KENWOOD

HI/FI STEREO COMPONENTS

SERVICE MANUAL

KA-8300
(KA-9800)

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 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.

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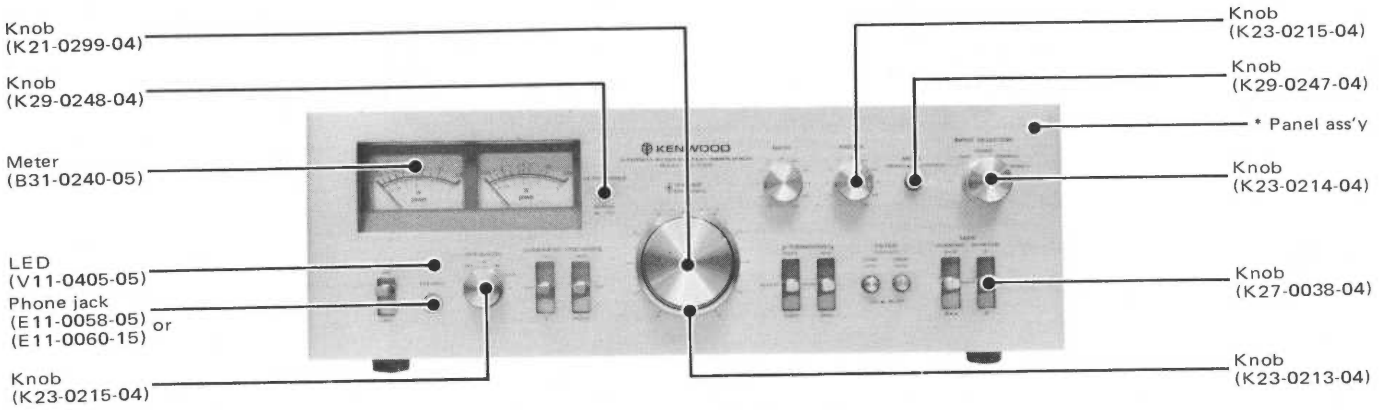
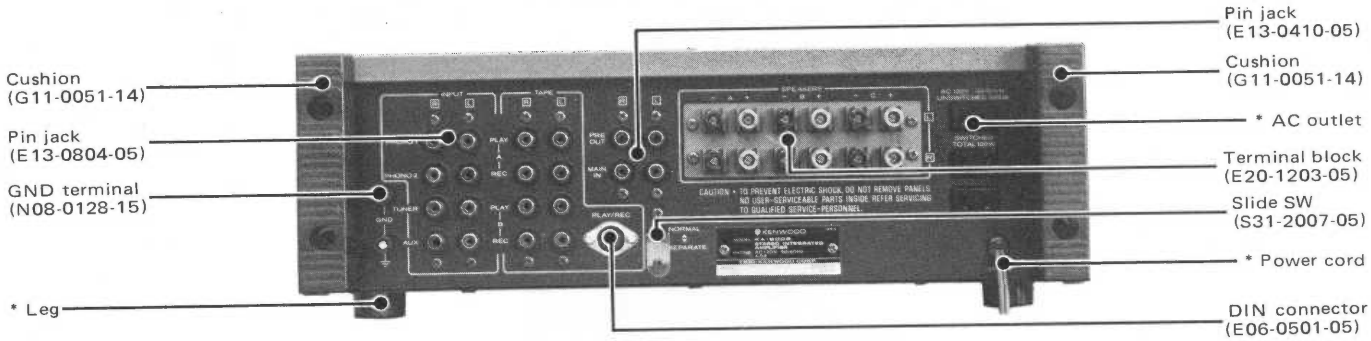
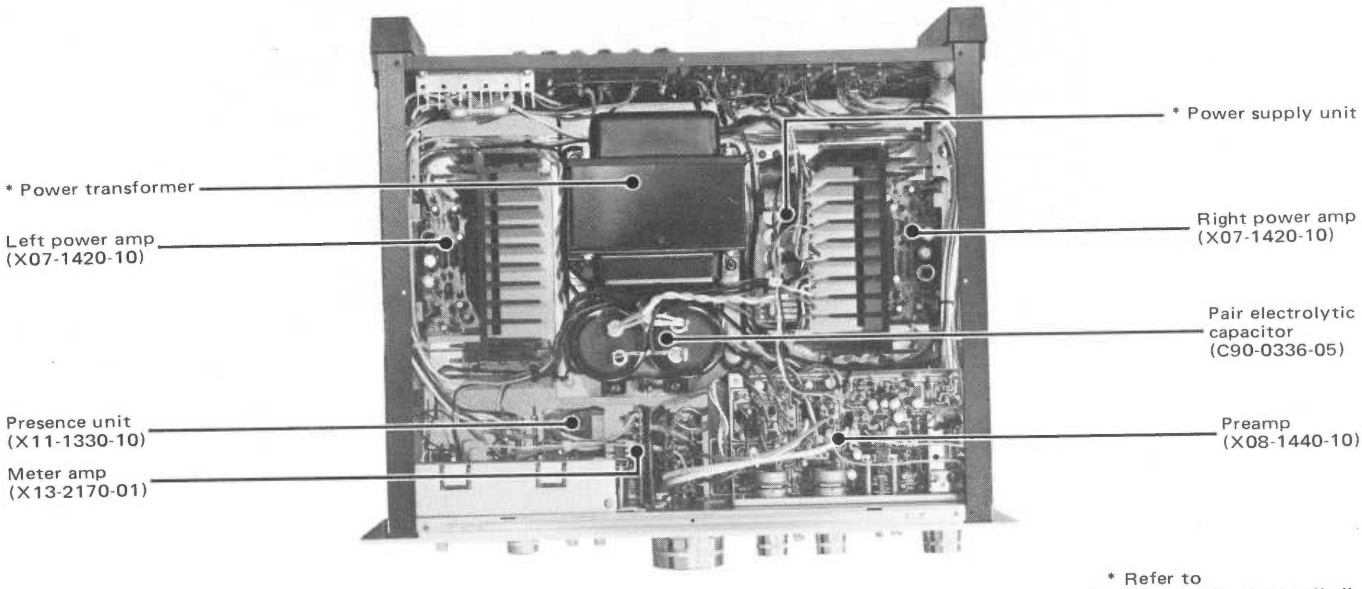
EXTERNAL & INTERNAL VIEW







* Refer to "destinations' parts list".

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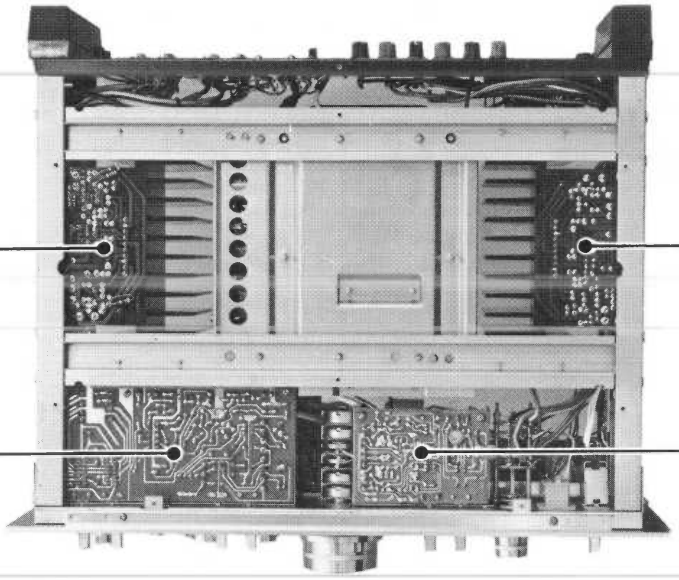
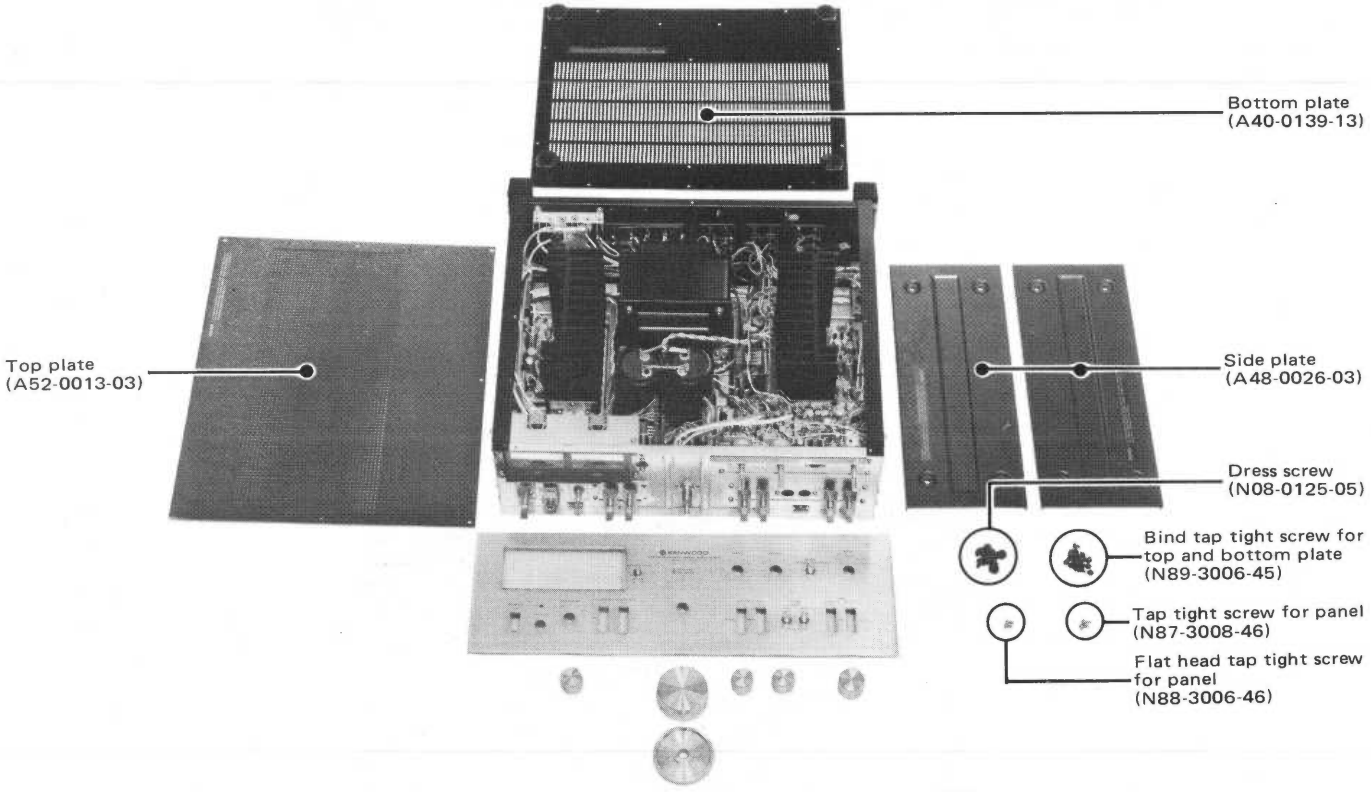
INTERNAL VIEW/DISASSEMBLY





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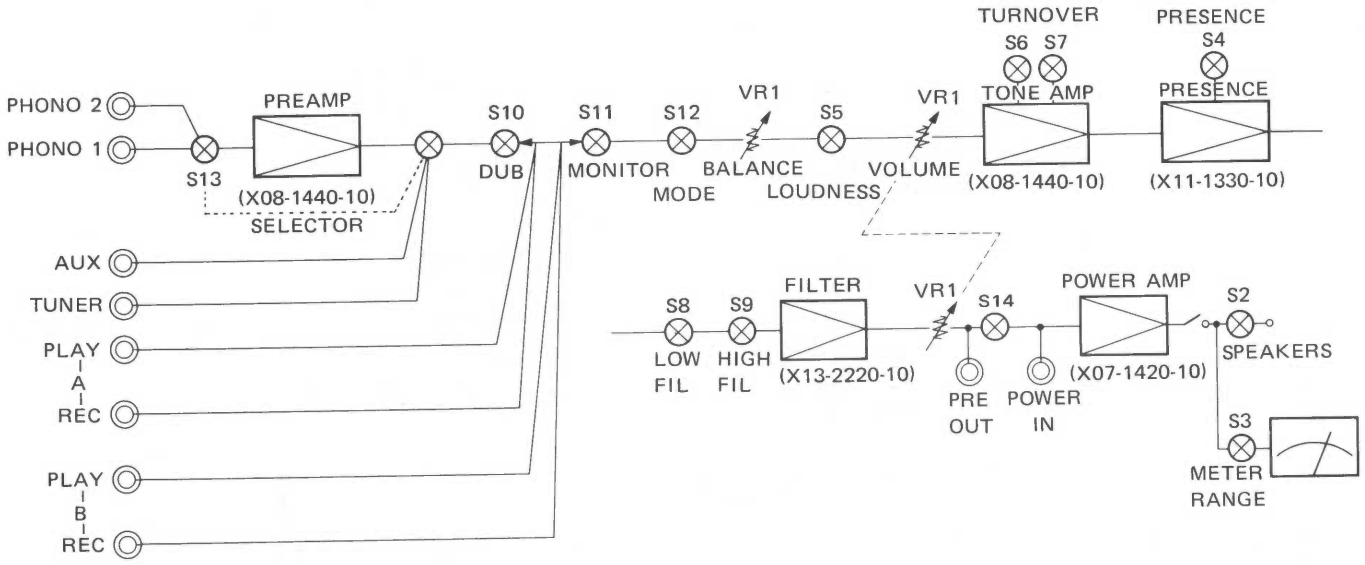
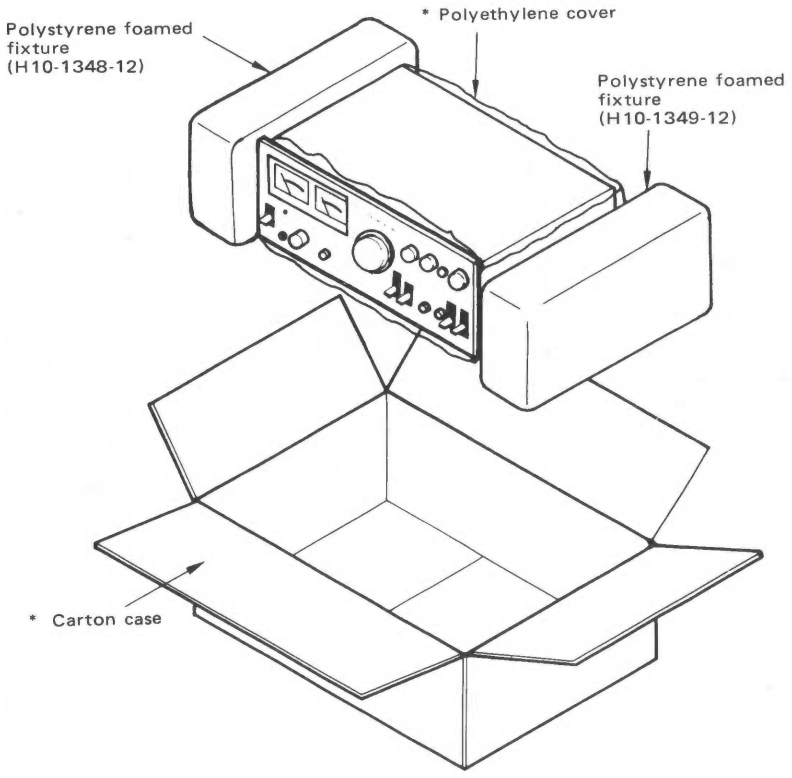
BLOCK DIAGRAM/PACKING





* Refer to Destinaitons' parts list.

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CIRCUIT DESCRIPTIONS/ADJUSTMENTS/TROUBLESHOOTING

PREAMP SECTION

The preamp circuit is composed of a differential amp, emitter follower and a class A amp.
The total gain of this circuit is 36 dB (63 times at 1 kHz).
The circuit operates with a dual 28 volts which assures the wide dynamic range and a low distortion.

POWER AMP

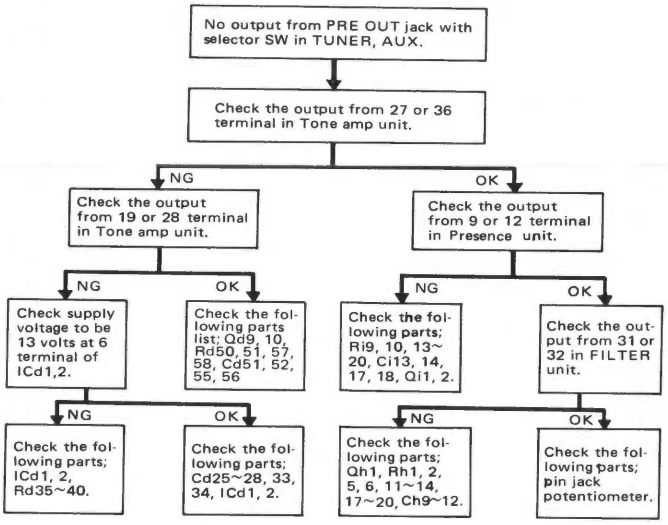
Power amp consists of a differential amp, driver amp, bias circuit, constant current circuit, ASO protection circuit, and complementary emitter follower output amp. The first stage, Qe1 and 2 are a differential amp and the subsequent stage, Qe3 is a class A amp. Qe4 acts as a constant current circuit and gives the constant current to ICe1. ASO protection circuit, which protects a power transistor for excessive current, complementary transistor, and power transistor are packed in the IC, which is called Darlington power pack.

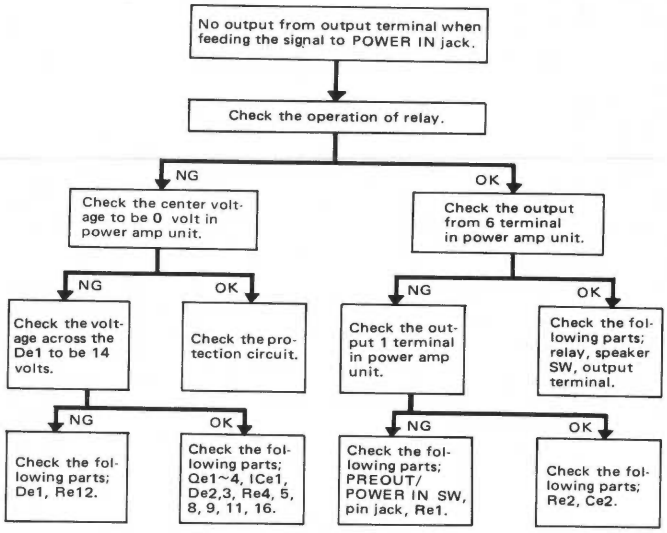
TONE AMP

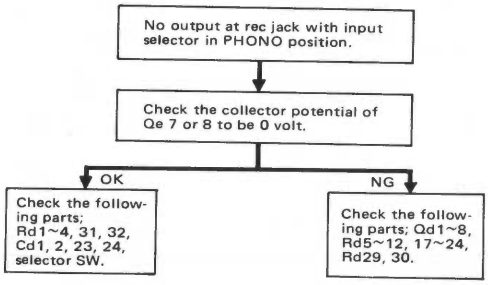
Tone amp circuit employs IC as buffer amp and NPN transistor as tone control amp.

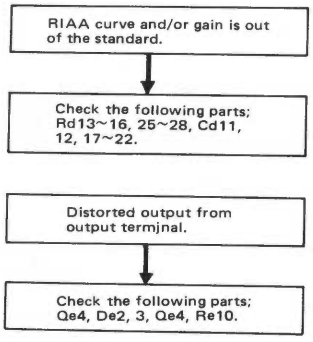
METER RANGE ADJUSTMENT

Push the meter range pushbutton switch to 3W position. Connect the dummy load to the output terminal instead of the loudspeaker. Also connect the audio generator to AUX jack of the amplifier. Then turn VOLUME until the output power is 3W (4.9V/8Ω).
Turn the PC trimmer potentiometer VRq1, 2 until the meter indicates 3W.









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DESTINATIONS' PARTS LIST

Symbol ☆ : new parts, Symbol ● : the parts not being kept in stock. KA-9800 is the product for "AUDIO CLUB"

Ref. No.	U.S.A. (K)	Canada (P)	PX (U)	Australia (X)	Europe (W)	Scandinavia (L)	England (T)	KA-9800 M2	Other Area (M)	Description
–	A20-0971-12	A20-0971-12	A20-0971-12	A20-0971-12	A20-0971-12	A20-0971-12	A20-0992-12	A20-1080-02	A20-0971-12	Panel ass'y ☆
–	A20-0972-02	A20-0972-02	A20-0972-02	A20-0972-02	A20-0972-02	A20-0972-02	A20-0993-02	A20-1081-02	A20-0972-02	Panel ● ☆
–	A23-0594-02	A23-0594-02	A23-0595-02	A23-0595-02	A23-0596-02	A23-0597-02	A23-0597-02	A23-0595-02	A23-0595-02	Rear panel ● ☆
–	B40-1274-04	B40-1274-04	B40-1418-04	B40-1275-04	B40-1277-04	B40-1278-04	B40-1276-04	B40-1414-04	B40-1275-04	Model name plate ● ☆
–	B42-0611-04	–	–	–	–	–	–	–	–	Caution sticker x 4 ● ☆
–	–	–	–	–	B42-0024-04	–	–	–	–	SEV sticker ● ☆
–	B42-0552-04	B42-0552-04	–	–	–	–	–	–	–	Fuse sticker ● ☆
–	B46-0056-00	B46-0055-10	B46-0050-00	–	–	–	–	–	–	Warranty card
–	–	–	B46-0051-00	–	–	–	–	–	–	Warranty card
–	B50-1404-00	B50-1404-00	B50-1404-00	B50-1404-00	B50-1404-00	B50-1404-00	B50-1405-00	B50-1544-00	B50-1404-00	Instruction manual ☆
–	–	–	B58-0139-00	B58-0003-00	B58-0156-00	–	–	B58-0003-00	B58-0003-00	Power supply caution card ●
–	–	–	B58-0144-00	B58-0101-00	B58-0157-00	–	–	B58-0101-00	B58-0101-00	Power voltage selector caution card ●
–	B58-0043-00	B58-0043-00	–	–	–	–	–	–	–	Carton case caution card ●
–	–	–	B58-0146-00	B58-0108-00	B58-0108-00	–	–	B58-0108-00	B58-0108-00	Spare fuse caution card ●
–	–	–	–	–	–	–	B58-0214-04	–	–	Power cord caution card ●
–	–	–	B59-0018-00	–	–	–	–	–	–	KENWOOD service stations' list
C3,4	C91-0001-05	C91-0001-05	CK45E3D103PMU	CK45E3D103PMU	CK45E3D103PMU x 3	CK45E3D103PMU x 3	CK45E3D103PMU	CK45E3D103PMU	CK45E3D103PMU	Capacitor 0.01μF
–	D32-0075-04	D32-0075-04	D32-0075-04x2	D32-0075-04x2	D32-0075-04x2	D32-0075-04	D32-0075-04	D32-0075-04x2	D32-0075-04x2	Switch stopper (power voltage selector or pre out/power in)
–	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	E30-0515-05 ☆	E30-0185-05	E30-0580-05	E30-0292-05	040-0304-05	E30-0515-05 ☆	E30-0515-05 ☆	Power cord
–	E90-0037-05	E90-0027-05	–	–	–	–	–	–	–	Fuse cap x 2
–	F05-6025-05	F05-6025-05	F05-6021-05	F05-6021-05	F05-6321-05	–	–	F05-6021-05	F05-6021-05	Fuse (6A)
–	–	–	F05-3022-05	F05-3022-05	F05-3121-05	F05-3121-05	F05-3121-05	F05-3022-05	F05-3022-05	Fuse (3A)
–	–	–	F09-0033-05	F09-0033-05	F09-0033-05x3	F09-0033-05x3	F09-0033-05	F09-0033-05	F09-0033-05	Capacitor cap x 2
–	H01-1439-04	H01-1551-04	H01-1440-04	H01-1439-04	H01-1440-04	H01-1440-04	H01-1441-04	H01-1594-04	H01-1439-04	Carton case ☆
–	–	H03-0515-04	–	–	H03-0454-04	H03-0454-04	H03-0455-04	–	–	Carton case ☆
–	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0416-04	Polyethylene cover
–	–	–	H25-0029-04	H25-0029-04	H25-0029-04	–	H25-0029-04	H25-0029-04	H25-0029-04	Polyethylene bag
									H40-0004-04	Anti-rust paper
–	J02-0073-04	J02-0049-14	J02-0049-14	J20-0049-14	J20-0049-14	J20-0049-14	J20-0049-14	J20-0049-14	J20-0049-14	Leg x 4
–	–	–	J13-0033-15	J13-0033-15	J13-0031-05	J13-0031-05	J13-0031-05	J13-0033-15	J13-0033-15	Fuse holder
–	J41-0034-05	J41-0034-05	J41-0033-05	J41-0024-15	J41-0033-05	J41-0033-05	J41-0024-15	J41-0033-05	J41-0033-05	Power cord bushing
–	L04-0094-05	L04-0094-05	L30-0112-05	L03-0112-05	L09-0156-05	L09-0157-05	L09-0156-05	L03-0112-05	L03-0112-05	Power transformer ☆
S1	S59-2033-05	S59-2033-05	S59-2032-05	S59-2032-05	S59-2034-05	S59-2034-05	S59-2034-05	S59-2032-05	S59-2032-05	Lever switch (Power) ☆
–	–	–	S31-2001-05	S31-2001-05	S31-2001-05	–	–	S31-2001-05	S31-2001-05	Slide switch (power voltage selector)
–	X00-1650-11	X00-1650-11	X00-1650-21	X00-1651-21	X00-1650-61	X00-1650-61	X00-1650-61	X00-1650-21	X00-1650-21	Power supply unit ☆

PARTS LIST

☆ : New parts, ● : The parts not being kept in stock.

Ref. No.	Parts No.	Description	Re-marks
		CAPACITOR	
C1,2	C90-0336-05	Pair electrolytic 15,000μF 63WV	
C5~12	CK45F1H403Z	Ceramic 0.04μF +80%,−20%	
		RESISTOR	
R1,2	RC05GF2H331K	Carbon 330Ω ±10% 1/2W	
R3,4	PD14BY2B104J	Carbon 100kΩ ±5% 1/8W	
R5,6	PD14BY2B394J	Carbon 390kΩ ±5% 1/8W	
		SEMICONDUCTOR	
–	V11-0405-05	LED GD-4-207RD	☆
		POTENTIOMETER	
VR1	R11-9011-05	Potentiometer 6 gang	☆
		VOLUME/BALANCE/SWITCH	
S2	S01-2035-05	Rotary (SPEAKERS)	☆
S14	S31-2007-05	Slide (PRE OUT/POWER IN)	
		MISCELLANEOUS	
–	A13-0127-23	Left framework	●☆
–	A13-0128-13	Right framework	●☆
–	A13-0129-23	Left angle hardware	●☆
–	A13-0130-23	Right angle hardware	●☆
–	A13-0131-12	Angle hardware x 2	●☆
–	A23-0182-32	Sub panel	●☆
–	A40-0139-13	Bottom plate	●☆
–	A48-0027-03	Side plate x 2	☆
–	A52-0015-03	Top plate	☆
–	B03-0107-04	Dress plate	☆
–	B07-0162-04	Ring x 3	☆
–	B07-0163-04	Ring	☆
–	B10-0189-04	Front glass	☆
–	B19-0183-04	Lighting acryl board	☆
–	B30-0108-15	Pilot lamp x 2	☆
–	B31-0240-05	Meter x 2	☆
–	B42-0009-04	Passed sticker	
–	D19-0050-14	Side board x 4	☆
–	E06-0501-05	DIN connector	
–	E11-0058-05 or	Phone jack	☆
–	E11-0060-15		☆
–	E13-0410-05	Pin jack (4P)	
–	E13-0804-05	Pin jack (8P) x 2	
–	E20-1203-05	Terminal block (12P)	
–	E30-0516-05	Mini-connector	☆
–	E30-0517-05	Mini-connector	☆
–	E30-0549-05	Mini-connector	☆
–	F19-0203-04	Blind board	●☆
–	F19-0211-04	Blind board	●☆
–	F31-0105-04	Reinforce hardware x 2	●☆
–	G01-0312-04	Spring x 4	☆
–	G10-0013-04	Cushion	☆
–	G11-0051-14	Cushion x 2	☆
–	G11-0055-04	Cushion x 11	☆
–	G16-0058-04	Flet	●☆
–	H10-1348-12	Left polystyrene foamed fixture	☆
–	H10-1349-12	Right polystyrene foamed fixture	☆
–	H25-0078-00	Instruction bag	
–	J20-0317-12	Power transformer mounting hardware	●☆
–	J21-1396-13	Pilot lamp mounting hardware	●☆
–	J21-1406-13	Meter mounting hardware	●☆
–	J42-0065-04	Pilot lamp bushing	
–	K21-0299-04	Knob (VOLUME)	☆
–	K23-0213-04	Knob (BALANCE)	☆
–	K23-0214-04	Knob (SELECTOR)	☆
–	K23-0215-04	Knob (TONE, SPEAKERS) x 3	☆
–	K27-0038-04	Knob (LEVER) x 7	☆
–	K29-0247-04	Knob (PUSHBUTTON) x 3	☆
–	K29-0248-04	Knob (PUSHBUTTON)	☆
–	N08-0125-05	Dress screw x 8	
–	N08-0128-15	GND terminal x 2	
–	X07-1420-10	Power amp unit x 2	☆
–	X08-1440-10	Pre amp unit	☆
–	X11-1330-10	PRESENCE unit	☆
–	X13-2170-01	Meter amp unit	☆
–	X13-2220-10	Switch unit	☆

POWER SUPPLY (X00-1650-11, -21, -61)

Ref. No.	Parts No.	Description	Re-marks
		CAPACITOR	
Ck1,2	CK45E2H103P	Ceramic 0.01μF +100%,−0%	
Ck3	CE04W1H331EL	Electrolytic 330μF 50WV	
Ck4	CE04W1V331EL	Electrolytic 330μF 35WV	
Ck5	CE04W1H331EL	Electrolytic 330μF 50WV	
Ck6	CE04W1V331EL	Electrolytic 330μF 35WV	
Ck7	CE04W1H100EL	Electrolytic 10μF 50WV	
Ck8	CE04W1C101NP	Non-pole electrolytic 100μF 16WV	
Ck9	CE04W1E101MBR	Electrolytic 100μF 25WV	
Ck10,11	CK45E2H103P	Ceramic 0.01μF +100%,−0%	
		RESISTOR	
Rk1,2	RN14AB3A121JB	Metal film 120Ω ±5% 1W	
Rk3	RN14AB3A221JB	Metal film 220Ω ±5% 1W	
Rk4	RN14AB3A271JB	Metal film 270Ω ±5% 1W	
Rk5	RN14AB3A222JB	Metal film 2.2kΩ ±5% 1W	
Rk6	RC05GF2H182K	Carbon 1.8kΩ ±10% 1/2W	
Rk7,8	PD14BY2E223JKW	Carbon 22kΩ ±5% 1/4W	
Rk9	PD14BY2E682JKW	Carbon 6.8kΩ ±5% 1/4W	
Rk10	PD14BY2E272JKW	Carbon 2.7kΩ ±5% 1/4W	
Rk11	PD14BY2E333JKW	Carbon 33kΩ ±5% 1/4W	
Rk12	PD14BY2E682JKW	Carbon 6.8kΩ ±5% 1/4W	
Rk13	RN14AB3A561JB	Metal film 560Ω ±5% 1W	
Rk14	PD14BY2E823JKW	Carbon 82kΩ ±5% 1/4W	
		SEMICONDUCTOR	
Qk1	V03-0430-05	Transistor 2SC1746 (GR)	
Qk2	V04-0068-05	Transistor 2SD415 (Q)	
Dk1	V11-0347-05	Diode SS-5	
Dk2	V11-0348-05	Diode SS-5R	
Dk3,4	V11-0295-05	Diode W06B	
Dk5	V11-0219-05	Diode V06B	
Dk6,7	V11-0273-05	Diode 1S2076A	
DZk1,2	V11-0417-05	Zener diode EQB01-28	
		MISCELLANEOUS	
–	F05-1021-05	Fuse (1A) (X00-1650-11)	
–	F05-1023-05	Fuse (1A) (X00-1650-21)	
–	F06-1021-05	Fuse (1A) (X00-1650-61)	
–	J13-0020-05	Fuse holder x2(X00-1650-11,-21)	
–	J13-0039-05	Fuse holder x 2 (X00-1650-61)	
–	J21-1296-04	Left PC board mounting hardware	●

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PARTS LIST

Ref. No.	Parts No.	Description	Re-marks
–	J21-1297-04	Right PC board mounting hardware	●
–	S51-4029-05	Relay (24V)	

POWER AMP (X07-1420-10)

Ref. No.	Parts No.	Description	Re-marks
CAPACITOR			
Ce1	CC45SL1H101K	Ceramic 100pF ±10%	☆
Ce2	C91-0019-05	Film 0.47μF 100WV	
Ce3	CE04W1H010EL	Electrolytic 1μF 50WV	
Ce4	CE04W1J470EL	Electrolytic 47μF 63WV	
Ce5	CE04W1A330EL	Electrolytic 33μF 10WV	
Ce6	CC45SL1H030C	Ceramic 3pF ±0.25pF	
Ce7	CC45SL1H220J	Ceramic 22pF ±5%	
Ce8	CE04W0J331EL	Electrolytic 330μF 6.3WV	
Ce9,10	CE04W0J470EL	Electrolytic 47μF 6.3WV	
Ce11	CQ93M1H224M	Mylar 0.22μF ±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	RC05GF2H222KMA	Carbon 2.2kΩ ±10% 1/2W	
Re5	RC05GF2H103KMA	Carbon 10kΩ ±10% 1/2W	
Re6	PD14CY2E222JKW	Carbon 2.2kΩ ±5% 1/4W	
Re7	PD14CY2E563JKW	Carbon 56kΩ ±5% 1/4W	
Re8	RC05GF2H560KMA	Carbon 56Ω ±10% 1/2W	
Re9	RC05GF2H270KMA	Carbon 27Ω ±10% 1/2W	
Re10	RC05GF2H101KMA	Carbon 100Ω ±10% 1/2W	
Re11	RC05GF2H223KMA	Carbon 22kΩ ±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(1)(E)or(F)	
Qe3	V03-0407-05 V03-0439-05	Transistor 2SC1628(O)or(Y) or 2SC1885(R)or(S)	
Qe4	V01-0153-05 V01-0162-05	Transistor 2SA818(O)or(Y) or 2SA912(R)or(S)	
De1	V11-0254-05	Zener diode YZ-140	
De2,3	V11-0273-05	Diode 1S2076	
ICe1	V30-0136-05	IC TA-100W	
MISCELLANEOUS			
–	F01-0219-03	Heat sink	☆
–	J21-1403-04	Heat sink mounting hardware x 2	● ☆
Le1	L39-0060-05	Coil	

PREAMP (X08-1440-10)

Ref. No.	Parts No.	Description	Re-marks
CAPACITOR			
Cd1,2	CS15E1A3R3M	Tantalum 3.3μF 10WV	
Cd3~6	CC45SL1H101K	Ceramic 100pF ±10%	
Cd7,8	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Cd9,10	CE04W1C470	Electrolytic 47μF 16WV	
Cd11,12	CE04W1A101	Electrolytic 100μF 10WV	
Cd13,14	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Cd15,16	CE04W1A101	Electrolytic 100μF 10WV	
Cd17,18	CQ93M1H122J	Mylar 0.0012μF ±5%	
Cd21,22	CQ93M1H392J	Mylar 0.0039μF ±5%	
Cd23,24	CE04W1E100	Electrolytic 10μF 25WV	
Cd25,26	CS15E1VR47M	Tantalum 0.47μF 35WV	
Cd27,28	CE04W1A101	Electrolytic 100μF 10WV	
Cd29~32	CC45SL1H270K	Ceramic 27pF ±10%	
Cd33,34	CE04W1E100	Electrolytic 10μF 25WV	
Cd35,36	CC45SL1H470K	Ceramic 47pF ±10%	
Cd37,38	CE04W1H010	Electrolytic 1μF 50WV	
Cd39~42	CQ93M1H102K	Mylar 0.001μF ±10%	
Cd43,44	CQ93M1H333K	Mylar 0.033μF ±10%	
Cd45,46	CQ93M1H563K	Mylar 0.056μF ±10%	
Cd47,48	CE04W1H010MBR	Electrolytic 1μF 50WV	
Cd49,50	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Cd51,52	CE04W1H010	Electrolytic 1μF 50WV	
Cd53,54	CE04W1A101	Electrolytic 100μF 10WV	
Cd55,56	CE04W1E100	Electrolytic 10μF 25WV	
Cd57,58	CE04W1V220	Electrolytic 22μF 35WV	
Cd59	CK45F1H403Z	Ceramic 0.04μF +80%,–20%	
RESISTOR			
Rd1,2	PD14CY2E222J	Carbon 2.2kΩ ±5% 1/4W	
Rd3,4	PD14CY2E334J	Carbon 330kΩ ±5% 1/4W	
Rd5,6	PD14CY2E563J	Carbon 56kΩ ±5% 1/4W	
Rd7,8	PD14CY2E154J	Carbon 150kΩ ±5% 1/4W	
Rd9	PD14CY2E274J	Carbon 270kΩ ±5% 1/4W	
Rd10	PD14BY2E274J	Carbon 270kΩ ±5% 1/4W	
Rd11,12	PD14CY2E472J	Carbon 4.7kΩ ±5% 1/4W	
Rd13,14	PD14CY2E394J	Carbon 390kΩ ±5% 1/4W	
Rd15,16	PD14CY2E122J	Carbon 1.2kΩ ±5% 1/4W	
Rd17	PD14CY2E104J	Carbon 100kΩ ±5% 1/4W	
Rd18	PD14BY2E104J	Carbon 100kΩ ±5% 1/4W	
Rd19,20	PD14CY2E101J	Carbon 100Ω ±5% 1/4W	
Rd21,22	PD14CY2E561J	Carbon 560Ω ±5% 1/4W	
Rd23,24	PD14BY2E562J	Carbon 5.6kΩ ±5% 1/4W	
Rd25,26	PD14CY2E623J	Carbon 62kΩ ±5% 1/4W	
Rd27,28	PD14CY2E105J	Carbon 1MΩ ±5% 1/4W	
Rd29,30	PD14CY2E472J	Carbon 4.7kΩ ±5% 1/4W	
Rd31,32	PD14CY2E474J	Carbon 470kΩ ±5% 1/4W	
Rd33,34	PD14CY2E222J	Carbon 2.2kΩ ±5% 1/4W	
Rd35,36	PD14CY2E104J	Carbon 100kΩ ±5% 1/4W	
Rd37,38	PD14CY2E824J	Carbon 820kΩ ±5% 1/4W	
Rd39,40	PD14CY2E102J	Carbon 1kΩ ±5% 1/4W	
Rd41,42	PD14CY2E133J	Carbon 13kΩ ±5% 1/4W	
Rd43,44	PD14CY2E272J	Carbon 2.7kΩ ±5% 1/4W	
Rd45,46	PD14CY2E153J	Carbon 15kΩ ±5% 1/4W	
Rd47,48	PD14BY2E243J	Carbon 24kΩ ±5% 1/4W	
Rd49,50	PD14BY2E153J	Carbon 15kΩ ±5% 1/4W	
Rd51,52	PD14CY2E202J	Carbon 2kΩ ±5% 1/4W	
Rd53,54	PD14CY2E154J	Carbon 150kΩ ±5% 1/4W	
Rd55,56	PD14CY2E333J	Carbon 33kΩ ±5% 1/4W	
Rd57,58	PD14CY2E392J	Carbon 3.9kΩ ±5% 1/4W	
Rd59,60	PD14CY2E102J	Carbon 1kΩ ±5% 1/4W	
Rd61	PD14BY2E153J	Carbon 15kΩ ±5% 1/4W	
Rd62	PD14CY2E153J	Carbon 15kΩ ±5% 1/4W	
Rd63	PD14BY2E243J	Carbon 24kΩ ±5% 1/4W	
Rd64	PD14CY2E243J	Carbon 24kΩ ±5% 1/4W	
Rd65,66	PD14CY2E104J	Carbon 100kΩ ±5% 1/4W	
Rd67,68	PD14CY2E222J	Carbon 2.2kΩ ±5% 1/4W	
SEMICONDUCTOR			
Qd1~4	V01-0090-05	Transistor 2SA620WL(4) or (5)	
Qd5,6	V01-0146-05	Transistor 2SA640 (E) or (F)	
Qd7,8	V03-0424-05	Transistor 2SC1400 (U) or (E)	☆
Qd9,10	V03-0292-05	Transistor 2SC1345 (D) or (E)	
ICd1,2	V30-0140-05	IC TA7129P	

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PARTS LIST

Ref. No.	Parts No.	Description	Remarks
POTENTIOMETER			
VRd1,2	R08-5031-05	Potentiometer 50kΩ (C) x 2 (tone)	☆
SWITCH			
S12	S40-2061-05	Pushbutton (mode)	
S13	S29-4003-05	Slide rotary switch (input)	
MISCELLANEOUS			
–	E40-0371-05	Pin assembly (3P) x 3	
–	E40-0571-05	Pin assembly (5P) x 2	
–	J21-1405-03	Mounting hardware	●
–	J31-0129-04	Sleeve	

PRESENCE (X11-1330-10)

Ref. No.	Parts No.	Description	Remarks
CAPACITOR			
Ci1,2	CQ93M1H273J	Mylar 0.027μF ±5%	
Ci5,6	CQ93M1H562J	Mylar 0.0056μF ±5%	
Ci7,8	CQ93M1H102J	Mylar 0.001μF ±5%	
Ci9,10	CQ93M1H152J	Mylar 0.0015μF ±5%	
Ci11,12	CC45SL1H271K	Ceramic 270pF ±5%	
Ci13,14	CE04W1H010BR	Electrolytic 1μF 50WV	
Ci15,16	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Ci17,18	CE04W1E100	Electrolytic 10μF 25WV	
Ci19,20	CE04W1A101	Electrolytic 100μF 10WV	
Ci21,22	CQ93M1H563J	Mylar 0.056μF ±5%	
RESISTOR			
Ri1,2	PD14CY2E153J	Carbon 15kΩ ±5% 1/4W	
Ri3,4	RC05GF2H225K	Carbon 2.2MΩ ±10% 1/2W	
Ri5~8	PD14CY2E473J	Carbon 47kΩ ±5% 1/4W	
Ri9~12	PD14CY2E104J	Carbon 100kΩ ±5% 1/4W	
Ri13,14	PD14CY2E154J	Carbon 150kΩ ±5% 1/4W	
Ri15,16	PD14CY2E333J	Carbon 33kΩ ±5% 1/4W	
Ri17,18	PD14CY2E302J	Carbon 3kΩ ±5% 1/4W	
Ri19,20	PD14CY2E102J	Carbon 1kΩ ±5% 1/4W	
Ri21,22	PD14CY2E104J	Carbon 100kΩ ±5% 1/4W	
Ri25~32	RC05GF2H225K	Carbon 2.2MΩ ±10% 1/2W	
Ri33,34	PD14CY2E473J	Carbon 47kΩ ±5% 1/4W	
SEMICONDUCTOR			
Qi1,2	V03-0271-05	Transistor 2SC1345 (E) or (F)	
SWITCH			
S4	S32-2012-05	Lever (PRESENCE)	
S5	S32-4006-05	Lever (LOUDNESS)	
MISCELLANEOUS			
–	J21-1429-04	Unit mounting hardware	● ☆

METER AMP (X13-2170-01)

Ref. No.	Parts No.	Description	Remarks
CAPACITOR			
Cq1,2	CQ93M1H223M	Mylar 0.022μF ±20%	
Cq3,4	CE04W1A470	Electrolytic 47μF 10WV	
RESISTOR			
Rq1	PD14CY2E822J	Carbon 8.2kΩ ±5% 1/4W	
Rq2	PD14BY2E822J	Carbon 8.2kΩ ±5% 1/4W	
Rq3	PD14CY2E122J	Carbon 1.2kΩ ±5% 1/4W	
Rq4	PD14BY2E122J	Carbon 1.2kΩ ±5% 1/4W	
Rq7,8	PD14CY2E561J	Carbon 560Ω ±5% 1/4W	
Rq9,10	PD14CY2E182J	Carbon 1.8kΩ ±5% 1/4W	
SEMICONDUCTOR			
Dq1,2	V11-0332-05	Diode 1N34A	
Dq3,4	V11-0051-05	Diode 1N60IFT	☆
THq1,2	V22-0007-05	Thermister SDT-20	
POTENTIOMETER			
VRq1,2	R12-0026-05	PC trimmer 500Ω (B)	
SWITCH			
S3	S40-2060-05	Pushbutton (meter)	☆
MISCELLANEOUS			
–	J21-1430-04	Unit mounting hardware	● ☆
–	J31-0029-04	Sleeve x 2	

SWITCH (X13-2220-10)

Ref. No.	Parts No.	Description	Remarks
CAPACITOR			
Ch1,2	CQ93M1H332J	Mylar 0.0033μF ±5%	
Ch3,4	CQ93M1H152J	Mylar 0.0015μF ±5%	
Ch5,6	CQ93M1H473J	Mylar 0.047μF ±5%	
Ch7,8	CQ93M1H183J	Mylar 0.018μF ±5%	
Ch9,10	CS15E1V010M	Tantalum 1μF 35WV	
Ch11,12	CE04W1H3R3	Electrolytic 3.3μF 50WV	
Ch13,14	CE04W1V470	Electrolytic 47μF 35WV	
RESISTOR			
Rh1,2	PD14BY2E562J	Carbon 5.6kΩ ±5% 1/4W	
Rh3,4	PD14BY2E105J	Carbon 1MΩ ±5% 1/4W	
Rh5,6	PD14BY2E133J	Carbon 13kΩ ±5% 1/4W	
Rh7,8	PD14BY2E105J	Carbon 1MΩ ±5% 1/4W	
Rh9,10	PD14BY2E823J	Carbon 82kΩ ±5% 1/4W	
Rh11,12	PD14BY2E334J	Carbon 330kΩ ±5% 1/4W	
Rh13,14	PD14BY2E824J	Carbon 820kΩ ±5% 1/4W	
Rh15,16	PD14BY2E222J	Carbon 2.2kΩ ±5% 1/4W	
Rh17,18	RC05GF2H682K	Carbon 6.8kΩ ±10% 1/2W	
Rh19,20	PD14BY2E221J	Carbon 220Ω ±5% 1/4W	
Rh21~28	RC05GF2H225K	Carbon 2.2MΩ ±10% 1/2W	
SEMICONDUCTOR			
Qh1,2	V03-0271-05	Transistor 2SC1345 (E)	
SWITCH			
S6	S32-4006-05	Lever (TURNOVER)	
S7	S32-2012-05	Lever (TURNOVER)	
S8,9	S42-2004-05	Pushbutton (FILTER)	
S10,11	S32-4007-05	Lever (TAPE)	
MISCELLANEOUS			
–	J21-1399-03	PC board mounting hardware	● ☆

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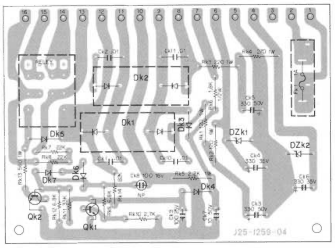
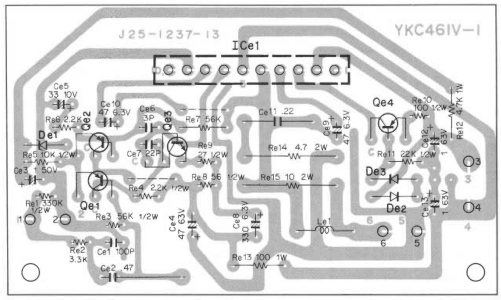
PC BOARD/SEMICONDUCTOR SUBSTITUTIONS

▼ POWER SUPPLY (X00-1650-11)



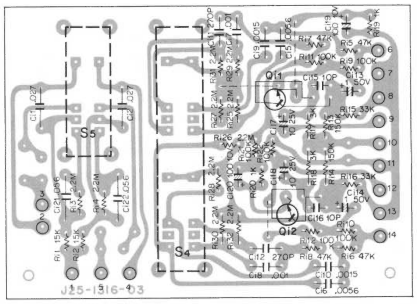
Qk1:2SC1746 (GR), Qk2:2SD415 (Q) or (R), Dk1:SS-5, Dk2:SS-5R, Dk3, 4:W06B, Dk5:V06B, Dk6, 7:1S2076A, DZ1, 2:EQB01-28

▼ POWER AMP (X07-1420-10)



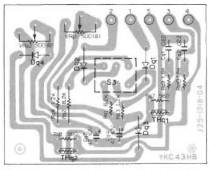
Qe1, 2:2SA750 (1) (E) or (F), Qe3:2SC1628 (O) or (Y), Qe4:2SA818 (O) or (Y), ICe1:TA-100W, De1:YZ-140, De2:1S2076

▼ PRESENCE (X11-1330-10)



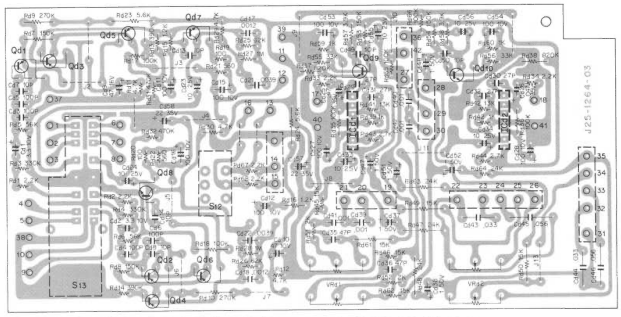
Qi1, 2:2SC1345 (E) or (F)

▼ METER (X13-2170-01)



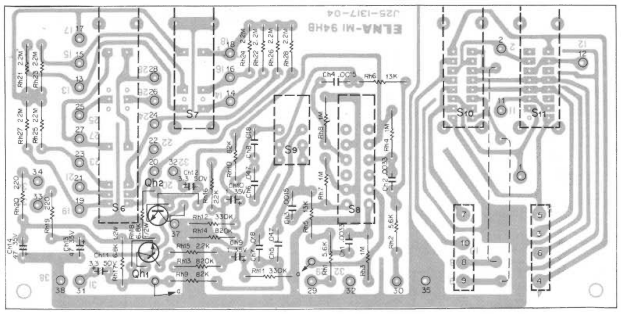
Dq1, 2:1N34A, Dq3, 4:1N60IFT, THq1, 2:SDT-20

▼ PREAMP (X08-1440-10)



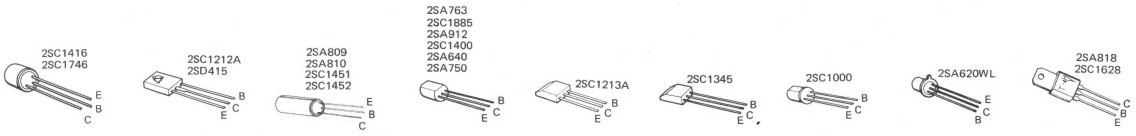
Qd1~4:2SA620WL 4 or 5, Qd5, 6:2SA640 (E) or (F), Qd7, 8:2SC1400 (U) or (E), Qd9, 10:2SC1345 (D) or (E), ICd1, 2:TA7129P

▼ SWITCH (X13-2220-10)



Qh1, 2:2SC1345 (E)

Semiconductor name	Substitutions
POWER SUPPLY (X00-1650-11)	
2SC1746 (GR)	2SC1213A (B) or (C)
2SD415 (Q), (R)	2SC1212A (B) or (C)
POWER AMP (X07-1420-10)	
2SA750 I (E), (F)	2SA620WLH
2SA912 (R), (S)	2SA818 (O), (Y) 2SA809, 2SA819
2SC1885 (R), (S)	2SC1451, 2SC1452, 2SC1628
PREAMP (X08-1440-10)	
2SA620WL (4), (5)	2SA763WL (4) or (5)
2SA640 (E), (F)	2SA620WL (4), (5), 2SA763WL
2SC1435 (D), (E)	2SC1000, 2SC1416
2SC1400 (E), (U)	2SC1345, 2SC1000
TA7129P	–
PRESENCE (X11-1330-10)	
2SC1345 (E), (F)	2SC1000, 2SC1416
SWITCH (X13-2220-10)	
2SC1345 (E)	2SC1000, 2SC1416



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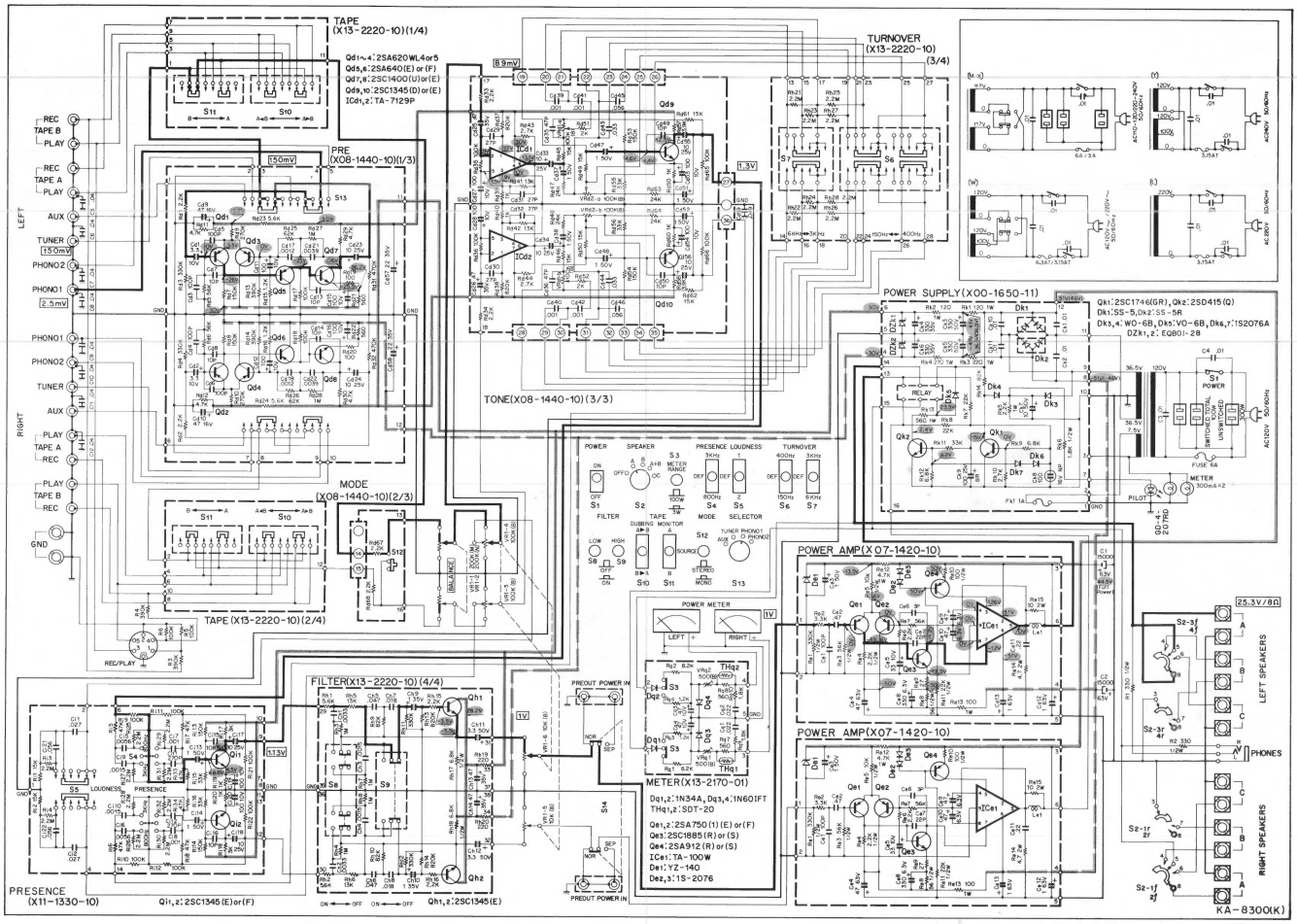
SCHEMATIC DIAGRAM



DC voltage measured with 20 kΩ/V meter.

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SPECIFICATIONS

POWER AMPLIFIER SECTION

80 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	85 + 85 watts 8 ohms at 1,000 Hz
	100 + 100 watts 4 ohms at 1,000 Hz
Dynamic Power Output	380 watts (4 ohms)
Total Harmonic Distortion	0.1% at rated power into 8 ohms
	0.04% at 1 watt power into 8 ohms at 20 Hz ~ 20,000 Hz
Intermodulation Distortion	0.1% at rated power into 8 ohms
(60 Hz : 7 kHz 4 : 1)	0.04% at 1 watt power into 8 ohms
Power Bandwidth	5 Hz to 40,000 Hz
Signal to Noise Ratio (IHF A)	100 dB (short circuited)
Damping Factor	50 at 8 ohms
Input Sensitivity / Impedance	1.0V / 50 kohms
Speaker Impedance	Accept 4 ohms to 16 ohms

PREAMPLIFIER SECTION

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

Phono 1	2.5 mV /	50 kohms /	72 dB	(5 mV)
Phono 2	2.5 mV /	50 kohms /	72 dB	(5 mV)
Tuner	150 mV /	50 kohms /	90 dB	
AUX	150 mV /	50 kohms /	90 dB	
Tape	150 mV /	50 kohms /	90 dB	

Maximum Input Level		
Phono		260 mV (rms) T.H.D. 0.1% at 1,000 Hz
Output Level / Impedance		
Tape REC (Pin)		150 mV
(Din)		30 mV / 80 kohms
Frequency Response		
Phono		RIAA standard curve ±0.3 dB
AUX & Tape		20 Hz to 40,000 Hz +0 dB −0.5 dB
Tone Control		
Bass	**150 Hz**	±5.0 dB at 100 Hz
	400 Hz	±7.5 dB at 100 Hz
Treble	**3 kHz**	±7.5 dB at 10,000 Hz
	6 kHz	±5.0 dB at 10,000 Hz
Loudness Control (−30 dB)	**1**	+7.5 dB at 100 Hz,
	2	+3.5 dB at 100 Hz
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	AC 50/60 Hz 110 ~ 120V, 220 ~ 240V
Power Consumption	550 watts at full power
AC Outlet	Switched 2, Unswitched 1
Dimension	W 16-15/16" (430 mm), H 5-7/8" (149 mm),
	D 14-13/16" (376 mm)
Weight	35.2 lbs. (16 kg)

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