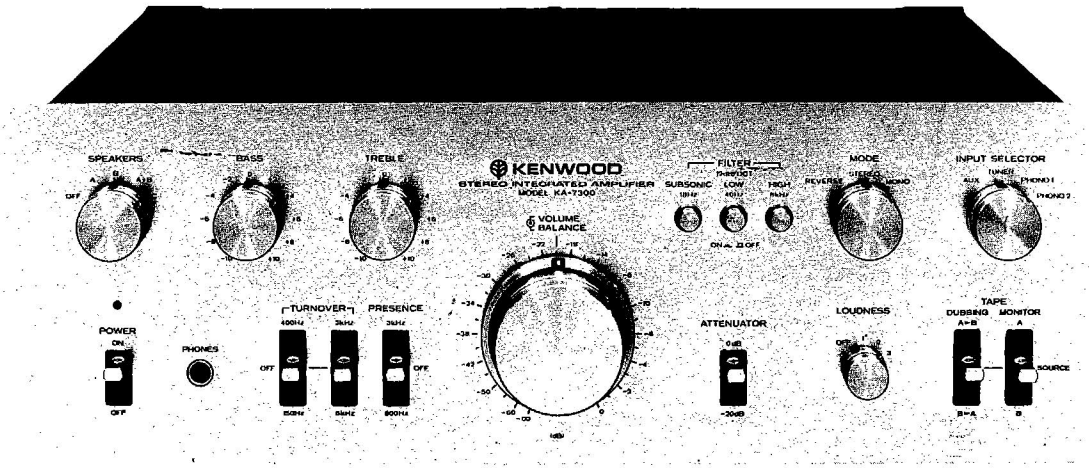
KENWOOD

HI/FI STEREO COMPONENTS

SERVICE MANUAL

KA-7300



STEREO INTEGRATED AMPLIFIER

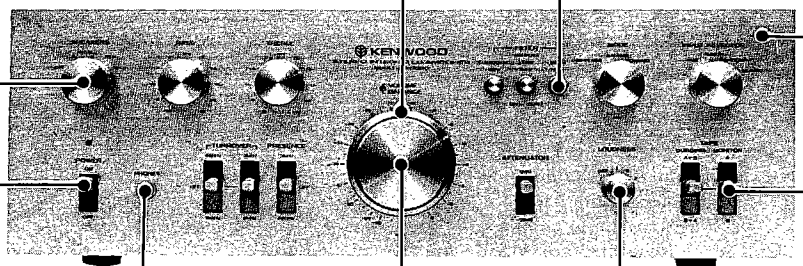
CONTENTS

Note 1 :
The products are subject to modification in components and circuits in different countries and regions. This is because each products must be used under the best condition.
This manual provides information of modification based on the standard in the U.S., for the convenience of ordering associated components and parts.

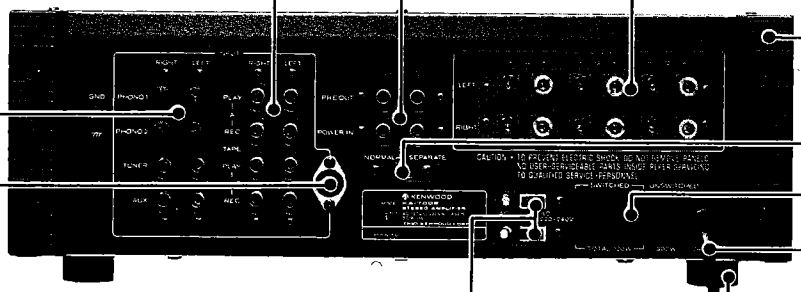
U.S.A.	K
Canada	P
PX	U
Australia	X
Europe	W
England	T
Scandinavia	L
South Africa	S
Other area	M

Note 2 :
Symbol ★ and symbol ● in parts list mean the new parts and the parts not being kept in stock, respectively.

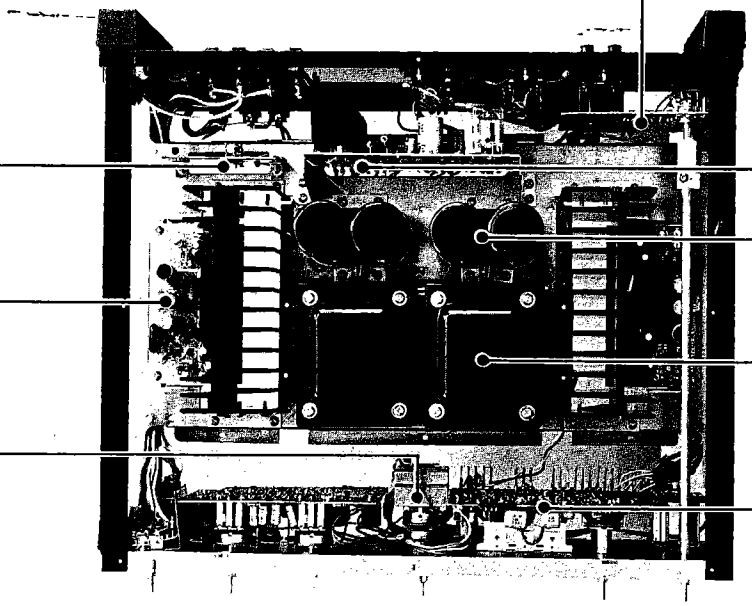
EXTERNAL & TOP VIEW



Knob (K23-0213-04)
Knob (K27-0033-04)
* Panel ass'y
Knob (K23-0214-04)
Knob (K27-0039-04)
Knob (K27-0038-04)
Phone jack (E11-0060-15) or (E11-0058-05)
Knob (K23-0238-04)
Knob (K21-0299-04)



Pin jack (E13-0410-05)
Terminal strips (E20-1203-05)
Pin jack (E13-0804-05)
Cushion (G11-0051-14)
Pin jack (E13-0807-05)
Slide switch (S31-2007-05)
DIN connector (E06-0501-05)
* AC outlet
* Power cord
* Slide switch
* Leg

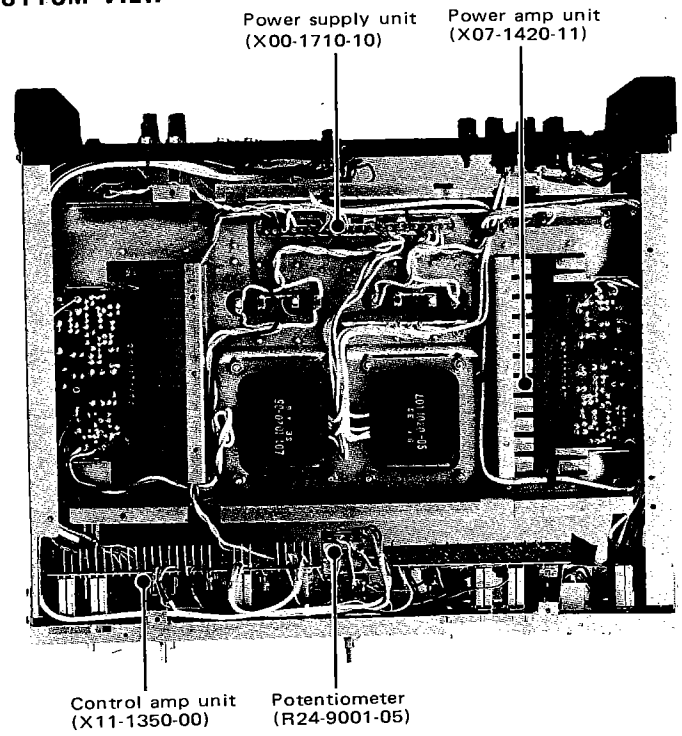


Preamp unit (X08-1460-00)
* Fuse unit
Power supply unit (X00-1710-10)
Electrolytic capacitor (C90-0324-05)
Power amp unit (X07-1420-11)
* Power transformer
Potentiometer (R24-9001-05)
Control amp unit (X11-1350-10)

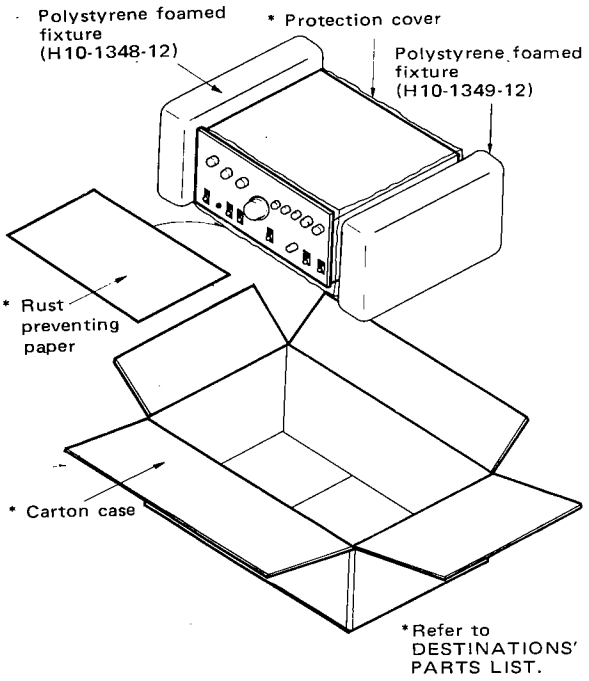
* Refer to DESTINATIONS' PARTS LIST

BOTTOM VIEW/DISASSEMBLY/PACKING

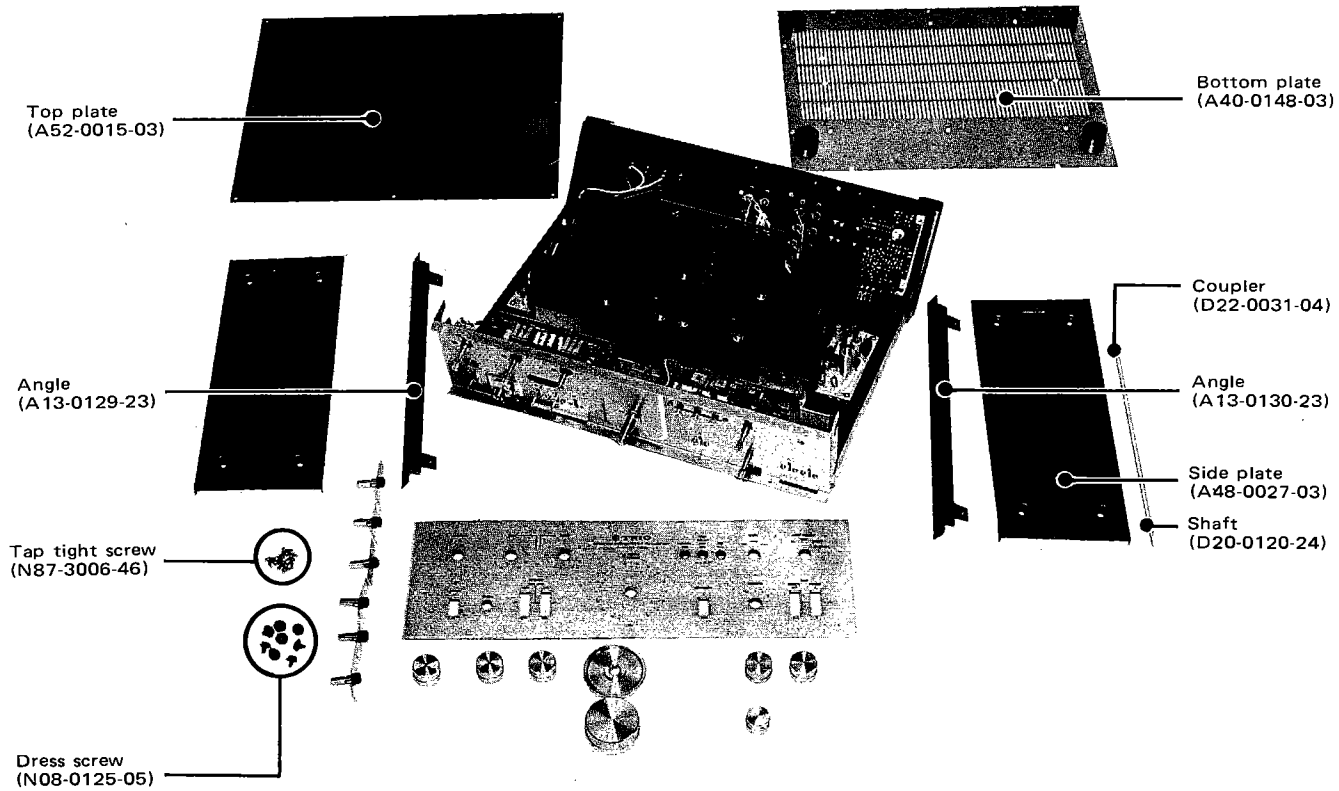
BOTTOM VIEW



PACKING



DISASSEMBLY



CIRCUIT DESCRIPTIONS

1. EQUALIZER AMPLIFIER

This amplifier is a 3-stage direct-coupled circuit driven by the positive and negative power supply. It is actually composed of (1) N-channel FET differential amplifier circuit, (2) PNP buffer amplifier, and (3) PNP class-A amplifier. Since the differential amplifier in the first stage is provided with FET, an input coupling capacitor can be omitted and the phase and noise characteristics are excellent. A large gross gain is obtained by inserting an emitter-follower circuit between the differential amplifier and the class-A amplifier. Maximum permissible input is 200mV rms (at 1 kHz, 0.1% distortion). The resistance component of the RIAA negative feedback element is inserted in front of the output coupling capacitor and it also functions as a DC feedback element. The capacitor component is fed back from the rear circiut of the output coupling capacitor, so that a feedback loop circuit can be obtained.

2. TONE CONTROL

The tone control consists of the 20 dB amplifier and the BASS and TREBLE NF type tone amplifiers that are independent of each other. The 20 dB amplifier contains a differential amplifier and a class-A amplifier, and it generally operates as a flat amplifier. However, when the attenuator S6 is switched on, the amount of NF changes and the amplifier generates a 0 dB gain. Though the conventional type has employed a resistance distributed attenuator, this type offers 20 dB attenuation without any deterioration in the quality of sound. The tone amplifiers are NF type with independent BASS and TREBLE circuits. The turn-over frequencies are 150 Hz and 400 Hz for the BASS circuit, and 3 kHz and 6 kHz for the TREBLE circuit. As shown in the illustration four types of connections can be obtained when S7 and S8 are switched over.

① When both S7 and S8 are switched off, the signal does not enter the tone amplifiers and are directly fed to Qi13 (Qi14).

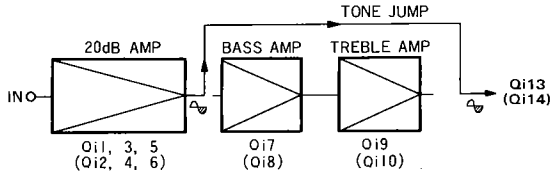
② When S7 is switched on (400 Hz or 150 Hz) and S8 is switched off, only the BASS circuit works as a tone amplifier and the TREBLE circuit works as a flat amplifier giving a 0 dB gain.

③ When S7 is switched off and S8 is switched on (3 kHz or 6 kHz), only the TREBLE circuit works as a tone amplifier and the BASS circuit works as a flat amplifier giving a 0 dB gain.

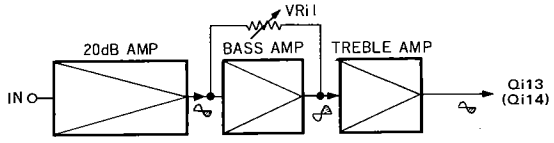
④ When both S7 and S8 are switched on. both BASS and TREBLE circuits work as a tone amplifier.

If either S7 or S8 is switched on, the OFF-side tone amplifier is used as a flat amplifier giving a 0 dB gain so that the signal can be in phase as illustrated.

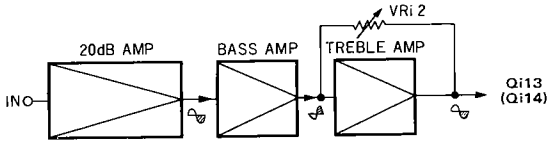
① Turn-over selector switches S7 (for BASS), and S8 (for TREBLE) are switched off.



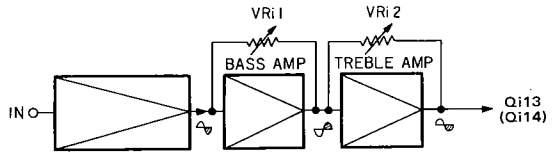
② S7 is set to 400 Hz or 150 Hz, and S8 is switched off.
The TREBLE amplifier operates as a flat amplifier giving a 0 dB gain.



③ S7 is switched off, and S8 is set to 3 kHz or 6 kHz.
The BASS amplifier operates as a flat amplifier giving a 0 dB gain.



④ S7 is set to 400 Hz or 150 Hz, and S8 is set to 3 kHz or 6 kHz.



3. LOUDNESS CONTROL

The loudness control can be switched over in 3 different boost levels. This control is effective in the low frequency band only. In the -30 dB volume control setting, the boost level can be set to +3 dB, +6 dB, or +10 dB (50Hz).

4. FILTER AMPLIFIER

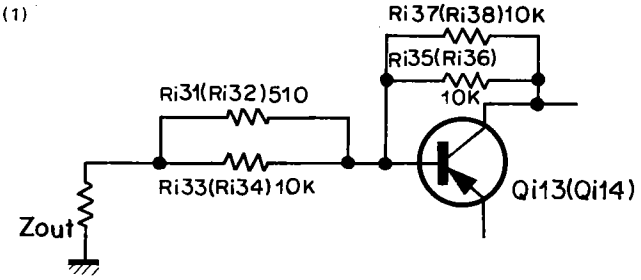
This amplifier employs Yamane type 12 dB/oct high filter, low filter, and subsonic filter. When the subsonic and low filters are switched on simultaneously, this circiut functions as a low filter.

CIRCUIT DESCRIPTIONS

5. PRESENCE CONTROL

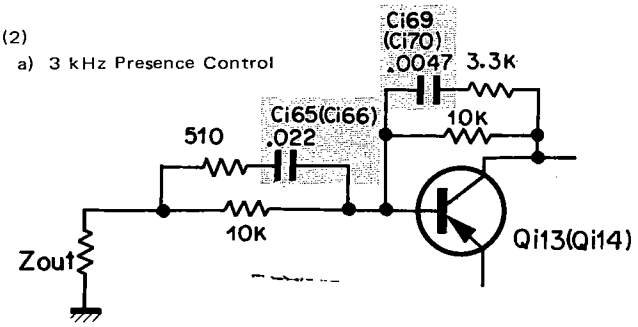
In order to obtain a pleasant effect at time of vocal reproduction, this circuit is used to enhance the middle or middle-high band. This circuit employs PNP transistor and the capacitor in the NF circuit gives a frequency characteristic to the NF performance.
(1) In the flat setting, this circuit works as a 0 dB amplifier. (2) When set to 3 kHz and 800 Hz, there is a gain of 6 dB (doubled) in each frequency. In actual circuits are installed a 3.3 MΩ resistor at both ends of the capacitor. This resistor is for shock-noise protection.

(1)

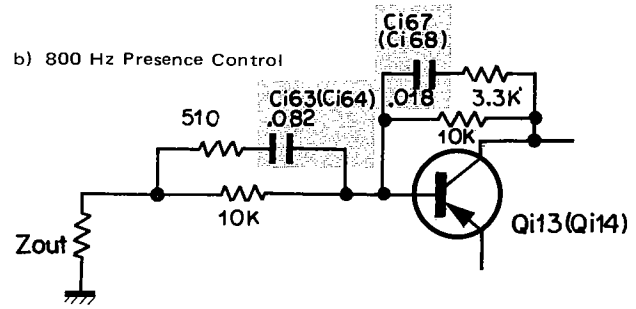


(2)

a) 3 kHz Presence Control



b) 800 Hz Presence Control



6. POWER AMPLIFIER

The power amplifier is composed of the differential amplifier, the class-A amplifier and the Power Darlington pack (complementary stage + final stage + ASO protection). The class-A amplifier is driven by a constant current.

7. POWER SUPPLY

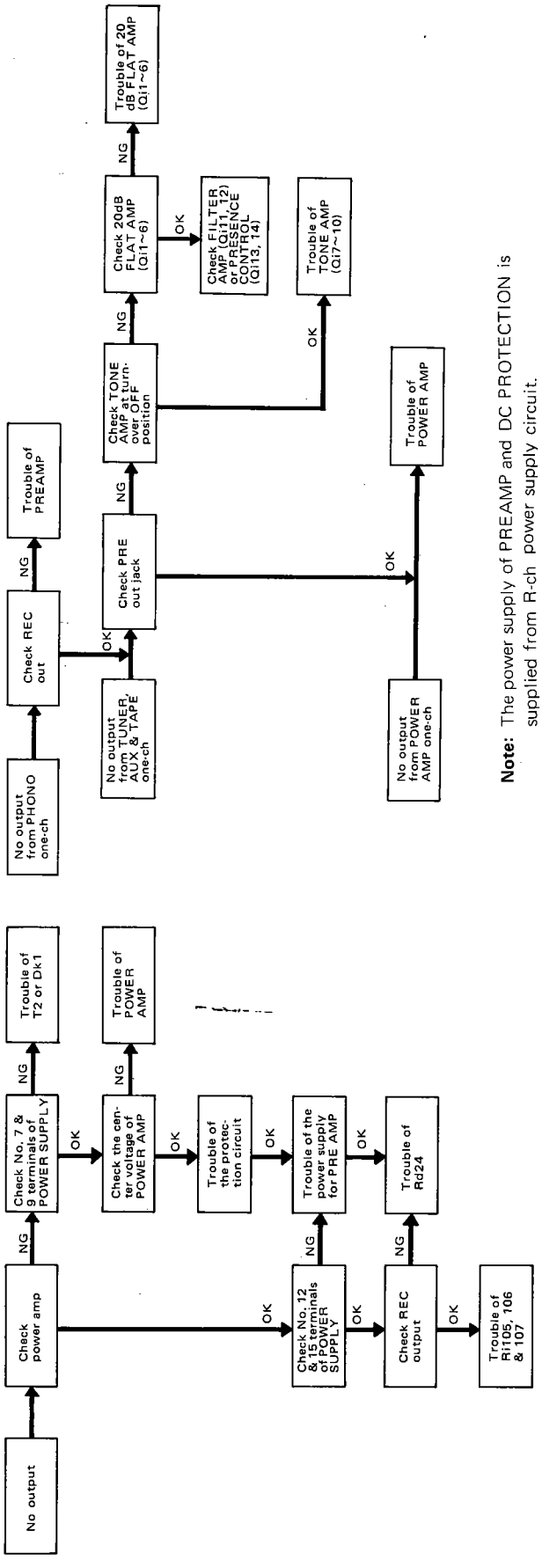
Conventional amplifiers have had a common power supply for right and left channels. In such an arrangement, however, a cross-talk may appear in a channel through the power supply circuit if a large transient signal is applied to the opposite channel. If a small input is applied to the opposite channel, this feeble signal will be adversely influenced by such a strong transient signal entry. This phenomenon is called the dynamic cross-talk and cannot be eliminated by a large-capacity power supply circuit. An effective measure is to install the two independent power supply circuits. Therefore, this unit contains the two independent power supply circuits, each consisting of power transformer, rectifier, and smoothing capacitor. Thus each power amplifier has an independent power supply. This arrangement assures remarkable improvement in the tone quality. Power for the preamp, tone control amp and the protection circuit is fed from the right-channel power supply circuit.

8. X11-1350-10 SERVICE NOTES

Ri1 ~ 8, ~ , Ri119, 120, Ri129: These resistors are printed type. The printed resistor is a resistance element which is directly printed on the printed circuit board. On the actual printed circuit board, these resistors can be seen as the black sections. If they must be replaced for new ones, the correct resistance value of each resistor must be determined in accordance with the schematic diagram. A PD type carbon resistor can be attached on the rear side of printed circuit board, and instead the defective resistor must be cut off with the tip of screw driver or knife. Since soldering flux is applied to the circuit board surface, it must be noted that continuity cannot be checked with a circuit tester from the upper surface.

TROUBLESHOOTING/PARTS LIST

TROUBLE SHOOTING



Note: The power supply of PREAMP and DC PROTECTION is supplied from R-ch power supply circuit.

TOTAL

Symbol ☆ : new parts, Symbol ● : the parts not being kept in stock.

Ref. No.	Parts No.	Description	Remarks
		CAPACITOR	
C1,2	C90-0324-05	Electrolytic 10,000μF 50Wx2	☆
C3	CQ93M1H103K	Mylar 0.01μF ±10%	
C4,5	CQ93M1H102K	Mylar 0.001μF ±10%	
		RESISTOR	
R1,2	RN14AB3A331J	Metal film 330Ω ±5% 1W	
R3,4	PD14BY2E104J	Carbon 100kΩ ±5% 1/4W	
R5,6	PD14BY2E394J	Carbon 390kΩ ±5% 1/4W	
		SEMICONDUCTOR	
D1	V11-0405-05	LED GD-4-207RD	
		SWITCH	
S12	S31-2007-05	Slide NORMAL ↔ SEPARATE	
S13	S01-1036-05	Rotary SPEAKERS	☆
		MISCELLANEOUS	
–	A10-0484-11	Chassis	● ☆
–	A13-0129-23	Angle (L)	●
–	A13-0130-23	Angle (R)	●
–	A40-0148-03	Bottom plate	● ☆
–	A48-0027-03	Side plate x 2	
–	A52-0015-03	Top plate	
–	B07-0177-04	Ring (panel ass'y) x 3	☆
–	B42-0009-04	Passed sticker	
–	B42-0473-14	Serial number seal	
–	B47-0037-00	Caution card	
–	D20-0120-24	Shaft	☆
–	D22-0031-04	Coupler	☆
–	D32-0075-04	Switch stopper (NORMAL ↔ SEPARATE)	
–	E06-0501-05	DIN connector	
–	E13-0410-05	Pin jack (4P)	
–	E13-0804-05	Pin jack (8P)	
–	E14-0107-05	Short pin plug x 2	
–	E20-1203-05	Terminal strips(12P SPEAKER)	
–	E31-0040-05	Connector socket with cord	
–	F31-0105-04	Reinforcing hardware (cushion)x2	●
–	G11-0051-14	Cushion x 2	
–	G11-0055-04	Cushion x 10 (panel ass'y)	●
–	H10-1348-12	Polystyrene foamed fixture	
–	H10-1349-12	Polystyrene foamed fixture	
–	H25-0078-00	Instruction bag	
–	J42-0065-04	Lamp bushing (LED)	
–	J61-0045-05	Combex (68 mm)	
–	J61-0056-05	Combex (100 mm) x 8	
–	K21-0299-04	Knob (VOLUME)	
–	K23-0213-04	Knob (BALANCE)	
–	K23-0214-04	Knob (SELECTOR, MODE, TONE)x5	
–	K23-0238-04	Knob (LOUDNESS)	☆
–	K27-0033-04	Knob (Pushbutton switch) x 3	☆
–	K27-0038-04	Knob (lever) x 5	☆
–	K27-0039-04	Knob (lever) x 2	☆
–	N08-0125-05	Dress screw (8 mm) x 8	
–	N08-0128-15	GND terminal screw	
–	N14-0115-05	Flange nut (transformer) x 8	
–	N87-4020-46	Dress screw (20mm, cushion) x 4	
–	X00-1710-10	Power supply unit	☆

PARTS LIST

Ref. No.	Parts No.	Description	Remarks
—	X07-1420-11	Power amp unit x 2	☆
—	X08-1460-00	Preamp unit	☆
—	X11-1350-10	Control amp unit	☆

POWER SUPPLY (X00-1710-10)

Ref. No.	Parts No.	Description	Remarks
CAPACITOR			
Ck1~4	CK45E2H103P	Ceramic 0.01μF +100%,−0%	
Ck5,6	CE04W1E471EL	Electrolytic 470μF 25WV	
Ck7	CE04W1H100EL	Electrolytic 10μF 50WV	
Ck8	CE04W1C101(NP)EL	Non-pole electrolytic 100μF 16WV	
Ck9	CE04W1E101BR	Electrolytic 100μF 25WV	
RESISTOR			
Rk1	RN14AB3D561JB	Metal film 560Ω ±5% 2W	
Rk2	RN14AB3D331JB	Metal film 330Ω ±5% 2W	
Rk3,4	PD14BY2E223J	Carbon 22kΩ ±5% 1/4W	
Rk5	PD14BY2E682J	Carbon 6.8kΩ ±5% 1/4W	
Rk6	PD14BY2E272J	Carbon 2.7kΩ ±5% 1/4W	
Rk7	PD14BY2E683J	Carbon 68kΩ ±5% 1/4W	
Rk8	PD14BY2E273J	Carbon 27kΩ ±5% 1/4W	
Rk9	PD14BY2E822J	Carbon 8.2kΩ ±5% 1/4W	
Rk10	RN14AB3A821JB	Metal film 820Ω ±5% 1W	
Rk11	RC05GF2H182K	Carbon 1.8kΩ ±10% 1/2W	
Rk12	RN14AB3A222JB	Metal film 2.2kΩ ±5% 1W	
SEMICONDUCTOR			
Qk1	V03-0430-05	Transistor 2SC1746 (GR)	
Qk2	V04-0076-05	Transistor 2SD414 (Q)	
Dk1,2	V11-0421-05	Diode M4C-3	
Dk3	V11-0295-05	Diode W06B	
Dk4~6	V11-0273-05	Diode 1S2076A	
Dk7	V11-0219-05	Diode V06B	
DZk1,2	V11-0286-05	Zener diode CZ-245	
MISCELLANEOUS			
—	J21-1296-04	PC board mounting hardware(L)	●
—	J21-1297-04	PC board mounting hardware(R)	●
—	S51-4030-05	Relay 24V	

POWER AMP (X07-1420-11)

Ref. No.	Parts No.	Description	Remarks
CAPACITOR			
Ce1	CC45SL1H101K	Ceramic 100pF ±10%	
Ce2	C91-0019-05	Polyester 0.47μF 100WV	
Ce3	CE04W1H010EL	Electrolytic 1μF 50WV	
Ce4	CE04W1A470EL	Electrolytic 47μF 63WV	
Ce5	CE04W1A330EL	Electrolytic 33μF 10WV	
Ce6	CC45SL1H030C	Ceramic 3pF ±0.25pF	
Ce7	CC45SL1H150J	Ceramic 15pF ±5%	
Ce8	CE04W0J331EL	Electrolytic 330μF 6.3WV	
Ce9,10	CE04W0J470EL	Electrolytic 47μF 6.3WV	
Ce11	CQ93M1H104M	Mylar 0.1μF ±20%	
Ce12,13	CE04W1J010EL	Electrolytic 1μF 63WV	
RESISTOR			
Re1	RC05GF2H334KMA	Carbon 330kΩ ±10% 1/2W	
Re2	PD14CY2E332JKW	Carbon 3.3kΩ ±5% 1/4W	
Re3	RC05GF2H563KMA	Carbon 56kΩ ±10% 1/2W	
Re4	RC05GF2H182KMA	Carbon 1.8kΩ ±10% 1/2W	
Re5	RC05GF2H562KMA	Carbon 5.6kΩ ±10% 1/2W	
Re6	PD14CY2E242JKW	Carbon 2.4kΩ ±5% 1/4W	
Re7	PD14CY2E563JKW	Carbon 56kΩ ±5% 1/4W	
Re8	RC05GF2H151KMA	Carbon 150Ω ±10% 1/2W	
Re10	RC05GF2H101KMA	Carbon 100Ω ±10% 1/2W	
Re11	RC05GF2H103KMA	Carbon 10kΩ ±10% 1/2W	
Re12	RN14AB3A472JB	Metal film 4.7kΩ ±5% 1W	
Re13	RN14AB3A101JB	Metal film 100Ω ±5% 1W	
Re14	RN14AB3D4R7JB	Metal film 4.7Ω ±5% 2W	
Re15	RN14AB3D100JB	Metal film 10Ω ±5% 2W	
SEMICONDUCTOR			
Qe1,2	V01-0152-05	Transistor 2SA750 (I) (E) or (F)	☆
Qe3	V03-0439-05	Transistor 2SC1885 (R), (S) or 2SC1628 (O), (Y)	
Qe4	V01-0162-05	Transistor 2SA912 (R), (S) or 2SA818 (O), (Y)	
De1	V11-0254-05	Zener diode YZ-140	
De2,3	V11-0273-05	Diode 1S2076	
ICe1	V30-0148-05	Darlington block TA-80W	☆
MISCELLANEOUS			
—	F01-0237-03	Heat sink	●☆
—	J21-1403-04	Heat sink mounting hardware	●☆
Le1	L39-0060-05	Coil	

PREAMP (X08-1460-00)

Ref. No.	Parts No.	Description	Remarks
CAPACITOR			
Cd1,2	CE04W1A470EL	Electrolytic 47μF 10WV	
Cd3,4	CE04W1A221EL	Electrolytic 220μF 10WV	
Cd5,6	CE04W1H010EL	Electrolytic 1μF 50WV	
Cd7,8	CE04W1V101EL	Electrolytic 100μF 35WV	
Cd9,10	CQ93M1H682J	Mylar 0.0068μF ±5%	
Cd11~14	CQ93M1H392J	Mylar 0.0039μF ±5%	
Cd15,16	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Cd17	CE04W1C470EL	Electrolytic 47μF 16WV	
Cd19~22	CC45SL1H220K	Ceramic 22pF ±10%	
RESISTOR			
Rd1,2	PD14BY2E222JKW	Carbon 2.2kΩ ±5% 1/4W	
Rd3,4	PD14CY2E473JKW	Carbon 47kΩ ±5% 1/4W	
Rd5,6	PD14CY2E753JKW	Carbon 75kΩ ±5% 1/4W	
Rd7,8	PD14CY2E821JKW	Carbon 820Ω ±5% 1/4W	
Rd9,10	PD14CY2E514JKW	Carbon 510kΩ ±5% 1/4W	
Rd11,12	PD14CY2E393JKW	Carbon 39kΩ ±5% 1/4W	
Rd13,14	PD14CY2E622JKW	Carbon 6.2kΩ ±5% 1/4W	
Rd15,16	PD14CY2E102JKW	Carbon 1kΩ ±5% 1/4W	
Rd17,18	PD14CY2E224JKW	Carbon 220kΩ ±5% 1/4W	
Rd19,20	PD14CY2E821JKW	Carbon 820Ω ±5% 1/4W	
Rd21,22	PD14CY2E224JKW	Carbon 220kΩ ±5% 1/4W	
Rd23	PD14CY2E472JKW	Carbon 4.7kΩ ±5% 1/4W	
Rd24	PD14CY2E332JKW	Carbon 3.3kΩ ±5% 1/4W	
Rd25,26	PD14CY2E104JKW	Carbon 100kΩ ±5% 1/4W	
Rd27,28	PD14CY2E103JKW	Carbon 10kΩ ±5% 1/4W	
SEMICONDUCTOR			
Qd1,2	V09-0096-05	FET 2SK68A (M)	
Qd3,4	V09-0098-05	FET 2SK68A (L)	
Qd5~8	V01-0160-05	Transistor 2SA763WL 5 or 6	
MISCELLANEOUS			
—	E13-0807-05	Pin jack (8P)	☆
—	J21-1479-04	PC board mounting hardware	●☆
S1	S29-1082-05	Slide rotary switch	☆

PARTS LIST

CONTROL AMP (X11-1350-10)

Ref. No.	Parts No.	Description			Remarks
CAPACITOR					
Ci1,2	CQ93M1H393K	Mylar	0.039μF	±10%	
Ci5,6	CE04W1H010MBR	Electrolytic	1μF	50WV	
Ci7,8	CE04W1C100MBR	Electrolytic	10μF	16WV	
Ci9,10	CC45SL1H100D	Ceramic	10pF	±0.5pF	
Ci11,12	CC45SL1H040D	Ceramic	4pF	±0.5pF	
Ci13,14	CE04W1A470	Electrolytic	47μF	10WV	
Ci15,16	CE04W1A470NP	Non-pole electrolytic	47μF	10WV	
Ci17,18	CE04W1H010MBR	Electrolytic	1μF	50WV	
Ci19,20	CE04W1C100MBR	Electrolytic	10μF	16WV	
Ci21,22	CE04W1H010MBR	Electrolytic	1μF	50WV	
Ci23,24	CE04W1C100MBR	Electrolytic	10μF	16WV	
Ci25~28	CE04W1A221MBR	Electrolytic	220μF	10WV	
Ci29,30	CQ93M1H563K	Mylar	0.056μF	±10%	
Ci31,32	CQ93M1H124K	Mylar	0.12μF	±10%	
Ci33,34	CQ93M1H182K	Mylar	0.0018μF	±10%	
Ci35,36	CQ93M1H332K	Mylar	0.0033μF	±10%	
Ci37,38	CQ93M1H682K	Mylar	0.0068μF	±10%	
Ci39,40	CQ93M1H332K	Mylar	0.0033μF	±10%	
Ci41,42	CQ93M1H473K	Mylar	0.047μF	±10%	
Ci43~46	CQ93M1H104K	Mylar	0.1μF	±10%	
Ci47,48	CQ93M1H473K	Mylar	0.047μF	±10%	
Ci49,50	CE04W1H010MBR	Electrolytic	1μF	50WV	
Ci51,52	CE04W1C100MBR	Electrolytic	10μF	16WV	
Ci53,54	CE04W1C471MBR	Electrolytic	470μF	16WV	
Ci55,56	CE04W1E101MBR	Electrolytic	100μF	25WV	
Ci57,58	CE04W1H010MBR	Electrolytic	1μF	50WV	
Ci59,60	CE04W1C100MBR	Electrolytic	10μF	16WV	
Ci61,62	CE04W1A221MBR	Electrolytic	220μF	10WV	
Ci63,64	CQ93M1H823K	Mylar	0.082μF	±10%	
Ci65,66	CQ93M1H223K	Mylar	0.022μF	±10%	
Ci67,68	CQ93M1H183K	Mylar	0.018μF	±10%	
Ci69,70	CQ93M1H472K	Mylar	0.0047μF	±10%	
RESISTOR					
Ri1~8, Ri11~14, Ri17,18, Ri25,26, Ri29~32, Ri39,40, Ri49~56, Ri61,62, Ri65~68, Ri75~78, Ri89~104, Ri115,116, Ri119,120, Ri129		PRINTED RESISTOR See schematic diagram for the value of resistor.			
Ri15,16	PD14BY2E104J	Carbon	100kΩ	±5% 1/4W	
Ri19,20	PD14BY2E392J	Carbon	3.9kΩ	±5% 1/4W	
Ri21,22	PD14BY2E154J	Carbon	150kΩ	±5% 1/4W	
Ri23,24	PD14BY2E473J	Carbon	47kΩ	±5% 1/4W	
Ri33,34	PD14BY2E302J	Carbon	3kΩ	±5% 1/4W	
Ri35,36	PD14BY2E103J	Carbon	10kΩ	±5% 1/4W	
Ri37,38	PD14BY2E101J	Carbon	100Ω	±5% 1/4W	
Ri41~48	RC05GF2H335K	Carbon	3.3MΩ	±10% 1/2W	
Ri57,58	PD14BY2E433J	Carbon	43kΩ	±5% 1/4W	
Ri59,60	PD14BY2E334J	Carbon	330kΩ	±5% 1/4W	
Ri63,64	PD14BY2E182J	Carbon	1.8kΩ	±5% 1/4W	
Ri69,70	PD14BY2E473J	Carbon	47kΩ	±5% 1/4W	
Ri71,72	PD14BY2E334J	Carbon	330kΩ	±5% 1/4W	
Ri73,74	PD14BY2E272J	Carbon	2.7kΩ	±5% 1/4W	
Ri79,80	PD14BY2E273J	Carbon	27kΩ	±5% 1/4W	
Ri81~88	RC05GF2H335K	Carbon	3.3MΩ	±10% 1/2W	
Ri105,106	PD14BY2E561JB	Carbon	560Ω	±5% 1/4W	
Ri107	PD14BY2E560JB	Carbon	56Ω	±5% 1/4W	
Ri111,112	PD14BY2E563JB	Carbon	56kΩ	±5% 1/4W	
Ri113,114	PD14BY2E334JB	Carbon	330kΩ	±5% 1/4W	
Ri117,118	PD14BY2E222JB	Carbon	2.2kΩ	±5% 1/4W	
Ri121~128	RC05GF2H335K	Carbon	3.3MΩ	±10% 1/2W	
SEMICONDUCTOR					
Qi1~4	V01-0160-05	Transistor 2SA763WL 5 or 6			
Qi5,6	V03-0271-05	Transistor 2SC1345 (E)			
Qi7~12	V01-0160-05	Transistor 2SA763WL 5 or 6			
Qi13,14	V01-0165-05	Transistor 2SA763WL 6			
POTENTIOMETER					
VRi1,2	R08-5032-05	Tone volume 20kΩ (B)			
—	R24-9001-05	VOLUME, BALANCE			
SWITCH					
S2	S33-4003-05	Lever (DUBBING)			
S3	S33-2007-05	Lever (MONITOR)			
S4	S01-1028-05	M-type rotary (MODE)			
S5	S29-1081-05	Slide rotary (LOUDNESS)			
S6	S33-2006-05	Lever (ATTENUATOR)			
S7,8,15	S33-4001-05	Lever (TURNOVER,PRESENCE)x3			
S9~11	S42-3012-05	Pushbutton (SUBSONIC, LOW, HIGH : 3 key)			
MISCELLANEOUS					
—	A22-0192-02	Sub panel			●
—	E11-0060-15 or E11-0058-05	Phone jack			
—	F10-0408-04	Shield plate			●

FUSE UNIT (X13-2250-10, -21, -61)

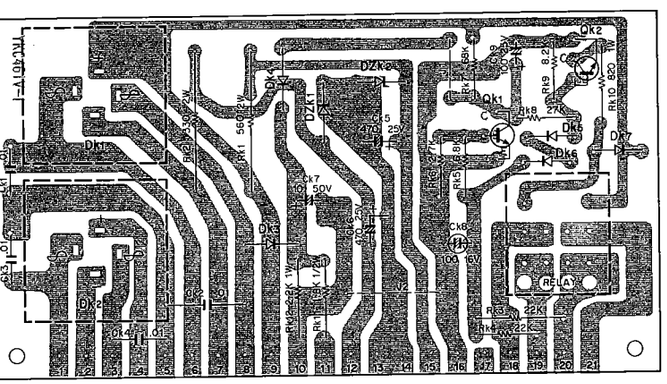
Ref. No.	Parts No.	Description	Remarks
MISCELLANEOUS			
—	B41-0140-04	Fuse sticker (3A)	●-21
—	B41-0135-04	Fuse sticker (1.6AT)	●-61
—	B41-0141-04	Fuse sticker (4AT)	●-61
F1	F05-3022-05	Fuse (3A 250V)	-21
	F05-1623-05	Fuse (SEMKO 1.6AT)	-61
	F05-6024-05	Fuse (6A 250V)	-10
—	J13-0020-05	Fuse clip (6φ x 30) x 2	-10 -21
—	J13-0039-05	Fuse clip (5φ x 20) x 2	-61
—	J21-0435-04	L-shaped fitting	●

Symbol ☆ : new parts, Symbol ● : the parts not being kept in stock.

Ref. No.	U.S.A. (K)	Canada (P)	PX (U)	Australia (X)	Europe (W)	Scandinavia (L)	England (T)	South Africa (S)	Other Area (M)	Description
C7,8	C91-0001-05	C91-0001-05	–	CK45E3D-103PMU	CK45E3D-103PMU	CK45E3D-103PMU	CK45E3D-103PMU	CK45E3D-103PMU	CK45E3D-103PMU	Ceramic capacitor 0.01μF
C9	–	–	–	–	CK45E3D-103PMU	CK45E3D-103PMU	CK45E3D-103PMU	–	–	Ceramic capacitor 0.01μF 2000WV
–	A20-1017-02	A20-1017-02	–	A20-1017-02	A20-1017-02	A20-1017-02	A20-1016-02	A20-1017-02	A20-1017-02	Panel ● ☆
–	A20-1020-02	A20-1020-02	–	A20-1020-02	A20-1020-02	A20-1020-02	A20-1019-02	A20-1020-02	A20-1020-02	Panel ass'y ☆
–	A23-0629-02	A23-0629-02	–	A23-0631-02	A23-0634-02	A23-0635-02	A23-0633-02	A23-0631-02	A23-0631-02	Rear panel ● ☆
–	–	–	–	–	B42-0024-04	–	–	–	–	SEV sticker x 2 ●
–	B42-0611-04	–	–	–	–	–	–	–	–	Caution sticker x 4 ●
–	B46-0056-00	B46-0055-10	–	–	–	–	–	–	–	Warranty card ●
–	B50-1461-00	B50-1461-00	–	B50-1461-00	B50-1461-00	B50-1461-00	B50-1463-00	B50-1461-00	B50-1461-00	Instruction manual ☆
–	–	–	–	B58-0003-00	B58-0156-00	–	–	B58-0003-00	B58-0003-00	Power supply voltage selector caution card ●
–	B58-0043-00	B58-0043-00	–	–	–	–	–	–	–	Carton case caution card ●
–	–	–	–	B58-0101-00	B58-0157-00	–	–	B58-0101-00	B58-0101-00	Power supply voltage selector caution card ●
–	–	–	–	B58-0108-00	B58-0108-00	–	–	B58-0108-00	B58-0108-00	Spare fuse caution card ●
–	–	–	–	–	–	–	B58-0214-04	–	–	Power cord caution card ●
–	–	–	–	D32-0077-04	D32-0077-04	–	–	D32-0077-04	D32-0077-04	Switch stopper
–	E08-0225-05	E08-0225-05	–	E08-0225-05	E08-0225-05	–	–	E08-0225-05	E08-0225-05	AC outlet x 3
–	E30-0181-05	E30-0181-05	–	E30-0185-05	E30-0580-05	E30-0292-05	–	–	E30-0515-05	Power cord
–	–	–	–	F05-6021-05	F05-4025-05	–	–	F05-6021-05	F05-6021-05	Spare fuse
–	–	–	–	–	F09-0033-05	F09-0033-05	F09-0033-05	–	–	Capacitor cap
–	H01-1544-04	H01-1545-04	–	H01-1544-04	H01-1552-04	H01-1552-04	H01-1546-04	H01-1544-04	H01-1544-04	Carton case (inside) ☆
–	–	H03-0511-04	–	–	H03-0516-04	H03-0516-04	H03-0512-04	–	–	Carton case (outside) ☆
–	H20-0394-04	H20-0394-04	–	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0416-04	Protection cover
–	–	–	–	H25-0029-04	H25-0029-04	–	–	H25-0029-04	H25-0029-04	Polyethylene bag
–	–	–	–	–	–	–	–	–	H40-0004-04	Rust preventing paper
–	J02-0073-04	J02-0049-14	–	J02-0049-14	J02-0049-14	J02-0049-14	J02-0049-14	J02-0049-14	J02-0049-14	Leg x 4
–	J41-0034-05	J41-0034-05	–	J41-0024-15	J41-0033-05	J41-0033-05	J41-0024-15	J41-0024-15	J41-0033-05	Power cord bushing
–	J61-0023-05 x 3	J61-0023-05 x 3	–	J61-0023-05 x 2	J61-0023-05 x 2	J61-0023-05 x 3	J61-0023-05 x 3	J61-0023-05 x 2	J61-0023-05 x 2	Wire clumper
–	–	–	–	–	J61-0038-05	J61-0038-05	J61-0038-05	J61-0038-05	–	Cord band
–	L01-1021-05	L01-1021-05	–	L01-1025-05	L01-1026-05	L01-1022-05	L01-1027-05	L01-1025-05	L01-1025-05	Power transformer ☆
S14	S59-2033-05	S59-2033-05	–	S39-1020-05	S59-2034-05	S59-2034-05	S59-2034-05	S39-1020-05	S39-1020-05	Power switch
–	–	–	–	S31-2001-05	S31-2001-05	–	–	S31-2001-05	S31-2001-05	Slide switch x 2
–	X13-2250-10	X13-2250-10	–	X13-2250-21	X13-2250-61	X13-2250-61	X13-2250-21	X13-2250-21	X13-2250-21	Fuse unit ☆

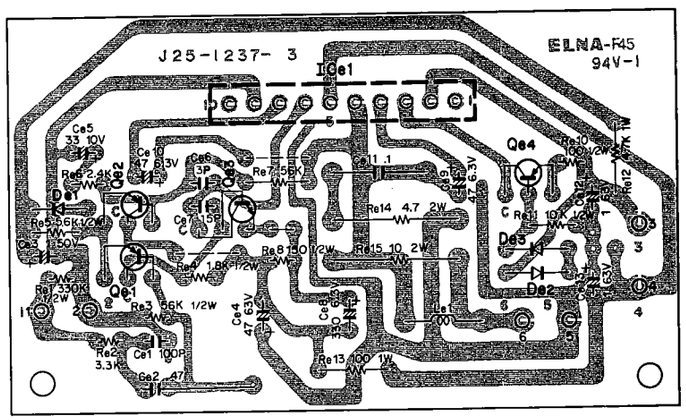
PC BOARD/SEMICONDUCTOR SUBSTITUTIONS & LEADS

▼ POWER SUPPLY (X00-1710-10)



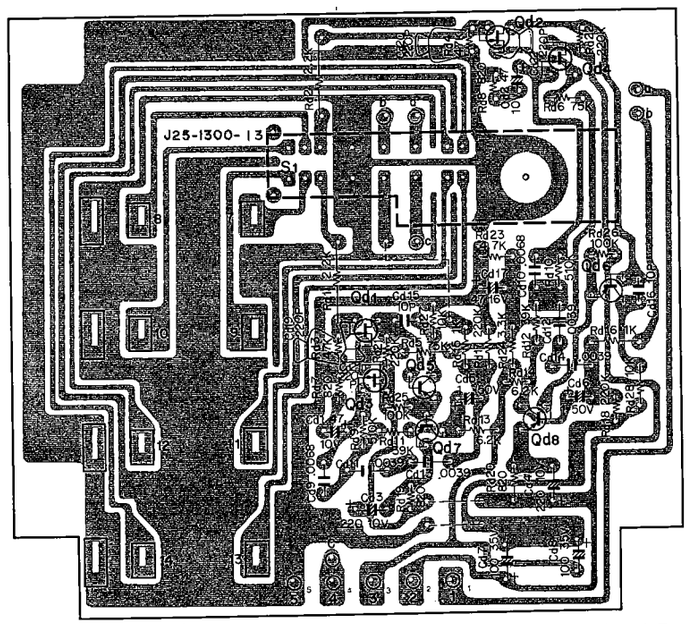
Qk1:2SC1746 (GR), Qk2:2SD414 (Q), Dk1, 2:M4C-3, Dk3:W06B,
Dk4~6:1S2076A, Dk7:V06B, DZk1, 2:CZ-245

▼ POWER AMP (X07-1420-11)

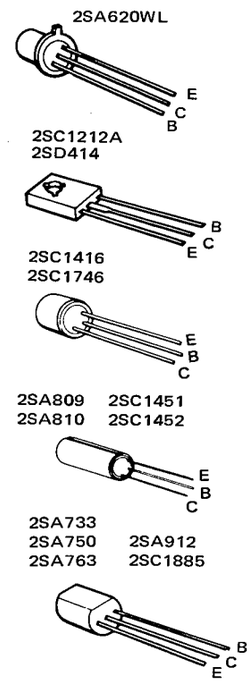


Qe1, 2:2SA750 (1) (E) or (F), Qe3:2SC1885 (R) or (S),
Qe4:2SA912 (R) or (S), ICe1:TA-80W, De1:YZ-140,
De2:1S2076

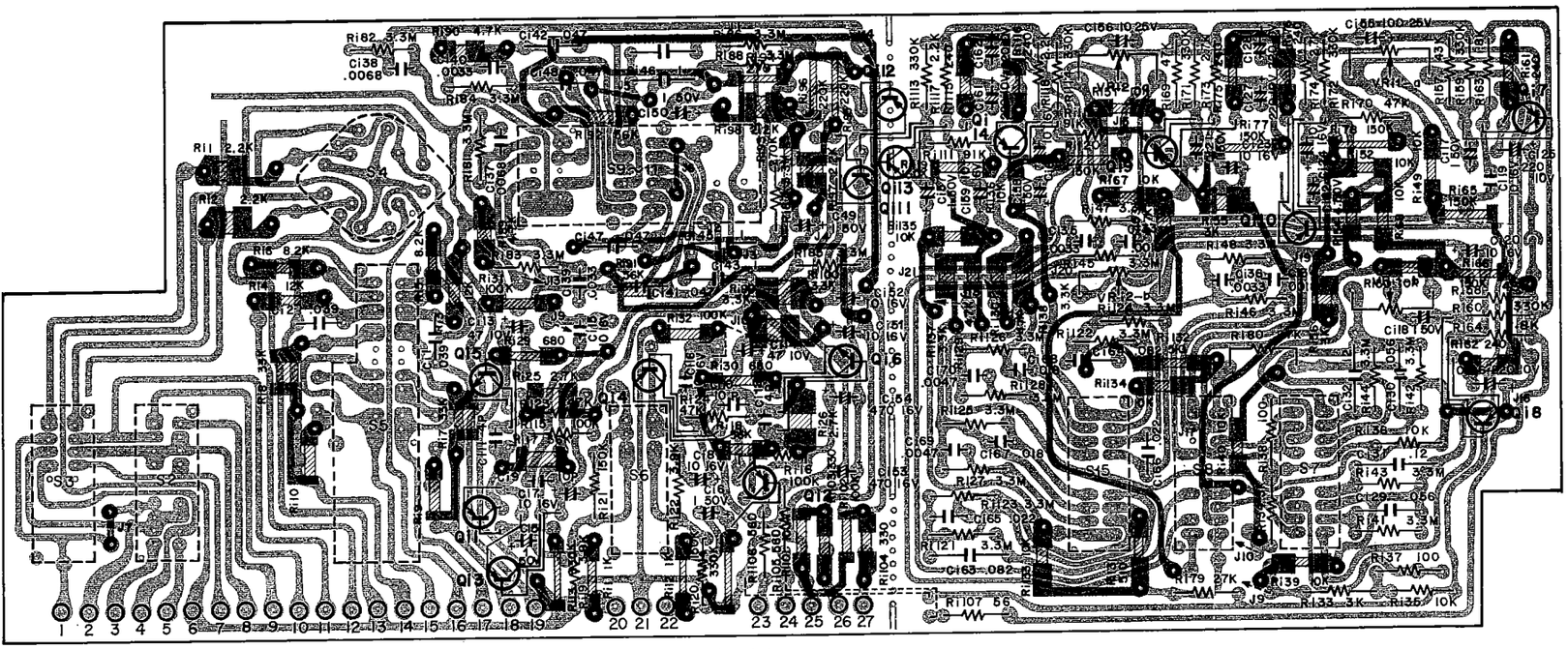
▼ PREAMP (X08-1460-00)



Qd1, 2:2SK68A (M), Qd3, 4:2SK68A (L), Qd5~8:2SA763 (WL) 5 or 6

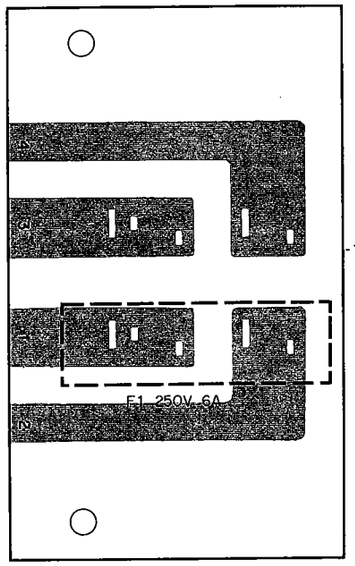


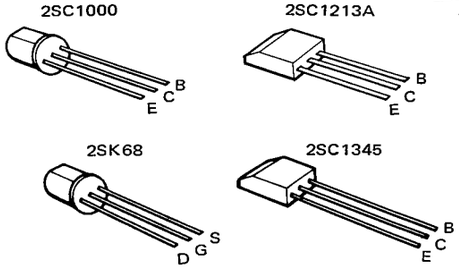
▼ CONTROL AMP (X11-1350-10)



Qi1~4, 7~12:2SA763 (WL) 5 or 6, Qi5, 6:2SC1345 (E), Qi13, 14:2SA763 (TL) 6

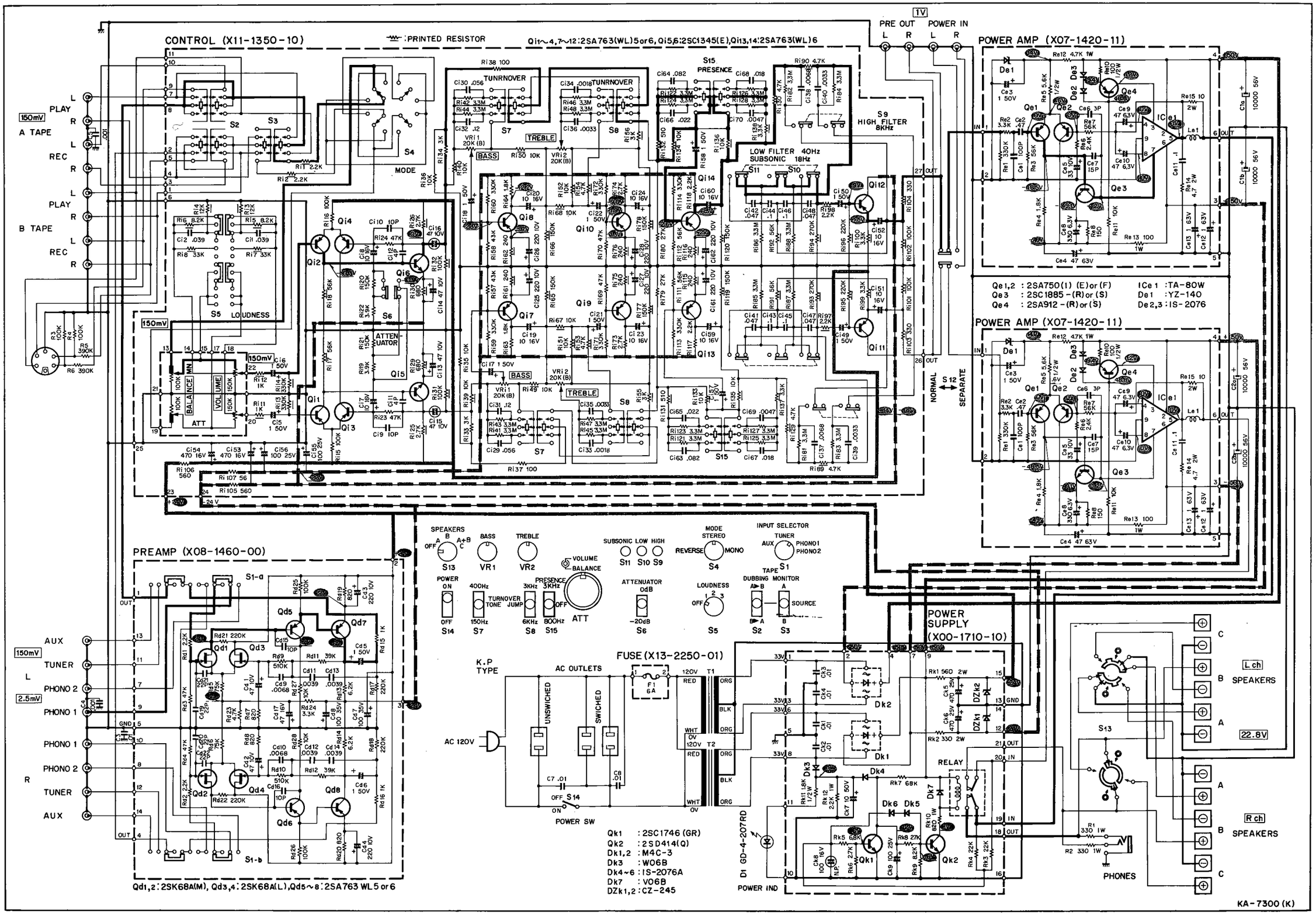
▼ FUSE (X13-2250-10)





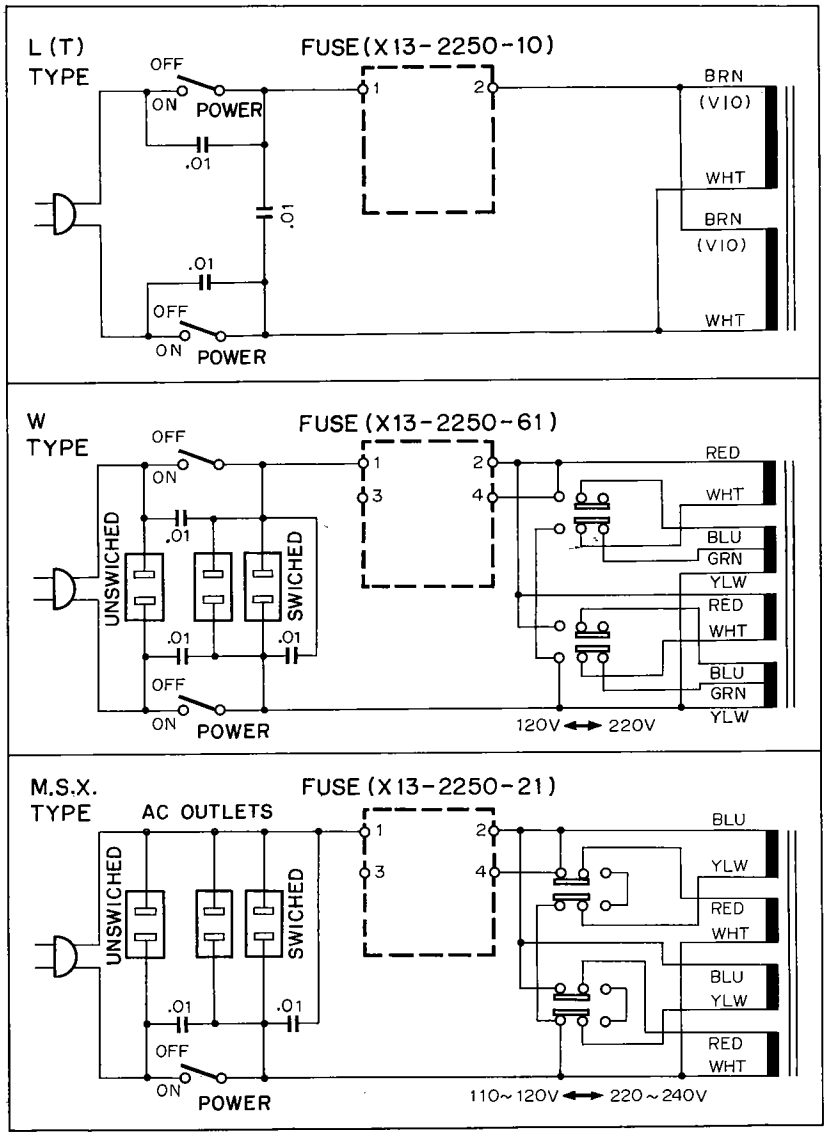
Semiconductor name	Semiconductor substitutions
POWER SUPPLY (X00-1710-10)	
2SC1746 (GR)	2SC1416
2SD414 (Q)	2SC1212A (B), (C)
POWER AMP (X07-1420-11)	
2SA750 (1) (E), (F)	2SA620WLH, 2SA810
2SA912 (R), (S)	2SA809, 2SA810
2SC1885 (R), (S)	2SC1451, 2SC1452
PREAMP (X08-1460-00)	
2SA763WL 5, 6	2SA620, 2SA733
2SK68A (M)	—
2SK68A (K)	—
CONTROL AMP (X11-1350-10)	
2SA763WL 5, 6	2SA620, 2SA733
2SC1345 (E)	2SC1000, 2SC1416

SCHEMATIC DIAGRAM

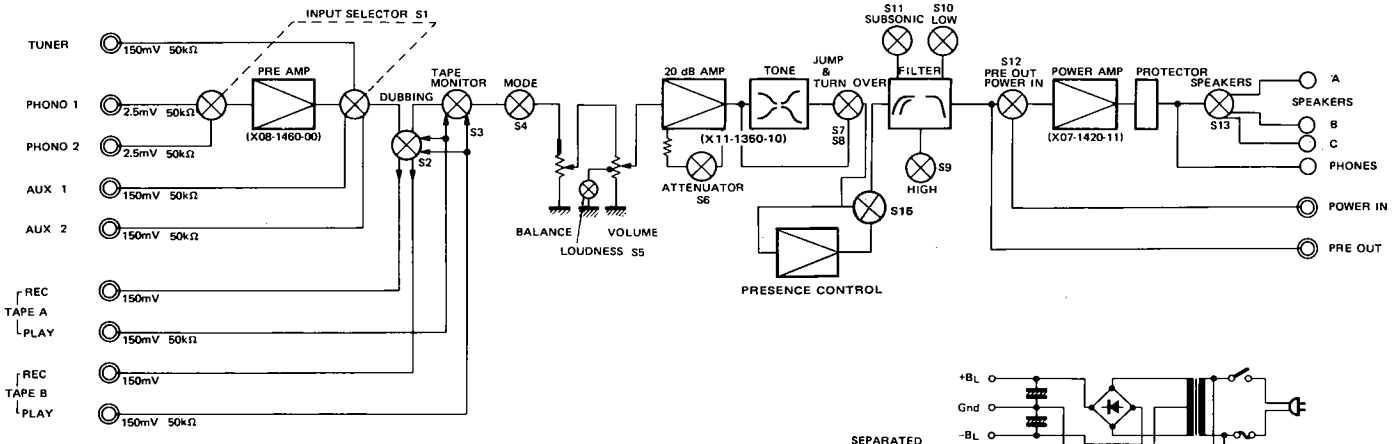


DC voltage measured with 20 kΩ/V meter.

SCHEMATIC DIAGRAM/BLOCK DIAGRAM



BLOCK DIAGRAM



SPECIFICATIONS

POWER AMPLIFIER

Power Output:	65 watts per channel minimum, RMS at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.1% total harmonic distortion
Both Channel Driven:	70 watts per channel into 8 ohms at 1,000 Hz 85 watts per channel into 4 ohms at 1,000 Hz
Dynamic Power Output:	250 watts into 4 ohms
Total Harmonic Distortion:	0.1% at rated power into 8 ohms 0.04% at 1 watt power into 8 ohms from 20 Hz to 20,000 Hz
Intermodulation Distortion:	0.1% at rated power into 8 ohms
(60 Hz : 7,000 Hz : 4 : 1)	0.04% at 1 watt power into 8 ohms
Power Bandwidth:	50 Hz ~ 60,000 Hz
Damping Factor:	50 at 8 ohms
Speaker Impedance:	Accept 4 ohms to 16 ohms
Signal to Noise Ratio (IHF A):	110 dB (Short circuited)
Imput Sensitivity, Impedance:	1.0V 50 kohms

PREAMPLIFIER SECTION

Input Sensitivity, Impedance & S/N (IHF A)

Phono 1:	2.5mV	50 kohms	76 dB (5 mV)
Phono 2:	2.5mV	50 kohms	76 dB (5 mV)
Tuner:	150mV	50 kohms	90 dB
Aux:	150mV	50 kohms	90 dB
Tape Play:	150mV	50 kohms	90 dB

Maximum Input Level:

Phono: 200 mV (rms)
T.H.D. 0.1% at 1,000 Hz

Output Voltage

Tape Rec (pin):		150 mV
(DIN):		350 mV 80 kohms
Frequency Response		
Phono:		RIAA standard curve ±0.3 dB
Aux, Tape Play:		20 Hz ~ 40,000 Hz $^{+0}_{-0.5}$ dB
Tone Controls		
Bass	**150 Hz:**	±7.5 dB at 40 Hz
	400 Hz:	±7.5 dB at 100 Hz
Treble	**3 kHz:**	±7.5 dB at 10,000 Hz
	6 kHz:	±7.5 dB at 20,000 Hz
Loudness Control (–30 dB) :		+3, 6, 10 dB at 50 Hz
Subsonic Filter:		18 Hz, 12 dB/oct
Low Filter:		40 Hz, 12 dB/oct
High Filter:		8,000 Hz, 12 dB/oct
Presence:	**800 Hz:**	+ 6 dB
	3 kHz:	+ 6 dB

GENERAL

Power Requirement:	50/60 Hz 110~120V, 220~240V
Power Consumption:	450 watts at full power
AC outlet:	Switched 2, Unswitched 1
Dimensions:	W 16-15/16" (430 mm) H 5-7/8" (149 mm) D 14-13/16" (376 mm)
Weight (Net) :	30.8 lbs. (14 kg)

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TRIO-KENWOOD CORPORATION

■ 3-6-17 AOBADAI, MEGURO-KU, TOKYO, JAPAN.