

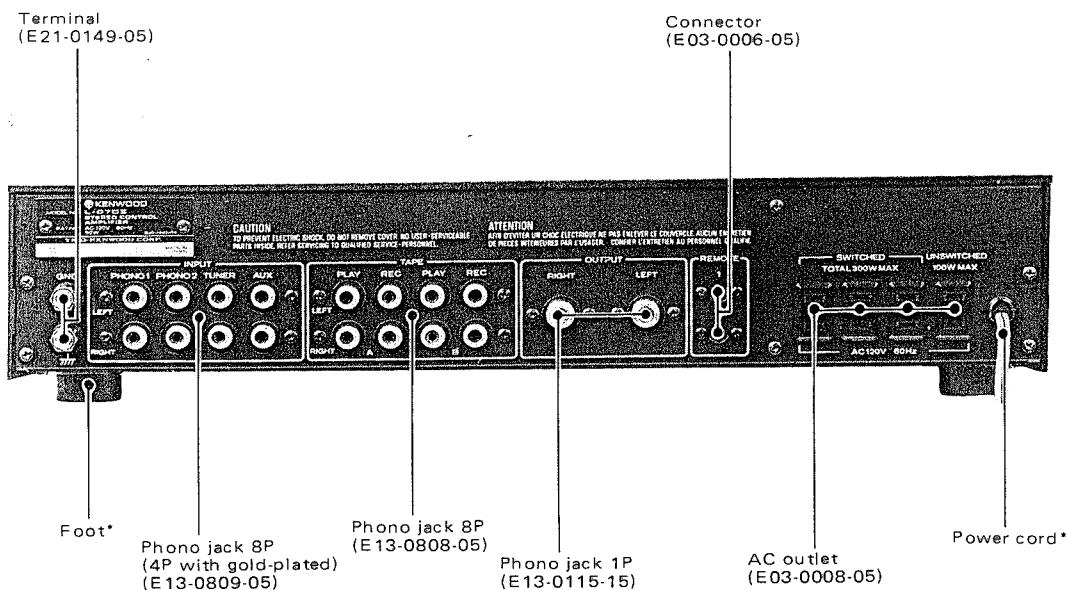
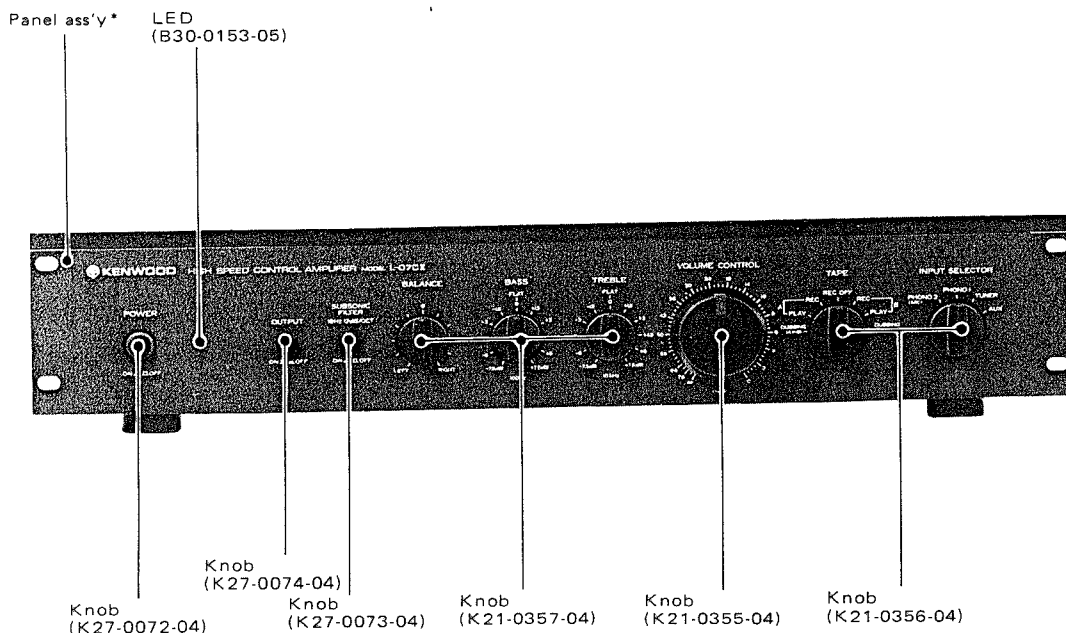
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Note:
 The products are subject to modification in components and circuits in different countries and regions. This is because each product must be used under the best condition. This manual provides information of modification based on the standard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

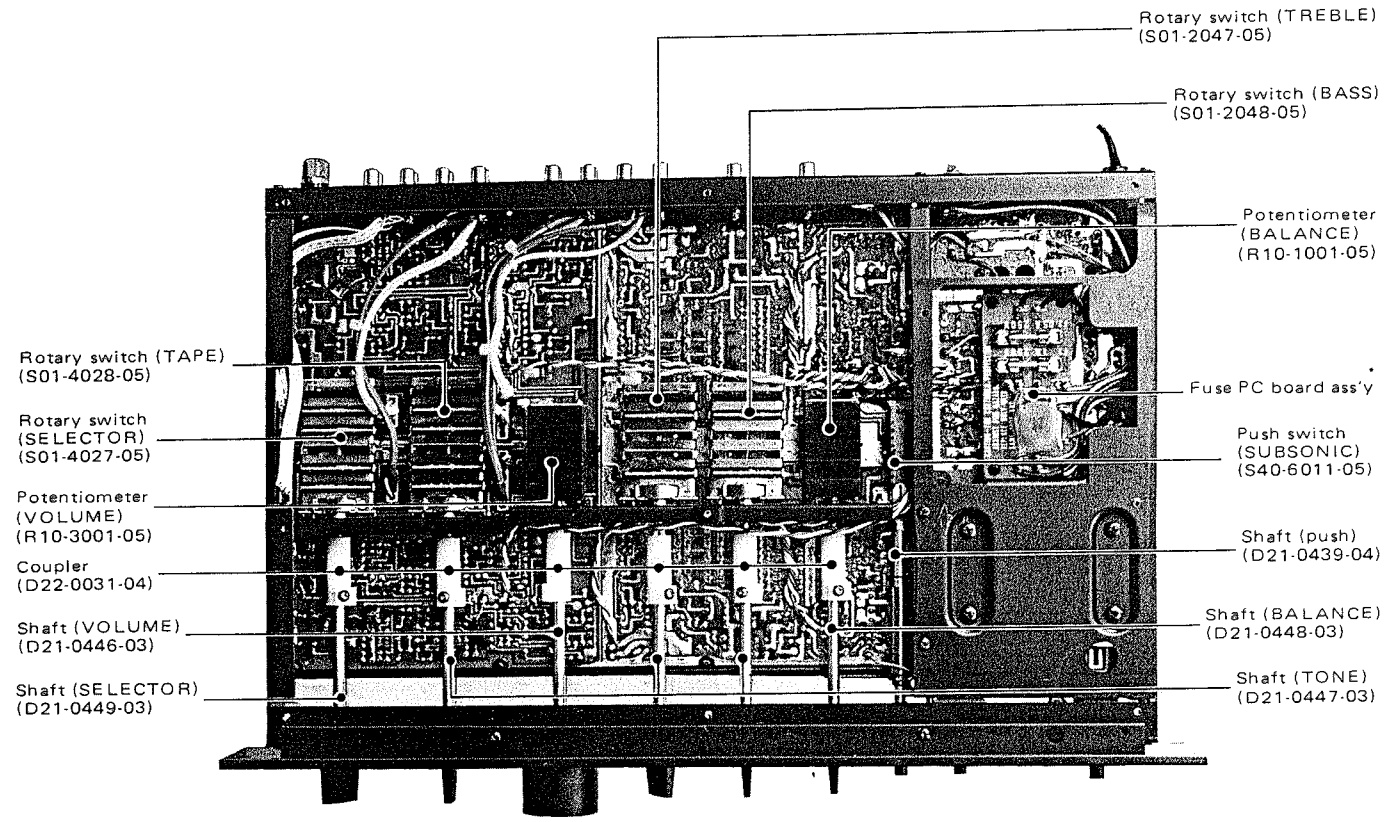
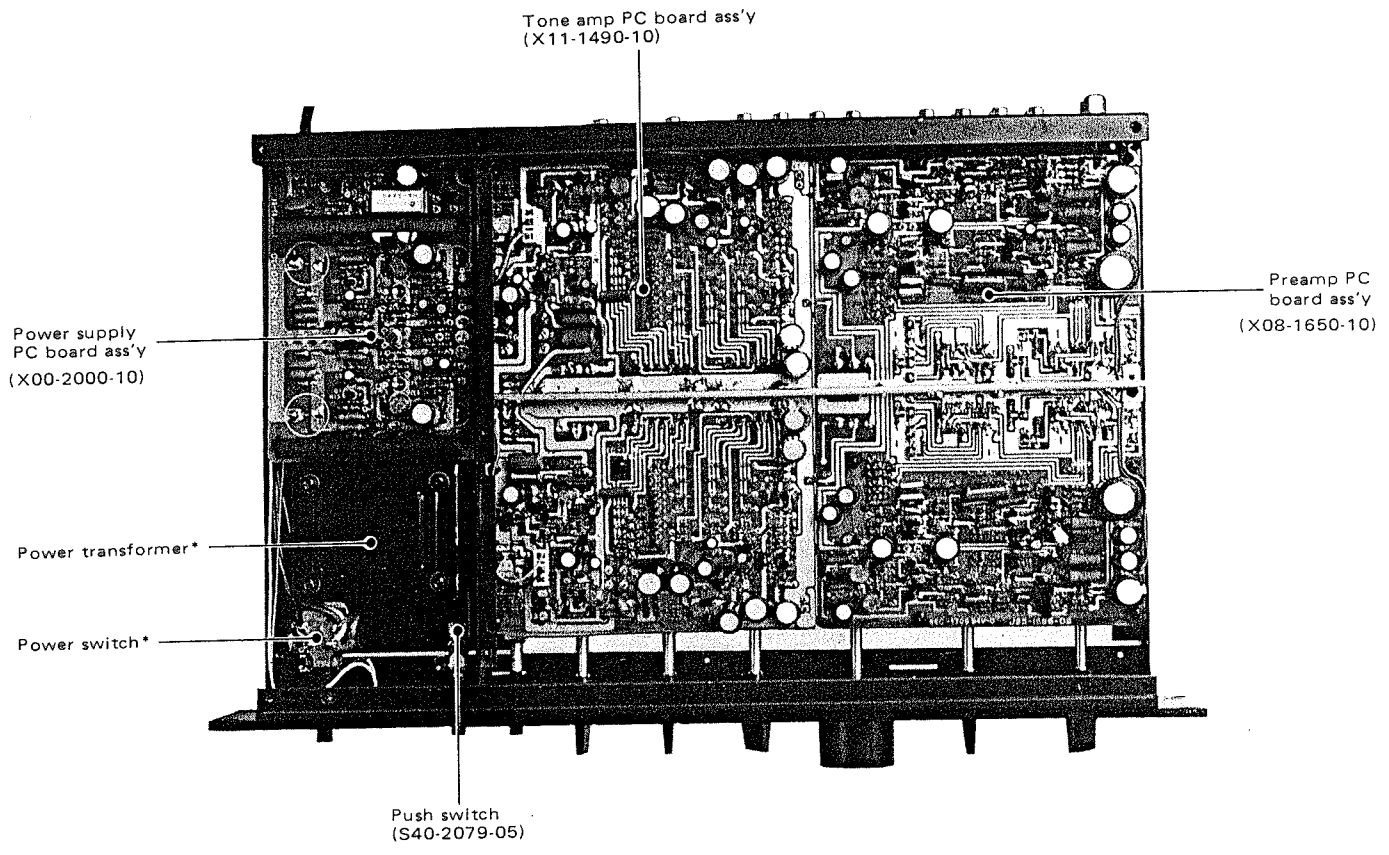
U.S.A.	K
Canada	P
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South Africa	S
Other Areas	M

EXTERNAL VIEW



* Refer to Destinations' Parts List.

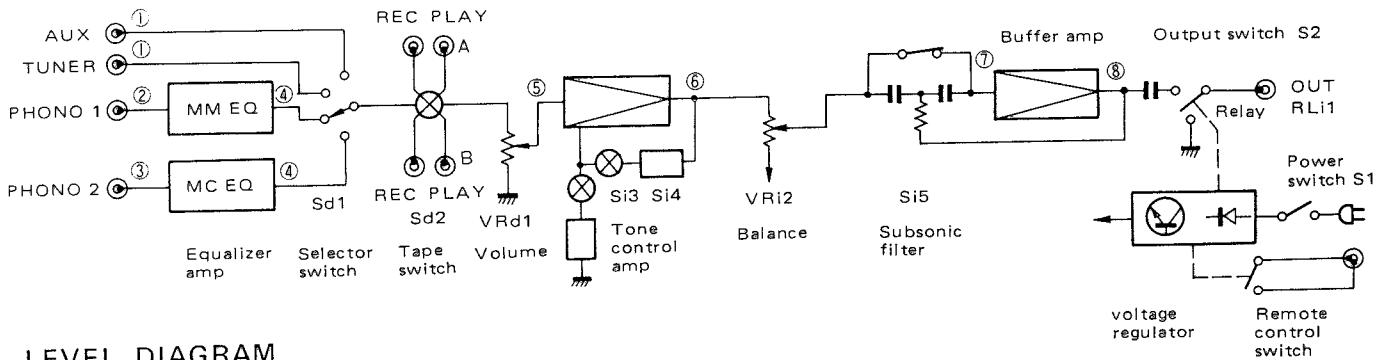
INTERNAL VIEW



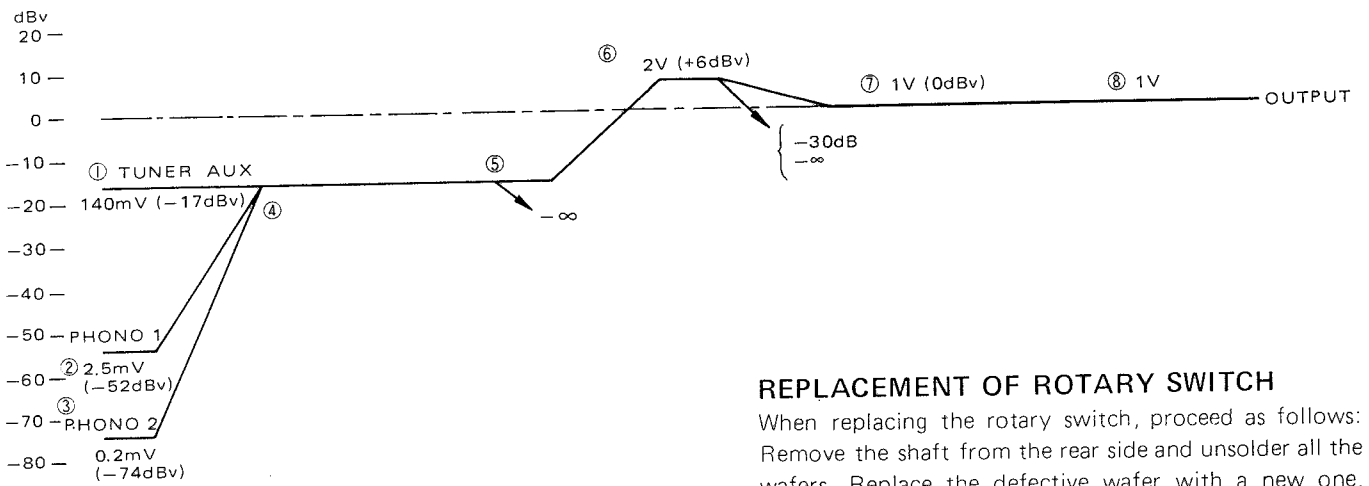
* Refer to Destinations' parts list.

BLOCK DIAGRAM/LEVEL DIAGRAM/TROUBLESHOOTING

BLOCK DIAGRAM



LEVEL DIAGRAM



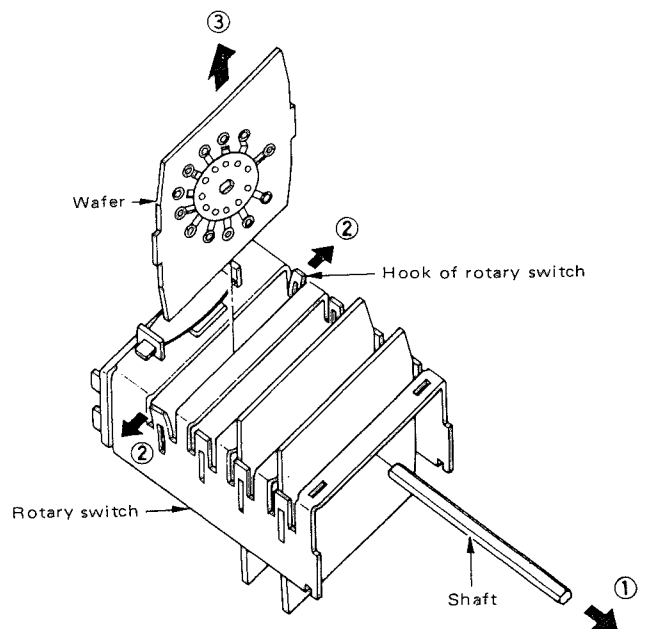
TROUBLESHOOTING

Check the circuit operation as follows.

- ① Check the offset voltage (0V: normal) of each amplifier.
- ② Check the bias current of the final stage. (Refer to the schematic diagram)
- ③ Check the DC voltages of each amplifier.
Note.) Handle the capacitors of the NFB circuit carefully to avoid damage by heat.

REPLACEMENT OF ROTARY SWITCH

When replacing the rotary switch, proceed as follows: Remove the shaft from the rear side and unsolder all the wafers. Replace the defective wafer with a new one. The rotary switch cannot be replaced as a unit.



1. Pull out the rotary switch shaft. ①
2. Loosen the hook fixing the wafer. ②
3. Pull out the defective wafer and replace with a new one. ③

PARTS LIST

☆ : New parts

TOTAL

Ref. No.	Parts No.	Description	Re- marks
—	A01-0343-03	Case	☆
—	B27-0241-04	Ring (power switch, panel ass'y)	
—	B27-0242-04	Ring x2 (panel ass'y)	
—	B30-0153-05	LED	
—	D21-0439-04	Shaft (push)	☆
—	D21-0446-03	Shaft (VOLUME)	☆
—	D21-0447-03	Shaft (TONE)	☆
—	D21-0448-03	Shaft (BALANCE)	☆
—	D21-0449-03	Shaft (SELECTOR)	☆
—	D22-0031-04	Coupler x6	
—	E03-0006-05	Connector x2	
—	E13-0115-15	Phono jack 1P x2	
—	E13-0808-05	Phono jack 8P	
—	E13-0809-05	Phono jack 8P (4P with gold-plated)	
—	E14-0001-05	Phono plug for audio cord	
—	E14-0107-05	Closed-circuit phono plug	
—	E21-0149-05	Terminal x2	
—	G01-0362-04	Spring x3	
—	H12-0057-13	Buffer fixture	☆
—	H12-0053-13	Buffer fixture	☆
—	H12-0062-04	Buffer fixture	☆
—	H25-0029-04	Polyethylene bag (60x110)	
—	H25-0078-04	Instruction bag	
—	H25-0097-04	Polyethylene bag	
—	K21-0355-04	Knob (VOLUME)	☆
—	K21-0356-04	Knob (TAPE, INPUT SELECTOR)x2	☆
—	K21-0357-04	Knob (BALANCE, BASS, TREBLE)x3	☆
—	K27-0072-04	Knob (POWER)	
—	K27-0073-04	Knob (SUBSONIC FILTER)	
—	K27-0074-04	Knob (OUTPUT)	☆
—	N09-0299-05	Flat head screw with hex. hole (M4x15) x4	☆
VRd1	R10-3001-05	Potentiometer (VOLUME, 25kΩ)	☆
VRi2	R10-1001-05	Potentiometer (BALANCE, 2kΩ)	☆
S2	S40-2079-05	Push switch (OUTPUT)	☆
Sd1	S01-4027-05	Rotary switch (SELECTOR)	☆
Sd2	S01-4028-05	Rotary switch (TAPE)	☆
Si3	S01-2047-05	Rotary switch (TREBLE)	☆
Si4	S01-2048-05	Rotary switch (BASS)	☆
Si5	S40-6011-05	Push switch (SUBSONIC)	
—	W01-0077-15	Hex. wrench 1.5φ	
—	W01-0084-05	Hex. wrench 2.5φ	
—	X00-2000-10	Power supply PC board ass'y	☆
—	X08-1650-10	Preamp PC board ass'y	☆
—	X11-1490-10	Tone amp PC board ass'y	☆
—	050-1012-05	Audio cord	☆

POWER SUPPLY (X00-2000-10)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ck1~4	C91-0039-05	Ceramic 0.1μF 250WV	
Ck5, 6	C90-0372-05	Electrolytic 800μF 80WV	☆
Ck7, 8	CE04W1C470EL	Electrolytic 47μF 16WV	
Ck9, 10	CE04W1J3R3MR	Electrolytic 3.3μF 63WV	
Ck11, 12	C91-0039-05	Electrolytic 0.1μF 250WV	

Ref. No.	Parts No.	Description	Re- marks
Ck13, 14	CE04W1A220MR	Electrolytic 22μF 10WV	
Ck15, 16	CE04W1H470MR	Electrolytic 47μF 50WV	
Ck17, 18	CE04W1H101MR	Electrolytic 100μF 50WV	
Ck19	CK45E2H103P	Ceramic 0.01μF +100%, -0%	
Ck20	CE04W1E220EL	Electrolytic 22μF 25WV	
Ck21	CE04AW1E470MEL	Electrolytic 47μF 25WV	
Ck22, 23	C91-0062-05	Polystyrene 100pF ±5%	
RESISTOR			
Rk1, 2	RD14GY2E102JMA	Carbon 1kΩ ±5% ¼W	
Rk3, 4	RS14GB3A332JMA	Flame-proof RS 3.3kΩ ±5% 1W	
Rk5, 6	RS14GB3A682JMA	Flame-proof RS 6.8kΩ ±5% 1W	
Rk7, 8	RD14GY2E561JMA	Carbon 560Ω ±5% ¼W	
Rk9, 10	RN14BK2E560JHO	Metal film 56Ω ±5% ¼W	
Rk11, 12	RN14BK2E683JHO	Metal film 68kΩ ±5% ¼W	
Rk13, 14	RN14BK2E821JHO	Metal film 820Ω ±5% ¼W	
Rk15, 16	RS14GB3A1R0JMA	Flame-proof RS 1.0Ω ±5% 1W	
Rk17, 18	RN14BK2E332JHO	Metal film 3.3kΩ ±5% ¼W	
Rk19, 20	RN14BK2E182JHO	Metal film 1.8kΩ ±5% ¼W	
Rk21, 22	RN14BK2E473JHO	Metal film 47kΩ ±5% ¼W	
Rk23, 24	RN14BK2E512JHO	Metal film 5.1kΩ ±5% ¼W	
Rk25	RS14GB3A152JMA	Flame-proof RS 1.5kΩ ±5% 1W	
Rk26	RD14BY2E152JKW	Carbon 1.5kΩ ±5% ¼W	
Rk27	RD14BY2E131JKW	Carbon 130Ω ±5% ¼W	
Rk28	RD14BY2E562JKW	Carbon 5.6kΩ ±5% ¼W	
Rk29	RD14BY2E101JKW	Carbon 100Ω ±5% ¼W	
Rk30	RD14BY2E274JKW	Carbon 270kΩ ±5% ¼W	
Rk31	RD14BY2E224JKW	Carbon 220kΩ ±5% ¼W	
Rk32	RD14BY2E273JKW	Carbon 27kΩ ±5% ¼W	
Rk33~36	RD14BY2E560JKW	Carbon 56Ω ±5% ¼W	
Rk37	RD14BY2E103JKW	Carbon 10kΩ ±5% ¼W	
Rk39	RS14GB3D222JMA	Flame-proof RS 2.2kΩ ±5% 2W	
Rk40	RS14GB3A470JMA	Flame-proof RS 47Ω ±5% 1W	
SEMICONDUCTOR			
Qk1	V03-0499-05	Transistor 2SC1904 (G), (B)	
Qk2	V01-0214-05	Transistor 2SA899 (G), (B)	
Qk3	V03-0499-05	Transistor 2SC1904 (G), (B)	
Qk4	V01-0214-05	Transistor 2SA899 (G), (B)	
Qk5	V04-0078-05	Transistor 2SD525	
Qk6	V02-0059-05	Transistor 2SB595	
Qk7	V03-1775-00	Transistor 2SC1775	
Qk8	V01-0198-05	Transistor 2SA872	
Qk9, 10	V01-0073-05	Transistor 2SA673A (B), (C)	
Qk11	V01-0198-05	Transistor 2SA872	
Qk12	V01-0173-05	Transistor 2SA850	
ICk1	V30-0088-05	IC RC4558 T	
Dk1~4	V11-0200-05	Diode V06C	
Dk5, 6	V11-0254-05	Zener diode YZ-140	
Dk9, 10	V11-0394-05	Zener diode WZ-050	
Dk11~14	V11-0271-05	Diode 1S2076	
Dk15	V11-0200-05	Diode V06C	
Dk16	V11-4102-20	Zener diode WZ-230	
Dk17, 18	V11-0271-05	Diode 1S2076	
MISCELLANEOUS			
VRk1, 2	R12-1029-05	PC trimming potentiometer 1kΩ Voltage adjust	
RLk1	S51-1022-05	Relay (HA124S, 24V)	
RLk2	S51-1021-05	Relay (G2E, 24V)	

PARTS LIST

PREAMP (X08-1650-10)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Cd1, 2	C91-0049-05	Polystyrene 7pF ±10%	
Cd3, 4	CQ09S1H102JYO	Polystyrene 1000pF ±5%	☆
Cd7, 8	CE04W1V470MR	Electrolytic 47μF 35WV	
Cd9, 10	C90-0374-05	Electrolytic 2200μF 6.3WV	☆
Cd13, 14	CQ09S1H151JYO	Polystyrene 150pF ±5%	☆
Cd15, 16	CQ93AP2A162G	Mylar 0.0016μF ±2%	
Cd17, 18	CQ93AP2A103G	Mylar 0.01μF ±2%	
Cd19, 20	CQ93AP2A272G	Mylar 0.0027μF ±2%	
Cd21, 22	CQ93AP2A393G	Mylar 0.039μF ±2%	
Cd23, 24	C91-0051-05	Polyethylene 12pF ±10%	
Cd25, 26	CE04W1A101MR	Electrolytic 100μF 10WV	
Cd27~30	CQ09S1H103JYO	Polystyrene 0.01μF ±5%	
Cd31, 32	CE04BW1H150MMR	Electrolytic 15μF 50WV	☆
Cd35~38	CE04W1H101MR	Electrolytic 100μF 50WV	
Cd39, 40	CE04W1V4R7MR	Electrolytic 4.7μF 35WV	
Cd41, 42	C91-0062-05	Polystyrene 100pF ±10%	
Cd43, 44	C91-0056-05	Polystyrene 33pF ±10%	
Cd53, 54	CQ09S1H152JYO	Polystyrene 1500pF ±5%	
Cd55, 56	CE04W1V4R7MR	Electrolytic 4.7μF 35WV	☆
Cd57, 58	C90-0375-05	Electrolytic 2200μF 10WV	
Cd59, 60	CE04W1H470MR	Electrolytic 47μF 50WV	☆
Cd61, 62	C91-0062-05	Polystyrene 100pF ±10%	
Cd63, 64	CE04W1A100MR	Electrolytic 10μF 10WV	
Cd71, 72	CQ93AP2A622G	Mylar 0.0062μF ±2%	
Cd73, 74	CQ93AP2A683G	Mylar 0.068μF ±2%	
Cd75, 76	CQ93AP2A203G	Mylar 0.02μF ±2%	
Cd77, 78	CQ93AP2A244G	Mylar 0.24μF ±2%	
Cd79, 80	CE04BW1H150MMR	Electrolytic 15μF 50WV	
Cd81, 82	C91-0062-05	Polystyrene 100pF ±10%	

Ref. No.	Parts No.	Description	Re- marks
RESISTOR			
Rd1, 2	RN14BK2E100JHO	Metal film 10Ω ±5% ¼W	
Rd3, 4	RN14BK2E621JHO	Metal film 620Ω ±5% ¼W	
Rd5~8	RN14BK2E390JHO	Metal film 39Ω ±5% ¼W	
Rd9, 10	RN14BK2E271JHO	Metal film 270Ω ±5% ¼W	
Rd11, 12	RN14BK2E562JHO	Metal film 5.6kΩ ±5% ¼W	
Rd13, 14	RN14BK2E622JHO	Metal film 6.2kΩ ±5% ¼W	
Rd15, 16	RS14GB3D112JMA	Flame-proof RS 1.1kΩ ±5% 2W	
Rd17, 18	RS14GB3D471JMA	Flame-proof RS 470Ω ±5% 2W	
Rd19, 20	RN14BK2E11R8FHO	Metal film 11.8Ω ±1% ¼W	
Rd21, 22	RD14BY2E105JKW	Carbon 1MΩ ±5% ¼W	
Rd25, 26	RN14BK2E271JHO	Metal film 270Ω ±5% ¼W	
Rd27, 28	RN14BK2E102JHO	Metal film 1kΩ ±5% ¼W	
Rd29, 30	RN14BK2E683JHO	Metal film 68kΩ ±5% ¼W	
Rd31, 32	RN14BK2E362JHO	Metal film 3.6kΩ ±5% ¼W	
Rd33, 34	RN14BK2E6491FHO	Metal film 6.49kΩ ±1% ¼W	
Rd35, 36	RN14BK2E7682FHO	Metal film 76.8kΩ ±1% ¼W	
Rd37, 38	RN14BK2E473JHO	Metal film 47kΩ ±5% ¼W	
Rd39, 40	RN14BK2E271JHO	Metal film 270Ω ±5% ¼W	
Rd41, 42	RN14BK2E152JHO	Metal film 1.5kΩ ±5% ¼W	
Rd43~46	RS14GB3A121JMA	Flame-proof RS 120Ω ±5% ¼W	
Rd47~50	RN14BK2E220JHO	Metal film 22Ω ±5% ¼W	
Rd51, 52	RN14BK2E563JHO	Metal film 56kΩ ±5% ¼W	
Rd53, 54	RN14BK2E101JHO	Metal film 100Ω ±5% ¼W	
Rd55, 56	RN14BK2E273JHO	Metal film 27kΩ ±5% ¼W	
Rd57, 58	RN14BK2E151JHO	Metal film 150Ω ±5% ¼W	
Rd59, 60	RN14BK2E621JHO	Metal film 620Ω ±5% ¼W	
Rd61, 62	RN14BK2E100JHO	Metal film 10Ω ±5% ¼W	
Rd63, 64	RN14BK2E563JHO	Metal film 56kΩ ±5% ¼W	
Rd65~68	RN14BK2E820JHO	Metal film 82Ω ±5% ¼W	
Rd69, 70	RN14BK2E123JHO	Metal film 12kΩ ±5% ¼W	
Rd71, 72	RN14BK2E390JHO	Metal film 39Ω ±5% ¼W	
Rd73, 74	RN14BK2E333JHO	Metal film 33kΩ ±5% ¼W	
Rd75, 76	RN14BK2E203JHO	Metal film 20kΩ ±5% ¼W	
Rd77, 78	RS14GB3D202JMA	Flame-proof RS 2kΩ ±5% 2W	
Rd79, 80	RS14GB3A821JMA	Flame-proof RS 820Ω ±5% 1W	
Rd81, 82	RN14BK2E23R7FHO	Metal film 23.7Ω ±1% ¼W	
Rd83, 84	RD14BY2E105JKW	Carbon 1MΩ ±5% ¼W	
Rd85~88	RN14BK2E202JHO	Metal film 2kΩ ±5% ¼W	
Rd89, 90	RN14BK2E223JHO	Metal film 22kΩ ±5% ¼W	

Ref. No.	Parts No.	Description	Re- marks
Rd91, 92	RN14BK2E681JHO	Metal film 680Ω ±5% ¼W	
Rd93, 94	RN14BK2E361JHO	Metal film 360Ω ±5% ¼W	
Rd95, 96	RN14BK2E181JHO	Metal film 180Ω ±5% ¼W	
Rd97, 98	RN14BK2E1021FHO	Metal film 1.02kΩ ±5% ¼W	
Rd99, 100	RN14BK2E1242FHO	Metal film 12.4kΩ ±1% ¼W	
Rd101 104	RS14GB3A390JMA	Flame-proof RS 39Ω ±5% 1W	
Rd105~108	RN14BK2E220JHO	Metal film 22Ω ±5% ¼W	
Rd109, 110	RN14BK2E563JHO	Metal film 56kΩ ±5% ¼W	
Rd111, 112	RN14BK2E101JHO	Metal film 100Ω ±5% ¼W	
Rd121~124	RN14BK2E472JHO	Metal film 4.7kΩ ±5% ¼W	
Rd125~130	RD14BY2E105JKW	Carbon 1MΩ ±5% ¼W	

Ref. No.	Parts No.	Description	Re- marks
SEMICONDUCTOR			
Qd1~4	V09-0134-40	FET 2SK147(V)	☆
Qd5~8	V09-0134-30	FET 2SK147(BL)	☆
Qd9~12	V03-0460-05	Transistor 2SC1904(B), (V)	
Qd13~16	V01-0198-05	Transistor 2SA872	
Qd17~20	V01-0200-05	Transistor 2SA872A(D), (E)	
Qd21, 22	V01-0198-05	Transistor 2SA872	
Qd23, 24	V01-0200-05	Transistor 2SA872A(D), (E)	
Qd25, 26	V03-1775-30	Transistor 2SC1775A	
Qd27, 28	V03-0460-05	Transistor 2SC1904(B), (V)	
Qd29, 30	V01-0199-05	Transistor 2SA899(B), (V)	
Qd31, 32	V09-0134-40	FET 2SK147(V)	☆
Qd33, 34	V09-0134-30	FET 2SK147(BL)	☆
Qd35~38	V09-0134-40	FET 2SK147(V)	☆
Qd39~40	V01-0198-05	Transistor 2SA872	
Qd45~48	V01-0199-05	Transistor 2SA899(B), (V)	
Qd49, 50	V03-0460-05	Transistor 2SC1904(B), (V)	
Qd51, 52	V03-0468-05	Transistor 2SC1913(Q), (R)	
Qd53, 54	V01-0188-05	Transistor 2SA913(Q), (R)	
Dd1~4, 7, 8	V11-0271-05	Diode 1S2076	
Dd9, 10	V11-2200-10	Varistor SV-22	
Dd11, 12	V11-0394-05	Zener diode WZ-050	
Dd13, 14	V11-2200-10	Varistor SV-22	
Dd15, 16	V11-0271-05	Diode 1S2076	
Dd17, 18, 21, 22	V11-4102-60	Zener diode WZ-330	
Dd19, 20, 23, 24	V11-4013-40	Zener diode BZ-300	☆

TONE AMP (X11-1490-10)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ci1, 2	C01-0058-05	Polystyrene 47pF ±10%	
Ci3, 4	CE04W1H010MR	Electrolytic 1μF 50WV	
Ci5, 6	CE04W1H4R7MR	Electrolytic 4.7μF 50WV	
Ci7, 8	C90-0050-05	Polystyrene 10pF ±10%	
Ci9, 10	CE04W1A470MR	Electrolytic 47μF 10WV	
Ci11, 12	C91-0052-05	Polystyrene 15pF ±10%	
Ci13~16	CE04BW1H470MMR	Electrolytic 47μF 50WV	
Ci17, 18	CE04W1H470MR	Electrolytic 47μF 50WV	
Ci19~22	CE04W1H101MR	Electrolytic 100μF 50WV	
Ci23, 24	CS15E1VR33K	Tantalum 0.33μF 35WV	
Ci25, 26	CS15E1VR68K	Tantalum 0.68μF 35WV	
Ci27, 28	CS15E0J330K	Tantalum 33μF 6.3WV	
Ci29, 30	CS15E0J100K	Tantalum 10μF 6.3WV	
Ci31, 32	CS15E1VR15K	Tantalum 0.15μF 35WV	
Ci33~36	CS15E1C2R2K	Tantalum 2.2μF 16WV	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
Ci37,38	CS15E1E010K	Tantalum 1μF 25WV	
Ci39,40	CS15E1VR33K	Tantalum 0.33μF 35WV	
Ci41,42	CS15E0J4R7K	Tantalum 4.7μF 6.3WV	
Ci43,44	CS15E1VR47K	Tantalum 0.47μF 35WV	
Ci45,46	CQ93AP2A563J	Mylar 0.056μF ±5%	
Ci47,48	CS15E1VR33K	Tantalum 0.33μF 35WV	
Ci49,50	CS15E1C2R2K	Tantalum 2.2μF 16WV	
Ci51,52	CS15E1VR68K	Tantalum 0.68μF 35WV	
Ci53,54	CS15E1VR33K	Tantalum 0.33μF 35WV	
Ci55,56	CS15E1VR15K	Tantalum 0.15μF 35WV	
Ci57,58	CQ93AP2A683J	Mylar 0.068μF 100WV	
Ci59~62	C90-0377-05	Electrolytic 2200μF 6.3WV	*
Ci63,64	CQ93AP2A224J	Mylar 0.22μF ±5%	
Ci65,66	CQ93AP2A562J	Mylar 0.0056μF ±5%	
Ci67,68	CQ93AP2A823J	Mylar 0.082μF ±5%	
Ci69,70	CE041H010MR	Electrolytic 1μF 50WV	
Ci71,72	CQ09S1H102JYO	Polystyrene 0.001μF ±5%	
Ci73,74	CE04W1H010MR	Electrolytic 1μF 50WV	
Ci75,76	C91-0053-05	Polystyrene 18pF ±10%	
Ci77,78	C91-0058-05	Polystyrene 47pF ±10%	
Ci79,80	CE04BW1H150MMR	Electrolytic 15μF 50WV	
Ci81,82	CE04W1A470MR	Electrolytic 47μF 10WV	
Ci83~86	CQ09S1H103JYO	Polystyrene 0.01μF 50WV	
Ci87~90	CE04W1H4R7MR	Electrolytic 4.7μF 50WV	
Ci91,92	CE04W1H010EL	Electrolytic 1μF 50WV	
RESISTOR			
Ri1, 2	RN14BK2E100JHO	Metal film 10Ω ±5% ¼W	
Ri3~6	RD14BY2E105JKW	Carbon 1MΩ ±5% ¼W	
Ri7~10	RN14BK2E101JHO	Metal film 100Ω ±5% ¼W	
Ri11,12	RN14BK2E103JHO	Metal film 10kΩ ±5% ¼W	
Ri13, 14	RN14BK2E274JHO	Metal film 270kΩ ±5% ¼W	
Ri15,16	RN14BK2E104JHO	Metal film 100kΩ ±5% ¼W	
Ri17,18	RN14BK2E103JHO	Metal film 10kΩ ±5% ¼W	
Ri19,20	RN14BK2E202JHO	Metal film 2kΩ ±5% ¼W	
Ri21,22	RN14BK2E820JHO	Metal film 82Ω ±5% ¼W	
Ri23,24	RN14BK2E823JHO	Metal film 82kΩ ±5% ¼W	
Ri25,26	RN14BK2E511JHO	Metal film 510Ω ±5% ¼W	
Ri27,28	RN14BK2E681JHO	Metal film 680Ω ±5% ¼W	
Ri29,30	RN14BK2E910JHO	Metal film 91Ω ±5% ¼W	
Ri31,32	RD14BY2E434JKW	Carbon 430kΩ ±5% ¼W	
Ri33,34	RN14BK2E561JHO	Metal film 560Ω ±5% ¼W	
Ri35~38	RN14BK2E220JHO	Metal film 22Ω ±5% ¼W	
Ri39,40	RN14BK2E202JHO	Metal film 2kΩ ±5% ¼W	
Ri41,42	RN14BK2E1002FHO	Metal film 10kΩ ±1% ¼W	
Ri43,44	RN14BK2E24R9FHO	Metal film 24.9Ω ±1% ¼W	
Ri45,46	RN14BK2E13R0FHO	Metal film 13.0Ω ±1% ¼W	
Ri47,48	RN14BK2E10R7FHO	Metal film 10.7Ω ±1% ¼W	
Ri49~52	RN14BK2E100JHO	Metal film 10Ω ±5% ¼W	
Ri53,54	RN14K2E28R7FHO	Metal film 28.9Ω ±1% ¼W	
Ri55,56	RN14BK2E33R2FHO	Metal film 33.2Ω ±1% ¼W	
Ri57,58	RN14BK2E76R8FHO	Metal film 76.8Ω ±1% ¼W	
Ri59,60	RN14BK2E1620FHO	Metal film 162Ω ±1% ¼W	
Ri61,62	RN14BK2E4120FHO	Metal film 412Ω ±1% ¼W	
Ri63,64	RN14BK2E1960FHO	Metal film 196Ω ±1% ¼W	
Ri65,66	RN14BK2E2211FHO	Metal film 2.21kΩ ±1% ¼W	
Ri67,68	RN14BK2E4020FHO	Metal film 402Ω ±1% ¼W	
Ri69,70	RN14BK2E9530FHO	Metal film 953Ω ±1% ¼W	
Ri71,72	RN14K2E2051FHO	Metal film 2.05kΩ ±1% ¼W	
Ri73,74	RN14BK2E6341FHO	Metal film 6.34kΩ ±1% ¼W	
Ri75,76	RN14BK2E3240FHO	Metal film 324Ω ±1% ¼W	
Ri77,78	RN14BK2E1740FHO	Metal film 174Ω ±1% ¼W	
Ri79,80	RN14BK2E1470FHO	Metal film 147Ω ±1% ¼W	
Ri81,82	RN14BK2E1210FHO	Metal film 121Ω ±1% ¼W	
Ri83,84	RN14BK2E1100FHO	Metal film 110Ω ±1% ¼W	
Ri85,86	RN14BK2E3650FHO	Metal film 365Ω ±1% ¼W	
Ri87,88	RN14BK2E102JHO	Metal film 1kΩ ±5% ¼W	
Ri89,90	RN14BK2E100JHO	Metal film 10Ω ±5% ¼W	
Ri91,92	RN14BK2E393JHO	Metal film 39kΩ ±5% ¼W	
Ri93,94	RN14BK2E104JHO	Metal film 100kΩ ±5% ¼W	

Ref. No.	Parts No.	Description	Re- marks
Ri95~98	RN14BK2E561JHO	Metal film 560Ω ±5% ¼W	
Ri99,100	RN14BK2E103JHO	Metal film 10kΩ ±5% ¼W	
Ri101, 102	RN14BK2E274JHO	Metal film 270kΩ ±5% ¼W	
Ri103, 104	RN14BK2E244JHO	Metal film 240kΩ ±5% ¼W	
Ri105, 106	RN14BK2E161JHO	Metal film 160Ω ±5% ¼W	
Ri107, 108	RN14BK2E183JHO	Metal film 18kΩ ±5% ¼W	
Ri109, 110	RN14BK2E823JHO	Metal film 82kΩ ±5% ¼W	
Ri111, 112	RN14BK2E222JHO	Metal film 2.2kΩ ±5% ¼W	
Ri113, 114	RN14BK2E910JHO	Metal film 91Ω ±5% ¼W	
Ri115, 116	RN14BK2E181JHO	Metal film 180Ω ±5% ¼W	
Ri117 118	RN14BK2E562JHO	Metal film 5.6kΩ ±5% ¼W	
Ri119~122	RN14BK2E220JHO	Metal film 22Ω ±5% ¼W	
Ri123~126	RS14GB3A152JMA	Flame-proof RS 1.5kΩ ±5% 1W	
Ri127~128	RN14BK2E273JHO	Metal film 27kΩ ±5% ¼W	
Ri129, 130	RN14BK2E563JHO	Metal film 56kΩ ±5% ¼W	
Ri131, 132	RN14BK2E750JHO	Metal film 75Ω ±5% ¼W	
Ri133, 134	RN14BK2E330JHO	Metal film 33Ω ±5% ¼W	
Ri135, 136	RN14BK2E101JHO	Metal film 100Ω ±5% ¼W	

SEMICONDUCTOR

Qi1, 2	V09-0097-05	FET	2SK68A(N)
Qi3, 4	V09-009605	FET	2SK68A(M)
Qi5~8	V03-1775-00	Transistor	2SC1775
Qi9~12	V01-0198-05	Transistor	2SA872
Qi13,14	V01-0218-05	Transistor	2SA915(L), (K)
Qi15,16	V03-0506-05	Transistor	2SC1940(L), (K)
Qi17,18	V03-0460-05	Transistor	2SC1904(B), (V)
Qi19,20	V01-0199-05	Transistor	2SA899(B)(V)
Qi21~26	V03-1775-00	Transistor	2SC1775
Qi27,28	V01-0200-05	Transistor	2SA872A(D)(E)
Qi29~32	V03-1775-30	Transistor	2SC1775A
Qi33,34	V01-0200-05	Transistor	2SA872A(D), (E)
ICi1, 2	V09-0133-20	IC	μPA63H(M)
Di1~4	V11-0271-05	Diode	1S2076
Di5~10	V11-2200-10	Varistor	SV-22
Di11,12	V11-4100-20	Zener diode	WZ-300
Di13,14	V11-2200-10	Varistor	SV-22
Di15,16	V11-0271-05	Diode	1S2076

MISCELLANEOUS

RLi1, 2	S51-1021-05	Relay G2E(24V)	
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FUSE (X13-2470-11, -21, -51, -61)

Ref. No.	Parts No.	Description	Re- marks
Fh1	F05-1021-05	Fuse (1A), -11	
	F05-1023-05	Fuse (1A), -12	
	F06-1022-05	Fuse (1AT), -61	
Fh2	F05-3112-05	Fuse (315mA), -51, -61	
	F05-5013-05	Fuse (0.5A) -21	
-	J13-0055-05	Fuse clip	

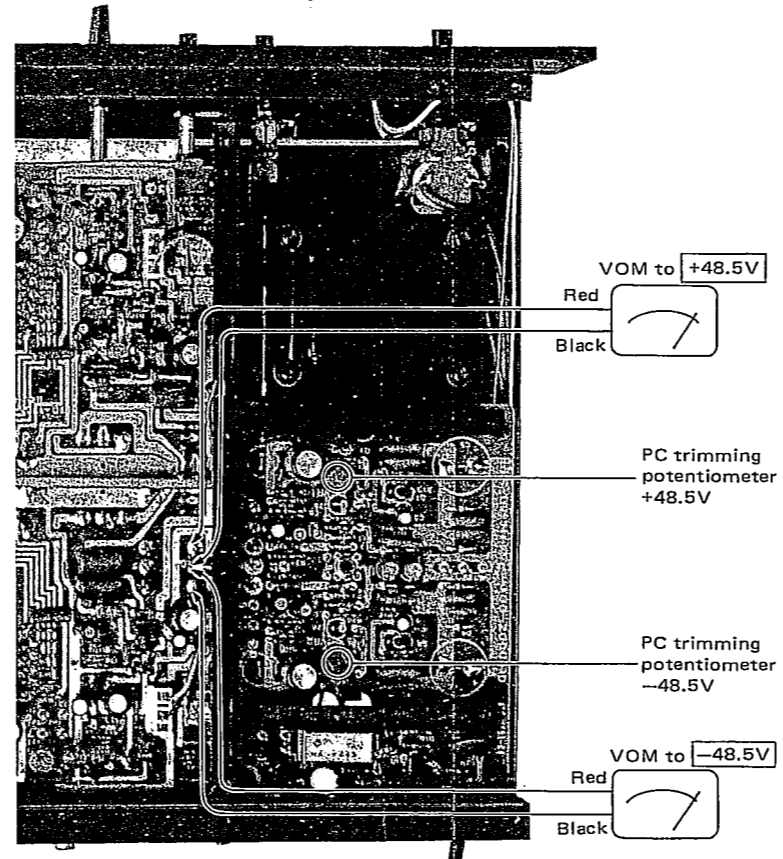
DESTINATIONS' PARTS LIST/ADJUSTMENT/PC BOARD/SEMICONDUCTOR SUBSTITUTIONS

DESTINATIONS' PARTS LIST

Ref. No.	U.S.A. (K)	Canada (P)	Europe (W)	Scandinavia (L)	England (T)	Other Area (M)	Description
C1, 2 C1~3	C90-0145-05 A20-1305-02 B46-0061-10 B50-1755-00 B59-0088-00	C91-0025-05 A20-1305-02 B46-0055-20 B50-1755-00 B59-0088-00	CK45E3D103PMU A20-1305-02 B50-1755-00 B59-0088-00 D32-0075-04	CK45E3D103PMU A20-1305-02 B50-1755-00 B59-0088-00	CK45E3D103PMU A20-1309-02 B46-0060-00 B50-1757-00	C91-0023-05 A20-1305-02	Capacitor 0.01μF AC 125V Ceramic capacitor 0.01μF DC 2kV Panel ass'y *
	E03-0008-05 x 4 E30-0181-05 H01-1817-04 H20-0394-04	E03-0008-05x4 E30-0181-05 H01-1818-04 H20-0394-04	E03-0459-05 H01-1817-04 H20-0394-04	E30-0292-05 H01-1817-04 H20-0394-04	E30-0602-05 H01-1819-04 H20-0394-04	E03-0008-05 x 3 E30-0545-05	Warranty card Instruction manual * Guide book Switch stopper AC outlet Power cord
	J02-0088-05 J41-0034-05 L01-1291-15 S40-1004-05	J02-0089-05 J41-0034-05 L01-1291-15 S40-1004-05	J02-0089-05 J41-0033-05 L01-1296-15 S40-2092-05 S31-2001-05	J02-0089-05 J41-0033-05 L01-1292-15 S40-2092-05	J02-0089-05 J41-0024-15 L01-1297-15 S40-2092-05	J02-0089-05 J41-0034-05 L01-1295-15 S40-1005-05 S31-2001-05	Carton box * Polyethylene cover Anti-rust paper Foot x 4 Power cord bushing Power transformer Power switch * Slide switch Fuse PC board ass'y
S1	X13-2470-11	X13-2470-11	X13-2470-61	X13-2470-51	X13-2470-51	X13-2470-21	

* : New parts

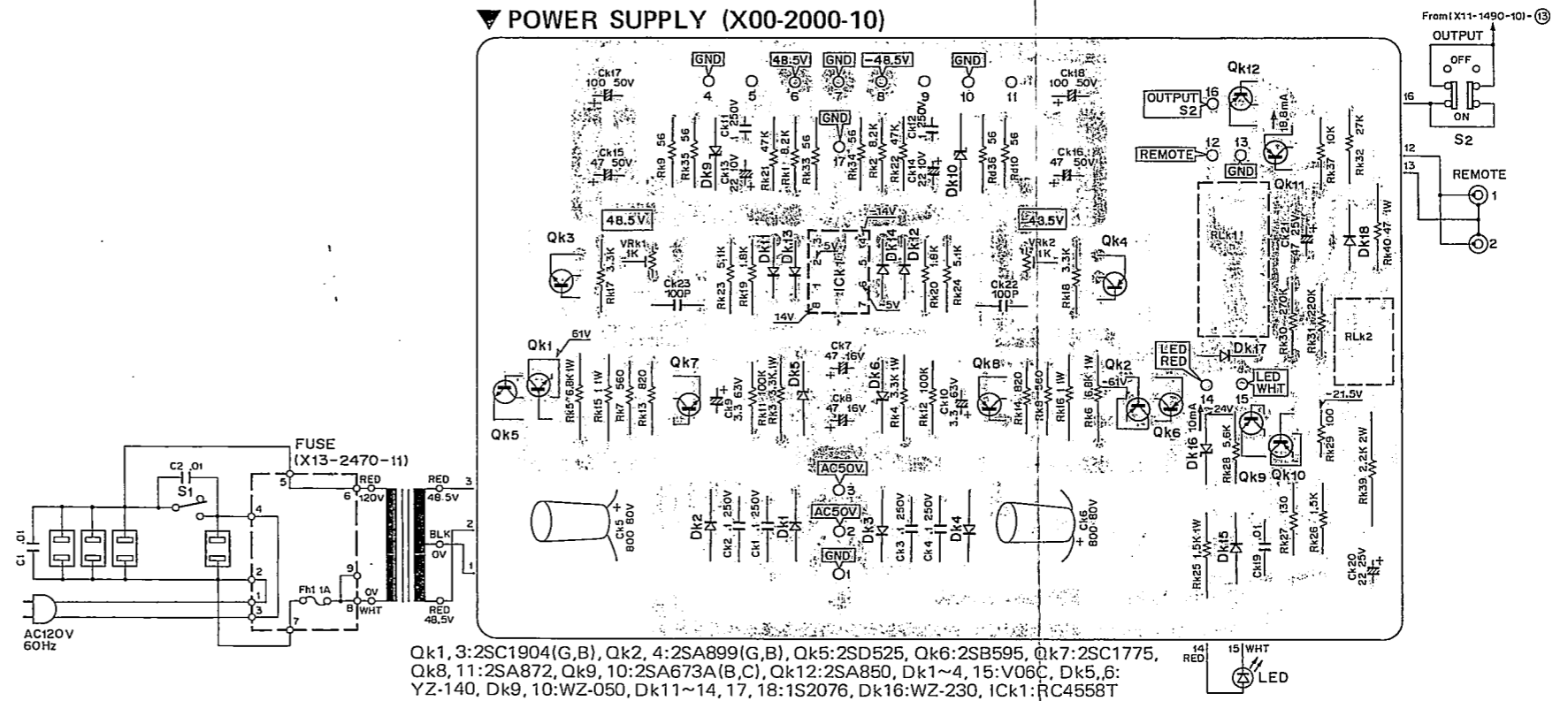
ADJUSTMENT
VOLTAGE REGULATOR CIRCUIT



SEMICONDUCTOR SUBSTITUTIONS

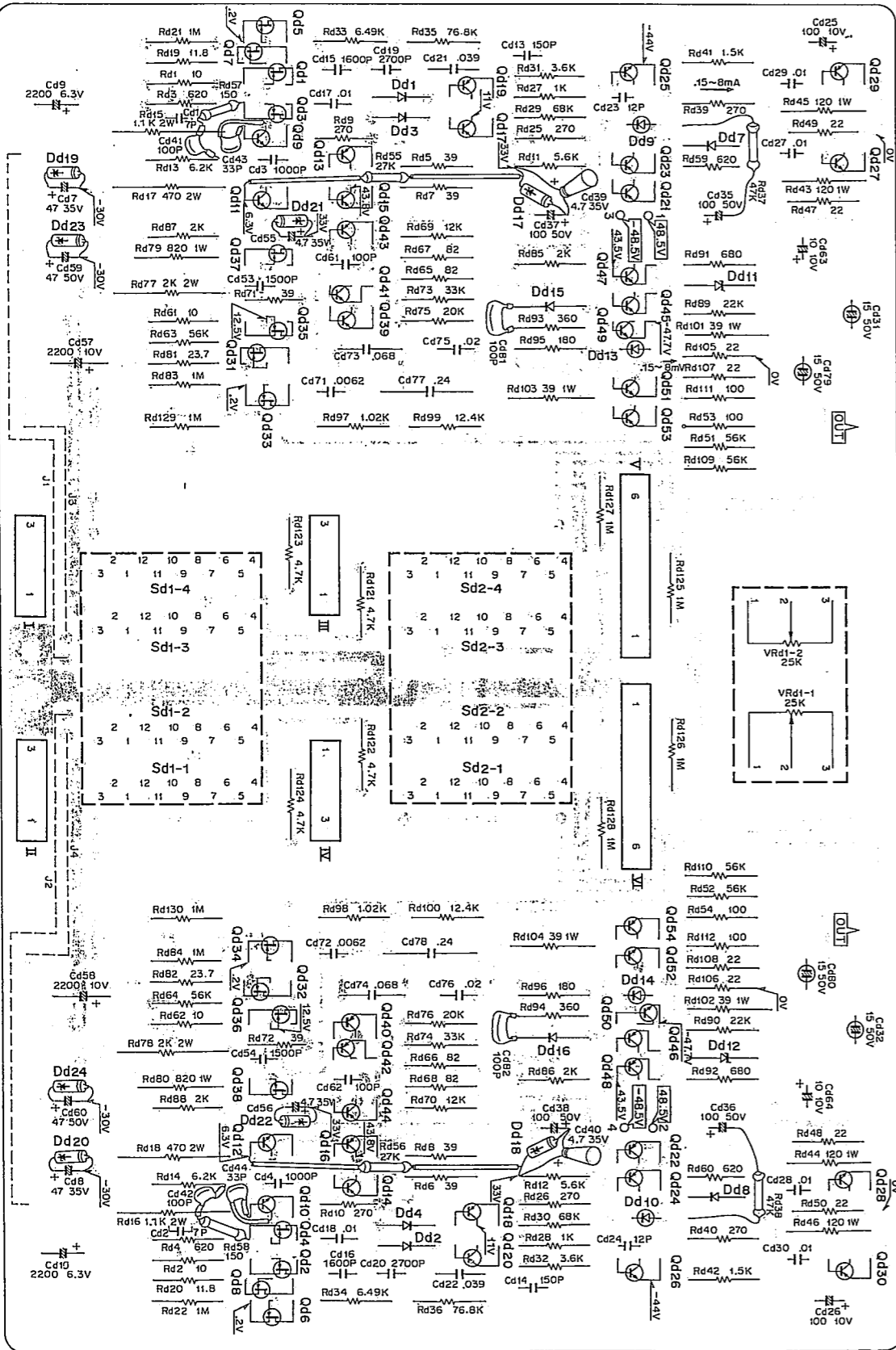
Semiconductor	Substitutions
X00-2000-10 Qk 9, 10 : 2SA673A (B, C) Qk 12 : 2SA850 Dk 9, 10 : WZ-050	2SA850, 2SA777, 2SA899, Pc > 500mW 2SA899 Pc > 800mW EQA01-05 S
X08-1650-10 Qd 51, 52 : 2SC1913 (Q, R) Qd 53, 54 : 2SA913 (Q, R) Dd 11, 12 : WZ-050 Dd 17~24 : WZ-330	2SD381 (2) 2SB536 (2) EQA01-05 S EQA01-33R
X11-1490-10 Qd 1, 2 : 2SK68A (N) Qd 3, 4 : 2SK68A (M) Ql 13, 14 : 2SA915 (L, K) Ql 15, 16 : 2SC1940 (L, K) Dd 1, 2 : WZ-300	2SK117 (BL) 2SK117 (GR) 2SA899 (B, V) 2SC1904 (B, V) EQA01-30R

POWER SUPPLY (X00-2000-10)



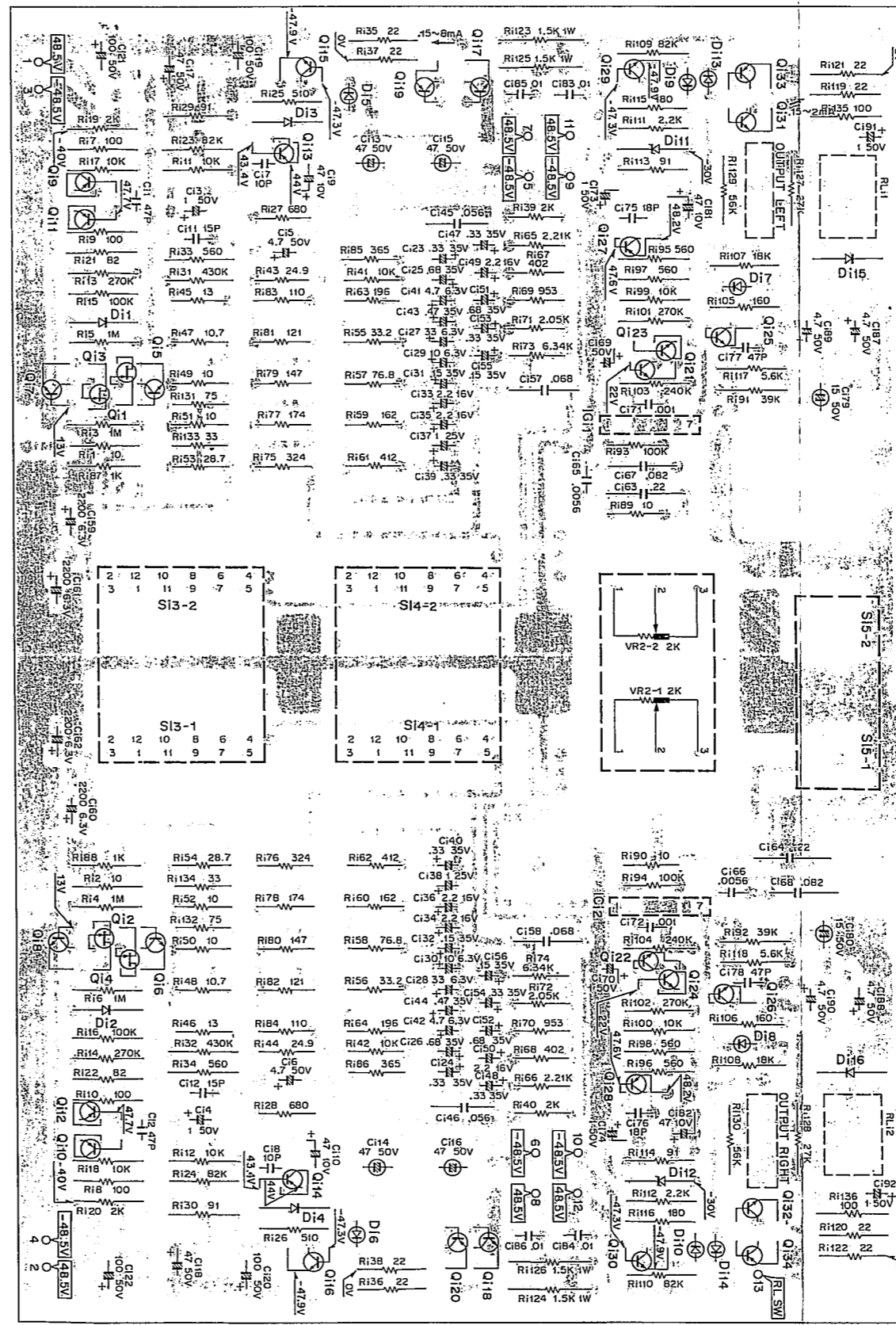
PC BOARD/SCHEMATIC MODIFICATIONS

PREAMP (X08-1650-10)



Qd1~4, 31, 32, 35~38:2SK147(V), Qd5~8, 33, 34:2SK147(BL), Qd9~12, 27, 28, 49, 50:2SC1904(B,V), Qd13~16, 21, 22, 39~44:2SA872, Qd17~20, 23, 24:2SA872(A,D,E), Qd25, 26:2SC1775A, Qd29, 30, 45~48:2SA899(B,V), Qd51, 52:2SC1913(O,R), Qd53, 54:2SA913(O,R), Dd1~4, 7, 8:1S2076, Dd9, 10, 13, 14:SV-22, Dd11, 12:WZ-060, Dd15, 16:1S2076, Dd17, 18, 21, 22:WZ-330, Dd19, 20, 23, 24:BZ-300

TONE AMP (X11-1490-10)



Q11, 2:2SK68A(N), Q13, 4:2SK68A(M), Q15~8, 21~26:2SC1775, Q19~12:2SA872, Q113, 14:2SA915(L,K), Q115, 16:2SC1940(L,K), Q117, 18:2SC1904(B,V), Q119, 20:2SA899(B,V), Q127, 28, 33, 34:2SA872A(D,E), Q129~32:2SC1775A, Di1~4, 15, 16:1S2076, Di5~10, 13, 14:SV-22, Di11, 12:WZ-300, IC11, 2:μPA63H(M)

