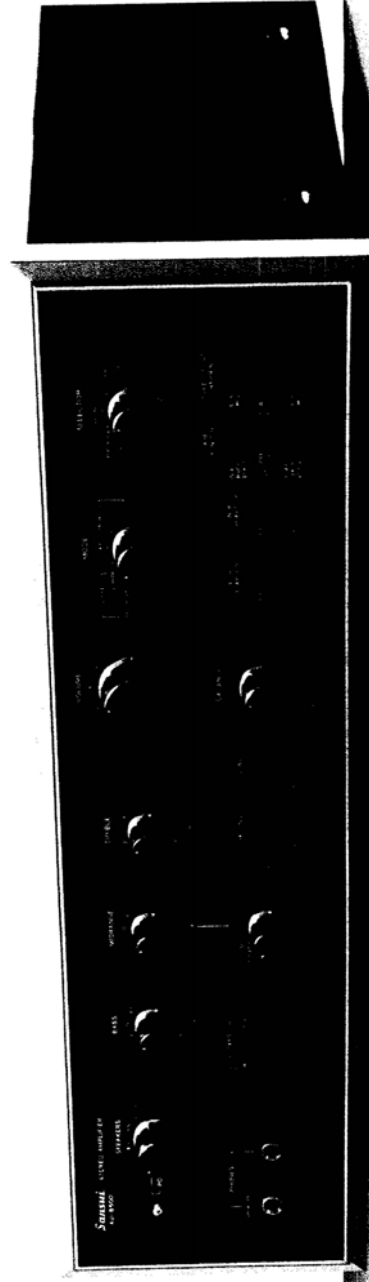


SERVICE MANUAL

STEREO AMPLIFIER

SANSUI AU-8500



Sansui

SANSUI ELECTRIC CO., LTD.

This service manual is designed for service engineers to repair, adjust, maintain and order the replacement parts of the AU-8500 correctly.

When ordering the parts, use the stock number and parts name specifically referring to the Parts Locations & Parts List.

For general usage and maintenance of the unit, please refer to the Operating Instructions attached with the unit.

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1. SPECIFICATIONS

POWER OUTPUT (at rated distortion)

MUSIC POWER (IHF) . . . 240W (4 Ω 1,000Hz)

180W (8 Ω 1,000Hz)

CONTINUOUS POWER (each channel driven)

. 110/110W (4 Ω 1,000Hz)

70/ 70W (8 Ω 1,000Hz)

CONTINUOUS POWER (both channel driven)

. 90 + 90W (4 Ω 1,000Hz)

64 + 64W (8 Ω 1,000Hz)

60 + 60W (8 Ω 20 to 20,000Hz)

TOTAL HARMONIC DISTORTION (at rated output)

OVERALL (from AUX) . . less than 0.1%

PRE AMPLIFIER ONLY . . less than 0.05%

POWER (MAIN) AMPLIFIER ONLY . . less than 0.1%

INTERMODULATION DISTORTION (at rated output

70Hz : 7,000Hz = 4 : 1 SMPTE method)

OVERALL (from AUX) . . less than 0.1%

PRE AMPLIFIER ONLY . . less than 0.05%

POWER (MAIN) AMPLIFIER ONLY . . less than 0.1%

POWER BANDWIDTH (IHF, each channel driven at

rated distortion) 5 to 40,000Hz

FREQUENCY RESPONSE (power output at 1W)

OVERALL (from AUX) . . 15 to 30,000Hz ± 0.2 dB

POWER (MAIN) AMPLIFIER ONLY

. 3 to 50,000Hz ± 0.2 dB

RIAA CURVE DEVIATION

PHONO-1, 2 30 to 15,000Hz ± 0.5 dB

LOAD IMPEDANCE 4 to 16 Ω

DAMPING FACTOR 50 (8 Ω)

INPUT SENSITIVITY AND IMPEDANCE (at 1,000Hz)

PHONO-1 2.5mV 50k Ω

PHONO-2 2.5mV 30k Ω , 50k Ω , 100k Ω

(adjustable)

Max. input capability . . 300mV (THD : less than 0.5%)

MIC 2.5mV 50k Ω

TUNER 100mV 50k Ω

AUX 100mV 50k Ω (input level

adjustable)

TAPE DECK-1, 2 (PIN) . . 100mV 50k Ω (input level

adjustable)

TAPE DECK-2 (DIN) . . . 100mV 50k Ω

4-CH. ADAPTOR 100mV 50k Ω

N.R. ADAPTOR 100mV 50k Ω

POWER (MAIN) INPUT . . 800mV 50k Ω

OUTPUT LEVEL AND IMPEDANCE (at 1,000Hz)

TAPE DECK-1, 2 (PIN) . . . 100mV 1.5k Ω

TAPE DECK-2 (DIN) . . . 30mV 70k Ω

4-CH. ADAPTOR 100mV 1.5k Ω

N.R. ADAPTOR 100mV 1.5k Ω

PRE OUTPUT 800mV 1.5k Ω

Max. output level 5V (THD less than 0.5%)

CROSSTALK (rated output at 1,000Hz)

PHONO-1, 2 better than 50dB

MIC better than 50dB

TUNER better than 50dB

AUX better than 50dB

MAIN INPUT better than 60dB

HUM AND NOISE (IHF)

PHONO-1, 2 better than 75dB

MIC better than 65dB

TUNER better than 85dB

AUX better than 85dB

MAIN INPUT better than 100dB

CONTROLS

BASS ± 15 dB at 20Hz

MIDRANGE ± 5 dB at 1,500Hz

Midrange tone selector

TREBLE DEFEAT 750Hz, 1.5kHz, 3kHz

LOUDNESS (volume control : -30 dB)

. ± 15 dB at 20,000Hz

. ± 10 dB at 50Hz

+ 8dB at 10,000Hz

LOW FILTER -3 dB at 50Hz (12dB/oct.)

HIGH FILTER -3 dB at 12,000Hz (12dB/oct.)

OTHERS

SEMICONDUCTORS

TRANSISTORS 58

FETs 2

DIODES 33

ZENER DIODES 5

POWER REQUIREMENTS

VOLTAGE 100, 110, 117, 127, 220, 230

240, 250V 50/60Hz

CONSUMPTION 140W (rated), 450VA (max.)

DIMENSIONS 140mm (5 $\frac{5}{16}$ ") H,

500mm (19 $\frac{1}{16}$ ") W,

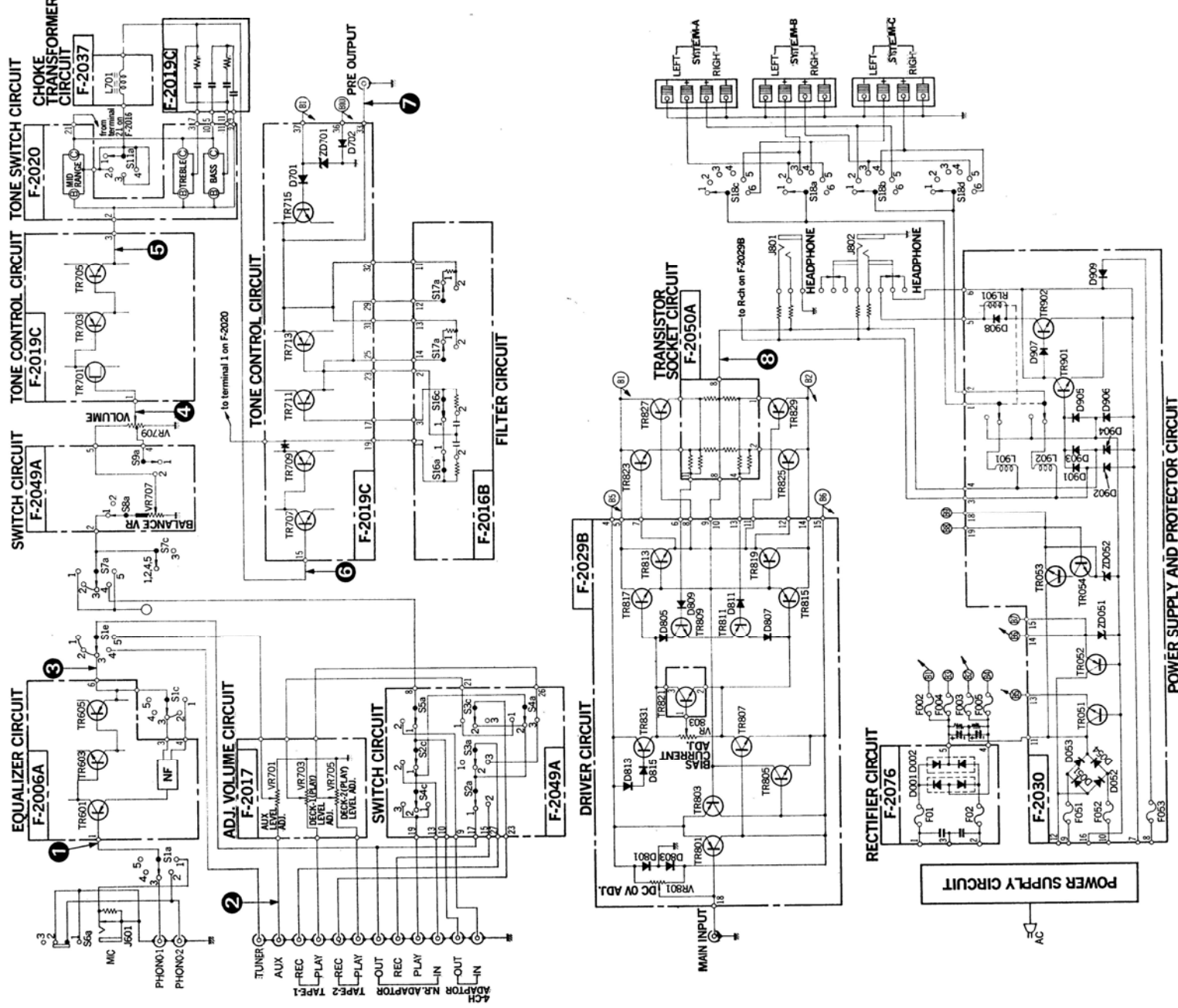
347mm (13 $\frac{3}{16}$ ") D

WEIGHT 20.5 kg (45.2 lbs)

* Design and sepefications subject to change without notice for improvements.

2. BLOCK DIAGRAM AND LEVEL DIAGRAM

2-1. Block Diagram

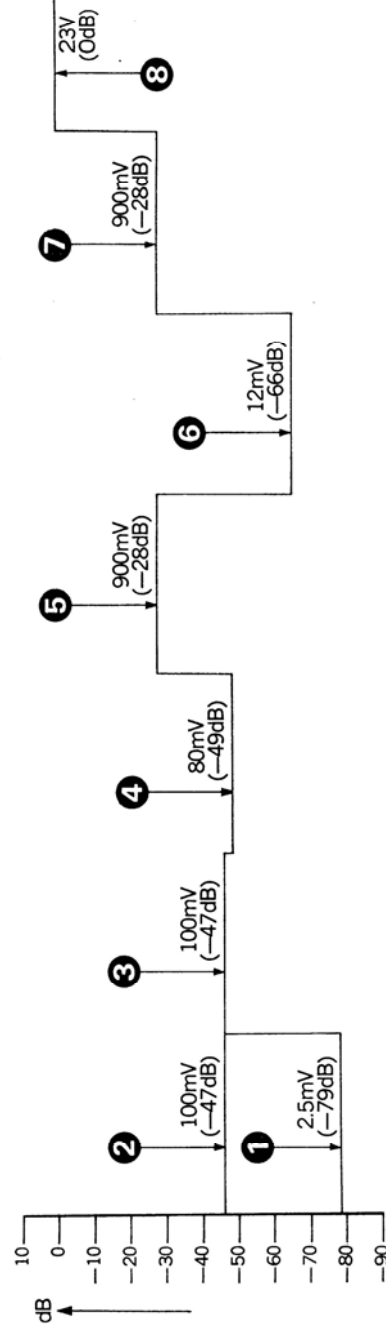


2-2. Level Diagram

*Each number (①, ②, ③...) indicated in Level Diagram undermentioned corresponds to the number in Block Diagram.

1. MASTER VOLUME controlMaximum
2. BASS, MIDRANGE, TREBLE, BALANCE
volume controlCenter
3. Input.....PHONO-1 2.5mV 1kHz Sine Wave
AUX-1 100mV 1kHz Sine Wave
(output impedance of 600Ω at an audio oscillator)
4. Output23V (66W) 8Ω

Note: Each voltage value is for reference and measured by a VTVM. In some recorders, the actual voltage value is in minor difference from the reference value.



S1-a~f SELECTOR	S7-a~c MODE	S12-a, b TREBLE CONTROL
1. MIC	1. STEREO REVERSE	1~5. CUT
2. PHONO-2	2. STEREO NORMAL	6. FLAT
3. PHONO-1	3. MONO L+R	7~11. BOOST
4. TUNER	4. MONO L	
5. AUX	5. MONO R	S14-a, b BASS CONTROL
		1~5. CUT
S2-a~d N.R. ADAPTOR	S8-a, b MUTING	6. FLAT
1. OUT	1. NORMAL	7~11. BOOST
2. IN	2. 20dB	
S3-a~d TAPE TO TAPE REPRINT	S9-a, b LOUDNESS	S16-a~d LOW FILTER
1. DECK-1▶2	1. OUT	1. OUT
2. SOURCE RECORD	2. IN	2. IN
3. DECK-2▶1		S17-a~d HIGH FILTER
S4-a~d TAPE MONITOR	S10-a, b MIDRANGE CONTROL	1. OUT
1. PLAYBACK DECK-1	1~5. CUT	2. IN
2. SOURCE	6. FLAT	
3. PLAYBACK DECK-2	7~11. BOOST	S18-a~e POWER and SPEAKER
S5-a, b 4-CH. ADAPTOR	S11-a, b MIDRANGE SELECTOR	1. POWER OFF
1. OUT	1. DEFEAT	2. A
2. IN	2. 750Hz	3. B
	3. 15kHz	4. C
S6-a, b PHONO PICKUP LOAD	4. 3kHz	
1. 30kΩ		
2. 50kΩ		
3. 100kΩ		

3. ADJUSTMENTS

3-1. Driver Circuit Board Adjustment (See Figs. 3-1 and 3-2)

Note: 1. Master Volume.....Minimum

2. Make the SP terminal free (no load).

3. Confirm the AC Power Supply voltage.

4. For adjustment, run the unit for more than 3 minutes after the power is switched on.

5. After adjustment, run the unit for more than 5 minutes, then check and readjust necessary.

6. Room temperature should be 18~28°C (65~83°F) for bias current adjustment.

STEP	SUBJECT	EQUIPMENT	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1	DC 0V L-ch	DC volt meter	F-2029B terminal 9 (left side board)	F-2029B VR801 (left side board)	0V	○ Step down meter's range accordingly
2	DC 0V R-ch	Same as above	F-2029B terminal 9 (right side board)	F-2029B VR801 (right side board)	Same as above	Same as above
3	Bias current L-ch	DC milliammeter	F002 Fig. 3-1	F-2029B VR803 (left side board)	40mA	○ Step down meter's range accordingly
4	Bias current R-ch	Same as above	F004 Fig. 3-1	F-2029B VR803 (right side board)	Same as above	Same as above

Fig. 3-1

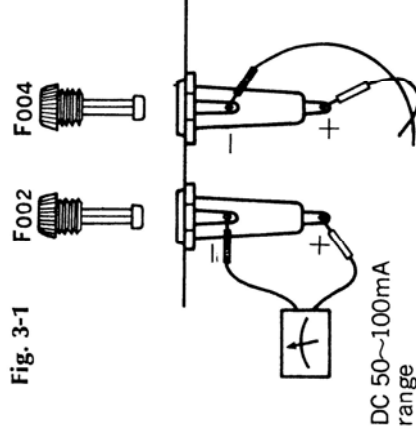
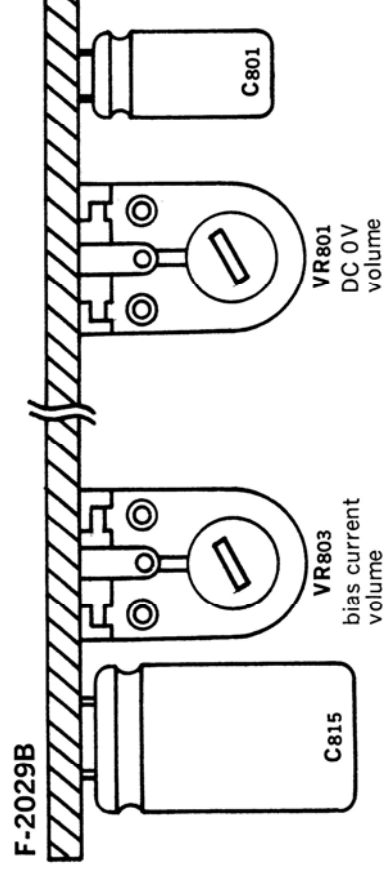


Fig. 3-2



4. TROUBLESHOOTING CHART

4-1. Troubleshooting on Power Supply Section

1. No power supplied to each section

Symptom	Check Point	Cause & What to Do
1-1. Indicator lamp for power not lighted		1. Imperfect contact of power supply cord 2. Imperfect contact of power switch S_{18a} 3. Power fuse F_{001} open 4. Quick Acting fuse F_{006} open 5. Indicator lamp for power PL_{001} open 6. Defective power transformer
1-2. Indicator lamp for power lighted		
—1) $\pm 43V$ not supplied to collector on each power transistor (TR_{823} , $TR_{827} + 43V$, TR_{825} , $TR_{829} - 43V$)		7. Defective D_{001} , D_{002} on F-2074
—2) $+61V$ not supplied to terminal 13 on F-2030		8. F_{002} , F_{004} (F_{003} , F_{005}) open
—3) $-60V$ not supplied to terminal 14 on F-2030		9. F_{051} , F_{052} on F-2030 open
—4) $+45V$ not supplied to terminal 19 on F-2030		10. Defective D_{053} , D_{054} on F-2030
		11. Defective TR_{051} on F-2030
		12. F_{051} , F_{052} on F-2030 open
		13. Defective D_{051} , D_{052} on F-2030
		14. Defective TR_{052} on F-2030
		15. F_{051} , F_{052} on F-2030 open
		16. Defective D_{053} , D_{054} on F-2030
		17. Defective TR_{053} on F-2030

4-2. Troubleshooting on Protector Section

1. Protector circuit inoperative

- (In case center voltage on power section is over 2.5V)
1. Defective $D_{901} \sim D_{906}$ on F-2030
 2. Defective TR_{901} on F-2030

4-3. Troubleshooting on Audio Section

1. No sound from both speakers

1. F_{503} on F-2030 open
2. Defective D_{909} on F-2030
3. Imperfect contact of headphonejack (J_{902})
4. Defective RL_{901} on F-2030
5. Defective TR_{902} on F-2030
6. Defective D_{907} on F-2030

2. Both channels inoperative

7. Defective power supply section (See 4-1.)
8. Defective protector circuit (See 4-2.)
9. Protector circuit operates by the defec-
tion of power amp. section (See 4. or 5.)

3. One channel inoperative

Symptom	Check Point	Cause & What to Do
3-1. Set MODE switch to L+R		
1) Both channels operative	10.	Tape deck or tuner connected into this set has faulty
2) One channel inoperative	11.	Defective F-2006A (PHONO position only)
2-1) Reverse L and Rch at PRE OUT, MAIN IN		
1) R and Lch sound reverses	12.	Defective F-2019C in Pre-amp.
2) No sound at all	13.	Defective Pre-amp. or F-2029A in Main-amp.

4. Quick Acting Fuses not open

- 1) $\pm 43V$ not supplied to collector on each power transistor (TR₈₂₃, TR₈₂₇ + 43V, TR₈₂₅, TR₈₂₉ - 43V) — 14. Defective power supply section (See 4-1.)

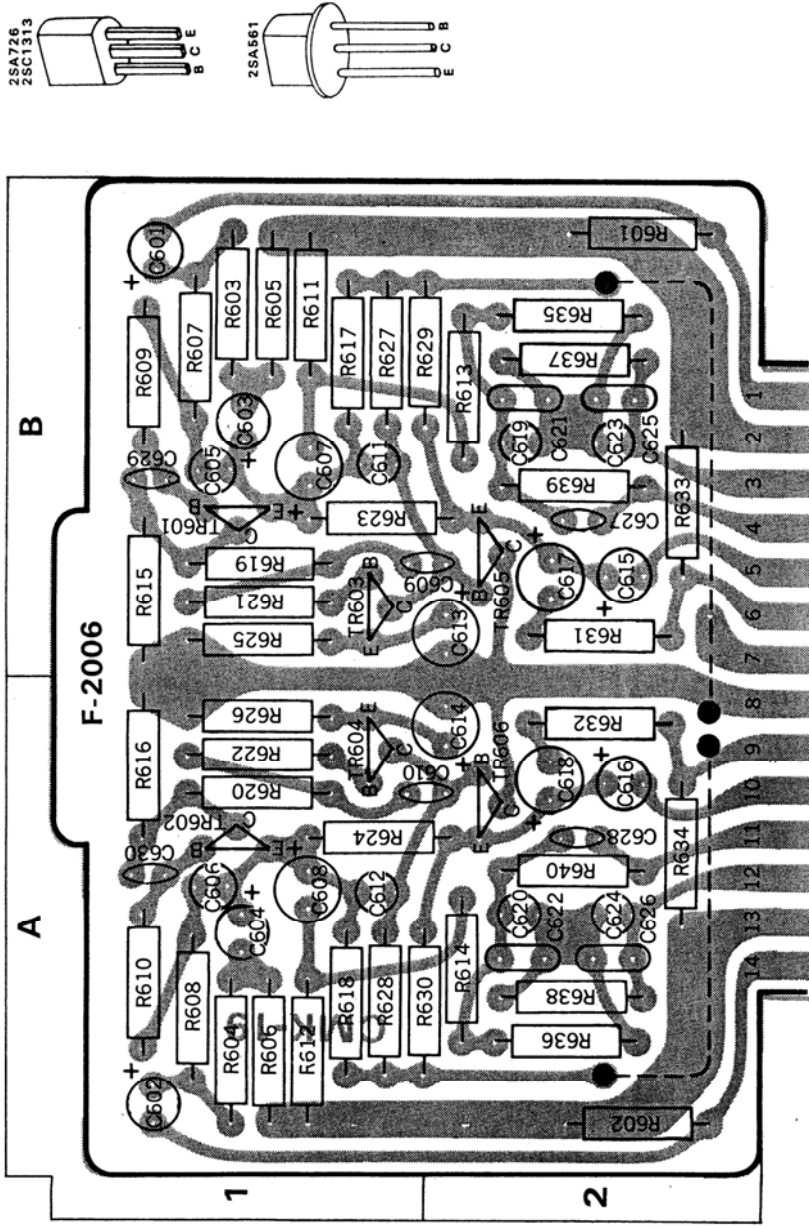
5. Quick Acting Fuses open

- 1) After replacement, fuse not open — 15. Set the bias current to 40mA
- 2) After replacement, fuse open again — 16. Defective TR₈₂₃, TR₈₂₇ on F-2050A
17. Defective TR₈₂₅, TR₈₂₉ on F-2050A
18. Defective TR₈₁₇, TR₈₁₉ on F-2029B
19. Defective TR₈₀₉, TR₈₁₅ on F-2029B
20. Defective TR₈₃₁ on F-2029B
21. Defective TR₈₀₁, TR₈₀₃ on F-2029B

5. PARTS LOCATIONS AND PARTS LIST

5-1. F-2006A Equalizer Circuit Board (Stock No. 7550490 Complete Circuit Board F-2006A)

Conductor Side



Parts List

Parts No.	Stock No.	Description	Position
TR601	0300410, 1	2SA726 (F, G)	1 B
TR602	0300410, 1	2SA726 (F, G)	1 A
TR603	0306070, 1	2SC1313 (F, G)	1 B
TR604	0306070, 1	2SC1313 (F, G)	1 A
TR605	0300101, 2	2SA561 (Y, GR)	2 B
TR606	0300101, 2	2SA561 (Y, GR)	2 A
C601	0510101	1 μ F	1 B
C602	0519101	50V	50V
C603	0511100	10 μ F	10V
C604	0511100	10 μ F	10V
C605	0660151	150pF	10V
C606	0660151	150pF	10V
C607	0510470	47 μ F	10V
C608	0510470	47 μ F	10V
C609	0660100	10pF	10V
C610	0660100	10pF	10V
C611	0620331	330pF	10V
C612	0620331	330pF	10V
C613	0510470	47 μ F	10V
C614	0510470	47 μ F	10V
C615	0515479	4.7 μ F	10V
C616	0515479	4.7 μ F	10V
C617	0519102	3.3 μ F	10V
C618	0519102	3.3 μ F	10V

Parts No.	Stock No.	Description	Position
C619	0600126	0.0012 μ F	2 B
C620	0600126	0.0012 μ F	2 A
C621	0600806	0.008 μ F	2 B
C622	0600806	0.008 μ F	2 A
C623	0620471	470pF	2 B
C624	0620471	470pF	2 A
C625	0600226	0.0022 μ F	2 B
C626	0600226	0.0022 μ F	2 A
C629	0660470	47pF	1 B
C630	0660470	47pF	1 A
R601	0107104	100k Ω	2 B
R602	0107104	100k Ω	2 A
R603	0107104	100k Ω	1 B
R604	0107104	100k Ω	1 A
R605	0107473	47k Ω	1 B
R606	0107473	47k Ω	1 A

Abbreviations		to be continued	
C.R.	: Carbon Resistor	BP.E.C.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	C.C.	: Ceramic Capacitor
Ce.R.	: Cement Resistor	Mi.C.	: Mica Capacitor
M.R.	: Metallized Film Resistor	O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

F-2006A Parts List

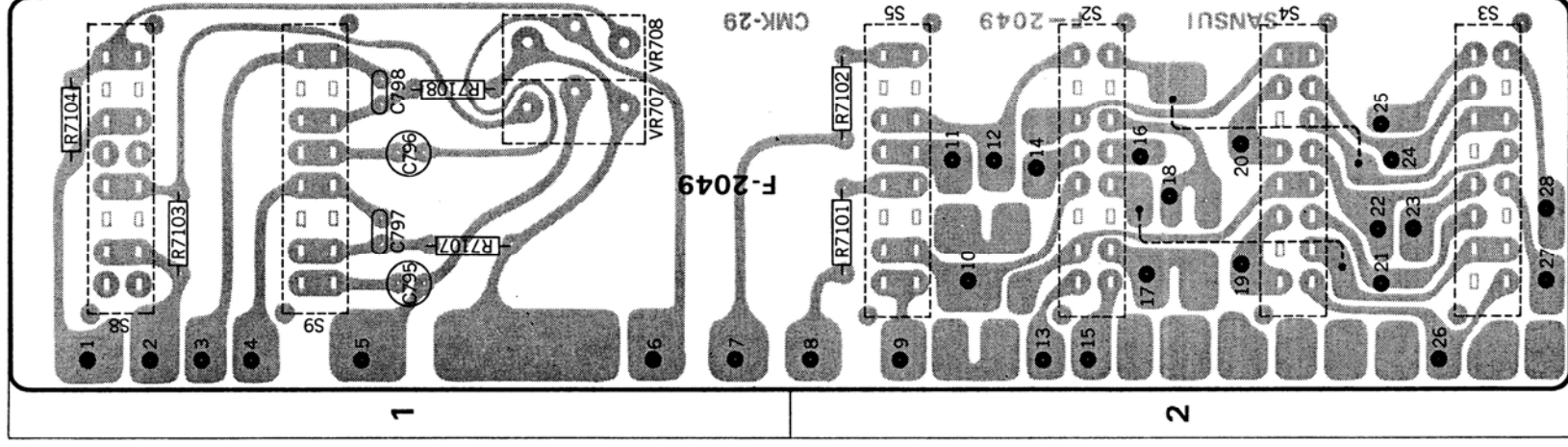
Parts No.	Stock No.	Description	Position
R607	0107222	2.2k Ω	1 B
R608	0107222	2.2k Ω	1 A
R609	0107221	220 Ω	1 B
R610	0107221	220 Ω	1 A
R611	0107821	820 Ω	1 B
R612	0107821	820 Ω	1 A
R613	0107331	330 Ω	2 B
R614	0107331	330 Ω	1, 2 A
R615	0107223	22k Ω	1 B
R616	0107223	22k Ω	1 A
R617	0107684	680k Ω	1 B
R618	0107684	680k Ω	1 A
R619	0107561	560 Ω	1 B
R620	0107561	560 Ω	1 A
R621	0107561	560 Ω	1 B
R622	0107561	560 Ω	1 A
R623	0107824	820k Ω	1, 2 B
R624	0107824	820k Ω	1, 2 A
R625	0107272	2.7k Ω	1 B
R626	0107272	2.7k Ω	1 A
R627	0107823	82k Ω	1 B
R628	0107823	82k Ω	1 A
R629	0107562	5.6k Ω	1, 2 B
R630	0107562	5.6k Ω	1, 2 A
R631	0107152	1.5k Ω	2 B
R632	0107152	1.5k Ω	2 A
R633	0107104	100k Ω	2 B
R634	0107104	100k Ω	2 A
R635	0107564	560k Ω	2 B
R636	0107564	560k Ω	2 A
R637	0107273	27k Ω	2 B
R638	0107273	27k Ω	2 A
R639	0107333	33k Ω	2 B
R640	0107333	33k Ω	2 A

$\pm 5\%$ $\frac{1}{4}W$ C.R.

5-2. F-2049A Switch Circuit Board

(Stock No. 7591810 Complete Circuit Board F-2049A)

Conductor Side



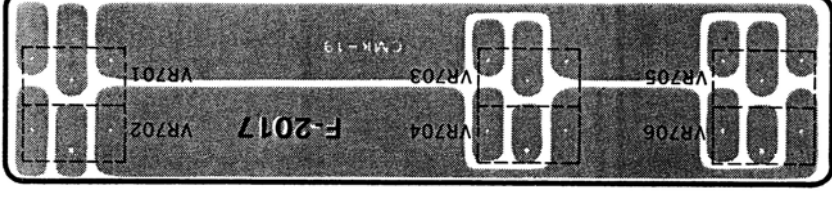
Parts List

Parts No.	Stock No.	Description	Position
C795	0620431	430pF	1
C796	0620431	± 5% 50V P.C.	1
C797	0600247	430pF	1
C798	0600247	± 5% 50V M.C.	1
		0.024μF	1
		0.024μF	1
R7101	0107123	12kΩ	2
R7102	0107123	12kΩ	2
R7103	0107824	820kΩ	1
R7104	0107824	± 5% 1/4W C.R.	1
R7107	0107223	820kΩ	1
R7108	0107223	22kΩ	1
		22kΩ	1
VR707, 708	1010870, 1	250kΩ (MIN) × 2 BALANCE	1
S2	1170300	Lever Switch, noise reduction adaptor	2
S3	1170290	Lever Switch, tape to tape reprint	2
S4	1170290	Lever Switch, tape monitor	2
S5	1170300	Lever Switch, 4-ch adaptor	2
S6	1170270	Lever Switch, muting	1
S9	1170270	Lever Switch, loudness	1

5-3. F-2017 Adjusting Volume Circuit Board

(Stock No. 7591360 Complete Circuit Board F-2017)

Conductor Side



Parts List

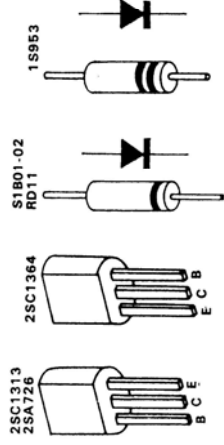
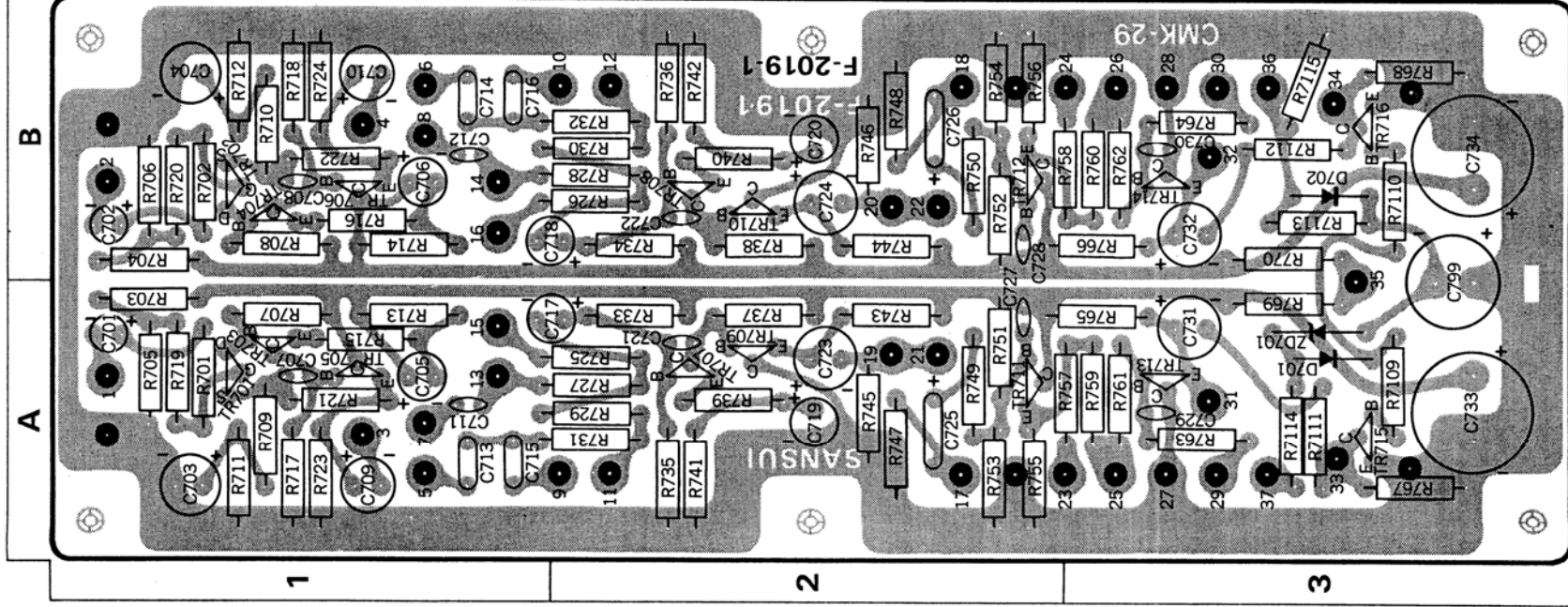
Parts No.	Stock No.	Description
VR701,2	1015060	250kΩ (B) × 2 AUX Level Adj.
VR703,4	1015060	250kΩ (B) × 2 DECK-1 (PLAY) Level Adj.
VR705,6	1015060	250kΩ (B) × 2 DECK-2 (PLAY) Level Adj.

Abbreviations

C.R.	: Carbon Resistor	BP.E.C.:	Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	C.C.	: Ceramic Capacitor
Ce.R.	: Cement Resistor	Mi.C.	: Mica Capacitor
M.R.	: Metallized Film Resistor	O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

5-4. F-2019C Tone Control Circuit Board

Conductor Side



Parts List

Parts No.	Stock No.	Description	Position
TR701	0370102	25K30 (Y)	1A
TR702	0370102	25K30 (Y)	1B
TR703	0300410, 1	25A726 $\text{\textcircled{R}}$ (F, G)	1A
TR704	0300410, 1	25A726 $\text{\textcircled{R}}$ (F, G)	1B
TR705	0306070, 1	25C1313 $\text{\textcircled{R}}$ (F, G)	1A
TR706	0306070, 1	25C1313 $\text{\textcircled{R}}$ (F, G)	1B
TR707	0306070, 1	25C1313 $\text{\textcircled{R}}$ (F, G)	2A
TR708	0306070, 1	25C1313 $\text{\textcircled{R}}$ (F, G)	2B
TR709	0300410, 1	25A726 $\text{\textcircled{R}}$ (F, G)	2A
TR710	0300410, 1	25A726 $\text{\textcircled{R}}$ (F, G)	2B
TR711	0306070, 1	25C1313 $\text{\textcircled{R}}$ (F, G)	2A
TR712	0306070, 1	25C1313 $\text{\textcircled{R}}$ (F, G)	2B
TR713	0300410, 1	25A726 $\text{\textcircled{R}}$ (F, G)	3A
TR714	0300410, 1	25A726 $\text{\textcircled{R}}$ (F, G)	3B
TR715	0306131, 2	25C1364 (6, 7)	3A
TR716	0306131, 2	25C1364 (6, 7)	3B
D701	0311050	15953	3A
D702	0311150	S1801-02	3B
ZD701	0315260	RD11A (M)	3A
C701	0601158	0.15 μ F	1A
C702	0601158	0.15 μ F	1B
C703	0512470	47 μ F	1A
C704	0512470	47 μ F	1B
C705	0510470	47 μ F	1A
C706	0510470	47 μ F	1B
C707	0660100	10 pF	1A
C708	0660100	10 pF	1B
C709	0519106	4.7 μ F	1A
C710	0519106	4.7 μ F	1B
C711	0600186	0.0018 μ F	1A
C712	0600186	0.0018 μ F	1B
C713	0600477	0.047 μ F	1A
C714	0600477	0.047 μ F	1B
C715	0600477	0.047 μ F	1A
C716	0600477	0.047 μ F	1B
C717	0519105	2.2 μ F	1A
C718	0519105	2.2 μ F	1B
C719	0510470	47 μ F	1A
C720	0510470	47 μ F	1B
C721	0660100	10 pF	1A
C722	0660100	10 pF	1B
C723	0519106	4.7 μ F	1A
C724	0519106	4.7 μ F	1B
C725	0601228	0.22 μ F	1A
C726	0601228	0.22 μ F	1B

Parts List

Parts No.	Stock No.	Description	Position
C727	0660220	22 pF	2 A
C728	0660220	22 pF ± 10%	2 B
C729	0660470	47 pF	3 A
C730	0660470	47 pF	3 B
C731	0519106	4.7 μF	3 A
C732	0519106	4.7 μF	2 B
C733	0514221	220 μF	3 A
C734	0514221	220 μF	3 B
C799	0513221	220 μF	3 A, B
R701	0107102	1kΩ	1 A
R702	0107102	1kΩ	1 B
R703	0107104	100kΩ	1 A
R704	0107104	100kΩ	1 B
R705	0107473	47kΩ	1 A
R706	0107473	47kΩ	1 B
R707	0107103	10kΩ	1 A
R708	0107103	10kΩ	1 B
R709	0107102	1kΩ	1 A
R710	0107102	1kΩ	1 B
R711	0107822	8.2kΩ	1 A
R712	0107822	8.2kΩ	1 B
R713	0107332	3.3kΩ	1 A
R714	0107332	3.3kΩ	1 B
R715	0107100	10Ω	1 B
R716	0107100	10Ω	1 B
R717	0107473	47kΩ	1 A
R718	0107473	47kΩ	1 B
R719	0107105	1MΩ	1 A
R720	0107105	1MΩ	1 B
R721	0107103	10kΩ	1 A
R722	0107103	10kΩ	1 B
R723	0107822	8.2kΩ	1 A
R724	0107822	8.2kΩ	1 B
R725	0107153	15kΩ	1, 2 A
R726	0107153	15kΩ	1, 2 B
R727	0107152	1.5kΩ	1, 2 A
R728	0107152	1.5kΩ	1, 2 B
R729	0107822	8.2kΩ	1, 2 A
R730	0107822	8.2kΩ	1, 2 B
R731	0107332	3.3kΩ	1, 2 A
R732	0107332	3.3kΩ	1, 2 B
R733	0107824	820kΩ	2 A
R734	0107824	820kΩ	2 B
R735	0107154	150kΩ	2 A
R736	0107154	150kΩ	2 B
R737	0107123	12kΩ	2 A
R738	0107123	12kΩ	2 B
R739	0107121	120Ω	2 A
R740	0107121	120Ω	2 B
R741	0107332	3.3kΩ	2 A
R742	0107332	3.3kΩ	2 B
R743	0107332	3.3kΩ	2 A
R744	0107332	3.3kΩ	2 B
R745	0107124	120kΩ	2 A
R746	0107124	120kΩ	2 B
R747	0107105	1MΩ	2 A
R748	0107105	1MΩ	2 B
R749	0107102	1kΩ	2 A
R750	0107102	1kΩ	2 B
R751	0107824	820kΩ	2 A
R752	0107824	820kΩ	2 B
R753	0107105	1MΩ	2 A

Parts No.	Stock No.	Description	Position
R754	0107105	1MΩ	2 B
R755	0107683	68kΩ	2 A
R756	0107683	68kΩ	2 B
R757	0107184	180kΩ	2, 3 B
R758	0107184	180kΩ	2, 3 B
R759	0107472	4.7kΩ	3 A
R760	0107472	4.7kΩ	3 B
R761	0107123	12kΩ	3 A
R762	0107123	12kΩ	3 B
R763	0107221	220Ω	3 A
R764	0107221	220Ω	3 B
R765	0107822	8.2kΩ	2, 3 A
R766	0107822	8.2kΩ	2, 3 B
R767	0107124	120kΩ	3 A
R768	0107124	120kΩ	3 B
R769	0103821	820Ω	3 B
R770	0103821	820Ω	3 A
R7109	0107103	10kΩ	3 B
R7110	0107103	10kΩ	3 B
R7111	0107152	1.5kΩ	3 A
R7112	0107152	1.5kΩ	3 B
R7113	0107563	56kΩ	3 B
R7114	0107683	68kΩ	3 A

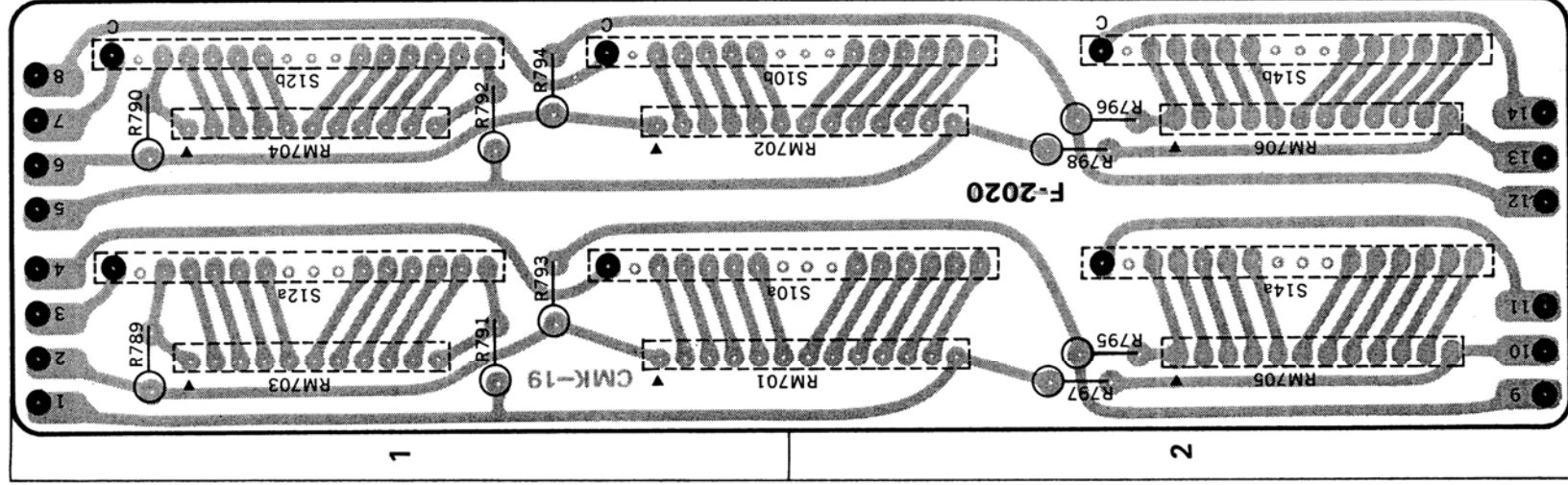
Abbreviations

C.R.	: Carbon Resistor	B.P.E.C.:	Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	C.C.	: Ceramic Capacitor
Ce.R.	: Cement Resistor	Mi.C.	: Mica Capacitor
M.R.	: Metallized Film Resistor	O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

5-5. F-2020 Tone Switch Circuit Board

(Stock No. 7591320 Complete Circuit Board F-2020)

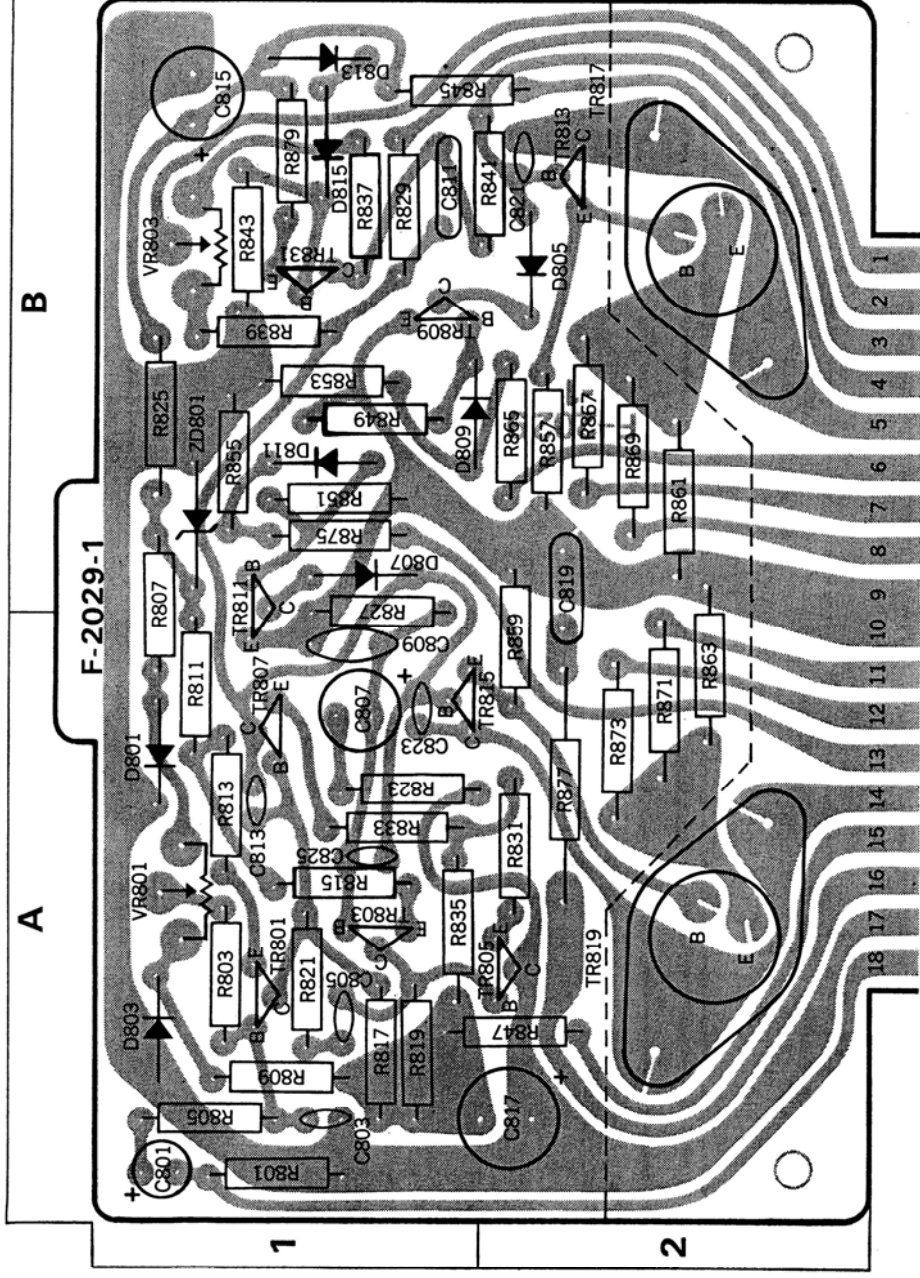
Conductor Side



Parts List

Parts No.	Stock No.	Description	Position
R789	0106122	1.2kΩ	1
R790	0106122	1.2kΩ	1
R791	0106152	1.5kΩ	1
R792	0106152	1.5kΩ	1
R793	0106103	10kΩ	1
R794	0106103	10kΩ	1
R795	0106272	2.7kΩ	2
R796	0106272	2.7kΩ	2
R797	0106103	10kΩ	2
R798	0106103	10kΩ	2
RM701	0800260	RM-1205	1, 2
RM702	0800260	RM-1205	1, 2
RM703	0800250	RM-1006	1
RM704	0800250	RM-1006	1
RM705	0800240	RM-1104	2
RM706	0800240	RM-1104	2
S10	1102470	Rotary Switch FP-2-2-11, midrange	1, 2
S12	1102470	Rotary Switch FP-2-2-11, treble	1
S14	1102470	Rotary Switch FP-2-2-11, bass	2

5-8. F-2029B Driver Circuit Board



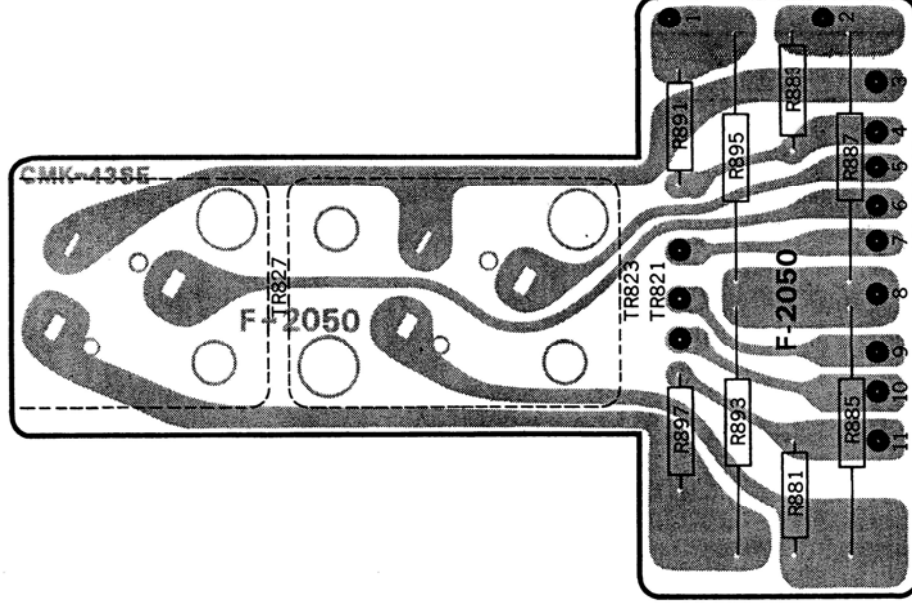
Parts List

Parts No.	Stock No.	Description	Position
TR801	0300470, 1	2SA726 [Ⓜ] (F, G)	1 A
TR803	0300470, 1	2SA726 [Ⓜ] (F, G)	1 A
TR805	0306021, 2	2SC983 (O, Y)	2 A
TR807	0306021, 2	2SC983 (O, Y)	1 A
TR809	0305640, 1	2SC735 (O, Y)	1 B
TR811	0300220, 1	2SA562 (O, Y)	1 A, B
TR813	0305900, 1	2SC1124 (1, 2)	2 B
TR815	0300480, 1	2SA706-5 (1, 2)	1 A
TR817	0306120, 1	2SC1431-1 (1, 2)	2 B
TR819	0300570, 1	2SA762-1 (1, 2)	2 A
TR831	0300480, 1	2SA706-5 (1, 2)	1 B
D801	0311050	1S953	1 A
D803	0311050	1S953	1 A
D805	0311050	1S953	2 B
D807	0311050	1S953	1 B
D809	0311050	1S953	1 B
D811	0311050	1S953	1 B
D813	0311050	1S953	1 B
D815	0311050	1S953	1 B
ZD801	0315220	RD9A(M)	1 B

5-9. F-2050A Transistor Socket Circuit Board

(Stock No. 7591820 Complete Circuit Board F-2050A)

Conductor Side



Parts List

Parts No.	Stock No.	Description
TR21	0305872	25C984 (C) Transistor
R881	0107151	150Ω ± 5% ¼W C.R.
R883	0107151	150Ω
R885	0133478	0.47Ω ± 10% 3 W Ce.R.
R887	0133478	0.47Ω
R891	0107151	150Ω ± 5% ¼W C.R.
R893	0133478	0.47Ω
R895	0133478	0.47Ω ± 10% 3 W Ce.R.
R897	0107151	150Ω ± 5% ¼W C.R.
	2030020	Transistor Socket

Abbreviations

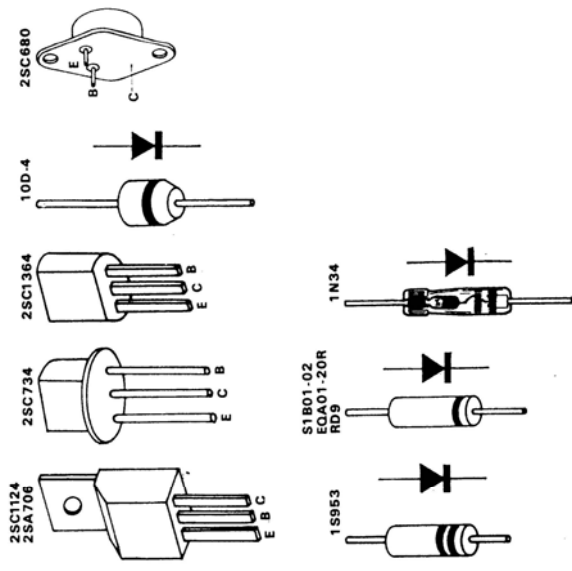
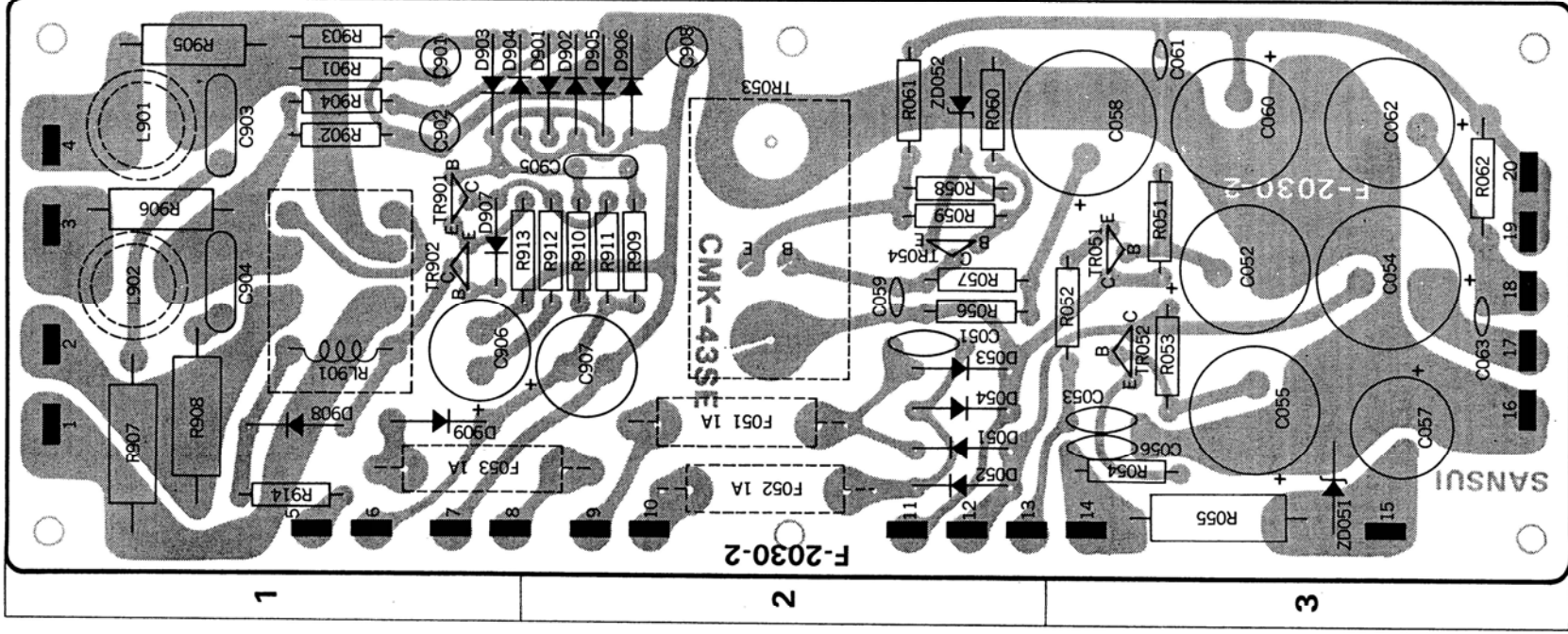
C.R.	: Carbon Resistor	BP.E.C.:	Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	C.C.	: Ceramic Capacitor
Ce.R.	: Cement Resistor	Mi.C.	: Mica Capacitor
M.R.	: Metallized Film Resistor	O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

Parts List

Parts No.	Stock No.	Description	Position
C801	0519105	2.2 μ F	50V E.C. 1A
C803	0660330	33pF $\pm 10\%$	50V C.C. 1A
C805	0620681	680pF $\pm 5\%$	50V P.C. 1A
C807	0531470	47 μ F	10V BP.E.C. 1A
C809	0660209	2pF ± 5 pF	50V C.C. 1A
C811	0601108	0.1 μ F $\pm 10\%$	50V M.C. 1B
C813	0660100	10pF ± 0.5 pF	50V C.C. 1A
C815	0519902	47 μ F	80V $\left\{ \begin{array}{l} \text{E.C.} \\ \text{1B} \end{array} \right.$
C817	0519902	47 μ F	80V $\left\{ \begin{array}{l} \text{E.C.} \\ \text{1B} \end{array} \right.$
C819	0601477	0.047 μ F $\pm 10\%$	50V M.C. 2A, B
C821	0660150	15pF $\pm 10\%$	50V $\left\{ \begin{array}{l} \text{C.C.} \\ \text{1A} \end{array} \right.$
C823	0660150	15pF $\pm 10\%$	50V $\left\{ \begin{array}{l} \text{C.C.} \\ \text{1A} \end{array} \right.$
C825	0660509	5pF ± 0.5 pF	50V $\left\{ \begin{array}{l} \text{C.C.} \\ \text{1A} \end{array} \right.$
R801	0107823	82k Ω	1A
R803	0107104	100k Ω	1A
R805	0107103	10k Ω	1A
R807	0107822	8.2k Ω	1A, B
R809	0107473	47k Ω	1A
R811	0107472	4.7k Ω	C.R. 1A
R813	0107151	150 Ω	1A
R815	0107151	150 Ω	1A
R817	0107682	6.8k Ω	1A
R819	0107682	6.8k Ω	1A
R821	0107221	220 Ω	1A
R823	0107332	3.3k Ω	1A
R825	0103822	8.2k Ω	$\pm 5\%$ $\frac{1}{2}$ W C.R. 1B
R827	0107104	100k Ω	1A, B
R829	0107820	82 Ω	C.R. 1B
R831	0107330	33 Ω	$\pm 5\%$ $\frac{1}{4}$ W C.R. 2A
R833	0107330	33 Ω	1A
R835	0103471	470 Ω	$\pm 5\%$ $\frac{1}{2}$ W C.R. 1A
R837	0107102	1k Ω	1B
R839	0107271	270 Ω	1B
R841	0107560	56 Ω	2B
R843	0107473	47k Ω	1B
R845	0107821	820 Ω	$\pm 5\%$ $\frac{1}{4}$ W C.R. 1, 2B
R847	0107331	330 Ω	1, 2B
R849	0107680	68 Ω	1B
R851	0107680	68 Ω	1B
R853	0107333	33k Ω	1B
R855	0107333	33k Ω	1B
R857	0107561	560 Ω	$\pm 5\%$ $\frac{1}{4}$ W C.R. 2B
R859	0107561	560 Ω	2A, B
R861	0103470	47 Ω	2B
R863	0103470	47 Ω	C.R. 2A, B
R865	0107479	4.7 Ω	$\pm 5\%$ $\frac{1}{4}$ W C.R. 2B
R867	0103100	10 Ω	2B
R869	0103100	10 Ω	2B
R871	0103100	10 Ω	$\pm 5\%$ $\frac{1}{2}$ W C.R. 2A
R873	0103100	10 Ω	2A
R875	0107479	4.7 Ω	$\pm 5\%$ $\frac{1}{4}$ W C.R. 1B
R877	0132100	10 Ω	$\pm 10\%$ 2 W Ce.R. 2A
R879	0107121	120 Ω	$\pm 5\%$ $\frac{1}{4}$ W C.R. 1B
V R801	1031092	5k Ω (B)	1A
V R803	1031022	200 Ω (B)	Semi-Variable Resistor 1B

5-10. F-2030-1 Power & Protector Circuit Board (Stock No. 7500740 Complete Circuit Board F-2030-1)

Conductor Side



Parts List

Parts No.	Stock No.	Description	Position
TR051	0305901, 2	2SC1124 (2, 3)	3
TR052	0300391, 2	2SA706 (2, 3)	3
TR053	0305621, 2	2SC680 (B, C)	2
TR054	0305360, 1	2SC734 (O, Y)	2
TR901	0306131, 2	2SC1364 (6, 7)	1
TR902	0306131, 2	2SC1364 (6, 7)	1
D051	0310360	10D-4	2
D052	0310360	10D-4	2
D053	0310360	10D-4	2
D054	0310360	10D-4	2
D901	0310401	1N34A	2
D902	0310401	1N34A	2
D903	0310401	1N34A	1
D904	0310401	1N34A	1
D905	0310401	1N34A	2
D906	0310401	1N34A	2
D907	0311050	1S953	1
D908	0311150	S1B01-02	1
D909	0311150	S1B01-02	1
ZD051	0315220	RD9A (M)	3
ZD052	0316040	EQA01-20R	2
L901	4210190	1.5 μ H	1
L902	4210190	1.5 μ H	1
RL901	1150250	MY-2 DC24V Relay	1
C051	0659011	0.01 μ F +80% -20%	2
C052	0519301	100 μ F	3
C053	0659011	0.01 μ F +80% -20%	3
C054	0519302	220 μ F	3
C055	0519301	100 μ F	3
C056	0659011	0.01 μ F +80% -20%	3

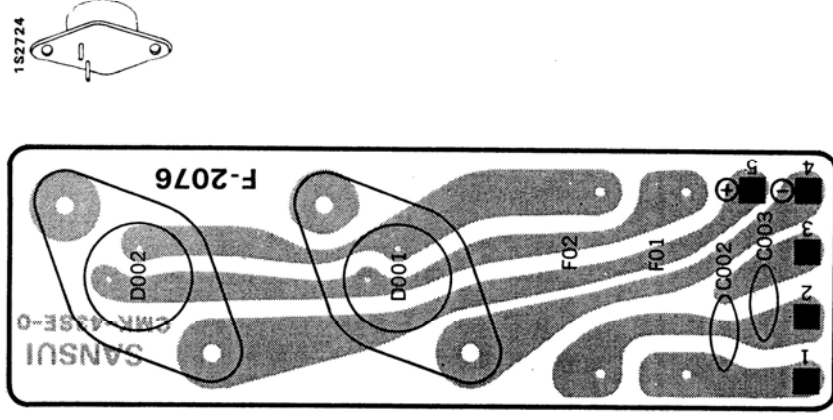
Parts List

Parts No.	Stock No.	Description	Position
C057	0512471	470 μ F	3
C058	0519302	220 μ F	3
C059	0657102	0.001 μ F $\pm 80\%$ -20%	2
C060	0515221	220 μ F	3
C061	0657103	0.01 μ F $\pm 80\%$ -20%	3
C062	0515221	220 μ F	3
C063	0657103	0.01 μ F $\pm 80\%$ -20%	3
C901	0531470	47 μ F	1
C902	0531470	47 μ F	1
C905	0601338	0.33 μ F $\pm 10\%$	2
C906	0510102	1000 μ F	1
C907	0515101	100 μ F	2
C908	0535109	1 μ F	2
R051	0107103	10k Ω	3
R052	0107680	68 Ω	3
R053	0107103	10k Ω	3
R054	0107680	68 Ω	3
R055	0105332	3.3k Ω	3
R056	0107222	2.2k Ω	2
R057	0107332	3.3k Ω	2
R058	0107683	68k Ω	2
R059	0107562	5.6k Ω	2
R060	0107472	4.7k Ω	2
R061	0107680	68 Ω	2
R062	0103471	470 Ω	2
R901	0107472	4.7k Ω	3
R902	0107472	4.7k Ω	1
R903	0107473	47k Ω	1
R904	0107473	47k Ω	1
R905	0104479	4.7 Ω	1
R906	0104479	4.7 Ω	1
R909	0107394	390k Ω	2
R910	0107224	220k Ω	2
R911	0107683	68k Ω	2
R912	0107220	22 Ω	2
R913	0107100	10 Ω	2
R914	0107100	10 Ω	1
F051	0432830	1A Wired-in Fuse	2
F052	0432830		2
F053	0432830		1, 2

5-11. F-2076 Rectifier Circuit Board

(Stock No. 7500860 Complete Circuit Board F-2076)

Conductor Side



Parts List

Parts No.	Stock No.	Description
D001	0311230	1S2724-R (S40R)
D002	0311220	1S2724-R (S40)
C002	0659011	0.01 μ F $\pm 80\%$ 500V C.C.
C003	0659011	0.01 μ F $\pm 20\%$ 500V C.C.

Abbreviations

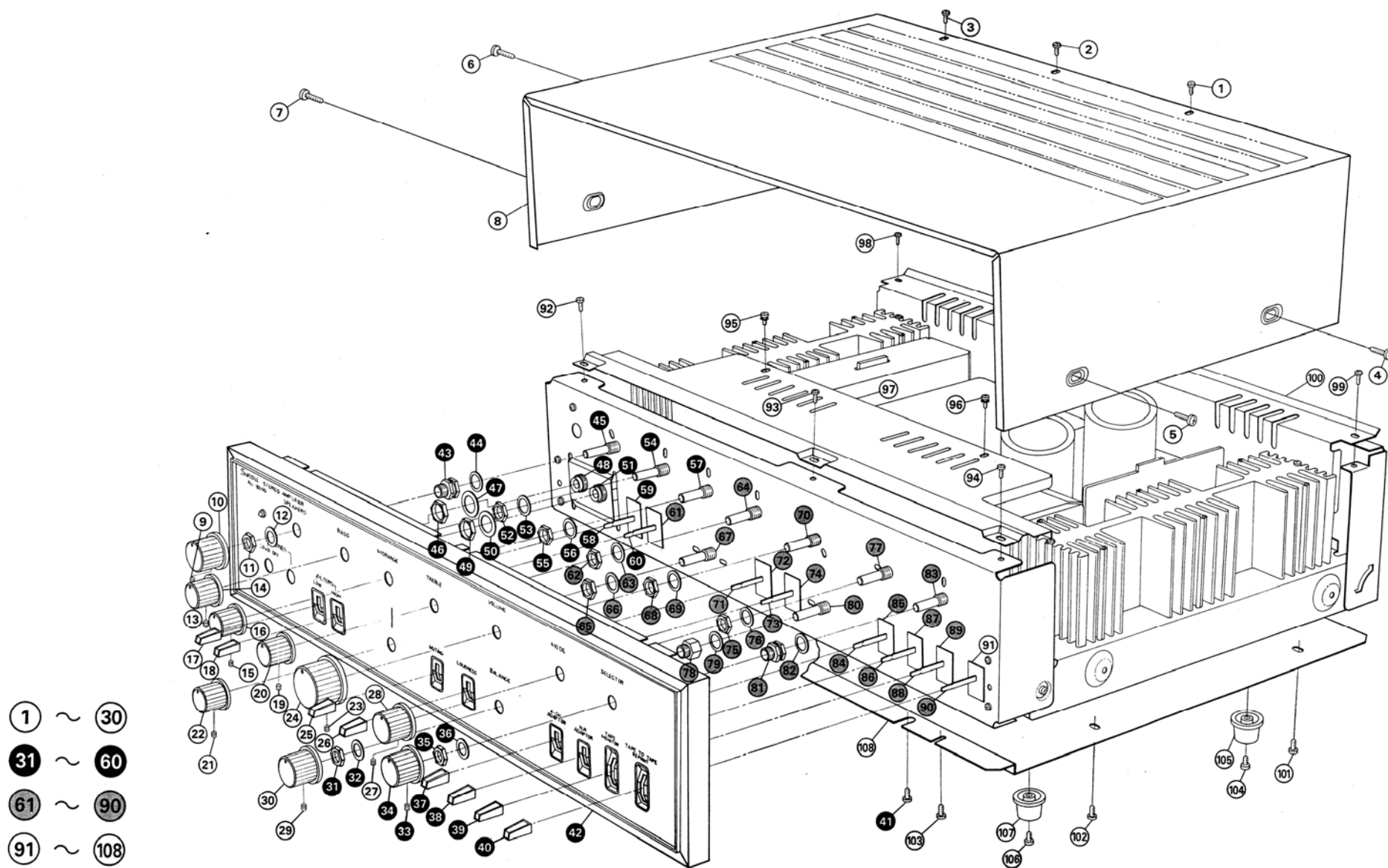
C.R.	: Carbon Resistor	BP.E.C.:	Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	C.C.	: Ceramic Capacitor
Ce.R.	: Cement Resistor	Mi.C.	: Mica Capacitor
M.R.	: Metallized Film Resistor	O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

5-12. OTHER PARTS (Front Side)

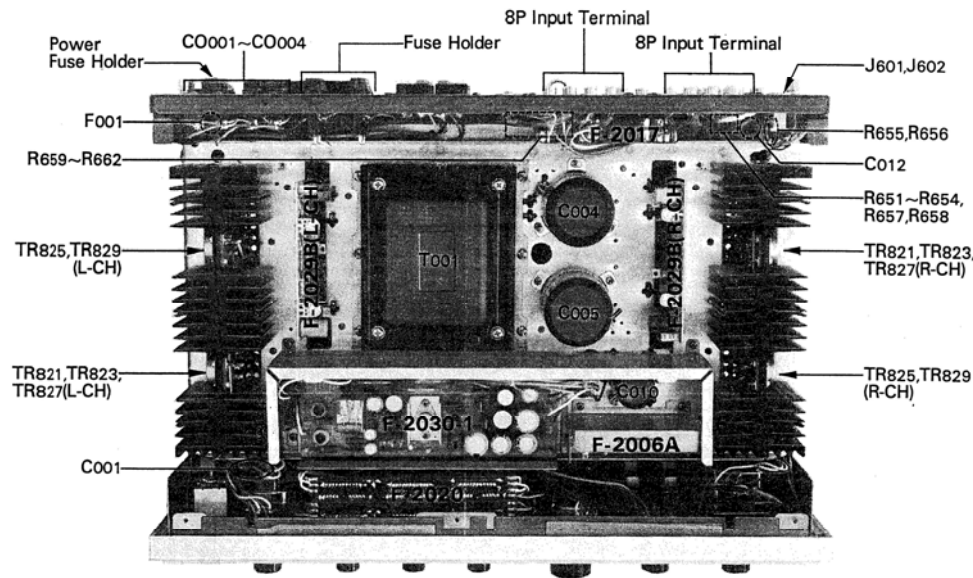
Parts List

Parts No.	Stock No.	Description
1	5101143	Binding Head Screw, M3 x 6
2	5101143	Binding Head Screw, M3 x 6
3	5101143	Binding Head Screw, M3 x 6
4	5101161	Binding Head Screw, M4 x 6
5	5101161	Binding Head Screw, M4 x 6
6	5101161	Binding Head Screw, M4 x 6
7	5101161	Binding Head Screw, M4 x 6
8	5006272	Metal Bonnet
9		Hex Socket Setscrew, M4 x 0.7 x 6
10	5317422	B-5 Type Knob, speaker
11	5110781	Hex. Nut M9, speaker
12	5120184	Plain Washer 9φ, speaker
13		Hex Socket Setscrew, M4 x 0.7 x 6
14	5317402	Z-4 Type Knob, bass
15		Hex Socket Setscrew, M4 x 0.7 x 6
16	5317402	Z-4 Type Knob, midrange
17	5326342	Button D, low filter
18	5326342	Button D, high filter
19		Hex Socket Setscrew, M4 x 0.7 x 6
20	5317402	Z-4 Type Knob, treble
21		Hex Socket Setscrew, M4 x 0.7 x 6
22	5317402	Z-4 Type Knob, midrange
23		Hex Socket Setscrew, M4 x 0.7 x 6
24	5317412	A-5 Type Knob, volume
25	5326342	Button D, muting
26	5326342	Button D, loudness
27		Hex socket Setscrew, M4 x 0.7 x 6
28	5317422	B-5 Type Knob, mode
29		Hex Socket Setscrew, M4 x 0.7 x 6
30	5317422	B-5 Type Knob, balance
31	5110781	Hex. Nut M9, balance
32	5120184	Plain Washer 9φ, balance
33		Hex Socket Setscrew, M4 x 0.7 x 6
34	5317422	B-5 Type Knob, selector
35	5110781	Hex. Nut M9, selector
36	5120184	Plain Washer 9φ, selector
37	5326342	Button D, 4-ch adaptor
38	5326342	Button D, noise reduction adaptor
39	5326342	Button D, tape monitor
40	5326342	Button D, tape to tape reprint
41	5101143	Binding Head Screw, M3 x 6
42	5308521	Front panel
43	5176261	Spacer Nut D, M9
44	5120184	Plain Washer 9φ, speaker
45	1102460	Rotary Switch N-2-2-6, speaker
46		Hex. Nut M12, jack
47		Plain Washer 12φ, jack
48	2430230	Jack, headphone
49		Hex. Nut M12, Jack
50		Plain Washer 9φ, Jack
51	2430220	Jack, headphone
52	5110781	Hex. Nut M9, bass
53	5120184	Plain Washer 9φ, bass
54	1102470	Rotary Switch F-2-2-11, bass
55	5110781	Hex. Nut M9, midrange
56	5120184	Plain Washer 9φ, midrange
57	1102470	Rotary Switch F-2-2-11, midrange
58	1170270	Lever Switch, low filter
59	5047470	Masking, lever switch
60	1170270	Lever Switch, high filter
61	5047470	Masking, lever switch

Parts No.	Stock No.	Description
62	5110781	Hex. Nut M9, treble
63	5120184	Plain Washer 9φ, treble
64	1102470	Rotary Switch F-2-2-11, treble
65	5110781	Hex. Nut M9, midrange
66	5120184	Plain Washer 9φ, midrange
67	1101490	Rotary Switch N-1-2-4, midrange
68	5110780	Hex. Nut M8, volume
69	5120183	Plain Washer 8φ, volume
70	1010580	250kΩ (B) x 2, volume
71	1170270	Lever Switch, muting
72	5047470	Masking, muting
73	1170270	Lever Switch, Loudness
74	5047470	Masking, Loudness
75	5110781	Hex. Nut M9, mode
76	5120184	Plain Washer 9φ, mode
77	1101191	Rotary Switch N-1-2-5, mode
78	5176251	Spacer Nut C, M8
79	5120183	Plain Washer, 8φ
80	1010870	250kΩ (MN) x 2 Balance Volume
81	5176261	Spacer Nut D, M9
82	5120184	Plain Washer 9φ, selector
83	1104270	Rotary Switch, Y-4-8-5
84	1170300	Lever Switch 4-Ch, adaptor
85	5047470	Masking, 4-Ch adaptor
86	1170300	Lever Switch, N.R. adaptor
87	5047470	Masking, N.R. adaptor
88	1170290	Lever Switch, tape monitor
89	5047470	Masking, tape monitor
90	1170290	Lever Switch, tape to tape reprint
91	5047470	Masking, tape to tape reprint
92	5101143	Binding Head Screw, M3 x 6
93	5101143	Binding Head Screw, M3 x 6
94	5101143	Binding Head Screw, M3 x 6
95	5101444	Binding Head SEMS C Screw, M3 x 8
96	5101444	Binding Head SEMS C Screw, M3 x 8
97	5057812	Shield Plate
98	5101143	Binding Head Screw, M3 x 6
99	5101143	Binding Head Screw, M3 x 6
100	5057821	Rear Panel Cover
101	5101061	Binding Head Screw, M4 x 6
102	5101061	Binding Head Screw, M4 x 6
103	5101061	Binding Head Screw, M4 x 6
104	5100665	Binding Head Tapping Screw, M4 x 16
105	5516821	Rubber Foot
106	5100665	Binding Head Tapping Screw, M4 x 16
107	5516821	Rubber Foot
108	5057833	Bottom Plate



5-13. OTHER PARTS (Top Side)



Top Side Parts List

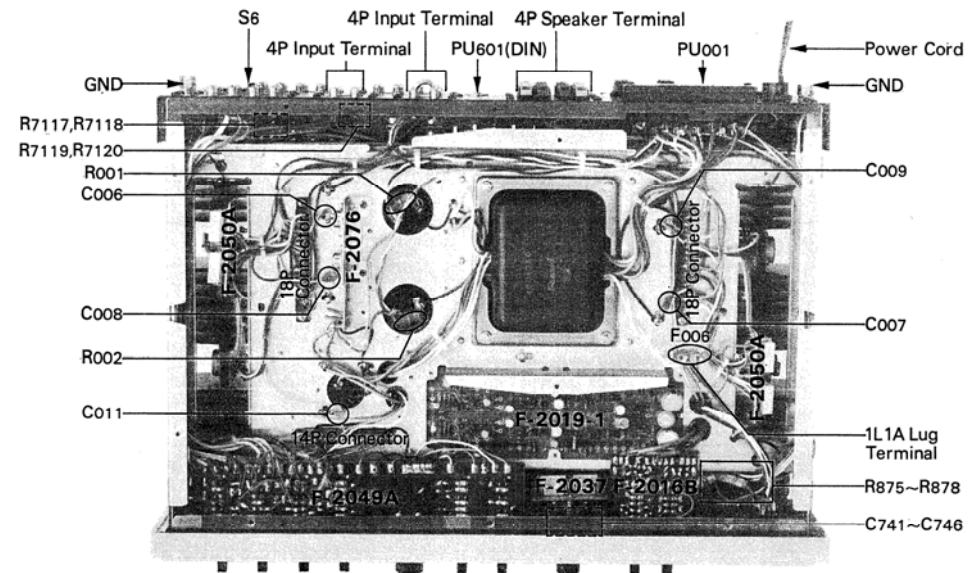
Parts No.	Stock No.	Description
TR821	0305872	25C984 (C)
TR823	0306200, 1	25C1030 (S) (A, B)
TR825	0300560, 1	25A756 (S) (A, B)
TR827	0306200, 1	25C1030 (S) (A, B)
TR829	0300560, 1	25A756 (S) (A, B)
C001	0605477	0.047 μ F 250V M.C.
C004	0559350	15000 μ F 50V C.C.
C005	0559350	15000 μ F 50V C.C.
C010	0559839	1000 μ F 50V
C012	0800121	0.047 μ F $\times$ 4 50V Capacitor Composite Parts
R651	0107563	56k Ω
R652	0107563	56k Ω
R653	0107473	47k Ω
R654	0107473	47k Ω
R655	0107104	100k Ω
R656	0107104	100k Ω
R657	0107104	100k Ω
R658	0107104	100k Ω
R659	0107104	100k Ω
R660	0107104	100k Ω

Parts No.	Stock No.	Description
R661	0107224	220k Ω
R662	0107224	220k Ω
F001	0431270	4A Power Fuse (220~250V)
	0431290	6A Power Fuse (100~127V)
	2300060	Power Fuse Holder
F002~5	0433290	Wired-in Fuse (6A 250V)
	2300020	Fuse Holder
CO001~4	2450040	AC Outlet
T001	4001350	Power Transformer
	2460070	PM Connector
	2200340	8P Input Terminal

Abbreviations

C.R. : Carbon Resistor	BP.E.C. : Bi-Pola Electrolytic Capacitor
S.R. : Solid Resistor	C.C. : Ceramic Capacitor
Co.R. : Cement Resistor	M.L.C. : Mica Capacitor
M.R. : Metallized Film Resistor	O.C. : Oil Capacitor
M.C. : Mylar Capacitor	P.C. : Polystyrene Capacitor
E.C. : Electrolytic Capacitor	T.C. : Tantalum Capacitor

5-14. OTHER PARTS (Bottom Side)



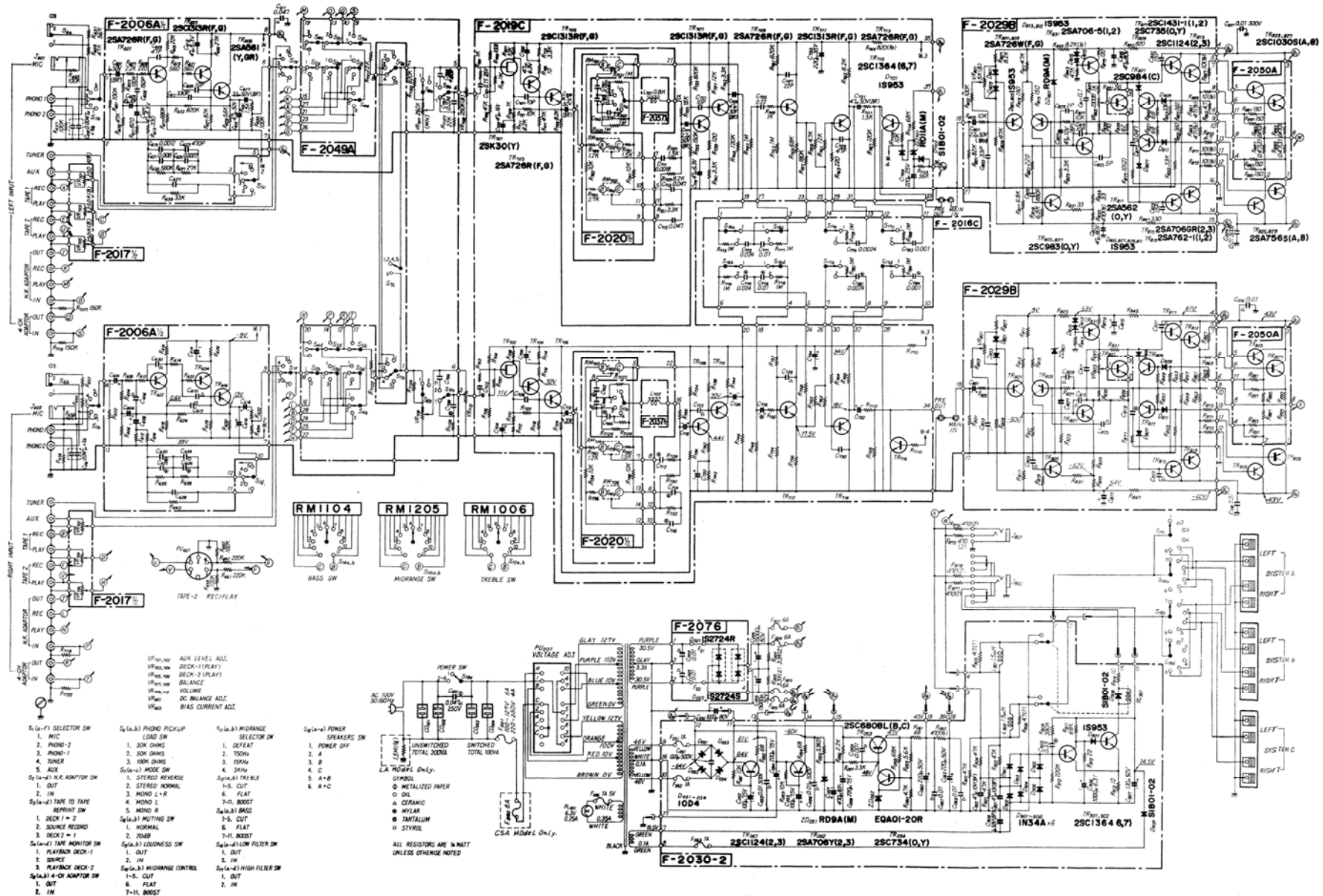
Bottom Side Parts List

Parts No.	Stock No.	Description
C006	0659011	0.01 μ F 500V
C007	0659011	0.01 μ F 500V
C008	0659011	0.01 μ F 500V
C009	0659011	0.01 μ F 500V
C011	0657473	0.047 μ F 50V
C741	0600227	0.022 μ F
C742	0600227	0.022 μ F
C743	0600107	0.01 μ F
C744	0600107	0.01 μ F
C745	0600406	0.004 μ F
C746	0600406	0.004 μ F
R001	0105332	3.3k Ω
R002	0105332	3.3k Ω
R661	0107224	220k Ω
R662	0107224	220k Ω
R875	0152471	470 Ω
R876	0152471	470 Ω
R877	0152471	470 Ω
R878	0152471	470 Ω
R7117	0107154	150k Ω
R7118	0107154	150k Ω

Parts No.	Stock No.	Description
R7119	0107154	150k Ω
R7120	0107154	150k Ω
F006	0432830, 1	Wired-In Fuse (1A 250V)
S6	1110110	Slide Switch
PU001	2410170	Voltage Selector, socket
	2410190	Voltage Selector, plug (sub)
	2410180	Voltage Selector, plug (main)
PU601	2430040	DIN Connector
	3800090	Power Cord
	2200320	4P Input Terminal
	2290100	4P Speaker Terminal
	2420040	14P Input Terminal
	2420020	18P Input Terminal
	2230050	Ground Terminal
	2110010	1L1A Lug Terminal

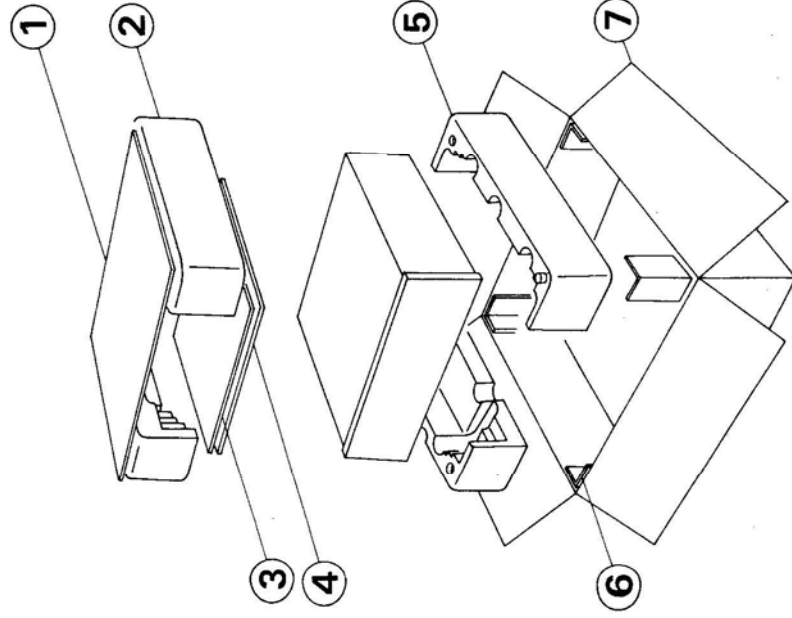
6. SCHEMATIC DIAGRAM

* Design and specifications subject to change without notice for improvements.



9. MAINTENANCE

Parts No.	Stock No.	Description
1	9017220	Inner Packing
2	9027713	Stylofoam Packing
3	9017270	Sub Packing
4	9017270	Sub Packing
5	9027713	Stylofoam Packing
6	9017250	Corner Packing
7	9007282	Carton Case



8. ACCESSORY PARTS LIST

Stock No.	Description
9406020	Polishing Cloth
0433290	6A Quick Acting Fuse
2410110	Pin Plug (red)
2410120	Pin Plug (white)
9226940	Operating Instruction Sheet
9206940	Operating Instructions

9. MAINTENANCE

9-1. Voltage Adjustment

The Voltage Selector on the rear panel enables you to operate at correct voltage in any areas. The voltage has been preadjusted at the factory, but can be easily changed as follows.

1. Remove the two screws securing the name plate on the rear, then remove the name plate.
2. Set the arrow mark on the Main Voltage Selector Plug to the new voltage: 100, 110, 117, 127, 220, 230, 240, or 250 volts.
3. If the new voltage is indicated in red, set the arrow mark on the adjacent Sub Voltage Selector Plug to "RED". If it is indicated in white, however, set that arrow to "WHITE".
4. Change the power fuse as well whenever the power supply voltage has changed. For 100~127 volts operation, use a 6-ampere grass-tubed fuse. For 220~250 volts operation, use a 4-ampere one.
5. Where the power supply voltage considerably fluctuates, the Main Voltage Selector Plug may be reset to avoid unpleasant side effects of such fluctuation. Reset it to the voltage immediately higher than the peak of the fluctuation.

