw the knob.



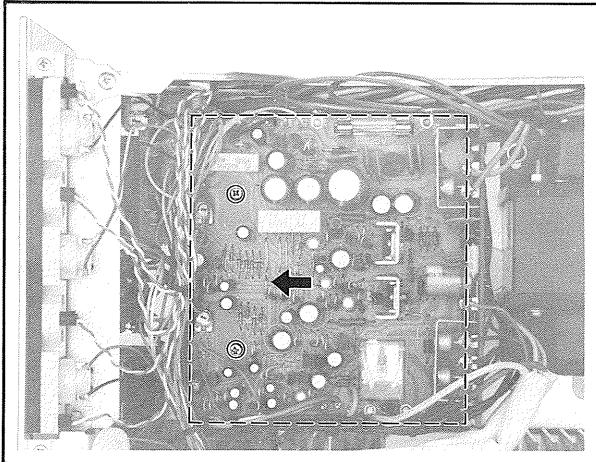
Step 2.

- 1) Remove 4 screws 1 to 4.
- 2) Loosen 4 screws A to D fixing each knob with a hexagonal allen wrench, then withdraw the knobs.



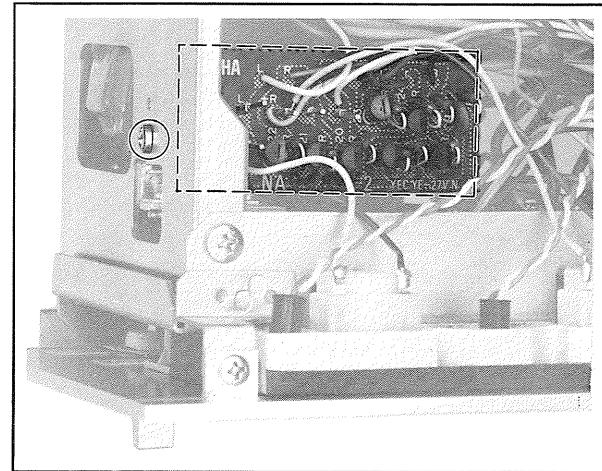
7. POWER SUPPLY CIRCUIT BOARD 1 REMOVAL

Remove 2 screws, then pull off the Power Supply Circuit Board 1 in arrow direction.



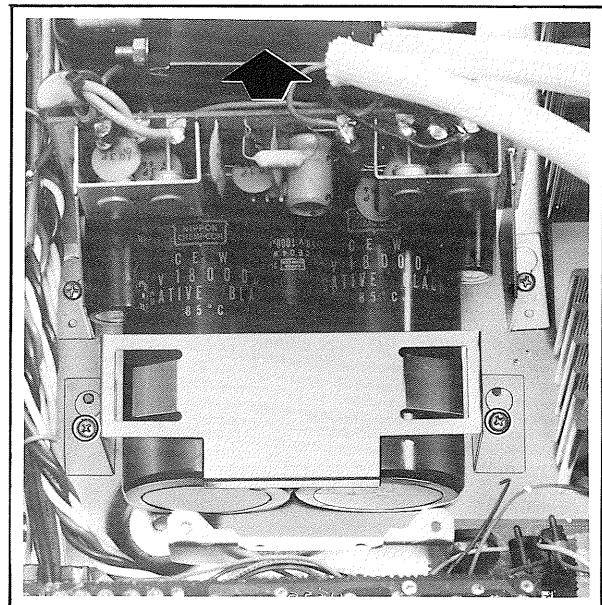
8. POWER SUPPLY CIRCUIT BOARD 2 REMOVAL

Remove a screw.



9. ELECTROLYTIC CAPACITOR CIRCUIT BOARD REMOVAL

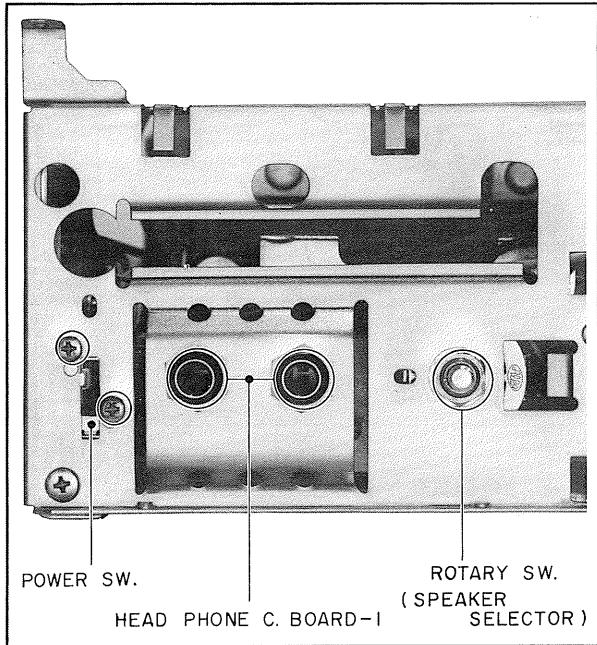
- 1) Remove 2 screws, then dismantle the holder securing 2 electrolytic capacitors.
- 2) Slide up the Electrolytic Capacitor Circuit Board in arrow direction.



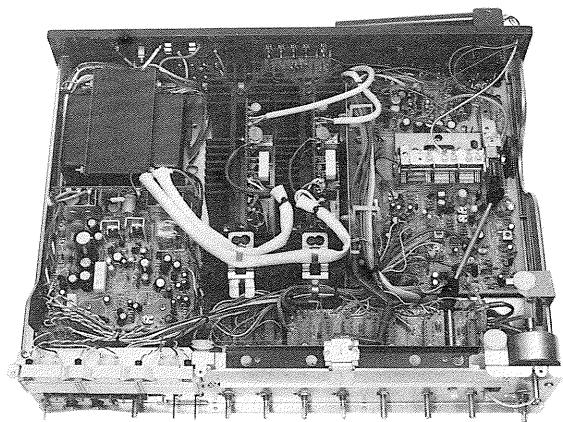
DISASSEMBLY PROCEDURES

10. POWER SWITCH, HEADPHONE CIRCUIT BOARD 1 AND ROTARY SWITCH REMOVAL

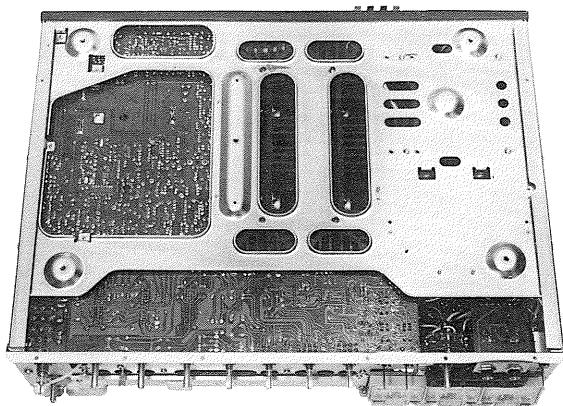
- 1) Pull off the knob of the power switch.
- 2) Remove 2 screws and 3 hexagonal nuts.



TOP VIEW

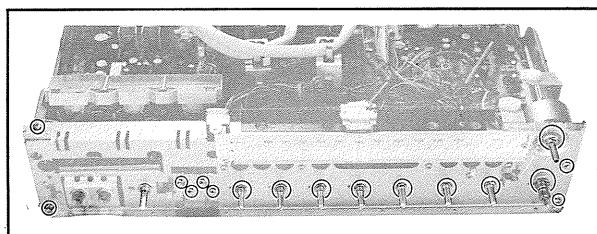


BOTTOM VIEW



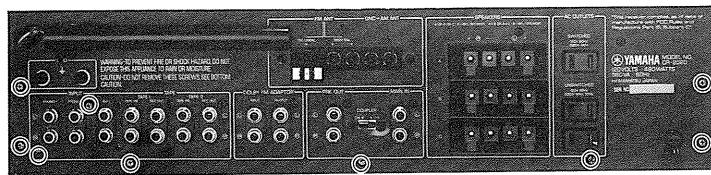
11. SUB-CHASSIS REMOVAL

- 1) Pull the knobs off.
- 2) Remove 8 screws and 9 hexagonal nuts.

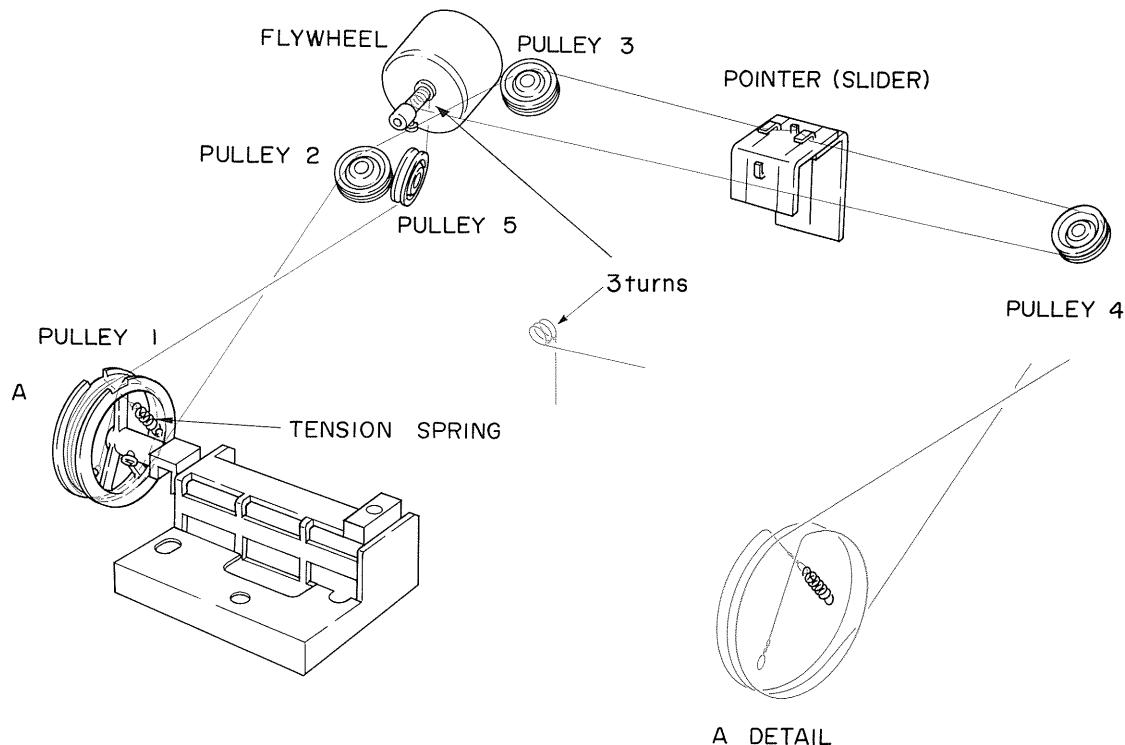


12. REAR PANEL REMOVAL

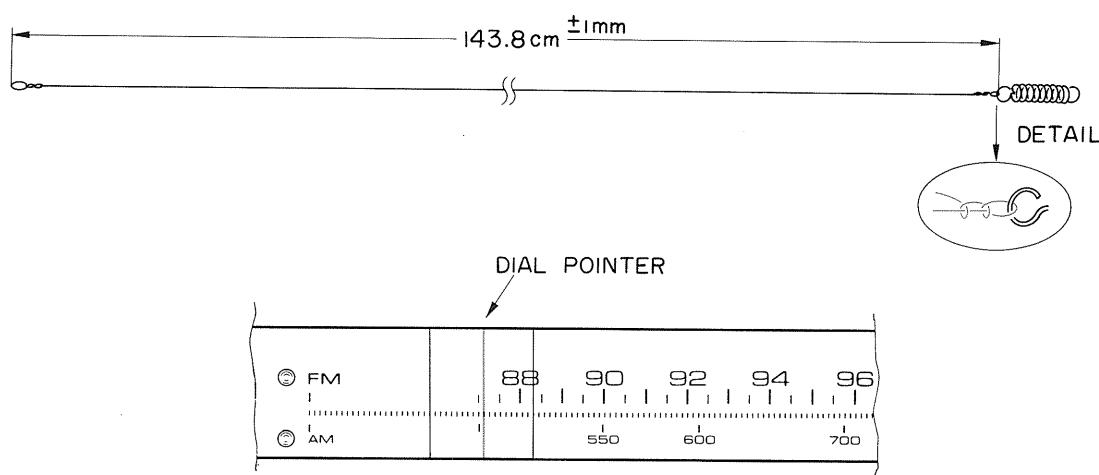
Remove 9 screws.



DIAL CORD STRINGING



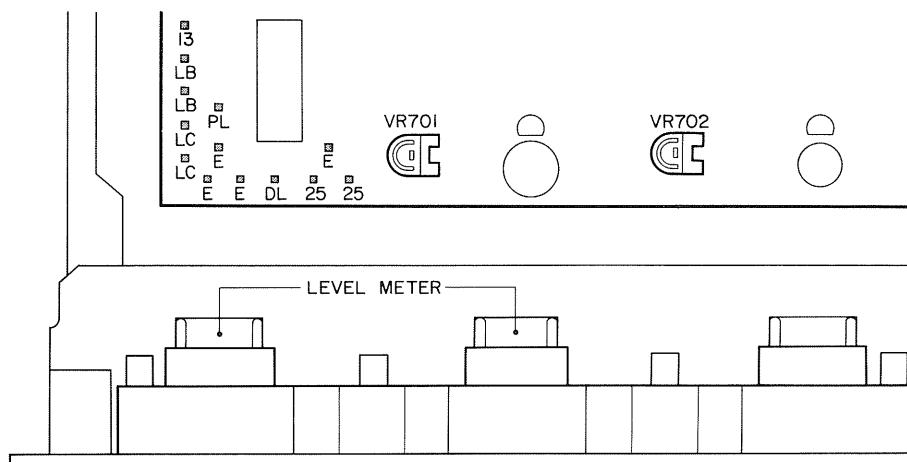
DIAL CORD LENGTH



After stringing the dial cord, turn the tuning knob fully counterclockwise and set the pointer to lower end indication of the scale as illustrated above. Then hook the string to the pointer assembly and lock by painting.

ADJUSTMENT**ADJUSTMENT OF LEVEL METER**

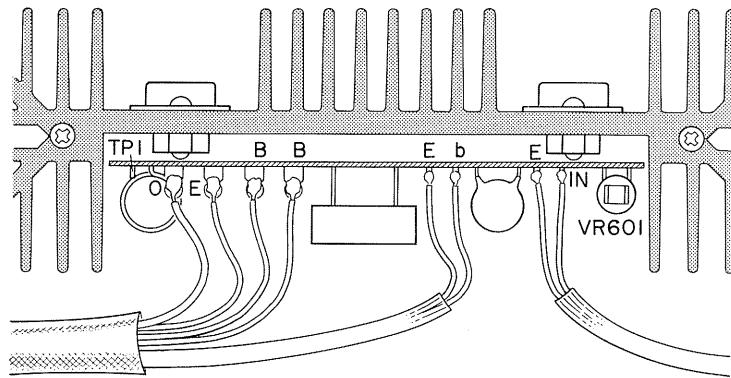
ADJUSTING POINTS



ITEM	AD-JUSTING POINTS	CON-NECTING POINT	EQUIPMENT	METHOD	INDI-CATION
LEVEL METER	VR-701 VR-702	—	50W/8Ω (1kHz)	Turn VR-701, 702 so that the wattage becomes rated value as shown on right hand side.	50W (±1m/m)

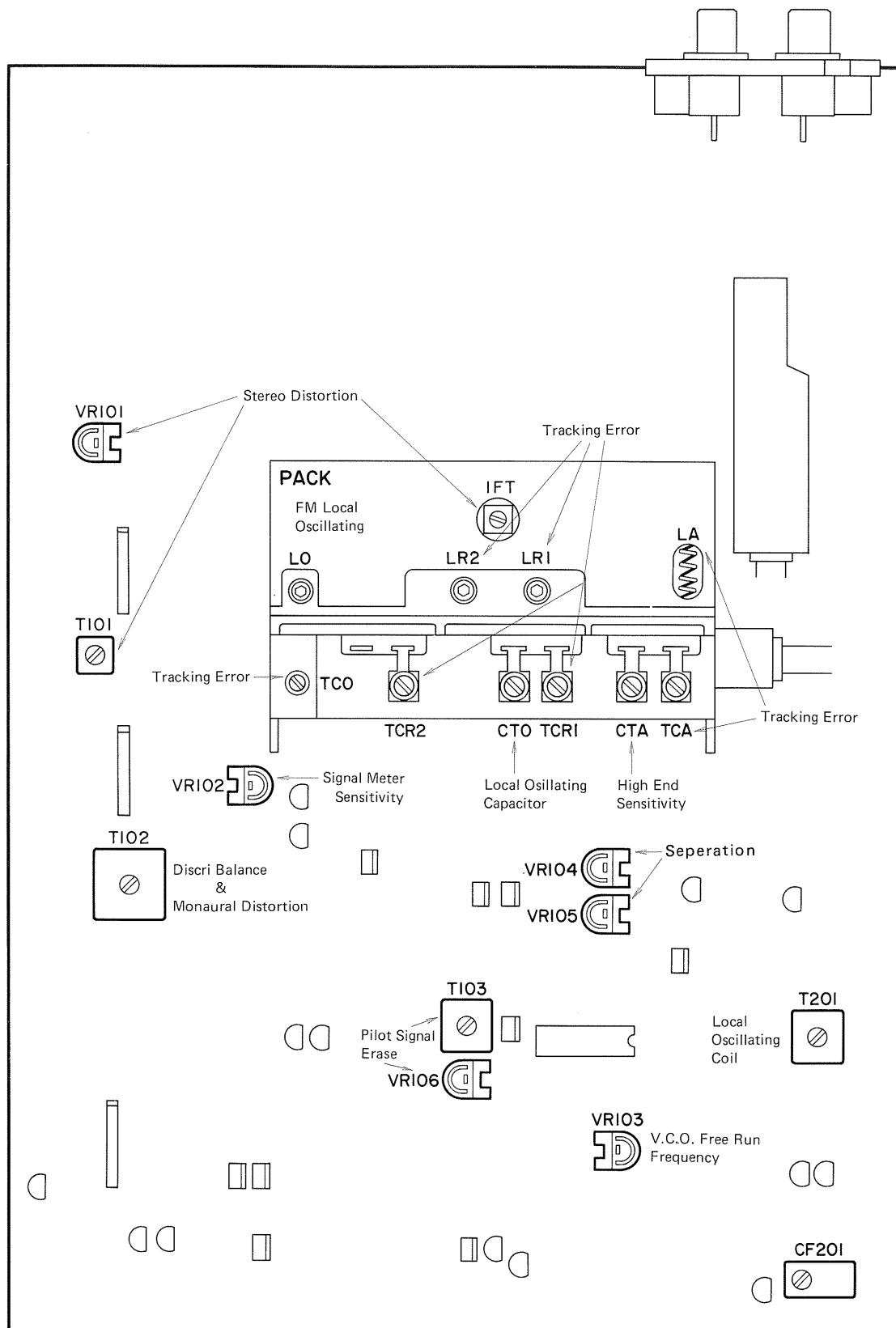
ADJUSTMENT OF MAIN C.BOARD

ADJUSTING POINTS

**ADJUSTMENT FOR IDLING CURRENT**

ITEM	AD-JUSTING POINT	CON-NECTING POINT	EQUIPMENT	METHOD	INDI-CATION
IDLING CURRENT	VR-601	TP1 – 0	VTVM or Digital Volt Meter	Turn VR601, so that the voltage between TP1 and TPO becomes rated value as shown on right hand side.	10±1mV

ADJUSTMENT

ADJUSTMENT OF TUNER C.BOARD
ADJUSTING POINTS


ADJUSTMENT**ADJUSTMENT OF TRACKING ERROR OF FM SECTION**

Step	ITEMS	ADJUST-ING POINTS	CON-NECTING INPUT	EQUIPMENT	METHOD	RE-MARKS
1	POINTER OF THE DIAL	Pointer	FM Ant.	FM SG 98MHz 60dB μ	Tune the receiver to SG, then loosen the pointer from the dial string and set the pointer to 98MHz of the scale.	$\pm 1\text{mm or less}$
2	HIGH END TRACKING ERROR CONFIRMATION		FM Ant.	FM SG 108MHz 60dB μ	Tune the receiver to SG, then confirm so that the pointer is on 108MHz of the scale.	$\pm 2\text{mm or less}$
3	TRACKING ERROR TRIMMING (Only when proper confirmation cannot be made by step 2, proceed to step 3.)	Pointer	FM Ant.	FM SG 88MHz to 108MHz 60dB μ	Reset the pointer, so that the pointer is on within allowance in all range as shown on right hand side.	$\pm 2\text{mm or less}$
4	TRACKING ERROR ADJUSTING(Only when proper adjustment cannot be made by step 3, proceed step 4.)	TCO (Pack)	FM Ant.	FM SG 98MHz 108MHz 60dB μ	Adjust error by the pointer and TCO alternately. 98MHz – pointer 108MHz – TCO	

ADJUSTMENT OF TRACKING ERROR OF AM SECTION

ADJUST AM SECTION AFTER ADJUSTMENT OF FM SECTION MADE CORRECTLY.

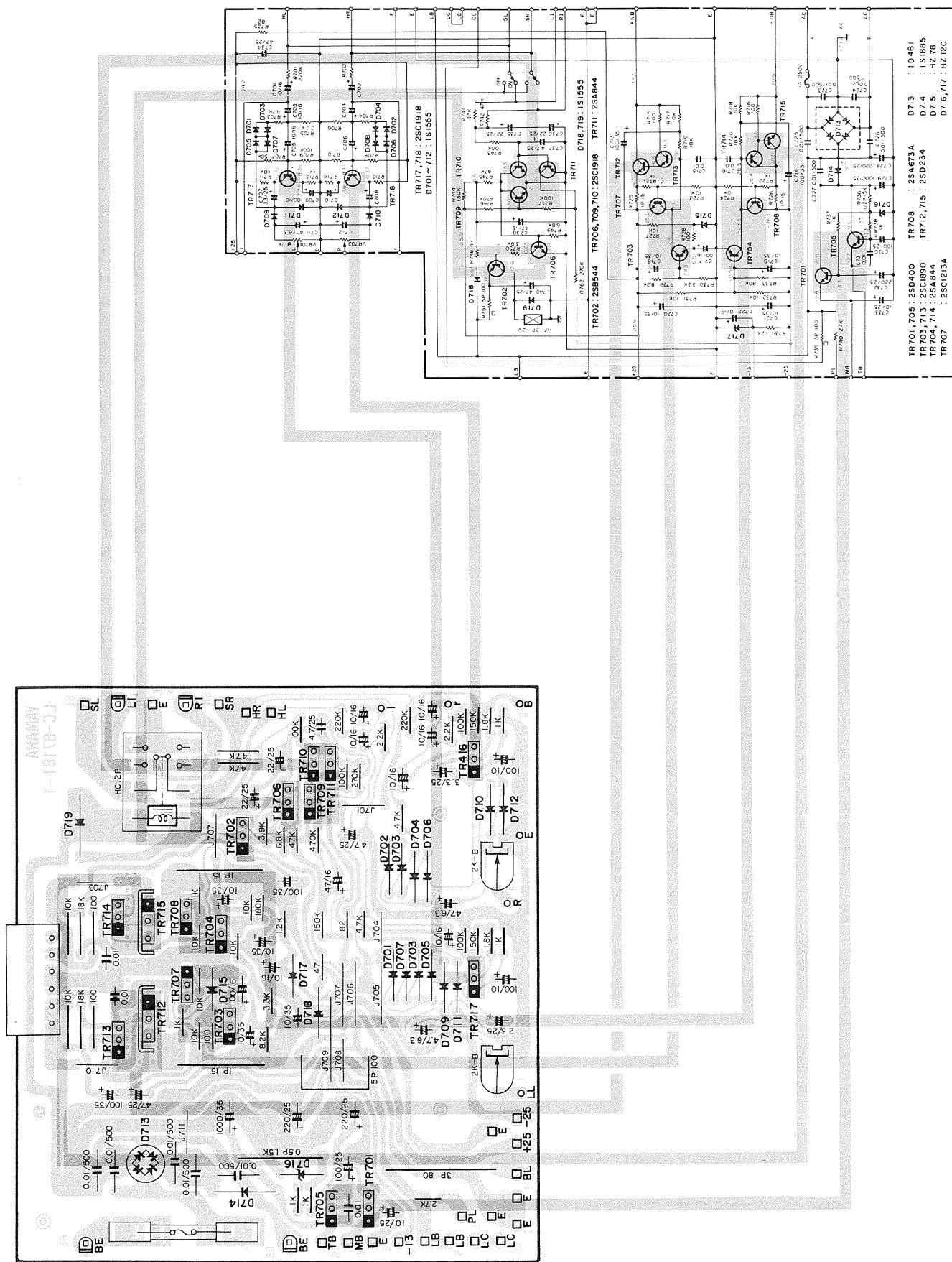
Step	ITEMS	AD-JUSTING POINTS	CON-NECTING POINTS	EQUIPMENT	METHOD	RE-MARKS
1	LOCAL OSCILLATING COIL	T201	Bar Ant.	AM SG 600kHz 80dB/m to 100dB/m	Set the pointer to 600kHz of the scale, then turn the core of T201 slowly, so that the signal meter swings to the maximum.	
2	LOW END SENSITIVITY	Core of bar ant.	Bar Ant.	AM SG 600kHz 60dB/m	Turn the cord of the bar antenna coil, so that the signal meter swings to the maximum.	
3	LOCAL OSCILLATING CAPACITOR	CT0 (Pack)	Bar Ant.	AM SG 1350kHz 80dB/m to 100dB/m	Set the pointer to 1350kHz of the scale, then turn the trimmer capacitor CT0, so that the signal meter swings to the maximum.	
4	HIGH END SENSITIVITY	CTA (Pack)	Bar Ant.	AM SG 1350kHz 60dB/m	Turn the trimmer capacitor CTA, so that the signal meter swings to the maximum.	
5	REPEAT			AM SG 600kHz 1350kHz 60dB/m	The above adjustments are necessary to repeat 2 to 3 times to minimize tracking error and differential of sensitivity between 600kHz and 1350kHz.	Tracking error: $\pm 1.5\text{mm or less}$
6	MID RANGE CONFIRMATION		Bar Ant.	AM SG 950kHz	Tune the receiver to SG, so that the signal meter swings to the maximum, then confirm so that the pointer is on 950kHz of the scale.	$\pm 2\text{mm or less}$

ADJUSTMENT**ADJUSTMENT OF TUNER CIRCUIT BOARD**

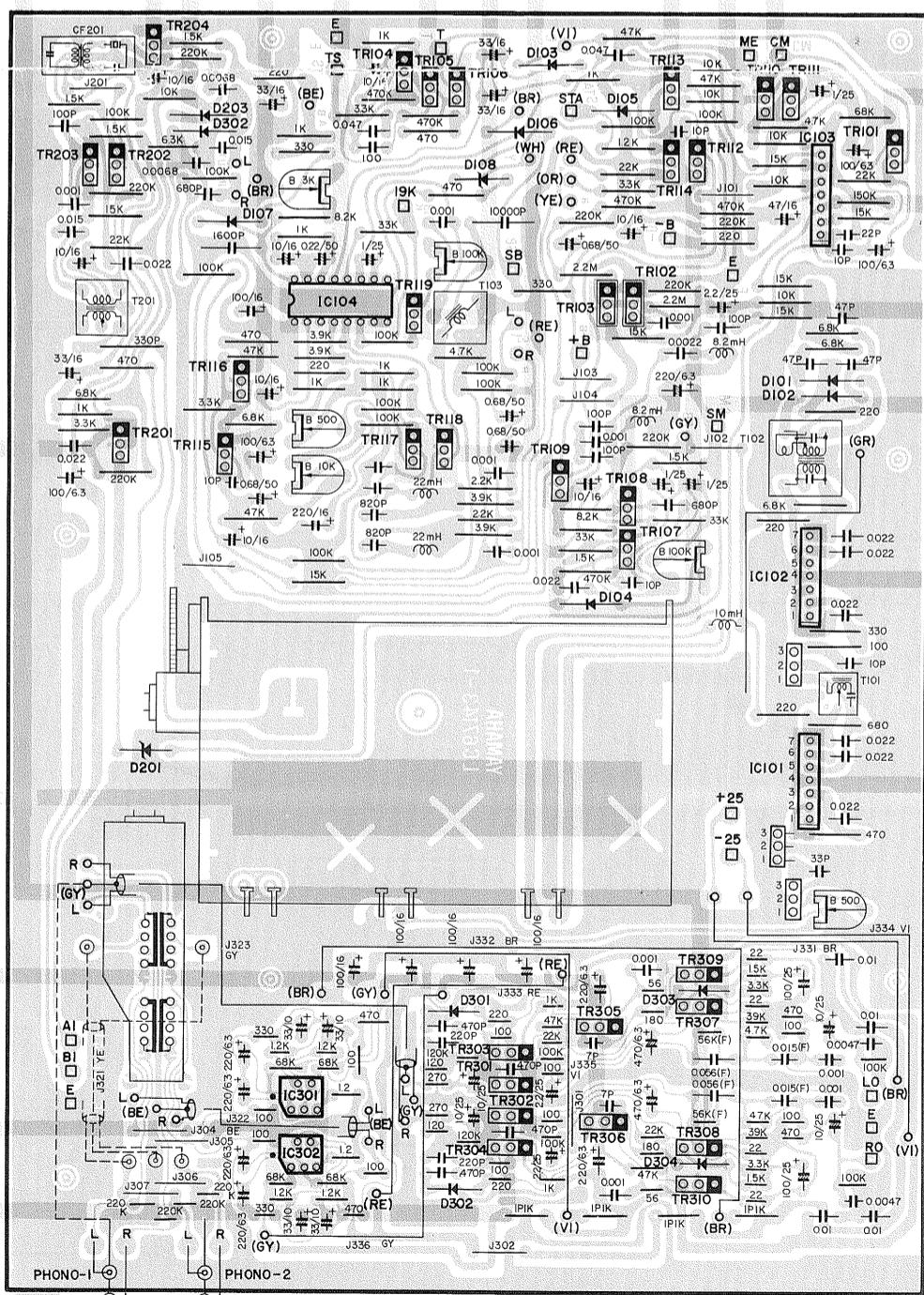
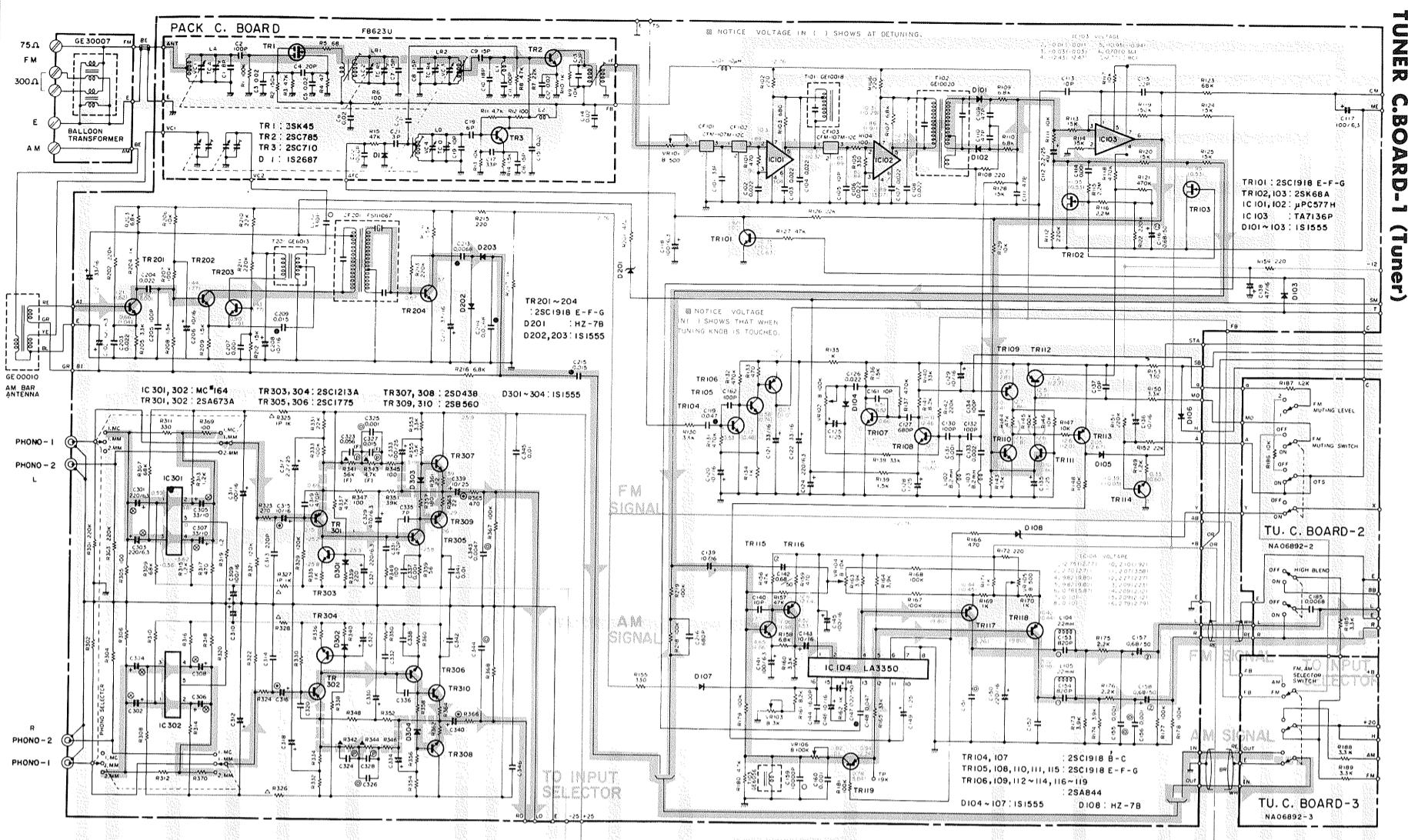
Step	ITEMS	ADJUST-ING POINT	CON-NECTING INPUT	POINT OUTPUT	EQUIPMENT	METHOD	INDI-CATION (Typical)
1	DISCRI. BALANCE	T102 (up-side core)	FM Ant.			Turn the pointer to detuning point near by 98MHz, and turn the up-side core of the T102 so that the tuning meter reads zero. Note: Before adjusting, confirm that the meter reads zero when the power SW. is off.	0(zero)
2	TUNING POINT SETTING	Tuning knob	FM Ant.		FM SG 98MHz 60dB μ	Tune the knob so that the tuning meter reads center.	
3	VCO FREE RUN FREQUENCY	VR103	FM Ant.	19kHz TP	FM SG -do- 0% (mod.) Frequency Counter (FC.)	Adjust VR103 so that FC. reads 19kHz. Confirm that FM SG is set to mono.	19kHz \pm 20Hz (\pm 5Hz)
4	MONAURAL DISTORTION	T 102 (bottom-side core)	FM Ant.	Output (L or R)	-do- FM SG mono. 1kHz 100%	Turn the bottom-side core of the T102 so that the distortion becomes minimum.	-60dB or less (-64dB)
5	STEREO DISTORTION	T101 VR 101 IFT (Pack)	FM Ant.	Output (L)	FM SG 98MHz 60dB μ L+R stereo 1kHz 100% Oscilloscope VTVM Distortion Meter (DM.) LPF(17kHz)	Turn the core of the T101 IFT (Pack), and adjust VR101 so that the distortion becomes minimum.	-56dB or less (-62dB)
6	SEPARATION	VR 104 VR 105	FM Ant.	Output (L, R)	same as step 5 (except DM)	Adjust VR104 (SEP. BAL) so that the both separations of L to R and R to L become approximately equal, then adjust VR105 (SEP.) so that the separation becomes to the maximum. These adjustments should be repeated two or three times.	50dB or more (55dB)
7	PILOT SIGNAL ERASE	VR106 T103	FM Ant.	Output (L, R)	FM SG 98MHz 60dB μ stereo (MD) pilot: 9%	Connect VTVM and OSC to the Output terminal, and adjust VR106 and T103 so that carrier level becomes minimum.	60dB or more (both ch.)
8	SIGNAL METER SENSITIVITY	VR102	FM Ant.		FM SG 98MHz 80dB μ 0%	Adjust VR102 so that the signal meter swings 90.	90

CIRCUIT BOARDS

POWER SUPPLY C. BOARD-1

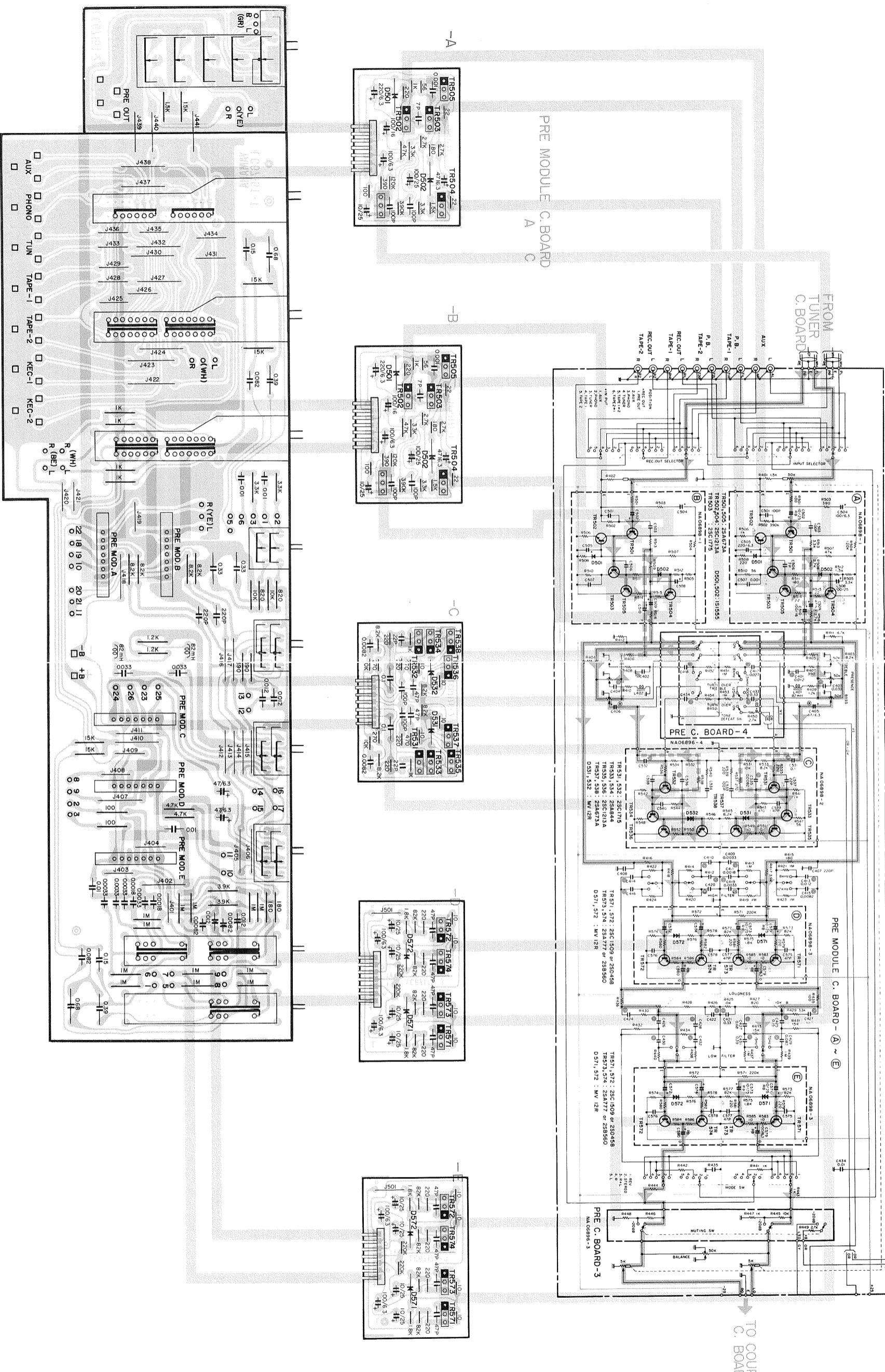


CIRCUIT BOARDS



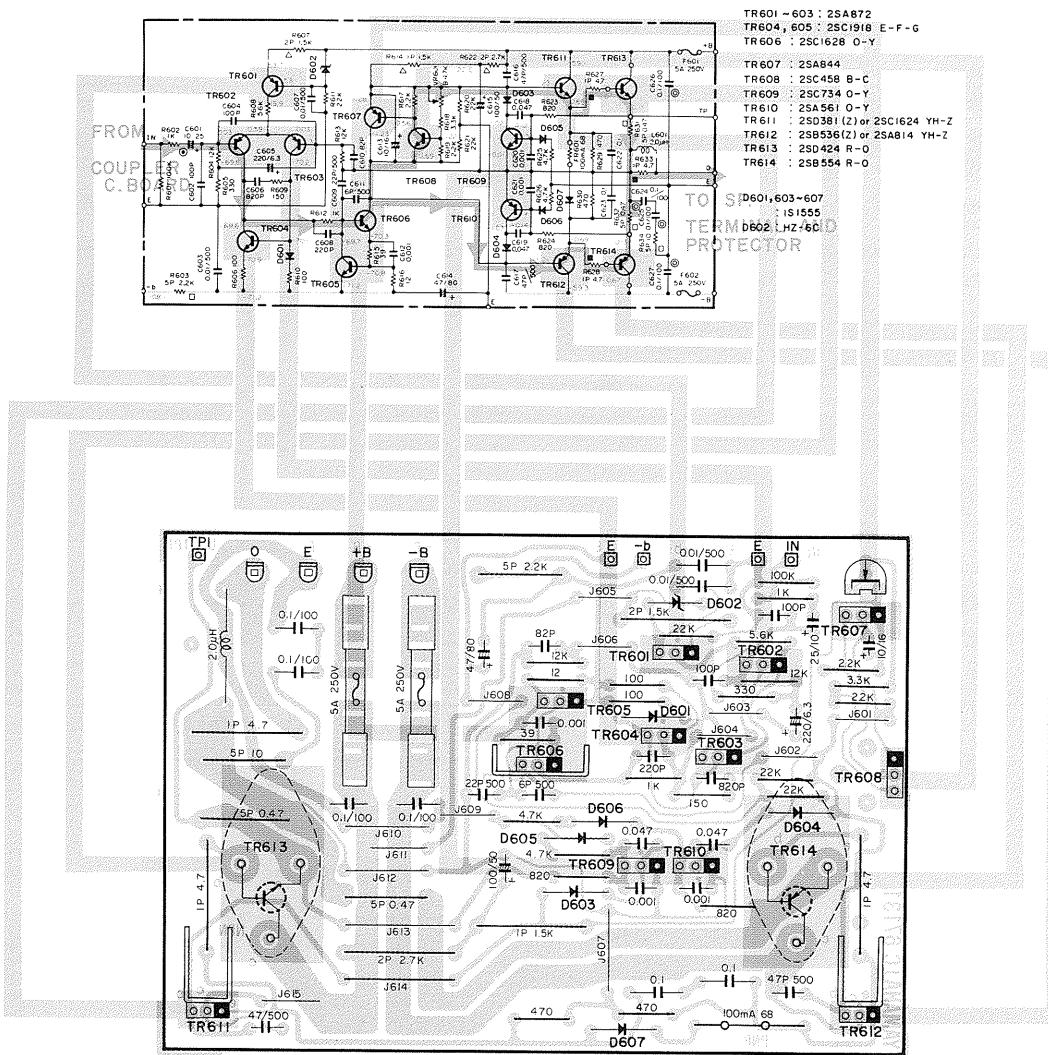
CIRCUIT BOARDS

PRE C.BOARD-1,2 (Equalizer and Tone Control Amp.)

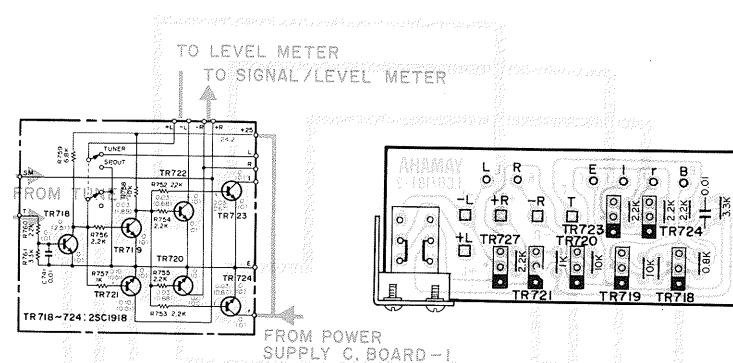


CIRCUIT BOARDS

MAIN C.BOARD

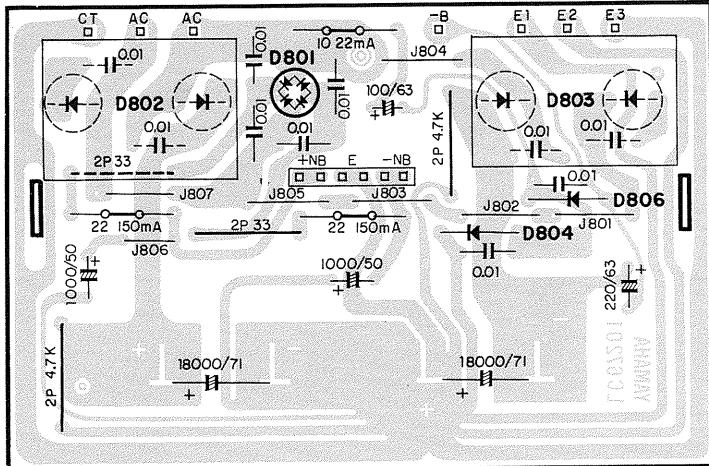


POWER SUPPLY C.BOARD-2

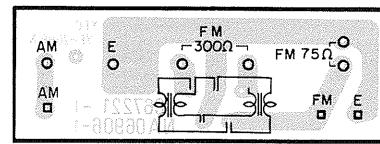


CIRCUIT BOARDS

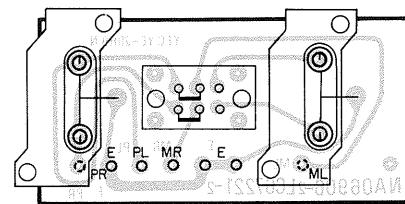
ELECTROLYtic CAP. C. BOARD



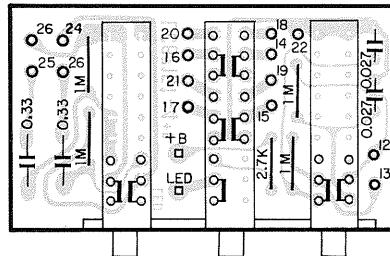
COUPLER C.BOARD-1



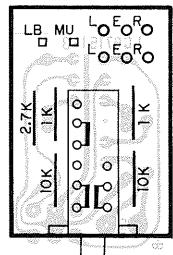
COUPLER C.BOARD-2



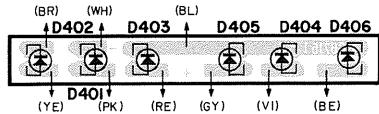
PRE C.BOARD -4



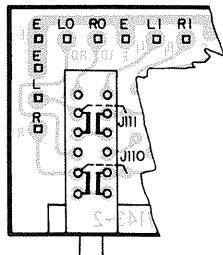
PRE C.BOARD-3



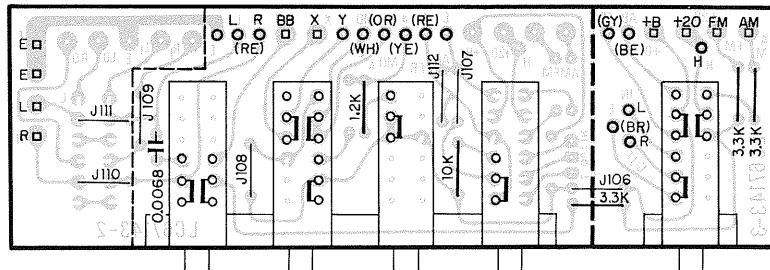
PRE C.BOARD-5



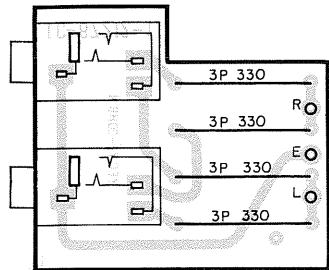
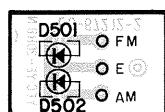
TUNER C.BOARD-2. -3



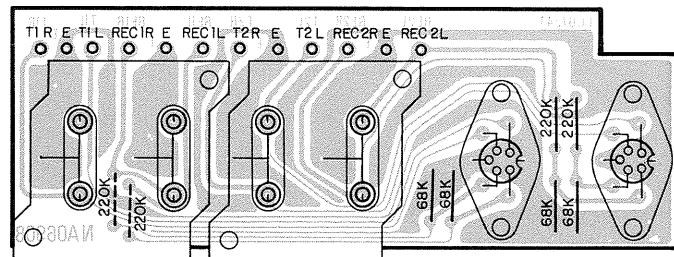
←
(Only for
US. and
Canadian
models.)

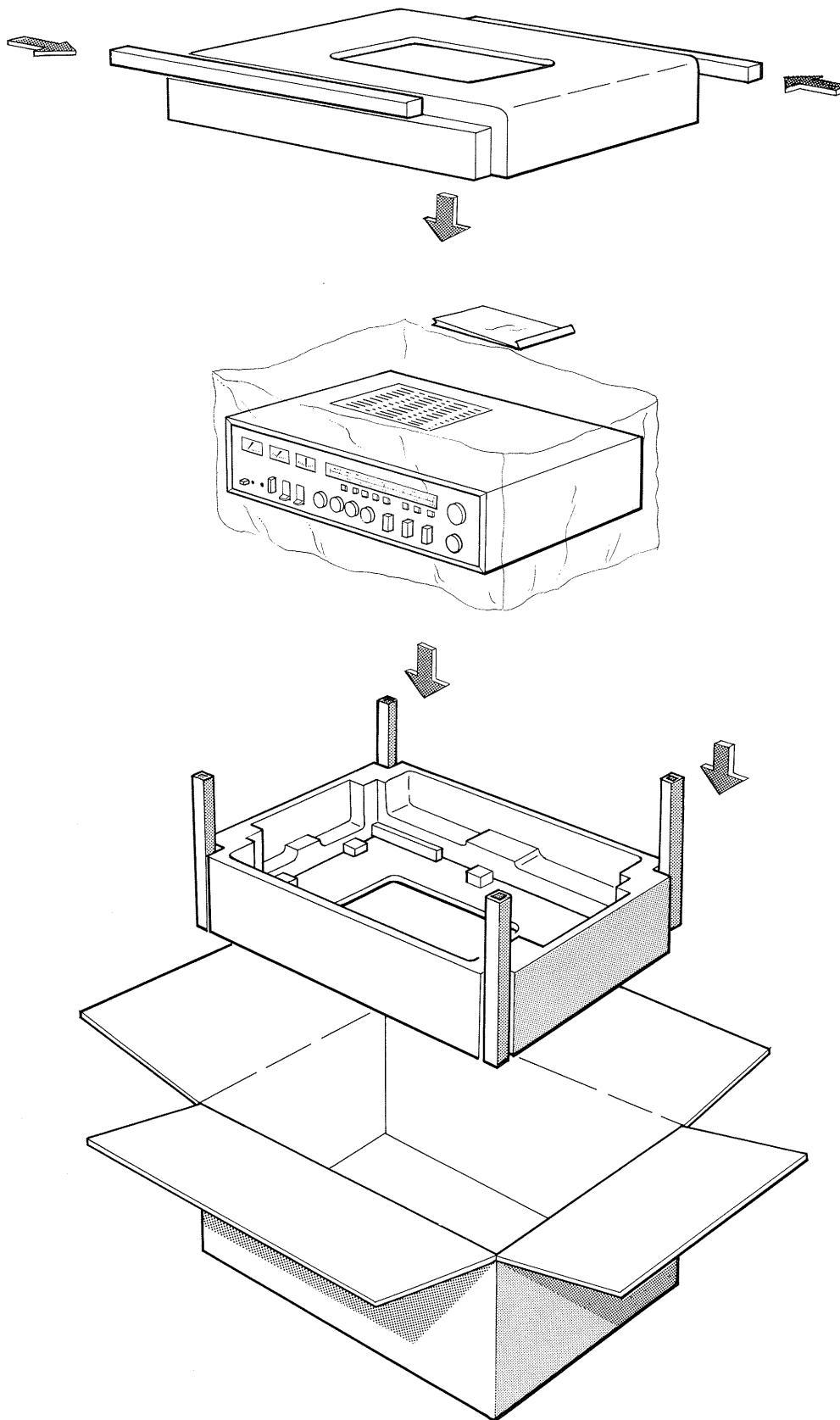


HEAD PHONE C.BOARD-1

HEAD PHONE
C.BOARD-2

DIN C.BOARD (Only for European models)

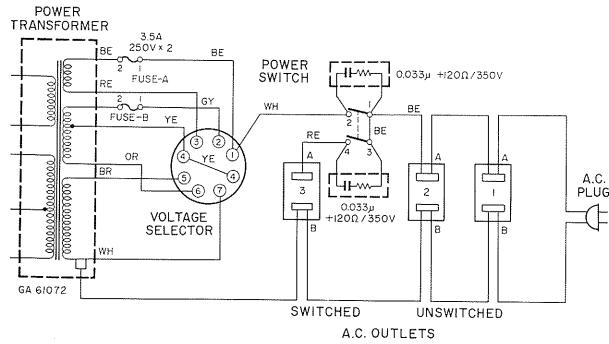


PACKAGE

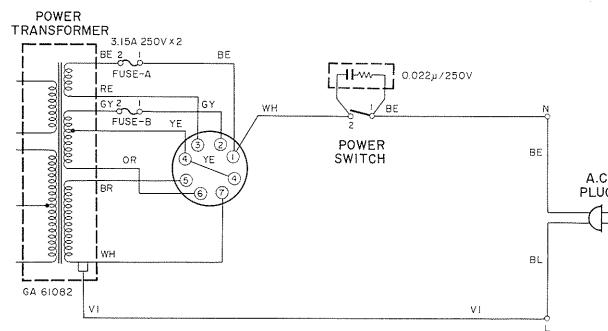
SCHEMATIC DIAGRAM BY EXPORT ZONE

POWER SUPPLY CIRCUIT

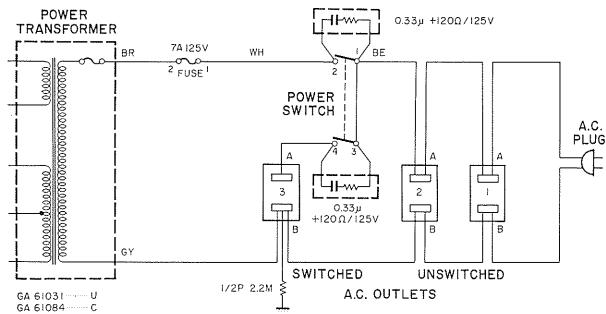
GENERAL EXPORT model



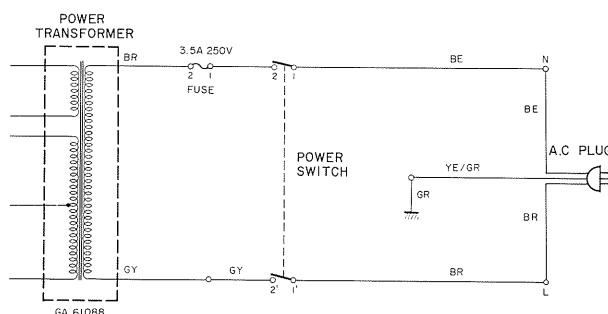
EUROPEAN model



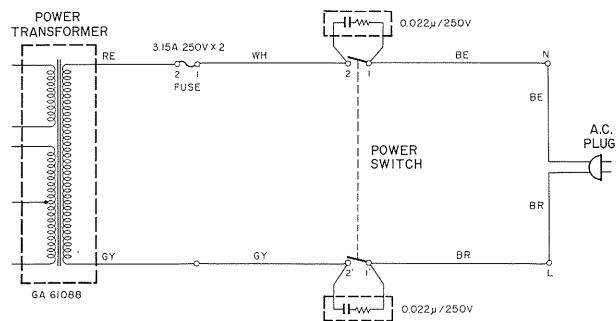
US & CANADIAN model

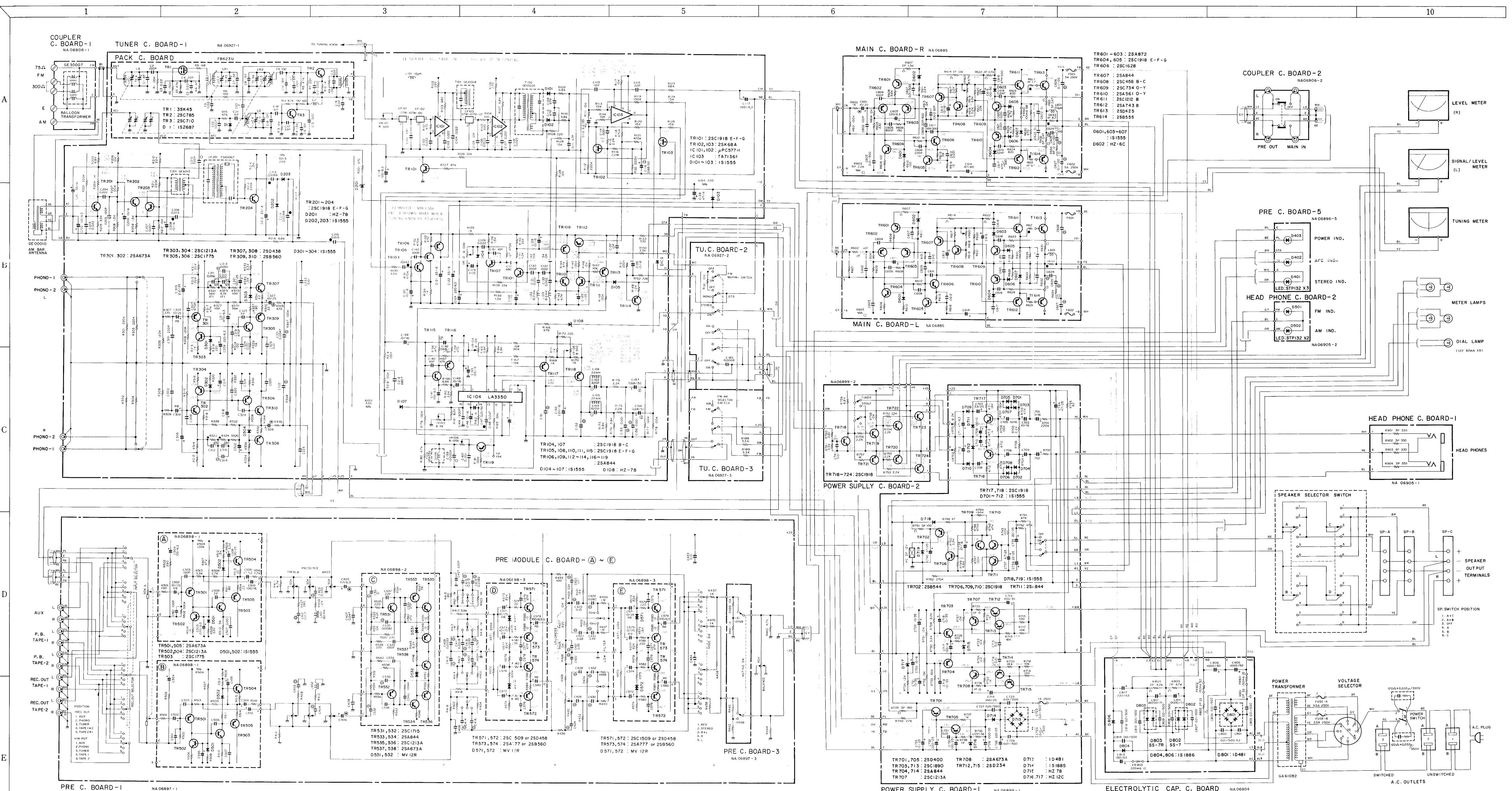


AUSTRALIAN model



UK model





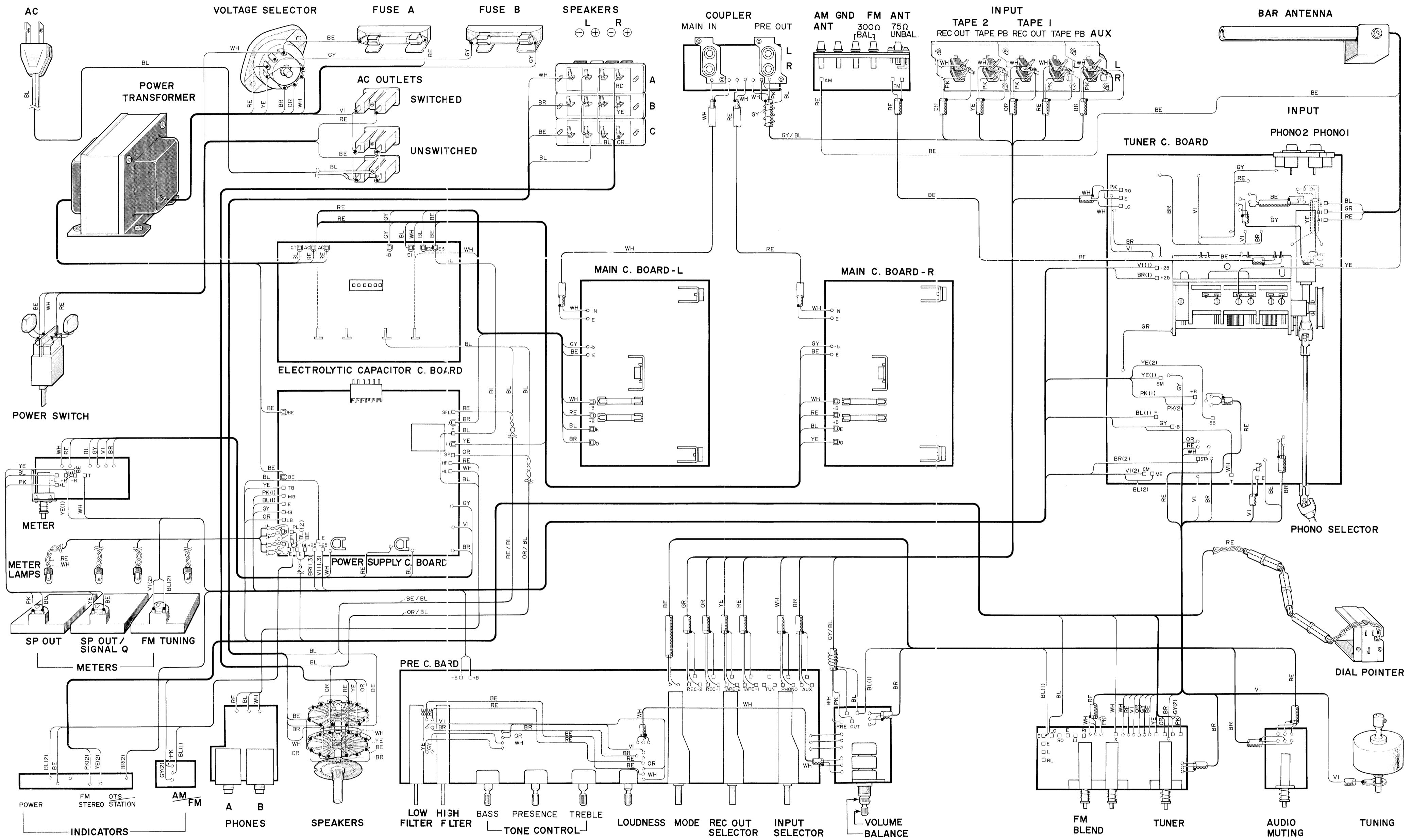
RESISTORS

- : FUSE RESISTOR
- △ : METALIZED FILM RESISTOR
- △ : METALIZED OXIDATION RESISTOR
- : FIRE PROOF RESISTOR
- NO MARK : CEMENT RESISTOR
- NO MARK : CARBON RESISTOR
- NO MARK : POLYSTYRENE CAPACITOR
- NO MARK : CERAMIC CAPACITOR

CAPACITORS

- : U.P.F. CAPACITOR
- △ : S.B.L. CAPACITOR
- : MYLAR CAPACITOR
- : POLYSTYRENE CAPACITOR
- NO MARK : ELECTROLYTIC CAPACITOR

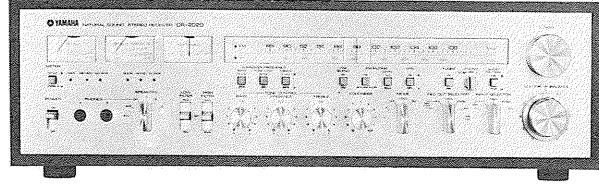
WIRE COLOR ABBREVIATIONS



PARTS LIST

CR-2020

FM/AM STEREO RECEIVER

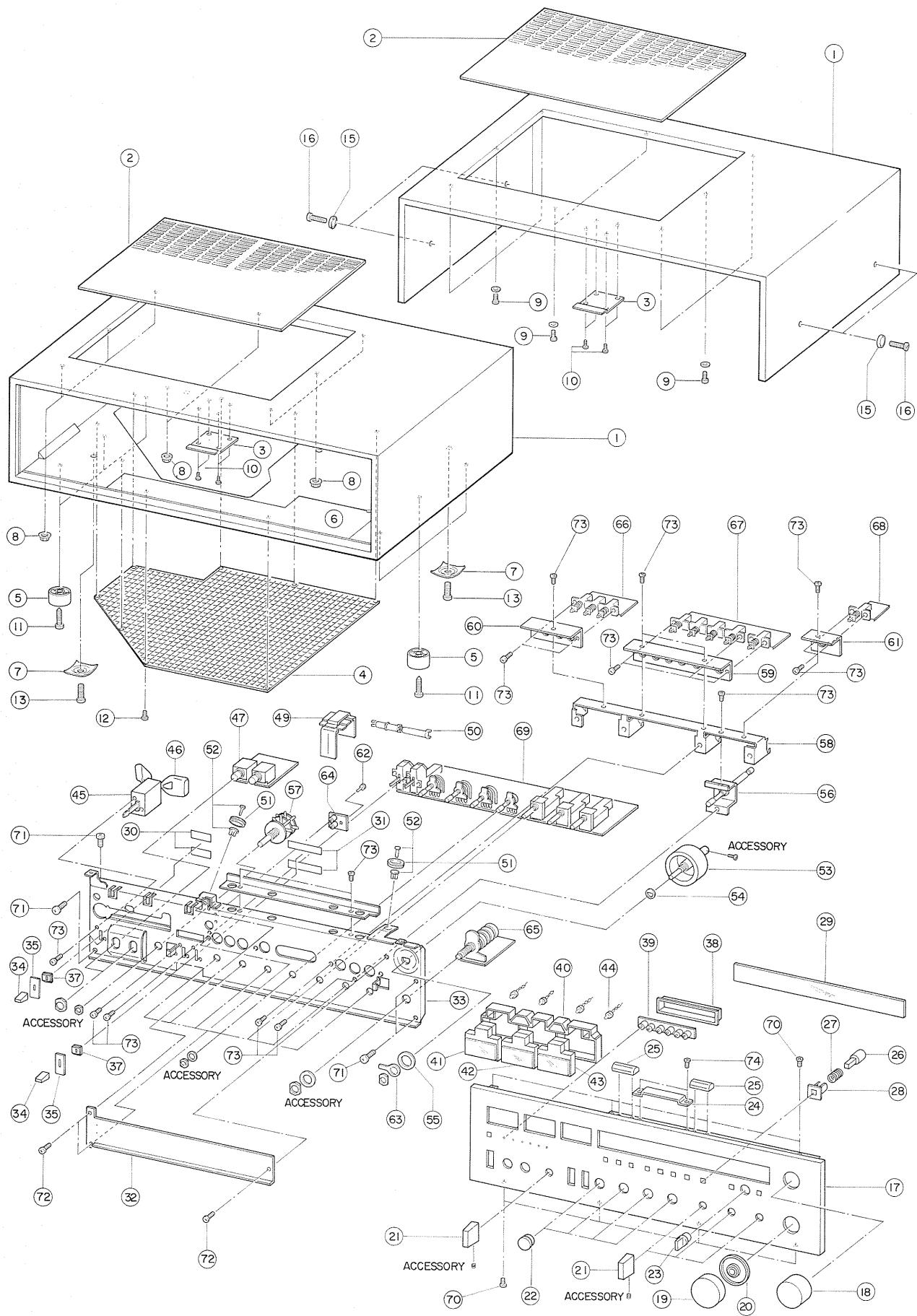


SINCE 1887



YAMAHA

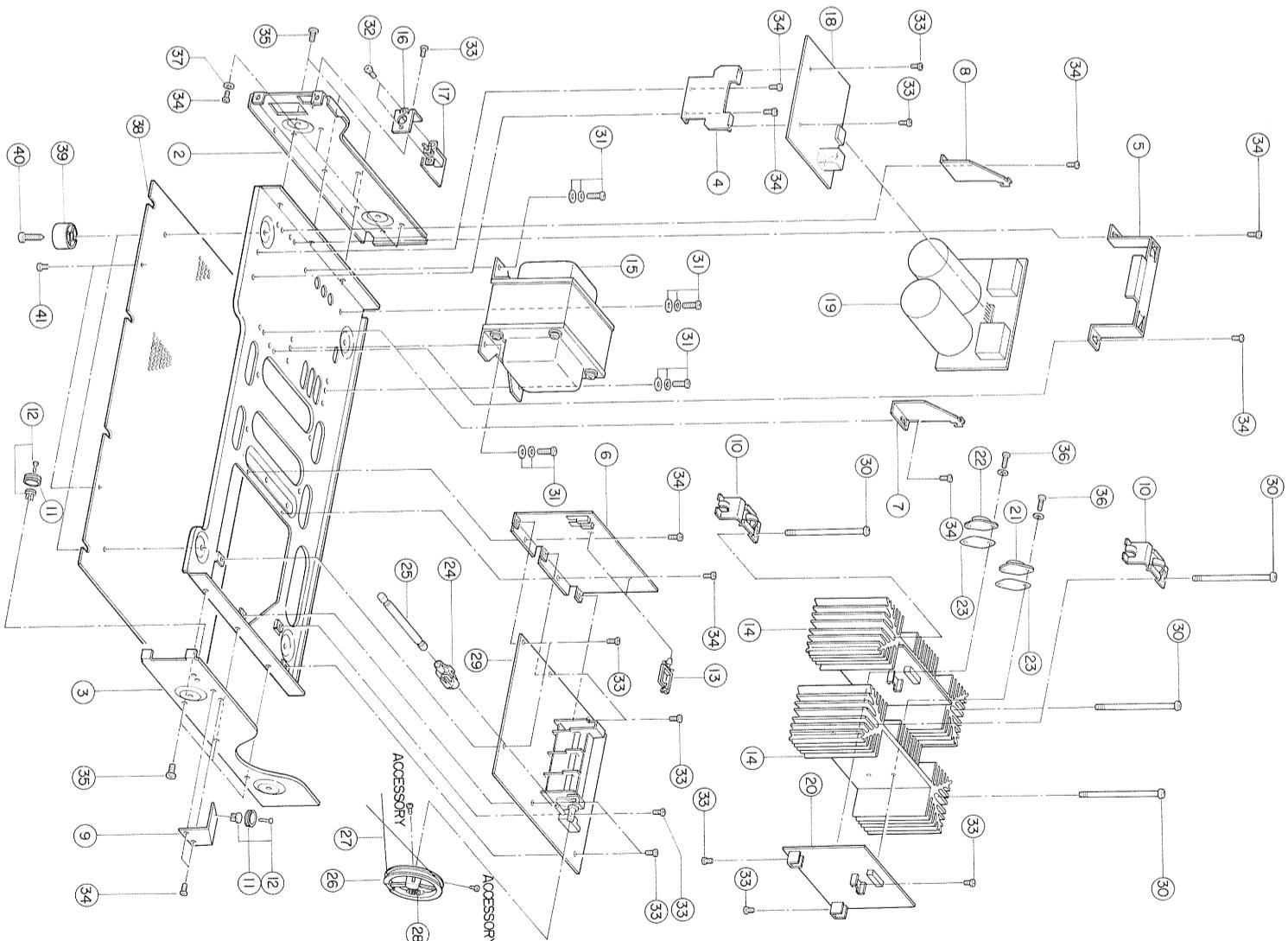
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN



Ref. No.	Part No.	Description	Remarks	Common Models	
1	3 2 0 0 1 5 5 0 6 1 5 1 0	Cabinet	外装組み上り	R.U.C,A	
	3 2 0 0 1 5 5 0 6 1 5 2 1 0	—do.—	〃	E,B	
2	3 2 0 0 0 0 A A 0 8 5 3 1 0	Radiator Grille	放熱グリル	R.U.C,A	
	3 2 0 0 0 0 C B 0 7 9 4 0 0	—do.—	〃	E,B	
3	3 2 0 0 0 0 A A 0 8 5 3 2 0	Metal Warp Prevention	反り止め金具	R.U.C,A	
	3 2 0 0 0 0 A A 0 8 5 3 0 0	—do.—	〃	E,B	
4	3 2 0 0 0 0 A A 0 8 5 3 3 0	Punching Metal	パンチングメタル	R.U.C,A	
	4 2 0 0 0 0 C B 0 7 9 4 9 0	Leg	脚	CR-1020, 620-820	
6	4 2 0 0 0 0 C A 0 6 5 6 8 0	Shield Paper	ハリヤ紙	R.U.C,A	
7	3 2 0 0 0 0 A A 0 7 4 6 3 0	Amp. Setting Washer	アンプ取付 ワッシャー	R.U.C,A	
8	4 2 0 0 0 0 E V 9 0 0 3 0	Hexagonal Nut With Washer	M3 ZMC2-Y	座付ナット	R.U.C,A
9	4 2 0 0 0 0 E i 0 3 0 1 0	Birding Tapping Screw	3×10 ZMC2-Y	ハイビンディング ナット	E,B
10	4 2 0 0 0 0 E Q 7 3 1 1 0	Wooden Screw	31×10 ZMC2-Y	鉄丸木ネジ	R.U.C,A
11	4 2 0 0 0 0 E Q 7 4 1 2 0 0	—do.—	4.1×20 ZMC2-Y	〃	R.U.C,A
12	4 2 0 0 0 0 E Z 0 3 1 1 0	Wooden Cums Screw	31×10 ZMC2-Y	鉄丸座付木ネジ	R.U.C,A
13	4 2 0 0 0 0 E A 0 5 0 2 5 0	Pan Head Screw	5×25 ZMC2-Y	ナベ木ネジ	R.U.C,A
14	4 2 0 0 0 0 E Q 7 4 1 4 0	Pan Head Tapping Screw	4×14 ZMC2-Y	ナベタッピングネジ	E,B
15	3 2 0 0 0 0 C B 0 7 9 5 2 0	Hole Cap	ホールキャップ	E,B	
16	4 2 0 0 0 0 E D 4 5 0 1 4	Birding Head Screw 5×14 FCCM3-BI	ハイビンドドリネジ	E,B	
17	3 2 0 0 0 0 B A 0 6 9 6 5 0	Panel	ハネル	R.A.E.B	
18	3 2 0 0 0 0 B A 0 6 9 6 4 0	—do.—	〃	U.C	
19	3 2 0 0 0 0 B A 0 6 9 6 9 0	—do.—, Volume Control	Tuツマミ	CR-1020	
20	3 2 0 0 0 0 B A 0 6 9 7 0 0	Double Knob	ダブルツマミ	—do.—	
21	3 2 0 0 0 0 B A 0 6 9 7 1 0	Knob, Switch	SWツマミ	—do.—	
22	3 2 0 0 0 0 B A 0 6 4 4 5 0	—do.—, Tone Control	ツマミ	CR-400-620, 820-1020	
23	3 2 0 0 0 0 C B 0 7 9 2 7 0	—do.—, Phono Selector	Phonoツマミ	CR-1020	
24	3 2 0 0 0 0 A A 0 8 4 9 4 0	Metal, Warp Prevention	反り止め金具	CR-1020, 620-820	
25	3 2 0 0 0 0 C B 0 7 9 3 2 0	Spacer, Warp Prevention	反り止めサム	R.U.C,A	
26	3 2 0 0 0 0 C B 0 7 9 2 4 0	Button, Push Switch	ツツユボタン	—do.—	
27	3 2 0 0 0 0 A A 0 8 4 9 5 0	Spring, Push Switch	ツツユスプリング	—do.—	
28	3 2 0 0 0 0 C B 0 7 9 2 5 0	Button Frame, Push Switch	ツツユボタン枠	—do.—	
29	3 2 0 0 0 0 C G 0 6 0 4 5 0	Dial Panel	ダイヤルパネル	CR-1020	
30	4 2 0 0 0 0 C B 0 7 9 0 2 0	Film For Apion	エラフローリム	CA-R ¹ , CR-1020	
31	4 2 0 0 0 0 C B 0 7 9 1 0 0	—do.—	〃	CR-1020	
32	3 2 0 0 0 0 B A 0 6 9 6 6 0	Dial Scale	ダイヤル目盛板	CR-1020	
33	3 2 0 0 0 0 A A 0 8 4 7 2 0	Sub-Chassis	サブシャーシ	—do.—	
34	3 2 0 0 0 0 C B 0 7 9 7 8 0	Knob, Lever Switch	レバーツマミ	—do.—	
35	4 2 0 0 0 0 C B 0 7 9 5 0 0	Apion, Lever Switch	SWツマミ	CA-R ¹ , CR-1020	
36	4 2 0 0 0 0 C B 0 7 9 5 1 0	—do.—	—do.—	CR-1020	
37	3 2 0 0 0 0 C B 0 7 9 7 7 0	Bush, Lever Switch	SWツマミ	CR-1020	
38	3 2 0 0 0 0 C B 0 7 9 2 9 0	Holder For LED	LEDホルダー	CR-1020	
39	3 2 0 0 0 0 N A 0 6 8 9 6 5	Pre Circuit Board 5	プリント基板 5	LED	
	4 2 0 0 0 0 i F 0 0 0 6 8 0	LED	LED	CR-1020, 620-820	
B	3 2 0 0 0 0 C B 0 7 9 3 0	Spacer For LED	LEDスペーサー	CR-1020	
40	3 2 0 0 0 0 C B 0 7 9 2 3 0	Holder For Meters	メーターホルダー	CR-1020	
	A 3 2 0 0 0 0 C B 0 7 9 3 1 0	Colour Plate	カラーフレート	CR-1020	
41	4 2 0 0 0 0 J i 0 0 0 6 4 0	Level Meter	4.2V 1mA 650Ω	レベルメーター	A,E,B
42	4 2 0 0 0 0 J i 0 0 0 6 5 0	Signal Meter	—do.—	シグナルメーター	A,E,B
43	4 2 0 0 0 0 J i 0 0 0 6 7 0	Tuning Meter	4.2V 250Ω 650Ω	チューニングメーター	A,E,B
44	3 2 0 0 0 0 M Z 0 6 9 5 6 0	Lamp Assembly	ランプアセンブリー	Lapping Pin	ラッピング端子

Ref. No.	Part No.	Description	Remarks	Common Models
45	4 2 0 0 0 0 K A 2 0 0 6 3 0	Lever Switch	ハンドルスイッチ	R.U.C
	4 2 0 0 0 0 K A 2 0 0 6 8 0	—do.—	〃	E
46	4 2 0 0 0 0 K A 2 0 0 6 9 0	—do.—	〃	B,A
	4 2 0 0 0 0 F Z 0 0 0 5 4 0	Spark Killer	DC500V 0.033μ+120Ω	スパークキラー
	4 2 0 0 0 0 F Z 0 0 0 1 1 0	—do.—	0.033μ+120Ω	R
47	3 2 0 0 0 0 N A 0 6 9 0 5 1 0	Headphone Circuit Board 1	ヘッドフォン回路基板 1	シードト1
A	4 2 0 0 0 0 L B 3 0 0 5 2 0	Phone Jack	LJ190-1-2	フオーンジャック
B	4 2 0 0 0 0 H M 5 3 3 3 0	Cement Molded Resistor 3W330Ω	セメント抵抗器	ハイドロカーボン
C	3 2 0 0 0 0 A A 0 8 4 8 6 0	Dial Pointer Rail	ダイヤル指針	ハイドロカーボン
D	3 2 0 0 0 0 C B 0 6 8 5 9 0	Holder, Dial Pointer	指針ホルダー	ハイドロカーボン
E	3 2 0 0 0 0 C B 0 6 8 6 0 0	Pilot Lamp	ハイロットランプ	ハイドロカーボン
F	4 2 0 0 0 0 E D 0 2 0 0 5 0	Binding Head Screw 2×5 ZMC2-Y	バイントナット	ハイドロカーボン
G	3 2 0 0 0 0 C B 0 6 8 9 5 0	Pointer	ダイヤル指針	ハイドロカーボン
H	3 2 0 0 0 0 N B 0 7 8 7 0 0	Dial Pointer Unit	ダイヤル指針	ハイドロカーボン
I	3 2 0 0 0 0 A J B 0 0 0 5 1 0	Pilot Lamp	ハイロットランプ	ハイドロカーボン
J	3 2 0 0 0 0 A A 0 7 3 6 7 0	Cover For Pointer	指針カバー	ハイドロカーボン
K	3 2 0 0 0 0 C B 0 6 8 9 5 0	Pointer	ダイヤル指針	ハイドロカーボン
L	3 2 0 0 0 0 C B 0 7 9 2 8 0	Lead Pipe	リードパイプ	ハイドロカーボン
M	3 2 0 0 0 0 C B 0 7 5 8 4 0	Wheel	滑車	ハイドロカーボン
N	3 2 0 0 0 0 C B 0 7 7 8 9 0	Pulley Clip	フレリクリップ	ハイドロカーボン
O	3 2 0 0 0 0 N B 0 7 8 1 4 0	Tuning Unit	チュニーナー	ハイドロカーボン
P	3 2 0 0 0 0 C B 0 7 7 8 8 0	Isolation Bush	絶縁ブッシュ	ハイドロカーボン
Q	4 2 0 0 0 0 C A 0 6 5 1 5 0	Isolation Fiber	絶縁ファイバー	ハイドロカーボン
R	3 2 0 0 0 0 C B 0 7 7 8 9 0	Pulley Clip	フレリクリップ	ハイドロカーボン
S	3 2 0 0 0 0 N B 0 7 8 1 4 0	Tuning Unit	チュニーナー	ハイドロカーボン
T	3 2 0 0 0 0 C B 0 7 7 8 8 0	Isolation Bush	絶縁ブッシュ	ハイドロカーボン
U	4 2 0 0 0 0 C A 0 6 5 1 5 0	Isolation Fiber	絶縁ファイバー	ハイドロカーボン
V	3 2 0 0 0 0 C B 0 7 7 8 9 0	Pulley Clip	フレリクリップ	ハイドロカーボン
W	3 2 0 0 0 0 A A 0 8 4 7 6 0	Shaft Unit, Selector	シャフトユニット	CR-1020
X	3 2 0 0 0 0 K A 5 0 1 0 2 0	Rotary Switch γ-246W	ロータリースイッチ	CR-1020
Y	3 2 0 0 0 0 A A 0 8 4 7 5 0	Switch Stay	SWスティック	CR-1020
Z	3 2 0 0 0 0 A A 0 8 4 8 2 0	Holder C, Push Switch	SWホールダーC	CR-1020
AA	3 2 0 0 0 0 A A 0 8 4 9 1 0	Holder L, —do.—	〃 L	CR-1020
AB	3 2 0 0 0 0 A A 0 8 4 9 2 0	Holder R, —do.—	〃 R	CR-1020
AC	3 2 0 0 0 0 C B 0 6 8 8 8 0	Plastic Rivet	プラスチック	CR-1020
AD	4 2 0 0 0 0 C B 0 6 8 8 8 0	Plastic Rivet	プラスチック	CR-1020
AE	3 2 0 0 0 0 N A 0 6 9 0 5 2	Headphone Circuit Board 2	ヘッドフォン回路基板 2	ツートン
AF	4 2 0 0 0 0 i F 0 0 0 6 8 0	LED	LED	CR-1020
AG	3 2 0 0 0 0 C B 0 7 9 3 0	Spacer For LED	LEDスペーサー	CR-1020
AH	3 2 0 0 0 0 N A 0 6 8 9 6 2	Pre Circuit Board 2	プリント基板 2	ツートン
AI	4 2 0 0 0 0 H S 4 2 0 1 7 0	Variable Resistor 50K×2+50K×2	可変抵抗器	ツートン
AJ	4 2 0 0 0 0 i F 0 0 0 6 8 0	LED	LED	CR-1020
AK	3 2 0 0 0 0 C B 0 7 9 3 0	Spacer For LED	LEDスペーサー	CR-1020
AL	3 2 0 0 0 0 N A 0 6 8 9 6 4	Pre Circuit Board 4	プリント基板 4	ツートン
AM	4 2 0 0 0 0 K A 8 0 3 1 0	Push Switch	ツツユスイッチ	CR-1020
AN	3 2 0 0 0 0 N A 0 6 8 9 6 2	Tuner Circuit Board 2	チューナー回路基板 2	R
AO	4 2 0 0 0 0 F A 1 1 4 2 7 0	Mylar Capacitor	マイラーコンデンサー	ハイドロカーボン
AP	4 2 0 0 0 0 F A 1 1 5 3 3 0	—do.—	0.033μ	ハイドロカーボン
AQ	3 2 0 0 0 0 N A 0 6 8 9 3 2	—do.—	—	A,E,B
AR	4 2 0 0 0 0 K A 8 0 3 2 0	Push Switch	ツツユスイッチ	R.A.E.B
AS	4 2 0 0 0 0 K A 8 0 3 3 0	—do.—	5×4×3	U.C
AT	4 2 0 0 0 0 K A 8 0 2 7 0	—do.—	1×4×3	U.C
AU				

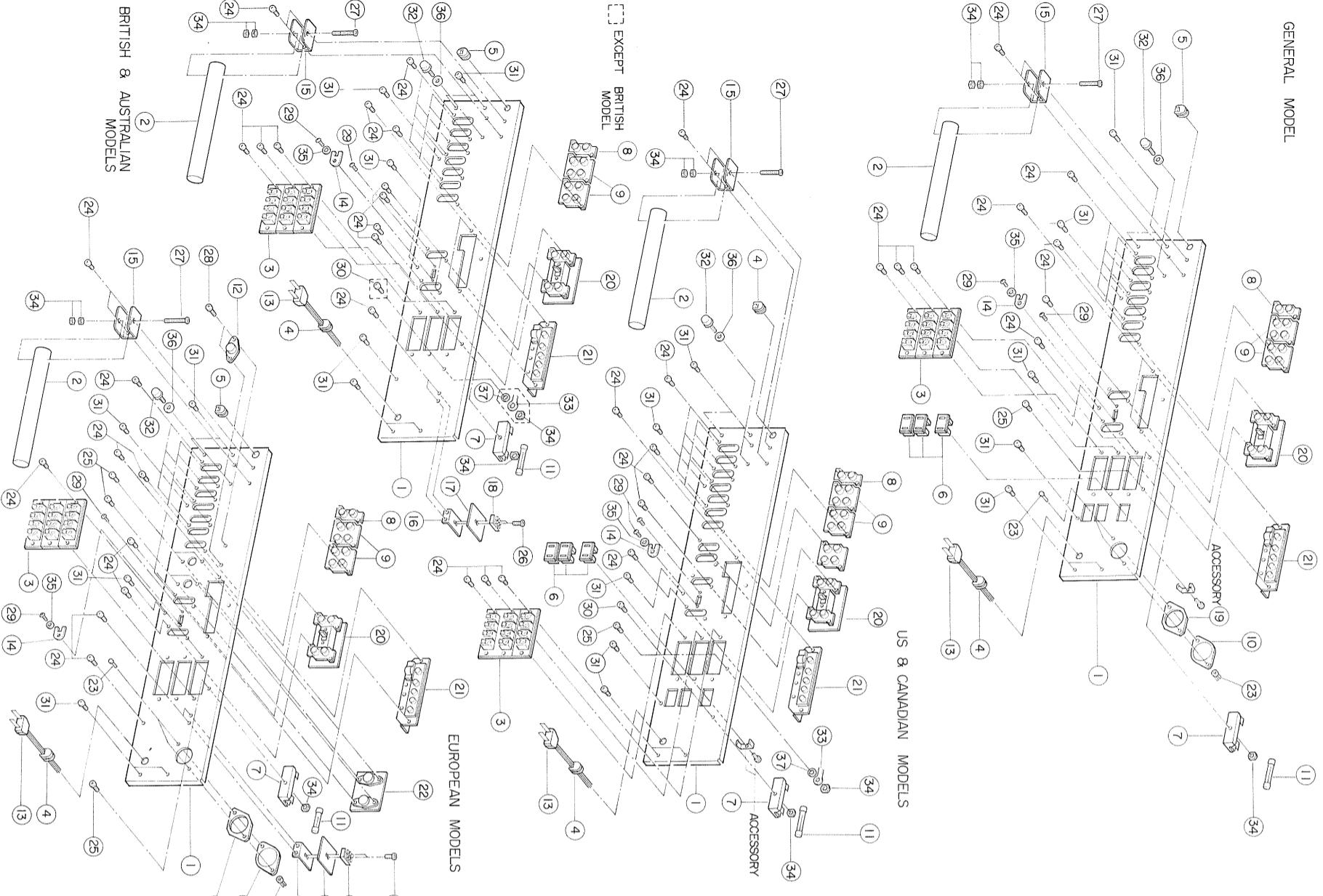
Ref. No.	Part No.	Description	Remarks	Common Models
C	4 2 0 0 0 0 F S I I 3 6 8 0	BL Ceramic Capacitor 50V 0.0068 μ	SBLコン	
68	3 2 0 0 0 0 N A 0 6 8 9 6 3	Pre Circuit Board 3	プリシート3	
A	4 2 0 0 0 0 K A 8 0 0 2 7 0	Push Switch 1×4×3	プッシュスイッチ	
B	4 2 0 0 0 0 L A 0 0 1 2 8 0	Lapping Pin	ラッピング端子	
69	3 2 0 0 0 0 N A 0 6 8 9 6 1	Pre Circuit Board 1	プリシート1	
A	4 2 0 0 0 0 K A 5 0 0 6 5 0	Rotary Switch SRZ-V045 NS	ロータリースイッチ	
	4 2 0 0 0 0 H S 4 1 0 5 4 0	- do. - CT50K×2	//	
C	4 2 0 0 0 0 G D 9 0 2 4 0	Coil, Magnetic Shield Type 82mH	コイル	
D	4 2 0 0 0 0 F Z 0 0 0 8 3 0	Electrostatic Cap., MS 47.6/3V	MSケミコン	
	4 2 0 0 0 0 F A I I 3 1 8 0	Mylar Cap. 50VMS 0.0018 μ	マイラーコン	
	4 2 0 0 0 0 F A I I 3 3 3 0	- do. - 0.0033 μ	//	
	4 2 0 0 0 0 F A I I 3 8 2 0	- do. - 0.0082 μ	//	
	4 2 0 0 0 0 F A I I 4 1 4 0	- do. - 0.01 μ	//	
	4 2 0 0 0 0 F A I I 4 1 2 0	- do. - 0.012 μ	//	
	4 2 0 0 0 0 F A I I 4 3 3 0	- do. - 0.033 μ	//	
	4 2 0 0 0 0 F A I I 4 8 2 0	- do. - 0.082 μ	//	
	4 2 0 0 0 0 F A I I 5 1 5 0	- do. - 0.15 μ	//	
	4 2 0 0 0 0 F A I I 5 3 9 0	- do. - 0.39 μ	//	
	4 2 0 0 0 0 F A I I 5 3 3 0	- do. - 0.33 μ	//	
	4 2 0 0 0 0 F Z 0 0 1 0 0	Metallized Polyester Film Cap. 0.68 μ	//	
E	4 2 0 0 0 0 L A 0 0 1 2 8 0	Wire Lapping Pin	ラッピング端子	
F	3 2 0 0 0 0 N A 0 6 8 9 8 0	Pre Module C. Board	プリモジュール CR-1020	
a	4 2 0 0 0 0 F A I I 3 8 2 0	Mylar Capacitor 0.0082 μ 50V	マイラーコン	
b	4 2 0 0 0 0 F Z 0 0 0 9 8 0	Electrolytic Cap. RB 10 μ 25V	RBケミコン	
	4 2 0 0 0 0 F A I I 5 1 0 0	- do. - 0.1 μ 50V	//	
	4 2 0 0 0 0 F Z 0 0 0 9 8 0	Electrolytic Cap. RB 10 μ 25V	RBケミコン	
	4 2 0 0 0 0 F A I I 5 3 1 0	Transistor 2SA673A C,D	トランジスター	
	4 2 0 0 0 0 i A 0 8 4 1 0	- do. - 2SA844 D,E	//	
	4 2 0 0 0 0 i C I I 2 1 3 1 0	- do. - 2SC1213A C,D	//	
	4 2 0 0 0 0 i C I I 7 5 1 0	- do. - 2SC1775 D,E	//	
	4 2 0 0 0 0 i C I I 7 5 1 0	- do. - 2SC1775 E,F	//	
	4 2 0 0 0 0 i C I I 5 0 9 3 0	- do. - 2SC1509 Q,R	//	
	4 2 0 0 0 0 i A 0 7 7 7 3 0	- do. - 2SA777 Q,R	//	
c	4 2 0 0 0 0 i F 0 0 0 0 4 0	Diode 1S1555	ダイオード	
d	4 2 0 0 0 0 i F 0 0 0 7 9 0	Varistor MV-12R	バリスタ	
e	4 2 0 0 0 0 L B 6 0 1 7 8 0	Connector	コネクター	
70	4 2 0 0 0 0 E I O 3 0 0 8 0	Binding Tapping Screw 3×8 ZMC2-Y	バーピングダネ	
	71 4 2 0 0 0 0 E I O 4 0 0 8 0	- do. - 4×8 ZMC2-Y	//	
	72 4 2 0 0 0 0 E I 2 3 0 0 6 0	- do. - 3×6 F CrM3-3g	//	
	73 4 2 0 0 0 0 E D O 3 0 0 6 0	Binding Head Screw 3×6 ZMC2-Y	バインド小ネジ	
	74 4 2 0 0 0 0 E I O 3 0 0 6 0	Binding Tapping Screw 3×6 ZMC2-Y	バーピングダネ	



Ref. No.	Part No.	Description	Remarks	Common Models
1	3 2 0 0 0 0 A A 0 8 4 7 1 0	Main-Chassis	メインシャーシ	CR-1020
2	3 2 0 0 0 0 A A 0 8 4 7 3 0	Side Frame, L	サイドフレームL	-do.-
3	3 2 0 0 0 0 A A 0 8 4 7 4 0	Side Frame, R	サイドフレームR	-do.-
4	3 2 0 0 0 0 A A 0 8 4 8 3 0	Holder, Power Supply C. Board 1	電源シート1 ホルダー	-do.-
5	3 2 0 0 0 0 A A 0 8 4 8 4 0	Holder, Electrolytic Cap.	ケミコンホルダー	-do.-
6	3 2 0 0 0 0 A A 0 8 4 8 5 0	Adiabatic Board	断熱板	CR-1020
7	3 2 0 0 0 0 A A 0 8 4 8 8 0	Holder R, Electrolytic Cap. C. Board	シートホルダーR	-do.-
8	3 2 0 0 0 0 A A 0 8 4 8 9 0	Holder L, Electrolytic Cap. C. Board	シートホルダーL	-do.-
9	3 2 0 0 0 0 A A 0 8 4 9 3 0	Holder For Pulley	滑車ホルダ-	-do.-
10	3 2 0 0 0 0 A A 0 8 4 8 7 0	Plate For Cord	コード押え	-do.-
11	3 2 0 0 0 0 C B 0 7 5 8 4 0	Pulley	滑車	-do.-
12	3 2 0 0 0 0 C B 0 7 7 8 9 0	Pulley Clip	ブリーフリップ	-do.-
13	3 2 0 0 0 0 C B 0 7 9 4 2 0	Wire Supporter	ワイヤーホルダー	CR-1020
14	3 2 0 0 0 0 B A 0 6 5 7 5 0	Heat Sink	放熱板	CR-1020 CA-1000I
15	4 2 0 0 0 0 G A 6 1 0 8 2 0	Power Transformer	電源トランス	R.E
16	3 2 0 0 0 0 A A 0 8 4 9 0 0	Switch Stay	SW取付金具	CR-1020
17	3 2 0 0 0 0 N A 0 6 8 9 9 2	Power Supply Circuit Board 2	電源シート2	R.U.C.A
18	3 2 0 0 0 0 N A 0 6 8 9 9 1	Power Supply Circuit Board 1	電源シート1	R.U.C.A
19	3 2 0 0 0 0 N A 0 6 9 0 0 1	--do.--	--do.--	U
20	3 2 0 0 0 0 N A 0 6 9 0 0 2	--do.--	--do.--	A,B
21	4 2 0 0 0 0 K A 8 0 0 2 6 0	Push Switch	1×2×3	CR-1020
22	4 2 0 0 0 0 i C 1 9 1 8 0 0	Transistor	トランジスター	420000HW24220
23	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
24	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
25	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
26	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
27	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
28	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
29	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
30	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
31	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
32	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
33	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
34	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
35	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
36	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
37	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
38	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
39	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
40	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
41	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
42	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
43	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
44	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
45	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
46	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
47	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
48	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
49	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
50	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
51	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
52	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
53	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
54	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
55	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
56	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
57	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
58	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
59	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
60	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
61	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
62	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
63	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
64	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
65	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
66	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
67	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
68	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
69	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
70	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
71	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
72	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
73	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
74	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
75	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
76	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
77	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
78	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
79	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
80	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
81	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
82	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
83	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
84	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
85	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
86	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
87	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
88	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
89	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
90	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
91	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
92	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
93	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
94	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
95	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
96	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
97	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
98	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター	420000HW24220
99	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Push Switch	1×2×3	420000HW24220
100	4 2 0 0 0 0 i C 1 9 1 8 0 1 0	Transistor	トランジスター</	

Ref. No.	Part No.	Description	Remarks	Common Models
E	4 2 0 0 0 0 G D 9 0 0 2 1 0	Coil 2.0 μ H	コイル	
F	4 2 0 0 0 0 K B 0 0 0 5 9 0	Fuse, S 5A/250V	(S)ヒューズ B.E	
	4 2 0 0 0 0 K B 0 0 1 1 0	-do.- UL 5A/250V	ULヒューズ R.U.C.A	
G	3 2 0 0 0 0 B A 0 6 9 5 5 0	Radiator	放熱板 CA-R1 GR-1020	
	3 2 0 0 0 0 B A 0 6 9 6 7 0	-do.-	//	CR-1020
H	3 2 0 0 0 0 B B 0 6 3 0 8 0	TR-Pusher	トランジスター フランジヤー	CR-420-820, 1020(C-1000II)
I	4 2 0 0 0 0 L A 0 0 0 3 7 0	Pipe-Lug Terminal	バイブルグ 羽根付ハトメ	
	4 2 0 0 0 0 L A 0 0 0 5 3 0	Eyelet With Wing	ハトメ	
J	4 2 0 0 0 0 L B 2 0 0 9 0 0	Eyelet	ヒューズ ホルダーピン	R.U.C.A
	4 2 0 0 0 0 L B 2 0 1 0 6 0	Fuse Holder Pin YSP402P	//	B.E
K	4 2 0 0 0 0 L B 3 0 0 1 1 0	Transistor Socket SZ-110B-00	トランジスター ソケット	R.B.A.E
	4 2 0 0 0 0 L B 3 0 0 2 7 0	-do.-	トランジスター SZ-110M-0L	U.C
L	4 2 0 0 0 0 i B 0 5 5 4 0 0	Transistor 2SB554 R~0	//	
M	4 2 0 0 0 0 i D 0 4 2 4 0 0	-do.- 2SD424 R~0	//	
N	4 2 0 0 0 0 i L 0 0 0 2 3 0	Isolation Base Mica	マイカベース	
O	4 2 0 0 0 0 i B A 0 6 9 7 2 0	Shaft	延長シャフト	CR-1020
P	4 2 0 0 0 0 i B 0 5 5 4 0 0	Joint	ジョイント	
Q	4 2 0 0 0 0 i D 0 4 2 4 0 0	-do.-	トランジスター 2SD424 R~0	U.C
R	4 2 0 0 0 0 i C 1 7 7 5 0 0	-do.-	トランジスター 2SC1775 D.E.	U.C
S	4 2 0 0 0 0 i C 1 9 1 8 0 0	-do.-	2SA844 D.E.	U.C
T	4 2 0 0 0 0 i D 0 5 6 0 0 0	-do.-	2SB560	U.C
U	4 2 0 0 0 0 i C 1 2 1 3 1 0	-do.-	2SC1213A C.D	U.C
V	4 2 0 0 0 0 i A 0 6 7 3 1 0	Transistor	トランジスター 2SA673A C.D	U.C
W	4 2 0 0 0 0 i A 0 8 4 4 0 0	-do.-	2SC1775 D.E.	U.C
X	4 2 0 0 0 0 i C 1 9 1 8 0 0	-do.-	2SC1918 C.D.E	U.C
Y	4 2 0 0 0 0 i D 0 4 3 8 0 0	-do.-	2SD438	U.C
Z	4 2 0 0 0 0 i E 1 0 0 5 0 0	FET	2SK68A	FET
A	4 2 0 0 0 0 i F 0 0 0 4 0	Diode	1S1955	ダイオード
B	4 2 0 0 0 0 i G 0 0 1 2 3 0	-do.-	8201020	
C	4 2 0 0 0 0 i F 0 0 0 6 4 0	Zener Diode HZ-7B	ゼンナーダイオード	
D	4 2 0 0 0 0 i G 0 0 0 3 9 0	IC μ PC57H	IC	
E	4 2 0 0 0 0 i G 0 0 1 2 2 0	-do.-	1020450	
F	4 2 0 0 0 0 i G 0 0 1 2 2 0	-do.-	CR-520-820,	
G	4 2 0 0 0 0 i G 0 0 1 2 3 0	-do.-	CR-1020	
H	4 2 0 0 0 0 i G 0 0 1 6 4 0	-do.-	2SD438	
I	4 2 0 0 0 0 i G 0 0 1 6 4 0	-do.-	#164	
J	4 2 0 0 0 0 i G 0 0 1 2 3 0	-do.-	LA3350	
K	4 2 0 0 0 0 i G 0 0 1 2 4 0	Eyelet 3X1.6X3	ハトメ	
L	4 2 0 0 0 0 L A 0 0 1 2 8 0	Wire Lapping Pin	ラッピング端子	
M	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
N	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
O	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
P	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Q	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
R	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
S	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
T	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
U	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
V	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
W	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
X	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Y	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Z	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
A	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
B	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
C	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
D	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
E	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
F	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
G	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
H	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
I	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
J	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
K	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
L	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
M	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
N	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
O	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
P	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Q	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
R	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
S	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
T	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
U	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
V	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
W	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
X	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Y	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Z	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
A	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
B	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
C	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
D	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
E	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
F	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
G	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
H	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
I	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
J	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
K	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
L	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
M	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
N	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
O	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
P	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Q	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
R	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
S	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
T	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
U	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
V	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
W	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
X	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Y	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
Z	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
A	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
B	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
C	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
D	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
E	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
F	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
G	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
H	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
I	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
J	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
K	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock	ビンジャック	
L	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Lock</		

GENERAL MODEL



Ref. No.	Part No.	Description	Remarks	Common Models
1	3 2 0 0 0 0 A A 0 8 4 7 7 0	Rear Panel	IJアノナル	R
3	2 0 0 0 0 A A 0 8 6 0 9 0	—do.—	//	C
3	2 0 0 0 0 A A 0 8 4 7 8 0	—do.—	//	U
3	2 0 0 0 0 A A 0 8 4 7 9 0	—do.—	//	A
3	2 0 0 0 0 A A 0 8 4 8 0 0	—do.—	//	E
3	2 0 0 0 0 A A 0 8 5 5 2 0	—do.—	//	B
2	4 2 0 0 0 0 G E 0 0 0 1 0	AM Bar Antenna	AMバー・アンテナ	
3	4 2 0 0 0 0 L A 0 0 1 9 4 0	4P-Push Terminal	APプッシュ ターミナル	
6	4 2 0 0 0 0 L B 2 0 0 7 1 0	AC Socket	ACコンセント	R.U.C.
4	4 2 0 0 0 0 C B 0 6 8 6 3 0	Cord Stopper	コードストッパー	R.U.C.
4	2 0 0 0 0 C B 0 7 0 6 9 0	—do.—	//	A.E.B
5	3 2 0 0 0 0 C B 0 6 2 7 8 0	Rubber Spacer	ゴムブツシユ	R.A.E.B
6	4 2 0 0 0 0 L B 2 0 0 8 8 0	2P-Pin Jack	2Pピンジャック	
9	4 2 0 0 0 0 L B 4 0 0 1 6 0	4P-Pin Jack	4Pピンジャック	
10	4 2 0 0 0 0 L B 2 0 0 2 6 0	Voltage Selector	電圧切換器	R.E
11	4 2 0 0 0 0 K B 0 0 0 3 7 0	Fuse	ヒューズ	R.A
4	2 0 0 0 0 K B 0 0 0 7 6 0	Fuse, 3.15A250V	(S)ヒューズ	E.B
4	2 0 0 0 0 K B 0 1 3 7 0	Fuse, UL	ULヒューズ	U.C
12	4 2 0 0 0 0 L B 2 0 0 1 5 0	75Ω Coaxial Cable Socket	75Ω同軸 コネクター	E
13	4 2 0 0 0 0 M G 0 0 0 3 4 0	Power Cord	電源コード	R.U.C.
4	2 0 0 0 0 M G 0 0 0 5 0 0	—do.—	//	A
4	2 0 0 0 0 M G 0 0 0 4 6 0	Power Cord Assembly	//	B
14	3 2 0 0 0 0 C B 0 6 8 6 8 0	Stopper, Coupler Switch	カフテーストッパー	All of Modes
15	3 2 0 0 0 0 A A 0 7 6 9 7 0	Antenna Holder	アンテナホルダー	CR-1020-1000
16	3 2 0 0 0 0 A A 0 8 4 6 2 0	Stay, 3P-Terminal	端子ステイ	CR-1020-620 CR-1020-MS-2B
17	3 2 0 0 0 0 C B 0 7 4 9 7 0	Isolation Plate	絶縁板	CR-400-620 CR-400-1020
18	4 2 0 0 0 0 L A 0 0 1 4 0	Board, 3P-Terminal	3P中継端子台	A.E.B
19	3 2 0 0 0 0 C B 0 7 6 5 6 0	Isolation Plate For V>Select	VS絶縁板	R.E
20	3 2 0 0 0 0 N A 0 6 9 0 6 2	Coupler Circuit Board 2	カフラー・シート2	CR-1020-620 CR-1020-MS-2B
A	4 2 0 0 0 0 G E 3 0 0 0 7 0	Balloon Transformer	バルーン・トランジ	
B	4 2 0 0 0 0 L A 0 0 1 9 5 0	Antenna Terminal	アンテナ端子	
C	4 2 0 0 0 0 L A 0 0 1 2 8 0	Wire Lapping Pin	ラッピング端子	
21	3 2 0 0 0 0 N A 0 6 9 0 6 1	Coupler Circuit Board 1	カフラー・シート1	
A	4 2 0 0 0 0 K A 4 0 0 2 1 0	Slide Switch	スライドスイッチ	
B	4 2 0 0 0 0 L B 2 0 0 9 6 0	2P-Pin Jack	2Pピンジャック	
C	4 2 0 0 0 0 L A 0 0 0 4 3 0	Eyelet	ハトメ	
22	3 2 0 0 0 0 N A 0 6 9 0 8 0	Din Circuit Board	Dinシート	E
A	4 2 0 0 0 0 L B 5 0 0 1 9 0	Din Socket	Dinソケット	E
B	4 2 0 0 0 0 L A 0 0 0 4 3 0	Eyelet	ハトメ	E
23	4 2 0 0 0 0 C B 0 6 8 8 0	Plastic Rivet	プラスチック リベット	R.E
24	4 2 0 0 0 0 E i 4 3 0 0 8 0	Binding Tapping Screw	バイニング タッピングネジ	
25	4 2 0 0 0 0 E D 4 3 0 0 8 0	Binding Head Screw	バインド小ネジ	
26	4 2 0 0 0 0 E D 0 3 0 1 6 0	—do.—	3X16 ZMC2-Y	//
27	4 2 0 0 0 0 E A 4 3 0 2 5 0	Pan Head Screw	ナベ小ネジ	
28	4 2 0 0 0 0 E J 4 2 6 0 8 0	Pan Head Tapping Screw	ナベタッピングネジ	
29	4 2 0 0 0 0 E C 4 2 6 0 4 0	Oval Head Screw	トラス小ネジ	
30	4 2 0 0 0 0 E i 0 3 0 0 8 0	Binding Tapping Screw(C-1)	バイニング タッピングネジ	
31	4 2 0 0 0 0 E Z 0 0 0 4 6 0	Bonding Tapping Screw 3X8 FCM3-B1	ボンディング タッピングネジ	
32	4 2 0 0 0 0 L A 0 0 1 0 7 0	Earth Terminal	アース端子	

Ref. No.	Part No.	Description	Remarks	Common Models
33	4 2 0 0 0 0 L A 0 0 0 2 8 0	Lug Terminal 3mm	アースラグ	U.C.A
34	4 2 0 0 0 0 E V 1 0 4 3 0 0	Hexagonal Nut M3 FCM3-BI	六角ナット	
35	4 2 0 0 0 0 E V 2 0 4 0 3 0 0	Plain Washer 3S FCM3-BI	平座金ニ力キ丸	
36	4 2 0 0 0 0 E V 9 0 1 3 6 0	Plain Washer, Sems Type $\phi 3.6 \times \phi 10 \times t0.8$ FNM3-3g	//	
37	4 2 0 0 0 0 E V 4 1 0 0 3 0 0	Tooth Locked Washer 3S ZMC2-Y	歯付座金	U.C.A

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AUDIO **SERVICE** Information

BULLETIN NO.: 07-81

DATE: August 1981.

SUBJECT: CR-2020

Problem: Intermittent power supply.
Receiver goes on and off, speaker relay clicking.

Cause: R 801 and R 802 (33 ohm) in electrolytic capacitor circuit board get hot and unsolder themselves.

Remedy: Remove both resistors and install new 33 ohm, $3\frac{1}{4}$ watt wire wound resistors.

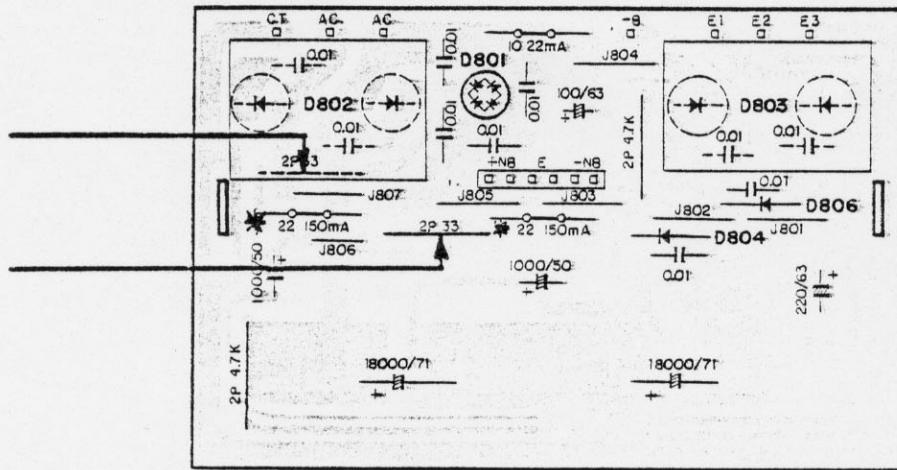
Mount the resistors approximately $\frac{1}{4}$ inch away from the circuit board.

We suggest to use Ohmite #4374. These resistors are available from Yamaha Canada Music, Parts Department.

* Also replace the 22 ohm 150 mA fuse resistors with Ohmite #4369 22 ohm $3\frac{1}{4}$ watt resistors.

Location of resistors:

ELECTROLYTIC CAP. C. BOARD



Please file this bulletin with your CR-2020 service manual and perform this modification on all units received for service.

This bulletin supercedes bulletin 2-79 March 28, 1979 and 2-79 Rev. November 10, 1980.

BULLETIN NO.: 08 - 80

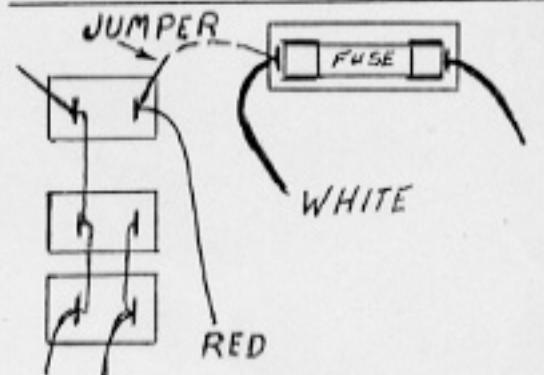
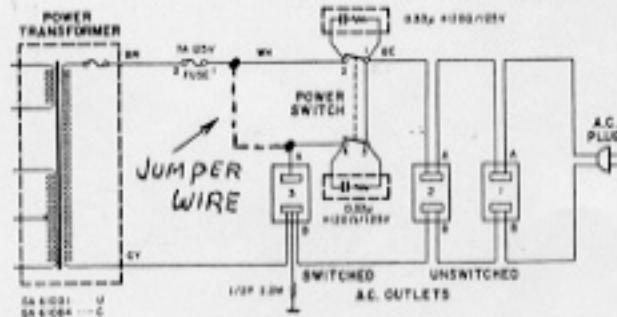
DATE: November 10, 1980.

SUBJECT: CR-2020

Problem: Power switch failure.

Cause: Pitting and burning of switch contact due to high current spike when set is switched off. (Back E.M.F. from power transformer).

Remedy: Replace power on/off switch (KA200630).
Install a jumper wire between the fuse holder (white wire) and the switched AC outlet (red wire).



Install the jumper wire on all units received for service that have not been modified.

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AUDIO
SERVICE
Information

BULLETIN NO.:

08 - 81

DATE:

November 1981.

SUBJECT: CR-2020

PROBLEM: Power Supply Failure

CAUSE: R801 and R802 (33 ohm 2 watt resistors)
FR801 and FR802 (150ma 22 ohm fuse resistors)
on electrolytic capacitor circuit board.
R801 and R802 get very hot and unsolder themselves.
FR801 and FR802 change resistance value.

TR712 and TR715 regulator transistors 2SD234 on power
supply circuit board breakdown due to overheating.

REMEDY: Remove R801 and R802 resistors and replace with 33 ohm
3½ watt ohmite resistors #4374.

Remove FR801 and FR802 fuse resistors and replace with
22 ohm 3½ watt ohmite resistors #4369.

Remove TR712 and TR715 - 2SD234 regulator transistors
and replace with 2SD525 transistors.

NOTE: Check and complete this modification on all CR-2020
receivers brought in for service.

Please also refer to service bulletins
"08-80 Power Switch Failure" and
"07-81 Intermittant Power Supply".