



KENWOOD
HI/FI STEREO COMPONENTS

SERVICE MANUAL

MODEL ELEVEN G (KR-11000G)



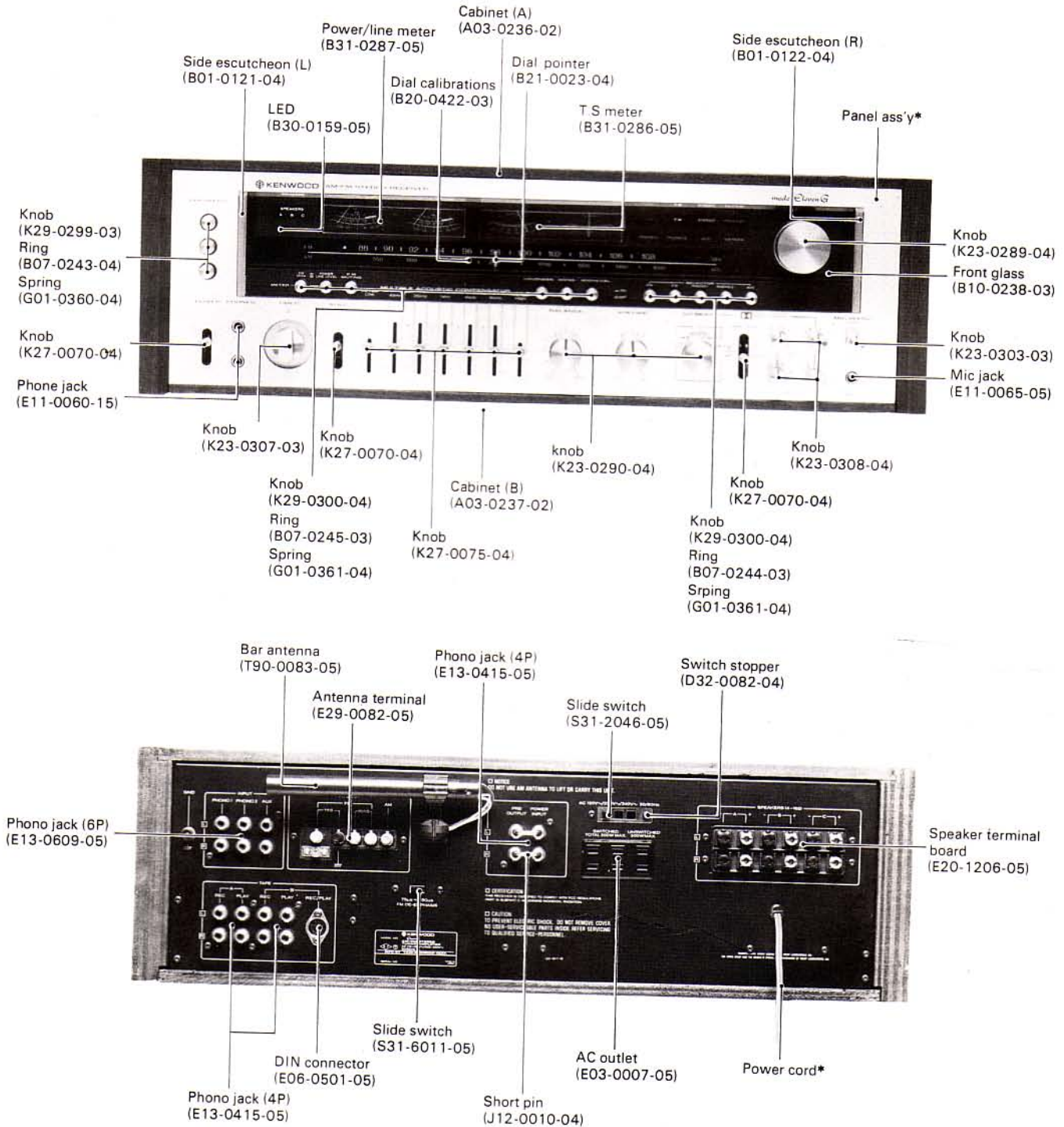
AM-FM STEREO RECEIVER

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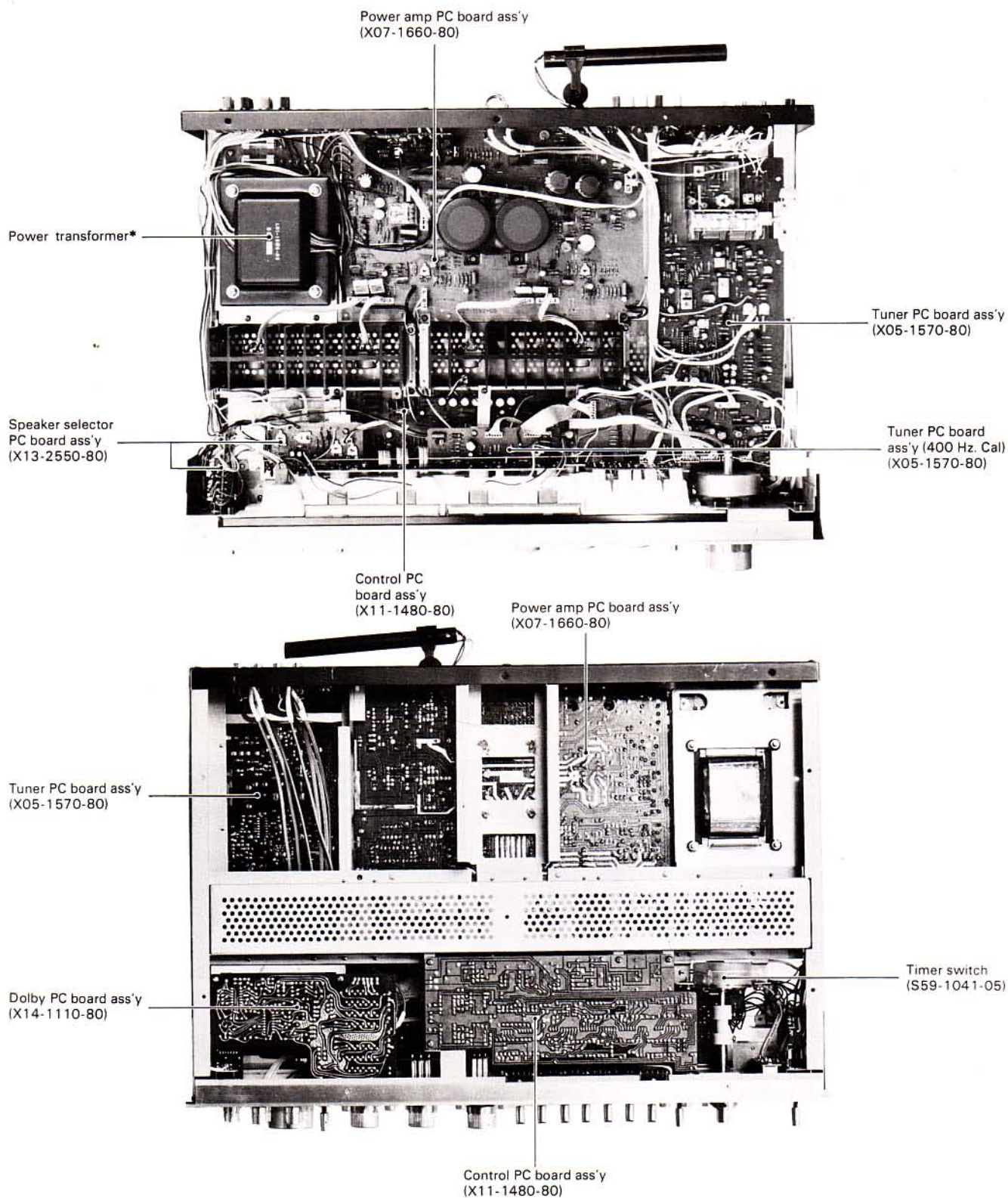
EXTERNAL VIEW

MODEL ELEVEN



* Refer to Parts List.

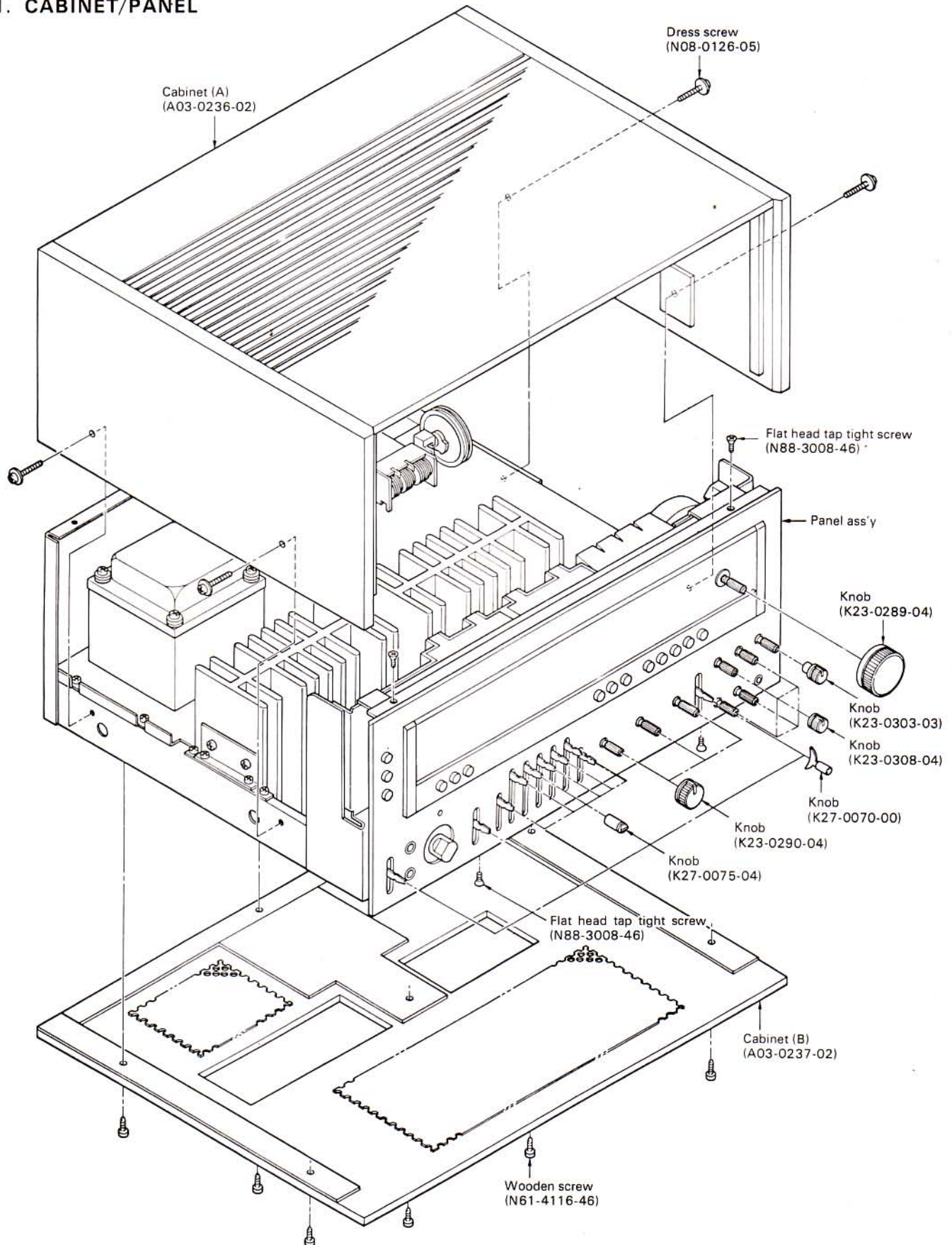
INTERNAL VIEW



* Refer to Parts List.

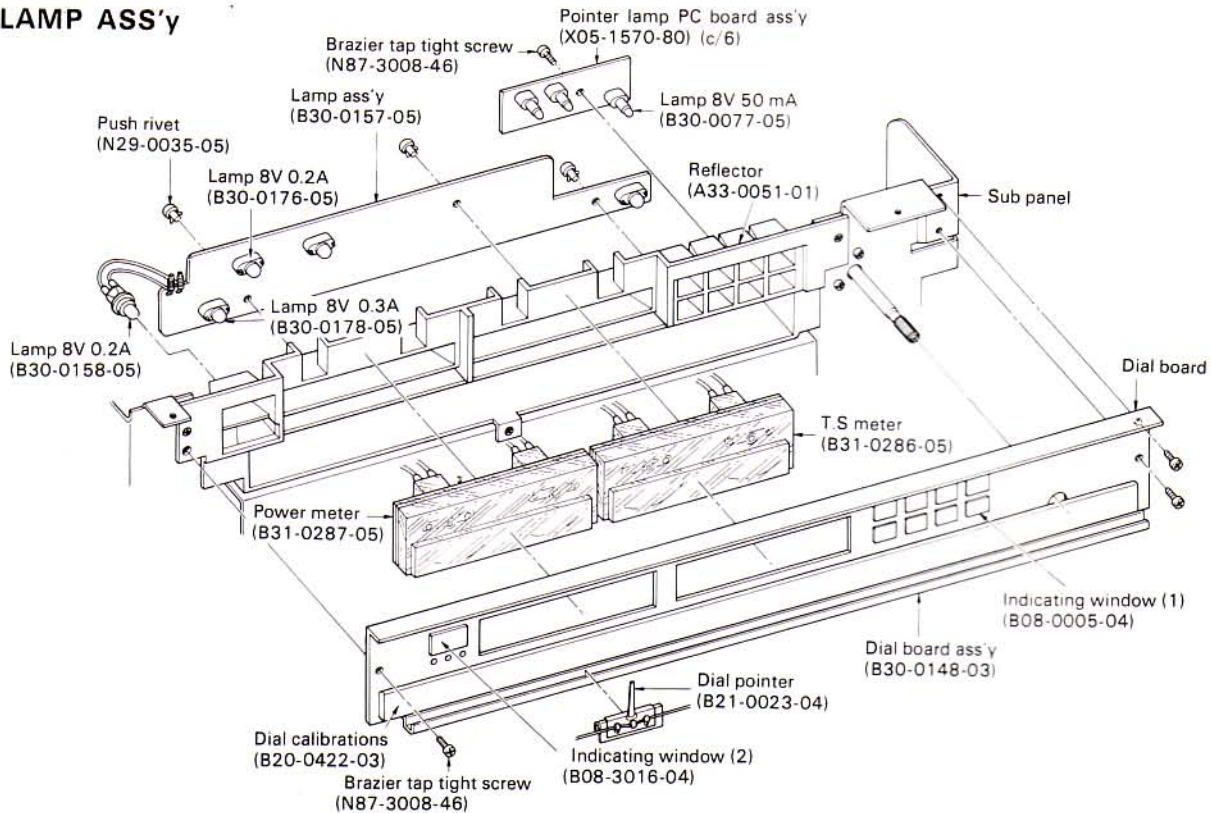
DISASSEMBLY FOR REPAIR

1. CABINET/PANEL



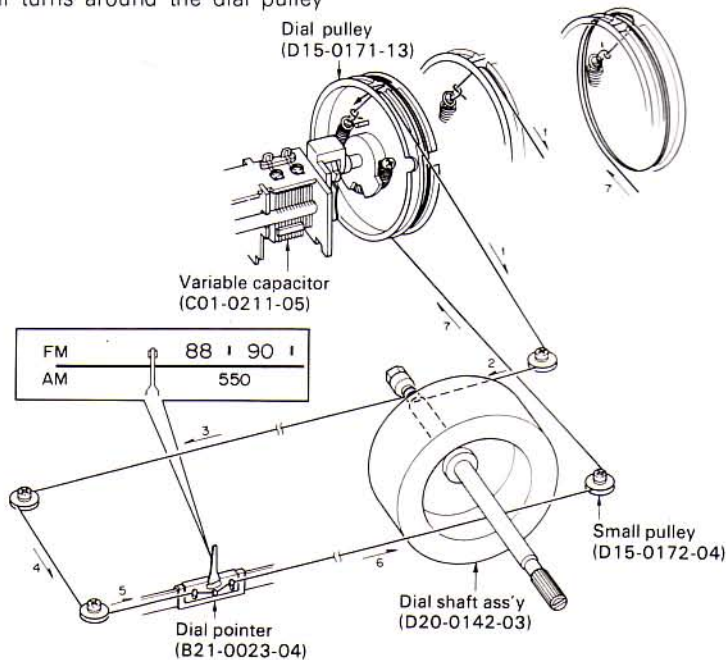
DISASSEMBLY FOR REPAIR

2. LAMP ASS'y



3. DIAL CORD STRINGING

1. Fully close the variable capacitor.
2. Set the dial pulley as illustrated, and fix it with a screw.
3. Tie the end of the dial cord and the dial spring, giving a margin of about 10 cm.
4. Hook the spring on the boss.
5. Dress the dial cord in the direction of "1" to "2", and wind it 2 turns around the dial shaft clockwise.
6. Dress the dial cord in the direction of "3" through "7", and wind it one and half turns around the dial pulley starting from its lower side.
7. Tie the dial cord rigidly with the margin cord (about 10 cm, described in 3. above) without permitting any slack.
8. Cut off the unnecessary part of the cord, and release the dial spring from the boss.
9. Mount the dial pointer in position as illustrated. This setting should be checked by receiving a suitable broadcast station actually.

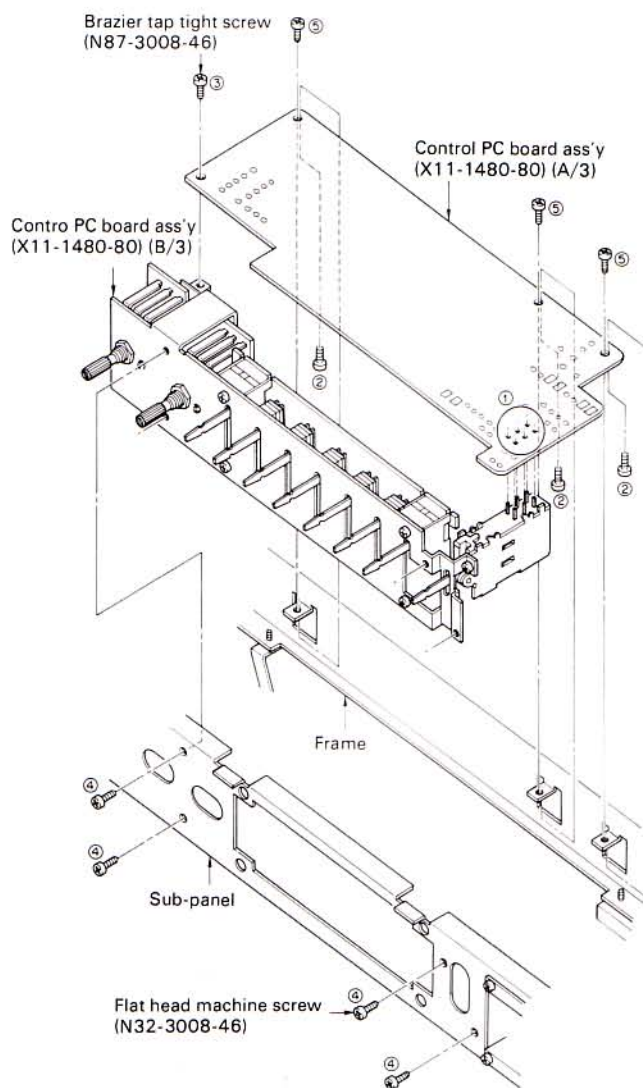


DISASSEMBLY FOR REPAIR

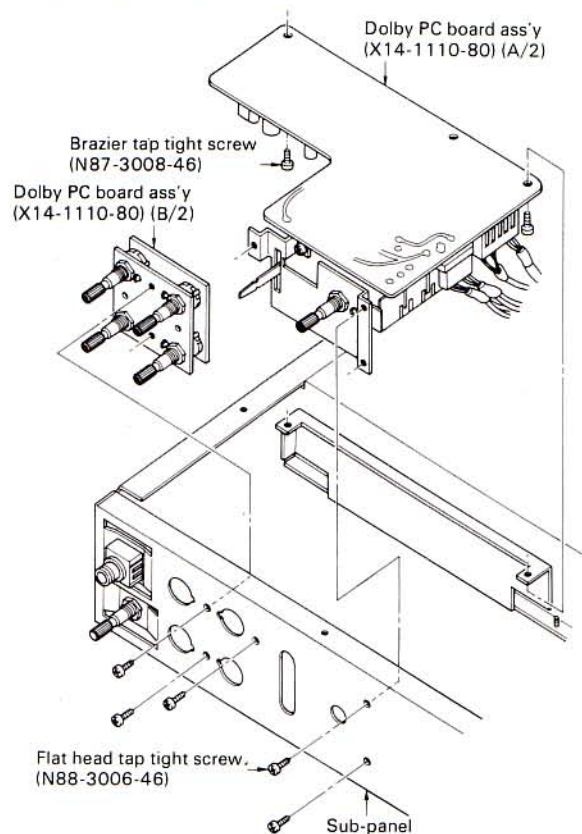
6. TONE AMP

DISASSEMBLING

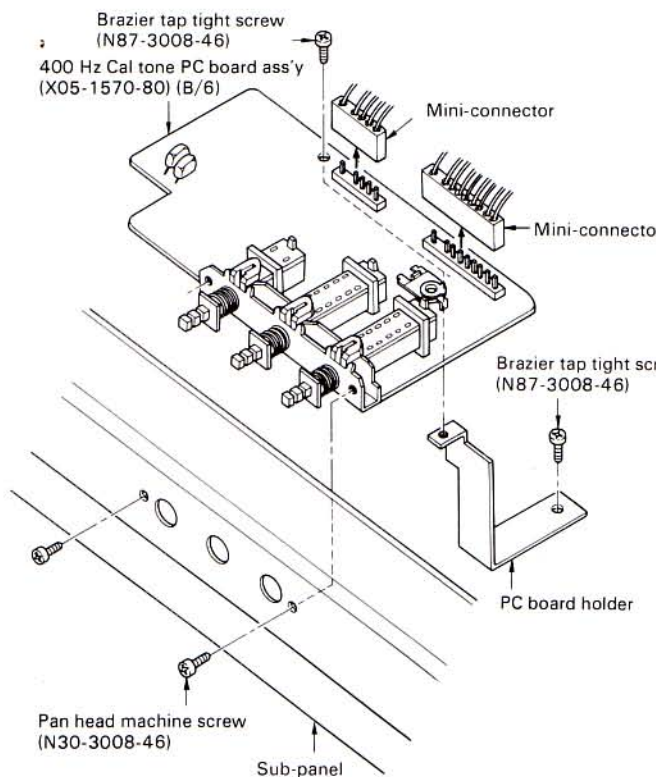
1. Unsolder.
 2. 3. 4. Remove the screws.
- Then, PC board ass'y can be taken out.
After repairing, fix the screws from the foil side (5).



7. DOLBY AMP

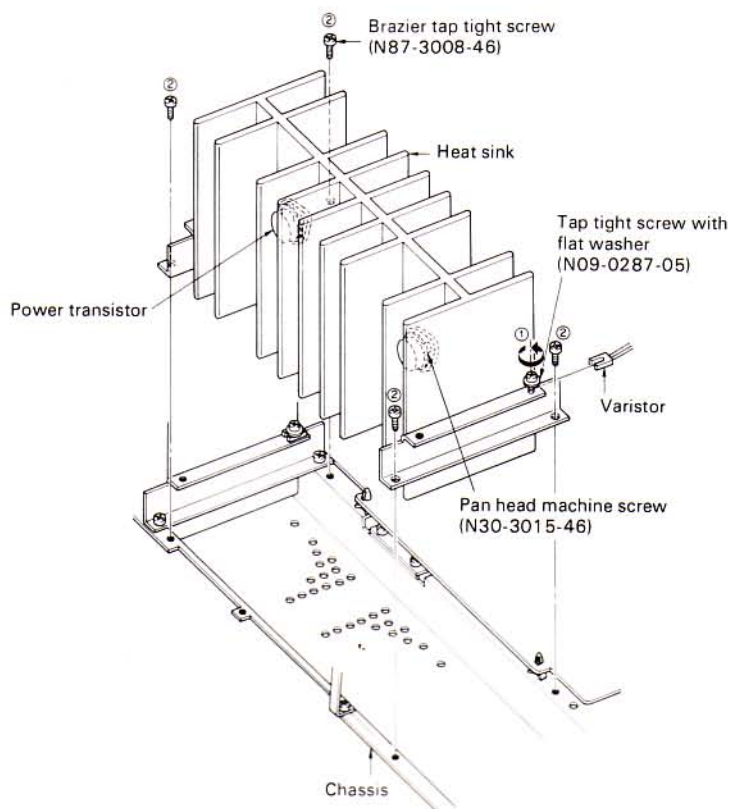


8. 400 Hz TONE



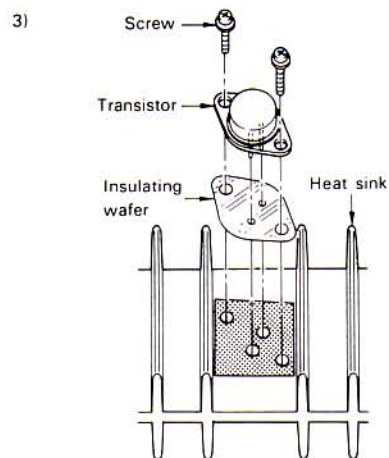
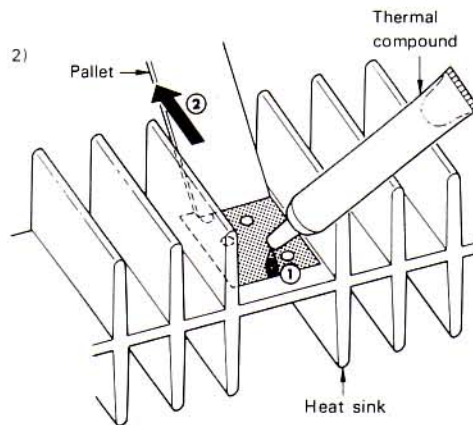
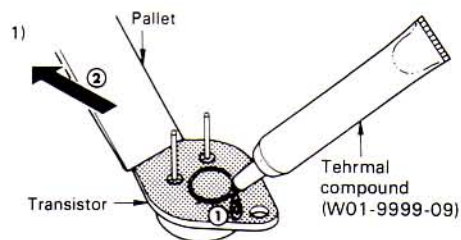
DISASSEMBLY FOR REPAIR

4. HEAT SINK

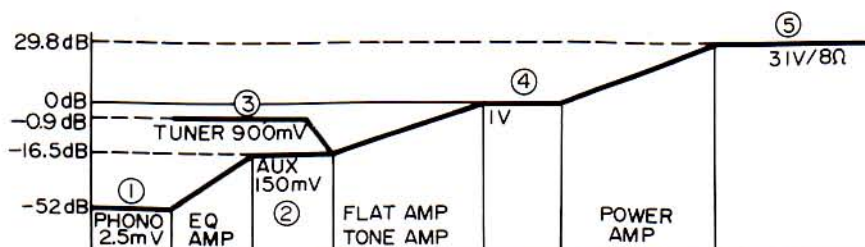
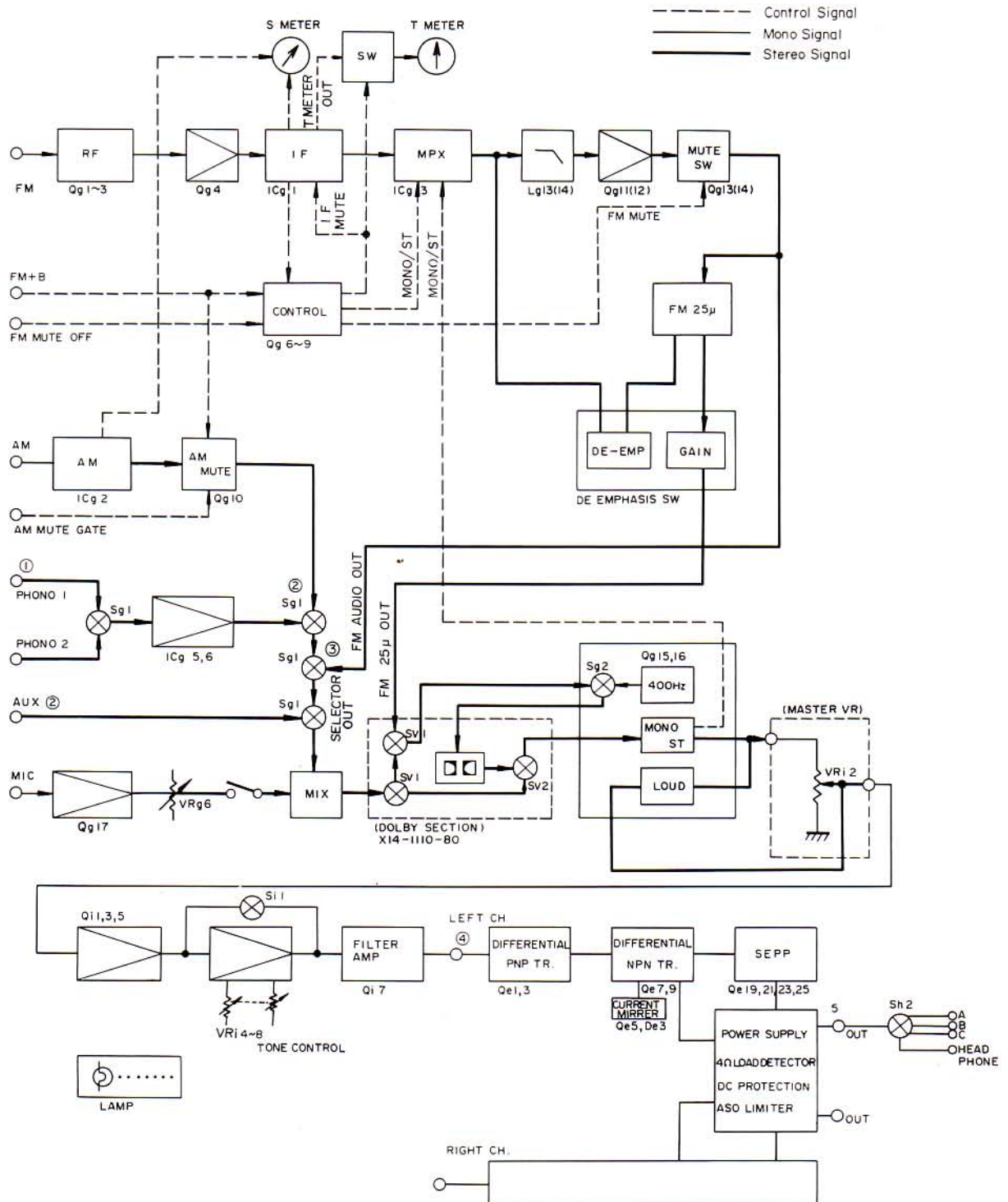


5. POWER TRANSISTOR REPLACEMENT

1. Paint thermal compound on a transistor using a pallet.
2. Paint thermal compound on a heat sink where a transistor is mounted using a pallet.
3. Mount the transistor on the heat sink.



BLOCK DIAGRAM/LEVEL DIAGRAM



CIRCUIT DESCRIPTION

MUTING CIRCUIT

(a) S Curve Detecting Output (b) Input Level Detecting Output

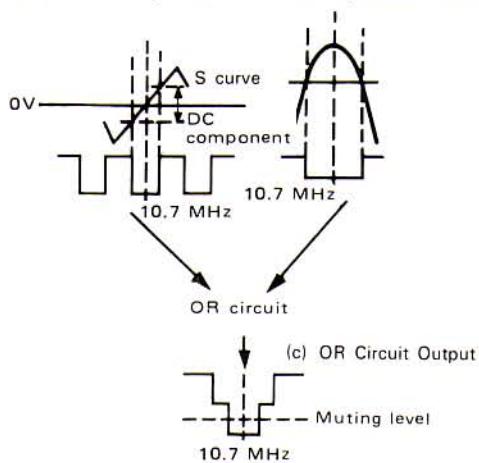


Fig. 1

The HA1137W incorporates the S curve detecting circuit (a) and input level detecting circuit (b). As shown in the figure, the No. 12 pin of the OR circuit (c) provides a muting control voltage which turns Qg6 to ON when antenna input is below 3~20 dB (μ V) of FM signal is returned. When Qg6 is ON, its collector voltage is low, causing Qg7 base voltage to be decreased which turns Qg7 to OFF. This increases Qg7 collector voltage and thus +B voltage is fed to the No. 11 pin of ICg3 through Dg7. At the same time, Qg8 base voltage is decreased and, hence, Qg8 turns to OFF, changing the quiescent point of Qg9.

When the control voltage is absent, Qg9 collector voltage is about 19V; when it is present, then the collector voltage is about -23V, allowing the gate of Qg13 (Qg14) to be

reversely biased and thus the signal is cut off and FM muting action is effected.

When the muting switch Sh1-3 is set to OFF, Qg9 base is always pulled toward GND, maintaining the positive collector voltage so that Qg13 (Qg14) remains ON.

The circuit consisting of Dg3~5, Cg31, 32 and Rg43 is used to sharply reduce Qg9 collector voltage, when power is turned to off, to prevent the generation of pop-noise.

MAC CIRCUIT

The model employs MAC circuit to compensate for frequencies more complex than those handled by common middle tone controls.

As shown in the figure, this circuit is a series connected 2-stage BAX type tone control, in the 250 Hz circuit the 0.022 μ F capacitor compensates for the frequencies falling from the top to the right and the 0.1 μ F capacitor, the frequencies falling from the top to the left.

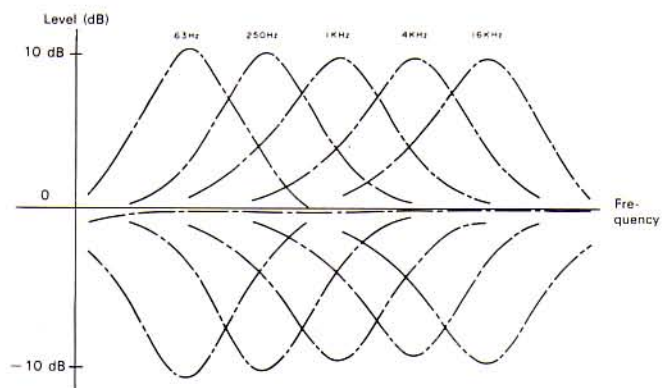


Fig. 3 MAC characteristics

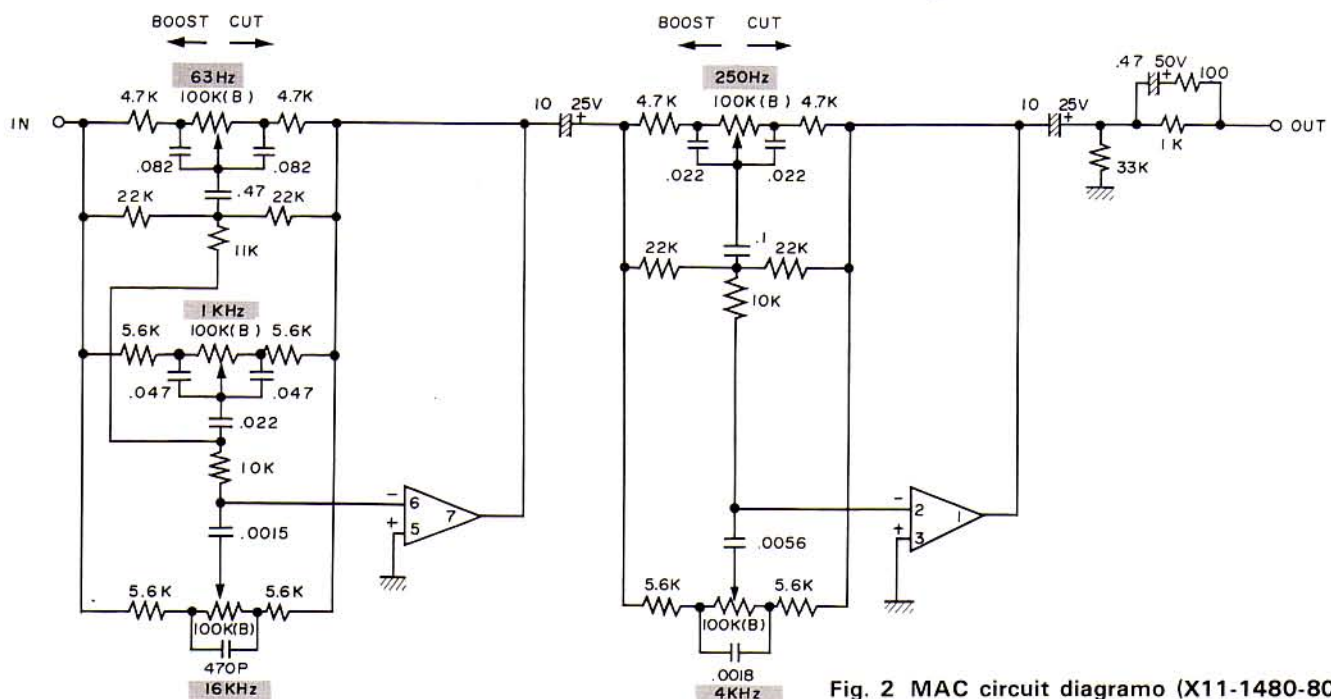


Fig. 2 MAC circuit diagramo (X11-1480-80)

CIRCUIT DESCRIPTION

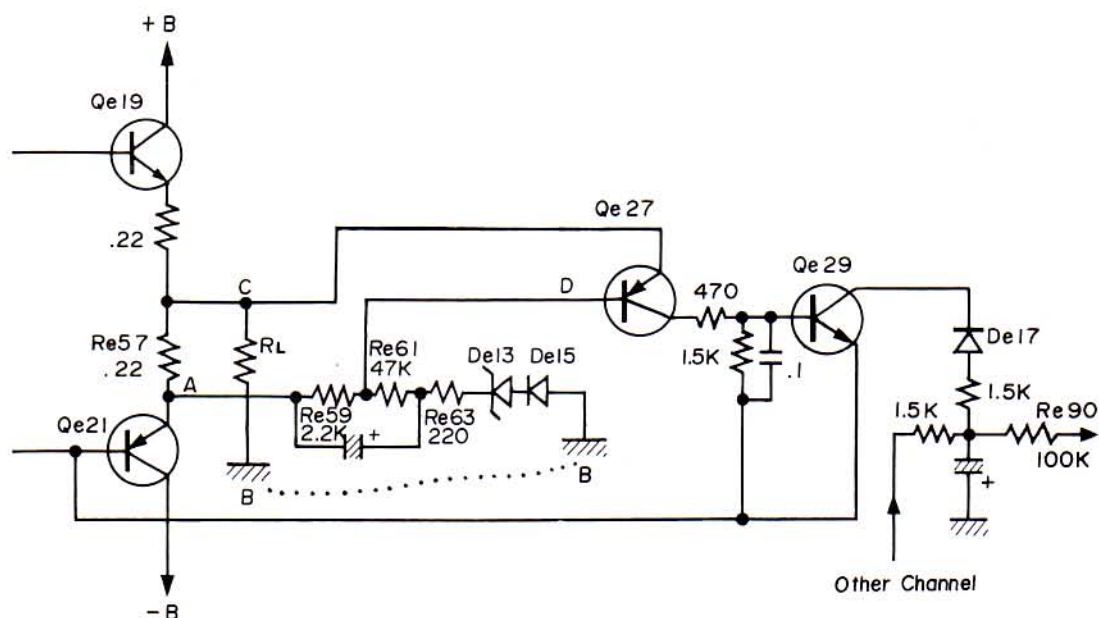


Fig. 4

4-OHM LOAD DETECTOR CIRCUIT

This circuit detects a speaker load larger or smaller than 4.7 ohms. It is composed of a bridge circuit with Re57, Re59, Re61 and RL (speaker impedance).

In the bridge circuit, the impedance of Re63, De13 and De15 with respect to Re61 is small. So it is thinkable that Re61 is connected to GND. The circuit is balanced when RL is 4.7 ohms and thus C and D provides the same voltage when a signal voltage (negative cycle) is applied to between A and B. If RL is less than 4.7 ohms, the voltage at the C point is increased while the voltage at the D point remains unchanged. The voltage across C and D is set to .6V by De13 at that time, so both Qe27 and Qe29 are energized. The detecting voltage is negative rectified by De17 and is fed to the memory circuit through Re90. When RL is larger than 4.7 ohms, Qe27 is not energized since the circuit between C and D is reversely biased.

When there is no detecting input, Qe37 and Qe36 are ON and a gate current flows into the thyristor De24, while +B (65V) is applied to the final transistor.

With a detecting input, it is charged in Ce34 and both Qe37 and Qe36 are turned OFF, thereby the gate current stops and De24 turns OFF, and thus +B (54V) is applied to the final transistor.

In this way, the +B voltage to the final transistor is set to 54V when the load is 4 ohms. This reduces the output to prevent it from exceeding the transistor ASO.

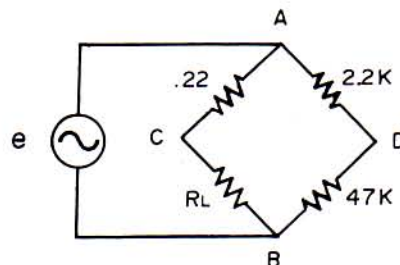


Fig. 5

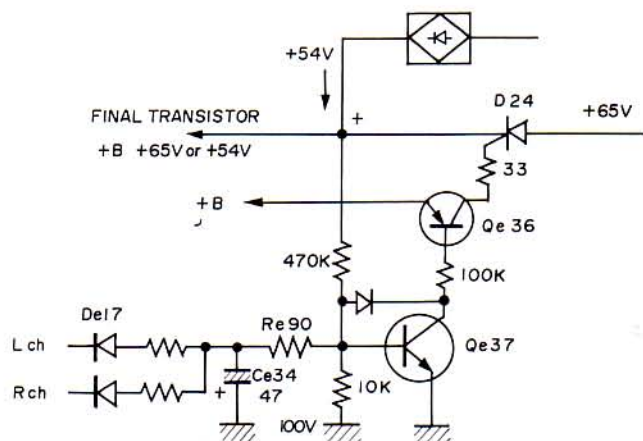


Fig. 6

ADJUSTMENT

NO.	ALIGN- MENT	TEST EQUIPMENTS		RECEIVER SETTING	OUTPUT INDICATOR	ADJUSTMENT POINTS	REMARKS
		CONNECTION	SETTING				
FM SECTION							
1	IFT	A	95 MHz 60 dB (ANT INPUT) 1 kHz (Mod) 75 kHz (Dev)	FM 95 MHz MODE: MONO	B	Lg5	Maximum output
2	DISCRI	—	—	FM MODE: MONO Interstation noise	T meter	Lg7 (primary)	Meter indication in the center
3		A	95 MHz 60 dB (ANT INPUT) 1 kHz (Mod) 75 kHz (Dev)	FM 95 MHz MODE: MONO	B	Lg7 (secondary)	Minim distortion
4	OUTPUT	ditto	ditto	ditto	ditto	—	Confirm that output voltage is 900 mV
5	TRACKING	ditto	90 MHz 1 kHz (Mod) 75 kHz (Dev)	FM 90 MHz	ditto	Lg4, 1, 2	Maximum output
6		ditto	106 MHz 1 kHz (Mod) 75 kHz (Dev)	FM 106 MHz	ditto	CTg1, 2, 3	ditto
7	VCO	A	95 MHz 60 dB (ANT INPUT) 0 (Dev)	FM 95 MHz MODE: STEREO	C	VRg2	Frequency counter indication is 19 kHz ± 50 Hz
8	SEPARATION	D	FM-MPX: SELECTOR→L or R 1 kHz (Mod) PILOT (6.75 kHz) FM-SG: 95 MHz 60 dB (ANT INPUT) 68.25 kHz (Dev)	ditto	R output (SELECTOR→L) B L output (SELECTOR→R)	VRg1	Minimum output. Adjust VRg1 so that the difference between R output and L output becomes minimum
9	DISTORTION	A	ditto	ditto	B	Lg5	Minimum distortion
10	DOLBY FM	A	95 MHz 60 dB (ANT INPUT) 1 kHz (Mod) 37.5 kHz (Dev)	FM 95 MHz Sg2 – 3: OFF Sv1: ☐ FM	B	VRg3, 4	Output is 580 mV
11	400 Hz OSC LEVEL	—	—	Sg2 – 3: ON Sv1: PLAY A→B Vrv1 ~ 4: MAX	B	Vrg5	ditto
AM SECTION							
12	TRACKING	F	600 kHz 400Hz, 30% (Mod)	AM 600 kHz	B	Lg9 Bar antenna	Maximum output
13		ditto	1400 kHz 400Hz, 30% (Mod)	AM 1400 kHz	B	CTg4, 5	ditto
AUDIO SECTION							
14	BIAS CURRENT	—	—	Volume to minimum position	I	VRe1, 2	22 mV
METER SECTION							
15	POWER	H	1 kHz	AUX Set the volume so that output is 2.8V (RMS) Sh 1 – 1: 3W Sh1 – 2: POWER	POWER/LINE meter	VRh3, 4	Meter indicates 1W
16	LINE	—	—	Sg2 – 3: ON Sv1: PLAY A→B Vrv1 ~ 4: MAX	POWER/LINE meter	VRh1, 2	Meter indicates cal.

TEST EQUIPMENT and its SPECIFICATIONS

STANDARD SIGNAL GENERATOR (RF-SG)

Ranges:	90 MHz ~ 108 MHz (FM) 500 kHz ~ 1600 kHz (AM)
Modulation frequency:	1 kHz, 400 Hz or external input (input level 2V or less)
Deviation:	0 ~ 75 kHz (FM)
Modulation:	0 ~ 30% (AM)
Output:	100 mV or more
Distortion:	0.5% or less

SOLID STATE VOLT METER (SSVM)

Ranges:	0.3 mV ~ 300V (full scale)
Frequency response:	5 Hz ~ 500 kHz
Impedance:	1M Ω or more

OSCILLOSCOPE (SCOPE)

Ranges:	DC ~ 10 MHz
Sensitivity:	20 mV/cm
Impedance:	1M Ω or more

DISTORTION METER

Ranges:	0.1% (full scale)
Sensitivity:	100 mV or more

FREQUENCY COUNTER (COUNTER)

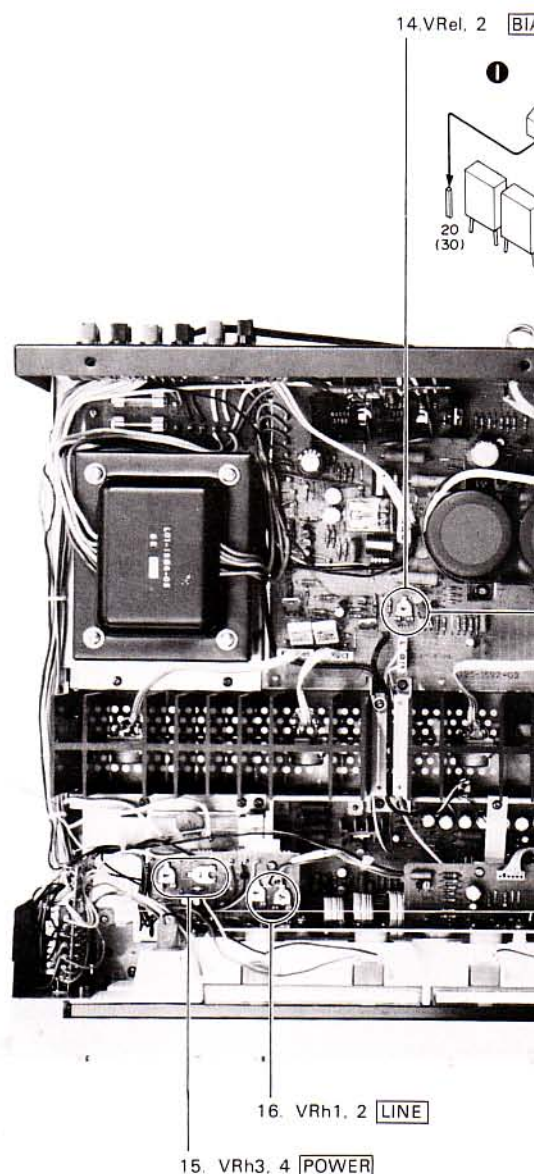
Frequency response:	10 Hz ~ 1 MHz
Sensitivity:	50 mV or more
Impedance:	1M Ω or more

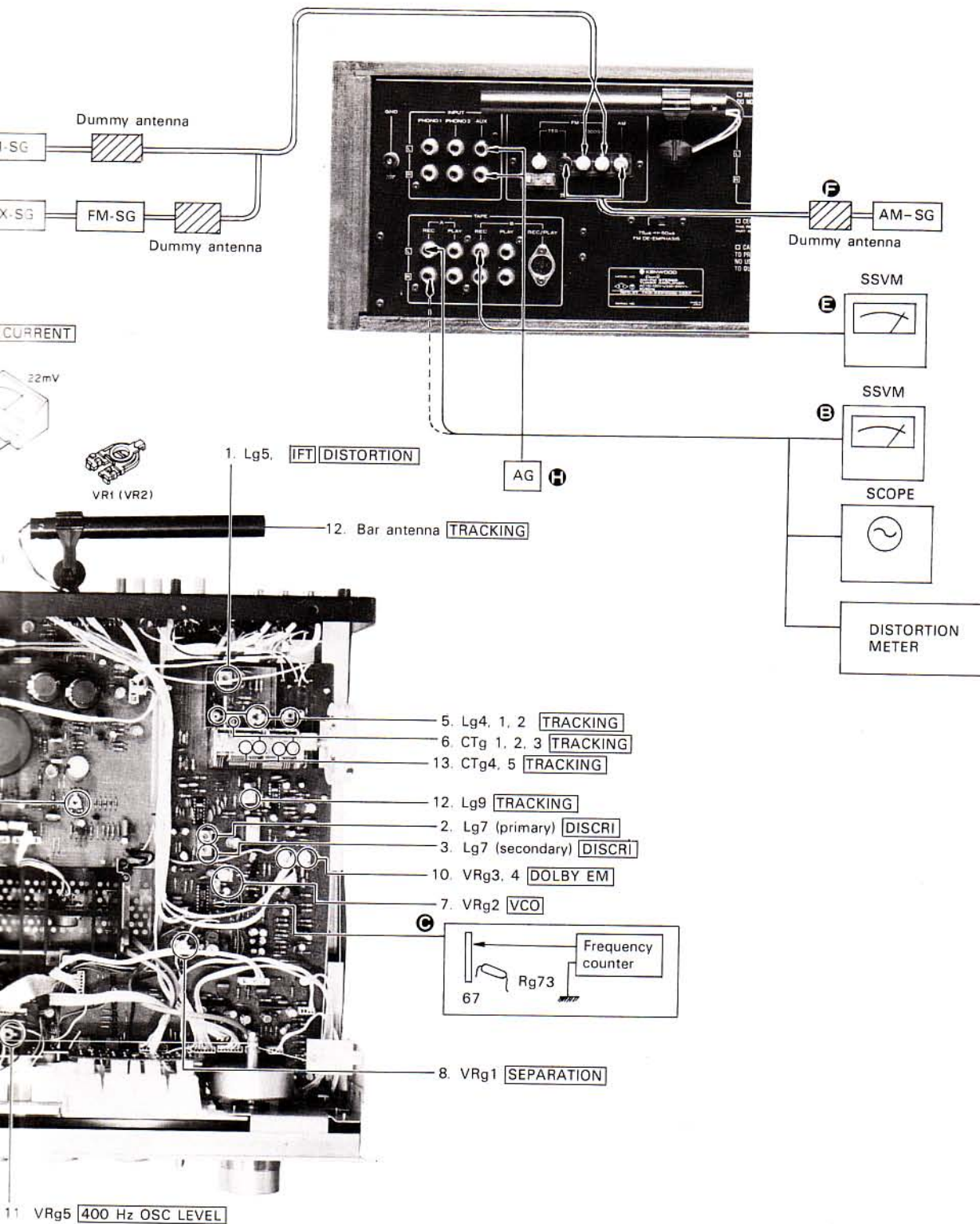
AUDIO SIGNAL GENERATOR (AG)

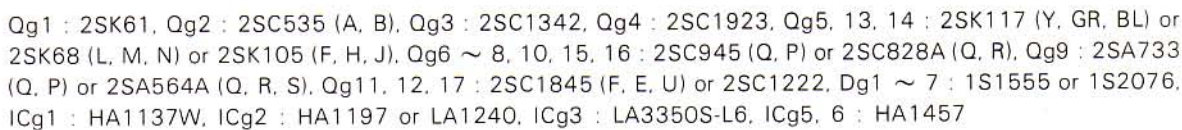
Ranges:	5 Hz ~ 500 kHz
Waveform:	Sine wave
Output:	10V r.m.s.
Distortion:	0.3% or less

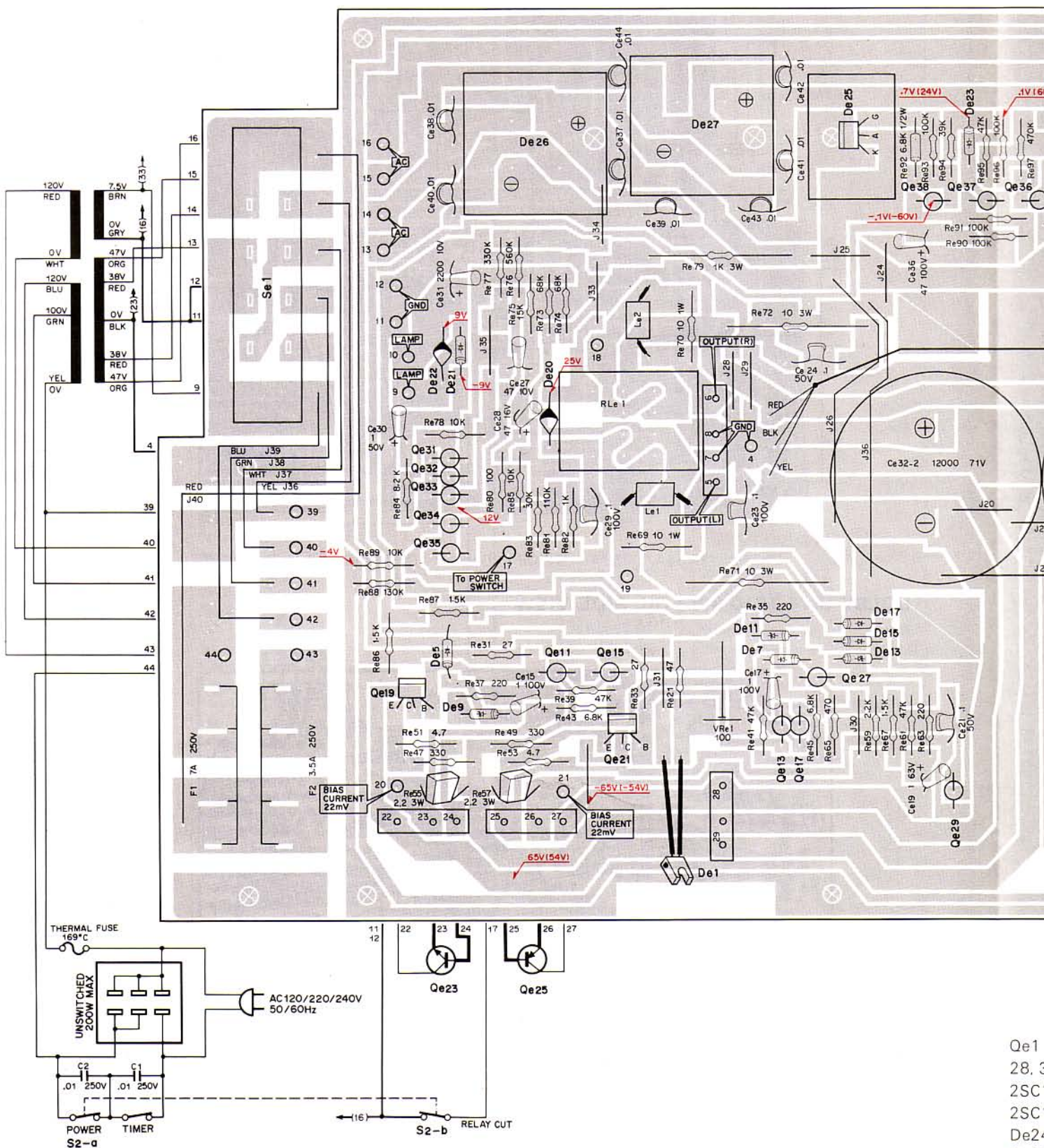
NOTES FOR ADJUSTMENTS

- *Use moderate instrument outputs at all times.
- *The output level of RF-SG means ANT input level.
- *0 dB = 1 μ V

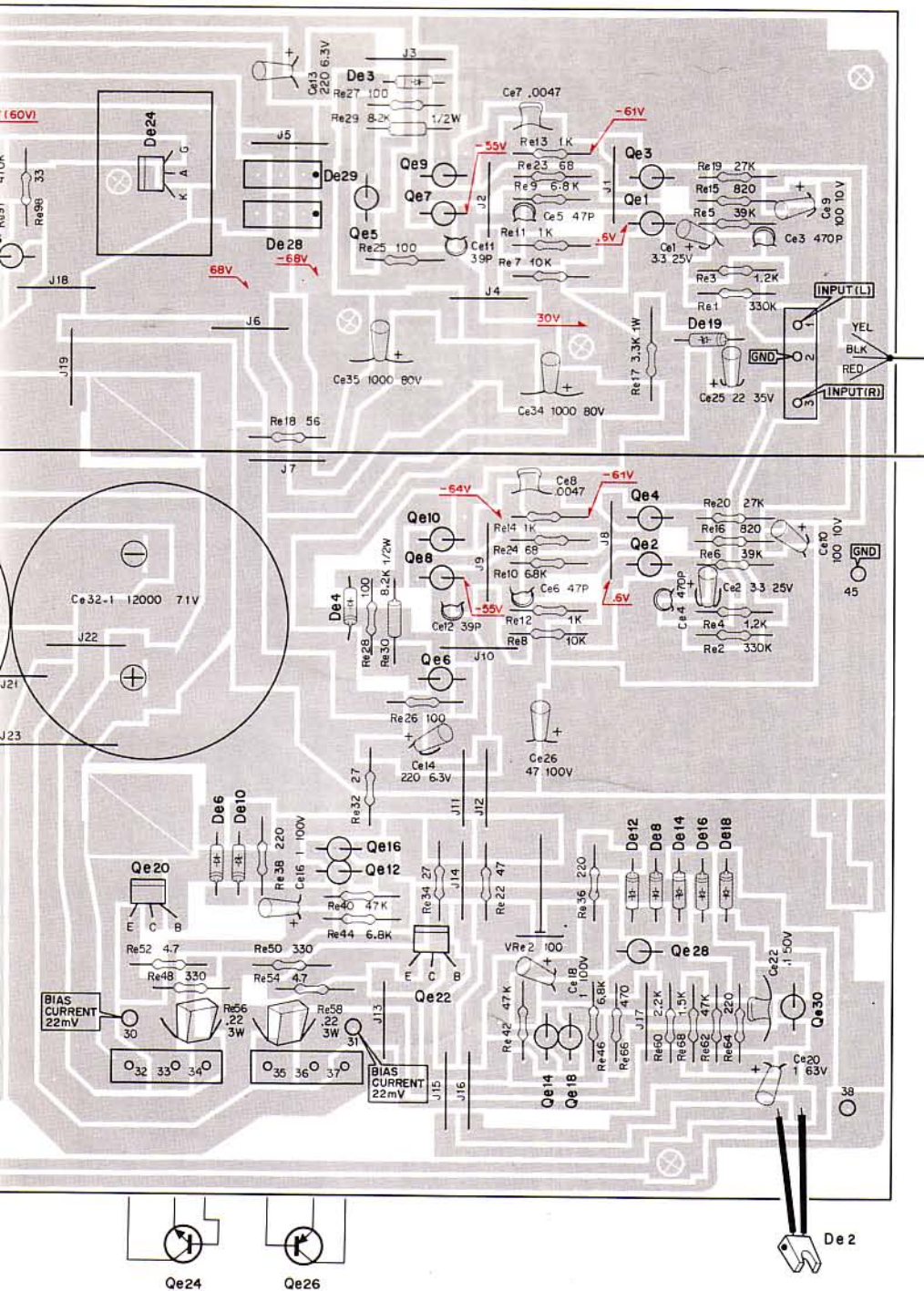




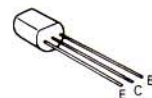




Qe1
28, 3
2SC
2SC
De2
De2
20R



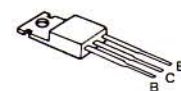
2SA992 2SC945
2SA733 2SC828A
2SA564A 2SD438MP
2SC1845



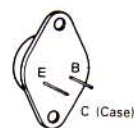
2SA899
2SC1904



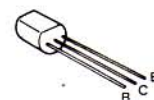
2SC1913
2SA913



2SB600
2SD555

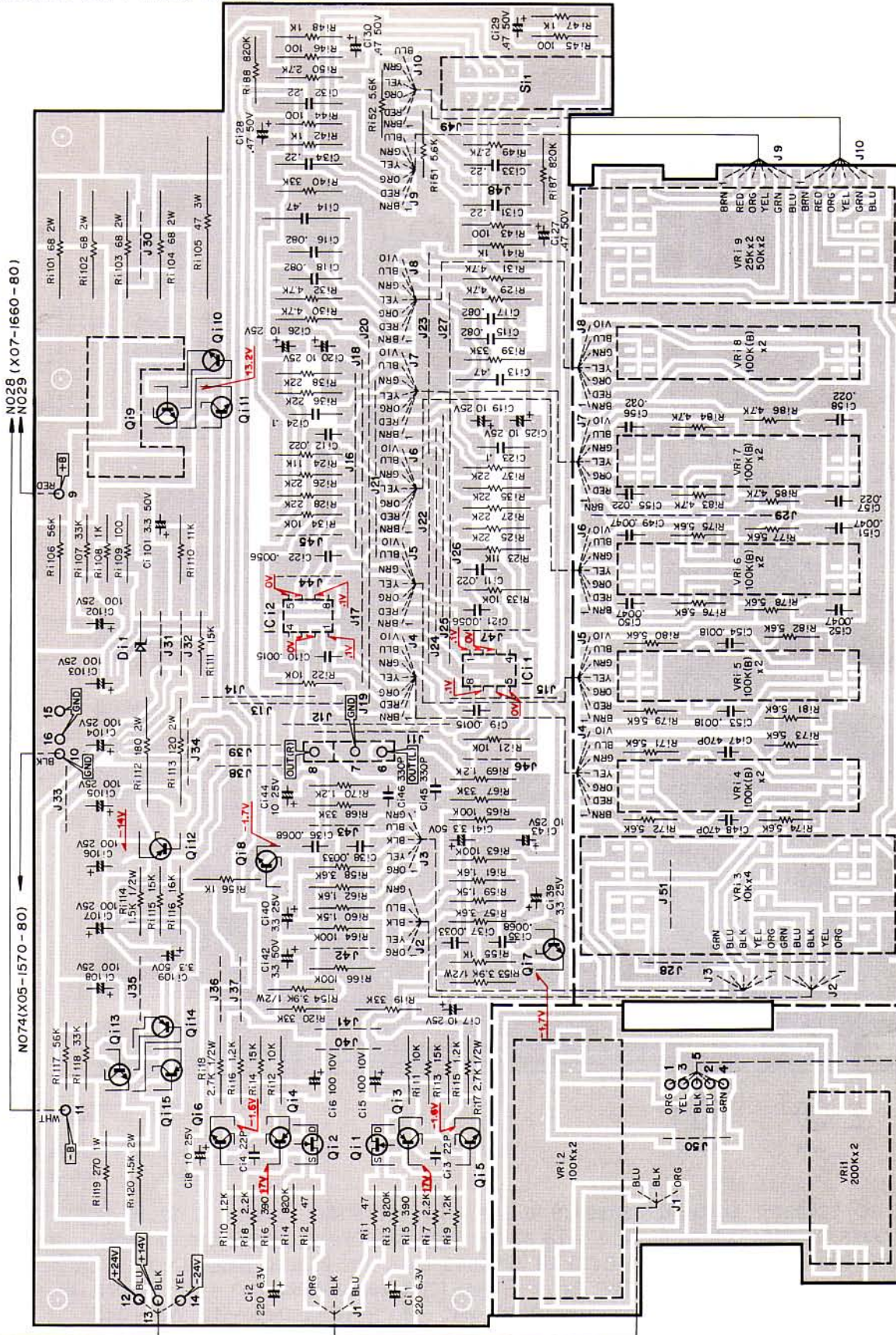


2SC1735



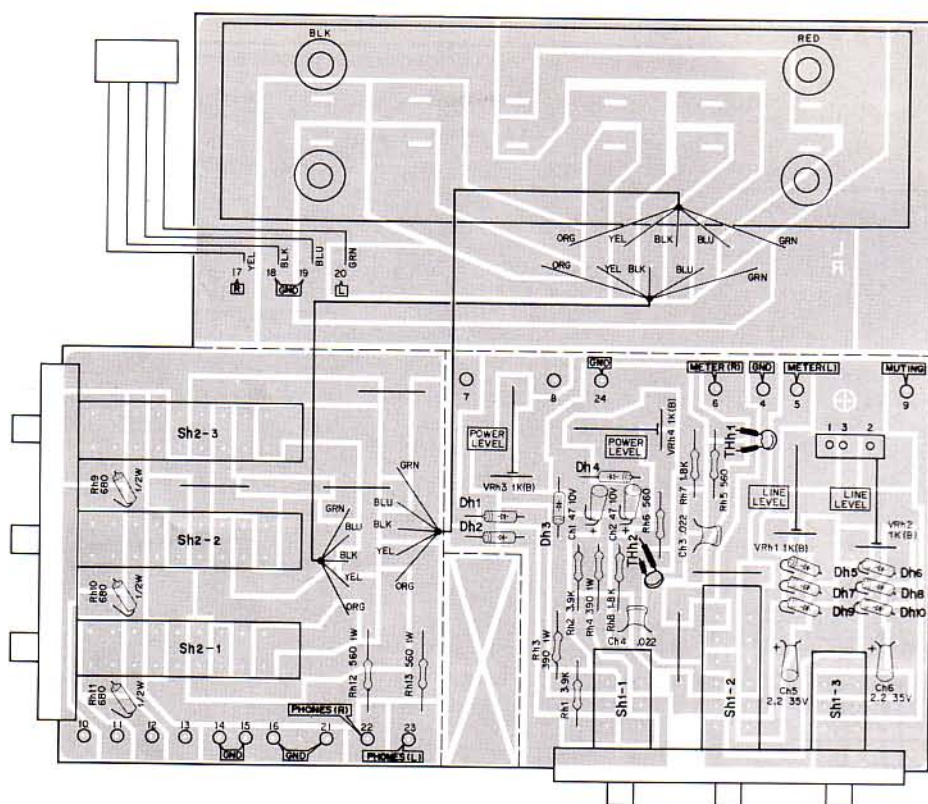
~ 4, 36, 38 : 2SA992 (F, E), Qe5, 6 : 2SA899 (B, V), Qe7 ~ 10 : 2SC1904 (B, V), Qe11, 12, 17, 18, 27, 31 : 2SA733 (R, Q) or 2SA564A (Q, R), Qe13 ~ 16, 32, 33 : 2SC945 (R, Q) or 2SC828A (Q, R), Qe19, 20 : 1913 (Q, R), Qe21, 22 : 2SA913 (Q, R), Qe23, 24 : 2SD555, Qe25, 26 : 2SB600, Qe29, 30, 35, 37 : 1845 (F, E), Qe34 : 2SC1735 or 2SD438MP, De1, 2 : STV-4H (G), De20, 22 : V06B, De3, 4, 21 : 1S2076, 4, 25 : 5P2M, De5 ~ 8, 15 ~ 18, 23 : 1S2076A, De26 : M4C - 51 - 12 * 2, De9 ~ 12 : WZ - 040, 7 : M4C - 41 - 12 * 1, De13, 14 : WZ - 140, De28 : S2VC - 20, De19 : WZ - 300, De29 : S2VC -

CONTROL (X11-1480-80) FOIL SIDE VIEW



Q11, 2 : 2SK68A (L, M), Q13, 4 : 2SA992 (F, E) or 2SA872, Q15, 6 : 2SC1845 (F, E, U) or 2SC1775, Q17, 8 :
 2SC1222 (U), Q19, 13 : 2SD330, Q10, 11 : 2SC945, Q12 : 2SA984K (E, F) or 2SA954 (L, K), Q14, 15 :
 2SA733, Di1 : XZ — 132, Di2 : NJM4558D — A

SPEAKER SELECTOR (X13-2550-80) COMPONENT SIDE VIEW



Dh1, 2 : 1N34A, Dh3, 4 : 1N60IFT, Dh5 ~ 10 : 1N60, THh1, 2 : SDT-20

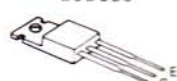
2SK68A



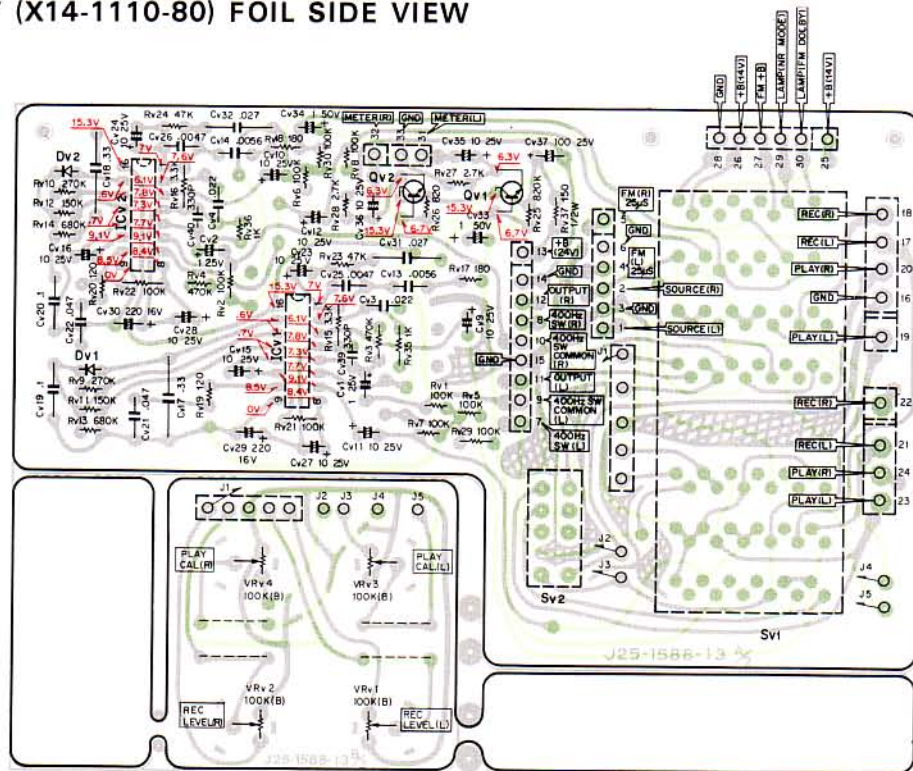
2SA992 2SC945
2SA872 2SA984K
2SC1845 2SA954
2SC1775 2SA733
2SC1222



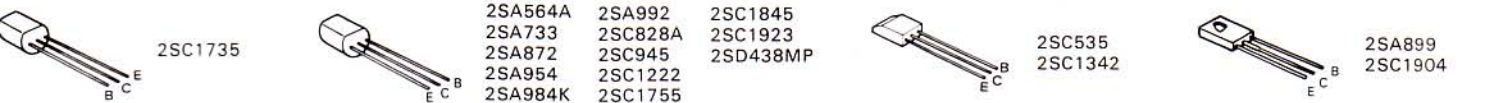
2SD330



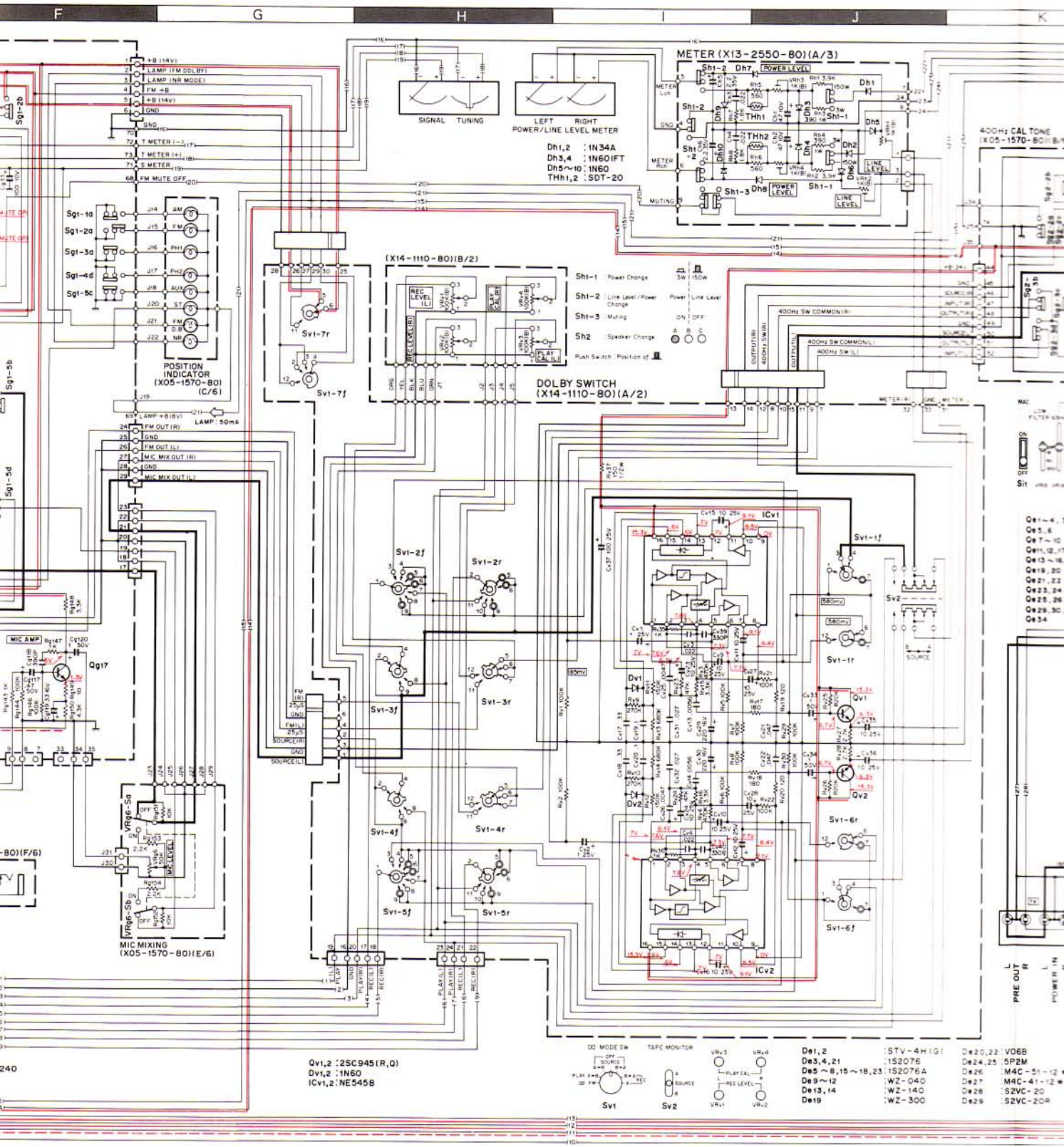
DOLBY (X14-1110-80) FOIL SIDE VIEW



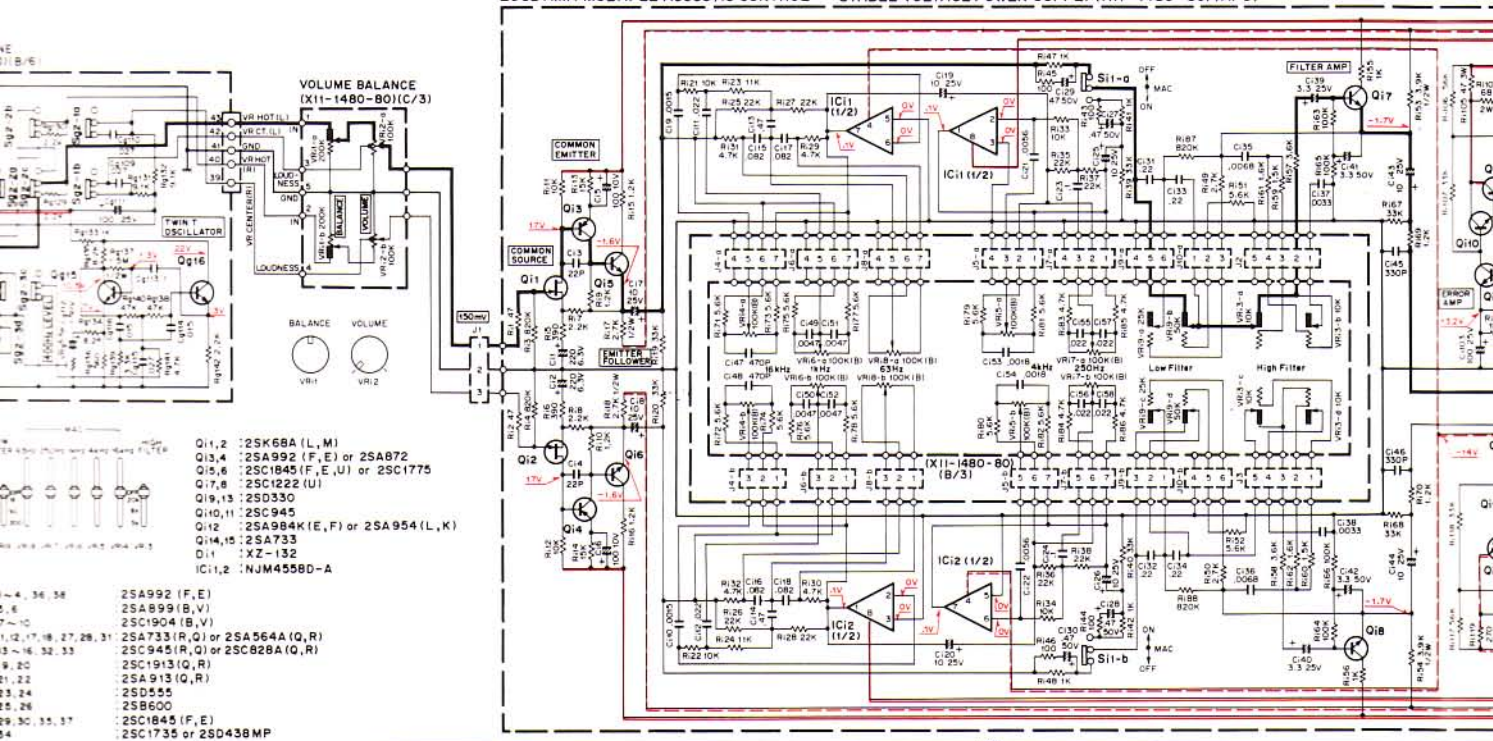
Qv1, 2 : 2SC945 (R, Q), Dv1, 2 : 1N60, ICv1, 2 : NE545B



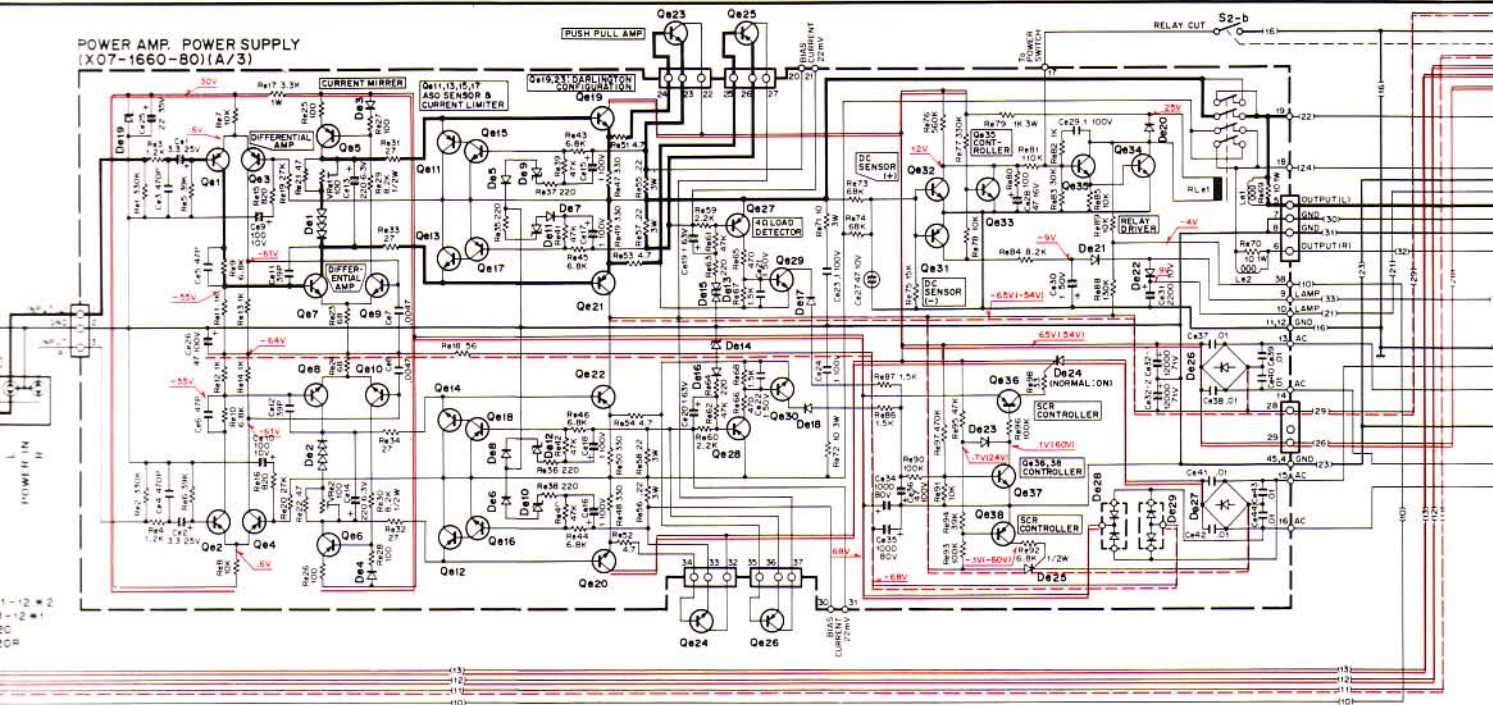
AM FM STEREO RECEIVER



20dB AMP. MULTIPLE ACOUSTIC CONTROL STABLE VOLTAGE POWER SUPPLY (X11-1480-80) (A/3)



POWER AMP. POWER SUPPLY (X07-1660-80)(A/3)



MODEL ELEVEN G



120 watts per channel minimum RMS, both channels driven, at 8 ohms from 20 to 20,000 Hz with no more than 0.03% total harmonic distortion.

Both Channels Driven	130 – 130W 4Ω at 1 kHz
Dynamic Power Output	440W 4Ω
Total Harmonic Distortion	0.03% at rated power into 8Ω
	0.01% at 1/2 rated power into 8Ω
Intermodulation Distortion (60 Hz 7 kHz = 4 : 1)	0.03% at rated power into 8Ω
	0.01% at 1/2 rated power into 8Ω
Power Bandwidth	5 Hz to 70 000 Hz
Frequency Response	5 Hz to 100 000 Hz – 1.5 dB
Signal to Noise Ratio	115 dB (short circuited)
Damping Factor	60 at 8 ohms
Input Sensitivity Impedance	1 0V/40 kΩ
Speaker Impedance	Accept 4Ω to 16Ω

Input Sensitivity/Impedance/Signal to Noise Ratio (IHF A curve)

Phono 1	2.5 mV/50 kΩ/80 dB
Phono 2	2.5 mV/50 kΩ/80 dB
AUX	150 mV/50 kΩ/110 dB
Tape A, B	150 mV/50 kΩ/110 dB
Mic	1.5 mV/10 kΩ/70 dB
Maximum Input Level for Phono	250 mV (RMS) T H D 0.03% at 1 kHz
Frequency Response	
Phono	RIAA standard 30 Hz to 20 kHz +0.3 dB
AUX and Tape	10 Hz to 60 000 Hz -1.0 dB
Multiple Acoustic Compensator	
63 Hz	+10 dB at 63 Hz
250 Hz	+10 dB at 250 Hz
1 kHz	+10 dB at 1 kHz
4 kHz	+10 dB at 4 kHz
16 kHz	+10 dB at 16 kHz
Loudness Control I -30 dB Vol I	+10 dB out 100 Hz
Variable Frequency Control	
Low Filter	12 dB/oct 13 Hz to 200 Hz
High Filter	12 dB/oct 13 Hz to 20 kHz
Output Level Impedance	
Tape REC (Pin)	A 150 mV/100Ω B 150 mV/100Ω B 120 mV/80 kΩ
(IDIN)	
Pre Out	1.0V/1 kΩ

Usable Sensitivity	103 dBf / 1.8 μ V
--------------------	-----------------------

50 dB Quieting Sensitivity	
Mono	14.7 dBf (3.0 μ V)
Stereo	37.2 dBf (140 μ V)
Signal to Noise Ratio at 65 dBf	
Mono	80 dB
Stereo	74 dB
Total Harmonic Distortion at 65 dBf	
Mono	0.1% at 1 kHz
Stereo	0.15% at 1 kHz
Frequency Response	
	30 Hz to 15,000 Hz ± 0.5 — 1.0 dB
Capture Ratio	1.0 dB
Alternate Channel Selectivity	75 dB
Spurious Response Ratio	85 dB
Image Response Ratio	60 dB
IF Response Ratio	75 dB
AM Suppression Ratio	
65 dBf	65 dB
Stereo Separation	48 dB at 1,000 Hz
	35 dB at 50 Hz to 15,000 Hz
Sub Carrier Product Rejection	46 dB
Antenna Impedance	300 Ω balanced and 75 Ω unbalanced
FM Frequency Range	88 MHz to 108 MHz

Usable Sensitivity

Signal to Noise Ratio
Image Rejection
Selectivity
IF Rejection
Total Harmonic Distortion

Power Requirement

Power Consumption	220-240V
A.C. Outlet	600 watts at full power Switched 2 Unswitched 1
Dimensions	W 24.9" (624 mm) H 8.1" (206 mm) D 18.1" (460 mm)
Weight (Net)	47.1 lb (20.5 kg)
(Gross)	57.0 lb (24.8 kg)

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

PARTS LIST

☆: New parts
RD: Carbon film resistor
RC: Carbon composition resistor
RW: Wire wound power resistor
RN: Meter film resistor
RS: Metal oxide film resistor

Note:
Resistors except the special type (example: cement, metal film, etc.) are not detailed in PARTS LIST. With regard to the value, refer to the schematic diagram or the PC board illustration.

Resistors not detailed are carbon type (1/4W or 1/8W).

TOTAL

☆: New parts U: PX, M₁: Other Areas, M₂: KR11000G

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
C1.2	C91-0023-05	Film 0.01μF 250WV	
C6	CK45B1H561K	Ceramic 560pF ±10%	
SWITCH			
S1	S59-1041-05	Timer switch	
S2	S33-4014-05	Lever switch	
MISCELLANEOUS			
—	A03-0236-02	Cabinet (A)	☆
—	A03-0237-02	Cabinet (B)	☆
—	A20-1314-02	Panel ass'y (U,M ₁)	☆
—	A20-1315-02	Panel ass'y (black) (M ₂)	☆
—	A30-0148-03	Dial back board ass'y	☆
—	A33-0051-01	Reflector	☆
—	B01-0120-03	Escutcheon (Panel ass'y)	☆
—	B01-0121-04	Side escutcheon L (Panel ass'y)	☆
—	B01-0122-04	Side escutcheon R (Panel ass'y)	☆
—	B07-0230-04	Escutcheon (shaft)	☆
—	B07-0234-03	Lever escutcheon (Tone, Tape, panel ass'y)	☆
—	B07-0235-04	Lever escutcheon (Power, panel ass'y)	☆
—	B07-0243-04	Push switch ring (Knob ass'y (1))	☆
—	B07-0244-03	Push switch ring (Knob ass'y (2))	☆
—	B07-0245-03	Push switch ring × 2 (Knob ass'y (3))	☆
—	B08-0005-04	Indicating window (1) (Dial board ass'y)	☆
—	B08-2017-14	Indicating window (Panel ass'y)	☆
—	B08-3016-04	Indicating window (2) (Dial board ass'y)	☆
—	B10-0238-03	Front glass (Panel ass'y)	☆
—	B20-0422-03	Dial calibrations	☆
—	B21-0023-04	Dial pointer	☆
—	B30-0077-05	Pilot lamp 8V 0.05A × 2	☆
—	B30-0157-05	Lamp ass'y	☆
—	B30-0158-05	Pilot lamp 8V 0.2A	☆
A,B,C	B30-0159-05	LED	☆
—	B31-0286-05	T.S. meter	☆
—	B31-0287-05	Power meter	☆
—	B42-0009-04	Passed sticker	☆
—	B46-0062-20	Warrantly card (U,M ₂)	☆
—	B46-0063-00	Warrantly card (U)	☆
—	B50-1765-00	Instruction manual (U,M ₁)	☆
—	B50-1767-00	Instruction manual (M ₂)	☆
—	B59-0018-00	Kenwood service stations list (U)	☆

Ref. No.	Parts No.	Description	Re- marks
—	D15-0171-13	Dial pulley	
—	D15-0172-04	Small pulley × 4	
—	D20-0142-03	Dial shaft ass'y	☆
—	D21-0450-03	Timer shaft	☆
—	D22-0033-04	Coupler	☆
—	D32-0082-04	Switch stopper (POWER)	
—	E02-0004-05	Transistor socket × 4	
—	E03-0007-05	AC outlet	
—	E06-0501-05	DIN connector	
—	E11-0060-15	Phone jack × 2	
—	E13-0415-05	Phono jack (4P) × 3	
—	E13-0609-05	Phono jack (6P)	
—	E14-0107-05	Closed circuit phono plug × 2	
—	E29-0082-05	Antenna terminal	
—	E30-0545-05	Power cord (U,M ₁)	
—	E30-0580-05	Power cord (M ₂)	
—	G01-0045-24	Dial spring	
—	G01-0360-04	Spring × 3 (Knob ass'y (1))	☆
—	G01-0361-04	Spring × 11 (Knob ass'y (1),(2))	☆
—	H01-1825-04	Carton box (U,M ₁)	☆
—	H01-1826-04	Carton box (M ₂)	☆
—	H10-1519-02	Polystyrene foamed fixture × 2	☆
—	H20-0443-04	Polyethylene cover (M ₁)	
—	H20-0449-04	Polyethylene cover (U,M ₂)	
—	H25-0078-04	Instruction bag	
—	H40-0004-04	Anti-rust paper	
—	J02-0049-14	Foot × 4	
—	J12-0010-04	Pin (closed circuit) × 2	
—	J19-0506-05	PC board supporter × 5	
—	J19-0507-05	Antenna holder	
—	J41-0033-05	Power cord bushing (M ₂)	
—	J41-0034-05	Power cord bushing (U,M ₁)	
—	K23-0289-04	Knob (TUNING)	
—	K23-0290-04	Knob (VOL,BAL,NR MODE) × 3	
—	K23-0303-03	Knob (MIC MIXING)	
—	K23-0307-03	Knob (TIMER)	☆
—	K23-0308-04	Knob (DOLBY CAL.) × 4	☆
—	K27-0070-04	Knob (LEVER) × 3	
—	K27-0075-04	Knob (M.A.C.) × 7	☆
—	K29-0299-04	Knob × 3 (Knob ass'y (1))	☆
—	K29-0300-04	Knob × 11 (Knob ass'y (2))	☆
—	L01-1586-05	Power transformer	☆
—	N08-0127-05	Dress screw × 4	
—	N08-0128-35	GND terminal	
—	T90-0083-05	Bar antenna	
—	T90-0202-05	FM indoor antenna	
—	X05-1570-80	Tuner PC board ass'y	☆
—	X07-1660-80	Power amp PC board ass'y	☆
—	X11-1480-80	Control PC board ass'y	☆
—	X13-2550-80	Speaker selector PC board ass'y	☆
—	X14-1110-80	Dolby PC board ass'y	☆
—	351-0003-14	Dial string (φ0.5)	

PARTS LIST

TUNER (X05-1570-80)

Ref No	Parts No.	Description	Re- marks
CAPACITOR			
Cg1	CC45SL1H101K	Ceramic 100pF ±10%	
Cg2	CC45SL1H180K	Ceramic 18pF ±10%	
Cg3	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg4	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Cg5	CC45SL1H180K	Ceramic 18pF ±10%	
Cg6	CC45SL1H221K	Ceramic 220pF ±10%	
Cg7	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg8	C91-0037-05	Low capacitive 0.47pF	
Cg9	CC45LG1H220J	Ceramic 22pF ±5%	
		(Lg4: L32-0210-05)	
	CC45CG1H220J	Ceramic 22pF ±5%	
		(Lg4: L32-0187-05)	
Cg10	CC45SH1H080D	Ceramic 8pF ±0.5pF	
Cg11	CC45CH1H390K	Ceramic 39pF ±10%	
Cg12	CC45CH1H150K	Ceramic 15pF ±10%	
Cg13 ~			
19	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg20	CC45SL1H221K	Ceramic 220pF ±10%	
Cg21	CE04W1C100	Electrolytic 10μF 16WV	
Cg22	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg23	CE04W1H010	Electrolytic 1μF 50WV	
Cg24	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg25	CE04W1H010	Electrolytic 1μF 50WV	
Cg26	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg27 ~			
29	CK45F1H473Z	Ceramic 0.047μF +80%, -20%	
Cg30	CE04W1C100	Electrolytic 10μF 16WV	
Cg31	CE04W1C330	Electrolytic 33μF 16WV	
Cg32	CE04W1C470	Electrolytic 47μF 16WV	
Cg33	CE04W1A101	Electrolytic 100μF 10WV	
Cg42	CC45UJ1H180K	Ceramic 18pF ±10%	
Cg43	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg44	CQ93M1H102M	Mylar 0.001μF ±20%	
Cg45	CE04W1C100	Electrolytic 10μF 16WV	
Cg46 47	CQ93M1H103M	Mylar 0.01μF ±20%	
Cg48	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg49	CE04W1C100	Electrolytic 10μF 16WV	
Cg50	CK45F1H473Z	Ceramic 0.047μF +80%, -20%	
Cg51	CE04W1C100	Electrolytic 10μF 16WV	
Cg52	CE04W1H010	Electrolytic 1μF 50WV	
Cg53	CK45B1H391K	Ceramic 390pF ±10%	
Cg54	CQ93M1H103M	Mylar 0.01μF ±20%	
Cg55	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg56	CQ93M1H333M	Mylar 0.033μF ±20%	
Cg57	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
Cg58	CE04W1C100	Electrolytic 10μF 16WV	
Cg61	CE04W1C470	Electrolytic 47μF 16WV	
Cg62	CQ93M1H473M	Mylar 0.047μF ±20%	
Cg63	CQ09FS1H152J	Polystyrene 1500pF ±5%	
Cg64	CE04AW1HR22M	Electrolytic 0.22μF 50WV	
Cg65	CE04AW1HR47M	Electrolytic 0.47μF 50WV	
Cg66	CE04W1H010	Electrolytic 1μF 50WV	
Cg67 68	CQ93M1H153J	Mylar 0.015μF ±5%	
Cg69 70	CQ93M1H822J	Mylar 0.0082μF ±5%	
Cg71 72	CE04W1C100	Electrolytic 10μF 16WV	
Cg73 74	CE04AW1H010M	Electrolytic 1μF 50WV	
Cg75 76	CE04AW1HR47M	Electrolytic 0.47μF 50WV	
Cg77 ~ 80	CE04W1C100	Electrolytic 10μF 16WV	
Cg81 82	CQ93M1H112J	Mylar 0.011μF ±5%	
Cg83 84	CQ93M1H392J	Mylar 0.0039μF ±5%	
Cg85	CE04W1E221	Electrolytic 220μF 25WV	

Ref. No.	Parts No.	Description	Re- marks
Cg91.92	CC45SL1H470K	Ceramic 47pF ±10%	
Cg93.94	CS15E1A3R3M	Tantalum 3.3μF 10WV	
Cg95.96	CE04W1A470	Electrolytic 47μF 10WV	
Cg97.98	CC45SL1H101K	Ceramic 100pF ±10%	
Cg99.			
100	CC45SL1H330K	Ceramic 33pF ±10%	
Cg101.			
102	CQ93M1H123J	Mylar 0.012μF ±5%	
Cg103.			
104	CQ93M1H332J	Mylar 0.0033μF ±5%	
Cg105.			
106	CE04AW1E4R7M	Electrolytic 4.7μF 25WV	
Cg107.			
108	CE04W1E101	Electrolytic 100μF 25WV	
Cg109.			
110	CQ93M1H273J	Mylar 0.027μF ±5%	
Cg111	CE04W1E101	Electrolytic 100μF 25WV	
Cg112	CE04W1H010	Electrolytic 1μF 50WV	
Cg113	CQ93M1H104M	Mylar 0.1μF ±20%	
Cg114	CQ93M1H153J	Mylar 0.015μF ±5%	
Cg115	CQ93M1H273J	Mylar 0.027μF ±5%	
Cg116	CQ93M1H153J	Mylar 0.015μF ±5%	
Cg117	CE04AW1HR47M	Electrolytic 0.47μF 50WV	
Cg118	CK45B1H391K	Ceramic 390pF ±10%	
Cg119	CE04W1C330	Electrolytic 33μF 16WV	
Cg120	CE04W1H010	Electrolytic 1μF 50WV	
RESISTOR			
Rg30	RC05GF2H106M	RC 10MΩ ±20% 1/2W	
Rg97.98	RC05GF2H106M	RC 10MΩ ±20% 1/2W	
Rg137	RC05GF2H155M	RC 1.5MΩ ±20% 1/2W	
SEMICONDUCTOR			
Qg1	V09-0124-10	FET 2SK61	
Qg2	V03-0535-10	Transistor 2SC535(A,B)	
Qg3	V03-1342-00	Transistor 2SC1342	
Qg4	V03-1923-00	Transistor 2SC1923	
Qg5	V09-0126-60	FET 2SK117(Y,GR,BL)	
	V09-0122-50	or 2SK68(L,M,N)	
	V09-0127-30	or 2SK105(F,H,J)	
Qg6 ~ 8	V03-0348-05	Transistor 2SC945(Q,P)	
	V03-0345-05	or 2SC828A(Q,R)	
Qg9	V01-0170-05	Transistor 2SA733(Q,P)	
	V01-0564-50	or 2SA564A(Q,R,S)	
Qg10	V03-0348-05	Transistor 2SC945(Q,P)	
	V03-0345-05	or 2SC828A(Q,R)	
Qg11.12	V03-1845-20	Transistor 2SC1845(F,E,U)	
	V03-0456-05	or 2SC1222	
Qg13.14	V09-0126-60	FET 2SK117(Y,GR,BL)	
	V09-0122-50	or 2SK68 (L,M,N)	
	V09-0127-30	or 2SK105(F,H,J)	
Qg15.16	V03-0348-05	Transistor 2SC945(Q,P)	
	V03-0345-05	or 2SC828A(Q,R)	
Qg17	V03-1845-20	Transistor 2SC1845(F,E,U)	
	V03-0456-05	or 2SC1222	
ICg1	V30-0133-05	IC HA1137W	
ICg2	V30-0196-05	IC HA1197	
	V30-0245-10	or LA1240	
ICg3	V30-0244-10	IC LA3350S-L6	
ICg5.6	V30-0264-10	IC HA1457	
Dg1 ~ 7	V11-0076-05	Diode 1S1555	
	V11-0271-05	or 1S2076	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
VC/TRIMMER/POTENTIOMETER			
—	C01-0211-05	Variable capacitor	☆
CTg1	C05-0055-05	Ceramic trimmer 6pF	
VRg1	R12-1021-05	Trimming potentiometer 1K Ω SEP	
VRg2	R12-1040-05	Trimming potentiometer 4.7K Ω VCO	
VRg3,4	R12-3045-05	Trimming potentiometer 10K Ω FM DOLBY LEVEL	
VRg5	R12-2016-05	Trimming potentiometer 5K Ω 400 Hz LEVEL	
VRg6	R01-4026-05	Potentiometer 50K with switch MIC LEVEL	
COIL/INDUCTOR/IFT/FILTER			
Lg1	L31-0361-05	FM ANT Coil	
Lg2	L31-0410-05	FM RF Coil	
Lg3	L40-1091-41	Inductor 1 μ H	
Lg4	L32-0210-05	FM OSC coil	
	L32-0187-05	or	
Lg5	L30-0282-05	FM IFT	
Lg6	L40-1511-03	Inductor 150 μ H	
	L40-1512-03	or	
	L40-1511-44	or	
	L40-1512-44	or	
Lg7	L30-0314-05	FM IFT	☆
Lg8	L40-1092-44	Inductor 1 μ H	
	L40-1092-03	or	
Lg9	L32-0217-05	AM OSC coil	☆
Lg10	L30-0284-05	AM DETECTION coil	
Lg11	L40-1021-03	Inductor 1mH	
	L40-1021-45	or	
Lg13	L79-0029-05	Low pass filter	
Lg14	L79-0030-05	Low pass filter	
CFg1~3	L72-0052-05	FM ceramic filter	
CFg4	L72-0035-05	AM ceramic filter	
	L72-0030-05	or	
SWITCH			
Sg1	S42-5010-05	Push	☆
Sg2	S42-3023-05	Push	☆
Sg3	S31-6011-05	Slide DE-EMPHASIS	☆
MISCELLANEOUS			
—	B30-0077-05	Lamp 8V 0.05A $\times$ 6	
—	E11-0065-05	Mic jack	

POWER AMP (X07-1660-80)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ce1,2	CE04AW1E3R3M	Electrolytic 3.3 μ F 25WV	
Ce3,4	CK45B1H471K	Ceramic 470pF $\pm$ 10%	
Ce5,6	CC45SL1H470K	Ceramic 47pF $\pm$ 10%	
Ce7,8	CQ93M1H472K	Mylar 0.0047 μ F $\pm$ 10%	
Ce9,10	CE04W1A101	Electrolytic 100 μ F 10WV	
Ce11,12	CC45SL1H390K	Ceramic 39pF $\pm$ 10%	
Ce13,14	CE04W0J221	Electrolytic 220 μ F 6.3WV	
Ce15~18	CE04W2A010	Electrolytic 1 μ F 100WV	

Ref. No.	Parts No.	Description	Re- marks
Ce19,20	CE04W1J010	Electrolytic 1 μ F 63WV	
Ce21,22	CQ93M1H104M	Mylar 0.1 μ F $\pm$ 20%	
Ce23,24	CQ93M2A104M	Mylar 0.1 μ F $\pm$ 20%	
Ce25	CE04W1V220	Electrolytic 22 μ F 35WV	
Ce26	CE04W2A470	Electrolytic 47 μ F 100WV	
Ce27	CE04BW1A470M	Electrolytic 47 μ F 10WV	
Ce28	CE04AW1C470M	Electrolytic 47 μ F 16WV	
Ce29	CQ93M2A104M	Mylar 0.1 μ F $\pm$ 20%	
Ce30	CE04W1H010	Electrolytic 1 μ F 50WV	
Ce31	CE04W1A222	Electrolytic 2200 μ F 10WV	
Ce32	C90-0378-05	Electrolytic 12000 μ F 71WV	☆
Ce34,35	C90-0353-05	Electrolytic 1000 μ F 80WV	
Ce36	CE04W2A470	Electrolytic 47 μ F 100WV	
Ce37,44	CK45E2H103P	Ceramic 0.01 μ F $\pm$ 100% - 0%	
RESISTOR			
Re17	RS14GB3A332J	Flame-proof RS 3.3K Ω $\pm$ 5% 1W	
Re18	RD14GY2E560J	Flame-proof RD 56 Ω $\pm$ 5% 1/4W	
Re23,24	RD14GY2E680J	Flame-proof RD 68 Ω $\pm$ 5% 1/4W	
Re25~28	RD14GY2E101J	Flame-proof RD 100 Ω $\pm$ 5% 1/4W	
Re29,30	RC05GF2H822K	RC 8.2K Ω $\pm$ 10% 1/2W	
Re31~34	RD14GY2E270J	Flame-proof RD 27 Ω $\pm$ 5% 1/4W	
Re35~38	RD14GY2E221J	Flame-proof RD 220 Ω $\pm$ 5% 1/4W	
Re47~50	RD14GY2E331J	Flame-proof RD 330 Ω $\pm$ 5% 1/4W	
Re51~54	RD14GY2E4R7J	Flame-proof RD 4.7 Ω $\pm$ 5% 1/W	
Re55~58	R92-0167-05	Cement 0.22 Ω 3W	
Re63,64	RD14GY2E221J	Flame-proof RD 220 Ω $\pm$ 5% 1/4W	
Re69,70	RS14GB3A100J	Flame-proof RS 10 Ω $\pm$ 5% 1W	
Re71,72	RS14GB3F100J	Flame-proof RS 10 Ω $\pm$ 5% 3W	
Re79	RS14GB3F102J	Flame-proof RS 1K Ω $\pm$ 5% 3W	
Re86,87	RD14GY2E152J	Flame-proof RD 1.5K Ω $\pm$ 5% 1/4W	
Re92	RC05GF2H682K	RC 6.8K Ω $\pm$ 10% 1/2W	
Re98	RD14GY2E330J	Flame-proof RD 33 Ω $\pm$ 5% 1/4W	
SEMICONDUCTOR			
Qe1~4	V01-0992-10	Transistor 2SA992(F,E)	
Qe5,6	V01-0199-05	Transistor 2SA899(B,V)	
Qe7~10	V03-0460-05	Transistor 2SC1904(B,V)	
Qe11,12	V01-0084-05	Transistor 2SA733(R,Q)	
	V01-0564-30	or 2SA564A(Q,R)	
Qe13~16	V03-0270-05	Transistor 2SC945(R,Q)	
	V03-0345-05	or 2SC828A (Q,R)	
Qe17,18	V01-0084-05	Transistor 2SA733R(Q)	
	V01-0564-30	or 2SA564A(Q,R)	
Qe19,20	V03-0468-05	Transistor 2SC1913(Q,R)	
Qe21,22	V01-0188-05	Transistor 2SA913(Q,R)	
Qe23,24	V04-0555-00	Transistor 2SD555	
Qe25,26	V02-0600-00	Transistor 2SB600	
Qe27,28	V01-0084-05	Transistor 2SA733(R,Q)	
	V01-0564-30	or 2SA564A(Q,R)	
Qe29,30	V03-1845-20	Transistor 2SC1845(F,E)	
Qe31	V01-0084-05	Transistor 2SA733(R,Q)	
	V01-0564-30	or 2SA564A(Q,R)	
Qe32,33	V03-0270-05	Transistor 2SC945(R,Q)	
	V03-0345-05	or 2SC828A(Q,R)	
Qe34	V03-0452-05	Transistor 2SC1735	
	V04-0438-30	or 2SD438MP	
Qe35	V03-1845-10	Transistor 2SC1845(F,E)	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
Qe36	V01-0992-10	Transistor 2SA992(F,E)	
Qe37	v03-1845-10	Transistor 2SC1845(F,E)	
Qe38	V01-0992-10	Transistor 2SA992(F,E)	
De1.2	V11-5100-40	Varistor STV-4H(G)	
De3.4	V11-0271-05	Diode 1S2076	
De5~8	V11-0273-05	Diode 1S2076A	
De9~12	V11-4102-50	Zener diode WZ-040	☆
De13.14	V11-0344-05	Zener diode WZ-140	
De15~18	V11-0273-05	Diode 1S2076A	
De19	V11-4100-20	Zenwe diode WZ-300	
De20	V11-0219-05	Diode V06B	
De21	V11-0271-05	Diode 1S2076	
De22	V11-0219-05	Diode V06B	
De23	V11-0273-05	Diode 1S2076A	
De24.25	V11-1200-50	Thyristor 5P2M	☆
De26	V11-2101-60	Diode M4C-51-12*2	☆
De27	V11-2101-40	Diode M4C-41-12*1	☆
De28	V11-1300-70	Diode S2VC-20	
De29	V11-1300-90	Diode S2VC-20R	
POTENTIOMETER			
VRe1.2	R12-0052-05	Trimming 100Ω BIAS	
COIL			
Le1.2	L39-0080-15	Coil	
SWITCH/RELAY			
Se1	S31-2046-05	Slide switch	
RLe1	S51-4033-05	Relay	
MISCELLANEOUS			
Fe1	F05-7025-05	Fuse 250V 7A	
Fe2	F05-3523-05	Fuse 250V 3.5A	
—	J13-0041-05	Fuse clip × 4	

CONTROL (X11-1480-80)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ci1.2	CE04W0J221	Electrolytic 220μF 6.3WV	
Ci3.4	CC45SL1H220K	Ceramic 22pF ±10%	
Ci5.6	CE04W1A101	Electrolytic 100μF 10WV	
Ci7.8	CE04AW1E100M	Electrolytic 10μF 25WV	
Ci9.10	CQ93M1H152J	Mylar 0.0015μF ±5%	
Ci11.12	CQ93M1H223J	Mylar 0.022μF ±5%	
Ci13.14	CQ93M1H474J	Mylar 0.47μF ±5%	
Ci15~18	CQ93M1H823J	Mylar 0.082μF ±5%	
Ci19.20	CE04W1E100	Electrolytic 10μF 25WV	
Ci21.22	CQ93M1H562J	Mylar 0.0056μF ±5%	
Ci23.24	CQ93M1H104J	Mylar 0.1μF ±5%	
Ci25.26	CE04AW1E100M	Electrolytic 10μF 25WV	
Ci27~30	CE04AW1H474M	Electrolytic 0.47μF 50WV	
Ci31~34	CQ93M1H224J	Mylar 0.22μF ±5%	
Ci35.36	CQ93M1H682J	Mylar 0.0068μF ±5%	
Ci37.38	CQ93M1H332J	Mylar 0.0033μF ±5%	
Ci39.40	CE04AW1E3R3M	Electrolytic 3.3μF 25WV	
Ci41.42	CE04W1H3R3	Electrolytic 3.3μF 50WV	
Ci43.44	CE04AW1E100M	Electrolytic 10μF 25WV	
Ci45.46	CK45B1H331K	Ceramic 330pF ±10%	
Ci47.48	CC45SL1H471J	Ceramic 470pF ±5%	

Ref. No.	Parts No.	Description	Re- marks
Ci49~52	CQ93M1H472J	Mylar 0.0047μF ±5%	
Ci53.54	CQ93M1H182J	Mylar 0.0018μF ±5%	
Ci55~58	CQ93M1H223J	Mylar 0.022μF ±5%	
Ci101	CE04W1H3R3	Electrolytic 3.3μF 50WV	
Ci102~108	CE04W1E101	Electrolytic 100μF 25WV	
Ci109	CE04W1H3R3	Electrolytic 3.3μF 50WV	
RESISTOR			
Ri17.18	RC05GF2H272K	RC 2.7KΩ ±10% 1/2W	
Ri53.54	RC05GF2H392K	RC 3.9KΩ ±10% 1/2W	
Ri101~104	RS14GB3D680J	Flame-proof RS 68Ω ±5% 2W	
Ri105	RS14GB3F470J	Flame-proof RS 47Ω ±5% 3W	
Ri112	RS14GB3D181J	Flame-proof RS 180Ω ±5% 2W	
Ri113	RS14GB3D121J	Flame-proof RS 120Ω ±5% 2W	
Ri114	RC05GF2H152K	RC 1.5KΩ ±10% 1/2W	
Ri119	RS14GB3A271J	Flame-proof RS 270Ω ±5% 1W	
Ri120	RS14GB3D152J	Flame-proof RS 1.5KΩ ±5% 2W	
SEMICONDUCTOR			
Qi1.2	V09-0092-05	FET 2SK68A(L,M)	
Qi3.4	V01-0992-10	Transistor 2SA992(F,E)	☆
	V01-0198-05	or 2SA872	
Qi5.6	V03-1845-20	Transistor 2SC1845(F,E,U)	☆
	V03-1775-00	or 2SC1775	
Qi7.8	V03-0416-05	Transistor 2SC1222(U)	
Qi9	V04-0330-00	Transistor 2SD330	
Qi10.11	V03-0297-05	Transistor 2SC945	
Qi12	V01-0984-30	Transistor 2SA984K(E,F)	
	V01-0954-10	or 2SA954(L,K)	
Qi13	V04-0330-00	Transistor 2SD330	
Qi14.15	V01-0085-05	Transistor 2SA733	
IC1.2	V30-0248-10	IC NJM4558D-A	
Di1	V11-4102-30	Zener diode XZ-132	
POTENTIOMETER			
VRI1	R06-5039-05	200KΩ × 2	☆
VRI2	R08-5039-05	100KΩ × 2	☆
VRI3	R13-3006-05	10KΩ × 4 HIGH FILTER	☆
VRI4~8	R13-5019-05	100KΩ(B) × 2 16k,4k,1k,250,63 Hz	☆
VRI9	R13-9001-05	25KΩ × 2, 50KΩ × 2 LOW FILTER	☆
SWITCH			
Si1	S33-2034-05	Lever	

SPEAKER SELECTOR (X13-2550-80)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ch1.2	CE04W1A470	Electrolytic 47μF 10WV	
Ch3.4	CQ93M1H223M	Mylar 0.022μF ±20%	
Ch5.6	CE04AW1V2R2M	Electrolytic 2.2μF 35WV	
RESISTOR			
Rh3.4	RS14GB3A391J	Flame-proof RS 390Ω ±5% 1W	
Rh9~11	RC05GF2H681K	RC 680Ω ±10% 1/2W	
Rh12.13	RS14GB3A561J	Flame-proof RS 560Ω ±5% 1W	
SEMICONDUCTOR			
Dh1.2	V11-0400-05	Diode 1N34A	
Dh3.4	V11-0423-05	Diode 1N60IFT	
Dh5~10	V11-0051-05	Diode 1N60	
THh1.2	V22-0007-05	Thermistor SDT-20	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
POTENTIOMETER			
VRh1 ~ 4	R12-1021-05	Trimming 1K Ω (B)	
SWITCH			
Sh1	S42-3022-05	Push Meter selector	☆
Sh2	S42-3017-05	Push Speaker selector	
MISCELLANEOUS			
—	E20-1206-05	Speaker terminal board	☆

DOLBY (X14-1110-80)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Cv1,2	CS15E1E010M	Tantalum 1 μ F 25WV	
Cv3,4	CQ93M1H223J	Mylar 0.022 μ F $\pm$ 5%	
Cv9 ~ 12	CE04W1E100	Electrolytic 10 μ F 25WV	
Cv13,14	CQ93AP2A562G	Polypropylene 0.0056 μ F $\pm$ 2%	
Cv15,16	CE04W1E100	Electrolytic 10 μ F 25WV	
Cv17,18	CQ93MIH334J	Mylar 0.33 μ F $\pm$ 5%	
Cv19,20	CQ93M1H104J	Mylar 0.1 μ F $\pm$ 5%	
Cv21,22	CQ93M1H473J	Mylar 0.047 μ F $\pm$ 5%	
Cv23,24	CE04W1E100	Electrolytic 10 μ F 25WV	
Cv25,26	CQ93AP2A472G	Polypropylene 0.0047 μ F $\pm$ 2%	
Cv27,28	CE04W1E100	Electrolytic 10 μ F 25WV	
Cv29,30	CE04W1C221	Electrolytic 220 μ F 16WV	
Cv31,32	CQ93AP2A273G	Polypropylene 0.027 μ F $\pm$ 2%	
Cv33,34	CE04W1H010	Electrolytic 1 μ F 50WV	
Cv35,36	CE04W1E100	Electrolytic 10 μ F 25WV	
Cv37	CE04W1E101	Electrolytic 100 μ F 25WV	
Cv39,40	CK45B1H331K	Ceramic 330pF $\pm$ 10%	
RESISTOR			
Rv37	RC05GF2H151K	RC 150 Ω $\pm$ 10% 1/2W	
SEMICONDUCTOR			
Qv1,2	V03-0270-05	Transistor 2SC945(R,Q)	
ICv1,2	V30-0139-05	IC NE545B	
Dv1,2	V11-0051-05	Diode 1N60	
POTENTIOMETER			
VRv1 ~ 4	R05-5001-05	100K Ω (B) .REC LEVER L/R PLAY CAL L/R	☆
SWITCH			
Sv1	S01-7001-05	Rotary MODE	☆
Sv2	S33-2040-05	Lever TAPE MONITOR	☆

SEMICONDUCTOR SUBSTITUTIONS

PC BOARD ASS'Y	REF. NO.	SEMICONDUCTOR	SEMICONDUCTOR SUBSTITUTIONS
X05-1570-80	Qg1	2SK61	—
	Qg2	2SC535 (A, B)	2SC785 (R), 2SC381 (R, O)
	Qg3	2SC1342	2SC785 (R), 2SC1923
	Qg4	2SC1923	2SC785 (R), 2SC381
	Qg5	2SK117, 2SK68, 2SK105	2SK68A
	Qg6~8	2SC945, 2SC828A	2SC1890 (D), 2SC734 (Y), 2SC1213A (C), (D)
	Qg9	2SA733, 2SA564A	2SA561 (Y)
	Qg10	2SC945, 2SC828A	2SC1890 (D), 2SC734 (Y), 2SC1213A (C), (D)
	Qg11, 12	2SC1845, 2SC1222	2SC1400
	Qg13, 14	2SK117, 2SK68, 2SK105	2SK68A
	Qg15, 16	2SC945, 2SC828A	2SC1890 (D), 2SC734 (Y), 2SC1213A (C), (D)
	Qg17	2SC1845, 2SC1222	2SC1400
X07-1660-80	Qe1~4	2SA992 (F, E)	2SA872 (E, F), 2SA872A (E, F)
	Qe5, 6	2SA899 (B, V)	—
	Qe7~10	2SC1904 (B, V)	—
	Qe11, 12	2SA733, 2SA564A	2SA561, 2SB725
	Qe13~16	2SC945, 2SC828A	2SC1775, 2SC1400, 2SC1890, 2SC734, 2SC1213A
	Qe17, 18	2SA733, 2SA564A	2SA561, 2SA539, 2SB725
	Qe19, 20	2SC1913 (Q, R)	2SD381 (2), 2SC1669
	Qe21, 22	2SA913 (Q, R)	2SB536 (2), 2SA839
	Qe23, 24	2SD555	—
	Qe25, 26	2SB600	—
	Qe27, 28	2SA733, 2SA564A	2SA561, 2SB725
	Qe29, 30	2SC1845 (F, E)	—
	Qe31	2SA733, 2SA564A	2SA561, 2SB725
	Qe32, 33	2SC945, 2SC828A	2SC1775, 2SC1400, 2SC1890, 2SC734, 2SC1213A
	Qe34	2SC1735, 2SD438MP	—
	Qe35	2SC1845 (F, E)	—
	Qe36	2SA992 (F, E)	2SA872, 2SA872A
	Qe37	2SC1845 (F, E)	—
	Qe38	2SA992 (F, E)	2SA872, 2SA872A
X11-1480-80	Qi1, 2	2SK68A (L, M)	—
	Qi3, 4	2SA992, 2SA872	2SA872A (E, F)
	Qi5, 6	2SC1845, 2SC1775	2SC1775A (E, F), 2SC1890 (D, E, F), 2SC1890A (D, E, F), 2SC2088, 2SC2089
	Qi7, 8	2SC1222 (U)	2SC1400 (D, E, U)
	Qi9	2SD330	2SD313V-AL
	Qi10, 11	2SC945	2SC734 (O, Y), 2SC1213A (B, C)
	Qi12	2SA984K, 2SA954	2SA777 (Q, R), 2SB560MP
	Qi13	2SD330	2SD313V-AL
	Qi14, 15	2SA733	2SA561 (O, Y), 2SB725
X14-1110-80	Qv1, 2	2SC945 (P, Q)	2SC734 (O, Y), 2SC1213A (B, C)

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