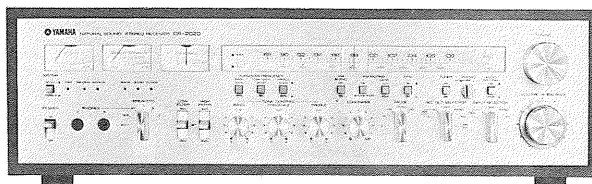


43

SERVICE MANUAL

CR-2020

FM/AM STEREO RECEIVER



SINCE 1887



YAMAHA

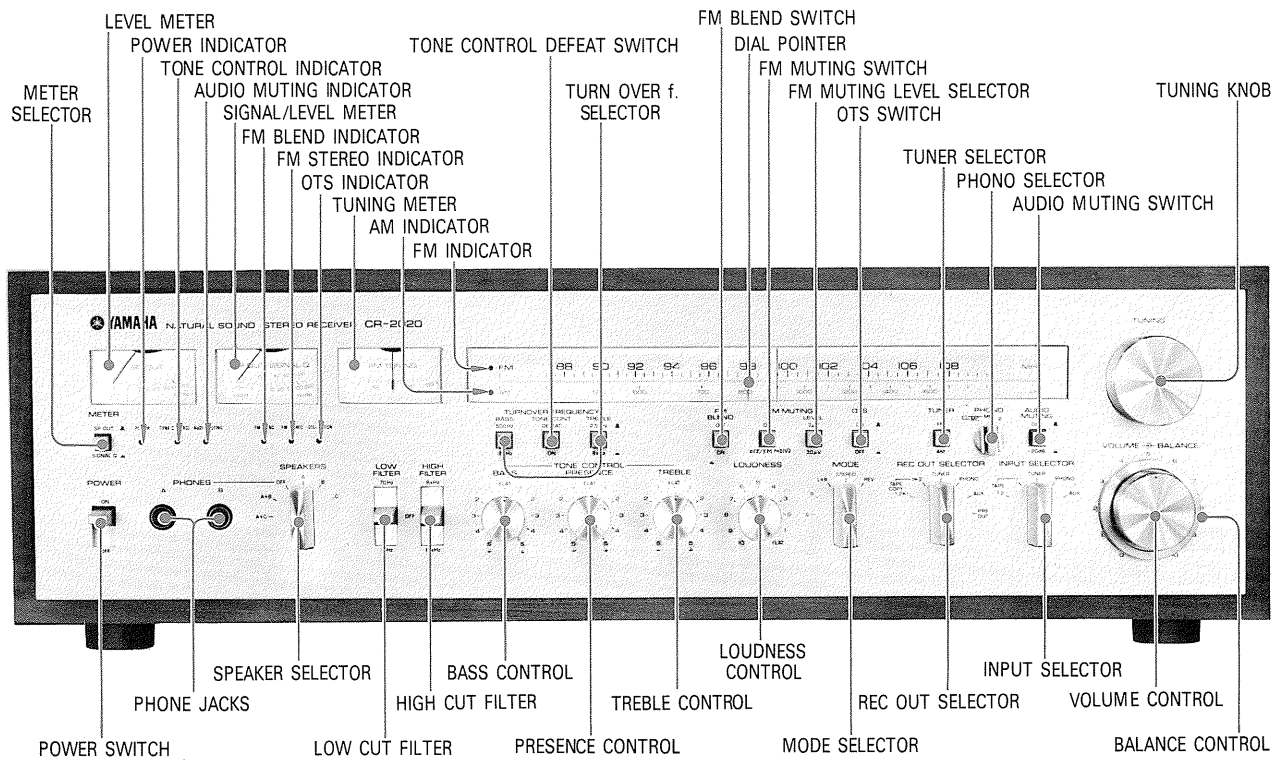
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

CONTENTS

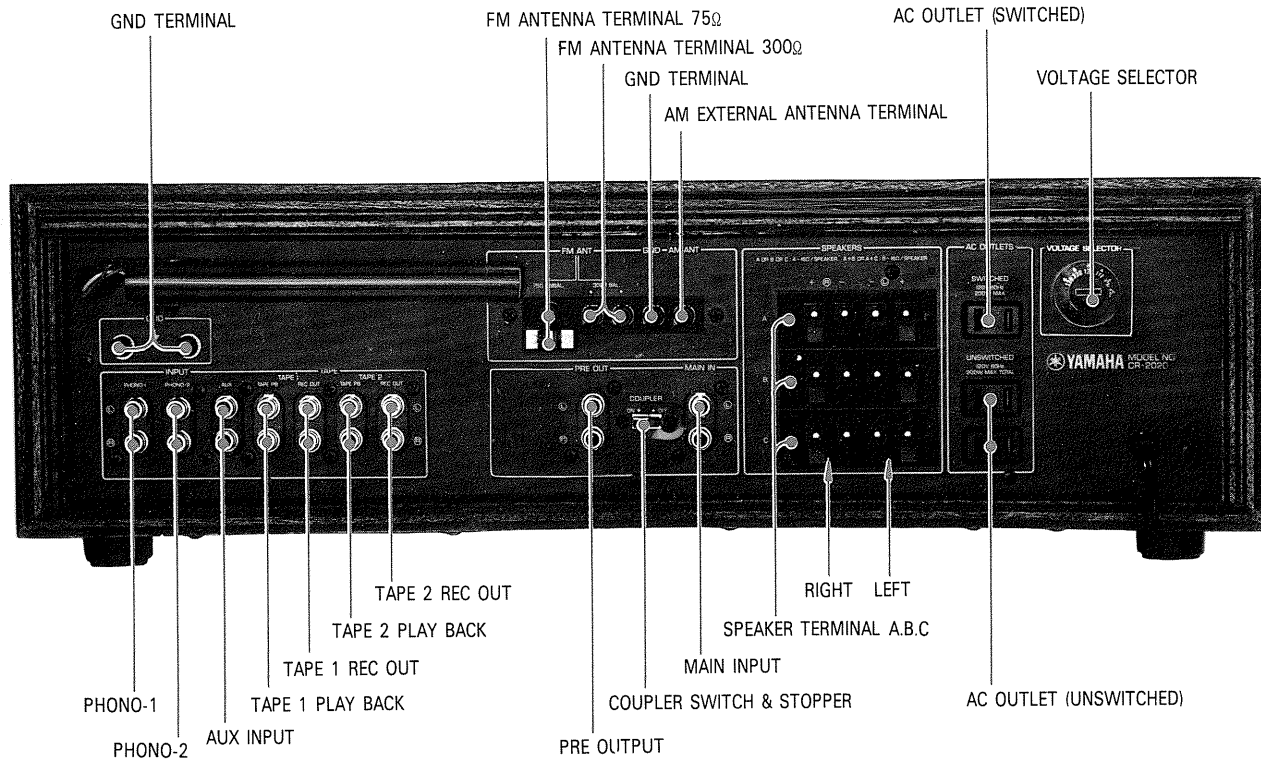
PANEL OPERATION	2
SPECIFICATIONS	4
CHARACTERISTIC CHARTS	5
BLOCK DIAGRAM	6
FLOW CHART FOR DISASSEMBLY PROCEDURES	7
DISASSEMBLY PROCEDURES	8
DIAL CORD STRINGING	11
ADJUSTMENT ADJUSTMENT OF MAIN AMP. C.BOARD & LEVEL METER	12
ADJUSTMENT OF TUNER C.BOARD	13
CIRCUIT BOARDS POWER SUPPLY C. BOARD 1	16
TUNER C. BOARD 1	17
PRE C. BOARD 1, 2	18
MAIN C. BOARD & POWER SUPPLY C. BOARD 2	19
ELECTROLYTIC C. BOARD & etc.	20
PACKAGE	21
SCHEMATIC DIAGRAM BY EXPORT ZONE	22
SCHEMATIC DIAGRAM	23
WIRING	24

PANEL OPERATION

FRONT PANEL



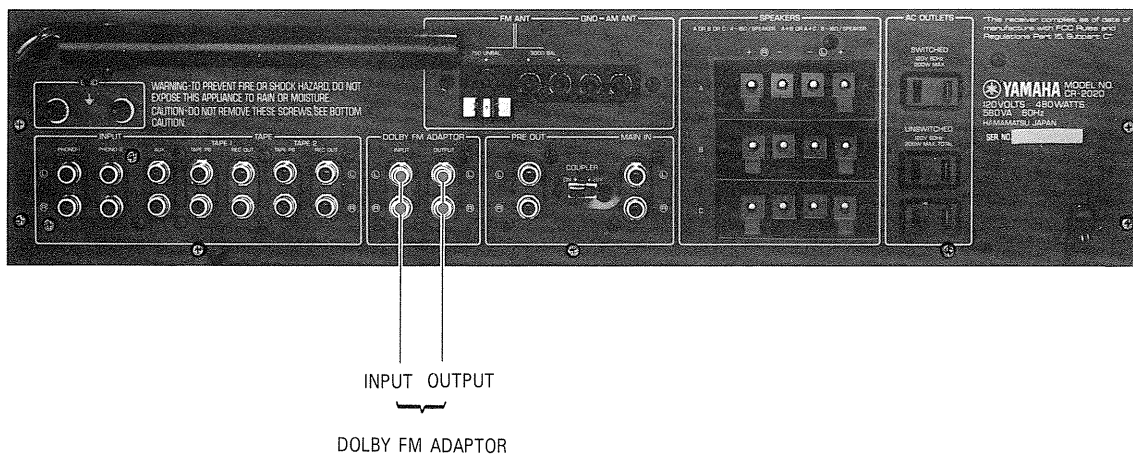
REAR PANEL GENERAL MODEL



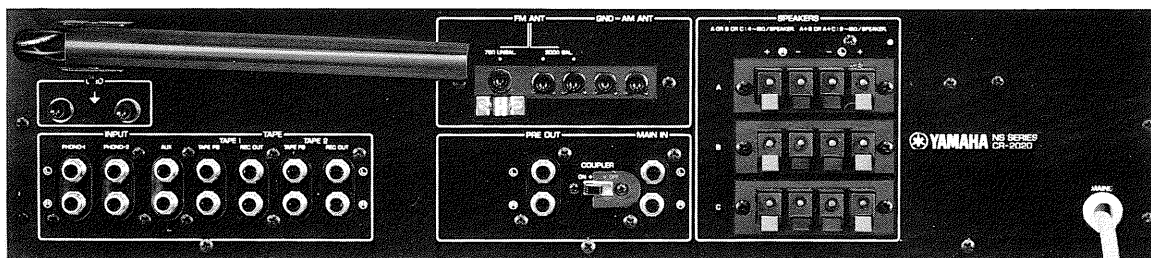
PANEL OPERATION

REAR PANEL

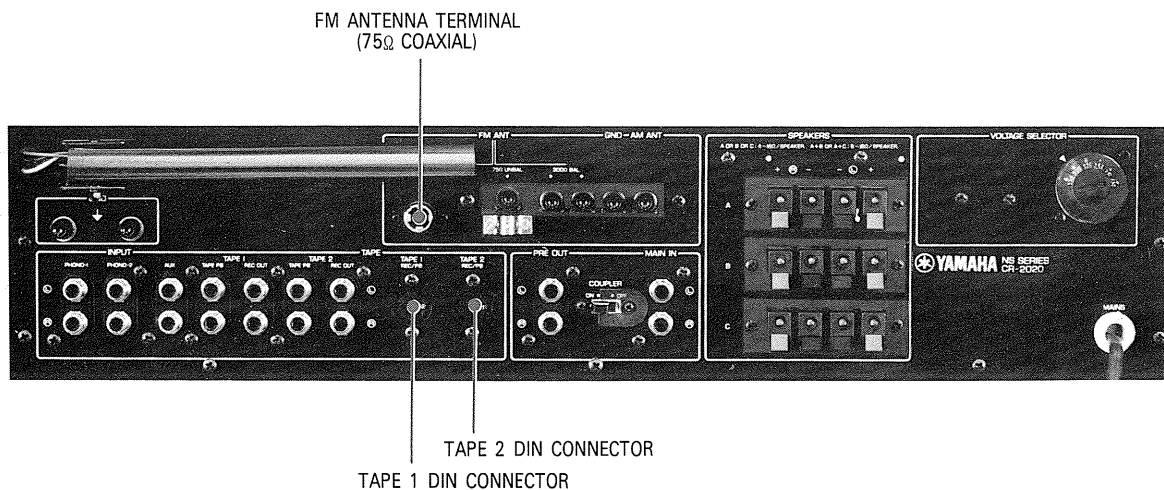
US & CANADIAN MODEL



UK & AUSTRALIAN MODEL



EUROPEAN MODEL



SPECIFICATIONS

AMPLIFIER SECTION

Input Sensivity/Impedance

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

Output Level/Impedance

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

Frequency Response

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

Tone Control Characteristics

BASS : Turnover 125,500Hz Variable Range
 \pm 15dB/50Hz
 TREBLE : Turnover 8, 2.5kHz Variable Range
 \pm 10dB/20kHz
 PRESENCE : Center 3kHz 2kHz \pm 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, 5.1k Ω Short
 Circuited)
 Tape : 100dB (-do.-)
 Main : 112dB (-do.-)
 Residual Noise : 100 μ V (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/8 Ω
 Main In : 0.015%(-do.-) SP. OUT 50W/8 Ω
 Phono 1(MM), 2 : 0.1%(0.1 to 100W/8 Ω) Vol. -20dB
 IM Distortion AUX: 0.02% SP. OUT 50W/8 Ω

Rating Output and etc.

8 Ω Both ch. driven: 100W (20 to 20kHz) 0.05% T.H.D.
 110W (1kHz) 0.05% T.H.D.
 4 Ω 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/8 Ω

TUNER SECTION-FM

Tuning Range

88 to 108MHz

Usable Sensitivity. 98MHz

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

50-dB Quieting Sensitivity

mono : 3.2 μ V, 15.3dBf
 stereo : 40 μ V, 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
 DIN (Dev: \pm 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 : \pm 0.3dB
 30 to 15kHz : \pm 0.5dB
 10 to 18kHz : \pm 0.5 -3dB

Sub Carrier Suppression

60dB

Muting Signal Level

3 μ V (14.8dBf), 30 μ V (34.8dBf)

TUNER SECTION-AM

Tuning Range

525 to 1605kHz

Usable Sensitivity (Used Bar antenna)

IHF: 300 μ V/m (49dB/m)

Selectivity

1000kHz: 30dB

Signal-to-Noise Ratio

80dB/m: 50dB

Image Interference Ratio

1000kHz: 55dB

IF Interference Ratio

1000kHz: 40dB

Spurious Interference Ratio

1000kHz: 55dB

Total Harmonics Distortion

80dB/m: 0.4%

Output Level/Impedance

FM(Mod. 100%) : 450mV/6.5K Ω (REC OUT)
 FM(Mod. 30%) : 120mV/6.5K Ω (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)

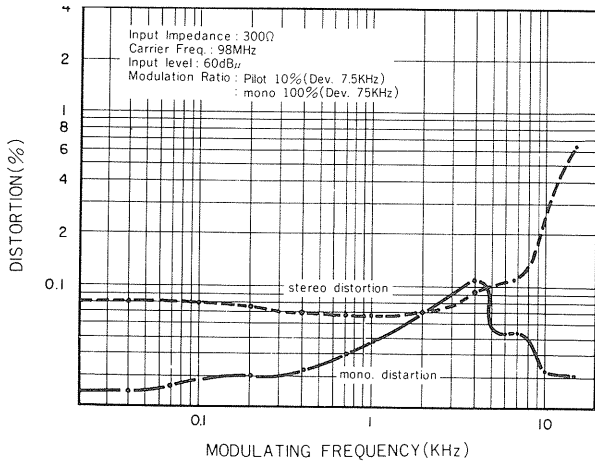
Weight

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

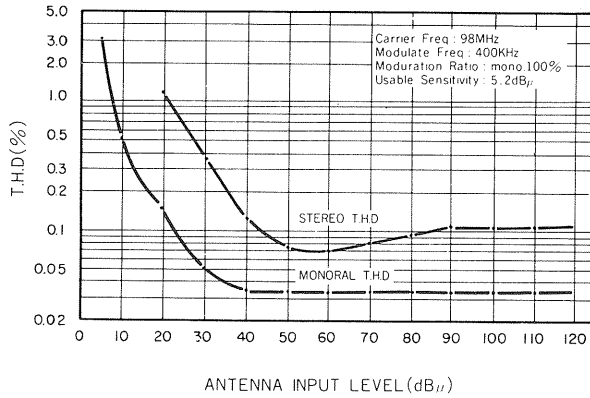
CHARACTERISTIC CHARTS

TUNER SECTION-FM

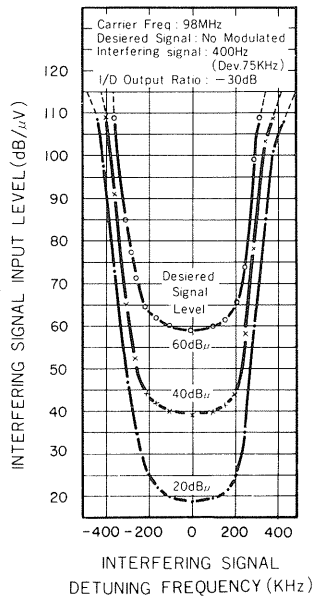
DISTORTION V. MODULATING FREQUENCY



T.H.D. V. INPUT LEVEL

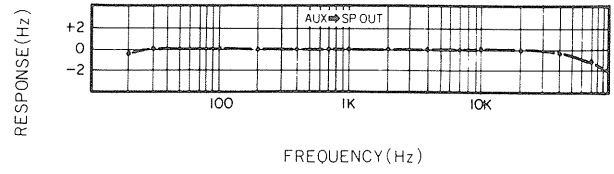


FM 2 SIGNALS EFFECTIVE SELECTIVITY

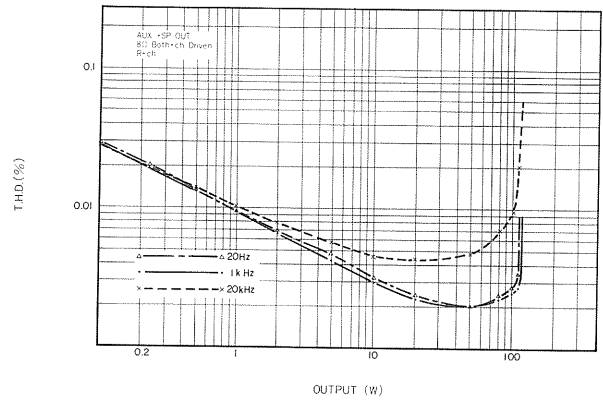


AMPLIFIER SECTION

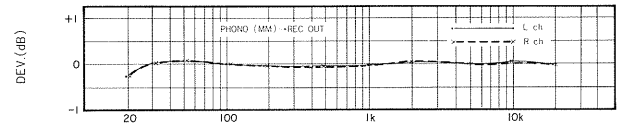
FREQUENCY RESPONSE



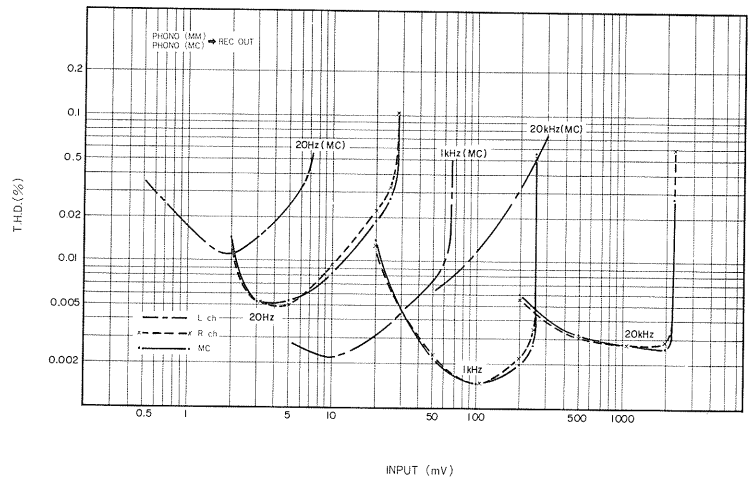
T.H.D. V. OUTPUT



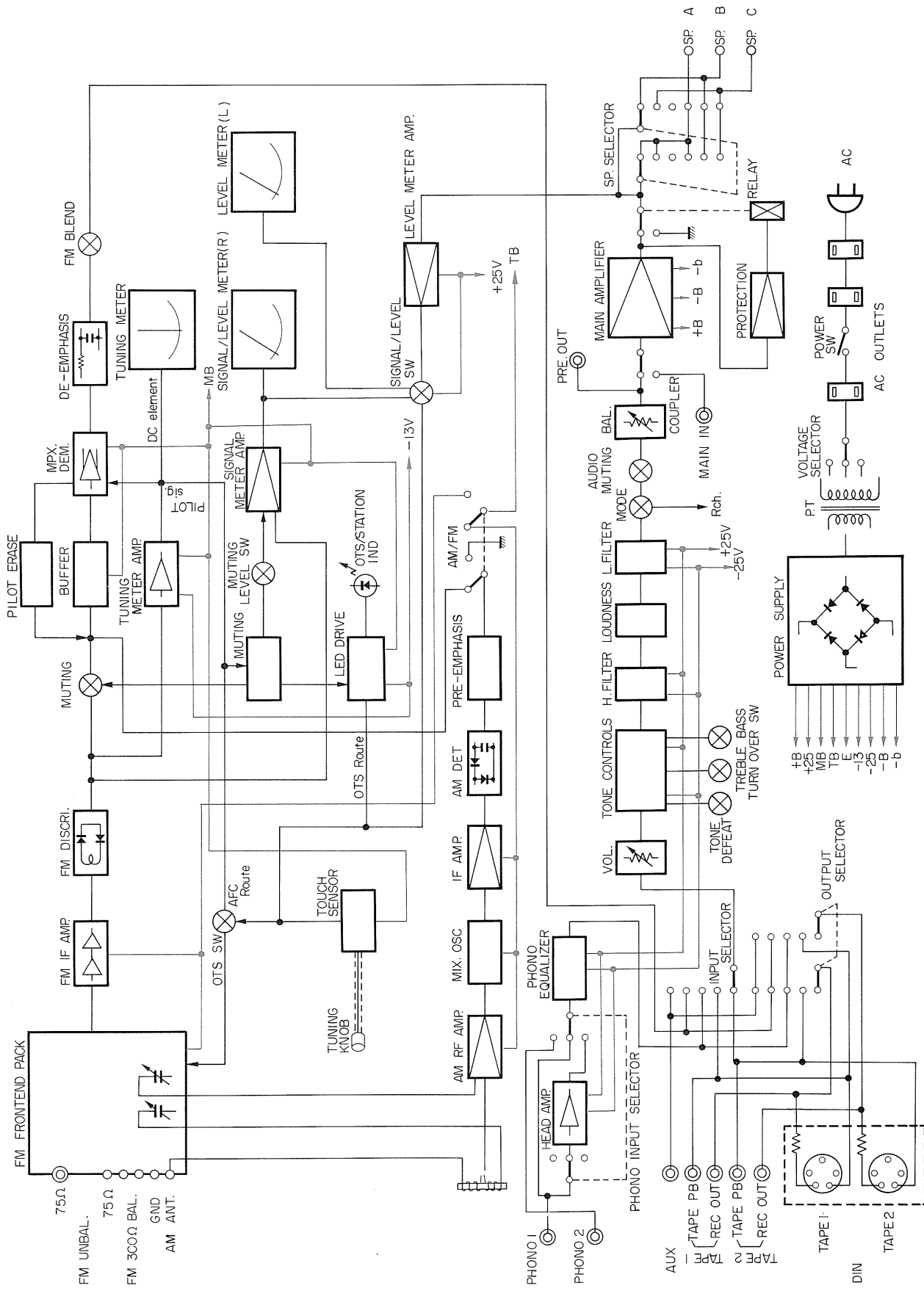
RIAA DEVIATION



T.H.D. V. PHONO INPUT

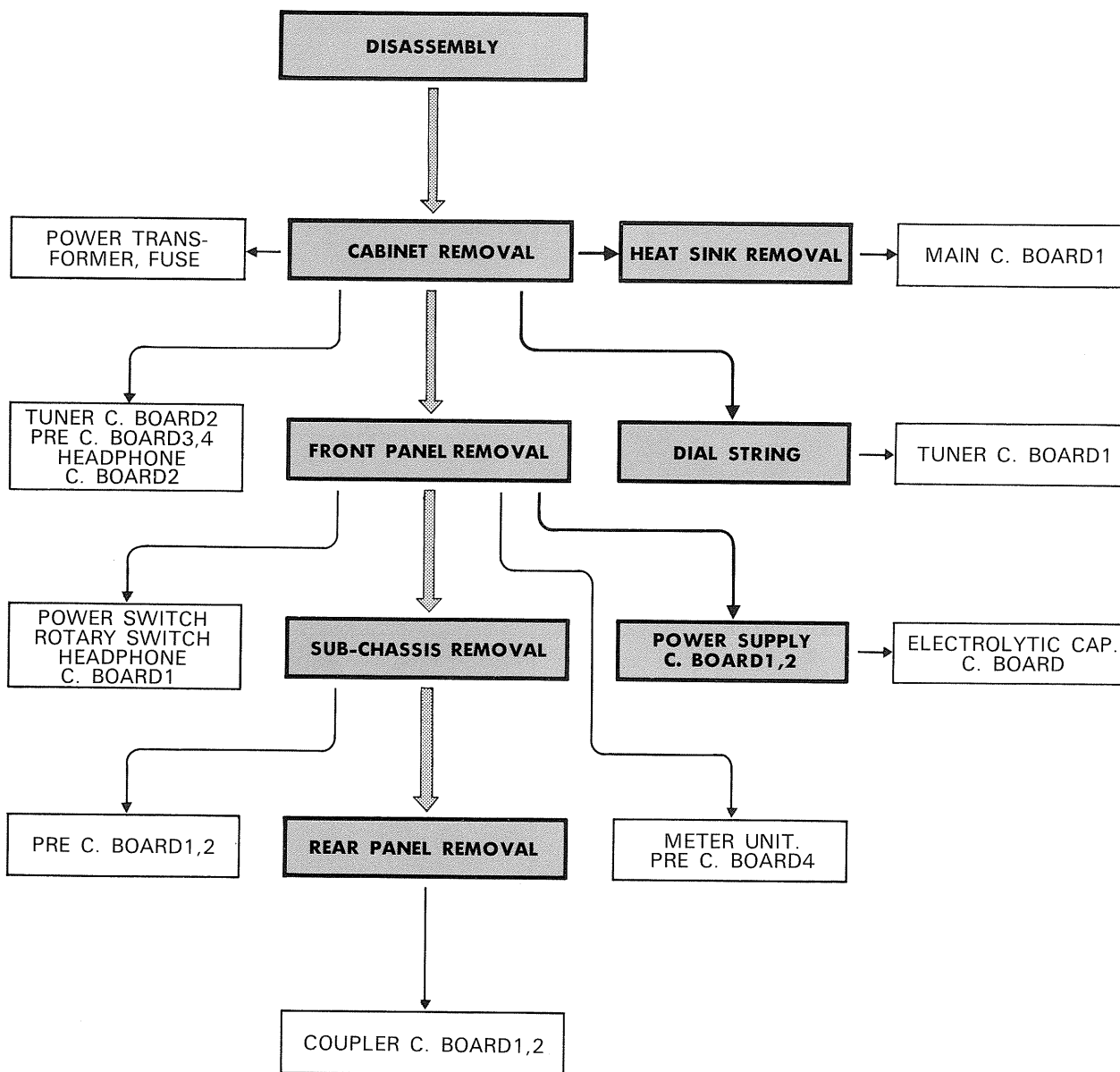


BLOCK DIAGRAM



FLOW CHART FOR DISASSEMBLY PROCEDURES

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



Note

TUNER C. BOARD 2:
PRE C. BOARD 1:

PRE C. BOARD 2:
PRE C. BOARD 3:
PRE C. BOARD 4:

HEADPHONE C. BOARD 1:
HEADPHONE C. BOARD 2:

COUPLER C. BOARD 1:
COUPLER C. BOARD 2:

POWER SUPPLY C. BOARD 2:

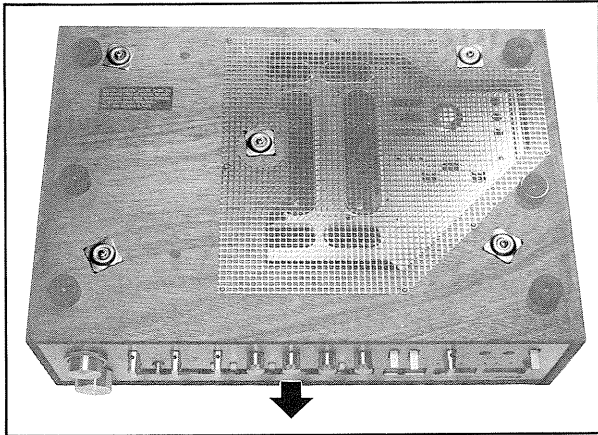
FM BLEND, FM MUTING, OTS AND AM-FM SWITCHES
LOW AND HIGH FILTER SWITCHES, TONE AND LOUDNESS CONTROLS,
MODE, REC OUT AND INPUT SELECTORS
VOLUME AND BALANCE CONTROLS
AUDIO MUTING SWITCH
TURNOVER FREQUENCY SWITCHES
HEADPHONE JACKS
AM-FM INDICATORS
ANTENNA TERMINALS
COUPLER SWITCH AND PIN JACKS
METER SELECTOR

DISASSEMBLY PROCEDURES

1. CABINET REMOVAL

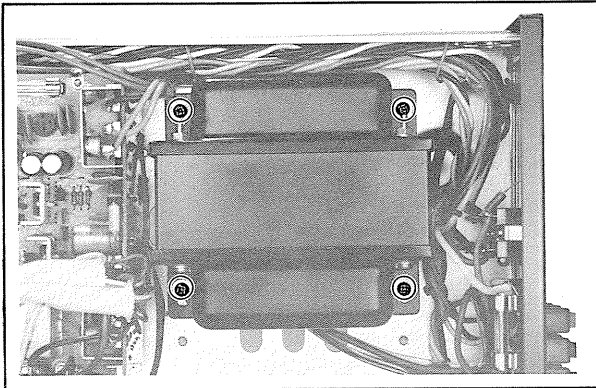
Remove 5 screws, then pull out the chassis in arrow direction.

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.



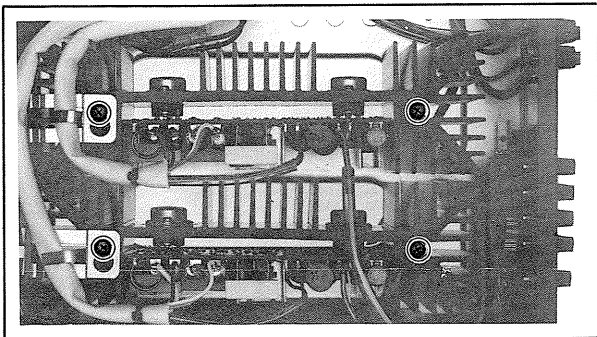
2. POWER TRANSFORMER REMOVAL

Remove 4 screws.

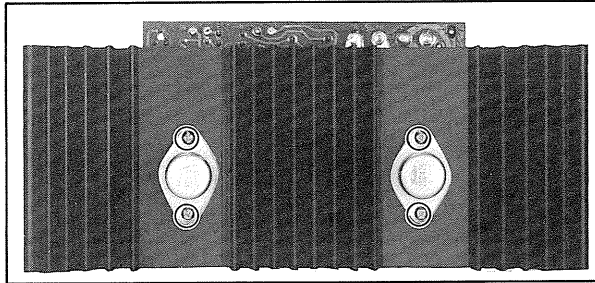


3. HEAT SINK AND MAIN CIRCUIT BOARD 1 REMOVAL

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



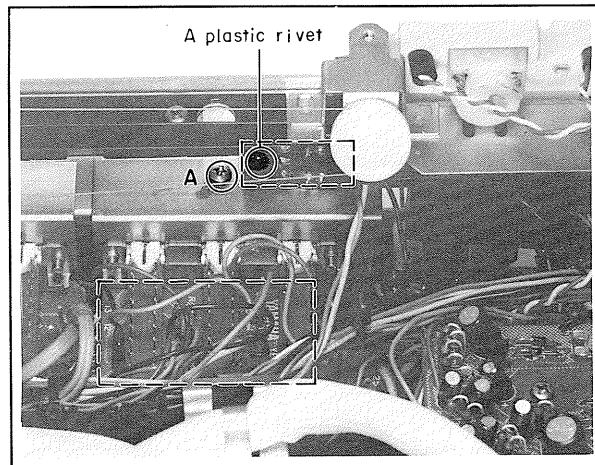
Step 2. Remove 4 screws fixing 2 power transistors.



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.

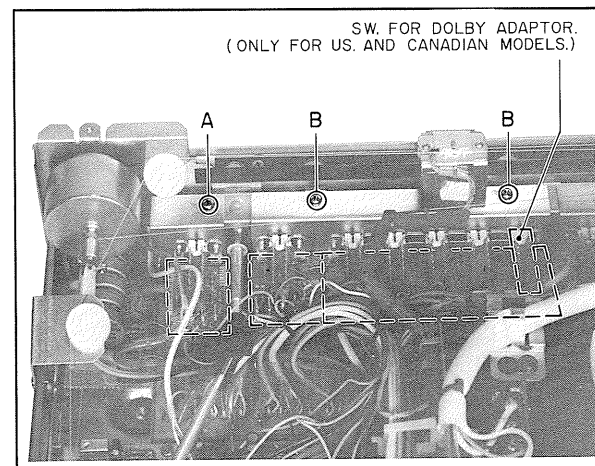
Remove a screw shown in A.



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

Screw A is for fixing the Pre Circuit Board 3.

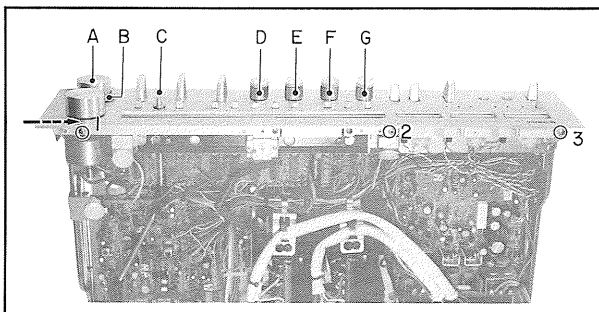
Screws B are for fixing the Tuner Circuit Board 2.



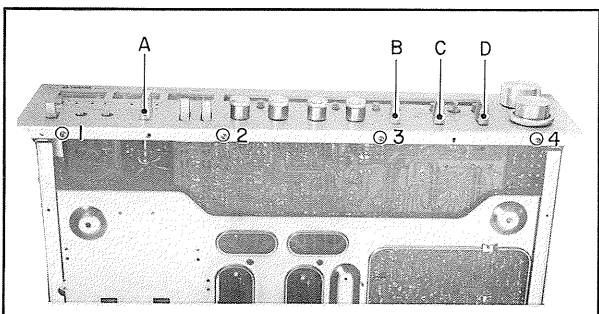
DISASSEMBLY PROCEDURES

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.

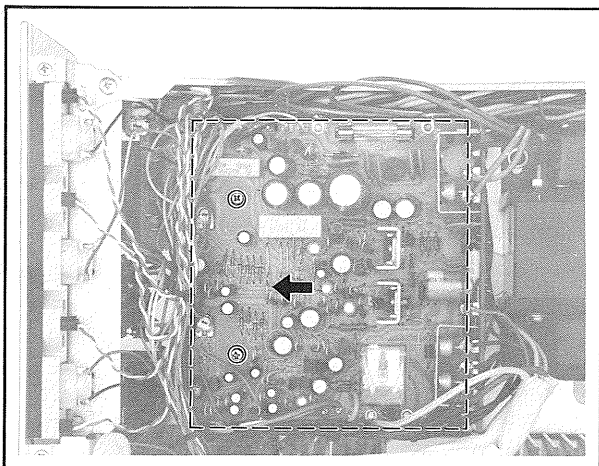


- Step 2.** 1) Remove 4 screws 1 to 4.
- 2) Loosen 4 screws **A** to **D** fixing each knob with a hexagonal allen wrench, then withdraw the knobs.



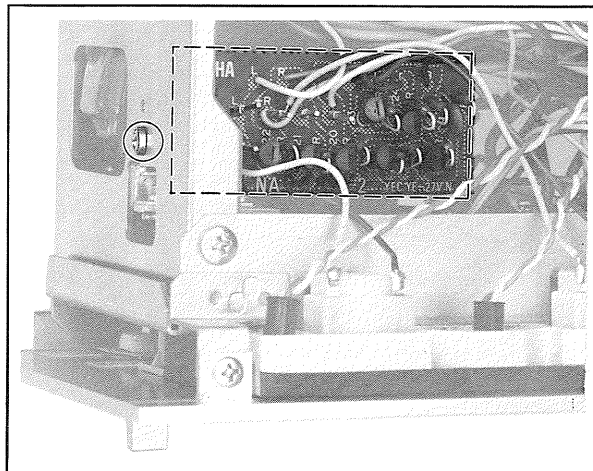
7. POWER SUPPLY CIRCUIT BOARD 1 REMOVAL

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



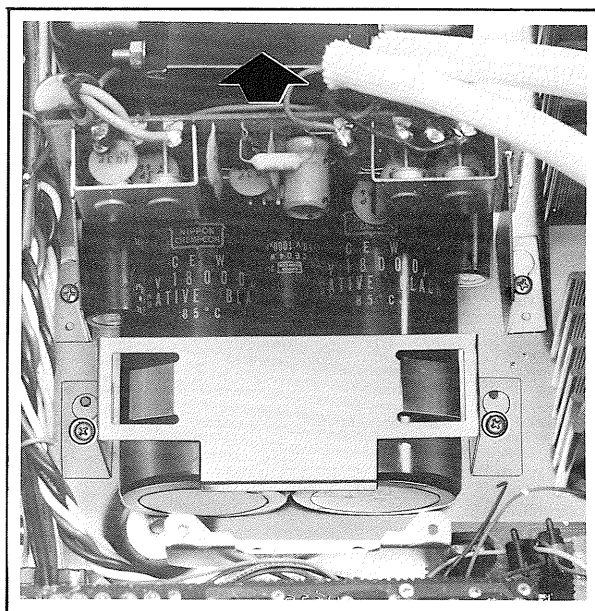
8. POWER SUPPLY CIRCUIT BOARD 2 REMOVAL

Remove a screw.



9. ELECTROLYTIC CAPACITOR CIRCUIT BOARD REMOVAL

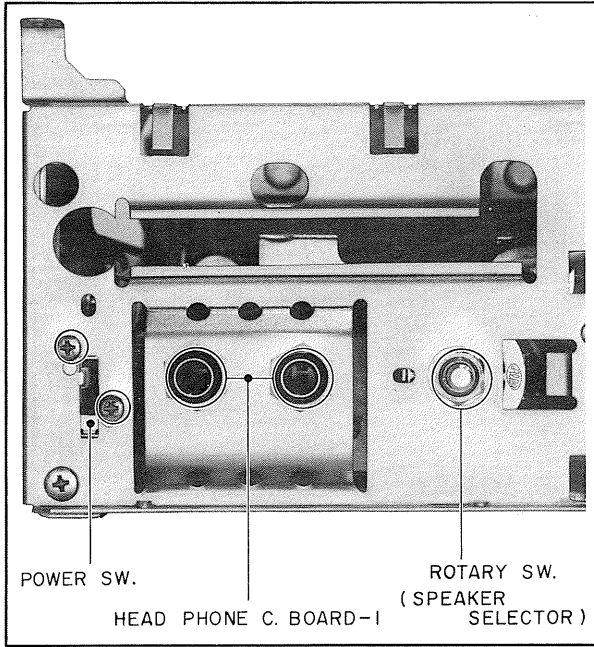
- 1) Remove 2 screws, then dismantle the holder securing 2 electrolytic capacitors.
- 2) Slide up the Electrolytic Capacitor Circuit Board in arrow direction.



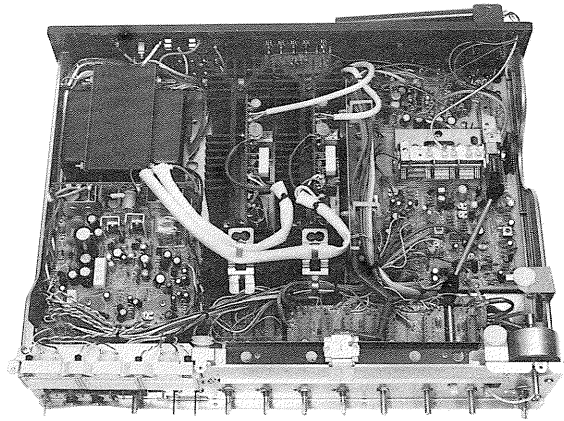
DISASSEMBLY PROCEDURES

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

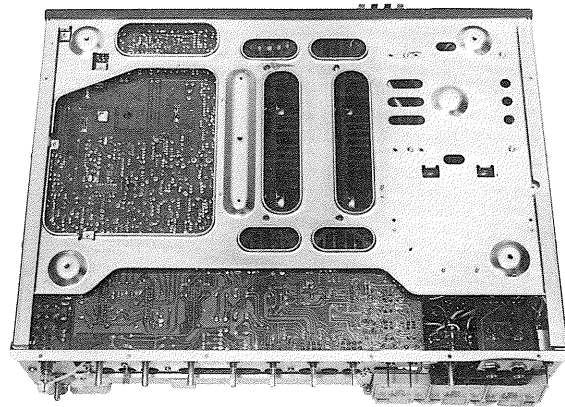
- 1) Pull off the knob of the power switch.
- 2) Remove 2 screws and 3 hexagonal nuts.



TOP VIEW

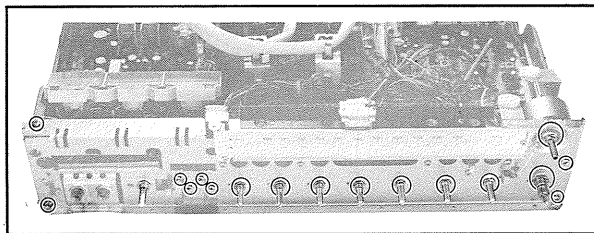


BOTTOM VIEW



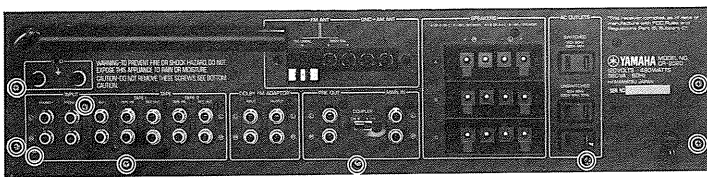
11. SUB-CHASSIS REMOVAL

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

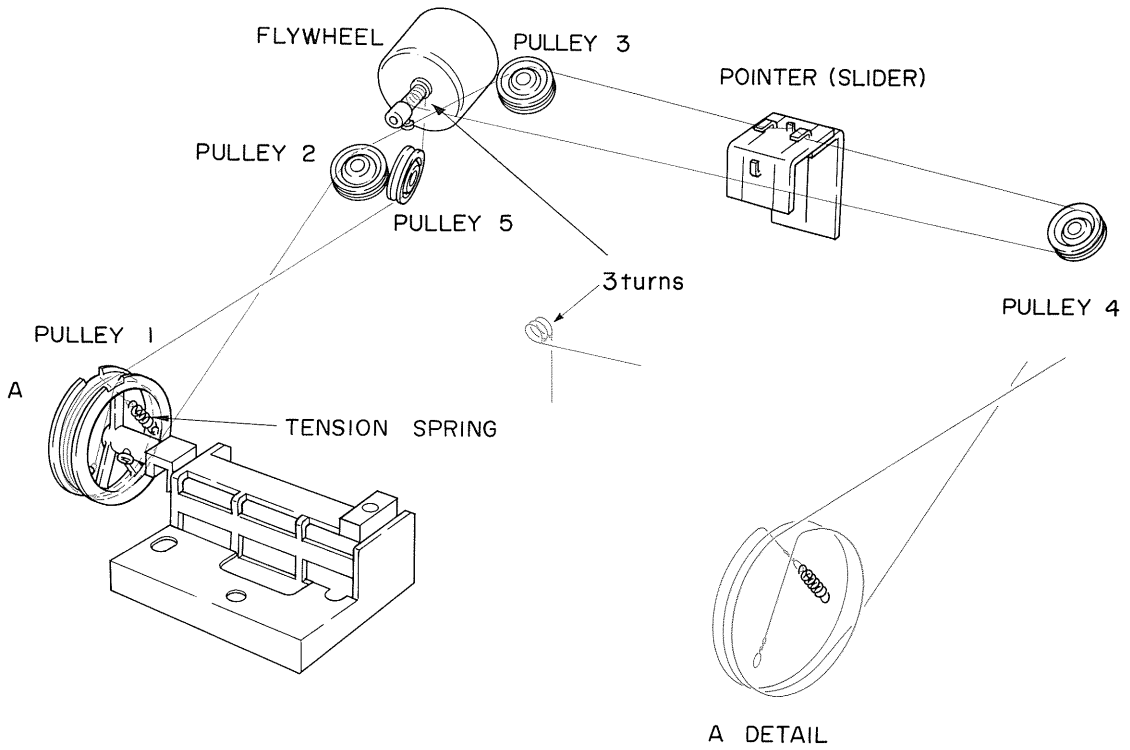


12. REAR PANEL REMOVAL

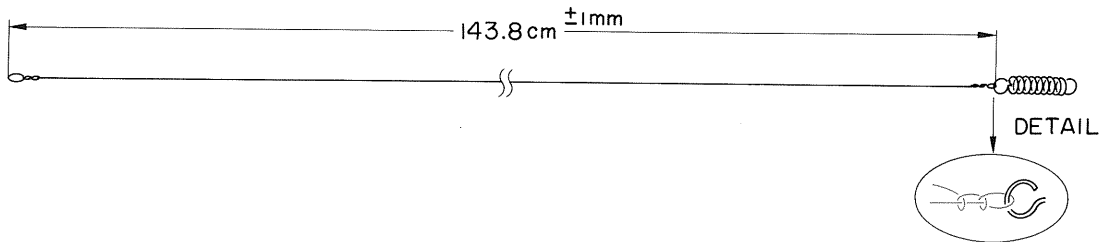
Remove 9 screws.



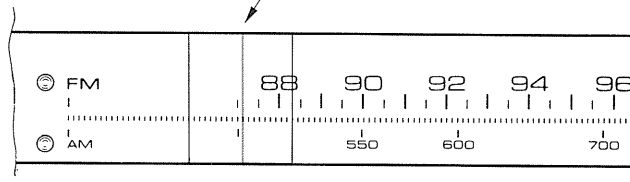
DIAL CORD STRINGING



DIAL CORD LENGTH



DIAL POINTER

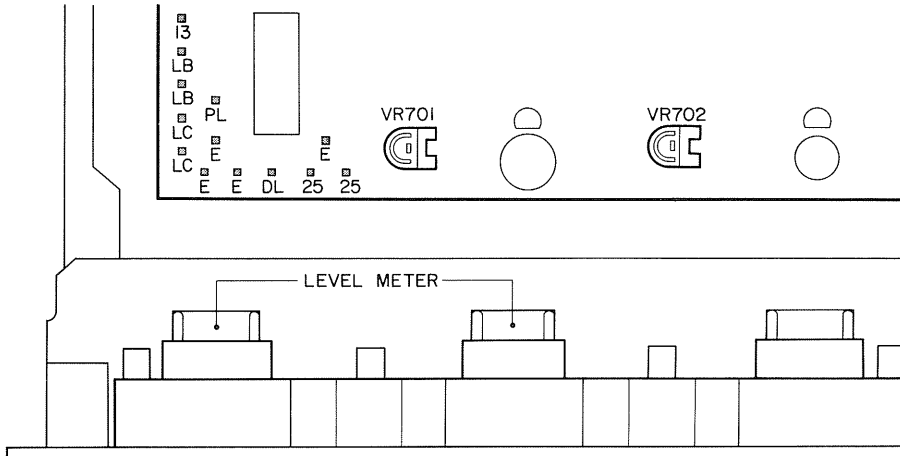


After stringing the dial cord, turn the tuning knob fully counterclockwise and set the pointer to lower end indication of the scale as illustrated above. Then hook the string to the pointer assembly and lock by painting.

ADJUSTMENT

ADJUSTMENT OF LEVEL METER

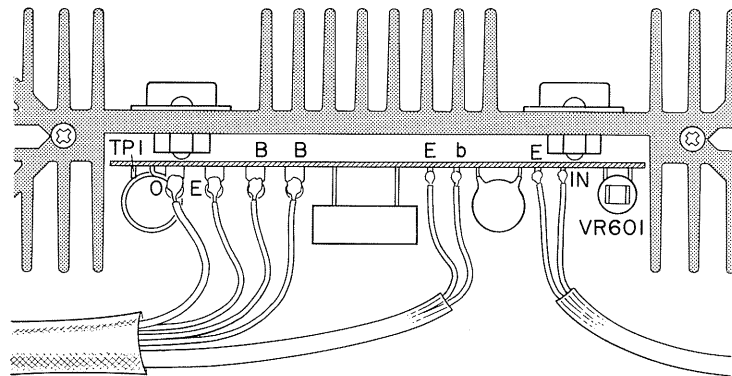
ADJUSTING POINTS



ITEM	ADJUSTING POINTS	CONNECTING POINT	EQUIPMENT	METHOD	INDICATION
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

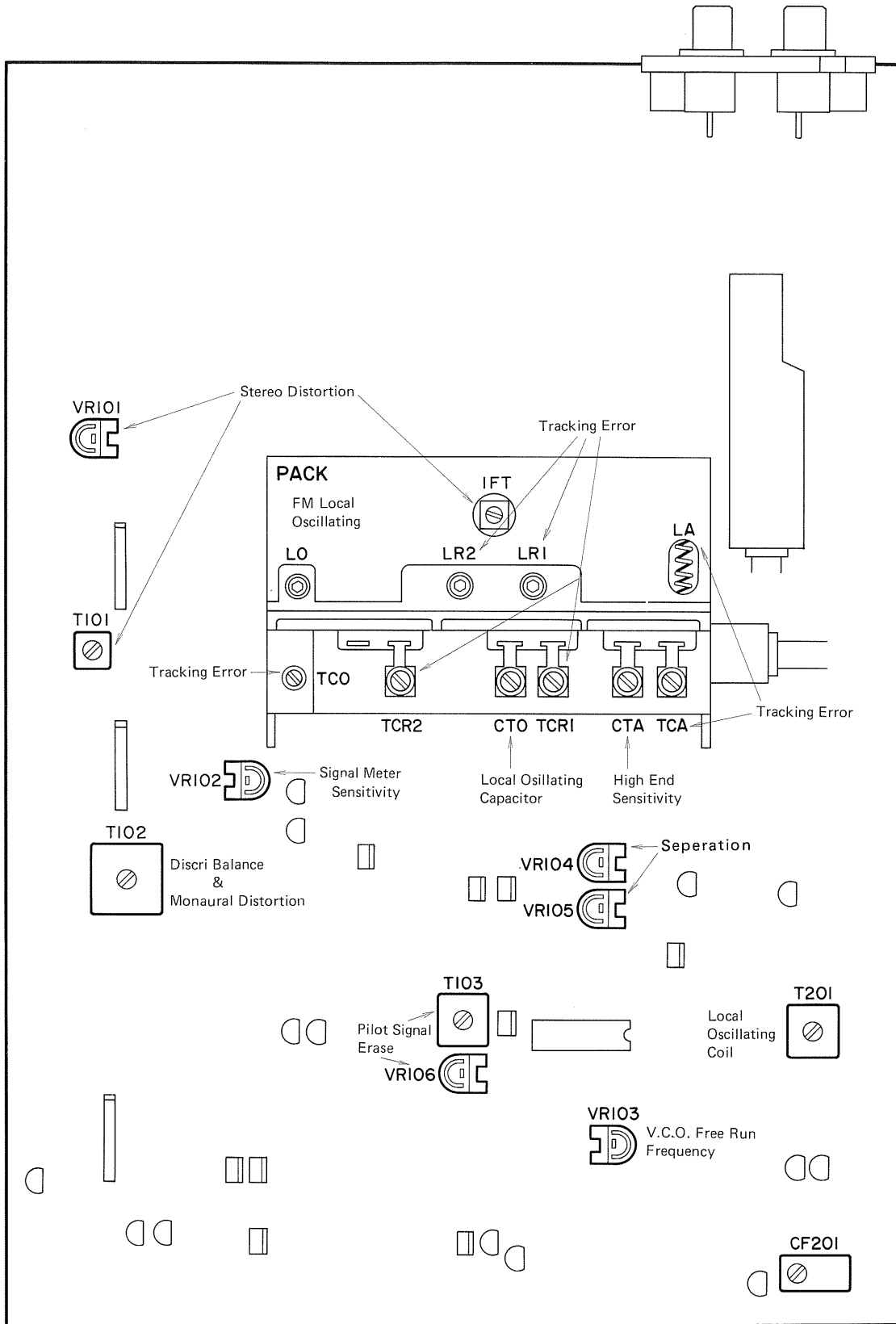


ADJUSTMENT FOR IDLING CURRENT

ITEM	ADJUSTING POINT	CONNECTING POINT	EQUIPMENT	METHOD	INDICATION
IDLING CURRENT	VR-601	TP1 - 0	VTVM or Digital Volt Meter	Turn VR601, so that the voltage between TP1 and TP0 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	ADJUSTING POINTS	CONNECTING 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.	± 1 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.	± 2 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.	± 2 mm or less
4	TRACKING ERROR ADJUSTING (Only when proper adjustment cannot be made by step 3, proceed step 4.)	TC0 (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

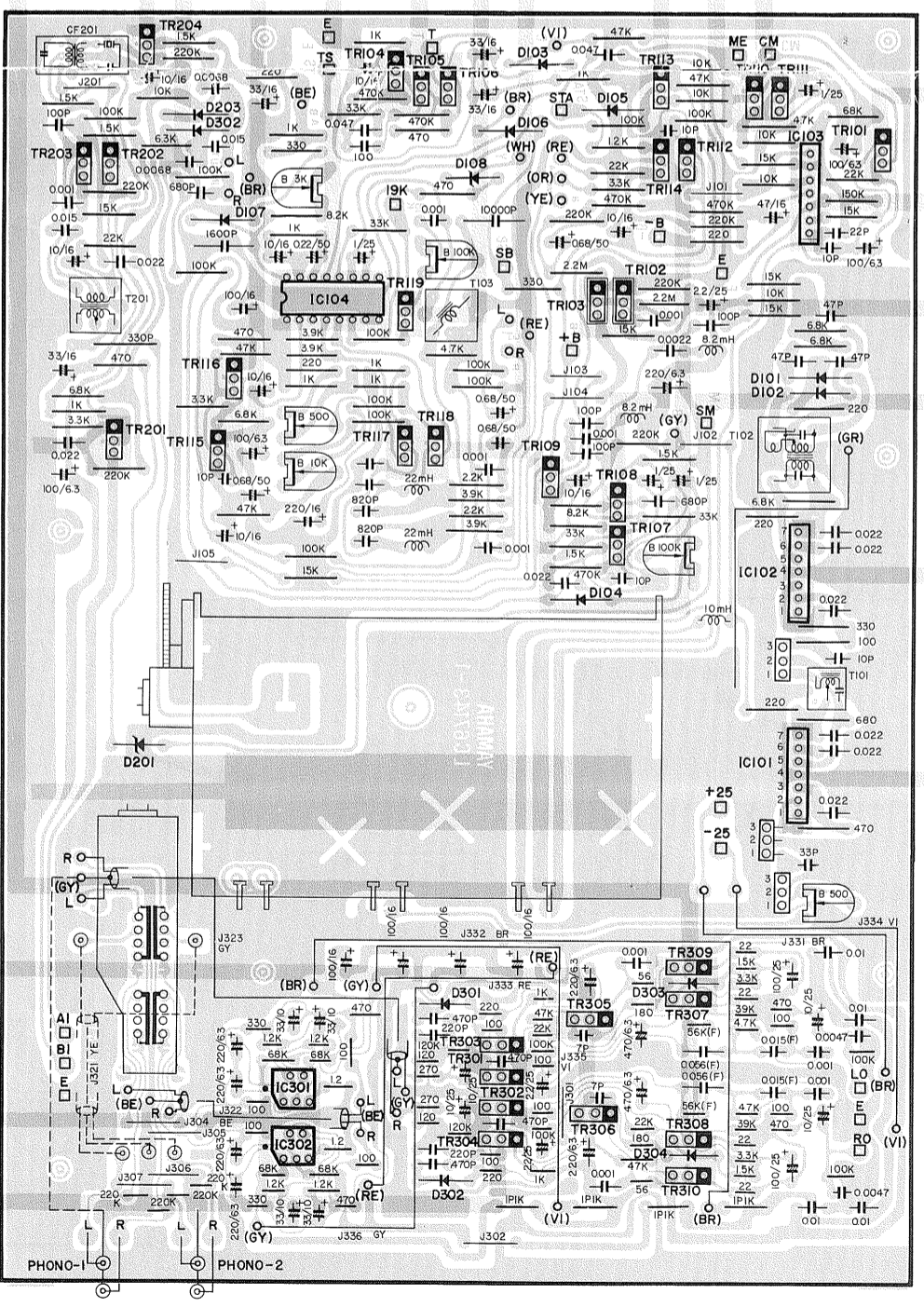
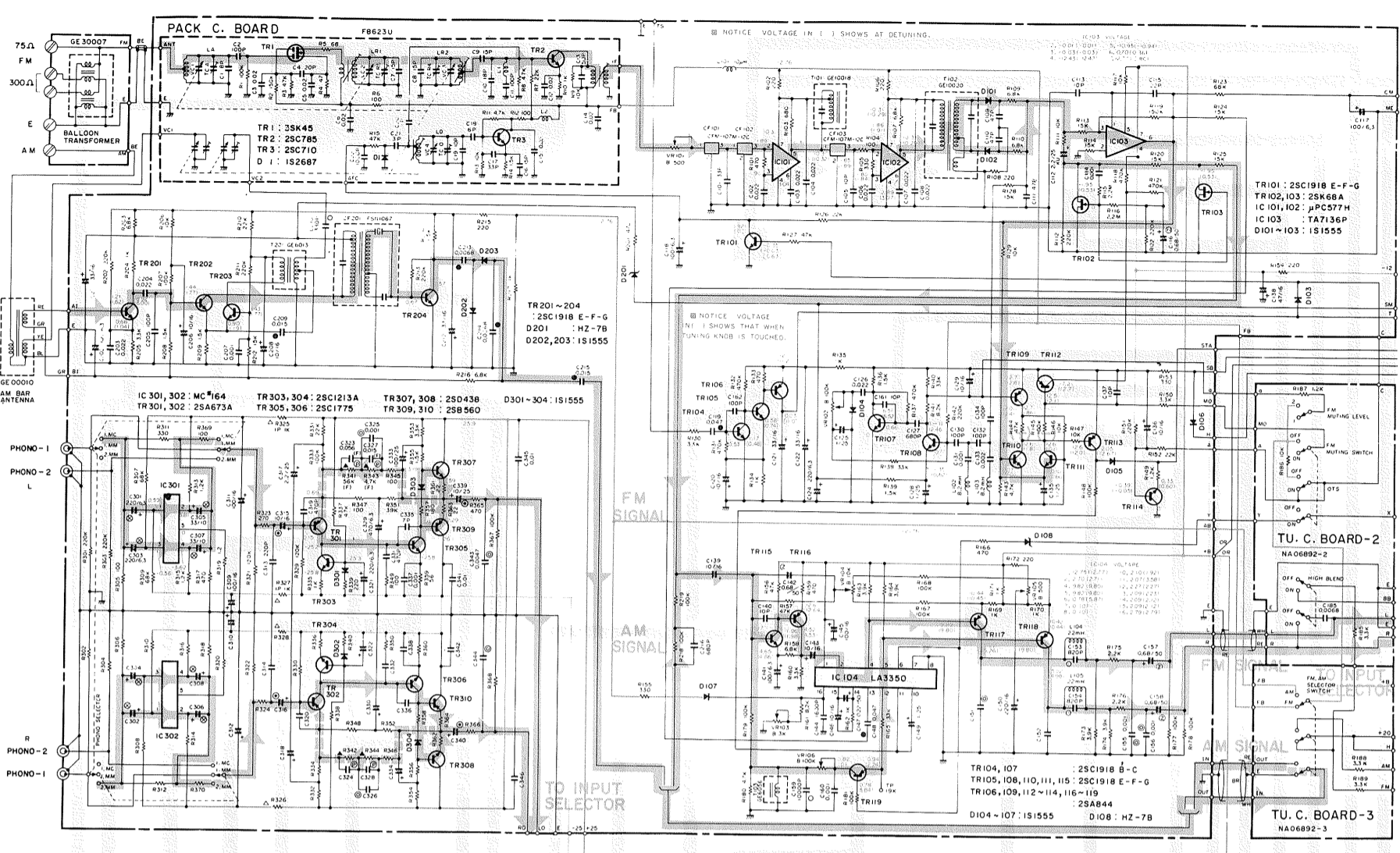
ADJUST AM SECTION AFTER ADJUSTMENT OF FM SECTION MADE CORRECTLY.

Step	ITEMS	ADJUSTING POINTS	CONNECTING 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: ± 1.5 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.	± 2 mm or less

ADJUSTMENT OF TUNER CIRCUIT BOARD

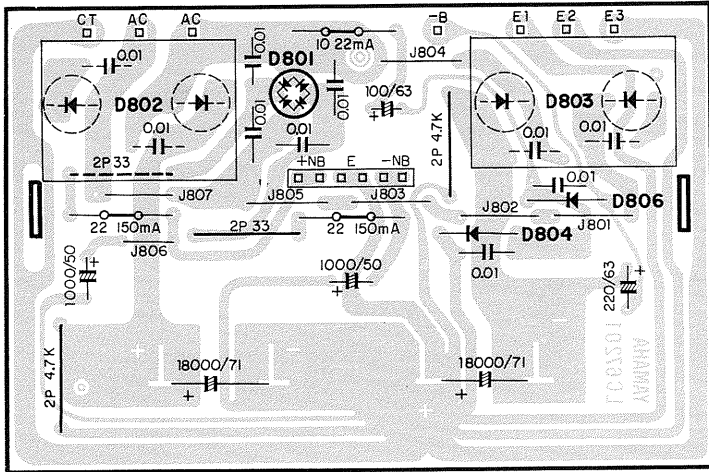
Step	ITEMS	ADJUST- ING POINT	CON- NECTING INPUT	POINT OUTPUT	EQUIPMENT	METHOD	INDI- CATION (Typical)
1	DISCRI. BALANCE	T102 (up-side core)	FM Ant.			Turn the pointer to detuning point near by 98MHz, and turn the up-side core of the T102 so that the tuning meter reads zero. Note: Before adjusting, confirm 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 VR105	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 VR 106 and T 103 so that carrier level becomes minimum.	60dB or more (both ch.)
8	SIGNAL METER SESITIVITY	VR102	FM Ant.		FM SG 98MHz 80dB μ 0%	Adjust VR 102 so that the signal meter swings 90.	90

TUNER CBOARD-1 (Tuner)

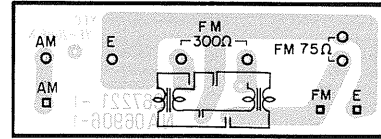


CIRCUIT BOARDS

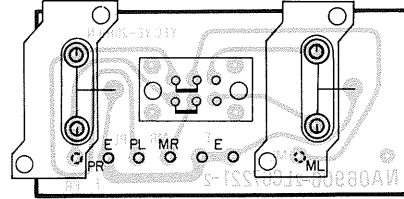
ELECTROLYTIC CAP. C. BOARD



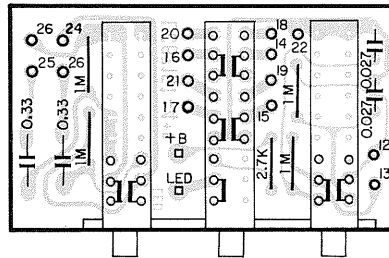
COUPLER C.B.OARD-1



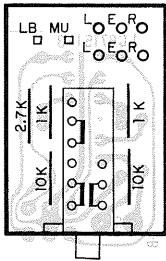
COUPLER C.B.OARD-2



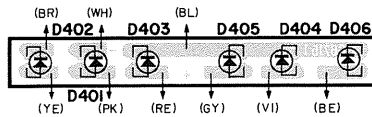
PRE C.B.OARD -4



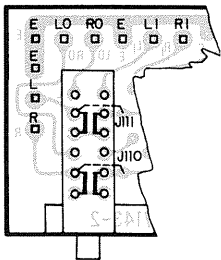
PRE C.B.OARD-3



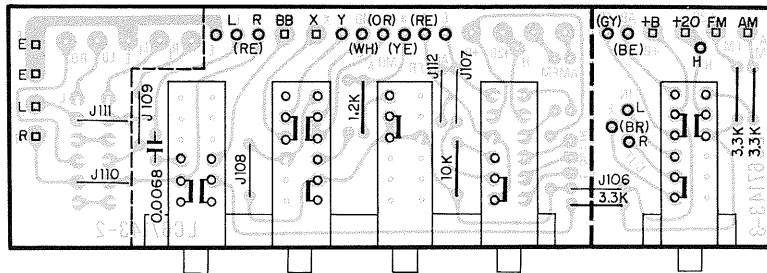
PRE C.B.OARD-5



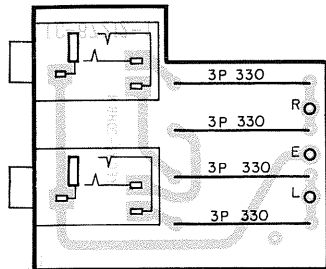
TUNER C.B.OARD-2. -3



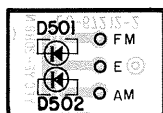
(Only for US. and Canadian models.)



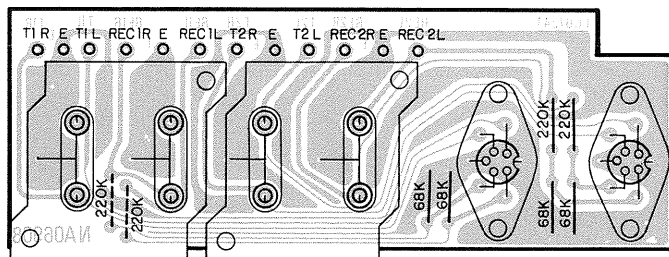
HEAD PHONE C.B.OARD-1

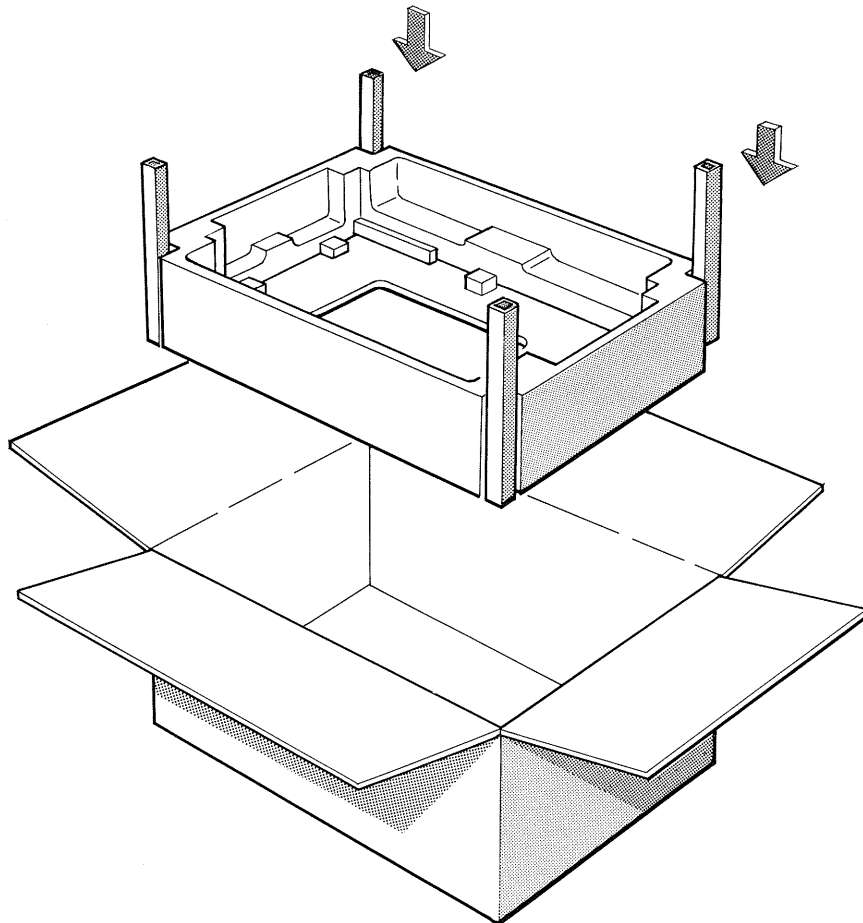
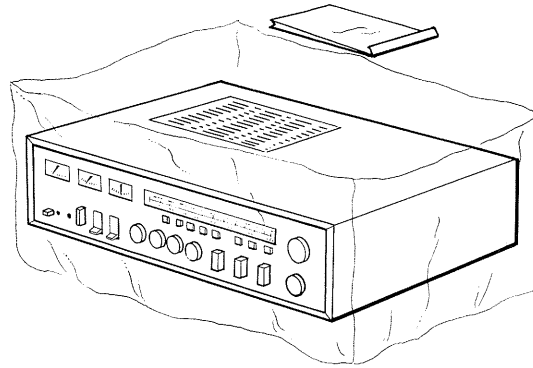
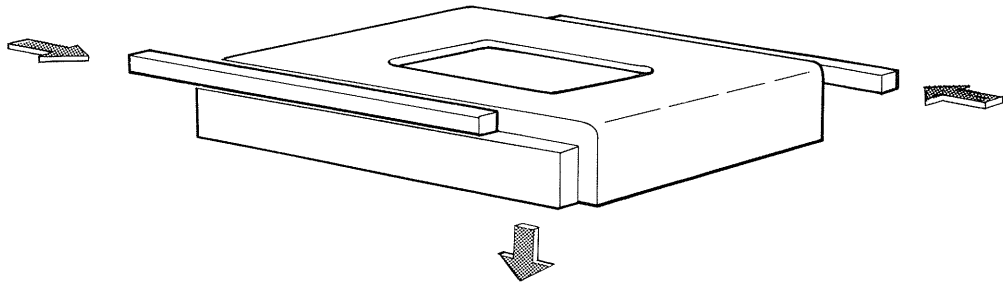


HEAD PHONE C.B.OARD-2



DIN C.B.OARD (Only for European models)

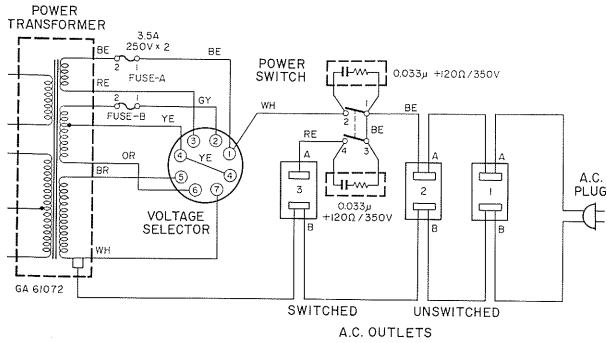




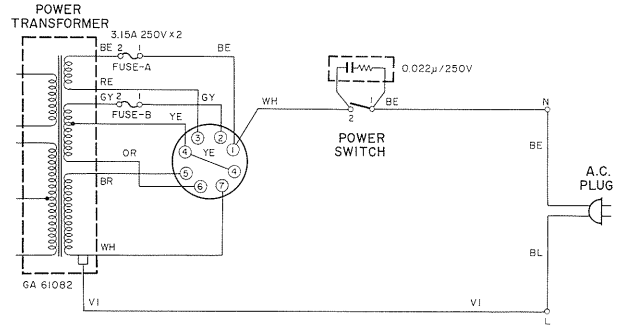
SCHEMATIC DIAGRAM BY EXPORT ZONE

POWER SUPPLY CIRCUIT

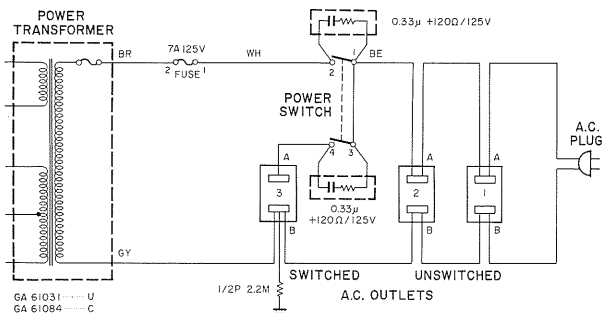
GENERAL EXPORT model



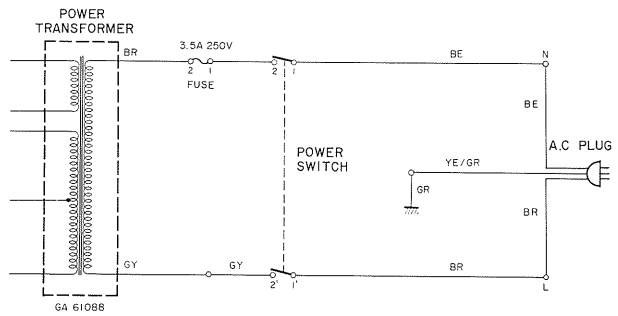
EUROPEAN model



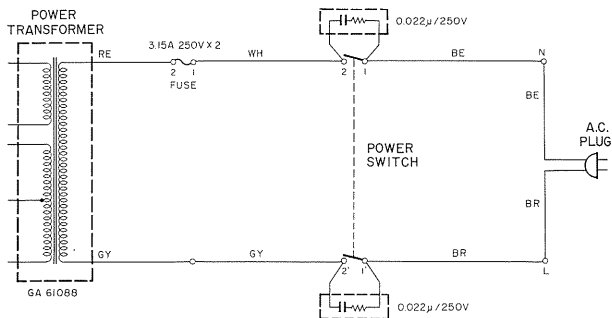
US & CANADIAN model

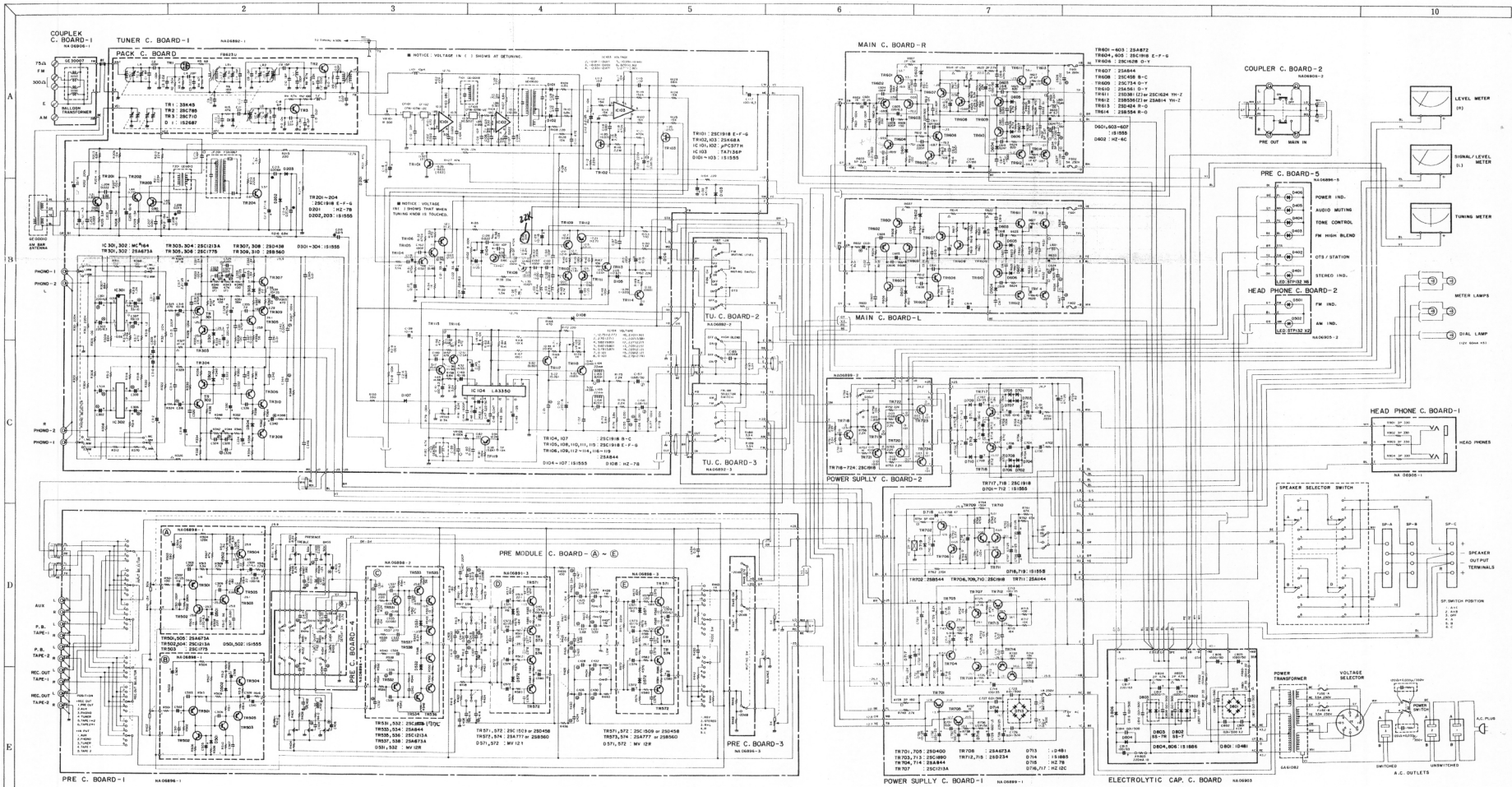


AUSTRALIAN model



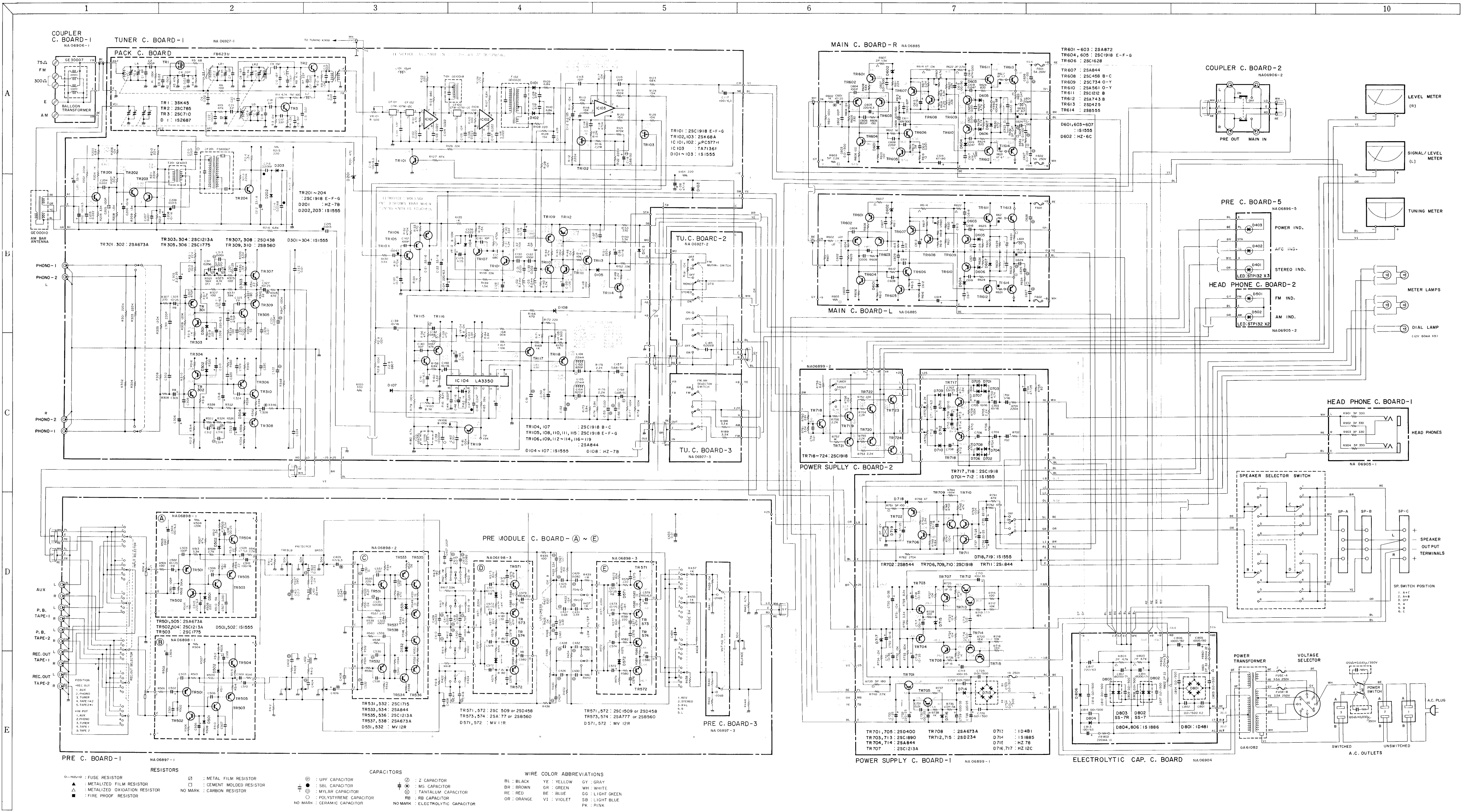
UK model





- RESISTORS**
- PURE RESISTOR
 - METALIZED FILM RESISTOR
 - METALIZED OXIDATION RESISTOR
 - METAL FILM RESISTOR
 - CERAMIC HOLED RESISTOR
 - CARBON RESISTOR
 - NO MARK
- CAPACITORS**
- 1VVF CAPACITOR
 - DR. CAPACITOR
 - POLAR CAPACITOR
 - POLYESTER CAPACITOR
 - POLYPROP. CAPACITOR
 - NO MARK
 - 2 CAPACITOR
 - MV CAPACITOR
 - TANTALUM CAPACITOR
 - POLYPROP. CAPACITOR
 - ELECTROLYTIC CAPACITOR
- WIRE COLOR ABBREVIATIONS**
- BL. P. OR. V. Y. BROWN ST. GRAY
 - BR. D. ORN. GR. GREEN W. WHITE
 - PK. RD. BK. BLUE CS. L. LIGHT GREEN
 - OR. ORANGE V. VIOLET SB. LIGHT BLUE
 - PK. PINK

SCHEMATIC DIAGRAM



RESISTORS

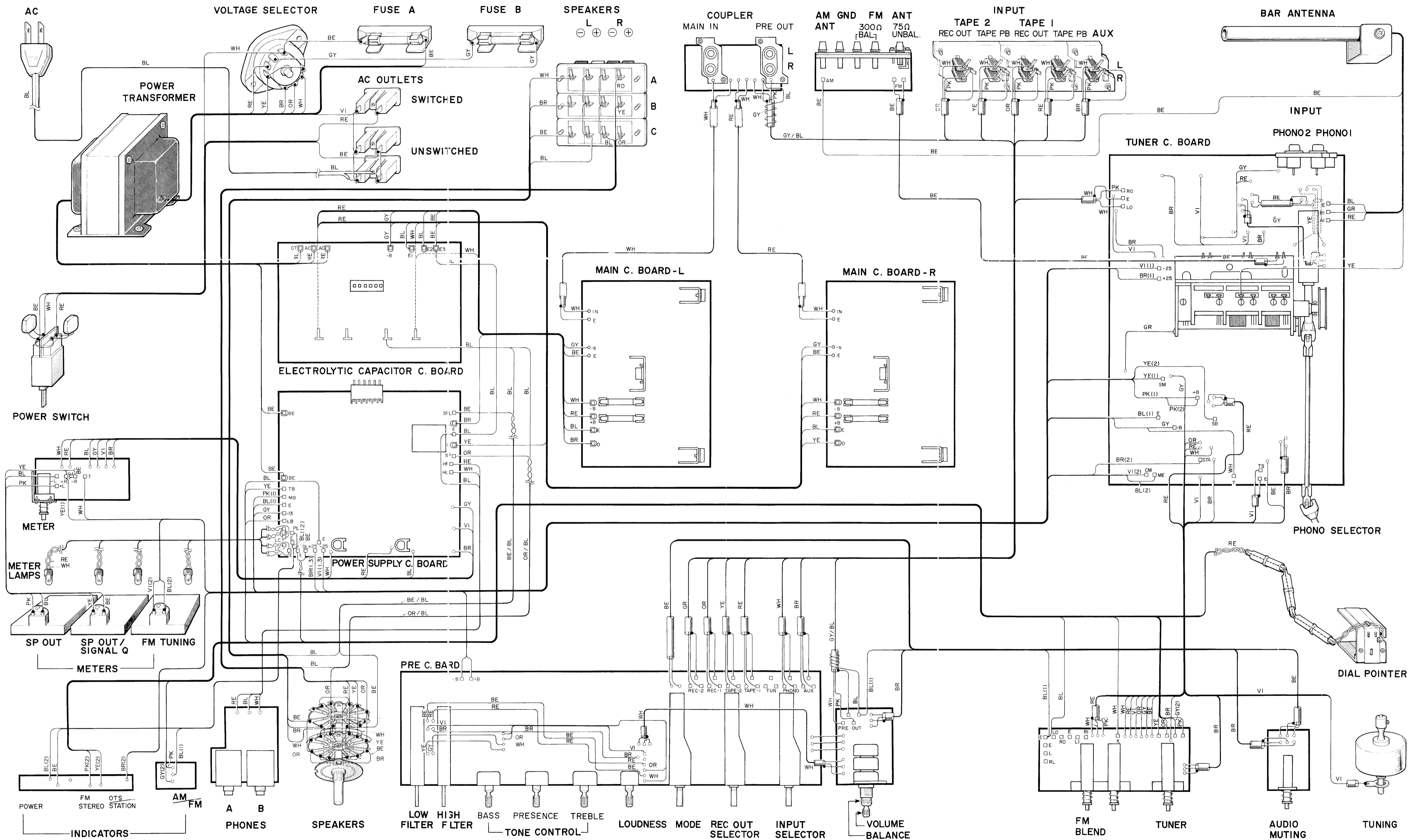
- : FUSE RESISTOR
- ▲ : METALIZED FILM RESISTOR
- △ : METALIZED OXIDATION RESISTOR
- : FIRE PROOF RESISTOR
- : METAL FILM RESISTOR
- : CEMENT MOLDED RESISTOR
- : CARBON RESISTOR

CAPACITORS

- ⊕ : UPF CAPACITOR
- ⊖ : SBL CAPACITOR
- ⊙ : MYLAR CAPACITOR
- ⊚ : POLYSTYRENE CAPACITOR
- ⊘ : CERAMIC CAPACITOR
- ⊚ : Z CAPACITOR
- ⊙ : MS CAPACITOR
- ⊚ : TANTALUM CAPACITOR
- ⊚ : RB CAPACITOR
- ⊚ : ELECTROLYTIC CAPACITOR

WIRE COLOR ABBREVIATIONS

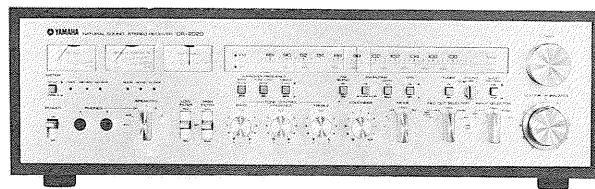
- BL : BLACK
- BR : BROWN
- RE : RED
- OR : ORANGE
- YE : YELLOW
- GR : GREEN
- BE : BLUE
- VI : VIOLET
- GY : GRAY
- WH : WHITE
- GG : LIGHT GREEN
- SB : LIGHT BLUE
- PK : PINK



PARTS LIST

CR-2020

FM/AM STEREO RECEIVER

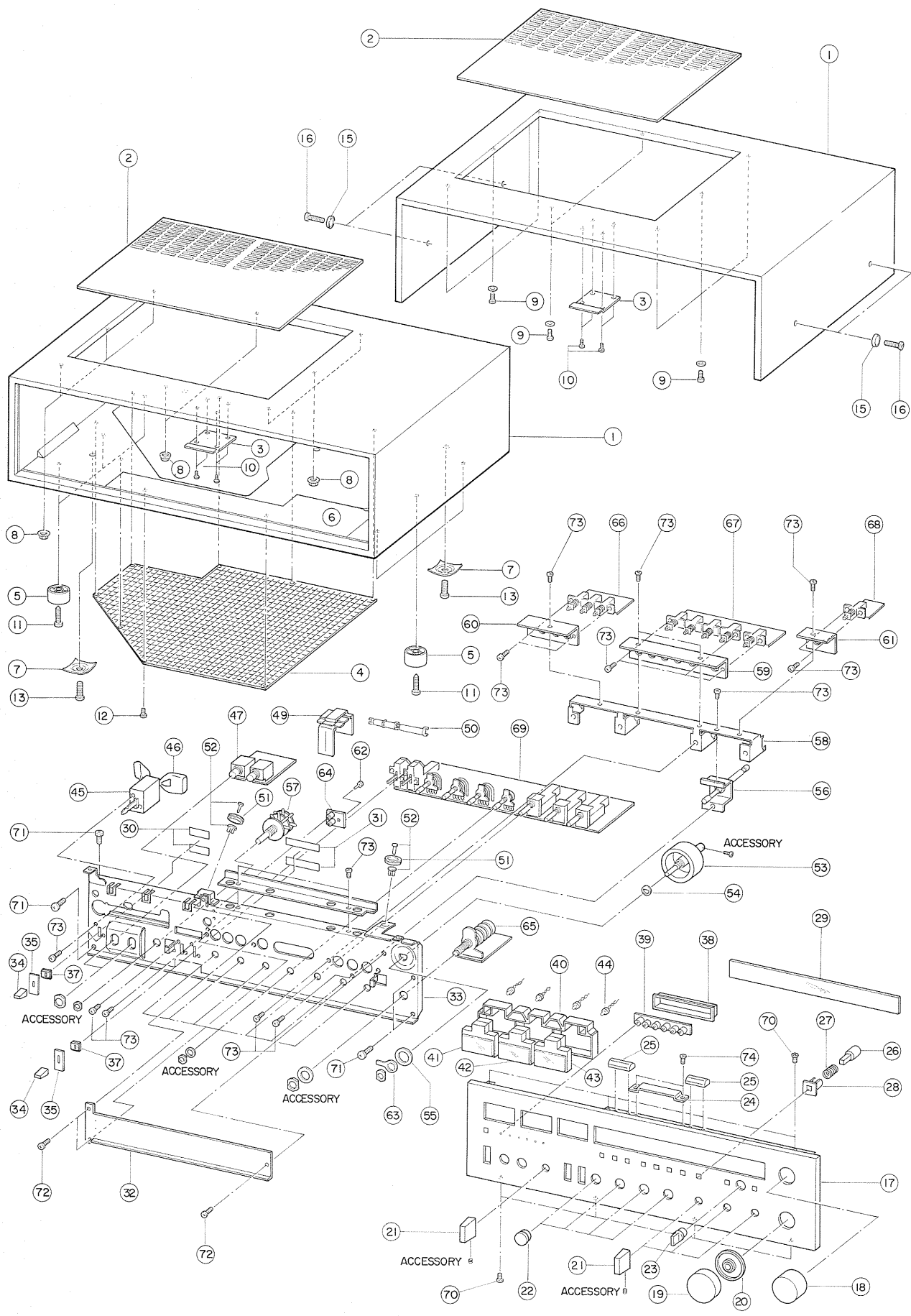


SINCE 1887



YAMAHA

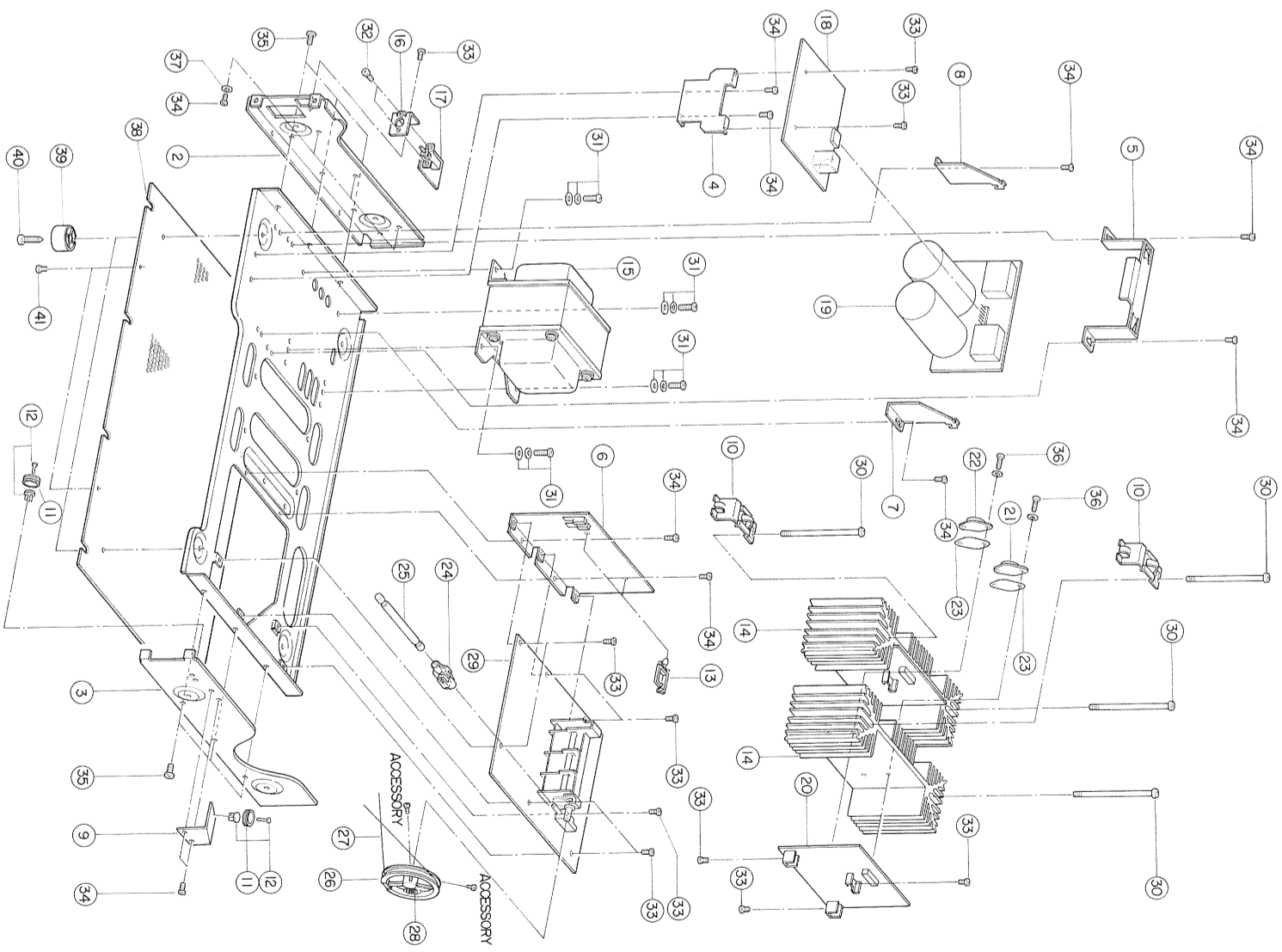
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN



Ref. No.	Part No.	Description	Remarks	Common Models
1	3 2 0 0 1 5 0 6 1 5 1 1 0	Cabinet	外装組み上り	RUCA
	3 2 0 0 1 5 0 6 1 5 2 1 0	-do-	//	EB
2	3 2 0 0 0 0 A A 0 8 5 3 1 0	Radiator Grille	放射グリル	RUCA
	3 2 0 0 0 0 C B 0 7 9 4 0 0	-do-	//	EB
3	3 2 0 0 0 0 A A 0 8 5 3 2 0	Metal, Warp Prevention	反り止め金具	RUCA
	3 2 0 0 0 0 A A 0 8 5 3 0 0	-do-	//	EB
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	RUCA
	4 2 0 0 0 0 C B 0 7 9 4 9 0	Leg	脚	CR-1020 620,820
5	4 2 0 0 0 0 C A 0 6 5 6 8 0	Shield Paper	バリヤ紙	RUCA
6	4 2 0 0 0 0 C A 0 6 5 6 8 0	Amp. Setting Washer	アンプ駆付 ワッシャー	RUCA
7	3 2 0 0 0 0 A A 0 7 4 6 3 0	Hexagonal Nut With Washer M3 ZMC2-Y	座付ナット	RUCA
8	4 2 0 0 0 0 E V 9 0 0 0 3 0	Binding Tapping Screw 3X10 ZMC2-Y	タッピンボルト	EB
9	4 2 0 0 0 0 E V 9 0 0 0 3 0	Binding Tapping Screw 3X10 ZMC2-Y	タッピンボルト	EB
10	4 2 0 0 0 0 E Q 7 3 1 0 0	Wooden Screw 41X20 ZMC2-Y	//	RUCA
11	4 2 0 0 0 0 E Q 7 4 1 2 0 0	Wooden Screw 31X10 ZMC2-Y	//	RUCA
12	4 2 0 0 0 0 E Z 0 3 1 0 0	Wooden Curnis Screw 5X25 ZMC2-Y	鉄丸座付ボルト	RUCA
13	4 2 0 0 0 0 E A 0 5 0 2 5 0	Pan Head Screw 5X14 ZMC2-Y	チホボルト	RUCA
14	4 2 0 0 0 0 E J 0 4 0 1 4 0	Pan Head Tapping Screw 4X14 ZMC2-Y	チホタッピンボルト	EB
15	3 2 0 0 0 0 C B 0 7 9 5 2 0	Hole Cap	ホールキャップ	EB
16	4 2 0 0 0 0 E D 4 5 0 1 4 0	Binding Head Screw 5X14 FCM3-BI	バインドボルト	EB
17	3 2 0 0 0 0 B A 0 6 9 6 5 0	Panel	パネル	RA,EB
	3 2 0 0 0 0 B A 0 6 9 6 4 0	-do-	//	UC
18	3 2 0 0 0 0 B A 0 6 9 6 8 0	Knob, Tuning	ダイヤル	CR-1020
19	3 2 0 0 0 0 B A 0 6 9 6 9 0	-do-, Volume Control	ボリューム	-do-
20	3 2 0 0 0 0 B A 0 6 9 7 0 0	Double Knob	ダブルダイヤル	-do-
21	3 2 0 0 0 0 B A 0 6 9 7 1 0	Knob, Switch	ダイヤル	-do-
22	3 2 0 0 0 0 B A 0 6 4 4 5 0	-do-, Tone Control	ダイヤル	CR-400,620, 820,1020
23	3 2 0 0 0 0 C B 0 7 9 2 7 0	-do-, Phono Selector	ダイヤル	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	スペーサー	-do-
26	3 2 0 0 0 0 C B 0 7 9 2 4 0	Button, Push Switch	押しボタン	-do-
27	3 2 0 0 0 0 A A 0 8 4 9 5 0	Spring, Push Switch	押しボタンスプリング	-do-
28	3 2 0 0 0 0 C B 0 7 9 2 5 0	Button Frame, Push Switch	押しボタン枠	-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 Aplon	フィルム	GA-1010 CR-1020
31	4 2 0 0 0 0 C B 0 7 9 1 0 0	-do-	//	GA-1010 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	レバードダイヤル	-do-
35	4 2 0 0 0 0 C B 0 7 9 5 0 0	Aplon, Lever Switch	SWエプロン	GA-1010 CR-1020
36	4 2 0 0 0 0 C B 0 7 9 5 1 0	-do-	//	-do-
37	3 2 0 0 0 0 C B 0 7 9 7 7 0	Bush, Lever Switch	SWワッシャー	CR-1010 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	プリシールドボード5	
A	4 2 0 0 0 0 F 0 0 0 6 8 0	LED	LED	
B	3 2 0 0 0 0 C B 0 7 9 3 0 0	Spacer For LED	LEDスペーサー	CR-1020 620,820
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	カラープレート	CR-1020 620,820
41	4 2 0 0 0 0 J 1 0 0 0 6 4 0	Level Meter 47B 1mA 650Ω	レベルメーター	
42	4 2 0 0 0 0 J 1 0 0 0 6 5 0	Signal Meter -do-	シグナルメーター	
43	4 2 0 0 0 0 J 1 0 0 0 6 7 0	Tuning Meter 47B 250μA 650Ω	チューニングメーター	
44	3 2 0 0 0 0 M Z 0 6 9 5 6 0	Lamp Assembly	ランプアッシー	

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	レバースイッチ	RUIC
	4 2 0 0 0 0 K A 2 0 0 6 8 0	-do-	//	E
	4 2 0 0 0 0 K A 2 0 0 6 9 0	-do-	//	BA
46	4 2 0 0 0 0 F Z 0 0 0 5 4 0	Spark Killer DG50V AC360V 0033μ+120Ω	スパークキラー	R
	4 2 0 0 0 0 F Z 0 0 0 1 1 0	-do-	//	U
	4 2 0 0 0 0 F Z 0 0 0 6 9 0	-do-	//	EB
	4 2 0 0 0 0 F Z 0 0 0 9 5 0	-do-	//	C
A	4 2 0 0 0 0 C B 0 7 2 1 9 0	Cover For Capacitor 820826	コンデンサー	RUBE
	4 2 0 0 0 0 C B 0 7 9 8 9 0	-do-	//	C
47	3 2 0 0 0 0 N A 0 6 9 0 5 1	Headphone Circuit Board 1	ヘッドホン	
A	4 2 0 0 0 0 L B 3 0 0 5 2 0	Phone Jack LJ190-1-2	フォンジャック	
B	4 2 0 0 0 0 H M 5 3 5 3 3 0	Cement Molded Resistor 3W330Ω	セメント抵抗	
48	3 2 0 0 0 0 A A 0 8 4 8 6 0	Dial Pointer Rail	ダイヤル 指針レール	
49	3 2 0 0 0 0 N B 0 7 8 7 0 0	Dial Pointer Unit	ダイヤル指針	
A	4 2 0 0 0 0 J B 0 0 0 5 1 0	Pilot Lamp UL 12V 60mA	パイロットランプ	
B	3 2 0 0 0 0 A A 0 7 3 6 7 0	Cover For Pointer	指針カバー	
C	3 2 0 0 0 0 C B 0 6 8 9 5 0	Pointer	ダイヤル指針	
D	3 2 0 0 0 0 C B 0 6 8 5 9 0	Holder, Dial Pointer	指針ホルダー	
E	3 2 0 0 0 0 C B 0 6 8 6 0 0	Colour Plate	指針カラー	
F	4 2 0 0 0 0 E D 0 2 0 0 5 0	Binding Head Screw 2X5 ZMC2-Y	バインドボルト	
50	3 2 0 0 0 0 C B 0 7 9 2 8 0	Lead Pipe	リードパイプ	CR-1020
51	3 2 0 0 0 0 C B 0 7 5 8 4 0	Wheel	滑車	CT-1010,CR-420, 820,1020
52	3 2 0 0 0 0 C B 0 7 7 8 9 0	Pulley Clip	プーリークリップ	-do-
53	3 2 0 0 0 0 N B 0 7 8 1 4 0	Tuning Unit	チューニング ユニット	CR-820, 1020
54	3 2 0 0 0 0 C B 0 7 7 8 8 0	Isolation Bush	絶縁ワッシャー	CT-1010 CR-820,1020
55	4 2 0 0 0 0 C A 0 6 5 1 5 0	Isolation Fiber	絶縁ファイバー	-do-
56	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
57	4 2 0 0 0 0 K A 5 0 1 0 2 0	Rotary Switch V-246W	ロータリースイッチ	
58	3 2 0 0 0 0 A A 0 8 4 7 5 0	Switch Stay	SWステイ	CR-1020
59	3 2 0 0 0 0 A A 0 8 4 8 2 0	Holder G, Push Switch	SWホルダーG	
60	3 2 0 0 0 0 A A 0 8 4 9 1 0	Holder L, -do-	// L	
61	3 2 0 0 0 0 A A 0 8 4 9 2 0	Holder R, -do-	// R	
62	4 2 0 0 0 0 C B 0 6 8 8 8 0	Plastic Rivet φ3.5	プラスチック ワッシャー	
63	4 2 0 0 0 0 L A 0 0 1 1 7 0	Lug Terminal φ9.5	ターミナル	
64	3 2 0 0 0 0 N A 0 6 9 0 5 2	Headphone Circuit Board 2	ヘッドホン ボード2	
A	4 2 0 0 0 0 F 0 0 0 6 8 0	LED	LED	
B	3 2 0 0 0 0 C B 0 7 9 3 0 0	Spacer For LED	LEDスペーサー	
65	3 2 0 0 0 0 N A 0 6 8 9 6 2	Pre Circuit Board 2	プリシールドボード2	
A	4 2 0 0 0 0 H S 4 2 0 1 7 0	Variable Resistor 50K X2+500X2+50K	可変抵抗器	
66	3 2 0 0 0 0 N A 0 6 8 9 6 4	Pre Circuit Board 4	プリシールドボード4	
A	4 2 0 0 0 0 K A 8 0 0 3 1 0	Push Switch 3X6X3	押しボタン	
B	4 2 0 0 0 0 L A 0 0 1 2 8 0	Lapping Pin	ラッピングピン	
C	4 2 0 0 0 0 F A 1 1 4 2 7 0	Mylar Capacitor 0027μ	マイラークонден	
	4 2 0 0 0 0 F A 1 1 5 3 3 0	-do-	//	
67	3 2 0 0 0 0 N A 0 6 9 2 6 2	Tuner Circuit Board 2	チューニングボード2	R
	3 2 0 0 0 0 N A 0 6 8 9 2 2	-do-	//	UC
	3 2 0 0 0 0 N A 0 6 8 9 3 2	-do-	//	AE,B
A	4 2 0 0 0 0 K A 8 0 0 3 2 0	Push Switch 4X4X3	押しボタン	RA,EB
	4 2 0 0 0 0 K A 8 0 0 3 3 0	-do-	//	UC
	4 2 0 0 0 0 K A 8 0 0 2 7 0	-do-	//	
B	4 2 0 0 0 0 L A 0 0 1 2 8 0	Lapping Pin	ラッピングピン	

Ref. No.	Part No.	Description	Remarks	Common Models
C	4 2 0 0 0 0 F S I 1 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	ブリシート3	
A	4 2 0 0 0 0 K A 8 0 0 2 7 0	Push Switch 1X4X3	ブリッシュスイッチ	
B	4 2 0 0 0 0 L A 0 0 1 2 8 0	Lapping Pin	ブリッシュ端子	
69	3 2 0 0 0 0 N A 0 6 8 9 6 1	Pre Circuit Board 1	ブリシート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 K A 5 0 0 9 8 0	-do- SRZ-V046 NS	//	
	4 2 0 0 0 0 K A 2 0 0 6 7 0	Lever Switch 4X3	レバースイッチ	
B	4 2 0 0 0 0 H S 4 1 0 5 6 0	Variable Resistor B10K X2	可変抵抗器	
	4 2 0 0 0 0 H S 4 1 0 5 4 0	-do- CT50K X2	//	
C	4 2 0 0 0 0 G D 9 0 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	Electrolytic Cap. MS 47 μ 63V	MSケミコン	
	4 2 0 0 0 0 F A I 1 3 1 8 0	Mylar Cap. 50VMS 0.0018 μ	マイラコン	
	4 2 0 0 0 0 F A I 1 3 3 3 0	-do- 0.0033 μ	//	
	4 2 0 0 0 0 F A I 1 3 8 2 0	-do- 0.0082 μ	//	
	4 2 0 0 0 0 F A I 1 4 1 0 0	-do- 0.01 μ	//	
	4 2 0 0 0 0 F A I 1 4 1 2 0	-do- 0.012 μ	//	
	4 2 0 0 0 0 F A I 1 4 3 3 0	-do- 0.033 μ	//	
	4 2 0 0 0 0 F A I 1 4 8 2 0	-do- 0.082 μ	//	
	4 2 0 0 0 0 F A I 1 5 1 5 0	-do- 0.15 μ	//	
	4 2 0 0 0 0 F A I 1 5 3 9 0	-do- 0.39 μ	//	
	4 2 0 0 0 0 F A I 1 5 3 3 0	-do- 0.33 μ	//	
	4 2 0 0 0 0 F Z 0 0 1 0 0 0	Metallized Polyester Film Cap. 0.88 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	ブリモジュール	CR-1020
a	4 2 0 0 0 0 F A I 1 3 8 2 0	Mylar Capacitor 0.0082 μ 50V	マイラコン	
	4 2 0 0 0 0 F A I 1 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	
b	4 2 0 0 0 0 I A 0 6 7 3 1 0	Transistor 2SA673A CD	トランジスター	
	4 2 0 0 0 0 I A 0 8 4 4 1 0	-do- 2SA844 DE	//	
	4 2 0 0 0 0 I C 1 2 1 3 1 0	-do- 2SC1213A CD	//	
	4 2 0 0 0 0 I C 1 7 7 5 1 0	-do- 2SC1775 DE	//	
	4 2 0 0 0 0 I C 1 7 7 5 1 0	-do- 2SC1775 NP E,F	//	2SC1213A
	4 2 0 0 0 0 I C 1 5 0 9 3 0	-do- 2SC1509 QR	//	2SD438
	4 2 0 0 0 0 I A 0 7 7 7 3 0	-do- 2SA777 QR	//	2SB560
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	
70	4 2 0 0 0 0 E I 0 3 0 0 8 0	Binding Tapping Screw 3X8 ZMC2-Y	ブリッピンネジ	
71	4 2 0 0 0 0 E I 0 4 0 0 8 0	-do- 4X8 ZMC2-Y	//	
72	4 2 0 0 0 0 E I 2 3 0 0 6 0	-do- 3X6 F.C.M3-3g	//	
73	4 2 0 0 0 0 E D 0 3 0 0 6 0	Binding Head Screw 3X6 ZMC2-Y	ブリヘッドネジ	
74	4 2 0 0 0 0 E I 0 3 0 0 6 0	Binding Tapping Screw 3X6 ZMC2-Y	ブリッピンネジ	

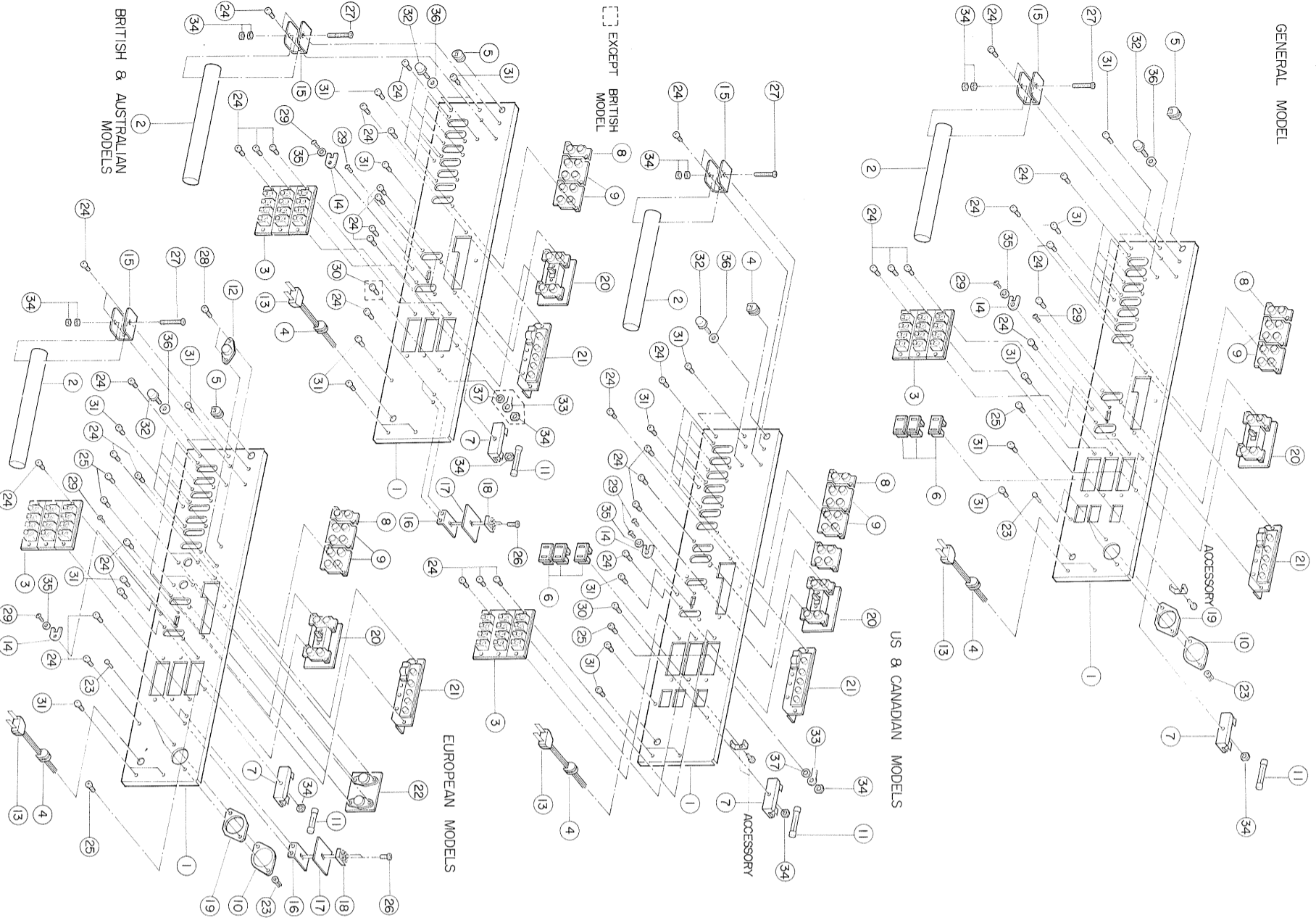


Ref. No.	Part No.	Description	Remarks	Common Models
1	3 2 0 0 0 0	AA084710 Main-Chassis	メインシャーシ	CR-1020
2	3 2 0 0 0 0	AA084730 Side Frame, L	サイドフレームL	-do-
3	3 2 0 0 0 0	AA084740 Side Frame, R	サイドフレームR	-do-
4	3 2 0 0 0 0	AA084830 Holder, Power Supply C, Board 1	電源シート1	-do-
5	3 2 0 0 0 0	AA084840 Holder, Electrolytic Cap.	ケミコンホルダー	-do-
6	3 2 0 0 0 0	AA084850 Adiabatic Board	断熱板	CR-1020
7	3 2 0 0 0 0	AA084880 Holder R, Electrolytic Cap. C, Board	シートホルダーR	-do-
8	3 2 0 0 0 0	AA084890 Holder L, Electrolytic Cap. C, Board	シートホルダーL	-do-
9	3 2 0 0 0 0	AA084930 Holder For Pulley	滑車ホルダー	-do-
10	3 2 0 0 0 0	AA084870 Plate For Cord	コード押え	-do-
11	3 2 0 0 0 0	CB075840 Pulley	滑車	CR-630820 1020CT:1010
12	3 2 0 0 0 0	CB077890 Pulley Clip	プーリークリップ	-do-
13	3 2 0 0 0 0	CB079420 Wire Supporter	ワイヤークリップ	CR-1020
14	3 2 0 0 0 0	BA065750 Heat Sink	放熱板	CR-1020 CA-106011
15	4 2 0 0 0 0	GA610820 Power Transformer	電源トランス	RE
	4 2 0 0 0 0	GA610840 -do-	//	C
	4 2 0 0 0 0	GA610810 -do-	//	U
	4 2 0 0 0 0	GA610880 -do-	//	AB
16	3 2 0 0 0 0	AA084900 Switch Stay	SW取付金具	CR-1020
17	3 2 0 0 0 0	NA068992 Power Supply Circuit Board 2	電源シート2	RUCA
	3 2 0 0 0 0	NA069002 -do-	//	EB
	4 2 0 0 0 0	KA800260 Push Switch 1X2X3	プッシュSW	
	4 2 0 0 0 0	IC191800 Transistor 2SC1918	トランジスター	
18	3 2 0 0 0 0	NA068991 Power Supply Circuit Board 1	電源シート1	RUCA
	3 2 0 0 0 0	NA069001 -do-	//	EB
A	4 2 0 0 0 0	AA065910 Transistor 2SA659NP E,F	トランジスター	2SA673AD
	4 2 0 0 0 0	AA084410 -do-	//	
	4 2 0 0 0 0	BA054400 -do-	//	
	4 2 0 0 0 0	IC117510 -do-	//	2SC1213ACD
	4 2 0 0 0 0	IC189000 -do-	//	
	4 2 0 0 0 0	IC191800 -do-	//	
	4 2 0 0 0 0	DO40000 -do-	//	
	4 2 0 0 0 0	DO23400 -do-	//	
B	4 2 0 0 0 0	F000040 Diode 1S1555	ダイオード	
	4 2 0 0 0 0	F000240 -do-	//	
	4 2 0 0 0 0	H000470 -do-	//	
	4 2 0 0 0 0	F000640 Zener Diode HZ-7B	ツェナーダイオード	
	4 2 0 0 0 0	F000550 -do-	//	
C	4 2 0 0 0 0	FH234100 Ceramic Capacitor 0.01,500VYZ	セラコン	
	4 2 0 0 0 0	FJ259100 Electrolytic Cap. 1000,35V	ケミコン	
	4 2 0 0 0 0	FZ000450 -do- Z Type 47,16V	Zケミコン	
D	4 2 0 0 0 0	HT170060 Variable Resistor B 2K	半固定抵抗	
	4 2 0 0 0 0	HL314150 Metal Oxide Film Resistor 15Ω	酸化抵抗	
	4 2 0 0 0 0	HM535180 Cement Molded Resistor 3P 180Ω	セメント抵抗	
	4 2 0 0 0 0	HM055100 -do-	//	
E	4 2 0 0 0 0	KB001060 Fuse ST-4 1A250V	ヒューズ	RUCA
	4 2 0 0 0 0	KB000730 -do- ⑤ 1A250V	//	EB
F	4 2 0 0 0 0	KCB00350 Relay HC-2P 12V80mA	リレー	
G	4 2 0 0 0 0	LA000530 Eylet	ハトメ	
H	4 2 0 0 0 0	LB200900 Fuse Holder	ヒューズホルダー	RUCA
	4 2 0 0 0 0	LB201060 -do-	//	EB

Ref. No.	Part No.	Description	Remarks	Common Models
I	4 2 0 0 0 0	LB600280 Connector Socket	コネクタ	
J	4 2 0 0 0 0	LA001280 Wire Lapping Pin	ラッピング端子	
K	3 2 0 0 0 0	BA069730 Radiator	放熱板	
19	3 2 0 0 0 0	NA069030 Electrolytic Cap. C, Board	ケミコンシート	R,CA,EB
	3 2 0 0 0 0	NA069010 -do-	//	U
A	4 2 0 0 0 0	IH000250 Diode 1S1886	ダイオード	
	4 2 0 0 0 0	IH000430 -do- SS-7	//	
	4 2 0 0 0 0	IH000440 -do- SS-7R	//	
	4 2 0 0 0 0	IH000470 -do- ID4B1	//	
B	4 2 0 0 0 0	FH234100 Ceramic Capacitor 0.01,500V	セラコン	
	4 2 0 0 0 0	FJ269100 Electrolytic Cap. 1000,50V	ケミコン	
	4 2 0 0 0 0	FZ000800 -do- Lug Type 18000,71V	ケミコンラゲ型	
C	4 2 0 0 0 0	HL326470 Metal Oxide Film Resistor 2P4.7KΩ	酸化抵抗	
	4 2 0 0 0 0	HL424330 -do- 2P33Ω	//	
	4 2 0 0 0 0	HW104220 Fuse Resistor 150mA22Ω	ヒューズ抵抗	RA,ECB
	4 2 0 0 0 0	HW104100 -do-	//	U
	4 2 0 0 0 0	HW104100 -do- 220mA10Ω	//	RA,ECB
	4 2 0 0 0 0	HW204100 -do-	//	U
D	4 2 0 0 0 0	LA000530 Eylet With Wing	羽根付ハトメ	
	4 2 0 0 0 0	LB601760 6P Connector, C, Board Type	コネクタピン	
20	3 2 0 0 0 0	NA068880 Main Circuit Board	メインシート	RA
	3 2 0 0 0 0	NA068840 -do-	//	U
	3 2 0 0 0 0	NA068860 -do-	//	C
	3 2 0 0 0 0	NA068870 -do-	//	EB
A	4 2 0 0 0 0	AA056170 Transistor 2SA561 O-Y	トランジスター	
	4 2 0 0 0 0	AA084400 -do- 2SA844	//	
	4 2 0 0 0 0	AA087200 -do- 2SA872	//	
	4 2 0 0 0 0	CA045880 -do- 2SC458 B,C	//	
	4 2 0 0 0 0	CO73430 -do- 2SC734 O-Y	//	
	4 2 0 0 0 0	CI62800 -do- 2SC1628 O-Y	//	
	4 2 0 0 0 0	CI91800 -do- 2SC1918 E,F,G	//	
	4 2 0 0 0 0	BO53610 -do- 2SB536(2)	//	2SA814YH-2
	4 2 0 0 0 0	DO38110 -do- 2SD381(2)	//	
B	4 2 0 0 0 0	F000040 Diode 1S1555	ダイオード	
	4 2 0 0 0 0	F000570 Zener Diode HZ-6C	ツェナーダイオード	2SC1624YH-2
C	4 2 0 0 0 0	FC025100 Mylar Capacitor 0.1,100V	マイラーコン	
	4 2 0 0 0 0	FH234100 Ceramic Cap. 0.01,500V	セラコン	
	4 2 0 0 0 0	FH610600 -do- 6P500V	//	
	4 2 0 0 0 0	FH611220 -do- 22P500V	//	
	4 2 0 0 0 0	FH611470 -do- 47P500V	//	
	4 2 0 0 0 0	FZ000980 Electrolytic Cap. RB 10,25V	RBケミコン	
D	4 2 0 0 0 0	HT410150 Variable Resistor B47K	ソリッドVR	
	4 2 0 0 0 0	HL416150 Metal Oxide Film Resistor 1P 1.5KΩ	酸化抵抗	
	4 2 0 0 0 0	HL626150 -do- 2P1.5KΩ	//	
	4 2 0 0 0 0	HL626270 -do- 2P2.7KΩ	//	
	4 2 0 0 0 0	HM052470 Cement Molded Resistor 5P0.47Ω	セメント抵抗	
	4 2 0 0 0 0	HM054100 -do- 5P10Ω	//	
	4 2 0 0 0 0	HM056220 Cement Molded Resistor 5P2.2KΩ	//	
	4 2 0 0 0 0	HZ000710 Fire Proof Resistor 1P4.7Ω	不燃性抵抗	
	4 2 0 0 0 0	HW114680 Fuse Resistor 100mA68Ω	ヒューズ抵抗	R,C,BAE
	4 2 0 0 0 0	HW214680 -do-	//	U

Ref. No.	Part No.	Description	Remarks	Common Models
E	4 2 0 0 0 0 G D 9 0 0 2 1 0	Coil 20μH	コイル	
F	4 2 0 0 0 0 K B 0 0 0 5 9 0	Fuse. ⑤ 5A250V	⑤ヒューズ	BE
G	4 2 0 0 0 0 K B 0 0 1 1 0 0	-do.- UL 5A250V	ULヒューズ	RJCA
H	3 2 0 0 0 0 B A 0 6 9 5 5 0	Radiator	放射板	CA-R1 CR-1020
I	4 2 0 0 0 0 B A 0 6 9 6 7 0	-do.-	//	CR-620 820 1020,450
J	4 2 0 0 0 0 L A 0 0 0 3 7 0	TR-Pusher	トランジスタ	
K	4 2 0 0 0 0 L A 0 0 0 5 3 0	Pipe-Lug Terminal	パイプラグ	
L	4 2 0 0 0 0 L A 0 0 0 6 4 0	Eyellet With Wing	羽根付ハトメ	
M	4 2 0 0 0 0 L A 0 0 0 6 4 0	Eyellet	ハトメ	
N	4 2 0 0 0 0 L B 2 0 1 0 6 0	Fuse Holder Pin	ホルダピン	RJCA
O	4 2 0 0 0 0 L B 3 0 0 1 1 0	-do.- YSH403P	//	BE
P	4 2 0 0 0 0 L B 3 0 0 2 7 0	Transistor Socket	トランジスタ	RBAE
Q	4 2 0 0 0 0 L B 3 0 0 2 7 0	-do.- SZ-110M-OL	//	UC
R	4 2 0 0 0 0 L B 3 0 0 2 7 0	Transistor 2SB554 R-0	トランジスタ	
S	4 2 0 0 0 0 L B 3 0 0 2 7 0	-do.- 2SD424 R-0	//	
T	4 2 0 0 0 0 L D 0 4 2 4 0 0	-do.-	//	
U	4 2 0 0 0 0 L L 0 0 0 2 3 0	Isolation Base, Mica	延長シヤフト	CR-1020
V	3 2 0 0 0 0 B A 0 6 9 7 2 0	Shaft	シャフト	CR-1020 820 620,450
W	3 2 0 0 0 0 C B 0 7 7 9 4 0	Joint	ジョイント	CR-620 820,1020
X	3 2 0 0 0 0 C B 0 7 9 2 6 0	V.C Pulley	バリコンプルー	
Y	4 2 0 0 0 0 C B 0 7 7 0 7 0	Dial String φ0.39×1.6m	ダイヤル糸	
Z	3 2 0 0 0 0 A A 0 8 0 5 3 0	Dial Spring	ダイヤル	CR-620,820 1020,450
AA	3 2 0 0 0 0 N A 0 6 9 2 6 1	Tuner Circuit Board 1	チューナーボード	R
AB	3 2 0 0 0 0 N A 0 6 8 9 2 1	-do.-	//	UC
AC	3 2 0 0 0 0 N A 0 6 8 9 3 1	-do.-	//	AEB
AD	4 2 0 0 0 0 P A 0 0 0 3 7 0	RF Pack FB623U	パック	CR-1020
AE	4 2 0 0 0 0 G E 1 0 0 1 5 0	OSC Coil	OSCコイル	
AF	4 2 0 0 0 0 G E 1 0 0 1 8 0	FM IFT	FM IFT	
AG	4 2 0 0 0 0 G E 1 0 0 2 0 0	FM Discriminator Coil	FMディスタリ	
AH	4 2 0 0 0 0 G E 2 0 0 0 7 0	MPX Coil	MPXコイル	
AI	4 2 0 0 0 0 G E 2 0 0 1 6 0	-do.- 22mH	MPX固定コイル	
AJ	4 2 0 0 0 0 G E 3 0 0 1 3 0	RF Inductor Coil	RFインダクター	
AK	4 2 0 0 0 0 G E 3 0 0 1 5 0	-do.- 82mH	//	
AL	4 2 0 0 0 0 G G 0 0 0 0 8 0	Ceramic Filter	セラミック	
AM	4 2 0 0 0 0 G G 0 0 0 1 7 0	-do.- CFM-107M-12C	//	
AN	4 2 0 0 0 0 F A 1 5 3 1 0 0	Mylar Capacitor (J) 0.001,50V	マイラコン	
AO	4 2 0 0 0 0 F A 1 5 4 1 5 0	-do.- (J) 0.015,50V	//	
AP	4 2 0 0 0 0 F A 1 5 4 2 2 0	-do.- (J) 0.022,50V	//	
AQ	4 2 0 0 0 0 F A 1 1 3 1 0 0	-do.- 0.001,50V	//	
AR	4 2 0 0 0 0 F A 1 1 3 4 7 0	-do.- 0.0047 50V	//	
AS	4 2 0 0 0 0 F D 1 5 2 8 2 0	Polystyrene Cap. (J) 820P	スチコン	
AT	4 2 0 0 0 0 F D 1 5 2 8 2 0	-do.- (J) 220P	//	
AU	4 2 0 0 0 0 F E 1 5 2 3 3 0	-do.- (J) 330P	//	
AV	4 2 0 0 0 0 F E 1 5 3 1 6 0	-do.- (J) 1600P	//	
AW	4 2 0 0 0 0 F E 1 5 4 1 0 0	-do.- (J) 10000P	//	
AX	4 2 0 0 0 0 F S 1 1 3 6 8 0	BL Ceramic Cap. 0.0068, 50V	SBLコン	
AY	4 2 0 0 0 0 F S 1 1 4 1 5 0	-do.- 0.015, 50V	//	
AZ	4 2 0 0 0 0 F S 1 3 4 4 7 0	-do.- 0.047, 50V	//	
BA	4 2 0 0 0 0 F Z 0 0 0 9 8 0	Electrolytic Cap. RB 10μ 25V	RBケミコン	
BB	4 2 0 0 0 0 F Z 0 0 0 7 2 0	UPF Cap. 0.015, 100V	UPFコン	
BC	4 2 0 0 0 0 F Z 0 0 0 7 3 0	-do.- 0.056, 100V	UPFコン	
BD	4 2 0 0 0 0 F J 5 4 6 2 2 0	Electrolytic Cap. KU 22μ 25V	ケミコン KU	

Ref. No.	Part No.	Description	Remarks	Common Models
42	4 2 0 0 0 0 F M 4 2 5 6 8 0	Electrolytic Cap. Z 0.68, 50V	Zケミコン	
43	4 2 0 0 0 0 F Z 0 0 0 7 1 0	Tantalum Capacitor 220μ/6.3V	タンタルコン	
44	4 2 0 0 0 0 F P 5 2 7 3 3 0	-do.- 33μ10V	//	
45	4 2 0 0 0 0 H T 1 7 0 0 2 0	Variable Resistor	半固定抵抗	
46	4 2 0 0 0 0 H T 1 7 0 0 3 0	-do.- B10K	//	
47	4 2 0 0 0 0 H T 1 7 0 0 4 0	-do.- B500	//	
48	4 2 0 0 0 0 H T 1 7 0 0 7 0	-do.- B3K	//	
49	4 2 0 0 0 0 H U 5 7 6 4 7 0	Metal Film Resistor (F) 4.7K	金属被膜抵抗	
50	4 2 0 0 0 0 H U 5 7 7 5 6 0	-do.- 56K	//	
51	4 2 0 0 0 0 H L 4 1 6 1 0 0	Metal Oxide Film Resistor 1P 1K	酸化抵抗	
52	4 2 0 0 0 0 A 0 6 7 3 1 0	Transistor 2SA673A C/D	トランジスタ	
53	4 2 0 0 0 0 A 0 8 4 4 0 0	-do.- 2SA844 D/E	//	
54	4 2 0 0 0 0 B 0 5 6 0 0 0	-do.- 2SB560	//	
55	4 2 0 0 0 0 C 1 2 1 3 1 0	-do.- 2SC1213A C/D	//	
56	4 2 0 0 0 0 C 1 7 7 5 0 0	-do.- 2SC1775 D/E	//	
57	4 2 0 0 0 0 C 1 9 1 8 0 0	-do.- 2SC1918 C/D/E	//	
58	4 2 0 0 0 0 D 0 4 3 8 0 0	-do.- 2SD438	//	
59	4 2 0 0 0 0 E 1 0 0 5 0 0 0	FET 2SK68A	FET	
60	4 2 0 0 0 0 F 0 0 0 0 4 0	Diode 1S1555	ダイオード	
61	4 2 0 0 0 0 F 0 0 0 6 4 0	Zener Diode HZ-7B	ツェナーダイオード	
62	4 2 0 0 0 0 G 0 0 0 3 9 0	IC μPC577H	IC	
63	4 2 0 0 0 0 G 0 0 1 2 2 0	-do.- TA7136P	//	
64	4 2 0 0 0 0 G 0 0 1 2 3 0	-do.- LA3350	//	
65	4 2 0 0 0 0 G 0 0 1 6 4 0	-do.- #164	//	
66	4 2 0 0 0 0 K A 5 0 1 0 0 0	Rotary Switch SRZ-V043	ロータリースイッチ	
67	4 2 0 0 0 0 L B 4 0 0 3 1 0	4P Pin-Jack	ピンジャック	
68	4 2 0 0 0 0 L A 0 0 1 2 4 0	Eyellet 3X16X3	ハトメ	
69	4 2 0 0 0 0 L A 0 0 1 2 8 0	Wire Lapping Pin	ラッピング端子	
70	4 2 0 0 0 0 E A 4 5 0 9 6 0	Pan Head Screw 5X96 FCM3-B1	ナットネジ	
71	4 2 0 0 0 0 E H 0 4 0 1 0 0	Pan Head Sems Type Screw 4X10ZM2C2-Y	セムスナットネジ	
72	4 2 0 0 0 0 E D 0 3 0 0 6 0	Binding Head Screw 3X6 ZMC2-Y	バインディングネジ	
73	4 2 0 0 0 0 E I 0 3 0 0 8 0	Binding Tapping Screw 3X8 ZMC2-Y	バインディングネジ	
74	4 2 0 0 0 0 E I 0 3 0 0 6 0	-do.- 3X6 ZMC2-Y	//	
75	4 2 0 0 0 0 E I 0 4 0 0 8 0	-do.- 4X8 ZMC2-Y	//	
76	4 2 0 0 0 0 E Z 3 3 0 1 4 0	BW Head Screw 3X14 FNM3-3M	BWヘッドナット	
77	4 2 0 0 0 0 E V 2 0 0 0 3 0	Flat Washer 3S ZMC2-Y	平座金ミカキ丸	
78	3 2 0 0 0 0 A A 0 8 4 8 1 0	Bottom Cover	ボトムカバー	CR-1020
79	4 2 0 0 0 0 C B 0 7 9 4 9 0	Leg	脚	-do.-
80	4 2 0 0 0 0 E J 0 4 0 1 4 0	Pon Head Tapping Screw 4X14 ZMC2-Y	ナットバインディングネジ	E,B
81	4 2 0 0 0 0 E D 0 3 0 0 8 0	Binding Tapping Screw 3X8 ZMC2-Y	バインディングネジ	E,B



Ref. No.	Part No.	Description	Remarks	Common Models
1	3 2 0 0 0 0 0 A A 0 8 4 7 7 0	Rear Panel	リアパネル	
	3 2 0 0 0 0 0 A A 0 8 6 0 9 0	-do-	//	
	3 2 0 0 0 0 0 A A 0 8 4 7 8 0	-do-	//	
	3 2 0 0 0 0 0 A A 0 8 4 7 9 0	-do-	//	
	3 2 0 0 0 0 0 A A 0 8 4 8 0 0	-do-	//	
	3 2 0 0 0 0 0 A A 0 8 5 5 2 0	-do-	//	
2	4 2 0 0 0 0 0 G E 0 0 0 1 0 0	AM Bar Antenna	AMバーアンテナ	
3	4 2 0 0 0 0 0 L A 0 0 1 9 4 0	4P-Push Terminal	4P押し端子	
4	4 2 0 0 0 0 0 C B 0 6 8 6 3 0	Cord Stopper SR-3P-4	コードストッパー	
	4 2 0 0 0 0 0 C B 0 7 0 6 9 0	-do- EA-5	//	
5	3 2 0 0 0 0 0 C B 0 6 2 7 8 0	Rubber Spacer	ゴムワッシャー	
6	4 2 0 0 0 0 0 L B 2 0 0 7 1 0	AC Socket S-16428	ACコンセント	
7	4 2 0 0 0 0 0 L B 2 0 0 8 4 0	Fuse Holder 1PFH	ヒューズホルダー	
	4 2 0 0 0 0 0 L B 2 0 0 9 4 0	-do- 1PFH-M	//	
8	4 2 0 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 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 0 L B 2 0 0 2 6 0	Voltage Selector SW033-3023	電圧切換器	
11	4 2 0 0 0 0 0 K B 0 0 0 3 7 0	Fuse 3.5A250V	ヒューズ	
	4 2 0 0 0 0 0 K B 0 0 0 7 6 0	Fuse ⑤ 3.15A250V	⑤ヒューズ	
	4 2 0 0 0 0 0 K B 0 0 1 3 7 0	Fuse, UL 7A125V	ULヒューズ	
12	4 2 0 0 0 0 0 L B 2 0 0 1 5 0	75Ω Coaxial Cable Socket	75Ω同軸コネクタ	
13	4 2 0 0 0 0 0 M G 0 0 0 3 4 0	Power Cord	電源コード	
	4 2 0 0 0 0 0 M G 0 0 0 5 0 0	-do-	//	
	4 2 0 0 0 0 0 M G 0 0 0 4 6 0	Power Cord Assembly	//	
14	3 2 0 0 0 0 0 C B 0 6 8 6 8 0	Stopper, Coupler Switch	カフラーストップバー	
15	3 2 0 0 0 0 0 A A 0 7 6 9 7 0	Antenna Holder	アンテナホルダー	
16	3 2 0 0 0 0 0 A A 0 8 4 6 2 0	Stay, 3P-Terminal	端子スナヤ	
17	3 2 0 0 0 0 0 C B 0 7 4 9 7 0	Isolation Plate	絶縁板	
18	4 2 0 0 0 0 0 L A 0 0 1 0 4 0	Board, 3P-Terminal	3P中継端子台	
19	3 2 0 0 0 0 0 C B 0 7 6 5 6 0	Isolation Plate For V>Select.	VS絶縁板	
20	3 2 0 0 0 0 0 N A 0 6 9 0 6 2	Coupler Circuit Board 2	カフラーシート2	
	4 2 0 0 0 0 0 G E 3 0 0 0 7 0	Balloon Transformer	バルーントランス	
A	4 2 0 0 0 0 0 L A 0 0 1 9 5 0	Antenna Terminal	アンテナ端子	
B	4 2 0 0 0 0 0 L A 0 0 1 2 8 0	Wire Lapping Pin	ラッピング端子	
C	4 2 0 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 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 0 K A 4 0 0 2 1 0	Slide Switch	スライスイッチ	
B	4 2 0 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 0 L A 0 0 0 4 3 0	Eyelet	ハトメ	
22	3 2 0 0 0 0 0 N A 0 6 9 0 8 0	Din Circuit Board	Dinシート	
A	4 2 0 0 0 0 0 L B 5 0 0 1 9 0	Din Socket	Dinソケット	
B	4 2 0 0 0 0 0 L A 0 0 0 4 3 0	Eyelet	ハトメ	
23	4 2 0 0 0 0 0 C B 0 6 8 8 8 0	Plastic Rivet	プラスチックリベット	
24	4 2 0 0 0 0 0 E 1 4 3 0 0 8 0	Binding Tapping Screw 3X8 FCM3-B1	バインドタッピングネジ	
25	4 2 0 0 0 0 0 E D 4 3 0 0 8 0	Binding Head Screw 3X8 FCM3-B1	バインドヘッドネジ	
26	4 2 0 0 0 0 0 E D 0 3 0 1 6 0	-do- 3X16 ZMC2-Y	//	
27	4 2 0 0 0 0 0 E A 4 3 0 2 5 0	Pan Head Screw 3X25 FCM3-B1	パンヘッドネジ	
28	4 2 0 0 0 0 0 E J 4 2 6 0 8 0	Pan Head Tapping Screw 26X8 FCM3-B1	パンヘッドタッピングネジ	
29	4 2 0 0 0 0 0 E C 4 2 6 0 4 0	Oval Head Screw 26X4 FCM3-B1	オvalsヘッドネジ	
30	4 2 0 0 0 0 0 E I 0 3 0 0 8 0	Binding Tapping Screw(C-1) 3X8 FCM3-B1	バインドタッピングネジ	
31	4 2 0 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 0 L A 0 0 1 0 7 0	Earth Terminal	アース端子	

AUDIO SERVICE

Information

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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, 3/4 watt wire wound resistors.

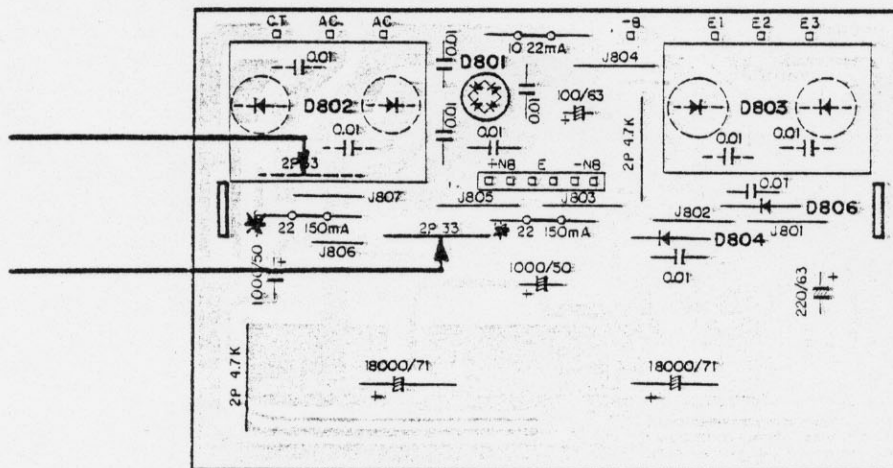
Mount the resistors approximately 1/4 inch away from the circuit board.

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 3/4 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

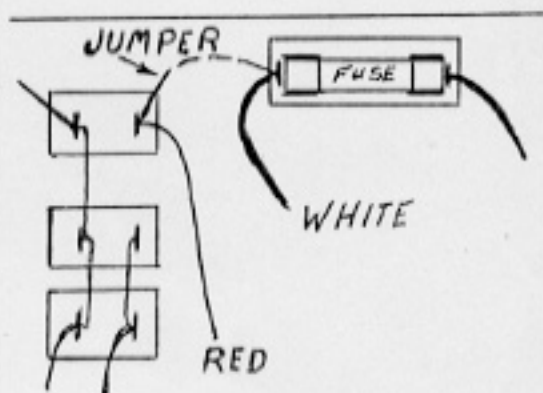
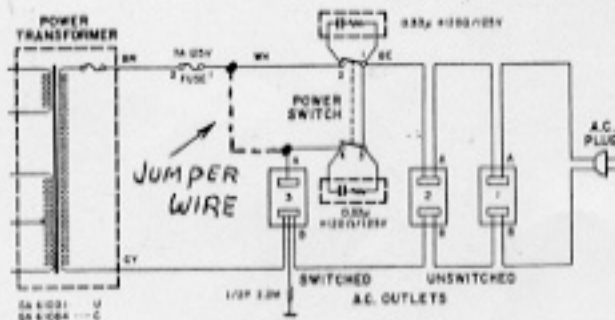
DATE: November 10, 1980.

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.

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
3/4 watt ohmite resistors #4374.

Remove FR801 and FR802 fuse resistors and replace with
22 ohm 3/4 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".