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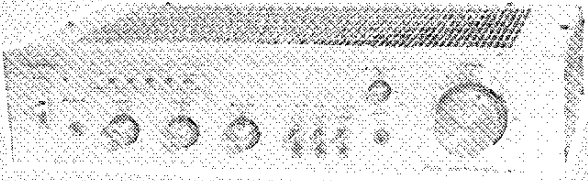
SERVICE DATA  
FILE NO. 170-082



# TOSHIBA

## STEREO AMPLIFIER

# SB-225



**SPECIFICATIONS**

<b>Continuous Power Output</b>		<b>Output Level:</b>	<b>TAPE/REC 150 mV</b>
<b>1 kHz (Both channels driven):</b>	<b>30 W x 2 8 ohm</b>	<b>PHONO Overload:</b>	<b>125 mV 0.1%</b>
	<b>35 W x 2 4 ohm</b>	<b>Frequency Response</b>	
<b>40 Hz to 20 kHz (Both channels driven):</b>	<b>28 W x 2 8 ohm</b>	<b>TUNER:</b>	<b>±2 dB (10 Hz to 50 kHz)</b>
	<b>30 W x 2 4 ohm</b>	<b>PHONO (RIAA equalization):</b>	<b>±0.5 dB (30 Hz to 15 kHz)</b>
<b>Total Harmonic Distortion</b>		<b>Tone Control BASS:</b>	<b>±8 dB (100 Hz)</b>
<b>40 to 20 kHz Rated</b>		<b>TREBLE:</b>	<b>±8 dB (10 kHz)</b>
<b>Power:</b>	<b>0.1%</b>	<b>Loudness Control:</b>	<b>±8 dB (100 Hz)</b>
<b>1 Watt Power:</b>	<b>0.08%</b>	<b>S/N (IHF A Network)</b>	
<b>Intermodulation</b>		<b>PHONO:</b>	<b>72 dB</b>
<b>Distortion Rated Power:</b>	<b>0.1%</b>	<b>TUNER/TAPE:</b>	<b>92 dB</b>
<b>1 Watt Power:</b>	<b>0.08%</b>	<b>MIC Input Sensitivity/Impedance:</b>	<b>2.0 mV/47K ohm</b>
<b>Damping Factor:</b>	<b>25</b>	<b>General</b>	
<b>Power Band Width (IHF):</b>	<b>0.1% (10 Hz to 30 kHz)</b>	<b>Power Supply:</b>	<b>AC 220 V 50 Hz</b>
<b>Load Impedance:</b>	<b>4 to 16 ohm</b>		<b>or AC 240 V 50 Hz</b>
<b>Input Sensitivity/Impedance:</b>	<b>PHONO 2.5 mV/47K ohm</b>	<b>Power Consumption:</b>	<b>270 watts</b>
	<b>TUNER 150 mV/47K ohm</b>	<b>Weight:</b>	<b>4.8 kg</b>
	<b>TAPE 150 mV/47K ohm</b>	<b>Dimensions (WxHxD):</b>	<b>420 x 96 x 241 (mm)</b>

# 1. OPERATING CONTROLS

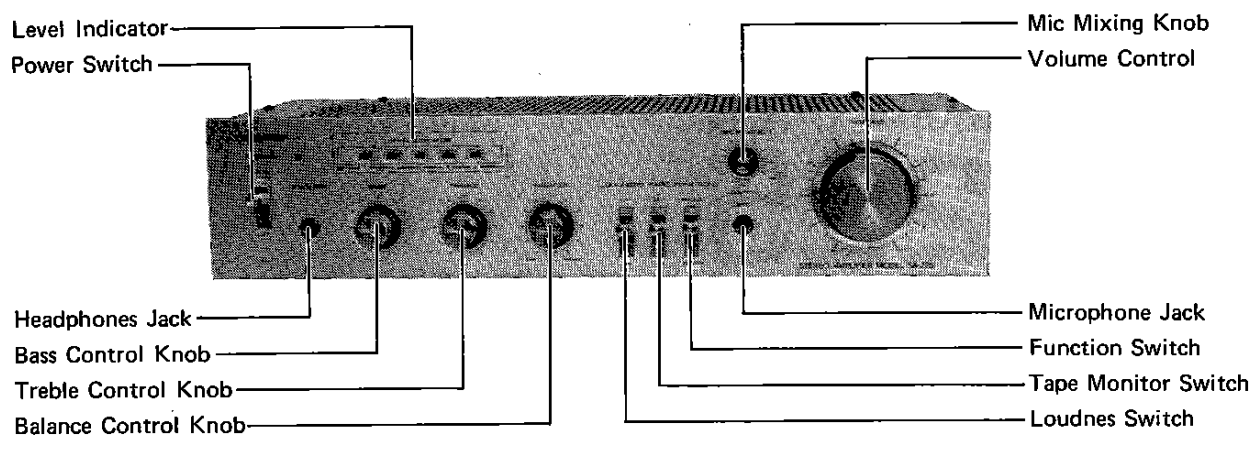


Figure 1.

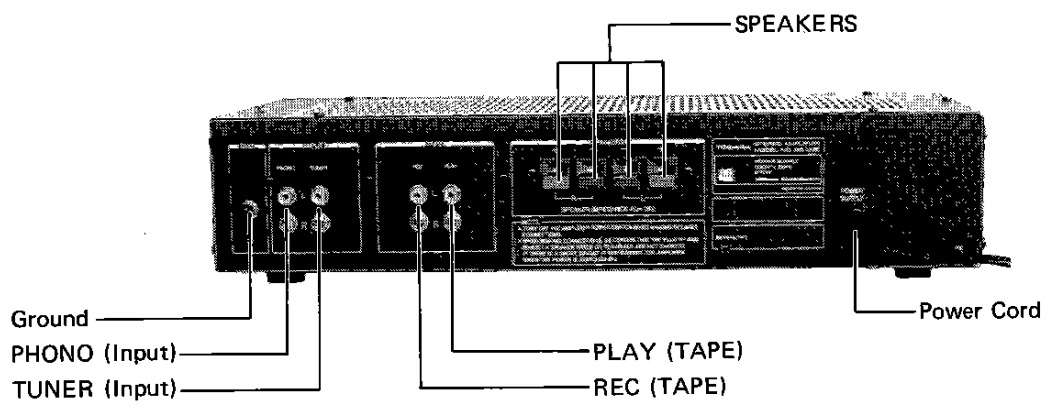


Figure 2.

## 2. DISASSEMBLY INSTRUCTIONS

### TOP COVER REMOVAL

1. Remove six screws ①. See Figure 3.

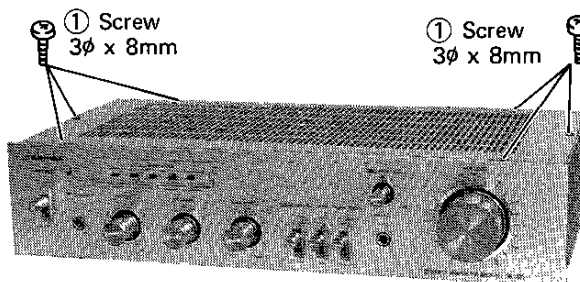


Figure 3.

### FRONT PANEL REMOVAL

1. Remove the Top Cover. See figure 3.
2. Remove nine knobs ②. See figure 4.
3. Remove two screws ③. See figure 4.

### BOTTOM PLATE REMOVAL

1. Remove four screws ④. See figure 4.

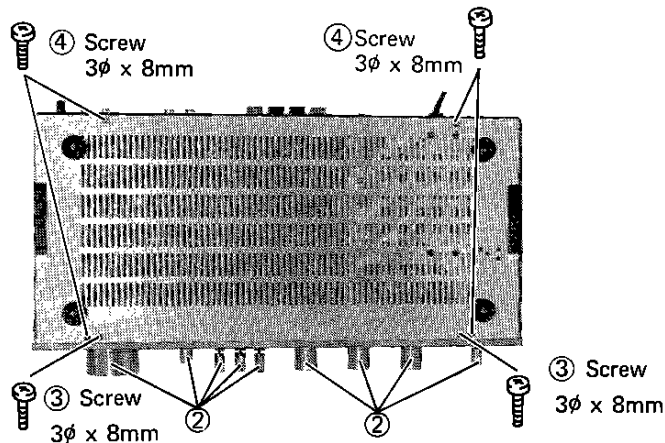


Figure 4.

## 3. ADJUSTMENTS

### IDLE CURRENT ADJUSTMENT

1. Left Channel Check

Connect  $\ominus$  side of DC voltmeter whose DC sensitivity is under 20mV to (A) and  $\oplus$  side to (B).

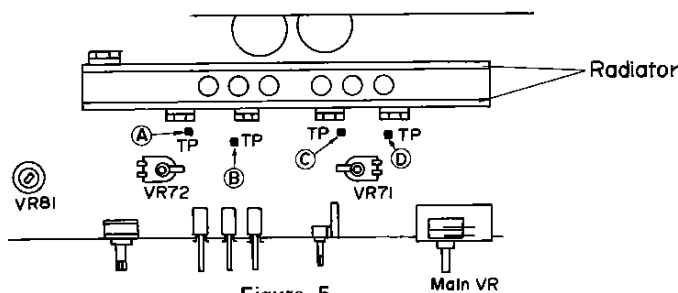
Adjust VR72 so the voltage reading is kept within from 0.1mV to 0.5mV after warming up for about 40 seconds. Keep main volume at "MIN".

2. Right Channel Check

Connect  $\ominus$  side of DC voltmeter whose DC sensitivity is under 20mV to (D) and  $\oplus$  side to (C).

Adjust VR71 so the voltage reading is kept within from 0.1mV to 0.5mV after warming up for about 40 seconds. Keep main volume at "MIN".

3. When the set is stabilized after 30 minutes from when the power is turned on, adjust the VR71, VR72 of left and right channels so that the center value is 15mV.



### LEVEL INDICATOR LIGHTING LEVEL ADJUSTMENT

1. Apply 1 kHz signal to both the left and right channels and adjust VR81 so the all level LEDs light simultaneously under 25W output when both channels are activating.
2. Make sure that whole level LEDs go out in order of 5, 4, 3, 2, 1 by reducing the main volume gradually.

4. BLOCK DIAGRAM

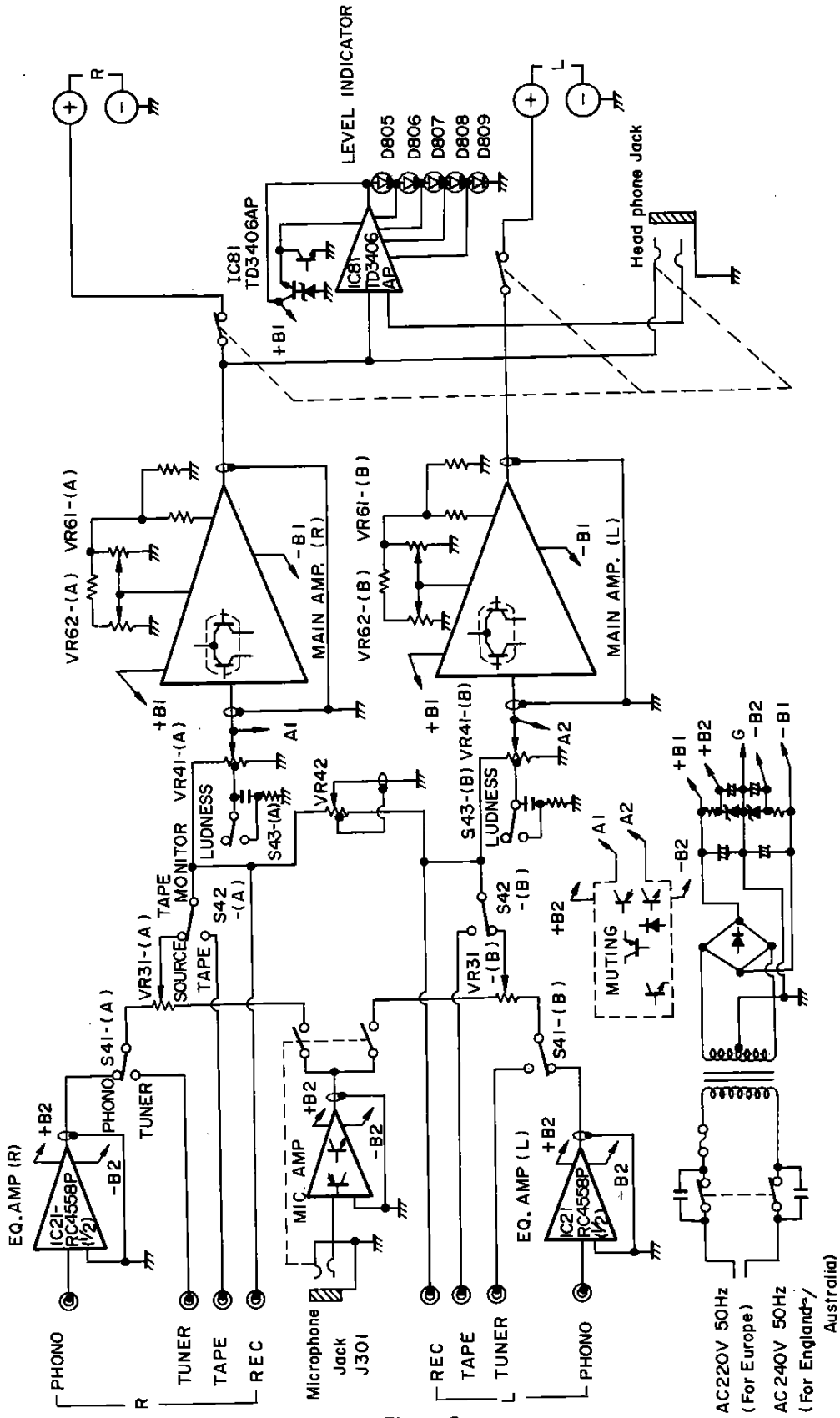


Figure 6.

### 5. ELECTRICAL PARTS LOCATIONS

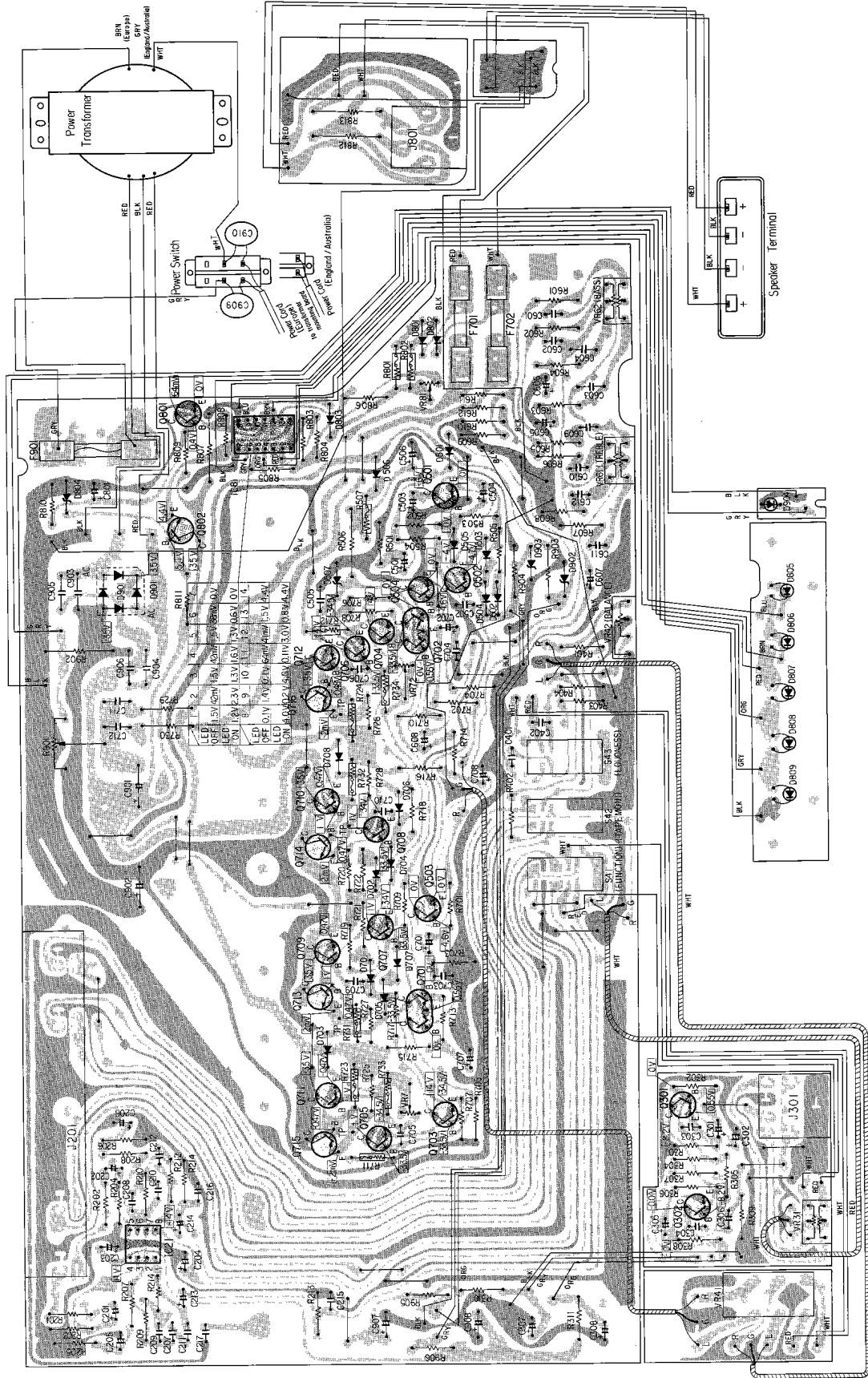


Figure 7.



### 7. CABINET PARTS LOCATIONS

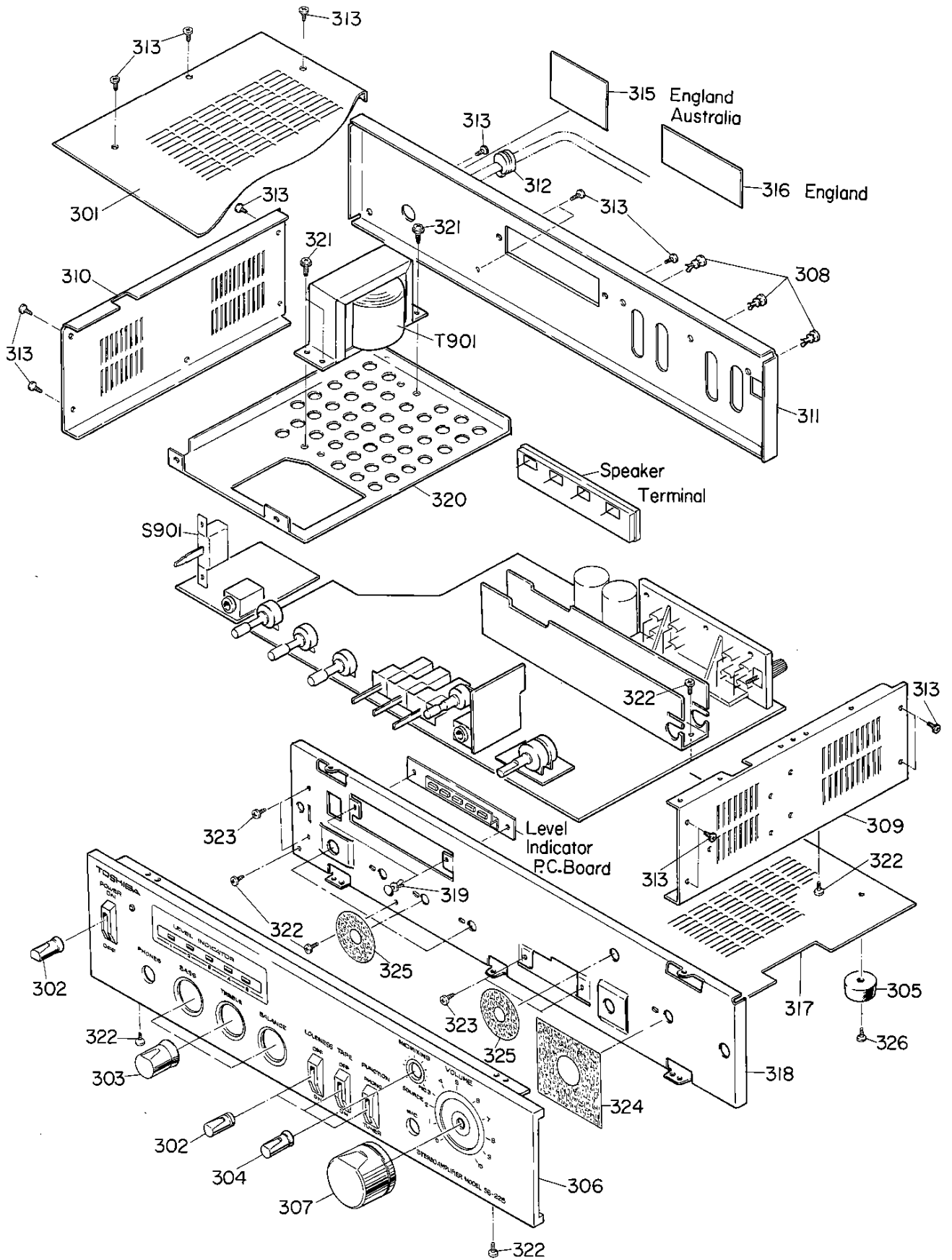


Figure 9.

## 8. PARTS LIST

Symbol No.	Part No.	Description
<b>CABINET PARTS</b>		
301	22711534	Cover, Top
302	22824227	Knob, Lever, Power/Function/ Tape Monitor/Loudness
303	22826180	Knob, Level, Balance/Bass/Treble
304	22826181	Knob, Mic Mixing
305	22874033	Foot
306	22821405	Panel Ass'y
307	22824241	Knob Ass'y, Volume
308	22705022	Rivet, Plastic, 3 $\phi$ x 5.5mm
309	22711449	Plate, Side (Right)
310	22711462	Plate, Side (Left)
311	22711586	Plate, Jack
312	25845528	Bush, Nylon, (Europe)
	25845556	Bush, Nylon, (England/Australia)
313	22701326	Screw, 3 $\phi$ x 8mm
315	22950795	Nameplate (England/ Australia)
316	22950592	Label, Caution (England)
<b>TRANSISTORS AND DIODE, ICS</b>		
Q301		Transistor, 2SA844-GR
Q302		Transistor, 2SC1081-BL-3A
Q501		Transistor, 2SA561A
Q502		Transistor, 2SC734-Y
Q503		Transistor, 2SC734-Y
Q504		Transistor, 2SC734-Y
Q701, 702	22114468	Transistor, 2SA798-G-DU
Q703, 704		Transistor, 2SC2229
Q705, 706		Transistor, 2SC2229
Q707, 708		Transistor, 2SA949
Q709, 710		Transistor, 2SC1627A-Y-O/Y.
Q711, 712		Transistor, 2SA817A
Q713, 714		Transistor, 2SD525-O-R/O
Q715, 716		Transistor, 2SB595-O-R/O
Q801		Transistor, 2SC734-Y
Q802		Transistor, 2SC1626-Y-O/Y
D501		Diode, 1S1555V
D502		Diode, 1S1553V
D503		Diode, 1S1555V
D504		Diode, 1S1555V
D505		Diode, 1S1555V
D506		Diode, 1S1555V
D507		Diode, 02Z6.2A
D701, 702		Diode, 1S1555V
D703, 704		Diode, M8513A-R
D705, 706		Diode, M8513A-R
D707, 708		Diode, M8513A-R
D801		Diode, 1S1555V
D802		Diode, 1S1555V
D803		Diode, 1S1555V

Symbol No.	Part No.	Description
D804		Diode, 02Z5.1A
D805	22115469	Diode, GL-9PR2
D806	22115469	Diode, GL-9PR2
D807	22115469	Diode, GL-9PR2
D808	22115469	Diode, GL-9PR2
D809	22115469	Diode, GL-9PR2
D901	22115422	Diode, S4VB20
D902, 903	22115368	Diode, RD15E
D904	22115383	Diode, SEL103S
IC21	22114635	IC, RC4558-P-L
IC81		IC, TD3406AP
<b>ELECTRICAL PARTS</b>		
S41	22195062	Switch, Lever, Function
S42	22195061	Switch, Lever, Tape Monitor
S43	22195060	Switch, Lever, Loudness
S901	22195148	Switch, Lever, Power
J201	22163662	Jack, US8Pin
J301	22163651	Jack, Microphone
J801	22163651	Jack, Headphone
F701, 702	22144385	Fuse, 3.15A/250V
F901	22144357	Fuse, 1.25A/250V
T901	22223191	Transformer, Power (Europe)
	22223192	Transformer, Power (England/ Australia)
	22162412	Terminal, Speaker
	22176286	Cord, Power (Europe)
	22176547	Cord, Power (England)
	22176489	Cord, Power (Australia)
<b>CAPACITORS</b>		
J = $\pm 5\%$ , K = $\pm 10\%$ , M = $\pm 20\%$ , Z = $-20\%$ +80%		
C201, 202	22467479	Electrolytic, 4.7mfd, 35V
C203, 204	22445470	Electrolytic, 47mfd, 16V
C205, 206	22447479	Electrolytic, 4.7mfd, 35V
C207, 208	22371472	Mylar, 0.0047mfd, 50V, J
C209, 210	22349471	Ceramic, 470pF, 50V, K
C211, 212	22371152	Mylar, 0.0015mfd, 50V, J
C213, 214	22448109	Electrolytic, 1mfd, 50V
C215, 216	22373102	Mylar, 0.001mfd, 50V, M
C217	22342223	Ceramic, 0.022mfd, 50V, Z
C301	22448109	Electrolytic, 1mfd, 50V
C302	22443470	Electrolytic, 47mfd, 10V
C303	22362470	Ceramic, 47pF, 50V, K
C304	22362470	Ceramic, 47pF, 50V, K
C305	22443101	Electrolytic, 100mfd, 10V
C306	22448109	Electrolytic, 1mfd, 50V
C307	22445221	Electrolytic, 220mfd, 16V
C308	22445221	Electrolytic, 220mfd, 16V
C401, 402	22372153	Mylar, 0.015mfd, 50V, K
C501	22445221	Electrolytic, 220mfd, 16V



Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
C502	22373102	Mylar, 0.001mfd, 50V, M	R501	22545820	82 ohm
C503	22445330	Electrolytic, 33mfd, 16V	R502	22545154	150K ohm
C504	22445470	Electrolytic, 47mfd, 16V	R503	22545223	22K ohm
C505	22373104	Mylar, 0.1mfd, 50V, M	R504	22545562	5.6K ohm
C506	22448221	Electrolytic, 220mfd, 50V	R505	22545222	2.2K ohm
C601, 602	22372273	Mylar, 0.027mfd, 50V, K	R506	22570323	2.2K ohm, 2W, Metal Oxide Film
C603, 604	22372184	Mylar, 0.18mfd, 50V, K	R507	22500176	22 ohm, Fusible
C605, 606	22448109	Electrolytic, 1mfd, 50V	R701, 702	22545222	2.2K ohm
C609, 610	22372272	Mylar, 0.0027mfd, 50V, K	R703, 704	22545473	47K ohm
C611, 612	22372183	Mylar, 0.018mfd, 50V, K	R705, 706	22545392	3.9K ohm
C607, 608	22443221	Electrolytic, 220mfd, 10V	R707, 708	22545392	3.9K ohm
C701, 702	22447100	Electrolytic, 10mfd, 35V	R709, 710	22545822	8.2K ohm
C703, 704	22349331	Ceramic, 330pF, 50V, K	R711, 712	22500180	82 ohm, Fusible
C705, 706	22362470	Ceramic, 47pF, 50V, K	R713, 714	22545223	22K ohm
C707, 708	22443101	Electrolytic, 100mfd, 10V	R715, 716	22545223	22K ohm
C709, 710	22362101	Ceramic, 100pF, 50V, K	R717, 718	22545562	5.6K ohm
C711, 712	22373104	Mylar, 0.1mfd, 50V, M	R719, 720	22545181	180 ohm
C801	22443101	Electrolytic, 100mfd, 10V	R721, 722	22545181	180 ohm
C901, 902	22440226	Electrolytic, 4700mfd, 42V	R723, 724	22500150	68 ohm, Fusible
C903, 904	22340032	Ceramic, 0.02mfd, 500V, Z	R725, 726	22500189	0.47 ohm, 2W, $\pm 10\%$ , Wire Wound
C905, 906	22340032	Ceramic, 0.02mfd, 500V, Z	R727, 728	22500189	0.47 ohm, 2W, $\pm 10\%$ , Wire Wound
C907, 908	22447471	Electrolytic, 470mfd, 35V	R729, 730	22570250	10 ohm, 1W, Metal Film
C909, 910	22340090	Ceramic, 4700pF, 250V, Z	R731, 732	22500150	68 ohm, Fusible
<b>RESISTORS</b>			R733, 734	22500139	150 ohm, Fusible
All resistors are 1/4W, $\pm 5\%$ , carbon film unless otherwise noted.			R801, 802	22500120	560 ohm, Fusible
R201, 202	22545221	220 ohm	R803	22545272	2.7K ohm
R203, 204	22545473	47K ohm	R804	22545392	3.9K ohm
R205, 206	22545104	100K ohm	R805	22545472	4.7K ohm
R207, 208	22545102	1K ohm	R806	22545222	2.2K ohm
R209, 210	22545564	560K ohm	R807	22570279	2.7K ohm, 1W, Metal Oxide Film
R211, 212	22545473	47K ohm	R808	22545122	1.2K ohm
R213, 214	22545104	100K ohm	R809	22545823	82K ohm
R301	22545473	47K ohm	R810	22545332	3.3K ohm
R302	22545222	2.2K ohm	R811	22570278	2.2K ohm, 1W, Metal Oxide Film
R304	22545154	150K ohm	R812	22570311	220 ohm, 2W, Metal Oxide Film
R305	22545104	100K ohm	R813	22570311	220 ohm, 2W, Metal Oxide Film
R306	22545183	18K ohm	R901	22570282	4.7K ohm, 1W, Metal Oxide Film
R307	22545472	4.7K ohm	R902	22570319	1K ohm, 2W, Metal Oxide Film
R308	22545221	220 ohm	R903	22570272	680 ohm, 1W, Metal Oxide Film
R309	22545104	100K ohm	R904	22570272	680 ohm, 1W, Metal Oxide Film
R310	22545102	1K ohm	R905	22545271	270 ohm
R311	22545102	1K ohm	R906	22545271	270 ohm
R401, 402	22545102	1K ohm	VR31	22651468	100K ohm, Variable
R403, 404	22545183	18K ohm	VR41	22651466	250K ohm, Variable
R601, 602	22545273	27K ohm	VR42	22620406	250K ohm, Variable, Balance
R603, 604	22545332	3.3K ohm	VR61	22651467	100K ohm, Variable, Treble
R605, 606	22545472	4.7K ohm	VR62	22651467	100K ohm, Variable, Bass
R607, 608	22545681	680 ohm	VR71, 72	22658393	300 ohm, Semi-fixed
R609, 610	22545471	470 ohm	VR81	22658291	1K ohm, Semi-fixed
R611, 612	22545332	3.3K ohm	<b>ACCESSORY</b>		
			22902073	Owner's Manual	
			22956590	LABEL, ENGLISH / FRENCH	
				EUROPE	