

AIWA®

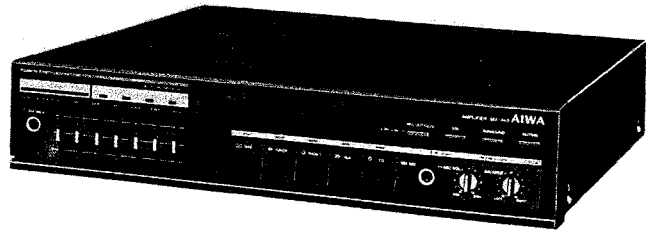
S/M Code No. 86-021
DATE OF ISSUE 5/1986-Z

SERVICE MANUAL

**STEREO INTEGRATED
AMPLIFIER**

MODEL NO.

MX-440



TYPE. HB,UB,EB,KB,GB,ZB

SPECIFICATIONS

**[Power amplifier]
Effective output
power:**

MX-440E, K, Z, G
35 W + 35 W (8 ohms, T.H.D.
1%, 1 kHz)
MX-440H
50 W + 50 W (8 ohms, EIAJ
10%, 1 kHz)
MX-440U (FTC Rule)
35 Watts per channel, Min.
RMS at 8 ohms, from 40
Hz—20 kHz, with no more than
0.2% Total harmonic Distortion.

**Total harmonic
distortion:**

0.02% (1 kHz)

Output bandwidth:

20 Hz to 50 kHz (less than
0.4%) [Both channels driven, 8
ohms]

Frequency response:

20 Hz to 50 kHz
(+1/-3 dB)

**[Preamplifier]
S/N ratio:**

IHF A curve short circuited
MX-440H, U, G, E, K, Z
PHONO 90 dB
TUNER, AUX, TAPE 90 dB

**Input jacks
(Sensitivity/
input impedance):**

PHONO
190 mV/27 kohms
TUNER, AUX TAPE
150 mV/47 kohms
CD
200 mV/27 kohms
MIC
1 mV/10 kohms

**Output jacks
(Level/output
impedance):**

TAPE 130 mV/47 kohms
Headphones 8 ohms
Speakers 8 ohms

[Common]

Power requirements:

MX-440H
AC 120 V/220 V/240 V
switchable, 50/60 Hz

MX-440U

AC 120 V, 50 Hz

MX-440E, Z

AC 220 V, 50/60 Hz

MX-440K, G

AC 240 V, 50/60 Hz

Power consumption:

MX-440G, E, K, Z

160 W (system total 180 W)

MX-440H

70 W (system total 90 W)

MX-440U

100 W (system total 120 W)

Dimensions:

330(W) × 71(H) × 314(D) mm

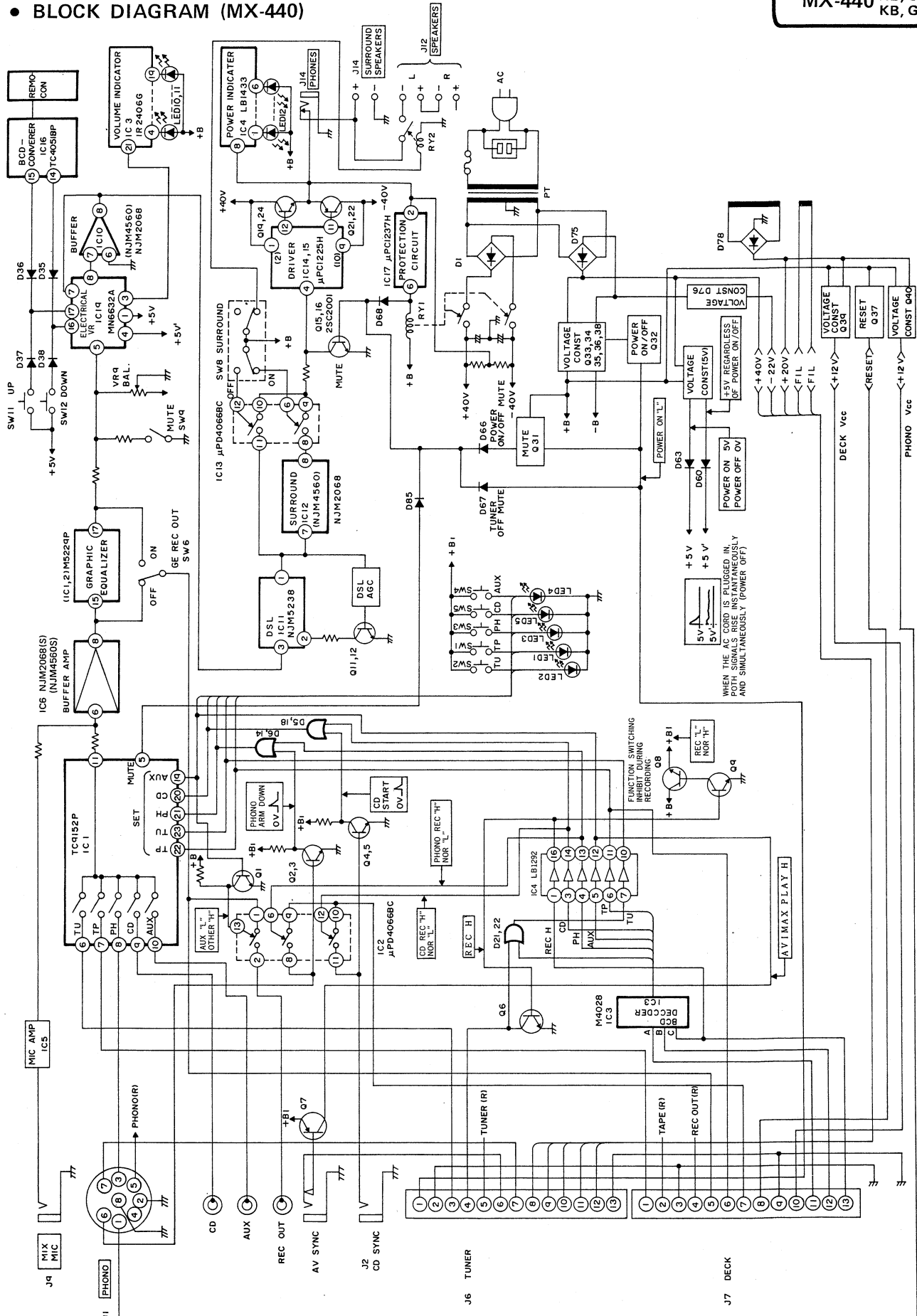
Weight:

4.0 kg

- Design and specifications are subject to change without notice.

• BLOCK DIAGRAM (MX-440)

MX-440 HB, UB, EB
KB, GB, ZB



WHEN THE AC CORD IS PLUGGED IN, BOTH SIGNALS RISE INSTANTANEOUSLY AND SIMULTANEOUSLY (POWER OFF)

J1 PHONO

1	+ B
2	GND I
3	Lch
4	NC
5	Rch
6	SYNC
7	PLAYER START/CUT
8	GND 2

J6 TUNER

1	POWER CONTROL
2	GND (SIG)
3	Lch
4	TU FUN
5	Rch
6	VTR TIMER
7	PLAYER START/CUT
8	+4.0V
9	-2.2V
10	+2.0V
11	FIL
12	FIL
13	GND (POWER)

J7 DECK

1	PB L
2	PB R
3	GND (SIG)
4	REC R
5	REC L
6	F-TAPE
7	SYNCRO
8	RESET
9	-(GND-POWER)
10	+1.2V
11	A
12	B
13	C

ELECTRICAL MAIN PARTS LIST

- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.
- *mark means less required items and availabilities may be limited.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
=== IC ===					
	87-020-547	IC, LB1292	C136	* 87-010-378	CAP, ELECT 16-10SME
	87-020-131	IC, LB1433	C137	* 87-018-012	CAP, CERA-SOL S 15P
	87-027-895	IC, M5218L	C138	* 87-018-012	CAP, CERA-SOL S 15P
	87-020-619	IC, M5238L	C139	* 87-010-405	CAP, ELECT 50-10SME
	87-020-676	IC, M4028BP	C140	* 87-010-405	CAP, ELECT 50-10SME
	87-027-986	IC, NJM2068	C145	* 87-010-401	CAP, ELECT 50-1SME
	87-027-978	IC, TC9152P	C146	* 87-010-401	CAP, ELECT 50-1SME
	87-027-897	IC, UPC1225H	C149	* 87-018-044	CAP, CERA-SOL S 1000P
	87-020-680	IC, NJM2068(S)	C150	* 87-015-450	CAP, ELECT 220-25V BP
	87-027-787	IC, UPC1237H	C152	* 87-010-403	CAP, ELECT 50-3.3SME
	87-027-554	IC, UPD4066BC	C171	* 87-010-263	CAP, ELECT 100/10V
			C173	* 87-010-383	CAP, ELECT 25-33SME
=== TRANSISTOR ===					
	89-502-465	FET 2SK 246GR	C174	* 87-010-248	CAP, ELECT 220-10SME
	89-110-155	TRANSISTOR, 2SA1015, GR	C175	* 87-010-402	CAP, ELECT 50-2.2SME
	89-206-882	TRANSISTOR, 2SB688	C176	* 87-010-260	CAP, ELECT 47-25V SME
	89-210-153	TRANSISTOR, 2SB1015	C177	* 87-010-260	CAP, ELECT 47-25V SME
	89-309-456	TRANSISTOR, 2SC945L, P	C178	* 88-337-520	CAP, ELECT 470-50V
	89-318-155	TRANSISTOR, 2SC1815, GR	C179	* 88-337-520	CAP, ELECT 470-50V
	89-320-011	TRANSISTOR, 2SC2001K	C180	* 87-010-260	CAP, ELECT 47-25V SME
	89-407-182	TRANSISTOR, 2SD718	C181	* 87-010-112	CAP, ELECT 100/16
	89-412-753	TRANSISTOR, 2SD1275	C182	* 87-010-040	CAP, ELECT 25-33 (105)
	89-414-063	TRANSISTOR, 2SD1406 OY	C183	* 87-010-391	CAP, ELECT 35-10SME
			C184	* 87-010-036	CAP, ELECT 50-3.3 (105)
			C185	* 87-010-391	CAP, ELECT 35-10SME
=== MAIN CIRCUIT BOARD SECTION ===					
PCB-A	*	MAIN CIRCUIT BOARD	C186	* 87-010-389	CAP, ELECT 25-2200SME
△	* 87-033-147	FUSE CLAMP	C200	* 87-018-047	CAP, CERA-SOL 0.01-16 (Z ONLY)
C1	* 87-010-384	CAP, ELECT 25-100SME	C201	* 87-010-254	CAP, ELECT 6800-50
C3	* 87-010-378	CAP, ELECT 16-10SME	C202	* 87-010-254	CAP, ELECT 6800-50
C4	* 87-010-405	CAP, ELECT 50-10SME	D1	87-020-144	DIODE DBA40C
C5	* 87-010-401	CAP, ELECT 50-1SME	D2	87-020-110	DIODE 1SS177
C6	* 87-010-401	CAP, ELECT 50-1SME	D3	87-020-110	DIODE 1SS177
C10	* 87-010-378	CAP, ELECT 16-10SME	D4	87-027-393	DIODE, ZENER HZ4C2
C15	* 87-010-405	CAP, ELECT 50-10SME	D5	87-020-110	DIODE 1SS177
C17	* 87-010-404	CAP, ELECT 50-4.7SME	D6	87-020-110	DIODE 1SS177
C18	* 87-010-404	CAP, ELECT 50-4.7SME	D11	87-020-110	DIODE 1SS177
C19	* 87-010-378	CAP, ELECT 16-10SME	D12	87-020-110	DIODE 1SS177
C20	* 87-010-378	CAP, ELECT 16-10SME	D13	87-020-110	DIODE 1SS177
C43	* 87-018-040	CAP, CERA-SOL S 470P	D14	87-020-110	DIODE 1SS177
C44	* 87-010-404	CAP, ELECT 50-4.7SME	D15	87-020-110	DIODE 1SS177
C45	* 87-010-404	CAP, ELECT 50-4.7SME	D16	87-020-110	DIODE 1SS177
C46	* 87-018-044	CAP, CERA-SOL S 1000P	D17	87-020-110	DIODE 1SS177
C47	* 87-010-379	CAP, ELECT 16-22SME	D18	87-020-110	DIODE 1SS177
C73	* 87-010-403	CAP, ELECT 50-3.3SME	D21	87-020-110	DIODE 1SS177
C74	* 87-010-403	CAP, ELECT 50-3.3SME	D22	87-020-110	DIODE 1SS177
C79	* 87-010-263	CAP, ELECT 100/10V	D25	87-020-110	DIODE 1SS177
C80	* 87-010-263	CAP, ELECT 100/10V	D28	87-020-110	DIODE 1SS177
C83	* 87-010-401	CAP, ELECT 50-1SME	D45	87-020-110	DIODE 1SS177
C84	* 87-010-401	CAP, ELECT 50-1SME	D46	87-020-110	DIODE 1SS177
C85	* 87-010-378	CAP, ELECT 16-10SME	D47	87-020-110	DIODE 1SS177
C86	* 87-010-378	CAP, ELECT 16-10SME	D48	87-020-364	DIODE, ZENER HZ-2B3
C87	* 87-010-401	CAP, ELECT 50-1SME	D49	87-020-110	DIODE 1SS177
C93	* 87-010-401	CAP, ELECT 50-1SME	D50	87-020-110	DIODE 1SS177
C94	* 87-010-401	CAP, ELECT 50-1SME	D51	87-027-502	DIODE, ZENER 05Z3.9
C97	* 87-018-008	CAP, CERA-SOL S 8.2P	D52	87-020-110	DIODE 1SS177
C98	* 87-018-008	CAP, CERA-SOL S 8.2P	D66	87-020-110	DIODE 1SS177
C120	* 87-010-378	CAP, ELECT 16-10SME	D67	87-020-110	DIODE 1SS177
C131	* 87-018-042	CAP, CERA-SOL S 680P	D68	87-020-110	DIODE 1SS177
C132	* 87-018-042	CAP, CERA-SOL S 680P	D69	87-027-475	DIODE, ZENER HZ-6B1
C133	* 87-010-404	CAP, ELECT 50-4.7SME	D70	87-020-110	DIODE 1SS177
C134	* 87-010-404	CAP, ELECT 50-4.7SME	D71	87-020-110	DIODE 1SS177
C135	* 87-010-378	CAP, ELECT 16-10SME	D72	87-020-110	DIODE 1SS177
			D73	87-020-110	DIODE 1SS177
			D74	87-027-475	DIODE, ZENER HZ-6B1
			D75	87-027-376	DIODE 1B4B41

CAPACITORS
No mark, U, UF: μ F
P, PF : pF

COILS
MMH: mH
UH : μ H

FUSE
MMA: mA

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
D76	87-027-323	DIODE,ZENER HZ22-2L	C2	* 87-010-478	CAP,ELECT 33-50V SR	△ F5	* 87-035-253	FUSE 2A (H ONLY)
D77	87-020-110	DIODE 1SS177	C3	* 87-015-688	CAP,ELECT 4.7-35V	△ F5	* 87-035-366	FUSE T2.5A (E,Z ONLY)
D78	87-020-144	DIODE DBA40C	C4	* 87-015-688	CAP,ELECT 4.7-35V	△ J15	* 87-049-017	AC OUTLET (AC OUTLET)(H ONLY)
D79	87-020-110	DIODE 1SS177	C5	* 87-018-040	CAP,CERA-SOL S 470P	△ J15	* 87-049-514	AC OUTLET E (AC OUTLET)(E,Z ONLY)
D81	87-020-110	DIODE 1SS177	C6	* 87-018-040	CAP,CERA-SOL S 470P	△ J15	* 87-049-017	AC OUTLET K (AC OUTLET)(K,G ONLY)
D82	87-020-110	DIODE 1SS177	C7	* 87-018-037	CAP,CERA-SOL S 270P	△ S1	* 87-031-551	ROTARY SW (AC VOLTAGE)(H ONLY)
D83	87-020-110	DIODE 1SS177	C8	* 87-018-037	CAP,CERA-SOL S 270P	=== POWER CIRCUIT BOARD SECTION (U ONLY) ===		
D84	87-020-110	DIODE 1SS177	C11	* 87-018-042	CAP,CERA-SOL S 680P	PCB-E	*	POWER CIRCUIT BOARD
D85	87-020-110	DIODE 1SS177	C12	* 87-018-042	CAP,CERA-SOL S 680P	△	* 87-033-147	FUSE CLAMP
D86	87-027-431	DIODE,ZENER RD-6.2E	C15	* 87-018-045	CAP,CERA-SOL 2200P	△ F1	* 87-035-302	FUSE 3.15A
D87	87-020-400	DIODE 1SR35-200	C16	* 87-018-045	CAP,CERA-SOL 2200P	△ F5	* 87-035-551	FUSE 2A
D88	87-020-400	DIODE 1SR35-200	C19	* 87-018-046	CAP,CERA-SOL S 0.0047	△ J15	* 87-049-070	AC OUTLET (AC OUTLET)
D89	87-020-400	DIODE 1SR35-200	C20	* 87-018-046	CAP,CERA-SOL S 0.0047	=== TR CIRCUIT BOARD SECTION ===		
D90	87-020-110	DIODE 1SS177	C21	* 87-015-692	CAP,ELECT 0.22-50V	PCB-F	*	TR CIRCUIT BOARD
D91	87-020-110	DIODE 1SS177	C22	* 87-015-692	CAP,ELECT 0.22-50V	=== MISCELLANEOUS ===		
D92	87-020-110	DIODE 1SS177	C25	* 87-015-694	CAP,ELECT 0.47-50V	△	* 87-034-731	AC CORD UL (U ONLY)
△ F2	* 87-035-249	FUSE 1A	C26	* 87-015-694	CAP,ELECT 0.47-50V	△	* 87-034-732	AC CORD H (H ONLY)
△ F3	* 87-035-249	FUSE 1A	C29	* 87-015-693	CAP,ELECT 0.33-50	△	* 87-034-736	AC CORD E (E,Z ONLY)
△ F4	* 87-035-254	FUSE 2.5A	C30	* 87-015-693	CAP,ELECT 0.33-50	△	* 87-034-975	AC CORD K (K,G ONLY)
J1	* 87-032-985	SOCKET DIN 8P (PHONO)	C31	* 87-015-695	CAP,ELECT 1-50	△	* 87-085-184	AC CORD BUSHING (H ONLY)
J2	87-049-630	JACK 2.5 (CD SYNC)	C32	* 87-015-695	CAP,ELECT 1-50	△	* 87-085-189	AC CORD BUSHING U (U ONLY)
J3	87-049-450	PIN JACK 4P (CD)(EXCEPT Z)	C35	* 87-015-688	CAP,ELECT 4.7-35V	△	* 87-085-189	AC CORD BUSHING (EXCEPT H,U)
J4	+++	PIN JACK 4P (AUX)(EXCEPT Z)	C36	* 87-015-688	CAP,ELECT 4.7-35V	△ PT1	* 81-756-606	TRANSFORMER PT (H ONLY)
J3	87-049-420	PIN JACK 4P (CD)(Z ONLY)	C38	* 87-015-688	CAP,ELECT 4.7-35V	△ PT1	* 81-756-608	TRANSFORMER PT (E,Z ONLY)
J4	+++	PIN JACK 4P (AUX)(Z ONLY)	C39	* 87-018-047	CAP,ELECT 33-25V	△ PT1	* 81-756-609	TRANSFORMER PT (K,G ONLY)
J16	+++	PIN JACK 4P (EARTH)(Z ONLY)	D1	87-020-110	DIODE 1SS177	△ PT1	* 81-756-607	TRANSFORMER PT (U ONLY)
J5	87-049-667	PIN JACK 2P (REC OUT)	D2	87-020-110	DIODE 1SS177			
J6	* 87-049-659	BP CONNECTOR SOCKET 13P (TUNER)	D3	87-020-110	DIODE 1SS177			
J7	* 87-049-659	BP CONNECTOR SOCKET 13P (DECK)	D4	87-020-110	DIODE 1SS177			
J8	87-049-629	JACK 3.5 (VIDEO SYNC)	D5	87-020-110	DIODE 1SS177			
J9	87-049-067	JACK 6.3 (MIX MIC)	D6	87-020-110	DIODE 1SS177			
△ R185	* 87-025-393	RES,CEMENT,2W-0.22	LED1	* 87-020-556	LED TLG205 (TAPE)			
△ R186	* 87-025-393	RES,CEMENT,2W-0.22	LED2	* 87-020-556	LED TLG205 (TUNER)			
△ R187	* 87-025-393	RES,CEMENT,2W-0.22	LED3	* 87-020-556	LED TLG205 (PHONO)			
△ R188	* 87-025-393	RES,CEMENT,2W-0.22	LED4	* 87-020-556	LED TLG205 (AUX)			
△ R351	* 87-029-089	RES,FUSIBLE 1/4W-4.7 (U ONLY)	LED5	* 87-020-556	LED TLG205 (CD)			
RY1	* 87-045-258	RELAY	LED6	* 87-027-679	LED TLR208 (REC OUT)			
RY1	* 87-045-251	RELAY G5R-12V (EXCEPT U)	LED7	* 87-027-679	LED TLR208 (DSL)			
TH1	* 82-304-722	THERMISTOR 42D26	LED8	* 87-027-679	LED TLR208 (SURROUND)			
TH2	* 82-304-722	THERMISTOR 42D26	LED9	* 87-027-679	LED TLR208 (MUTING)			
TH3	* 87-026-271	POSISTOR 61AR6.8 (EXCEPT H)	LED12	* 87-020-552	LED TLR208-5 (PEAK)			
VR9	87-021-922	VOLUME 50KW (BALANCE)	SW1	87-031-771	TACT SW (TAPE)			
VR10	87-021-921	VOLUME 10KB (MIC VOL.)	SW2	87-031-771	TACT SW (TUNER)			
=== CONNECTOR CIRCUIT BOARD SECTION ===			SW3	87-031-771	TACT SW (PHONO)			
PCB-B	*	CONNECTOR CIRCUIT BOARD	SW4	87-031-771	TACT SW (AUX)			
D93	87-020-400	DIODE 1SR 35-200	SW5	87-031-771	TACT SW (CD)			
J11	* 82-795-613	SP TERMINAL 4P (SPEAKERS)	SW6	81-752-625	PUSH SW (REC OUT-GEQ)			
J13	87-049-507	JACK 3.5 (MIC) (SUR.SP)	SW7	81-752-625	PUSH SW (DSL)			
J14	87-049-507	JACK 3.5 (MIC) (SUR.SP)	SW8	81-752-625	PUSH SW (SURROUND)			
△ R208	* 87-029-083	RES,FUSIBLE,1/2W-10	SW9	81-752-625	PUSH SW (MUTING)			
△ R209	* 87-029-083	RES,FUSIBLE,1/2W-10	VR1	87-021-956	SLIDE VR 20K(B) (40HZ)			
RY2	* 87-045-258	RELAY G4U-12V	VR2	87-021-956	SLIDE VR 20K(B) (125HZ)			
=== JACK CIRCUIT BOARD SECTION ===			VR3	87-021-956	SLIDE VR 20K(B) (330HZ)			
PCB-C	*	JACK CIRCUIT BOARD	VR4	87-021-956	SLIDE VR 20K(B) (1KHZ)			
J10	87-049-352	JACK 6.3 W/S (HEAD PHONE)	VR5	87-021-956	SLIDE VR 20K(B) (2.5KHZ)			
△ R206	* 87-025-154	RES,MF,1W-270	VR6	87-021-956	SLIDE VR 20K(B) (6.3KHZ)			
△ R207	* 87-025-154	RES,MF,1W-270	VR7	87-021-956	SLIDE VR 20K(B) (15KHZ)			
=== FRONT CIRCUIT BOARD SECTION ===			=== POWER CIRCUIT BOARD SECTION (EXCEPT U) ===					
PCB-D	81-752-620	FRONT CIRCUIT BOARD	PCB-E	*	POWER CIRCUIT BOARD			
C1	* 87-010-478	CAP,ELECT 33-50V SR	△ F1	* 87-033-147	FUSE CLAMP			
			△ F1	* 87-035-257	FUSE 4A (H ONLY)			
			△ F1	* 87-035-364	FUSE T1.6A (EXCEPT H)			

IC handling precaution

- IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.
1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
 2. To use solder iron less than 40W (less than 260°C) of power consumption for soldering. But do not overheat more than 10 second.
 3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.

△ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

Combination circuit board 81-756-610

PCB-A 81-756-611
PCB-B 81-756-613
PCB-C 81-756-612
PCB-E 81-756-614 (U ONLY)
PCB-E 81-756-615 (EXCEPT U)
PCB-F 81-756-616

Part No.	Description	Ref.No.	Part No.	Description
* 87-010-478	CAP,ELECT 33-50V SR	△ F5	* 87-035-253	FUSE 2A (H ONLY)
* 87-015-688	CAP,ELECT 4.7-35V	△ F5	* 87-035-366	FUSE T2.5A (E,Z ONLY)
* 87-015-688	CAP,ELECT 4.7-35V	△ J15	* 87-049-017	AC OUTLET (AC OUTLET)(H ONLY)
* 87-018-040	CAP,CERA-SOL S 470P	△ J15	* 87-049-514	AC OUTLET E (AC OUTLET)(E,Z ONLY)
* 87-018-040	CAP,CERA-SOL S 470P	△ J15	* 87-049-017	AC OUTLET K (AC OUTLET)(K,G ONLY)
* 87-018-037	CAP,CERA-SOL S 270P	△ S1	* 87-031-551	ROTARY SW (AC VOLTAGE)(H ONLY)
* 87-018-037	CAP,CERA-SOL S 270P			
* 87-018-042	CAP,CERA-SOL S 680P			
=== POWER CIRCUIT BOARD SECTION (U ONLY) ===				
PCB-E * POWER CIRCUIT BOARD				
* 87-018-042	CAP,CERA-SOL S 680P	△ F1	* 87-033-147	FUSE CLAMP
* 87-018-045	CAP,CERA-SOL 2200P	△ F5	* 87-035-302	FUSE 3.15A
* 87-018-045	CAP,CERA-SOL 2200P	△ F5	* 87-035-551	FUSE 2A
* 87-018-046	CAP,CERA-SOL S 0.0047	△ J15	* 87-049-070	AC OUTLET (AC OUTLET)
=== TR CIRCUIT BOARD SECTION ===				
PCB-F * TR CIRCUIT BOARD				
=== MISCELLANEOUS ===				
		△	* 87-034-731	AC CORD UL (U ONLY)
		△	* 87-034-732	AC CORD H (H ONLY)
		△	* 87-034-736	AC CORD E (E,Z ONLY)
		△	* 87-034-975	AC CORD K (K,G ONLY)
		△	* 87-085-184	AC CORD BUSHING (H ONLY)
		△	* 87-085-189	AC CORD BUSHING U (U ONLY)
		△	* 87-085-189	AC CORD BUSHING (EXCEPT H,U)
		△ PT1	* 81-756-606	TRANSFORMER PT (H ONLY)
		△ PT1	* 81-756-608	TRANSFORMER PT (E,Z ONLY)
		△ PT1	* 81-756-609	TRANSFORMER PT (K,G ONLY)
		△ PT1	* 81-756-607	TRANSFORMER PT (U ONLY)
Note; Combination Circuit Board				
The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.				
Combination circuit board 81-756-610				
PCB-A	81-756-611			
PCB-B	81-756-613			
PCB-C	81-756-612			
PCB-E	81-756-614 (U ONLY)			
PCB-E	81-756-615 (EXCEPT U)			
PCB-F	81-756-616			
R CIRCUIT BOARD SECTION (EXCEPT U) ===				
* POWER CIRCUIT BOARD				
* 87-033-147	FUSE CLAMP			
* 87-035-257	FUSE 4A (H ONLY)			
* 87-035-364	FUSE T1.6A (EXCEPT H)			

IC handling precaution

IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.

1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260°C) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.



Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

NOTES:

- 1) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signal.
- 2) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
- 3) Capacitors with no designation have a dielectric strength of less than 50WV.
- 4) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
- 5) Ceramic capacitor symbols:
 - |— For temperature compensation (SL)
 - |— High dielectric constant system (YY)
 - |— High dielectric constant system (YW, YP, YZ)
 - |— Semiconductor ceramic
 - |— For temperature compensation (SH)

6) Explanation of symbols

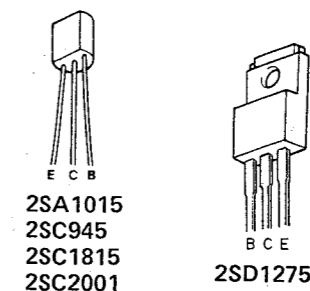
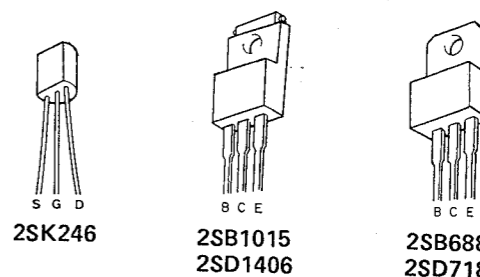
- Ⓜ Mylar capacitor
- Ⓐ Aluminum solid capacitor
- Ⓟ Polypropylene film capacitor
- Ⓟ Bi-polarized capacitor
- Ⓛ Low-leakage capacitor
- Ⓣ Tantalum capacitor
- Ⓢ Styrol capacitor
- Ⓜ Printed resistor
- Ⓜ Fuse resistor
- Ⓜ Nonflammable resistor
- Ⓛ Low noise resistor



Safety component symbol

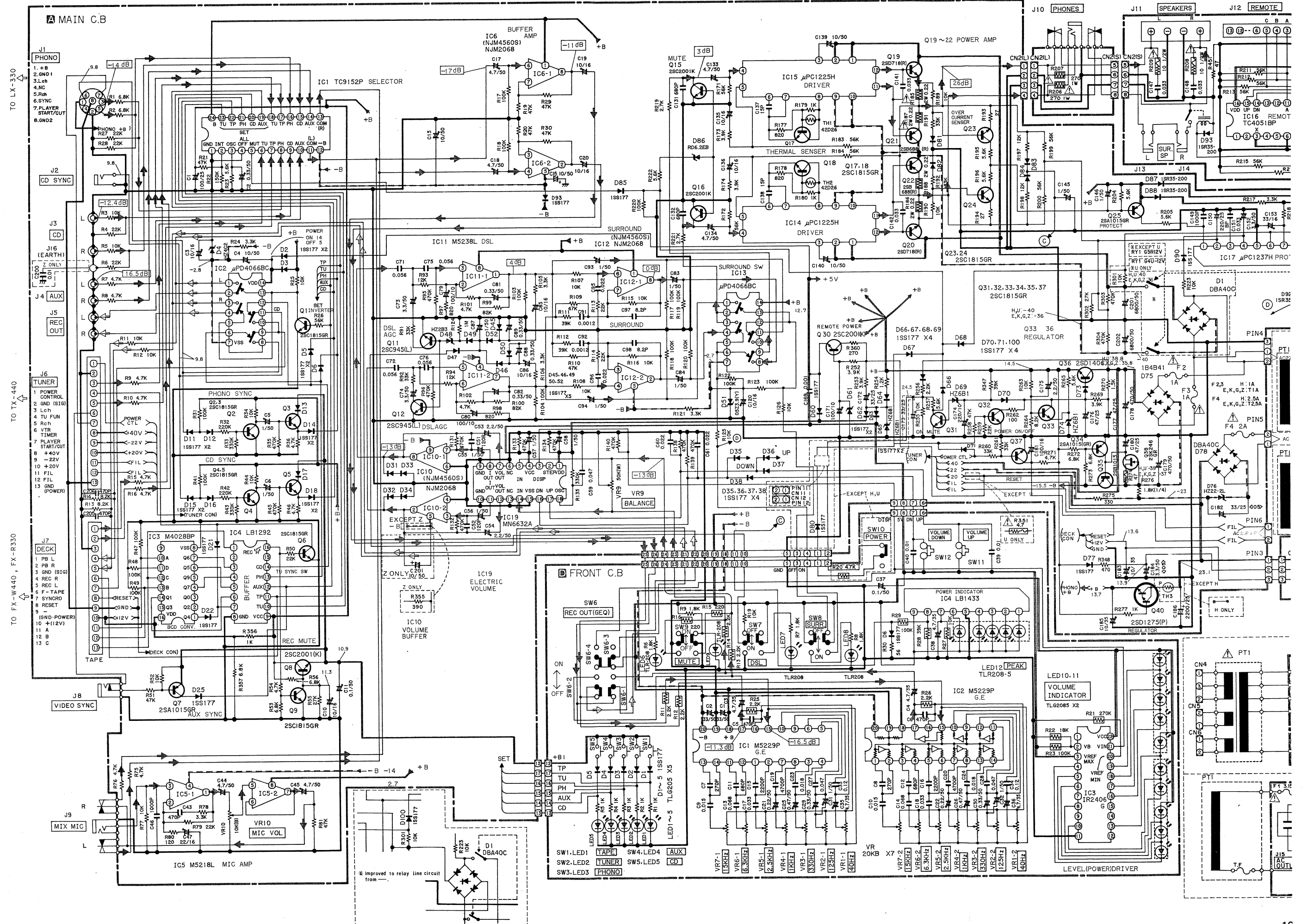
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

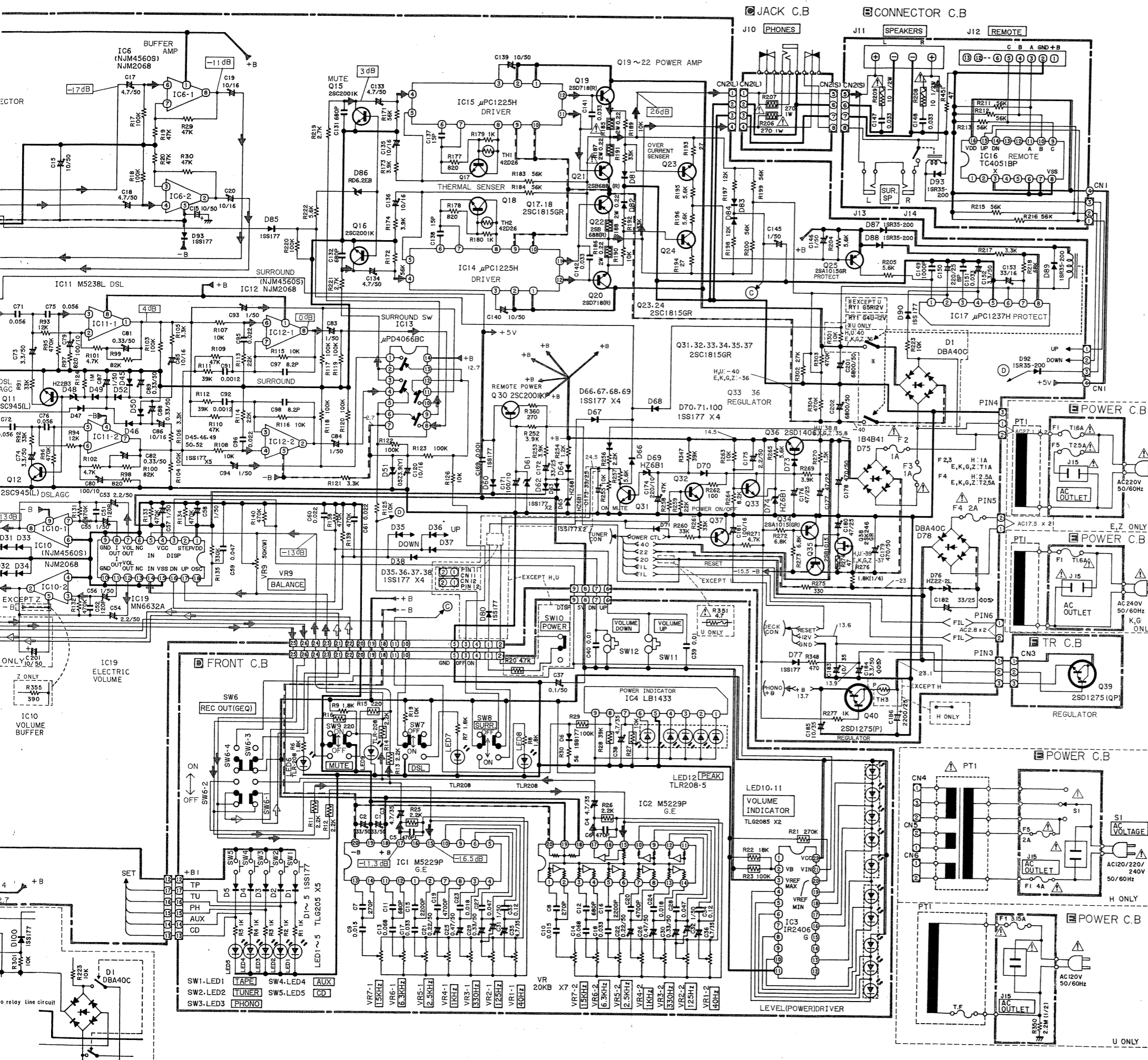
- This schematic diagram is subject to change without notice in the interests of improved performance.



SCHEMATIC DIAGRAM-1 (MX-440)

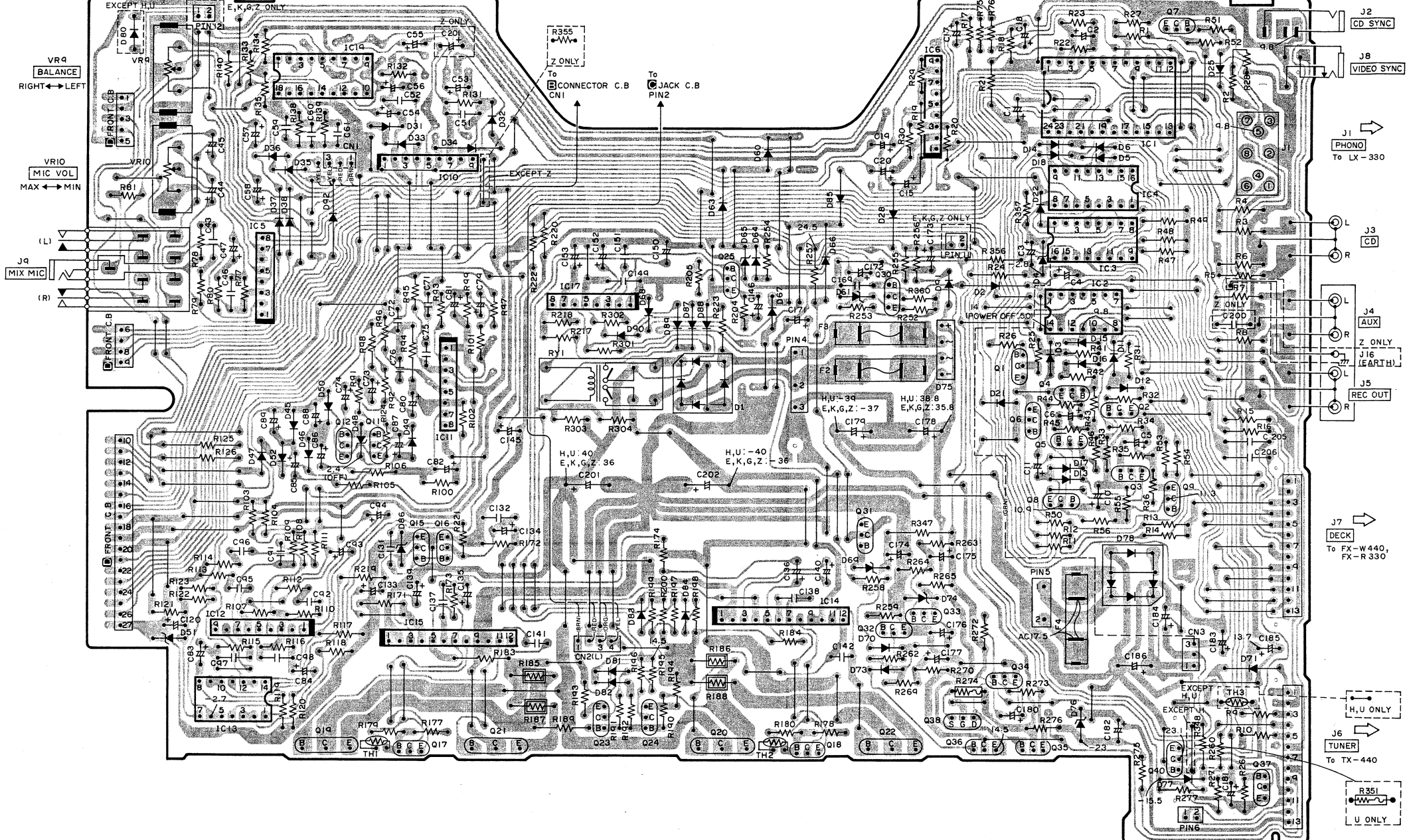
● JACK C.B □ CONNECTOR C.B



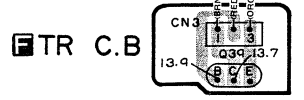
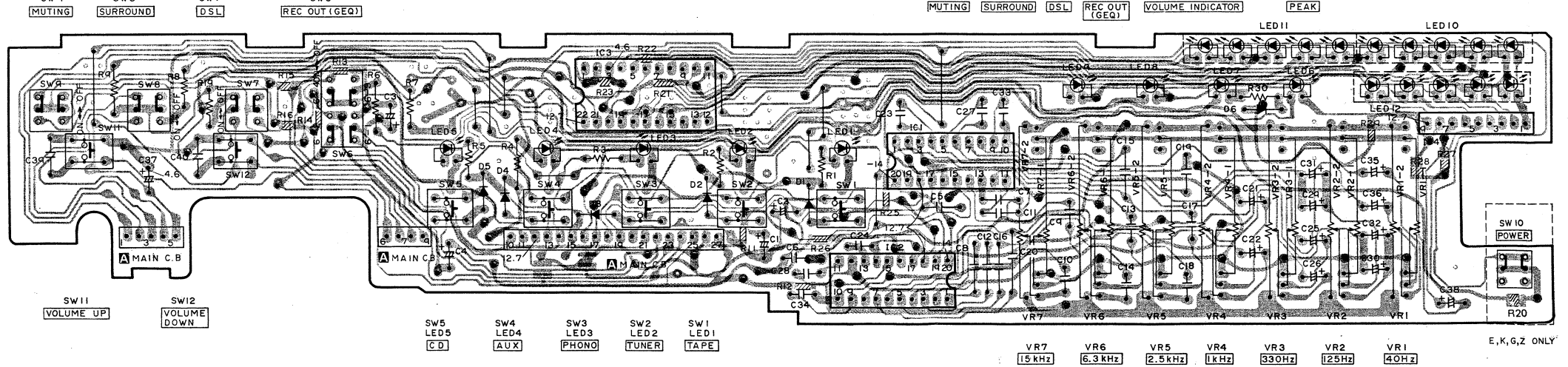


- NOTES:**
- 1) B (+) power supply B (-) power supply
 - 2) Signal path
 Rec path

A MAIN C.B.

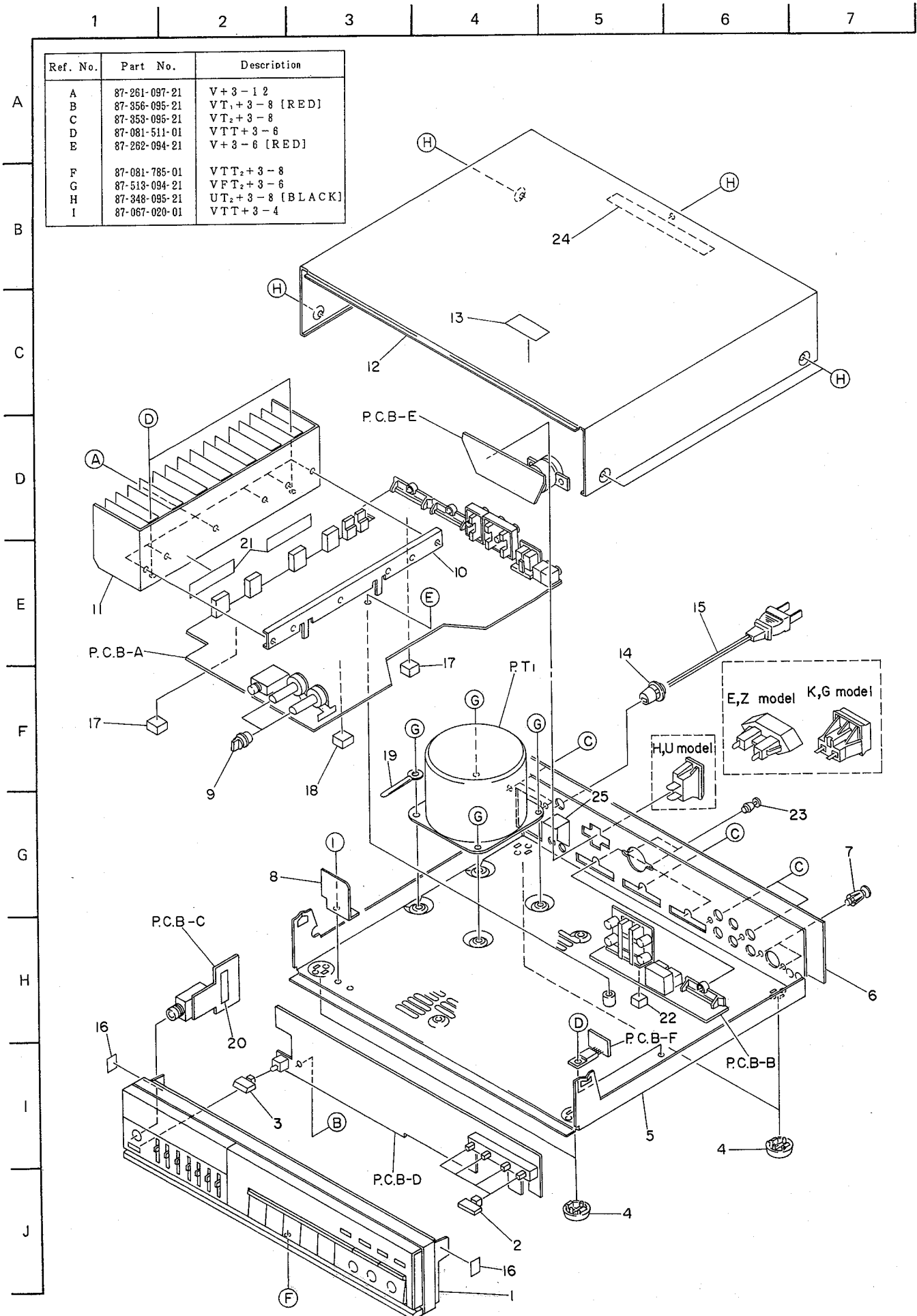


D FRONT C.B.



A
B
C
D
E
F
G
H
I
J
K

EXPLODED VIEW-1



MECHANICAL PARTS LIST (MX-440)

- ※-mark in this part list shows exclusive part.
- ★-mark means less required items availabilities may be limited.
- No availability part is marked with --- in Part No. list.

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★81-756-005	FRONT CABINET AH2B Ass'y (H, U only)	※	1
		★81-756-030	FRONT CABINET AE2B Ass'y (E, K, G, Z only)	※	1
	2	★81-748-010	PUSH-BUTTON T		4
	3	★84-714-013	BUTTON, POWER (E, K, G, Z only)	DX-770	1
	4	★87-055-057	FOOT B		4
	5	---	AMP. CHASSIS Ass'y		1
	6	---	JACK PLATE		1
	7	★87-084-063	NYLON RIVET #3.5-5.5		2
	8	---	HOLDER, HP		1
	9	★81-752-014	KNOB	MX-550	2
	10	---	HOLDER, IC		1
	11	---	HEAT SINK Ass'y		1
	12	★81-752-020	STEEL CABINET A (B) (H, U only)	MX-550	1
		★81-752-033	STEEL CABINET T (B) E (E, K, G, Z only)	MX-550	1
	13	---	LABEL, TEMP		1
	14	★87-034-184	CORD BUSHING (H, U only)		1
		★87-034-185	CORD BUSHING (E, K, G, Z only)		1
	15	★87-034-732	AC POWER CORD Ass'y (H only)		1
		★87-034-731	AC POWER CORD Ass'y (U only)		1
		★87-034-736	AC POWER CORD Ass'y (E, Z only)		1
		★87-034-975	AC POWER CORD (K only)		1
		★87-034-735	AC POWER CORD Ass'y (G only)		1
	16	---	SHEET 14-6-0.3		2
	17	---	G CUSHION 5×8×6		2
	18	---	G CUSHION 15-7-6		1
	19	---	WIRE BINDER		1
	20	---	MYLER 7-2 2		1
	21	★81-752-650	SHEET IC	MX-550	2
	22	---	G CUSHION PCB		1
	23	★87-085-090	NYLON RIVET 3-6.5 (H only)		2
	24	---	INSULATION SHEET H		1
	25	---	INSULATION SHEET E (E, K, G, Z only)		1

■ ACCESSORIES/PACKAGE LIST

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★81-756-904	INSTRUCTION BOOKLET	※	1
	2	★87-032-845	SIEMENS PLUG		1