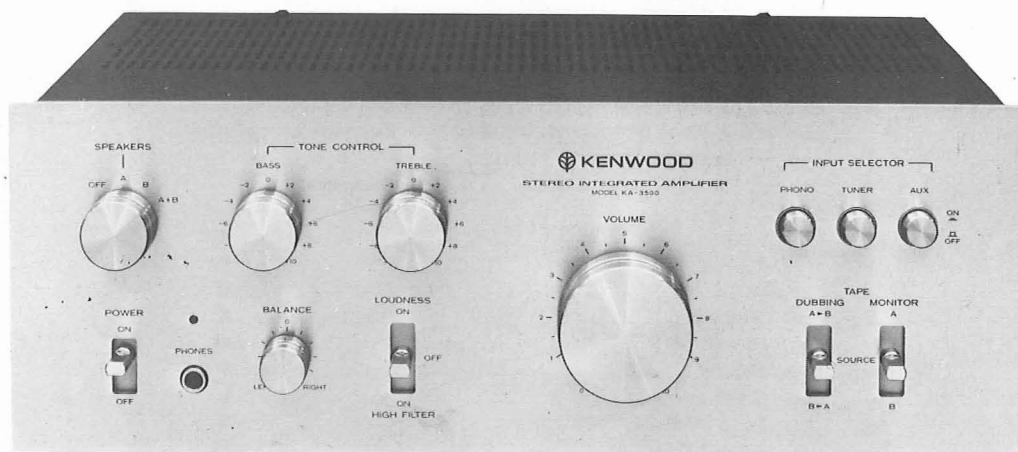


KENWOOD
HI/FI STEREO COMPONENTS

SERVICE MANUAL

KA-3500



STEREO INTEGRATED AMPLIFIER

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Note 1:

The products are subject to modification in components and circuits in different countries and regions. This manual provides information of modification based on the standard in the U.S. for the convenience of ordering associated components and parts.

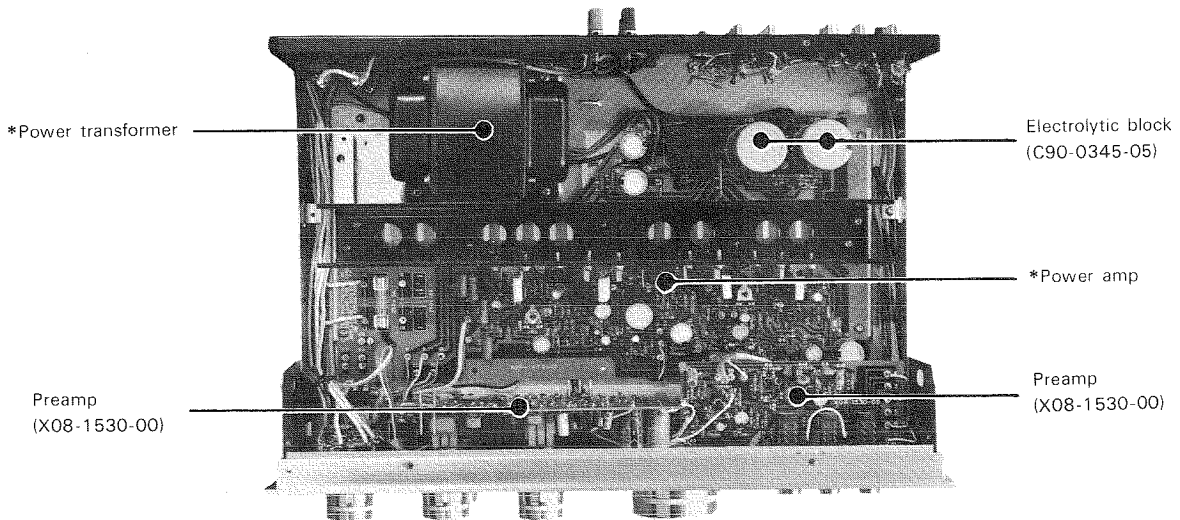
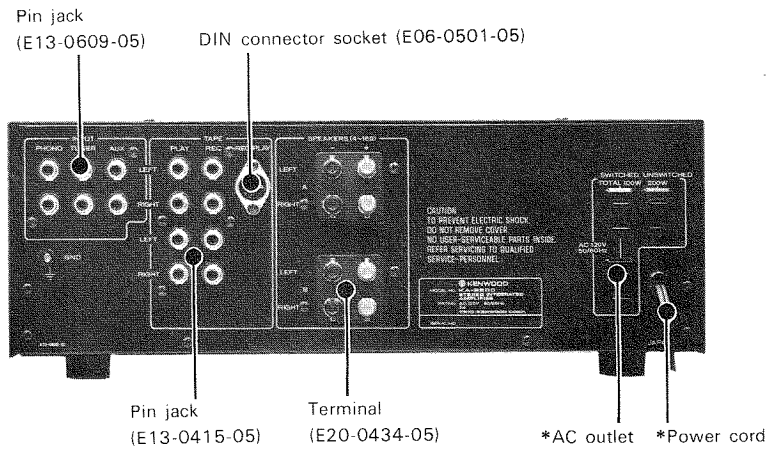
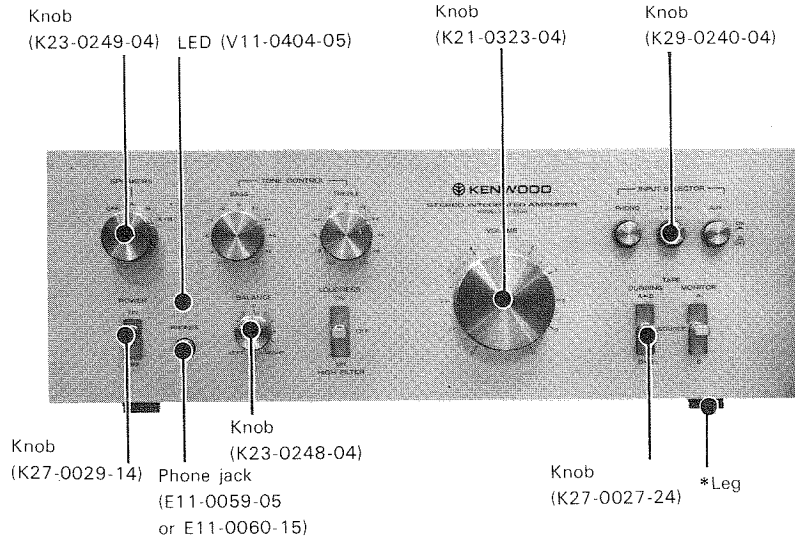
We employ the following abbreviations of respective countries

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

Note 2:

Symbol ☆ in the parts list means the new parts.

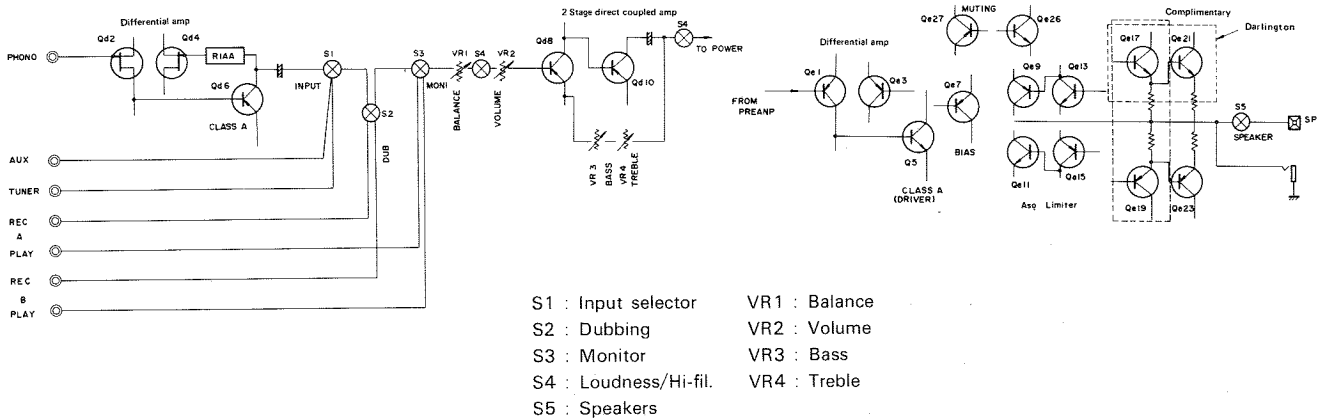
EXTERNAL & INTERNAL VIEW



*Refer to Destinations' Parts List.

BLOCK DIAGRAM/REPAIR/ADJUSTMENT

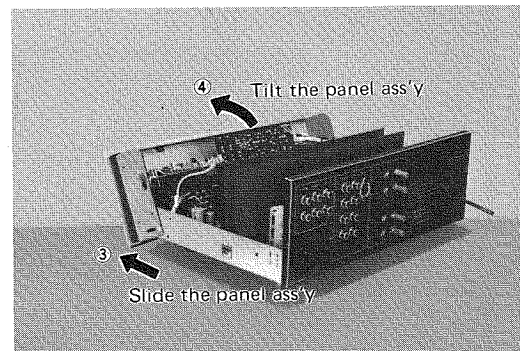
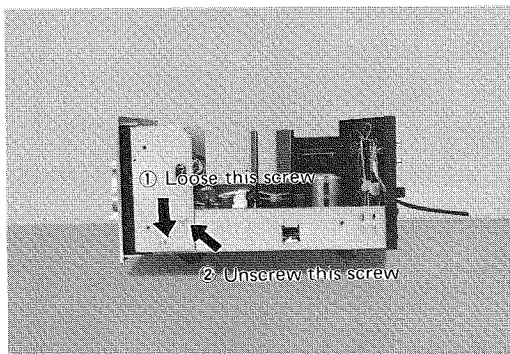
BLOCK DIAGRAM



REPAIR

When repair the internal of the product, for example preamp, unscrew the screw fixed the sub panel and the

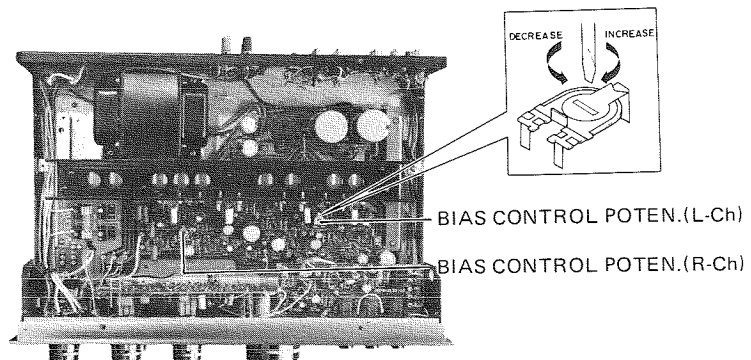
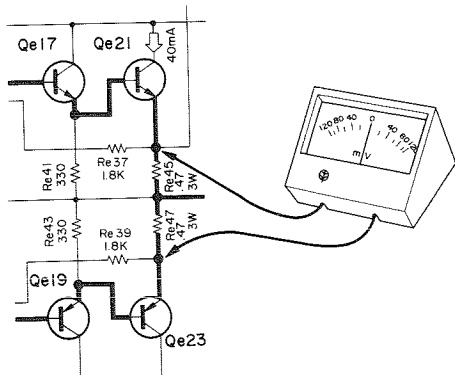
chassis. Then slide the panel assembly and tilt it as shown in the below.



BIAS ADJUSTMENT

Before adjustment, check the power amp has no signal. And then connect the bias current meter (B31-0125-05) across the emitter resistors 0.47Ω of the power

transistors. Turn the PC trimmer potentiometer $1k\Omega$ until the meter indicates 40mV.



PARTS LIST

☆ : new parts

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
C3~5	CK45F1H403Z	Ceramic 0.04 μ F +80% -20%	
RESISTOR			
R1.2	RN14AB3A221J	Metal film 220 Ω \pm 5% 1W	
R3.4	PD14BY2E104J	Carbon 100k Ω \pm 5% 1/4W	
R5.6	PD14BY2E394J	Carbon 390k Ω \pm 5% 1/4W	
R7.8	RC05GF2H103K	Carbon 10k Ω \pm 10% 1/2W	
SEMICONDUCTOR			
D1	V11-0404-05	LED GD-4-207RD	
MISCELLANEOUS			
-	A01-0293-03	Case	
-	B07-0157-04	Ring	
-	B42-0009-04	Passed sticker	
-	E06-0501-05	DIN connector socket	
-	E13-0415-05	Pin jack (4P) \times 2	
-	E13-0609-05	Pin jack (6P)	☆
-	E20-0434-05	Terminal board (SPEAKER) \times 2	
-	E31-0034-05	Connector socket with cable	
-	H10-1427-12	Left polystyrene foamed fixture	
-	H10-1428-12	Right polystyrene foamed fixture	
-	K21-0323-04	Knob (VOLUME)	☆
-	K23-0248-04	Knob (BALANCE)	☆
-	K23-0249-04	Knob (TONE, SPEAKERS) \times 3	☆
-	K27-0027-24	Knob (TAPE, LOUDNESS) \times 3	☆
-	K27-0029-14	Knob (POWER)	
-	K29-0240-04	Knob (INPUT) \times 3	
-	N08-0125-05	Dress screw \times 6	
-	N08-0128-25	GND screw	
-	X08-1530-00	Preamp	☆

POWER AMP (X07-1470-10, -21, -51, X07-1472-71)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ce1.2	CE04W1HR47MBR	Electrolytic 0.47 μ F 50WV	
Ce3.4	CC45SL1H101K	Ceramic 100pF \pm 10%	
Ce7.8	CE04W1A470	Electrolytic 47 μ F 10WV	
Ce9.10	CC45SL1H010C	Ceramic 1pF \pm 0.25pF	
Ce11.12	CC45SL1H220K	Ceramic 22pF \pm 10%	
Ce13.14	CE04W1A221	Electrolytic 220 μ F 10WV	
Ce15.16	CE04W1H470	Electrolytic 47 μ F 50WV	
Ce17.18	CC45SL1H101K	Ceramic 100pF \pm 10%	
Ce19.20	CQ93M1H102K	Mylar 0.001 μ F \pm 10%	
Ce21~24	CE04W1A470	Electrolytic 47 μ F 10WV	
Ce25.26	CQ93M1H104M	Mylar 0.1 μ F \pm 20%	
Ce27.28	CK45E2H103P	Ceramic 0.01 μ F +100% -0%	
Ce29.30	C90-0345-05	Electrolytic 6800 μ F 42WV	☆
Ce31.32	CE04W1V331	Electrolytic 330 μ F 35WV	
Ce33	CE04W2A470	Electrolytic 47 μ F 100WV	
Ce34	CE04W1C331	Electrolytic 330 μ F 16WV	
Ce35	CE04W1H221	Electrolytic 220 μ F 50WV	
Ce36	C91-0001-05	Ceramic 0.01 μ F (X07-1470-10)	

Ref. No.	Parts No.	Description	Re- marks
	C91-0023-05	Ceramic 0.01 μ F (X07-1470-21)	
	CK45E3D103PMU	Ceramic 0.01 μ F 2KWV (X07-1470-51, X07-1472-71)	
RESISTOR			
Re1.2	PD14BY2E334J	Carbon 330k Ω \pm 5% 1/4W	
Re3.4	PD14BY2E222J	Carbon 2.2k Ω \pm 5% 1/4W	
Re5.6	PD14BY2E563J	Carbon 56k Ω \pm 5% 1/4W	
Re7.8	PD14BY2E822J	Carbon 8.2k Ω \pm 5% 1/4W	
Re9.10	PD14BY2E182J	Carbon 1.8k Ω \pm 5% 1/4W	
Re11.12	PD14BY2E332J	Carbon 3.3k Ω \pm 5% 1/4W	
Re13.14	PD14BY2E563J	Carbon 56k Ω \pm 5% 1/4W	
Re15.16	PD14BY2E101J	Carbon 100 Ω \pm 5% 1/4W	
Re17.18	PD14BY2E222JB	Carbon 2.2k Ω \pm 5% 1/4W	
Re19.20	PD14BY2E472JB	Carbon 4.7k Ω \pm 5% 1/4W	
Re21	PD14BY2E104J	Carbon 100k Ω \pm 5% 1/4W	
Re22	PD14BY2E123J	Carbon 12k Ω \pm 5% 1/4W	
Re23.24	PD14BY2E392J	Carbon 3.9k Ω \pm 5% 1/4W	
Re25~28	PD14BY2E182J	Carbon 1.8k Ω \pm 5% 1/4W	
Re29~32	PD14BY2E391J	Carbon 390 Ω \pm 5% 1/4W	
Re33~36	PD14BY2E153J	Carbon 15k Ω \pm 5% 1/4W	
Re37~40	PD14BY2E182J	Carbon 1.8k Ω \pm 5% 1/4W	
Re41~44	PD14BY2E331JB	Carbon 330 Ω \pm 5% 1/4W	
Re45~48	R92-0111-05	Cement 0.47 Ω \pm 5% 3W	
Re49.50	RN14AB3D4R7JB	Metal film 4.7 Ω \pm 5% 2W	
Re51	RN14AB3A182JB	Metal film 1.8k Ω \pm 5% 2W	
Re52	PD14BY2E330JB	Carbon 330 Ω \pm 5% 1/4W	
Re53	PD14BY2E333J	Carbon 33k Ω \pm 5% 1/4W	
Re54	PD14BY2E563J	Carbon 56k Ω \pm 5% 1/4W	
Re55	RN14AB3A391JB	Metal film 390 Ω \pm 5% 1W	
Re56	RN14AB3A331JB	Metal film 330 Ω \pm 5% 1W	
Re57	RN14AB3A182JB	Metal film 1.8k Ω \pm 5% 1W	
SEMICONDUCTOR			
Qe1~4	V01-0115-05	Transistor 2SA620WN (4) or (5)	
Qe5.6	V03-0439-05	Transistor 2SC1885 (Q) or (R)	
Qe7.8	V01-0157-05	Transistor 2SA620WB (4) or (5)	
Qe9.10	V01-0084-05	Transistor 2SA733 (Q) or (R)	
Qe11~14	V03-0270-05	Transistor 2SC945 (Q) or (R)	
Qe15.16	V01-0084-05	Transistor 2SA733 (Q) or (R)	
Qe17.18	V03-0452-05	Transistor 2SC1735 (C) or (D)	
Qe19.20	V01-0173-05	Transistor 2SA850 (C) or (D)	
Qe21.22	V04-0077-05	Transistor 2SD588 (Q) or (R)	
Qe23.24	V02-0058-05	Transistor 2SB618 (Q) or (R)	
Qe25	V01-0073-05	Transistor 2SA673A (B) or (C)	
Qe26	V03-0456-05	Transistor 2SC1222 (E) or (U)	
Qe27	V01-0073-05	Transistor 2SA673A (B) or (C)	
De1	V11-0436-05	Diode S5VB20	
De2~4	V11-0273-05	Diode 1S2076A	
De5.6	V11-0286-05	Zener Diode CZ-245	
De7~10	V11-0273-05	Diode 1S2076A	
De11	V11-0254-05	Zener Diode YZ-140	
De12	V11-0273-05	Diode 1S2076A	
De13.14	V11-0295-05	Diode W06B	
THe1.2	V22-0016-05	Thermister 5TP-41L	
POTENTIOMETER			
VRe1.2	R12-1021-05	PC trimmer 1k Ω BIAS	

PARTS LIST/SEMICONDUCTOR SUBSTITUTIONS

☆ : new parts

Ref. No.	Parts No.	Description	Re- marks
MISCELLANEOUS			
—	F01-0254-03	Heat Sink	☆
F1	F05-3021-05	Fuse (3A) (X07-1470-10)	
F1	F05-3022-05	Fuse (3A) (X07-1470-21)	
F1	F05-1623-05	Fuse (1.6AT) (X07-1470-51)	
F1	F05-3121-05	Fuse (3.15AT) (X07-1472-71)	
F2	F05-1521-05	Fuse (1.5A) (X07-1470-21)	
F2	F05-1623-05	Fuse (1.6AT) (X07-1472-71)	
—	F20-0114-05	Mica plate × 4	
—	J13-0041-05	Fuse Clip × 2 (X07-1470-10)	
—	J13-0041-05	Fuse Clip × 4 (X07-1470-21)	
—	J13-0039-05	Fuse Clip × 2 (X07-1470-51)	
—	J13-0039-05	Fuse Clip × 4 (X07-1472-71)	

PREAMP (X08-1530-00)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Cd1,2	CE04W1A220	Electrolytic 22 μ F 10WV	
Cd3,4	CQ93M1H102J	Mylar 0.001 μ F \pm 5%	
Cd5,6	CQ93M1H332J	Mylar 0.0033 μ F \pm 5%	
Cd7,8	CC45SL1H270K	Ceramic 27pF \pm 10%	
Cd9,10	CE04W1A101	Electrolytic 100 μ F 10WV	
Cd11,12	CE04W1H3R3	Electrolytic 3.3 μ F 50WV	
Cd13,14	CC45SL1H220K	Ceramic 22pF \pm 10%	
Cd15,16	CQ93M1H393K	Mylar 0.039 μ F \pm 10%	
Cd17,18	CE04W010MBR	Electrolytic 1 μ F 50WV	
Cd19,20	CC45SL1H050D	Ceramic 5pF \pm 0.5pF	
Cd21,22	CE04W1V4R7	Electrolytic 4.7 μ F 35WV	
Cd23~	CE04W1E100	Electrolytic 10 μ F 25WV	
Cd26			
Cd27,28	CQ93M1H103K	Mylar 0.01 μ F \pm 10%	
Cd29,30	CQ93M1H823K	Mylar 0.082 μ F \pm 10%	
Cd31,32	CQ93M1H392K	Mylar 0.0039 μ F \pm 10%	
Cd33,34	CQ93M1H223K	Mylar 0.022 μ F \pm 10%	
Cd35,36	CQ93M1H332K	Mylar 0.0033 μ F \pm 10%	
Cd37,38	CE04W1V221	Electrolytic 220 μ F 35WV	
Cd39	CE04W1C470	Electrolytic 47 μ F 16WV	
RESISTOR			
Rd1,2	PD14BY2E222J	Carbon 2.2k Ω \pm 5% 1/4W	
Rd3,4	PD14BY2E563J	Carbon 56k Ω \pm 5% 1/4W	
Rd5,6	PD14BY2E183J	Carbon 18k Ω \pm 5% 1/4W	
Rd7,8	PD14BY2E103J	Carbon 10k Ω \pm 5% 1/4W	
Rd9,10	PD14BY2E162J	Carbon 1.6k Ω \pm 5% 1/4W	
Rd11,12	PD14BY2E824J	Carbon 820k Ω \pm 5% 1/4W	
Rd13,14	PD14BY2E753J	Carbon 75k Ω \pm 5% 1/4W	
Rd15,16	PD14CY2E564J	Carbon 560k Ω \pm 5% 1/4W	
Rd17,18	PD14BY2E562J	Carbon 5.6k Ω \pm 5% 1/4W	
Rd19,20	PD14BY2E102J	Carbon 1k Ω \pm 5% 1/4W	
Rd21,22	PD14BY2E224J	Carbon 220k Ω \pm 5% 1/4W	
Rd23,24	PD14BY2E102J	Carbon 1k Ω \pm 5% 1/4W	
Rd25,26	PD14BY2E103J	Carbon 10k Ω \pm 5% 1/4W	
Rd27,28	PD14BY2E222J	Carbon 2.2k Ω \pm 5% 1/4W	
Rd29,30	PD14BY2E334J	Carbon 330k Ω \pm 5% 1/4W	
Rd31,32	PD14BY2E103J	Carbon 10k Ω \pm 5% 1/4W	
Rd33,34	PD14BY2E154J	Carbon 150k Ω \pm 5% 1/4W	
Rd35,36	PD14BY2E153J	Carbon 15k Ω \pm 5% 1/4W	
Rd37,38	PD14BY2E182J	Carbon 1.8k Ω \pm 5% 1/4W	
Rd39,40	PD14BY2E184J	Carbon 180k Ω \pm 5% 1/4W	
Rd41,42	PD14BY2E822J	Carbon 8.2k Ω \pm 5% 1/4W	

Ref. No.	Parts No.	Description	Re- marks
Rd43,44	PD14BY2E332J	Carbon 3.3k Ω \pm 5% 1/4W	
Rd45,46	PD14BY2E123J	Carbon 12k Ω \pm 5% 1/4W	
Rd47,48	PD14BY2E222J	Carbon 2.2k Ω \pm 5% 1/4W	
Rd49,50	PD14BY2E102J	Carbon 1k Ω \pm 5% 1/4W	
Rd51,52	PD14BY2E103J	Carbon 10k Ω \pm 5% 1/4W	
Rd53,54	PD14BY2E273J	Carbon 27k Ω \pm 5% 1/4W	
Rd55,56	PD14BY2E824J	Carbon 820k Ω \pm 5% 1/4W	
Rd57,58	PD14BY2E101JB	Carbon 100 Ω \pm 5% 1/4W	
Rd59	PD14BY2E562J	Carbon 5.6k Ω \pm 5% 1/4W	
Rd61,62	PD14CY2E564J	Carbon 560k Ω \pm 5% 1/4W	
SEMI CONDUCTOR			
Q1~4	V09-0098-05	FET 2SK68A (L) or (M)	
Q5~8	V01-0146-05	Transistor 2SA640 (E) ro (F)	
Q9,10	V01-0189-05	Transistor 2SA872 (E)	
POTENTIOMETER			
VR1	R06-5019-05	Potentiometer 100k Ω (MN) BALANCE	☆
VR2	R08-0533-05	Potentiometer 100k Ω (B) dual VOLUME	☆
VR3,4	R06-4028-05	Potentiometer 50k Ω (C) dual TONE	
SWITCH			
S1	S42-3008-05	Pushbutton (INPUT)	
S2	S33-4002-05	Lever (DUBBING)	
S3	S33-2002-05	Lever (MONITOR)	
S4	S33-4005-05	Lever (LOUDNESS, HIGH FILTER)	☆
S5	S01-1031-05	Rotary (SPEAKERS)	
MISCELLANEOUS			
—	E11-0058-05 or E11-0060-15	Phone jack	

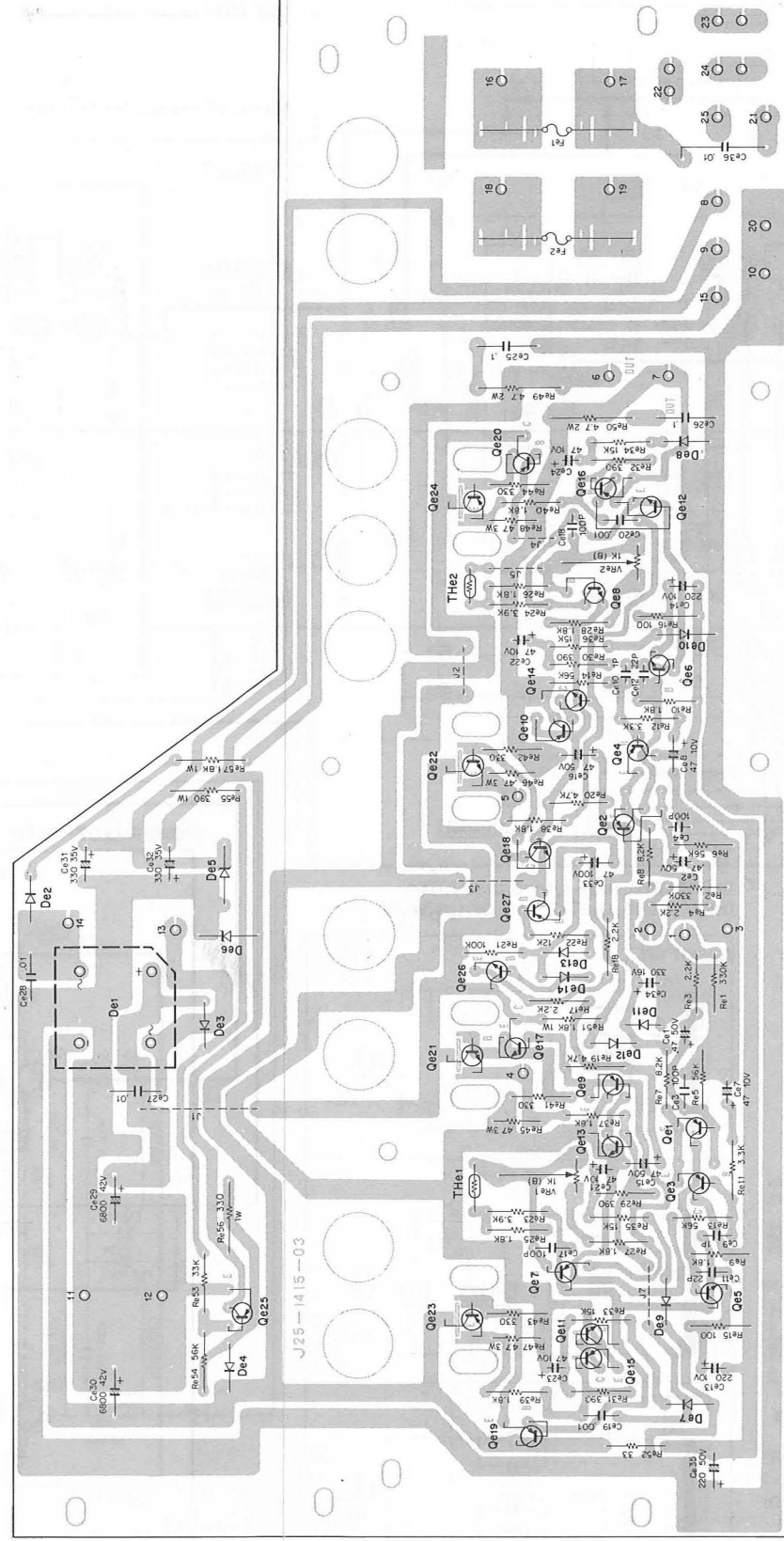
SEMICONDUCTOR NAME	SUBSTITUTIONS
POWER AMP (X07-1470-10)	
2SA620WN (4) or (5)	2SA620WL, 2SA763WL, 2SA841, 2SA872
2SA620WB (4) or (5)	2SA620WL, 2SA763WL
2SA673A (B) or (C)	2SA720 (C) or (Q)
2SA733 (Q) or (R)	2SA620, 2SA640
2SA850 (C) or (D)	2SA794
2SB618 (Q) or (R)	—
2SC945 (Q) or (R)	2SC458, 2SC1000, 2SC1345 2SC1345 (E)
2SC1222 (U) or (E)	2SC1567, 2SC1904
2SC1735 (C) or (D)	2SC1451, 2SC1452
2SC1885 (Q) or (R)	—
2SD588 (Q) or (R)	—
PREAMP (X08-1530-00)	
2SA640 (E) or (F)	2SA763WL, 2SA620WL
2SA872 (E)	2SA763WL, 2SA841, 2SA750,
2AK68A (L) or (M)	—

DESTINATIONS' PARTS LIST

Ref. No.	U.S.A. (K)	Canada (P)	Australia (X)	Europe (W)	Scandinavia (L)	England (T)	South Africa (S)	General Export (M)	Description
-	A20-1082-02	A20-1082-02	A20-1082-02	A20-1082-02	A20-1082-02	A20-1083-02	A20-1082-02	A20-1082-02	Panel Assy ☆
-	B46-0056-00	B46-0055-10	B50-1546-00	B50-1546-00	B50-1546-00	B50-1547-00	B50-1546-00	B50-1546-00	Warranty card
-	B50-1546-00	B50-1546-00	B50-1546-00	B50-1546-00	B50-1546-00	B50-1547-00	B50-1546-00	B50-1546-00	Instruction manual
C1	C91-0001-05	C91-0001-05	C91-0023-05	CK45E3D103 PMU	CK45E3D103 PMU	CK45E3D103 PMU	C91-0023-05	C91-0023-05	Capacitor 0.01μF
C2	-	-	-	CK45E3D103 PMU	CK45E3D103 PMU	CK45E3D103 PMU	-	-	Capacitor 0.01μF 2kVW
-	-	-	D32-0075-04	D32-0075-04	D32-0075-04	-	D32-0075-04	D32-0075-04	Switch stopper (voltage selector)
-	E08-0225-05	E08-0225-05	E08-0225-05	E30-0580-05	E30-0292-05	-	E08-0225-05	E08-0225-05	AC outlet x 3
-	E30-0181-05	E30-0181-05	E30-0185-05	F09-0033-05	F09-0033-05	040-0304-05	040-0304-05	E30-0515-05	Power cord
-	-	-	-	F09-0033-05	F09-0033-05	F09-0033-05	-	-	Capacitor cover x 3
-	H01-1643-04	H01-1644-04	H01-1646-04	H01-1643-04	H01-1646-04	H01-1645-04	H01-1643-04	H01-1643-04	Carton case
-	-	-	H12-0056-04	H12-0056-04	H12-0056-04	-	-	-	Buffer fixture
-	H20-0377-04	H20-0377-04	H20-0377-04	H20-0377-04	H20-0377-04	H20-0377-04	H20-0377-04	H20-0417-04	Polyethylene cover
-	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
-	L01-1191-05	L01-1191-05	L01-1195-05	L01-1196-05	L01-1196-05	L01-1197-05	L01-1195-05	L01-1195-05	Power transformer
S6	☆ S33-1002-05	☆ S33-1002-05	☆ S33-1003-05	S33-2005-15	S33-2005-15	S33-2005-15	☆ S33-1003-05	☆ S33-1003-05	Lever switch (POWER)
-	-	-	S31-2001-05	S31-2001-05	S31-2001-05	-	S31-2001-05	S31-2001-05	Slide switch (Voltage selector)
-	X07-1470-10	X07-1470-10	X07-1470-21	X07-1472-71	X07-1472-71	X07-1470-51	X07-1470-21	X07-1470-21	Power amp ☆

☆ : new parts

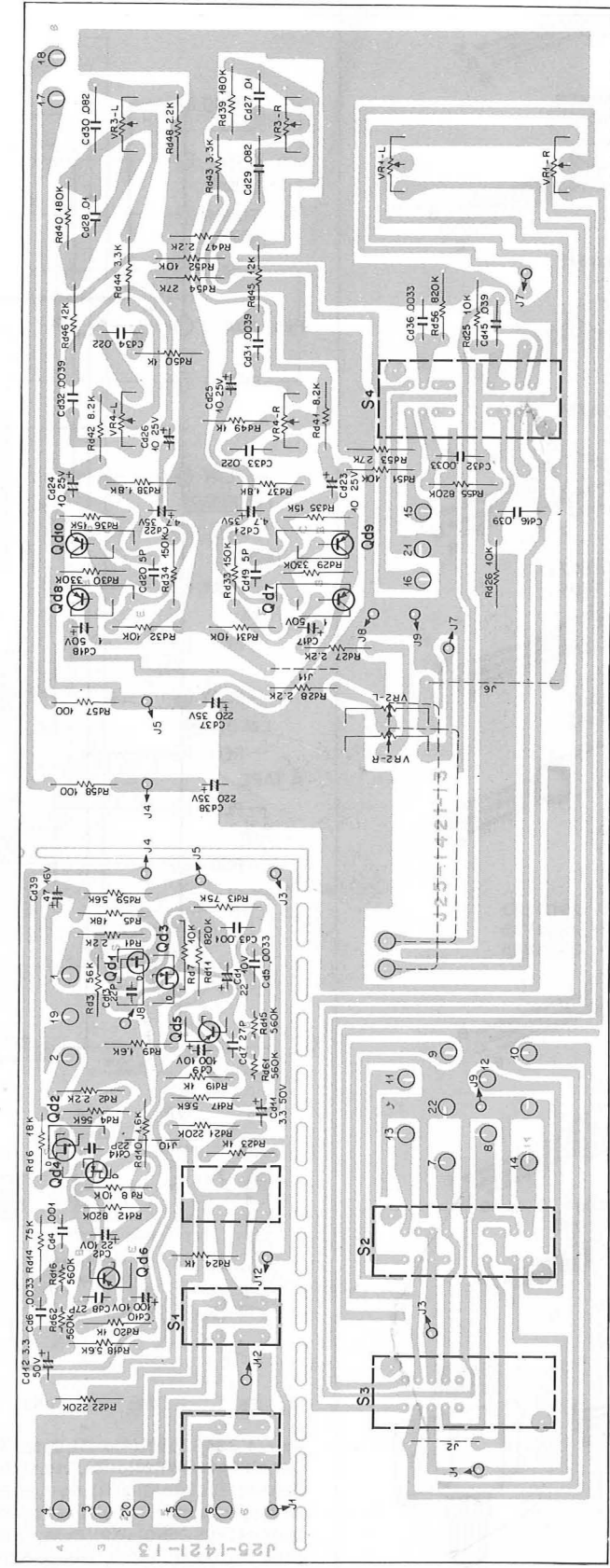
▼ POWER AMP (X07-1470-10)



Qe1~4: 2SA620 WN(4) or (5), Qe5, 6: 2SC1885 (Q) or (R), Qe7, 8: 2SA620 WB(4) or (5), Qe9, 10, 15, 16: 2SA733 (Q) or (R), Qe11~14: 2SC945 (Q) or (R), Qe17, 18: 2SC1735 (Q) or (D), Qe19, 20: 2SA850 (C) or (D), Qe21, 22: 2SD568 (Q) or (R)
 Qe23, 24: 2SB618 (Q) or (R), Qe25, 27: 2SA673A (B) or (C), Qe26: 2SC1222 (U) or (E), Th1, 2: 5TP-41L, De1: SSVB20, De2~4, 7~10, 12: 1S2076A, De5, 6: CZ245, De11: YZ-140, De13, 14: W06B

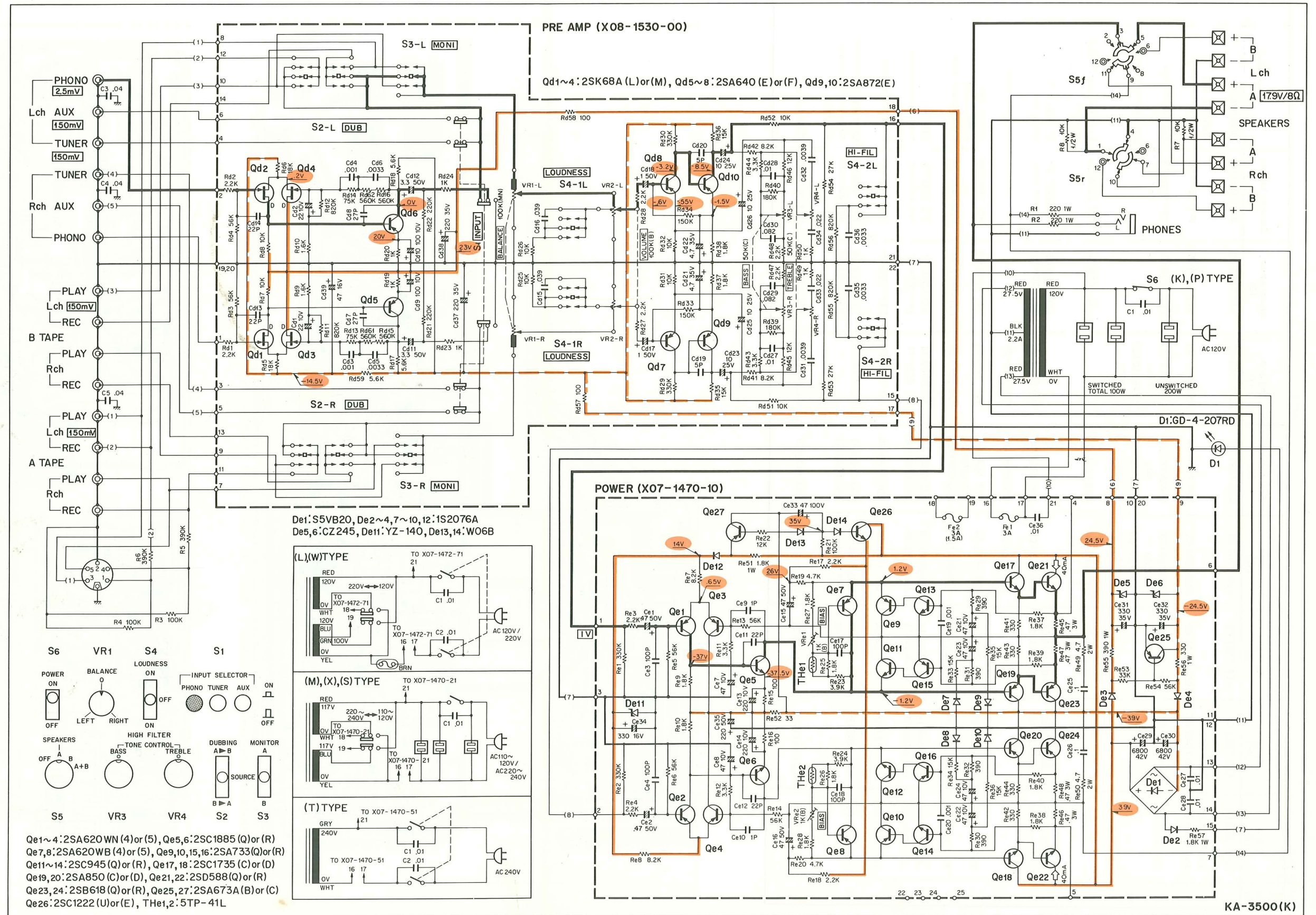
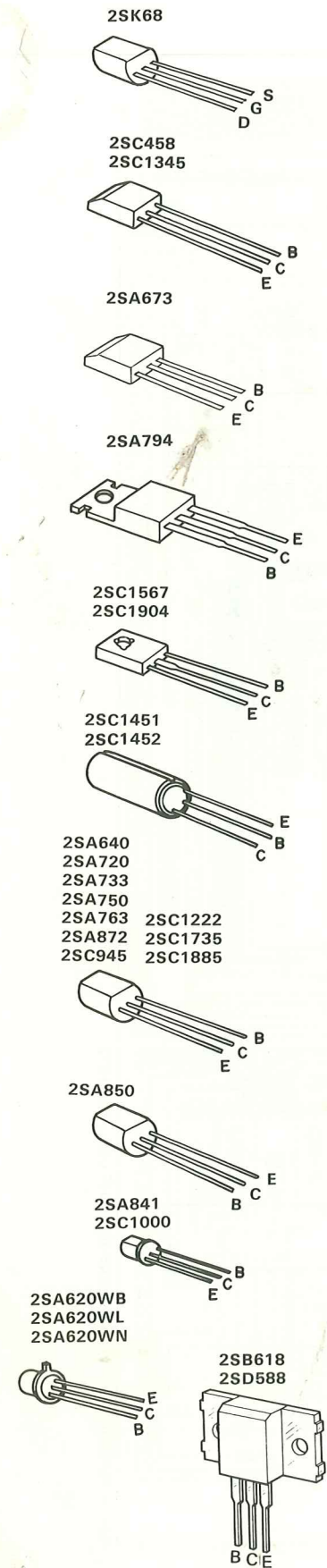
PC BOARD

▼ PREAMP (X08-1350-00)



Qd1~4: 2SK68A(L) or (M), Qd5~8: 2SA640(E) or (F), Qde, 10: 2SA872

SCHEMATIC DIAGRAM



DC voltage measured with 20 kΩ/V meter.

SPECIFICATIONS

POWER AMPLIFIER SECTION

Power Output:

40 watts per channel minimum, RMS at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.2% total harmonic distortion.

Both channel driven:

40 + 40 watts 8 ohms at 1,000 Hz

45 + 45 watts 4 ohms at 1,000 Hz

Dynamic Power Output:

170 watts 4 ohms

Total Harmonic Distortion:

0.2% at rated power into 8 ohms

0.06% at 1 watt into 8 ohms at 1,000 Hz

Intermodulation Distortion:

0.2% at rated power into 8 ohms

(60 Hz : 7 kHz = 4 : 1)

Power Bandwidth:

10 Hz to 40,000 Hz

Damping Factor:

50 at 8 ohms

Speaker Impedance:

Accept 4 ohms to 16 ohms

PRE AMPLIFIER SECTION

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

Phono: 2.5 mV 50 k ohms 76 dB (5 mV INPUT)

Tuner: 150 mV 50 k ohms 90 dB

AUX: 150 mV 50 k ohms 90 dB

Tape: 150 mV 50 k ohms 90 dB

Maximum Input Level for Phono 1:

200 mV (rms), T.H.D. 0.2% at 1,000 Hz

Output Level/Impedance

Tape REC (Pin): 150 mV

(Din): 30 mV 80 k ohms

Frequency Response

Phono: RIAA standard curve +0.5 dB, -0.5 dB

AUX and Tape: 20 Hz to 20,000 Hz +2 dB, -2 dB

Tone Control

Bass: ±8 dB at 100 Hz

Treble: ±8 dB at 10,000 Hz

Loudness Control (-30 dB):

+6 dB at 100 Hz

High Filter:

-3 dB at 7,000 Hz, 6 dB/oct

GENERAL

Power Requirement:

AC 50/60 Hz 110 ~ 120V, 220 ~ 240V

Power Consumption:

280 watts at full power

AC Outlet:

Switched 2 (100W max.), Unswitched 1 (200W max.)

Dimension:

W 14-31/32" (380 mm), H 5-1/2" (140 mm), D 10-1/32" (255 mm)

Weight (Net):

17.16 lbs (7.8 kg)

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