Service Manual

Technics
HI-FI COMPONENTS
Technics

FM/AM
4 CHANNEL/2 CHANNEL RECEIVER

MODEL SA-6000X

TECHNICAL SPECIFICATIONS (IHF) Specifications are subject to change without notice for further improvement

AUDIO SECTION

Music power:	**4 ch. operation**	140W (4Ω)
	Balanced transformerless operation	140W (8Ω)
1 kHz continuous (RMS) power:		
4 ch. operation	**Each ch. driven**	27W/27W/27W/27W (4Ω)
		18W/18W/18W/18W (8Ω)
	All ch. driven	16W+16W+16W+16W (4Ω)
		14W+14W+14W+14W (8Ω)
2CH Balanced transformerless operation		
Each ch. driven		50W/50W (8Ω)
Both ch. driven		35W+35W (8Ω)
20 Hz~20 kHz continuous (RMS) power:		
4 ch. operation	**All ch. driven**	10W+10W+10W+10W (8Ω)
Balanced transformerless operation	**Both ch. driven**	30W+30W (8Ω)
Total harmonic distortion:		0.5%
Intermodulation Distortion (60 Hz : 7 kHz : 4 : 1, SMPTE)		0.7%
Power bandwidth:	**All ch. driven at 8Ω**	7Hz~30 kHz, −3dB
Frequency response:	**PHONO**	RIAA standard curve ±1dB
	AUX	8Hz~50 kHz, +0, −3dB
Residual hum & noise:		1.5mV
Input sensitivity & Impedance:	**PHONO**	1.5mV/50kΩ
	AUX	150mV/60kΩ
	PLAYBACK	150mV/60kΩ
	MIC	2mV/50kΩ
S/N (IHF, A):	**PHONO**	70dB
	AUX	90dB
Tone control:	**BASS**	50Hz, +13dB −13dB
	TREBLE	10kHz, +10dB, −10dB
Loudness control (Volume at −30dB):		50Hz, +10dB
REC OUT:		150mV
Damping factor:		30 (8Ω)
Load impedance:	**4 CH**	4~16Ω
	Balanced Transformerless	8~16Ω

FM TUNER SECTION

Frequency range:		88~108MHz
FM sensitivity (IHF):		1.9μV
Alternate channel selectivity:		65dB
Harmonic distortion:	**MONO**	0.3%
	STEREO	0.4%
S/N:		65dB
Frequency response:		20Hz~13kHz, ±1dB
Image rejection (at 98 MHz):		55dB
IF rejection (at 98 MHz):		60dB
Spurious response rejection (at 98 MHz):		60dB
Capture ratio:		1.8dB
AM suppression:		50dB
Stereo separation (at 1 kHz):		40dB
Leak carrier (19 kHz, 38 kHz):		50dB

AM TUNER SECTION

Frequency range:	520~1610kHz
Sensitivity:	20μV
Selectivity:	25dB
Image rejection (at 1000 kHz):	40dB
IF rejection (at 1000 kHz):	40dB

GENERAL

Power consumption:	300W
Power supply:	AC 50/60Hz, 110/120/220/240V
Dimensions (W x H x D):	430×146×385mm (16 9/16" × 5 3/4" × 15 5/32")
Weight:	11.1kg (24.5 lb.)

TECHNISCHE DATEN (DIN 45 500) Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

VERSTÄRKERTEIL

Musikleistung:	**4-Kanal Betrieb**	4×35W (4Ω)
	Transformatorlos Ausgeglichen Betrieb	2×70W (8Ω)
Nennleistung 1 kHz:		
4-kanal Betrieb Alle Kanäle in Betrieb	4×16W (4Ω)	4×14W (8Ω)
Transformatorlos Ausgeglichen Betrieb Beide Kanäle in Betrieb		2×35W (8Ω)
Nennleistung 20Hz~20 kHz:		
4-Kanal Betrieb Alle Kanäle in Betrieb	4×12W (4Ω)	4×10W (8Ω)
Transformatorlos Ausgeglichen Betrieb Beide Kanäle in Betrieb		2×30W (8Ω)
Harmonische Verzerrung:		
Nennleistung, bei 1000 Hz 4Ω		0.5%
Intermodulations verzerrung: Nennleistung, bei 250 Hz : 8000 Hz = 4 : 1		0.7%
Leistungsbandbreite (Alle Kanäle in Betrieb 4Ω):		7Hz~40kHz, −3dB
Frequenzgang:		10Hz~50kHz, −3dB
Eingangs-Empfindlichkeit und-Impedanz:	**PHONO**	1.5mV/50kΩ
	AUX	150mV/60kΩ
	MIC	2mV/50kΩ
Tonband-Cinchbuches:	**PLAYBACK**	150mV/60kΩ
	REC OUT	150mV
Fremdspannungsabstand:		
bei Nennleistung	**PHONO**	60dB
	AUX	78dB
bei 50mW Ausgangsleistung	**PHONO**	60dB
	AUX	60dB
Klangregler: **Tiefen-Bereich**		+13dB, −13dB bei 50Hz
Höhen-Bereich		+10dB, −10dB bei 10kHz
Loudness-Regler:		50Hz +10dB
Dampfungsfaktor:		15 bei 4Ω 30 bei 8Ω
Ausgänge Lautsprecher: **4-Kanal Betrieb**		4~16Ω
Transformatorlos Ausgeglichen Betrieb		8~16Ω

UKW TUNERTEIL

Empfangsbereich:	88~108MHz
Antennenanschluß:	300Ω (symmetrisch) 75Ω (unsymmetrisch)
Empfindlichkeit (bei ±40 kHz Hub):	1.8 μV, 30dB Fremdspannungsabstand 300Ω
	1.5 μV, 20dB Fremdspannungsabstand 300Ω
	1.0 μV, 20dB Fremdspannungsabstand 75Ω
Klirrfaktor (bei ±40 kHz Hub):	MONO 0.3% STEREO 0.7%
Fremdspannungsabstand:	MONO 52dB STEREO 50dB
Selektivität bei 400 kHz:	65dB
Spiegelselektion (bei 98 MHz):	55dB
ZF-Festigkeit (bei 98 MHz):	60dB
Verzerrungsfestigkeit (bei 98 MHz):	60dB
Gleich wellen-Selektion:	1.8dB
AM-Unterdrückung:	50dB
Stereo-Übersprechdämpfung:	40dB bei 1kHz
Pilotton-Unterdrückung:	48dB bei 19kHz 58dB bei 38kHz
Begrenzung, Einsatzpunkt:	1.2μV
Bandbreit: **ZF-Verstärker**	350kHz
UKW-Demodulator	700kHz

MW TUNERTEIL

Empfangsbereich:	520~1610kHz
Empfindlichkeit:	20μV
Selektivität:	25dB
Spiegelselektion:	40dB
ZF-Festigkeit:	40dB

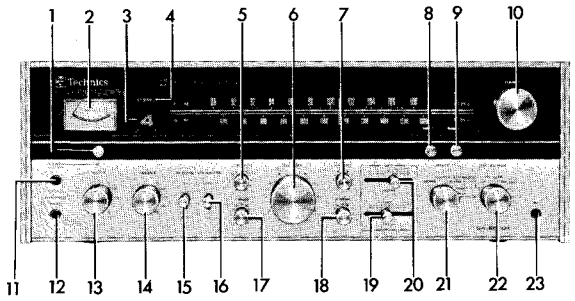
ALLGEMEINS

Leistungsaufnahme:	300W
Netzspannung umschaltbar:	AC50/60HZ. 110/120/220/240V
Abmessungen (B x H x T):	430×146×385mm
Gewicht:	11.1kg

MATSUSHITA ELECTRIC
MATSUSHITA ELECTRIC TRADING CO., LTD.
P. O. Box 288, Central Osaka, Japan

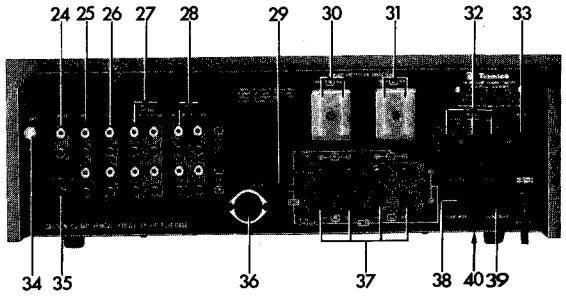
ORDER NO. AD-051

■ LOCATION OF CONTROLS



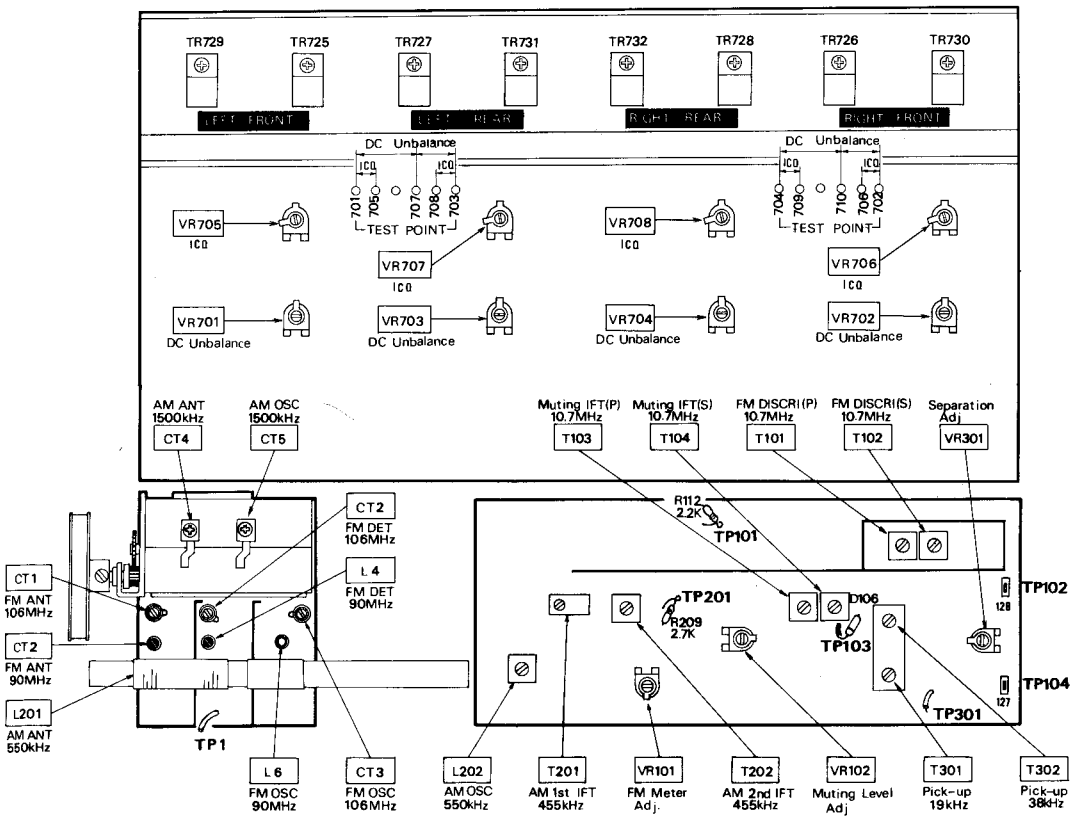
1. POWER SOURCE SWITCH (S8)
2. SIGNAL STRENGTH METER
3. CHANNEL INDICATOR
4. FM STEREO INDICATOR
5. LEFT FRONT LEVEL CONTROL (VR3)
6. MAIN VOLUME CONTROL (VR601)
7. RIGHT FRONT LEVEL CONTROL (VR4)
8. 4CH TAPE MONITOR SWITCH ..... TAPE 1 (S3)
9. 4CH TAPE MONITOR SWITCH ..... TAPE 2 (S4)
10. TUNING CONTROL
11. HEADPHONES JACK ..... Front Channel
12. HEADPHONES JACK ..... Rear Channel
13. BASS CONTROL (VR602)
14. TREBLE CONTROL (VR603)
15. MUTING SWITCH (S6)
16. LOUDNESS SWITCH (S7)
17. LEFT REAR LEVEL CONTROL (VR5)
18. RIGHT REAR LEVEL CONTROL (VR6)
19. AFD (DEPTH) CONTROL (VR2)
20. AFD (WIDTH) CONTROL (VR1)
21. MODE SWITCH (S2)
22. SELECTOR SWITCH (S1)
23. MICROPHONE JACK

24. PHONO INPUT TERMINALS ..... 2 Channel
25. AUX 1 INPUT TERMINALS ..... 4 Channel
26. AUX 2 INPUT TERMINALS ..... 4 Channel
27. 4CH TAPE MONITOR TERMINALS ..... TAPE 1
28. 4CH TAPE MONITOR TERMINALS ..... TAPE 2
29. BALANCED TRANSFORMER LESS SWITCH (S5)
30. RIGHT CHANNEL CIRCUIT PROTECTION FUSES
31. LEFT CHANNEL CIRCUIT PROTECTION FUSES
32. EXT FM ANTENNA TERMINALS
33. EXT AM ANTENNA TERMINAL
34. GROUND TERMINAL
35. 4CH MPX OUTPUT TERMINAL
36. 4CH REMOTE BALANCER CONNECTION SOCKET
37. SPEAKER TERMINALS
38. AC POWER OUTLET ..... Switched
39. AC POWER OUTLET ..... Unswitched
40. VOLTAGE SELECTOR SWITCH (S9)



■ ALIGNMENT INSTRUCTIONS

• **Alignment Points**



ALIGNMENT INSTRUCTIONS.....READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Notes :

1. Volume control ..... Minimum
2. Balanced transformer less switch..... 4CH
3. Other controls ..... Optional position
4. Maintain line voltage at rated voltage.
5. The adjustment should be started 1~2 minutes after setting the power switch to the ON position.
6. Before adjusting, I_{CQ} adjusting volumes (VR805, VR806, VR807 and VR808) as shown in Alignment Point Location.

	CIRCUIT	VTVM CONNECTION	ADJUSTMENT POINTS	REMARKS
	MAIN AMP ALIGNMENT			
1	DC Unbalance	Connect DC VTVM to **TP**702 and **TP**710 (R-Front), **TP**701 and **TP**707 (L-Front) terminal.	VR702 (R-Front) VR701 (L-Front)	Make sure that DC VTVM becomes 0mV.
		Connect DC VTVM to **TP**704 and **TP**710 (R-Rear), **TP**703 and **TP**707 (L-Rear) terminal.	VR704 (R-Rear) VR703 (L-Rear)	
2	I_{CQ}	Connect DC VTVM to **TP**702 and **TP**706 (R-Front), **TP**701 and **TP**705 (L-Front) terminal.	VR706 (R-Front) VR705 (L-Front)	Make adjustments so that the indication on DC VTVM becomes 4mV.
		Connect DC VTVM to **TP**704 and **TP**709 (R-Rear), **TP**703 and **TP**708 (L-Rear) terminal.	VR708 (R-Rear) VR707 (L-Rear)	

Notes :

1. Volume control ..... Maximum (AM-RF)
   Minimum (AM-IF, FM-IF)
   Variable (FM-RF)
2. Bass and treble control ..... Center
3. Band selector switch ..... AM
   FM-Auto (FM-RF, FM-IF)
4. Loudness switch ..... OFF
5. Muting switch ..... OFF
6. Balanced transformer less switch..... 4CH
7. Tape-monitor switch ..... Source
8. Mode switch ..... Stereo
9. Maintain line voltage at rated voltage.
10. Output of signal generator should be no higher than necessary to obtain an output reading.

	SIGNAL GENERATOR or SWEEP GENERATOR		RECEIVER DIAL SETTING [DISTANCE]	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
	AM ALIGNMENT					
3	High side through 0.001μF to antenna terminal, Common to chassis.	455kHz (20kHz Sweep)	Point of non-interference	Connect vert. amp. of scope to **TP**201.	T201 (1st IFT) T202 (2nd IFT)	Adjust for maximum output.
4	Fashion loop of several turns of wire and radiate signal into loop of receiver.	550kHz (30% Mod. with 400Hz)	550kHz [5.5mm (3/16")]	Connect meter to speakers terminal of set.	L202 (OSC Coil) L201 (ANT Coil)	Adjust for maximum output. Adjust L201 by moving coil bobbin along ferrite core.
5	Fashion loop of several turns of wire and radiate signal into loop of receiver.	1500kHz (30% Mod. with 400Hz)	1500kHz [157.2mm (6 3/16")]	Connect meter to speakers terminal of set.	CT5 (OSC Trimmer) CT4 (ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
	FM-IF ALIGNMENT					
6			Point of non-interference.	Connect DC VTVM between **TP**102 and **TP**104.	T102 (FM DISCRI IFT) (S)	Make sure that VTVM becomes 0V.
7	High side through 0.001μF to **TP**1. Common to chassis.	10.7MHz (400kHz Sweep)	Point of non-interference.	Connect vert. amp. of scope through detector to **TP**101. Refer to figure 1.		Confirm center frequency.
8	High side through 0.001μF to **TP**1. Common to chassis.	10.7MHz (400kHz Sweep)	Point of non-interference.	Connect vert. amp. of scope to **TP**103.	T103 (Muting IFT) (P) T104 (Muting IFT) (S)	Adjust for maximum sharp and proper linearity. Adjust to center frequency as step 7. Refer to figure 2.
	FM-RF ALIGNMENT					
9	Connect to FM antenna terminal through FM dumm antenna. (Refer to fig 3)	90MHz (100% Mod. with 400Hz)	90MHz [20.7mm (27/32")]	Output meter across speaker terminals.	L6 (FM OSC Coil) * L4 (FM DET Coil) L2 (FM ANT Coil)	Adjust for maximum output.
10	Connect to FM antenna terminal through FM dummy antenna. (Refer to fig. 3)	106MHz (100% Mod. with 400Hz)	106MHz [147.2mm (5 25/32")]	Output meter across speaker terminals.	CT3 (FM OSC Trimmer) CT2 (FM DET Trimmer) CT1 (FM ANT Trimmer)	Adjust for maximum output. Repeat steps (9) and (10).

* Use six cornered alignment tool for aligning FM OSC coil (L6).

MUTING LEVEL ALIGNMENT

Note : Muting switch.....ON

11	Connect to FM antenna terminal through FM dummy antenna.	98MHz (100% Mod. with 400Hz) Output 28dB	98MHz	Output meter or speaker across speaker terminals.	VR102 (Muting Level)	Adjust so that output can be obtained.

	SIGNAL GENERATOR CONNECTION	SIGNAL GENERATOR FREQUENCY	RECEIVER DIAL SETTING	INDICATOR (DISTORTION METER and SIGNAL METER)	ADJUSTMENT POINTS	REMARKS
	FM-MONO DISTORTION ALIGNMENT					
	Note: Muting switch ..... OFF					
12	Connect to FM antenna terminal through FM dummy antenna.	98MHz (100% Mod. with 400Hz) Output 72dB	98MHz	Connect distortion meter to speaker terminals.	T101 (FM DISCRI IFT) (P)	Adjust for minimum distortion.
	SIGNAL METER ALIGNMENT					
13	Connect to FM antenna terminal through FM dummy antenna.	98MHz (30% Mod. with 400Hz) Output 72dB	98MHz	Signal meter of set.	VR101 (Indicated Position)	Adjust for about 4.6 point of signal meter indication.

Notes:

Stereo-modulator ..... Connect stereo-modulator output to EXT. MOD. terminal of signal generator. Internal OSC 1kHz. Pilot signal modulation 10%.

Signal generator ..... Frequency approximately 98MHz. Output level 72dB. Modulation mode to FM.

1. Band selector ..... FM-Auto
2. Bass and treble control ..... Center
3. Balanced transformer less switch 4CH
4. Mode switch ..... Stereo
5. Maintain line voltage at rated voltage.
6. Muting switch ..... OFF
7. Loudness switch ..... OFF
8. Tape monitor switch ..... Source
9. Dummy load ..... Source

	SIGNAL GENERATOR CONNECTION	STEREO MODULATOR MODE and MOD. RATE	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
	19kHz COIL and PHASE ALIGNMENT				
14	FM antenna terminal through dummy antenna.	Pilot signal to ON.	Connect scope to **TP**301, Common to chassis.	T301 (19kHz Coil)	Adjust for maximum output.
15	〃	〃 L (or R) 30% Mod.	Connect scope to speaker terminals.	T302 (38kHz Coil) (Phase Alignment)	Adjust for minimum right (or left) output.
	SEPARATION ALIGNMENT				
16	FM antenna terminal through dummy antenna.	L (and R) 30% Mod.	Output meter across speaker terminals through low pass filter. (Refer to fig. 4)	VR301 (Separation)	Adjust for minimum right (and left) output.

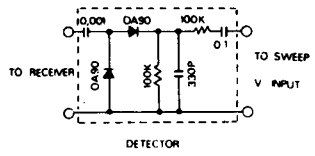


Fig. 1

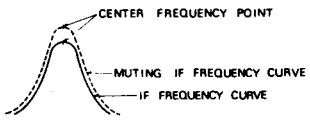


Fig.2

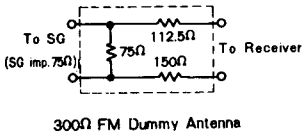


Fig. 3

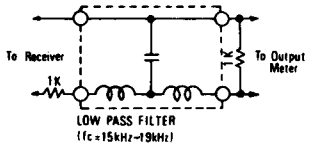


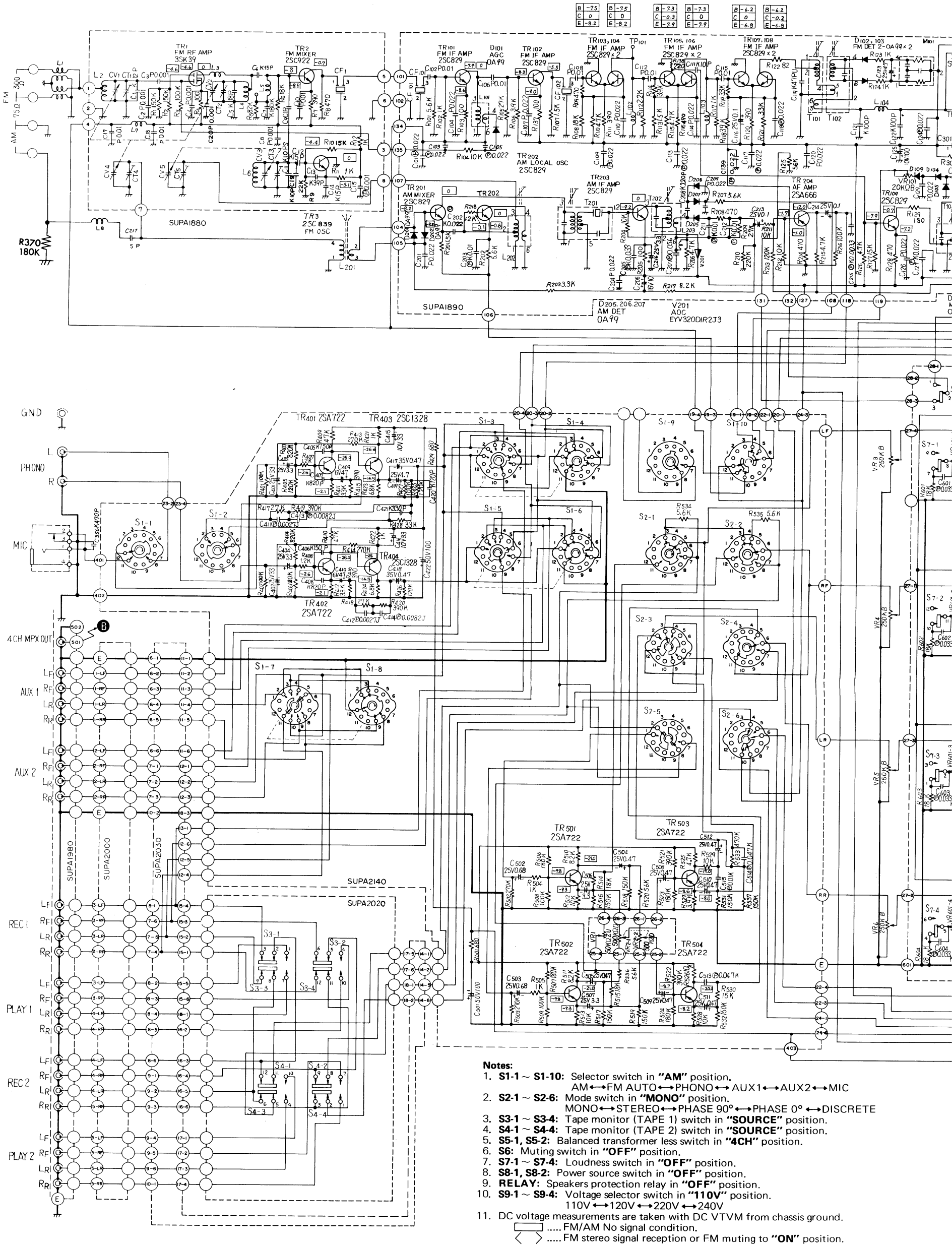
Fig.4

■ FM-RF ALIGNMENT INSTRUCTIONS ..... Only set for Germany

	MESSENDER SCHALTUNG	MESSENDER FREQUENZ	SKALENZEIGER-EINSTELLUNG DES EMPFÄNGERS (ABSTAND)	ANGEIGE (RÖHRENVOLTMETER ODER OSZILLOGRAPH)	ABGLEICH	BEMERKUNGEN
	ABGLEICHANWEISUNGEN.....VOR DEM ABGLEICH SORGFÄLTIG DURCHLESEN					
	FM HF-ABGLEICH					
	Anschluß an den FM Antennenanschluß über die künstliche, FM Antenne. (Vgl. Abb. 1)	87.5MHz (100% Mod. bei 400Hz)	87.5MHz (0mm)	Output meter über Lautsprecher-schwingspule anschließen.	L6 (Oszillatorspule)	Auf max. Ausgang abgleichen
	〃	90MHz (〃)	90MHz	〃	L4 (Zwischenkreis) L2 (Antennenspule)	〃
	〃	106MHz (〃)	106MHz (147.2mm)	〃	CT3 (OSZ. Trimmer) CT2 (DET. Trimmer) CT1 (ANT. Trimmer)	〃

Schematic Diagram .....Model SA-6000X

(This schematic diagram may be modified at any time with the

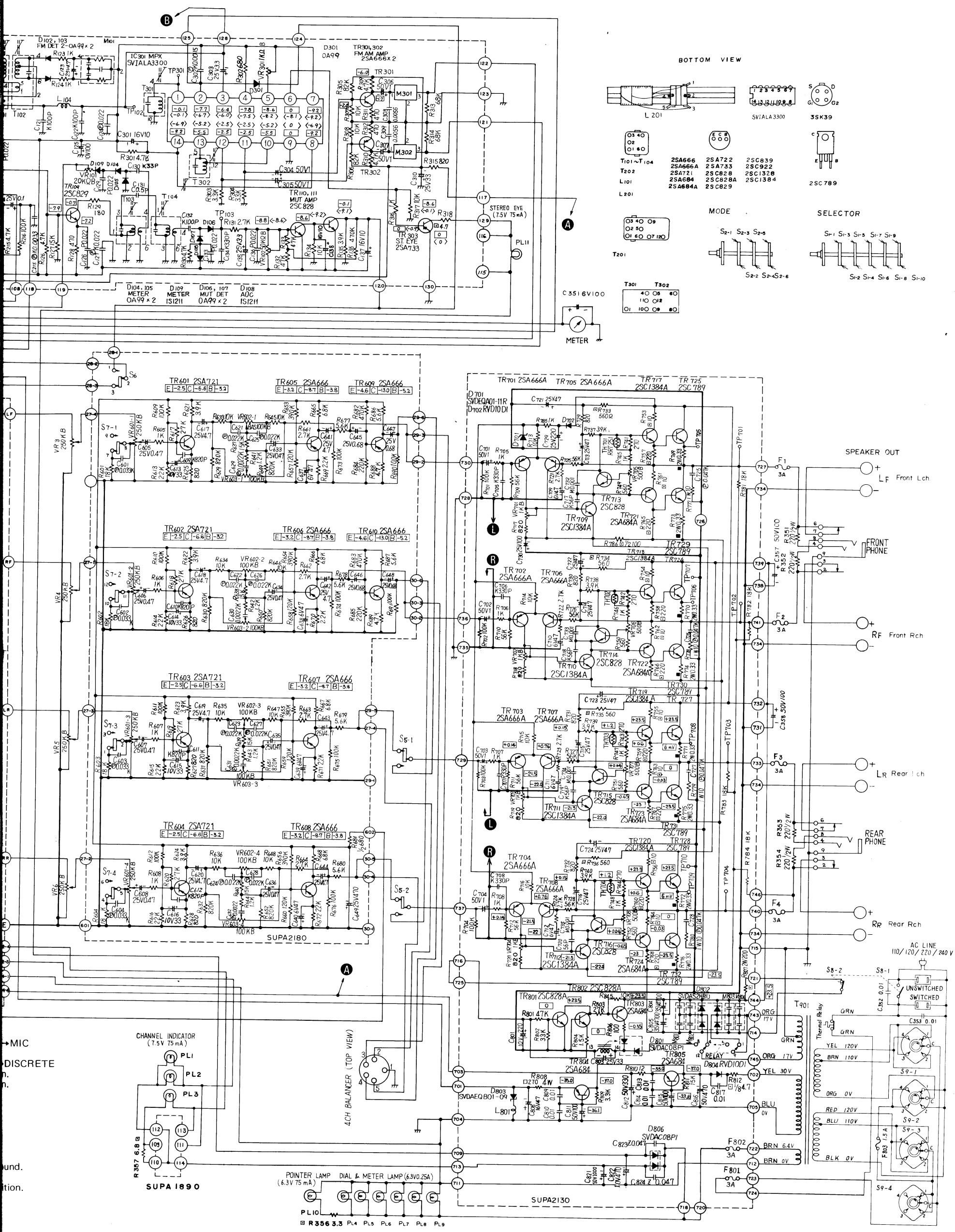


Notes:

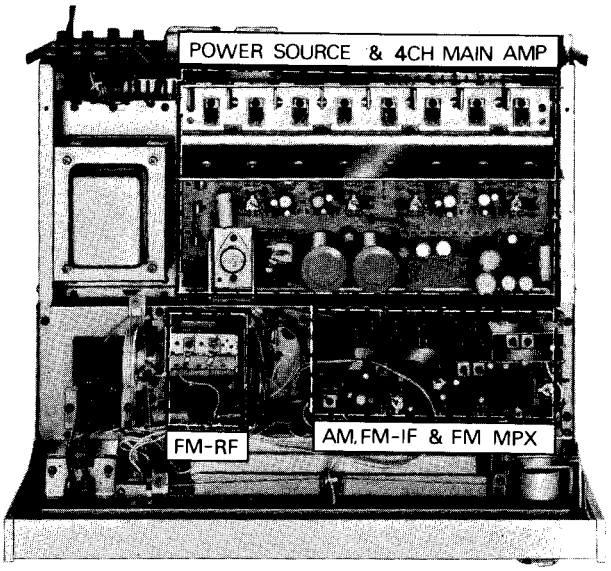
1. **S1-1 ~ S1-10:** Selector switch in **"AM"** position.
   AM ⟷ FM AUTO ⟷ PHONO ⟷ AUX1 ⟷ AUX2 ⟷ MIC
2. **S2-1 ~ S2-6:** Mode switch in **"MONO"** position.
   MONO ⟷ STEREO ⟷ PHASE 90° ⟷ PHASE 0° ⟷ DISCRETE
3. **S3-1 ~ S3-4:** Tape monitor (TAPE 1) switch in **"SOURCE"** position.
4. **S4-1 ~ S4-4:** Tape monitor (TAPE 2) switch in **"SOURCE"** position.
5. **S5-1, S5-2:** Balanced transformer less switch in **"4CH"** position.
6. **S6:** Muting switch in **"OFF"** position.
7. **S7-1 ~ S7-4:** Loudness switch in **"OFF"** position.
8. **S8-1, S8-2:** Power source switch in **"OFF"** position.
9. **RELAY:** Speakers protection relay in **"OFF"** position.
10. **S9-1 ~ S9-4:** Voltage selector switch in **"110V"** position.
    110V ⟷ 120V ⟷ 220V ⟷ 240V
11. DC voltage measurements are taken with DC VTVM from chassis ground.
    ▭ ..... FM/AM No signal condition.
    〈 〉 ..... FM stereo signal reception or FM muting to **"ON"** position.

VR1: AFD Control ..... WIDTH
VR2-1, VR2-2: AFD Control ..... DEPTH
VR3 ~ VR6: Channel Level Control
VR101: FM Meter Adjustment
VR102: FM Muting Level Adjustment
VR301: Separation Adjustment
VR601-1 ~ VR601-4: Main Volume Control
VR602-1 ~ VR602-4: Bass Control
VR603-1 ~ VR603-4: Treble Control
VR701 ~ VR704: DC Unbalance Adjustment
VR705 ~ VR708: ICQ Adjustment

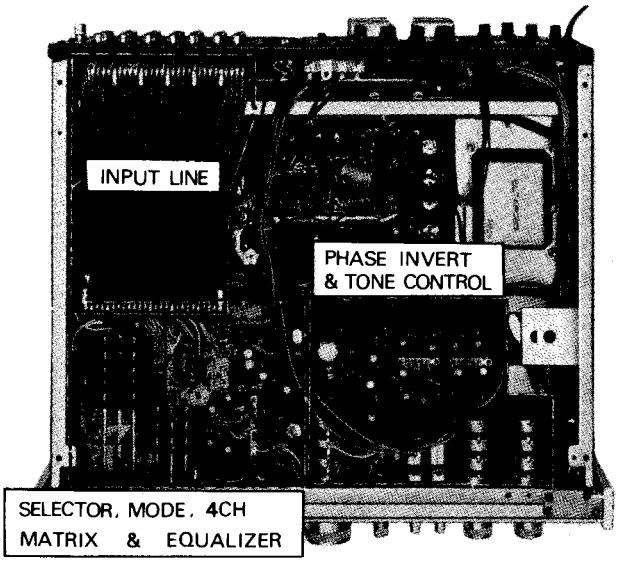
fied at any time with the development of new technology.)



■ LOCATION OF CIRCUIT BOARDS



Top View



Bottom View

■ TO REMOVE TUNER

1. Remove four (4) cabinet mounting screws.
2. Remove cabinet from chassis.
3. Remove fourteen (14) control knobs from front panel.
4. Remove six (6) front panel mounting black screws. Refer to cabinet and chassis Parts Location on page 13.
5. Remove front panel from chassis.
6. Remove seven (7) tuner mounting black screws, nos. 1~7, as figure 2 and 3.
7. Loosen power switch mounting screws, nos. 8, 9 and slide power switch as figure 3.
8. Then tuner can be moved in front of chassis as figure 1, and remove tuner from chassis.

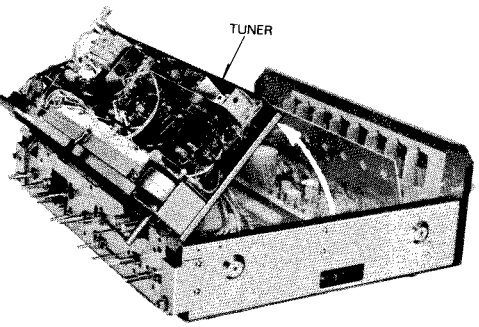


Fig. 1

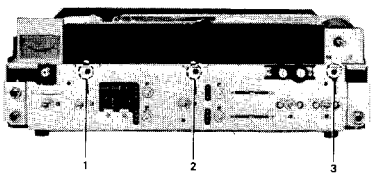


Fig. 2

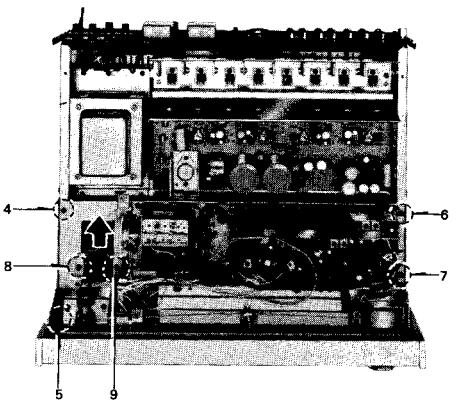
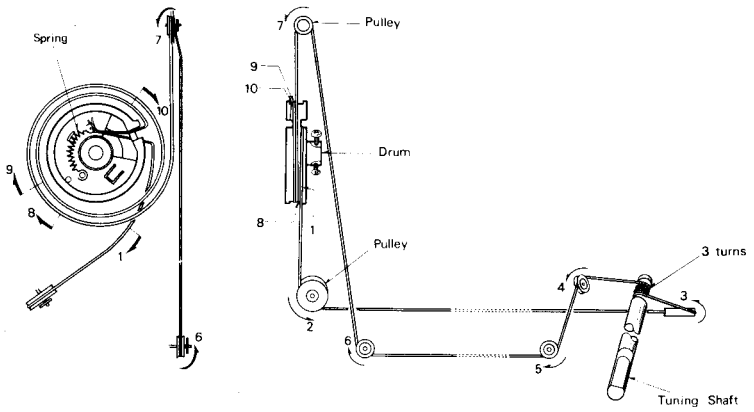


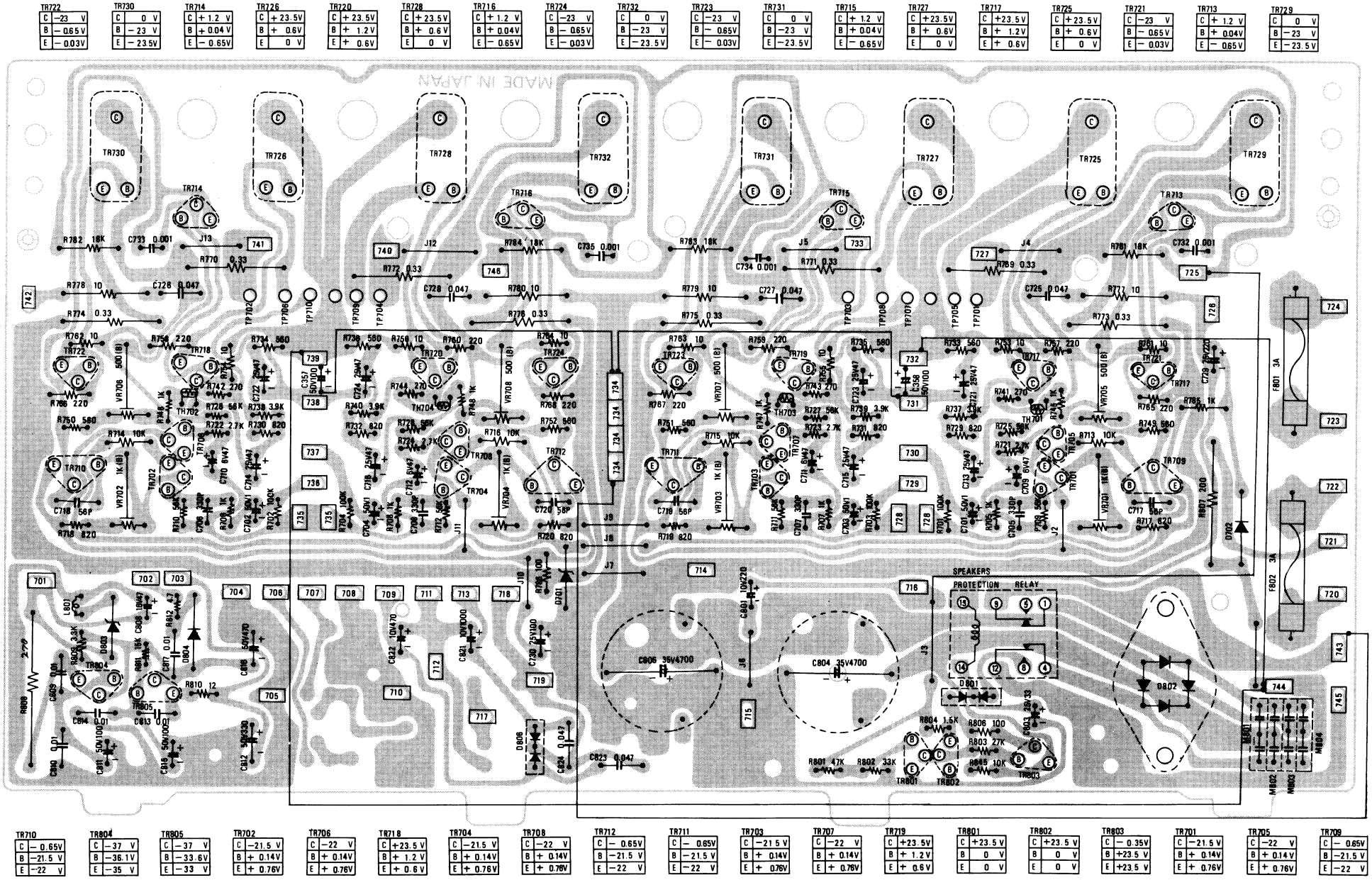
Fig. 3

■ DIAL CORD INSTALLATION GUIDE

1. Dial cord length is 63⅛" (160cm)
2. Tuning gang is positioned at maximum capacity. (Frequency is minimum)
3. Arrow marks (1 ~ 10) indicate correct order and direction of stringing dial cord.

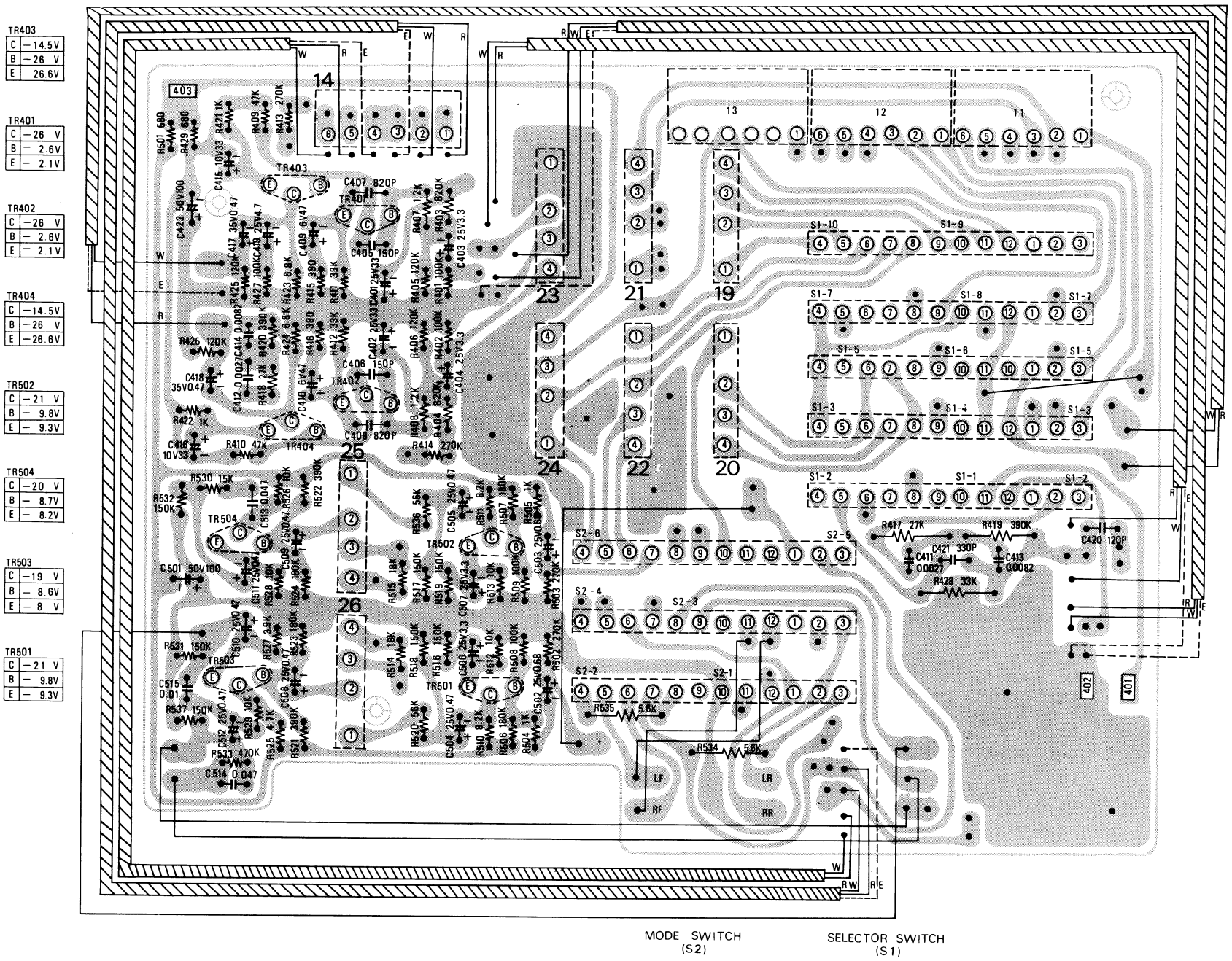


POWER SOURCE & 4CH MAIN AMPLIFIER Circuit Board



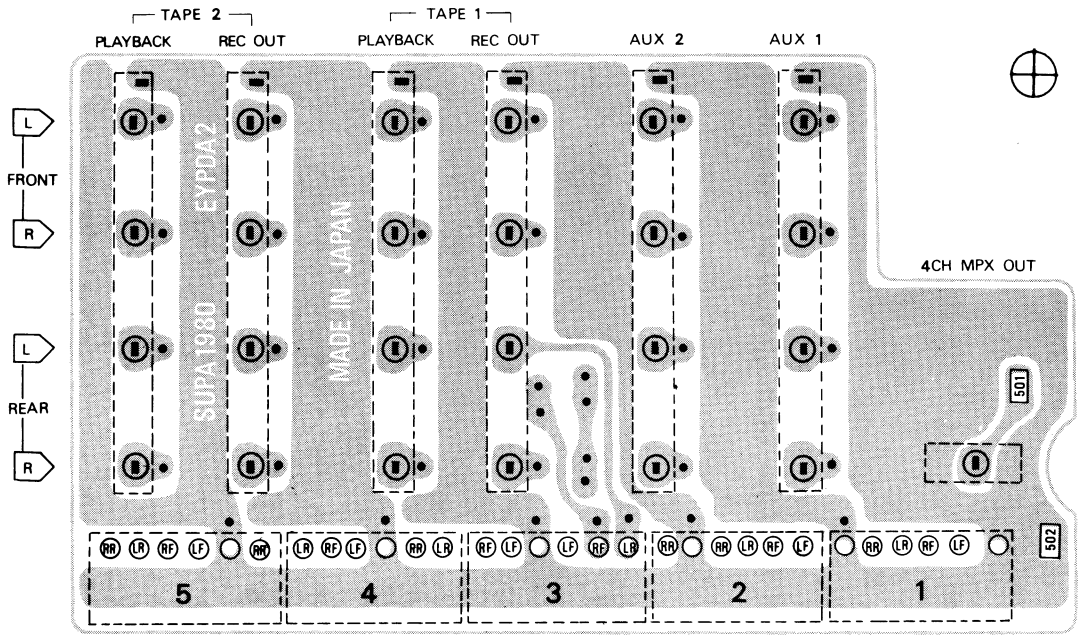
SELECTOR/MODE SWITCH. 4 CH MATRIX & EQUALIZER Circuit Board

Bottom View



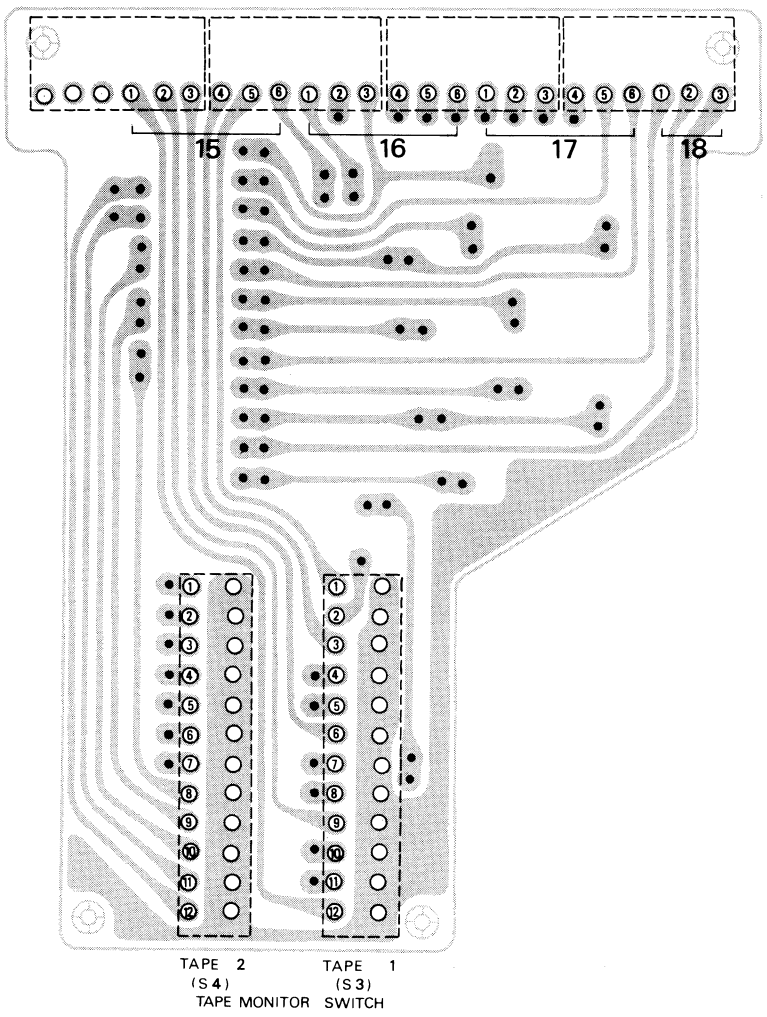
INPUT TERMINAL Circuit Board

Bottom View

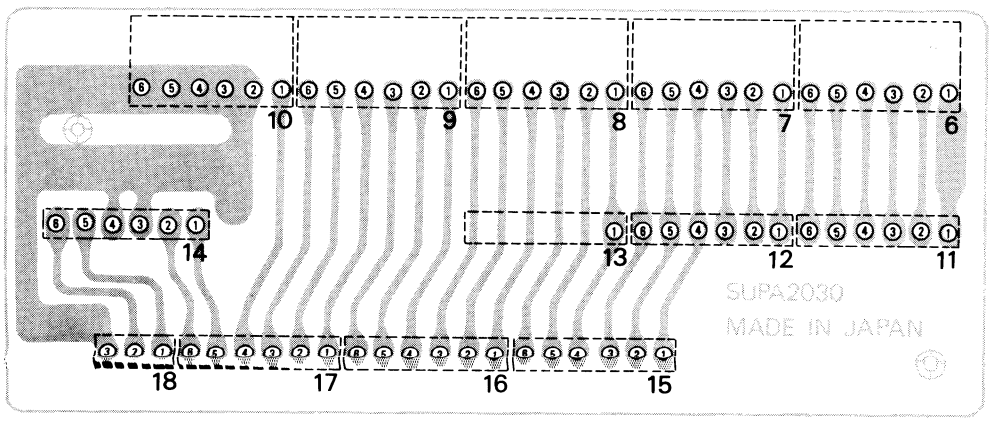


TAPE MONITOR SWITCH Circuit Board

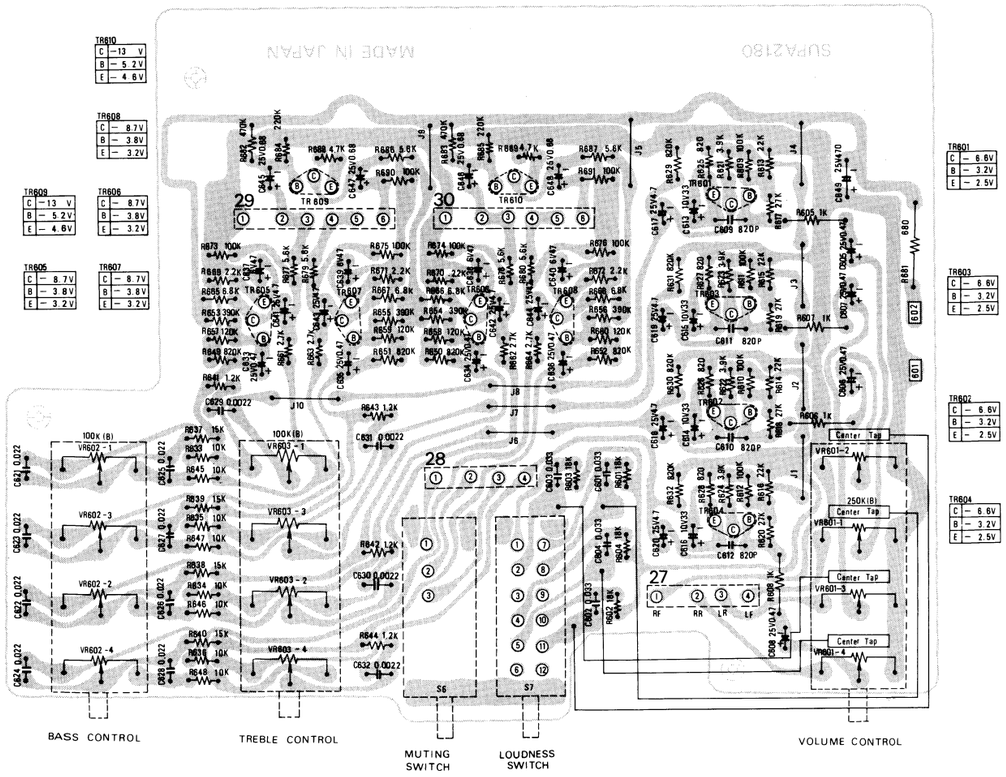
Bottom View



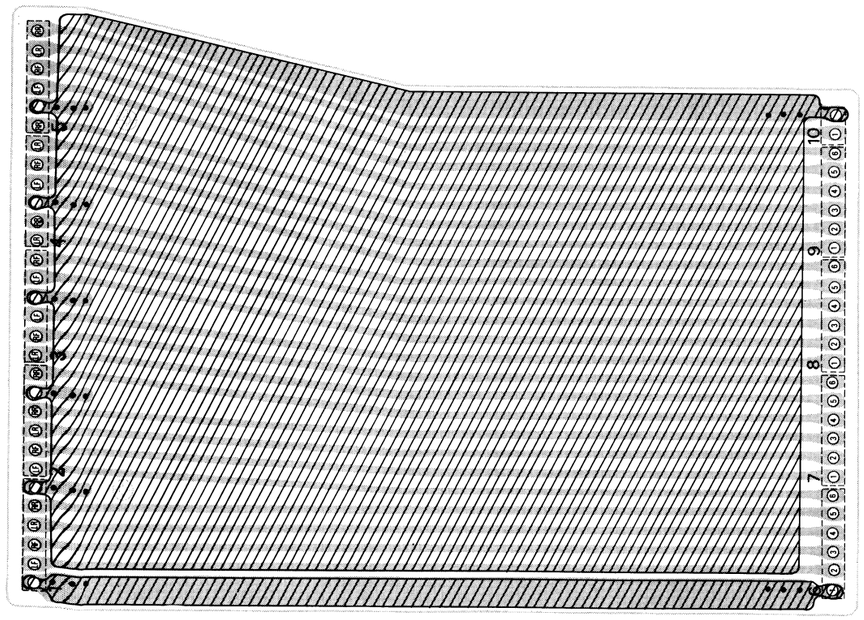
CONNECTING Circuit Board



PHASE INVERT & TONE CONTROL Circuit Board



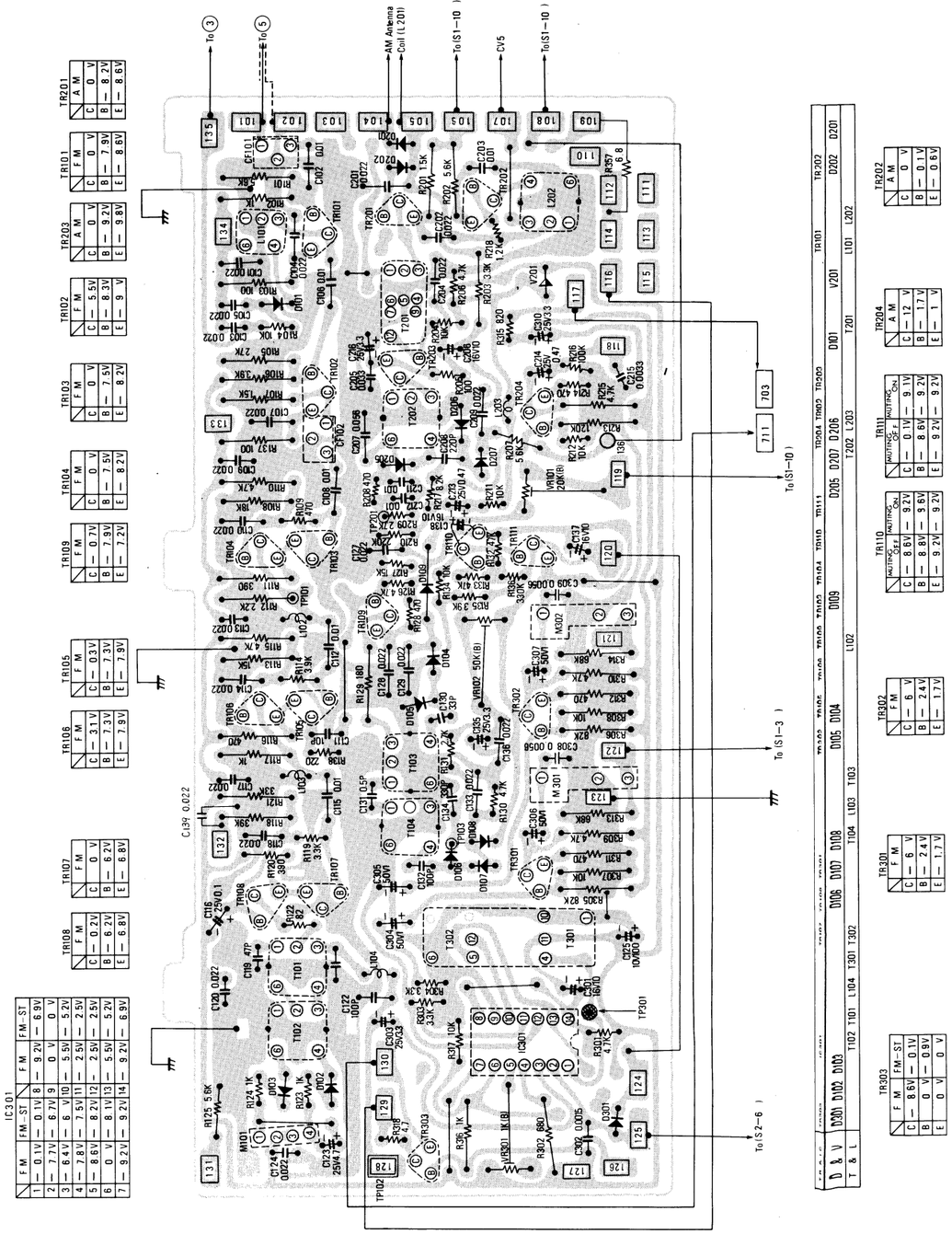
INPUT LINE Circuit Board



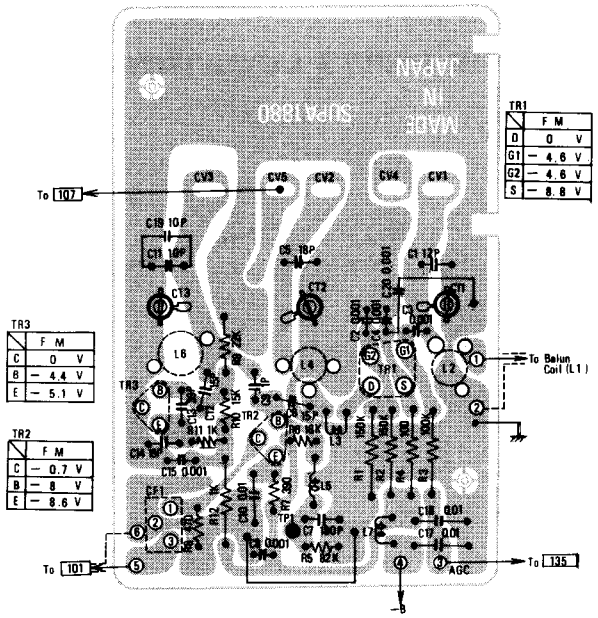
Printed Circuit View on Top of p.c.b.

Printed Circuit View on Bottom of p.c.b.

AM, FM-IF & FM MPX Circuit Board



FM-RF Circuit Board



■ SERVICE AID

How to install and remove the connection socket

1. Insert the lead wire into the lead wire pin clamp. (See fig. 1-①)
2. Bend the tabs of the lead wire pin clamp using radio pliers to attach the lead wire. (See fig. 1-② and ③)
3. Insert the lead wire pin clamp, to which the lead wire has been attached, into the connection socket. (See fig. 2)
4. In order to remove the lead wire pin clamp from the connection socket, insert a eyeleteer into the socket hole and touch it to the lead wire pin clamp stop. (See fig. 3-①)
5. Bend the stop inward toward the lead wire pin clamp and pull out the lead wire pin clamp. (See fig. 3-②)

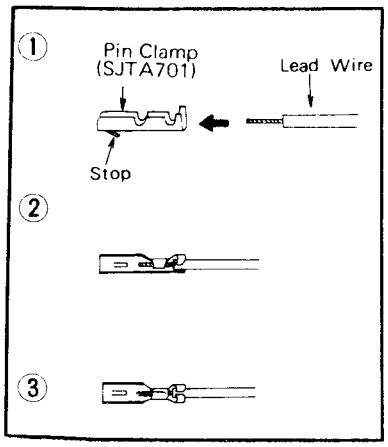


Fig. 1

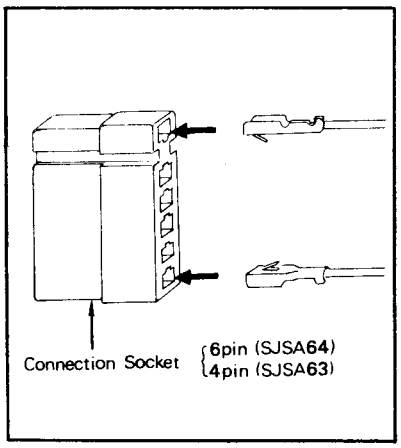


Fig. 2

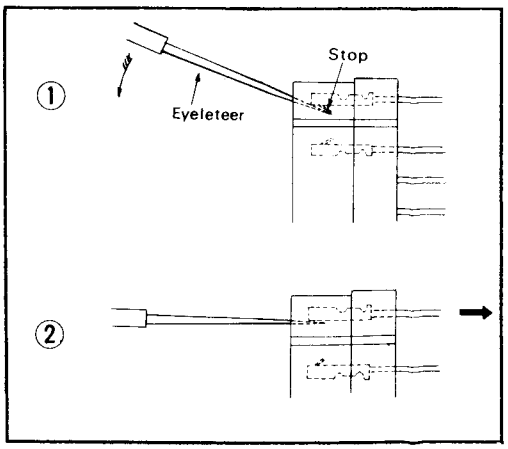
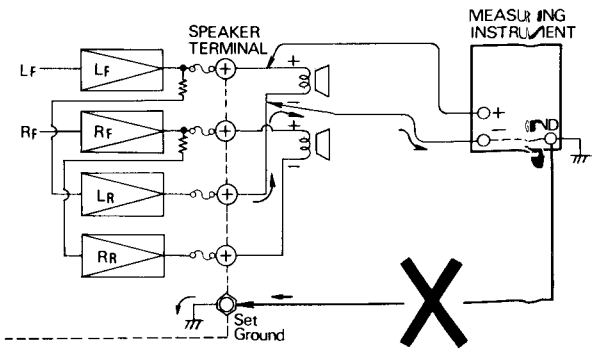
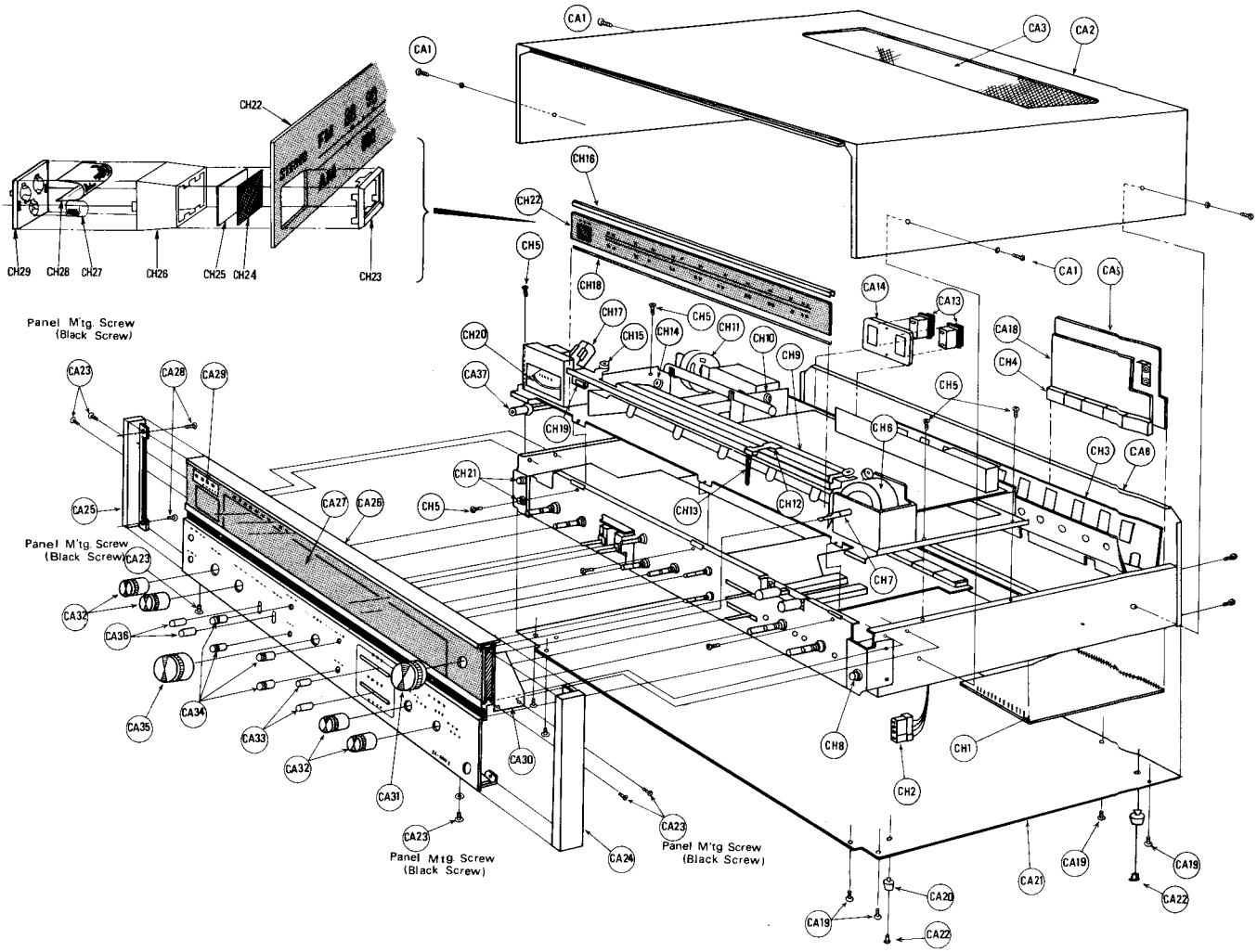


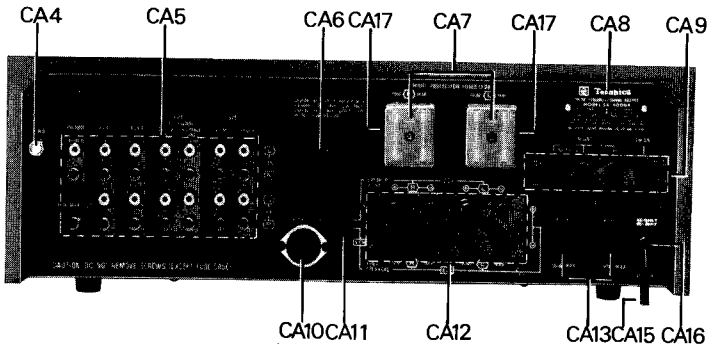
Fig. 3

When the measuring instrument is connected to the speaker terminals with the balanced transformerless connection, the following should be noted:
There are some measuring instruments whose ground (GND) terminal is connected directly to the negative side of the input terminal. If the instrument used for measurement is so designed, extreme care should be given that the ground terminal of the instrument not be connected to the ground terminal of the set. If care is not exercised and the connection is made, excessive electric current will flow in the direction of the arrow, as shown in the diagram, causing the rear amplifier to reach a short-circuit condition.
When this occurs, the circuit protecting fuse will be blown, interrupting the circuit. Please be careful.

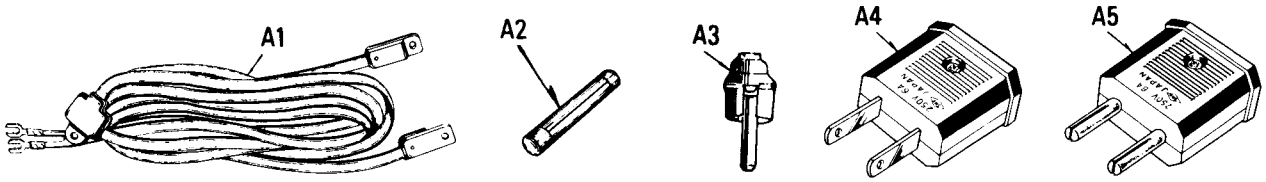


■ CABINET & CHASSIS PARTS LOCATION

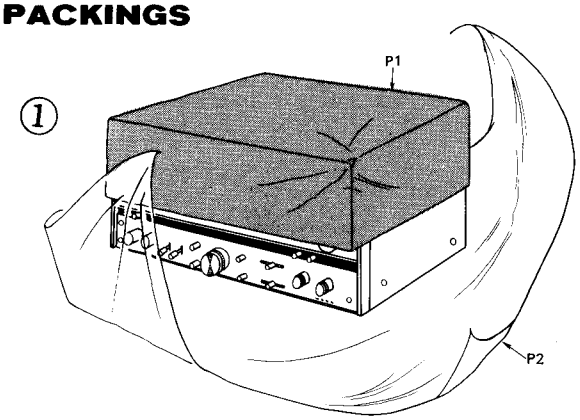


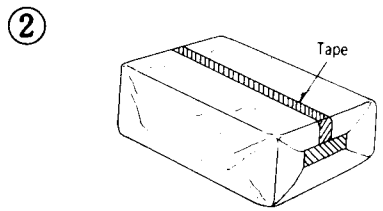


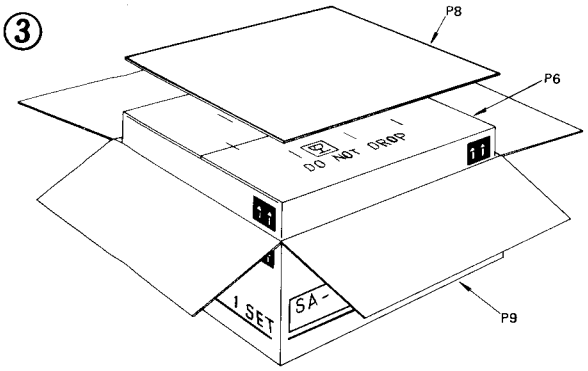
■ ACCESSORIES

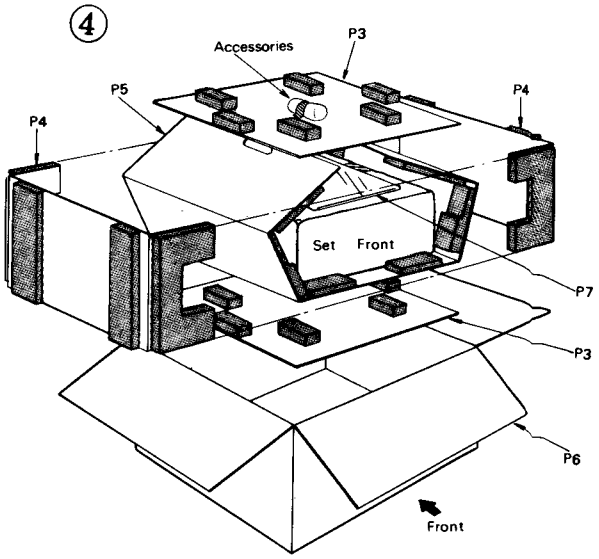


■ PACKINGS









■ REPLACEMENT PARTS LIST

NOTES :

1. Part numbers are indicated on most mechanical parts. Please use this part number, for parts orders.
2. Ⓝ indicates the New Parts.
3. **X - Z** rank: **X** rank parts will cover 80% of repair needs.
   X + Y rank parts will cover 95% of repair needs.
   Z rank parts are less necessary.

Bemerkungen :

1. Die meisten mechanischen Teile sind mit Teilnummern versehen. Bitte geben Sie diese Nummern an, sofern die Teile keine Bezugsnummern haben.
2. Ⓝ bedeutet : Neue Teile.
3. Gruppen **X - Z** : Teile der Gruppe **X** machen 80% des Erstzteilbedarfes aus. Teile der Gruppen **X** und **Y** machen 95% des Ersatzteilbedarfes aus. Teile der Gruppe **Z** werden seltener benötigt.

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
INTEGRATED CIRCUIT				
IC301	SVIALA3300	MPX Circuit	1	X
TRANSISTORS				
TR1	3SK39Q	FM RF Amplifier [FET]	1	X
TR2	2SC922M	FM Mixer	1	X
TR3	2SC839H	FM Oscillator	1	X
TR101,102, 103,104, 105,106, 107,108, 109,201, 202,203	2SC829C	FM IF Amp, Limiter & FM MIX, AM OSC & IF Amplifier	12	X
TR110,111, 713,714, 715,716	2SC828R	Muting Amp. Thermal Compensation	6	X
TR204,301, 302,605, 606,607, 608,609, 610	2SA666Q	FM/AM AF Amp, Tone Amp, & Phase Inverter	9	X
TR303	2SA733MAP	Stereo Eye Switching	1	X
TR401,402, 501,502, 503,504	2SA722T	Equalizer, Mic Amp. & 4ch Matrix	6	X
TR403,404	2SC1328T	Equalizer & Mic Amp.	2	X
TR601,602, 603,604	2SA721T	Volume Control Flat Amp.	4	Ⓝ X
TR701,702, 703,704, 705,706, 707,708	2SA666A-AD3	Differential Amplifier	8	X
TR709,710, 711,712, 717 718, 719,720	2SC1384A-Q	Pre Driver Amplifier	8	Ⓝ X
TR721,722, 723,724	2SA684A-Q	Driver Amplifier	4	Ⓝ X
TR725,726, 727,728, 729,730, 731,732	2SC789Y	Power Amplifier	8	X
TR801,802	2SC828A-R	Speaker Protection Switching Amp.	2	X
TR803,804, 805	2SA684R	Switching & Ripple Filter	3	X
DIODES and VARIATITE				
D101,104,105 106,107,201, 202,205,206, 207,301	0A99	AGC, AOC, AM Detector & Meter Detector	11	X
D102,103	2-0A99	FM Discriminator	1 pair	X
D108,109	1S1211	AOC, Meter Detector	2	X
D701	SVDEQA01-11R	Zener, 11V, Noise Cancel	1	X
D702,804	RVD10D1	Noise Cancel & Rectifier	2	X
D801,806	SVDAC08P-1	Rectifier	2	X
D802	SVDAS2HB10	Rectifier	1	X
D803	SVDAEQB01-09	Zener, 9V, Voltage Stabilizer	1	X
V201	EYV320D1R2J3	Variatite, AOC	1	X
COILS and TRANSFORMERS				
L1	SLAA4W1-1	Balun Coil	1	X
L2	SLAA4N9	FM Antenna Coil	1	X
L3	RLQY25S5	Choke Coil	1	Y
L4	SLDA4N18	FM DET Coil	1	X
L5	RLQY15G5	Choke Coil	1	Y
L6	SLOA4N9	FM OSC Coil	1	X
L7,8,102,103, 104,203,801	SLQX151-1Y	Choke Coil	7	Y
L101	SLIA4B1	FM AGC Coil	1	X
L201	SLFA2E15	AM Antenna Coil	1	X
L202	SLOA2C6	AM OSC Coil	1	X
T101	SLIA4C54	FM DISCRI IF Transformer (P)	1	X
T102	SLIA4C56	FM DISCRI IF Transformer (S)	1	X
T103,104	SLIA4C24	FM Muting IF Transformer (P), (S)	2	X
T201	RLI7W105S-T	AM 1st IF Transformer	1	X
T202	RLI2C450	AM 2nd IF Transformer	1	X
T301, (T302)	SLMA1Z2-K	19kHz, 38kHz Pick-up Transformer	1	X
T901	SLTA5Q10S	Power Transformer	1	Ⓝ X
CERAMIC FILTERS				
CF1,101,102	RVFCF10M12CG	FM IF Circuit, Green (10.6 MHz)	each 3	X
	RVFCF10M12CB	FM IF Circuit, Black (10,65 MHz)		
	RVFCF10M12CR	FM IF Circuit, Red (10.7 MHz)		
	RVFCF10M12CW	FM IF Circuit, White (10,75 MHz)		
	RVFCF10M12CY	FM IF Circuit, Yellow (10.8 MHz)		
RESISTORS				
R4,103,137	ERD14TJ101	100Ω, ¼W, ±5%, Carbon	3	Y
R129	ERD14TJ181	180Ω, ¼W, ±5%, Carbon	1	Y
R111	ERD14TJ391	390Ω, ¼W, ±5%, Carbon	1	Y
R116,311,312	ERD14TJ471	470Ω, ¼W, ±5%. Carbon	3	Y
R302	ERD14TJ681	680Ω, ¼W, ±5%, Carbon	1	Y
R12,102,117, 316,605,606, 607,608	ERD14TJ102	1kΩ, ¼W, ±5%, Carbon	8	Y
R107,201	ERD14TJ152	1.5kΩ, ¼W, ±5%, Carbon	2	Y
R112	ERD14TJ222	2.2kΩ, ¼W, ±5%, Carbon	1	Y
R209	ERD14TJ272	2.7kΩ, ¼W, ±5%, Carbon	1	Y
R203	ERD14TJ332	3.3kΩ, ¼W, ±5%, Carbon	1	Y
R106	ERD14TJ392	3.9kΩ, ¼W, ±5%, Carbon	1	Y
R110, 115,215 309,310	ERD14TJ472	4.7kΩ, ¼W, ±5%, Carbon	5	Y
R101,125,202, 534, 535	ERD14TJ562	5.6kΩ, ¼W, ±5%, Carbon	5	Y
R307,308	ERD14TJ103	10kΩ, ¼W, ±5%, Carbon	2	Y
R113	ERD14TJ153	15kΩ, ¼W, ±5%, Carbon	1	Y
108,781,782, 783,784	ERD14TJ183	18kΩ, ¼W, ±5%, Carbon	5	Y
R105,417	ERD14TJ273	27kΩ, ¼W, ±5%, Carbon	2	Y
R121,423	ERD14TJ333	33kΩ, ¼W, ±5%, Carbon	2	Y
R118	ERD14TJ393	33kΩ, ¼W, ±5%, Carbon	1	Y
R313,314	ERD14TJ683	68kΩ, ¼W, ±5%, Carbon	2	Y
R305,306	ERD14TJ823	82kΩ, ¼W, ±5%, Carbon	2	Y
R3	ERD14TJ104	100kΩ, ¼W, ±5%, Carbon	1	Y
R213	ERD14TJ124	120kΩ, ¼W, ±5%, Carbon	1	Y
R1,2	ERD14TJ154	150kΩ, ¼W, ±5%, Carbon	2	Y
R419	ERD14TJ394	390kΩ, ¼W, ±5%, Carbon	1	Y
R356	ERD14FJ3R3	3.3Ω, ¼W, ±5%, Carbon	1	Y
R318	ERD14FJ4R7	4.7Ω, ¼W, ±5%, Carbon	1	Y
R357	ERD14FJ6R8	6.8Ω, ¼W, ±5%, Carbon	1	Y
R753,754,755, 756,761,762, 763,764	ERD14FJ100	10Ω, ¼W, ±5%, Carbon	8	Y
R757,758,759, 760,761,766, 767,768	ERD14FJ221	220Ω, ¼W, ±5%, Carbon	8	Y
R733,734,735 736	ERD14FJ561	560Ω, ¼W, ±5%, Carbon	4	Y
R812	ERD18FJ4R7	4.7Ω, ⅛W, ±5%, Carbon	1	Ⓝ Y
R786	ERD12FJ101	100Ω, ½W, ±5%, Carbon	1	Ⓝ Y
R777,778,779, 780	ERX1ANJ100	10Ω, 1W, ±5%, Metallic	4	Y
R351,352,353, 354	ERD12TJ221	220Ω, ½W, ±5% Carbon	4	Y
R681	ERD12TJ681	680Ω, ½W, ±5% Carbon	1	Y
R810	ERD14FJ120	12Ω, ¼W, ±5%, Carbon	1	Y
R122	ERD14VJ820	82Ω, ¼W, ±5% Carbon	1	Y
R205,806	ERD14VJ101	100Ω, ¼W, ±5%, Carbon	2	Y
R138	ERD14VJ221	220Ω, ¼W, ±5%, Carbon	1	Y
R741,742,743, 744	ERD14VJ271	270Ω, ¼W, ±5%, Carbon	4	Y
R7,120,415, 416	ERD14VJ391	390Ω, ¼W, ±5%, Carbon	4	Y
R8,109,128, 208,214	ERD14VJ471	470Ω, ¼W, ±5%, Carbon	5	Y
R749,750,751 752	ERD14VJ561	560Ω, ¼W, ±5%, Carbon	4	Y
R429,501	ERD14VJ681	680Ω, ¼W, ±5%, Carbon	2	Y
R315,625,626, 627,628,717, 718,719,720, 729,730,731, 732	ERD14VJ821	820Ω, ¼W, ±5%, Carbon	13	Y
R11,123,124, 421,422,504, 505,705,706, 707,708,745, 746,747,748, 785	ERD14VJ102	1kΩ, ¼W, ±5%, Carbon	16	Y

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
R218,407,408, 641,642,643, 644	ERD14VJ122	1.2kΩ, ¼W, ±5%, Carbon	7	Y
R804	ERD14VJ152	1.5kΩ, ¼W, ±5%, Carbon	1	Y
R669,670,671, 672	ERD14VJ222	2.2kΩ, ¼W, ±5%, Carbon	4	Y
R131,661,662, 663,664,721, 722,723,724	ERD14VJ272	2.7kΩ, ¼W, ±5%, Carbon	9	Y
R119,303,304, 809	ERD14VJ332	3.3kΩ, ¼W, ±5%, Carbon	4	Y
R114,135,527, 621,622,623, 624,737,738, 739,740	ERD14VJ392	3.9kΩ, ¼W, ±5%, Carbon	11	Y
R126,130,206, 301,525,688, 689	ERD14VJ472	4.7kΩ, ¼W, ±5%, Carbon	7	Y
R207,677,678, 679,680,686, 687	ERD14VJ562	5.6kΩ, ¼W, ±5%, Carbon	7	Y
R423,424,665, 666,667,668	ERD14VJ682	6.8kΩ, ¼W, ±5%, Carbon	6	Y
R217,510,511	ERD14VJ822	8.2kΩ, ¼W, ±5%, Carbon	3	Y
R104,134,204, 211,212,317, 512,513,526, 528,529,633, 634,635,636, 645,646,647, 648,713,714, 715,716,845	ERD14VJ103	10kΩ, ¼W, ±5%, Carbon	24	Y
R10,127,530 637,638,639, 640,811	ERD14VJ153	15kΩ, ¼W,1 ±5%, Carbon	8	Y
R6,514,515, 601,602,603, 604	ERD14VJ183	18kΩ, ¼W, ±5%, Carbon	7	Y
R9	ERD14VJ223	22kΩ, ¼W, ±5%, Carbon	1	Y
R613,614,615, 616	ERD14VSJ223	22kΩ, ¼W, ±5%, Carbon	4	(N) Y
R617,618,619, 620	ERD14VSJ273	27kΩ, ¼W, ±5%, Carbon	4	(N) Y
R418,803	ERD14VJ273	27kΩ, ¼W, ±5%, Carbon	2	Y
R411,412,802	ERD14VJ333	33kΩ, ¼W, ±5%, Carbon	3	Y
R132,133,409, 410,801	ERD14VJ473	47kΩ, ¼W, ±5%, Carbon	5	Y
R520,536,709, 710,711,712, 725,726,727, 728	ERD14VJ563	56kΩ, ¼W, ±5%, Carbon	10	Y
R5	ERD14VJ823	82kΩ, ¼W, ±5%, Carbon	1	Y
R216,401,402 427,673,674, 675,676,690, 691,701,702, 703,704	ERD14VJ104	100kΩ, ¼W, ±5%, Carbon	14	Y
R508,509,609, 610,611,612,	ERD14VSJ104	100kΩ, ¼W, ±5%, Carbon	6	(N) Y
R425,426	ERD14VJ124	120kΩ, ¼W, ±5%, Carbon	2	Y
R405,406,657, 658,659,660	ERD14VSJ124	120kΩ, ¼W, ±5%, Carbon	6	(N) Y
R516,517,518, 519,531,532, 537	ERD14VJ154	150kΩ, ¼W, ±5%, Carbon	7	Y
R506,507,523 524	ERD14VSJ184	180kΩ, ¼W, ±5%, Carbon	4	(N) Y
R684,685	ERD14VSJ224	220kΩ, ¼W, ±5%, Carbon	2	(N) Y
R210	ERD14VJ224	220kΩ, ¼W, ±5%, Carbon	1	Y
R502,503	ERD14VJ274	270kΩ, ¼W, ±5%, Carbon	2	Y
R413,414	ERD14VSJ274	270kΩ, ¼W, ±5%, Carbon	2	(N) Y
R521,522,653, 654,655,656	ERD14VSJ394	390kΩ, ¼W, ±5%, Carbon	6	(N) Y
R420	ERD14VJ394	390kΩ, ¼W, ±5%, Carbon	1	Y
R136,533	ERD14VJ474	470kΩ, ¼W, ±5%, Carbon	2	Y
R682,683	ERD14VSJ474	470kΩ, ¼W, ±5% Carbon	2	(N) Y
R403,404	ERD14VSJ824	820kΩ, ¼W, ±5%, Carbon	2	(N) Y
R629,630,631, 632,649,650, 651,652	ERD14VJ824	820kΩ, ¼W, ±5%, Carbon	8	Y
R769,770,771, 772,773,774, 775,776	ERX2ANKR33	0.33Ω, 2W, ±10%, Metallic	8	Y
R807	ERM2P201	200Ω, 2W, ±5%, Wire	1	Z
R808	ERM4P271	270Ω, 4W, ±5%, Wire	1	Z
VARIABLE RESISTORS				
VR1	EVB17AA1654U	50kΩ(ZU), AFD Control (WIDTH)	1	(N) X
VR2-1,2-2	EVA77AA16D55	500kΩ (D), AFD Control (DEPTH)	1	(N) X
VR3,4,5,6	EVH56A034BF5	250kΩ (B), Channel Level Control	4	X
VR101	EVLS3AA00B24	20kΩ (B), Meter Adjustment	1	X
VR102	EVLS3AA00B54	50kΩ (B), Muting Level Adjustment	1	X
VR301,701, 702,703, 704	EVLS3AA00B13	1kΩ (B), Separation & DC Unbalance Adj.	5	X

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
VR601-1~ 601-4 VR602-1~ 602-4, 603-1~ 603-4	EVB83A030BF5	250kΩ (B), Main Volume Control	1	X
	EVB84A030B15	100kΩ (B), Bass & Treble Control	2	(N) X
VR705,706, 707, 708	EVLS3AA00B52	500Ω (B), ICQ Adjustment	4	X
THERMISTORS				
TH701,702, 703,704	RRT251	Driver Circuit	4	Y
CAPACITORS				
C131	ECCD1H0R5CC	0.5pF, 50WV, ±0.25pF, Ceramic	1	Z
C9	ECCD1H010CC	1pF, 50WV, ±0.25pF, Ceramic	1	Z
C217	ECCD1H050CC	5pF, 50WV, ±0.25pF, Ceramic	1	Z
C111	ECCD1H100KC	10pF, 50WV, ±10%, Ceramic	1	Z
C11	ECCD1H100KU	10pF, 50WV, ±10%, Ceramic	1	Z
C19	ECCD1H100KT	10pF, 50WV, ±10%, Ceramic	1	Z
C1	ECCD1H120KC	12pF, 50WV, ±10%, Ceramic	1	Z
C6,12,14	ECCD1H150KC	15pF, 50WV, ±10%, Ceramic	3	Z
C5	ECCD1H180KC	18pF, 50WV, ±10%, Ceramic	1	Z
C130	ECCD1H330KC	33pF, 50WV, ±10%, Ceramic	1	Z
C13	ECCD1H390KC	39pF, 50WV, ±10%, Ceramic	1	Z
C119	ECCD1H470KU	47pF, 50WV, ±10%, Ceramic	1	Z
C717,718,719, 720	ECCD1H560K	56pF, 50WV, ±10%, Ceramic	4	Z
C121,122,132	ECCD1H101K	100pF, 50WV, ±10%, Ceramic	3	Z
C420	ECCD1H121K	120pF, 50WV, ±10%, Ceramic	1	Z
C405,406	ECCD1H151K	150pF, 50WV, ±10%, Ceramic	2	Z
C7	ECCD1H181K	180pF, 50WV, ±10%, Ceramic	1	Z
C208	ECCD1H221K	220pF, 50WV, ±10%, Ceramic	1	Z
C134,421,705, 706,707,708	ECCD1H331K	330pF, 50WV, ±10%, Ceramic	6	Z
C356	ECKD1H471KB	470pF 50WV, ±10%, Ceramic	1	Z
C407,408,609, 610,611,612	ECKD1H821KB	820pF, 50WV, ±10%, Ceramic	6	Z
C2,3,4,8,15, 20	ECKD1H102PF	0.001μF, 50WV, $^{+100}_{-0}$%, Ceramic	6	Z
C732,733,734, 735	ECKE1H102MD	0.001μF, 50WV, ±20%, Ceramic	4	Z
C10,17,18, 102,106,108, 112,115,809, 810,813,814	ECKE1H103PF	0.01μF, 50WV, $^{+100}_{-0}$%, Ceramic	12	Z
C104,107,110, 114,120,126, 129,133,136, 201,204,209	ECKE1H223PF	0.022μF, 50WV, $^{+100}_{-0}$%, Ceramic	12	Z
C823,824	ECKD1H473ZF	0.047μF, 50WV, $^{+80}_{-20}$%, Ceramic	2	Z
C817	CEKD2H103PF	0.01μF, 500WV, $^{+100}_{-0}$%, Ceramic	1	Z
C302	ECQG05152KZN	0.0015μF, 50WV, ±10%, Polyester	1	Z
C629,630,631, 632	ECQG05222KZN	0.0022μF, 50WV, ±10%, Polyester	4	Z
C411,412	ECQG05272JZU	0.0027μF, 50WV, ± 5% Polyester	2	Z
C413,414	ECQG05822JZN	0.0082μF, 50WV, ± 5%, Polyester	2	Z
C215	ECQG05332KZN	0.0033μF, 50WV, ±10%, Polyester	1	Z
C203,211,212, 515	ECQG05103KZN	0.01μF, 50WV, ±10%, Polyester	4	Z
C101,103,105, 109,113,117 118,124,127, 139,202,621, 622,623,624, 625,626,627, 628	ECQG05223KZN	0.022μF, 50WV, ±10%, Polyester	19	Z
C205,601,602, 603,604	ECQG05333KZN	0.033μF, 50WV, ±10%, Polyester	5	Z
C513,514	ECQG05473KZN	0.047μF, 50WV, ±10%, Polyester	2	Z
C725,726,727, 728	ECQM05473KZ	0.047μF, 50WV, ±10%, Polyester	4	Z
C207	ECQG05563KZN	0.056μF, 50WV, ±10%, Polyester	1	Z
C308,309	ECQG05562JZN	0.0056μF, 50WV, ± 5%, Polyester	2	Z
C352,353	ECQU2A103MD	0.01μF, 250VAC, ±20%, Polyester	2	Z
C417,418	ECSZ35EFR47	0.47μF, 35WV, Electrolytic	2	Y
C403,404,506, 507	ECSZ25EF3R3	3.3μF, 25WV, Electrolytic	4	Y
C419,617,618, 619,620,641, 642,643,644	ECSZ25EF4R7	4.7μF, 25WV, Electrolytic	9	Y
C116,213,214	ECAG25ER1X	0.1μF 25WV, Electrolytic	3	Y
C504,505,508, 509,510,511, 512,605,606, 607,608,633, 634,635,636	ECAG25ER47X	0.47μF, 25WV, Electrolytic	15	Y
C502,503,645, 646,647,648,	ECAG25ER68X	0.68μF, 25WV, Electrolytic	6	Y
C409,410,637, 638,639,640, 709,710,711, 712	ECEA6V47	47μF, 6.3WV, Electrolytic	10	Y
C351	ECEA6V100	100μF, 6.3WV, Electrolytic	1	Y

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
C415,416,613, 614,615,616	ECEA10V33	33μF, 10WV, Electrolytic	6	Y
C125	ECEA10V100	100μF, 10WV, Electrolytic	1	Y
C801	ECEA10V220	220μF, 10WV, Electroylic	1	Y
C822	ECEA10V470	470μF, 10WV, Electrolytic	1	Y
C821	ECEA10V1000	1000μF, 10WV, Electrolytic	1	Y
C137,138,206 301	ECEA16V10	10μF, 16WV, Electrolytic	4	
C808	ECEA16V47	47μF, 16WV, Electrolytic	1	Y
C135,216,303	ECEA25V3R3	3.3μF, 25WV, Electrolytic	3	Y
C123	ECEA25V4R7	4.7μF, 25WV, Electrolytic	1	Y
C310,401,402, 803	ECEA25V33	33μF, 25WV, Electrolytic	4	Y
C713,714,715, 716,721,722, 723,724	ECEA25V47	47μF, 25WV, Electrolytic	8	Y
C730	ECEA25V100	100μF, 25WV, Electrolytic	1	Y
C729	ECEA25V220	220μF, 25WV, Electrolytic	1	Y
C649	ECEA25V470	470μF, 25WV, Electrolytic	1	Y
C304,305,306 307,701,702, 703,704	ECEA50V1	1μF, 50WV, Electrolytic	8	
C357,358,422, 501,811,815	ECEA50V100	100μF, 50WV, Electrolytic	6	Y
C812	ECEA50V330	330μF, 50WV, Electrolytic	1	Y
C816	ECEA50V470	470μF, 50WV, Electrolytic	1	Y
C804,805	ECET35R4700Y	4700μF, 35WV, Electrolytic	2	Ⓝ Y
VARIABLE CAPACITORS				
CV1,2,3,4,5, (CT4,5)	ECV5MX25X14G	Tuning Gang, FM/AM (Trimmer, AM ANT & AM OSC)	1	X
CT1,2	ECV1ZW10P32	Trimmer, FM ANT & FM DET, 10pF	2	X
CT3	ECV1ZW06P35	Trimmer, FM OSC,6pF	1	X
COMPONENT COMBINATIONS				
M101	EXA5DL04C	FM Discriminator Circuit	1	X
M301,302	SXAM675F	Low Pass Filter, 19kHz & 38kHz	2	X
M801,802,803, 804	RXAF103P22HD	Hum Cancel, 0.01μF (X2)	4	Y
SWITCHES				
S1-1~S1-10	SSRA49	Selector Switch	1	Ⓝ X
S2-1~S2-6	SSRA48	Mode Switch	1	Ⓝ X
S3-1~S3-4, S4-1~S4-4	SSHA35S	Tape Monitor 1 & 2 Switch	1	Ⓝ X
S5-1~S5-2	----------	Balanced Transformerless Switch (Refer to Ref. No. CA11)	1	
S6	SSLA18S	Muting Switch	1	Ⓝ X
S7-1~S7-4	SSLA19S	Loudness Switch	1	Ⓝ X
S8-1,S8-2	ESB7025	Power Source Switch	1	X
S9-1~S9-4	SSRA7S	Voltage Selector Switch	1	X
SPEAKER PROTECTION RELAY				
	SSYA1	Relay, Speaker Protection	1	X
FUSES				
F1,2,3,4	XBAS1A3001	3A, Circuit Protection	4	X
F801,802	XBAS1B3001	3A, Power Source	2	X
F803	XBAS1B1501	1.5A, Power Source	1	X
LAMPS				
PL1,2,3,11	XAM37K250	Stereo Eye, Ch. indicator (7.5V 75mA)	4	X
PL4,5,6,7,8,9	XAM35K	Dial & Meter Lamp (6.3V 0.25A)	6	X
PL10	XAMR33S400	Pointer Lamp (6.3V 75mA)	1	X
CABINETS				
CA1	XSB4+16BVCS	Screw, Cabinet M'tg.	4	Z
	SKAA610	Cabinet, Complete	1	Y
CA2	SKMA170	Wooden Cabinet } Order SKAA610	(1)	
CA3	SKPA3	Hole, Ventilation } Order SKAA610	(1)	
	SYPA181AS	Rear Panel, Complete	1	Ⓝ Y
CA4	SNEA404	Nut, Ground Terminal [Outer]	1	Z
	SNEA204-2S	Volt, Ground Terminal	1	Z
CA5	SJFA3010	Terminal, Tape Monitor 1,2, PHONO, AUX 1,2, & 4CH MPX OUT	1	Ⓝ Z
CA6	SGPA320B	Rear Panel Only	1	Ⓝ Z
CA7	SJFA5201	Holder, Circuit Protection Fuses	2	Z
CA8	SGTA1520	Name Plate	1	Ⓝ Z
CA9	SJFA4401	Terminal, Ext, Antenna	1	Z
CA10	RJS7A	Socket, 4 channel Controler	1	Z
CA11	SSSA3S	Switch, Balanced Transformerless (S5)	1	Z
CA12	SJFA4806	Terminal, Speakers	1	Z
CA13	SJSA1	Socket, AC Outlet	2	Z
CA14	SMKA3S	Mounting, AC Outlet	1	Z

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
CA15	SJAA3	Cord, AC Power Source	1	Z
CA16	RHR111	Bushing, AC Cord	1	Z
CA17	SJFA5202	Cap, Circuit Protection Fuse Holder	2	Z
	XSN26+12	Screw, Fuse Holder M'tg.	2	Z
CA18	SUPA1980	Printed Circuit Board Only	1	Ⓝ Z
CA19	XTV3D8CR	Red Screw, Bottom Board M'tg.	8	Z
	SYUA61A	Bottom Borad, Complete	1	Z
CA20	SKLA2-1	Leg	4	Z
CA21	SKUA321	Botton Board Only (Order SYUA61A)	(1)	
CA22	SHEA3-1	Lock Pin, Leg	4	Z
CA23	XTV3D8CK	Black Screw, Complete Panel M'tg.	6	Z
	SYWA101A	Front Panel, Complete	1	Ⓝ Y
CA24	SGXA52	Side Panel, Right	1	Z
CA25	SGXA53	Side Panel, Lefft	1	Z
CA26	SGWA1110	Panel,Printed Indicator(Order SYWA101A)	(1)	
CA27	SGUA12	Panel, Dial	1	Z
CA28	XTV3D8C	Screw, Panel M'tg.	11	Z
CA29	SGBA46	Badge, National Technics	1	Z
CA30	SULA37	Mounting, Panel (Right Side)	1	Z
	SULA36	Mounting, Panel (Left Side)	1	Z
CA31	SBNA100	Knob, Tuning Control	1	X
CA32	SBNA103	Knob, Bass, Treble, Selector & Mode	4	X
CA33	SBDA1	Knob, AFD Control	2	X
CA34	SBNA101	Knob, Channel Level Control	4	X
CA35	SBNA102	Knob, Main Volume Control	1	X
CA36	SBLA2	Knob, Muting & Loudness Switch	2	X
CA37	SBCA47	Button, Power Source Switch	1	X
CHASSIS				
CH1	SJTA307	Pin Terminal, Circuit Connection	153	Z
CH2	SJSA63	Socket, Connector, 4 pin(Refer to page 13)	9	Z
	SJSA64	Socket, Connector, 6 pin(Refer to page 13)	2	Z
	SJTA701	Cramp, Lead Wire	43	Z
CH3	SMYA36	Heat Sink, Power Transistor	1	Z
	SMYA37	Heat Sink, Rectifier (D802)	1	Ⓝ Z
CH4	SJSA65	Socket, Circuit Connection	18	Z
CH5	XTV3D8CK	Black Screw, FM/AM Tuner M'tg.	9	Z
	SDTA3S	Shaft, Tuning Control, Complete	1	Z
CH6	SDXA705S	Flywheel } Order SDTA3S	(1)	
CH7	SDTA6003	Shaft only } Order SDTA3S	(1)	
CH8	SJJA12	Jack, Microphone	1	Z
CH9	SJSA201	Holder, Dial Light	1	Z
CH10	RHG5-1	Rubber Cushion, Variable Capacitor	1	Z
CH11	SDDA391S	Drum, Dial Cord	1	Z
	XXAR3H6S	Screw, Drum M'tg.	2	Z
	RDZ05-5	Cord, Dial, 63⅜" (160 cm)	1 roll	Z
	SDSA4141	Spring, Dial Cord	1	Z
CH12	SDAA8	Slider, Dial Pointer	1	Y
CH13	SDPA3	Pointer, Dial	1	Y
CH14	RDR23	Pulley, Dial Cord	2	Z
CH15	RDR20	Pulley, Dial Cord	4	Z
CH16	SUMA5	Mounting, Dial Scale	1	Z
CH17	RJV1A	Holder, Meter Light	1	Z
CH18	SHGA634	Rubber Cushion, Dial Scale	1	Z
CH19	SHGA202	Bracket, Stereo Eye	1	Z
CH20	SSMA19-2	Meter, Signal	1	X
CH21	SJJA9-1	Jack, Headphones	2	Z
CH22	SKDA350	Scale, Dial	1	Ⓝ Y
CH23	SGEA3	Cap, Channel Indicator Cover	1	Z
CH24	SGKA131	Indicator, Channel	1	Z
CH25	SDUA4	Panel, Chennel Indicator	1	Z
CH26	SHRA605	Cover, Channel Indicator Light	1	Z
CH27	SDUA3	Bracket, Channel Indicator Light, Red	1	Z
CH28	SDUA5	Bracket, Channel Indicator Light, Grem	2	Z
CH29	SHRA604	Holder, Channel Indicator Light	1	Z
ACCESSORIES				
A1	SSAA1	Cord, FM Antenna	1	Y
A2	XBAS1A3001	Fuse, Circuit Protection [3A]	4	X
A3	RJP5	Pin Plug,	8	Y
A4	RJP16AS	Plug, AC Power Source	1	Y
A5	RJP17AS	Plug, AC Power Source	1	Y
PACKING PARTS				
P1	SPPA19	Soft Cover	1	Z
	SPEA3	Cover, AC Plug	1	Z
P2	SPHA6008	Polyethylene Sheet	1	Z
P3	SPSA58	Pad, Upper & Lower	2	Z
P4	SPSA57	Pad, Right & Left Side	2	Z
P5	SPSA56	Pad, Inside	1	Z
P6	SPNA170A	Carton Box (Inner)	1	Ⓝ Z
P7	SQFA158	Printed Matter, Complete	1	Ⓝ Y
	SQXA5100	Instructions Book (Order SQFA158)	(1)	
P8	SPNA142	Pad, Carton Box	1	Z
P9	SPGA251A	Carton Box (Outer)	1	Ⓝ Z
FOR HOLLAND ONLY ..... Change of Parts List				
A4	RJP16AS	Accessory, AC Plug (Deletion)	1	
A5	RJP17AS	Accessory, AC Plug (Deletion)	1	
	SPEA3	AC Plug Cover (Deletion)	1	
	RJP3A	AC Plug, Power Source Cord (Addition)	1	
	SPEA4	AC Plug Cover (Addition)	1	

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