

AIWA®

SERVICE MANUAL

S/M Code No. 85-011
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STEREO PREAMPLIFIER

MODEL NO. GX-120



STEREO POWER AMPLIFIER

MODEL NO. BX-120



TYPE. HB, UB, EB, KB, ZB

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

1. No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.
2. No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.
3. When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.
4. The following matters shall be maintained as they are, when repairing.
 - 1) Soldering of lead-wire ends
 - * Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
 - 2) Wiring and holding of lead-wires with wire-clips and binders
 - 3) Materials of lead-wires
 - * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
 - 4) Location of all kinds of insulators
 - 5) Setting of voltage selector switch
 - * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. After repaired, the insulation resistance or leakage current shall be measured with $500 \pm 5V$ D.C and shall be not less than $1M\Omega$.
Measuring Point
Connect to Chassis or Outside $\ominus$ of Pin Jack

The diagram shows a measuring point setup. A meter with a needle and scale is connected to a 'Pin Jack ($\ominus$)' and a 'Chassis ($\ominus$)'. An 'AC Power Cord ($\oplus$)' is also shown connected to the chassis. The meter's rating is 'More than $1M\Omega / 500V$ DC'.
6. General instructions for mechanism repair
 - 1) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
 - 2) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, malfunction and damage.

SPECIFICATIONS

GX-120

Total harmonic distortion:

TUNER, AUX, TAPE PLAY, CD
0.02% (1 kHz)
PHONO (MM)
0.01% (1 kHz, REC OUT)

Frequency response:

30 Hz to 50 kHz
(+0.5/−3 dB)

S/N ratio:

IHf A - Curve short circuited	
GX-120E, H, K, G, U	
PHONO (MM)	80 dB
TUNER, AUX, TAPE	83 dB
GX-120Z	
PHONO (MM)	76 dB
TUNER, AUX, TAPE	83 dB

Input jacks
(Sensitivity/input impedance):

PHONO (MM)
3 mV/47k ohms
TUNER
150 mV/47k ohms
CD
320 mV/27k ohms
TAPE
150 mV/47k ohms
AUX
150 mV/47k ohms
MIC
1 mV/10 kOhm

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

TAPE: 130 mV/47k ohms
(REC OUT)
OUTPUT: 1 V/47k ohms
 ± 0.5 dB (20 Hz ~ 20 kHz)

RIAA deviation:

±0.5 dB (20 Hz ~ 20 kHz)

- Design and specifications are subject to change without notice

BX-120

Effective output power: BX-120H

100W+100W (10%, 8 ohms)
BX-120G, E, K, Z
75W+75W (0.009%, 1 kHz,
8 ohms)
< FTC Rule U mode only >
75 Watts per channel,
Min. RMS at 8 ohms, from
20 Hz—20 kHz, with no more
than 0.02% Total Harmonic
Distortion.

Total harmonic distortion:

0.01% (50W+50W,
20 Hz—20 kHz, 8 ohms)

Frequency response:

10 Hz to 50 kHz (–1 dB)
IHF 110 dB, A curve sho

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

BX-120H
1V/47k ohms
BX-120G, E, K, Z, U
800 mV/47k ohms

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

Headphones 1 mW/1 W (8Ω)
Speakers (A or B) 8 to 16 ohms
Speakers (A + B) 16 ohms
More than 30 (8 ohms, 1 kHz)

Damping Factor:
Power requirements:

AC 120V, 60 Hz
 BX-120G, K
 AC 240V, 50/60 Hz
 BX-120H
 AC 120V/220V/240V
 switchable, 50/60 Hz
 BX-120E, Z
 AC 220V, 50/60 Hz

Power consumption:

BX-120G, E, K, Z
 350 W
 BX-120U
 100 W
 BX-120H
 118 W
 300 (W) × 71 (H) × 200 (D) mm
 4.5 kg

Dimensions:
Weight:

300 (W) × 71 (H) × 200 (D) mm
4.5 kg

- Design and specifications are subject to change without notice.

ELECTRICAL MAIN PARTS LIST (GX-120)

- +++ 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.

P, PF : pF

UH : μ H

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ELECTRICAL MAIN PARTS LIST (BX-120)

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	
=== IC ===			D22	87-020-401	DIODE,1SS176	C170	* 87-018-032	CAP,CERA-SOL S 100P	△	82-788-674	AC CORD (E) (E,Z ONLY)	=== IC ===			
	87-020-291	IC,BA3812L	D23	87-027-606	DIODE,ZENER HZ7C2L	C171	* 87-015-679	CAP,ELECT,33-10	△	87-034-708	AC CORD (K) (K ONLY)		87-020-431	IC,BA658	
	87-027-350	IC,IR2406G	D24	87-020-401	DIODE,1SS176	C172	* 87-015-679	CAP,ELECT,33-10	△	* 87-085-139	AC CORD BUSHING D (H,U ONLY)		④ 87-027-298	IC,C-MOS4001 NOR	
	87-027-895	IC,M5218L	D25	87-020-401	DIODE,1SS176	C173	* 87-015-698	CAP,ELECT 4.7-50	△	* 87-085-185	AC CORD BUSHING (E,K,Z ONLY)		87-020-429	IC,LB1290	
	87-027-925	IC,M5220											87-027-895	IC,M5218L	
	87-020-145	IC,M54563	D26	87-020-401	DIODE,1SS176	C174	* 87-015-698	CAP,ELECT 4.7-50	△SW22	87-031-685	ROTARY SW (VOLTAGE SELECTOR) (H ONLY)				
④	87-020-379	IC,MN6632	D27	87-020-401	DIODE,1SS176	C175	* 87-015-691	CAP,ELECT 0.1-50	△T1	81-739-641	TRANSFORMER P.T (H) (H ONLY)				
	87-027-986	IC,NJM4560	D28	87-020-401	DIODE,1SS176	C177	* 87-015-692	CAP,ELECT 0.22-50V	△T1	81-731-607	TRANSFORMER P.T (U) (U ONLY)		87-027-986	IC,NJM4560	
④	87-027-989	IC,TC4027BP	D29	87-027-555	DIODE,ZENER HZ5C2	C178	* 87-015-692	CAP,ELECT 0.22-50V	△T1	81-731-608	TRANSFORMER P.T (E) (E,Z ONLY)		87-020-162	IC,STK1070	
												④	87-020-207	IC,TC4022BP	
④	87-020-039	IC,TC4051BP	D30	87-020-401	DIODE,1SS176	D34	* 87-027-889	LED LN342GP (TAPE)	△T1	81-731-609	TRANSFORMER P.T (K) (K ONLY)	④	87-027-656	IC,TC4066BP	
④	87-027-656	IC,TC4066BP	D32	87-020-401	DIODE,1SS176	D35	* 87-027-889	LED LN342GP (TUNER)							
④	87-027-978	IC,TC9152P	D33	87-020-401	DIODE,1SS176	D36	* 87-027-889	LED LN342GP (AUX)							
			D35	87-020-401	DIODE,1SS176	D37	* 87-027-889	LED LN342GP (PHONO)					87-027-787	IC,UPC1237H	
=== TRANSISTOR ===			D36	87-027-405	DIODE,ZENER RD2.2EB	D38	* 87-027-889	LED LN342GP (CD)				=== TRANSISTOR ===			
	89-110-155	TRANSISTOR,2SA1015,GR	D37	87-020-401	DIODE,1SS176	D40	* 87-020-393	LED,TLR-206RPH (MUTE)					* 89-503-890	FET 2SK389	
	89-210-670	TRANSISTOR,2SB1067	D38	87-020-401	DIODE,1SS176	D41	* 87-020-393	LED,TLR-206RPH (DSL)					89-110-155	TRANSISTOR,2SA1015,GR	
	89-318-155	TRANSISTOR,2SC1815,GR	D39	87-020-401	DIODE,1SS176	D42	* 87-020-393	LED,TLR-206RPH (GE)					89-110-203	TRANSISTOR,2SA1020,O (EXCEPT H)	
	89-320-011	TRANSISTOR,2SC2001K											89-111-246	TRANSISTOR,2SA1124,R	
	89-309-456	TRANSISTOR,2SC945L,P	D40	87-027-431	DIODE,ZENER RD-6.2EB	D43	87-020-401	DIODE,1SS176					89-206-882	TRANSISTOR,2SB688 (EXCEPT H)	
	89-408-804	TRANSISTOR,2SD880,Y	D41	87-020-401	DIODE,1SS176	D44	87-020-401	DIODE,1SS176					89-318-155	TRANSISTOR,2SC1815,GR	
			D42	87-020-401	DIODE,1SS176	D45	87-020-401	DIODE,1SS176					89-318-154	TRANSISTOR,2SC1815,Y	
			D43	87-020-401	DIODE,1SS176	D46	87-020-401	DIODE,1SS176					89-320-011	TRANSISTOR,2SC2001K	
=== MAIN CIRCUIT BOARD SECTION ===			D45	87-020-401	DIODE,1SS176	D47	87-020-401	DIODE,1SS176					89-326-326	TRANSISTOR,2SC2632,R	
PCB-A	*	MAIN CIRCUIT BOARD	D51	87-027-475	DIODE,ZENER HZ-6B1	D80	* 87-020-399	LED,LN350GPH (VOLUME LEVEL)					89-326-553	TRANSISTOR,2SC2655(O) (EXCEPT H)	
C3	* 87-018-036	CAP,CERA-SOL S 220P	D65	87-020-401	DIODE,1SS176	D81	* 87-020-399	LED,LN350GPH (VOLUME LEVEL)					89-333-810	TRANSISTOR,2SC3381	
C4	* 87-018-036	CAP,CERA-SOL S 220P	D66	87-027-606	DIODE,ZENER HZ7C2L	D82	* 87-020-399	LED,LN350GPH (VOLUME LEVEL)					89-407-182	TRANSISTOR,2SD718 (EXCEPT H)	
C7	* 87-018-024	CAP,CERA-SOL S 47P													
			D70	87-020-401	DIODE,1SS176	D86	* 87-020-399	LED,LN350GPH (VOLUME LEVEL)					89-412-753	TRANSISTOR,2SD1275	
C8	* 87-018-024	CAP,CERA-SOL S 47P	D71	87-027-431	DIODE,ZENER RD-6.2EB	D87	* 87-020-399	LED,LN350GPH (VOLUME LEVEL)					89-413-023	TRANSISTOR,2SD1302S	
C53	* 87-018-044	CAP,CERA-SOL S 1000P	D72	87-020-400	DIODE,1SR35-200	D88	* 87-020-399	LED,LN350GPH (VOLUME LEVEL)				=== MAIN CIRCUIT BOARD SECTION ===			
C63	* 87-018-035	CAP,CERA-SOL 180P	D73	87-027-376	DIODE,1B4B41	D89	* 87-020-399	LED,LN350GPH (VOLUME LEVEL)				PCB-A	*	MAIN CIRCUIT BOARD	
C64	* 87-018-035	CAP,CERA-SOL 180P	D74	87-027-393	DIODE,ZENER HZ4C2	SW10	87-031-897	PUSH SW,SEA (POWER STANDBY,ON)				C92	* 87-018-131	CAP,CERA-SOL SS 1000P	
												C93	* 87-015-450	CAP,ELECT 220-25V BP	
C71	* 87-018-044	CAP,CERA-SOL S 1000P	J1	* 87-049-450	PIN JACK,4P (PHONO)	SW15	87-031-771	TACT SW EVQ-QSK04M (VOLUME-UP)				C171	* 87-010-276	CAP,ELECT 56V-5600	
C73	* 87-018-042	CAP,CERA-SOL S 680P	J2	+++	PIN JACK,4P (CD)	SW16	87-031-771	TACT SW EVQ-QSK04M (VOLUME-DOWN)					C172	* 87-010-275	CAP,ELECT 56V-8200
C201	* 87-012-110	CAP,BEAD 270P (Z ONLY)	J3	* 87-049-420	PIN JACK 4P-14 (AUX)	SW17	87-031-771	TACT SW EVQ-QSK04M (TAPE)					C173	* 87-010-276	CAP,ELECT 56V-5600
C202	* 87-012-110	CAP,BEAD 270P (Z ONLY)	J4	+++	PIN JACK 4P-14 (REC OUT)	SW18	87-031-771	TACT SW EVQ-QSK04M (PHONO)					C174	* 87-010-275	CAP,ELECT 56V-8200
													C181	* 89-663-815	CAP,CERA-SOL 0.01UF
C203	* 87-018-115	CAP,CERA-SOL 47P (Z ONLY)	J5	81-739-630	JACK,ASSY (PLAYER SYNC)	SW19	87-031-771	TACT SW EVQ-QSK04M (TUNER)					C201	* 87-010-035	CAP,ELECT 2.2/50V
C204	* 87-018-115	CAP,CERA-SOL 47P (Z ONLY)	J6	+++	JACK,ASSY (REC,PLAY)	SW20	87-031-771	TACT SW EVQ-QSK04M (AUX)					D25	87-020-110	DIODE,1SS177
C205	* 87-018-121	CAP,CERA-SOL 150P (Z ONLY)	J7	+++	JACK,ASSY (CONTROL)	SW21	87-031-771	TACT SW EVQ-QSK04M (CD)					D26	87-020-110	DIODE,1SS177
C206	* 87-018-121	CAP,CERA-SOL 150P (Z ONLY)	J8	+++	JACK,ASSY (TUNER)	VR15	87-021-898	SLIDE VOLUME 100KB (40HZ)					D30	87-027-369	DIODE,ZENER 05Z-6.2L
C207	* 87-018-121	CAP,CERA-SOL 150P (Z ONLY)	J9	+++	JACK,ASSY (CD SYNC)	VR16	87-021-898	SLIDE VOLUME 100KB (125HZ)					D31	87-020-110	DIODE,1SS177
C208	* 87-018-121	CAP,CERA-SOL 150P (Z ONLY)	J10	+++	JACK,ASSY (VIDEO SYNC)	VR17	87-021-898	SLIDE VOLUME 100KB (330HZ)					D32	87-020-110	DIODE,1SS177
C209	* 87-018-121	CAP,CERA-SOL 150P (Z ONLY)	J11	+++	JACK,ASSY (OUTPUT)	VR18	87-021-898	SLIDE VOLUME 100KB (1KHZ)					D33	87-020-110	DIODE,1SS177
C210	* 87-018-121	CAP,CERA-SOL 150P (Z ONLY)	J12	82-137-609	13P SOCKET (REMOTE CONTROL)	VR19	87-021-898	SLIDE VOLUME 100KB (2.5KHZ)					D34	87-020-400	DIODE,1SR35-200
D1	87-020-401	DIODE,1SS176	J13	82-675-661	JACK 6.3 (HP) (MIX MIC)	VR20	87-021-898	SLIDE VOLUME 100KB (6.3KHZ)					D48	87-020-400	DIODE,1SR35-200
D2	87-020-401	DIODE,1SS176	SW1	81-739-640	PUSH SW 3 (REC OUT)	VR21	87-021-898	SLIDE VOLUME 100KB (15KHZ)					D49	87-027-788	DIODE,D5FB20
D3	87-027-225	DIODE,ZENER 05Z-5.1L(TP)	SW2	+++	PUSH SW 3 (MUTE)								D51	87-020-400	DIODE,1SR35-200
D5	87-020-401	DIODE,1SS176	SW5	+++	PUSH SW 3 (DSL)								D52	87-020-400	DIODE,1SR35-200
D6	87-020-401	DIODE,1SS176	VR1	87-021-922	VOLUME 50KW (BALANCE)	=== POWER CIRCUIT BOARD SECTION ===									
D7	87-020-401	DIODE,1SS176	VR2	87-021-921	VOLUME 10KB (MIC VOLUME)	PCB-C	*	POWER CIRCUIT BOARD							
D8	87-020-401	DIODE,1SS176				△CR1	* 87-019-110	SPARK KILLER 0.01 D							
D9	87-020-401	DIODE,1SS176				△F1	87-035-139	FUSE T2.5A (E,Z ONLY)							
						△J14	* 87-049-017	AC OUTLET (H,U ONLY)							
=== FRONT CIRCUIT BOARD SECTION ===															
D10	87-020-401	DIODE,1SS176	PCB-B	81-740-620	FRONT CIRCUIT BOARD	△J15	* +++	AC OUTLET (H,U ONLY)							
D11	87-020-401	DIODE,1SS176	C141	* 87-015-696	CAP,ELECT 2.2-50	△J14	* 87-049-416	AC OUTLET (K ONLY)							
D12	87-020-401	DIODE,1SS176	C142	* 87-015-696	CAP,ELECT 2.2-50	△J15	* +++	AC OUTLET (K ONLY)							
D13	87-020-401	DIODE,1SS176	C145	* 87-015-431	CAP,AL 0.68-25	△J14	* 87-049-514	AC OUTLET (E,Z ONLY)							
D14	87-020-401	DIODE,1SS176	C146	* 87-015-431	CAP,AL 0.68-25	△J15	* +++	AC OUTLET (E,Z ONLY)							
D15	87-020-401	DIODE,1SS176	C155	* 87-018-040	CAP,CERA-SOL S 470P										
D16	87-020-401	DIODE,1SS176	C156	* 87-018-040	CAP,CERA-SOL S 470P										
D17	87-020-401	DIODE,1SS176	C159	* 87-018-036	CAP,CERA-SOL S 220P										
D18	87-027-393	DIODE,ZENER HZ4C2	C160	* 87-018-036	CAP,CERA-SOL S 220P	=== MISCELLANEOUS ===									
D19	87-020-401	DIODE,1SS176	C161	* 87-015-698	CAP,ELECT 4.7-50	△	87-034-992	AC CORD (H) (H ONLY)							
D20	87-027-555	DIODE,ZENER HZ5C2	C162	* 87-015-698	CAP,ELECT 4.7-50	△	87-303-578	AC CORD (U) (U ONLY)							
D21	87-020-401	DIODE,1SS176	C169	* 87-018-032	CAP,CERA-SOL S 100P										

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
J4	+++	JACK PLATE,ASSY (SPEAKERS A(R))	△S11	87-031-897	PUSH SW,SEA (POWER STANDBY/ON)	△F4	87-035-191	FUSE,T3.15A (E,K,Z ONLY)
J2	87-049-360	JACK6.3 (PHONES)						
J5	* 81-738-631	SPEAKER-TERMINAL (SPEAKERS B)						
L1	* 87-005-158	INDUCTOR 1UH	=== DRIVER-1 CIRCUIT BOARD SECTION ===			=== VOLTAGE SELECTOR CIRCUIT BOARD SECTION (H ONLY) ===		
L2	* 87-005-158	INDUCTOR 1UH	PCB-C	*	DRIVER-1 CIRCUIT BOARD	PCB-G	*	VOLTAGE SELECTOR CIRCUIT BOARD
△R139	* 87-025-347	RES,MFO 2W10 (F)	C3	* 87-015-380	CAP,ELECT BP 4.7-25V		82-304-743	1P TERMINAL
△R140	* 87-025-347	RES,MFO 2W10 (F)	C7	* 87-018-121	CAP,CERA-SOL SS 150P	△F1	87-033-147	FUSE CLAMP
△R223	* 87-025-348	RES,NONFLAM 1W270	C9	* 87-018-124	CAP,CERA-SOL SS 270P		87-035-312	FUSE, 7A
△R224	* 87-025-348	RES,NONFLAM 1W270	C13	* 87-018-117	CAP,CERA-SOL SS 68P	△F2	87-035-256	FUSE,3.15A
△R231	* 87-025-397	RES,NONFLAM 1K 2W	C17	* 87-018-104	CAP,CERA-SOL SS 10P	△S12	87-031-685	ROTARY SWITCH (VOLTAGE SELECTOR)
△R232	* 87-025-397	RES,NONFLAM 1K 2W	C19	* 87-018-099	CAP,CERA-SOL 3.9P			
△R301	* 87-029-383	RES,FUSIBLE 1W-3.3	C21	* 87-018-097	CAP,CERA-SOL SS 2.2P	=== MISCELLANEOUS ===		
△R302	* 87-029-383	RES,FUSIBLE 1W-3.3	C25	* 87-018-129	CAP,CERA-SOL 680P	△	* 87-034-578	AC COORD,U (U ONLY)
RY1	* 87-045-224	RELAY G2V 24V-2	C35	* 87-015-691	CAP,ELECT 0.1-50	△	* 82-788-674	AC COORD,E50 (E,Z ONLY)
RY2	* 87-045-223	RELAY G4W 24V-2	C53	* 87-018-106	CAP,CERA-SOL SS 15P	△	* 87-034-708	AC COORD,K50B (K ONLY)
S1	87-031-892	SW SUL (AFBS(SPEAKER A))	C59	* 87-018-123	CAP,CERA-SOL SS 220P	△	* 87-085-184	AC COORD BUSHING,D (H,U ONLY)
S5	+++	SW SUL (SPEAKERS A)	D1	87-027-469	DIODE,ZENER HZ16-2	△	* 87-085-185	AC COORD BUSHING (E,K,Z ONLY)
S6	+++	SW SUL (SPEAKERS B)	D3	87-020-110	DIODE,1SS177	△T1	* 81-738-606	TRANSFORMER PT,H (H ONLY)
			D5	87-027-469	DIODE,ZENER HZ16-2	△T1	* 81-738-607	TRANSFORMER PT,U (U ONLY)
			D7	87-020-110	DIODE,1SS177	△T1	* 81-738-608	TRANSFORMER PT,E (E,Z ONLY)
=== FRONT CIRCUIT BOARD SECTION ===			D15	87-027-625	DIODE,ZENER 05Z-6.8U	△T1	* 81-738-609	TRANSFORMER PT,K (K ONLY)
PCB-B	*	FRONT CIRCUIT BOARD	D17	87-027-625	DIODE,ZENER 05Z-6.8U			
C105	* 87-015-692	CAP,ELECT 0.22-50	△R43	* 87-029-112	RES,FUSIBLE 1/4W-330			
C106	* 87-015-692	CAP,ELECT 0.22-50	SFR1	* 87-021-856	SFR 100			
C107	* 87-015-696	CAP,ELECT 2.2-50	=== DRIVER-2 CIRCUIT BOARD SECTION ===					
C108	* 87-015-694	CAP,ELECT 0.47-50V	PCB-D	*	DRIVER-2 CIRCUIT BOARD			
C111	* 87-015-696	CAP,ELECT 2.2-50	C4	* 87-015-380	CAP,ELECT BP 4.7-25V			
C112	* 87-015-694	CAP,ELECT 0.47-50V	D2	87-027-469	DIODE,ZENER HZ16-2			
C115	* 87-015-696	CAP,ELECT 2.2-50	D4	87-020-110	DIODE 1SS177			
C116	* 87-015-694	CAP,ELECT 0.47-50V	D6	87-027-469	DIODE,ZENER HZ16-2			
C119	* 87-015-696	CAP,ELECT 2.2-50	D8	87-020-110	DIODE,1SS177			
C120	* 87-015-694	CAP,ELECT 0.47-50V	C8	* 87-018-121	CAP,CERA-SOL SS 150P			
C123	* 87-015-696	CAP,ELECT 2.2-50	C10	* 87-018-124	CAP,CERA-SOL SS 270P			
C124	* 87-015-694	CAP,ELECT 0.47-50V	C14	* 87-018-117	CAP,CERA-SOL SS 68P			
C125	* 87-018-129	CAP,CERA-SOL 680P	C18	* 87-018-104	CAP,CERA-SOL SS 10P			
C126	* 87-018-129	CAP,CERA-SOL 680P	C20	* 87-018-099	CAP,CERA-SOL 3.9P			
C127	* 87-015-696	CAP,ELECT 2.2-50	C22	* 87-018-097	CAP,CERA-SOL SS 2.2P			
C128	* 87-015-694	CAP,ELECT 0.47-50V	C26	* 87-018-129	CAP,CERA-SOL 680P			
C129	* 87-018-124	CAP,CERA-SOL SS 270P	C36	* 87-015-691	CAP,ELECT 0.1-50			
C130	* 87-018-124	CAP,CERA-SOL SS 270P	C54	* 87-018-106	CAP,CERA-SOL SS 15P			
C131	* 87-015-696	CAP,ELECT 2.2-50	C60	* 87-018-123	CAP,CERA-SOL SS 220P			
C132	* 87-015-694	CAP,ELECT 0.47-50V	D16	87-027-625	DIODE,ZENER,05Z-6.8U			
C133	* 87-015-696	CAP,ELECT 2.2-50	D18	87-027-625	DIODE,ZENER 05Z-6.8U			
C134	* 87-015-691	CAP,ELECT 0.1-50	△R44	* 87-029-112	RES,FUSIBLE 1/4W-330			
C135	* 87-015-694	CAP,ELECT 0.47-50V	SFR2	* 87-021-856	SFR 100			
C137	* 87-015-690	CAP,ELECT 22-35V	=== FUSE CIRCUIT BOARD SECTION ===					
C138	* 87-015-682	CAP,ELECT 22-16	PCB-E	*	FUSE CIRCUIT BOARD (EXCEPT H)			
C144	* 87-018-127	CAP,CERA-SOL SS 470P		82-304-743	1P TERMINAL (EXCEPT H)			
C146	* 87-018-130	CAP,CERA-SOL 820P	△	87-033-147	FUSE CLAMP (EXCEPT H)			
C147	* 87-015-691	CAP,ELECT 0.1-50	△F1	87-035-313	FUSE,5A (U ONLY)			
C151	* 87-015-689	CAP,ELECT 35-10V	△F1	87-035-190	FUSE,T2A (E,K,Z ONLY)			
D35	87-020-110	DIODE,1SS177						
D36	87-020-110	DIODE,1SS177	=== FUSE SUB CIRCUIT BOARD SECTION ===					
D37	87-020-110	DIODE,1SS177	PCB-F	*	FUSE SUB CIRCUIT BOARD (EXCEPT H)			
D38	87-020-110	DIODE,1SS177	D65	87-027-185	DIODE,30D2FA (EXCEPT H)			
D39	87-020-110	DIODE,1SS177	D66	87-027-185	DIODE,30D2FA (EXCEPT H)			
D40	87-020-110	DIODE,1SS177	D67	87-027-185	DIODE,30D2FA (EXCEPT H)			
D41	87-020-110	DIODE,1SS177	D68	87-027-185	DIODE,30D2FA (EXCEPT H)			
D42	87-020-110	DIODE,1SS177	△F3	87-035-303	FUSE,4A (U ONLY)			
D43	* 87-020-393	LED,TLR-206RPH (AFBS(SPEAKER A))	△F3	87-035-191	FUSE,T3.15A (E,K,Z ONLY)			
D45	87-027-686	DIODE,ZENER HZ12A1	△F4	87-035-303	FUSE,4A (U ONLY)			
D46	87-020-110	DIODE 1SS177						
D47	87-020-110	DIODE,1SS177						
FL	* 81-738-640	FL,CP1057GR						
△R229	* 87-029-390	RES,FUSIBLE 120 1/4W						

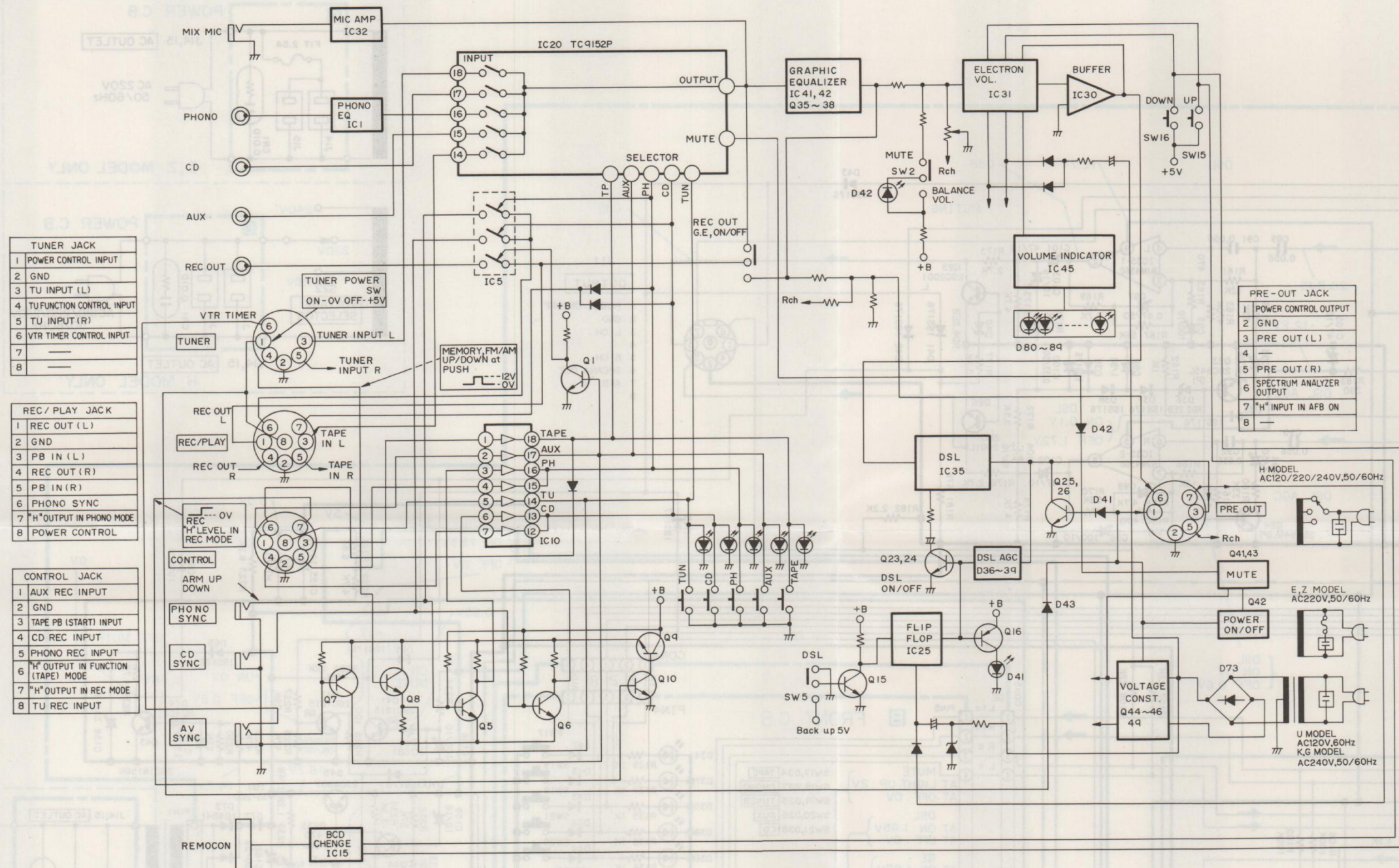
C-MOS IC handling precaution
The C-MOS IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.
1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260℃) 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.
4. The ICs on the electrical parts which are indicated by an C-MOS IC symbol mark (⊕).

 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.

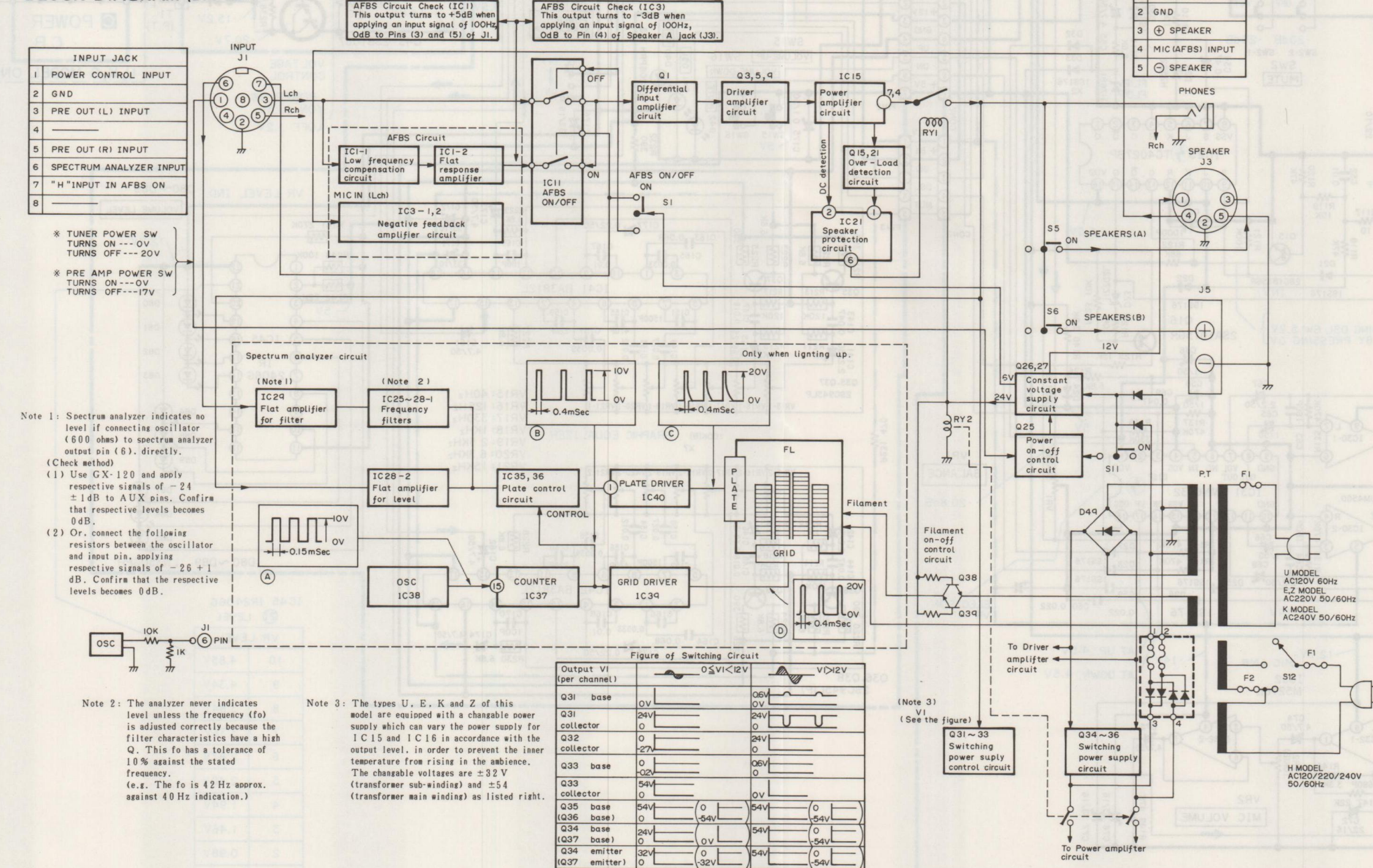
Note; Combination Circuit Board
The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

- [GX-120]**
Combination circuit board **81-729-610**
PCB-A **81-739-611**
PCB-B **81-739-612**
- [BX-120]**
Combination circuit board **81-738-610**
PCB-A **81-738-611**
PCB-B **81-738-612**
PCB-C **81-738-613**
PCB-D **81-738-614**
PCB-E **81-738-616 (EXCEPT H)**
PCB-F **81-738-617 (EXCEPT H)**
PCB-G **81-738-618 (H ONLY)**

BLOCK DIAGRAM (GX-120)

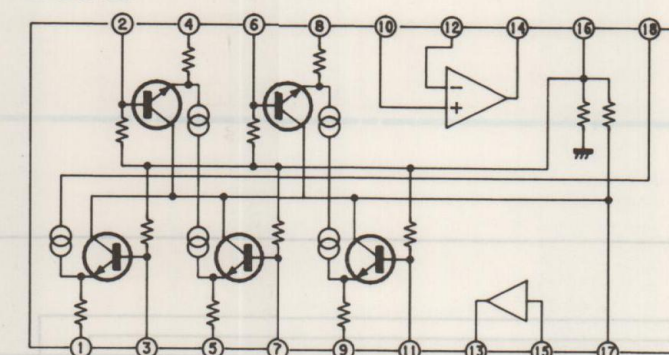


BLOCK DIAGRAM (BX-120)

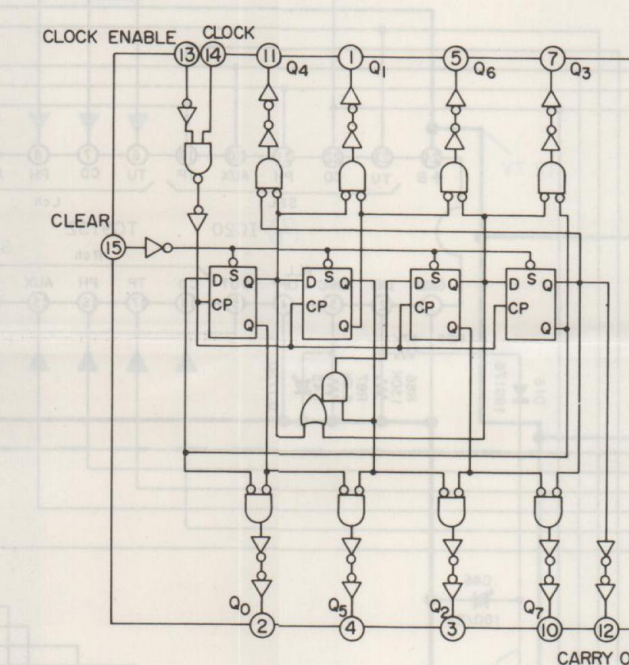


IC BLOCK DIAGRAM

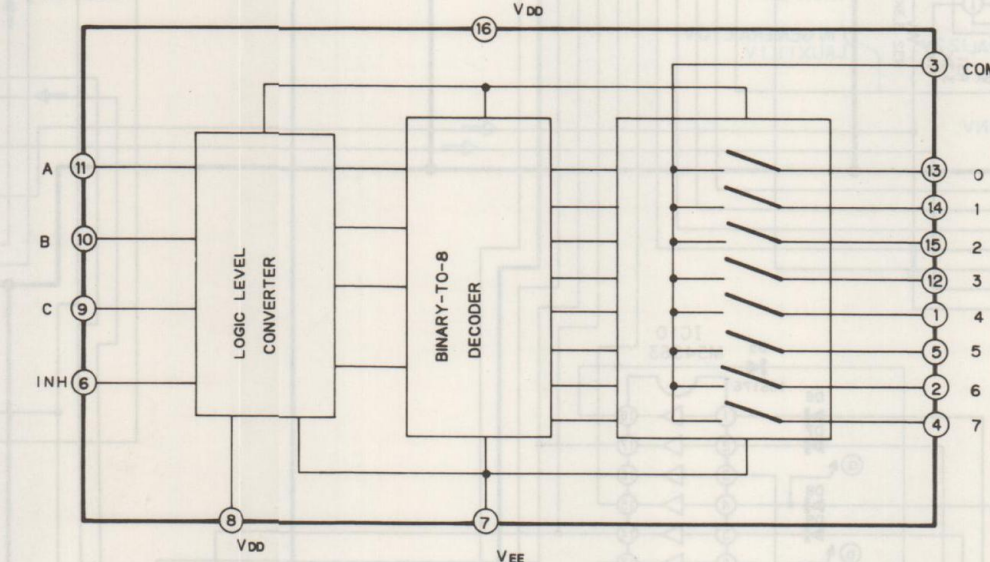
BA3812L



TC4022BP



TC4051



TRUTH TABLE

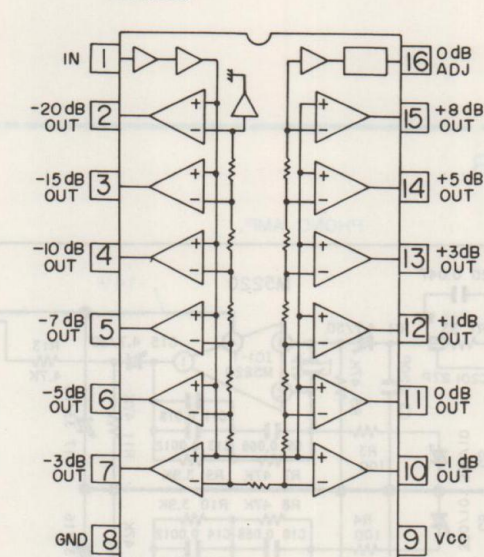
CONTROL INPUTS				"ON" CHANNEL
INHIBIT	C	B	A	
L	L	L	L	0
L	L	L	H	1
L	L	H	L	2
L	L	H	H	3
L	H	L	L	4
L	H	L	H	5
L	H	H	L	6
L	H	H	H	7
H	*	*	*	NOTE

* Don't Care

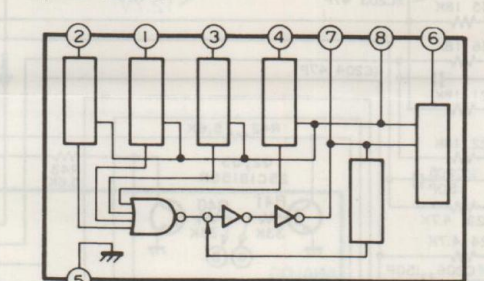
NOTES:

- The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
- Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
- Capacitors with no designation have a dielectric strength of less than 50WV.
- The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
- Ceramic capacitor symbols:
— High dielectric constant system (YY)
— High dielectric constant system (YW, YP, YZ)
— Semiconductor ceramic
- Explanation of symbols
M Mylar capacitor
A Aluminum solid capacitor
PP Polypropylene film capacitor
BP Bi-polarized capacitor
L Low-leakage capacitor
T Tantalum capacitor
S Styrol capacitor

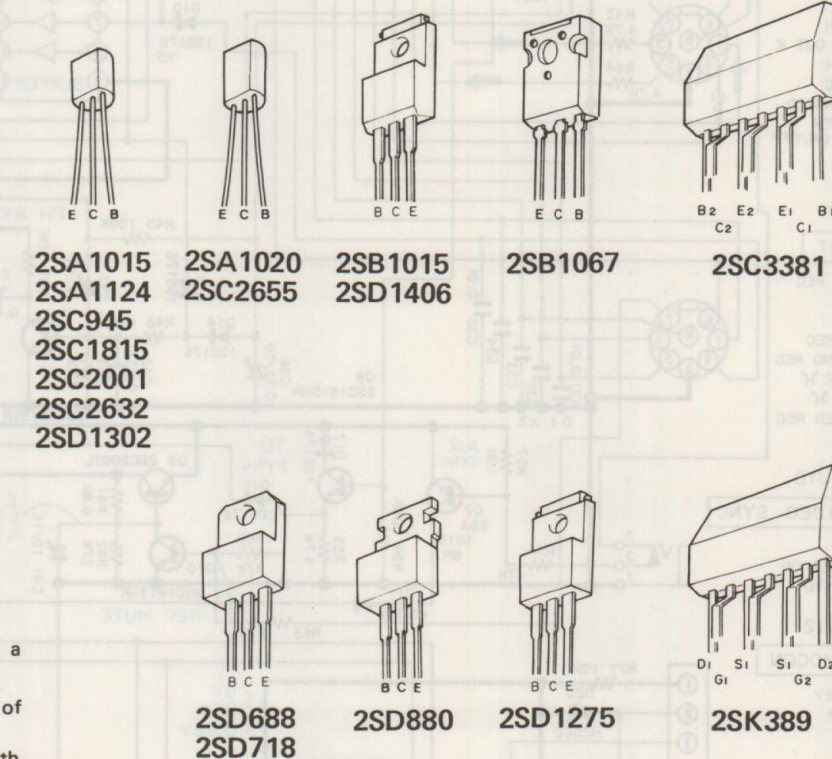
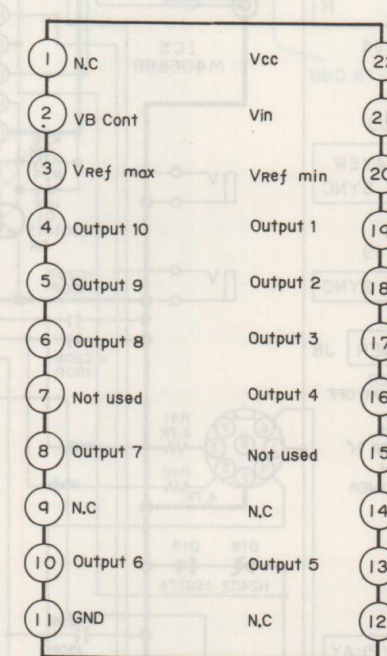
BA658



μPC 1237H



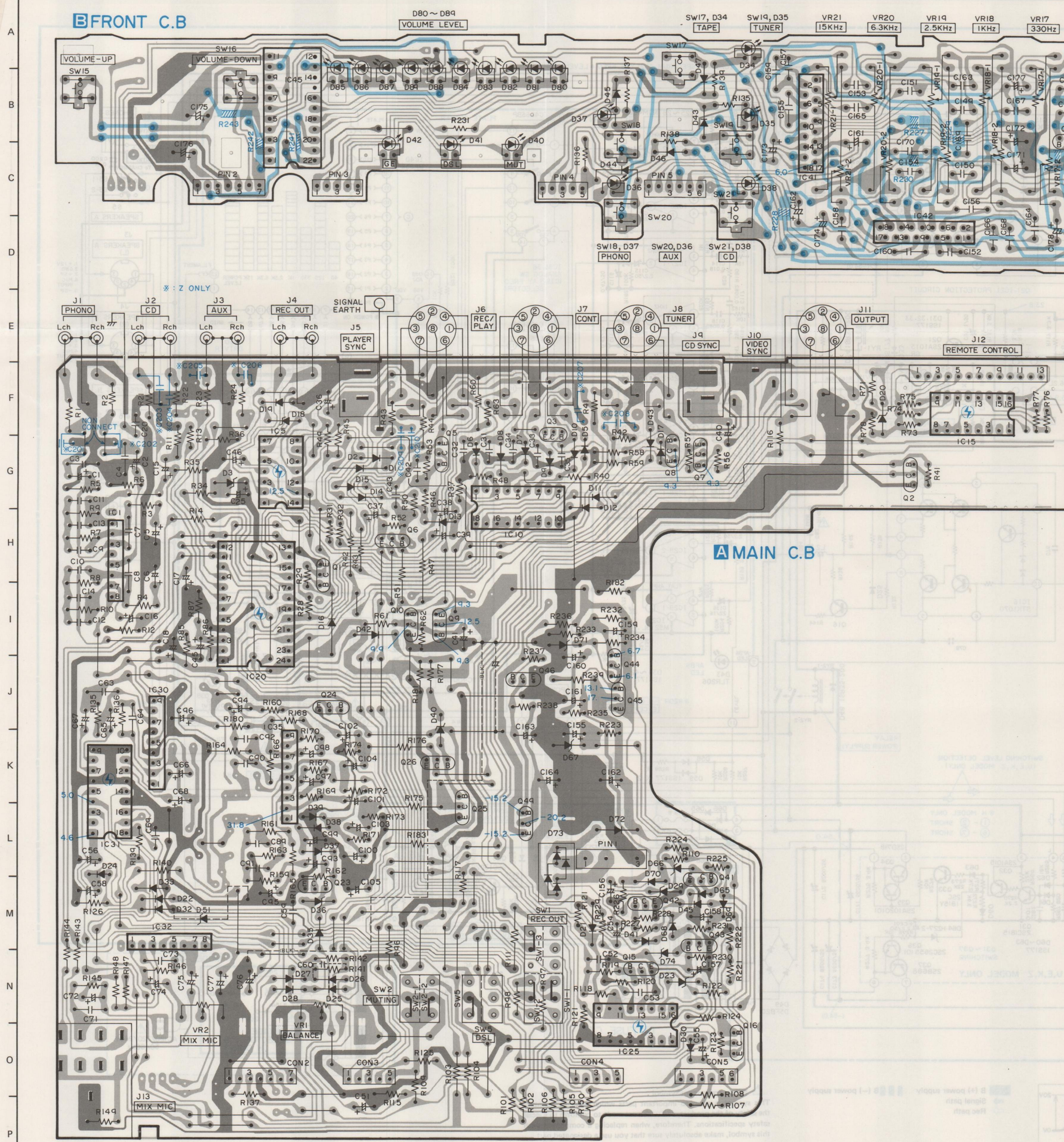
IR2406G



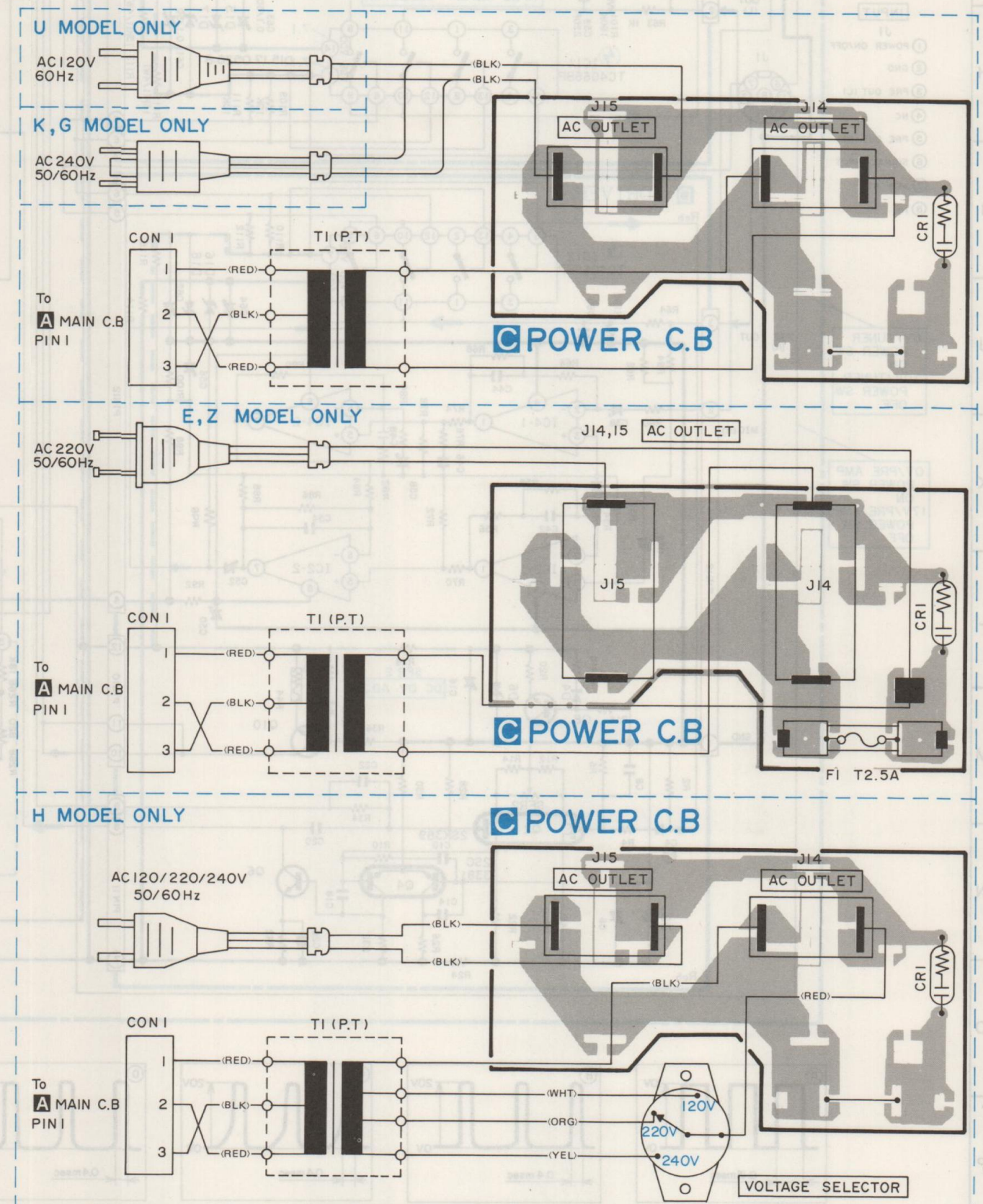
Safety component symbol

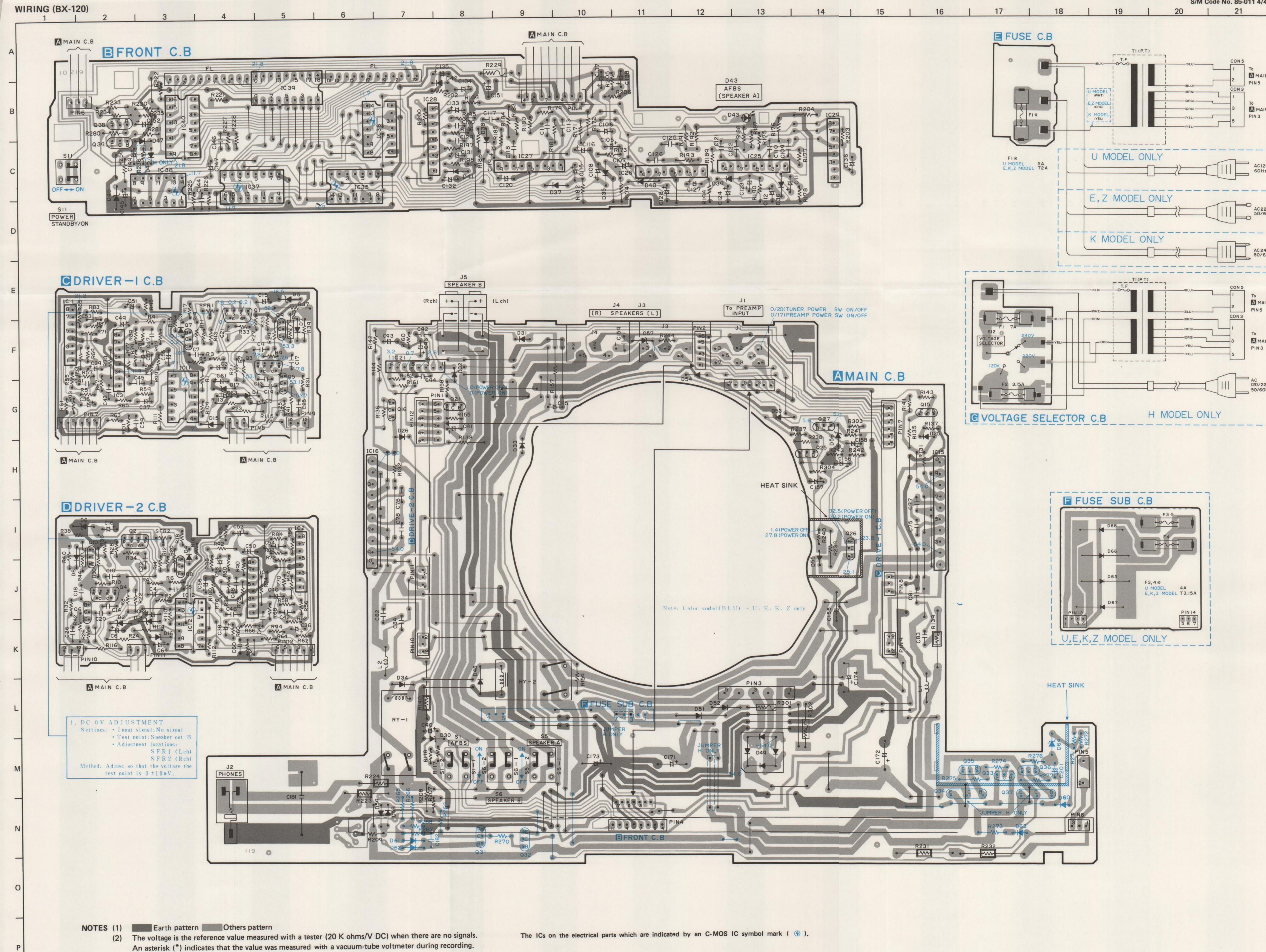
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

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



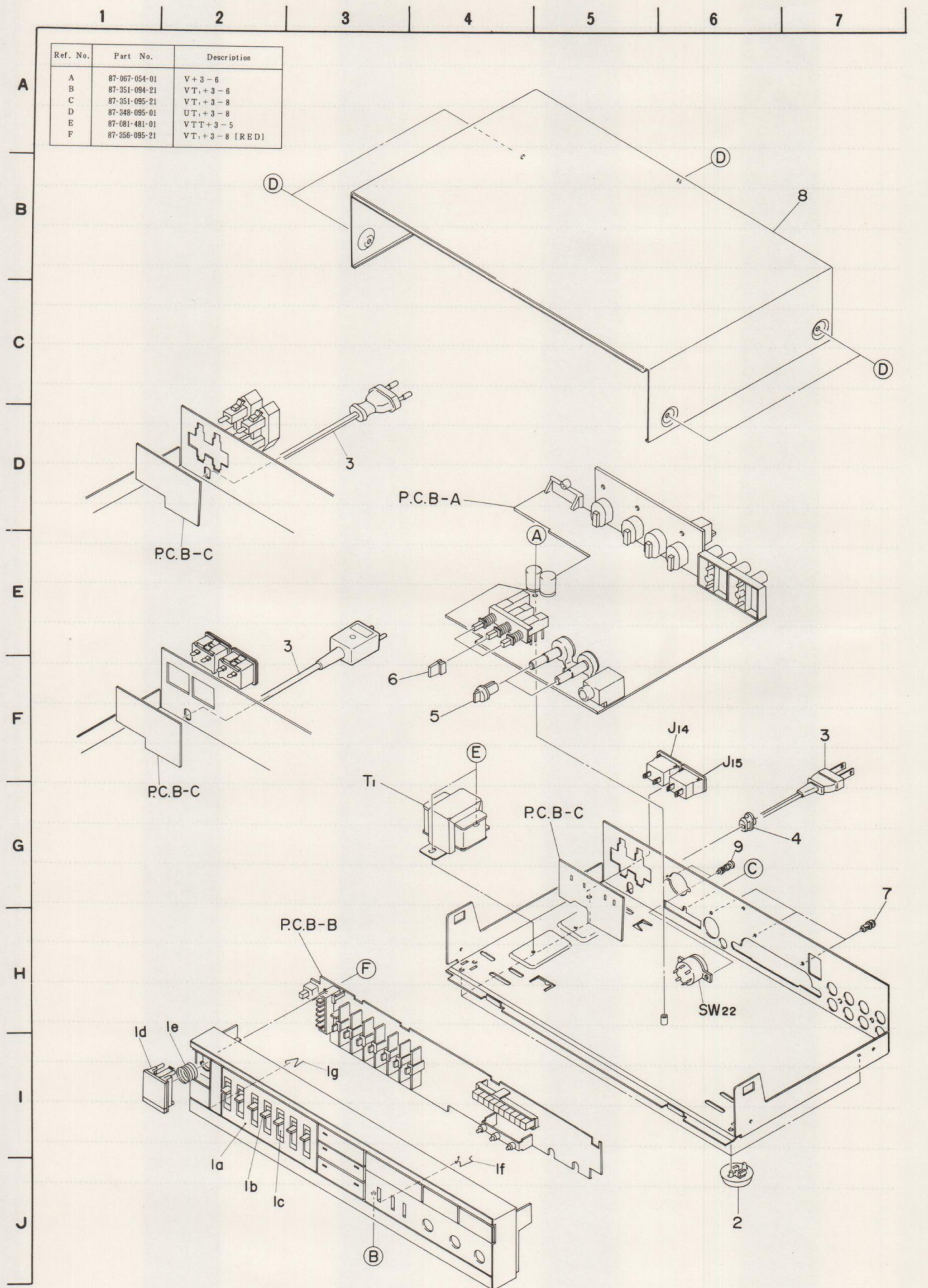
NOTES (1) Earth pattern Component side pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.





EXPLODED VIEW GX-120

OM3M

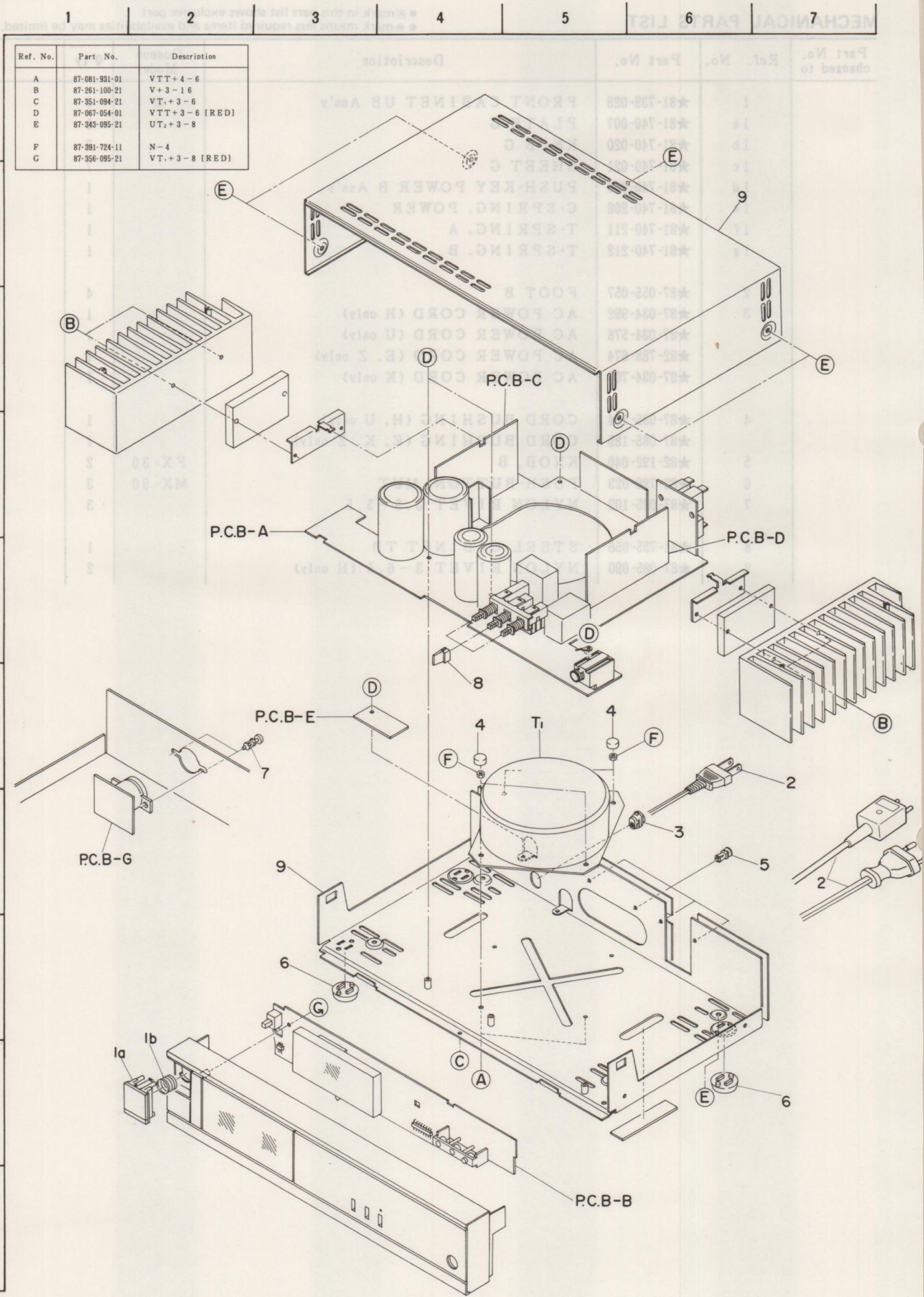


MECHANICAL PARTS LIST

●※mark in this part list shows exclusive part
●★mark means less required items and availabilities may be limited.

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★81-739-028	FRONT CABINET UB Ass'y	※	1
	1a	★81-740-007	PLATE G		1
	1b	★81-740-020	KNOB G		7
	1c	★81-740-021	SHEET G		7
	1d	★81-740-050	PUSH-KEY POWER B Ass'y		1
	1e	★81-740-208	C-SPRING, POWER		1
	1f	★81-740-211	T-SPRING, A		1
	1g	★81-740-212	T-SPRING, B		1
	2	★87-055-057	FOOT B		4
	3	★87-034-992	AC POWER CORD (H only)		1
		★87-034-578	AC POWER CORD (U only)		1
		★82-788-674	AC POWER CORD (E, Z only)		1
		★87-034-708	AC POWER CORD (K only)		1
	4	★87-085-184	CORD BUSHING (H, U only)		1
		★87-085-185	CORD BUSHING (E, K, Z only)		1
	5	★82-192-040	KNOB, B	FX-30	2
	6	★82-798-023	PUSH-BUTTON, MUT	MX-90	3
	7	★87-085-102	NYLON RIVET 3.5-5.5		3
	8	★81-735-056	STEEL CABINET TB		1
	9	★87-085-090	NYLON RIVET 3-6.5 (H only)		2

EXPLODED VIEW BX-120



PARTS LIST

MECHANICAL PARTS LIST

※ mark in this part list stows exclusive part.
★-mark means less required items and availabilities may be limited.

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★81-738-028	FRONT CABINET UB Ass'y	※	1
	1a	★81-740-050	PUSH-KEY POWER B Ass'y		1
	1b	★81-740-208	C-SPRING, POWER		1
	2	★87-034-992	AC POWER CORD (H only)		1
		★87-034-578	AC POWER CORD (U only)		1
		★82-788-674	AC POWER CORD (E, Z only)		1
		★87-034-708	AC POWER CORD (K only)		1
	3	★87-085-184	CORD BUSHING (H, U only)		1
		★87-085-185	CORD BUSHING (E, K, Z only)		1
	4	★82-781-206	PLATE NUT	SA-P 80	2
	5	★87-085-102	NYLON RIVET 3.5-5.5		4
	6	★87-055-057	FOOT B		4
	7	★87-085-090	NYLON RIVET 3-6.5 (H only)		2
	8	★82-798-023	PUSH-BUTTON, MUT	MX-90	3
	9	★81-738-035	STEEL CABINET PB	※	1

ACCESSORIES/PACKAGE LIST

GX-120

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	81-739-904	INSTRUCTION BOOKLET	※	1

BX-120

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★81-738-904	INSTRUCTION BOOKLET	※	1

AIWA Co., Ltd. Tokyo Japan