

Symbol No.	Part No.	Description
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Symbol No.	Part No.	Description
R720	87-029-089-01	< Resistors > 4.7Ω ¼W Fuse resistor
R702	87-029-117-01	10Ω ¼W Fuse resistor
R106	87-029-094-01	15Ω ¼W Fuse resistor
R102	87-029-016-01	22Ω ¼W Fuse resistor
R206	87-029-082-01	100Ω ¼W Fuse resistor
R303,304	88-175-224-01	220kΩ ¼W LN
R301,302	88-175-474-01	470kΩ ¼W LN
C501,502	87-015-241-01	< Capacitors > 1μF 50V Electrolytic LL
C301,302	87-015-617-01	10μF 16V Electrolytic LL
C805	87-015-668-01	22μF 16V Electrolytic BP
C605	87-015-431-01	0.68μF 25V Aluminum solid
C351,352	87-014-037-01	150P PP
C2,3	87-014-158-01	0.0033μF 100V PP
C311,312	87-014-159-01	0.012μF 100V PP
◀DOLBY-NR CIRCUIT BOARD SECTION▶		
PCB-B	82-184-620-11	Dolby-NR circuit board
IC1,2	87-027-862-01	IC, HA12038
L1,2	87-005-155-01	Coil, 36mH
R9,10	87-025-271-01	< Resistors > 5.1kΩ ¼W Metal film resistor
R11,12	87-025-295-01	15kΩ ¼W Metal film resistor
R35,36	87-025-296-01	56kΩ ¼W Metal film resistor
C15,16	87-015-617-01	< Capacitors > 10μF 16V Electrolytic LL
C21,22,23, 24,45,46	87-015-366-01	0.15μF 10V Aluminum solid
C35,36	87-014-160-01	0.0033μF 100V
C33,34	87-014-161-01	0.0039μF 100V
	87-049-117-01	Pin, 7P
	87-049-119-01	Pin, 9P
◀KEY BOARD CIRCUIT BOARD SECTION▶		
PCB-C	*	Key board circuit board
S905,906, 907,908, 909,910, 911,912, 913	87-031-712-01	Tact switch (PHONO REC, TUNE REC, AUX REC, PLAY, F.FWD/ CUE, REW/REVIEW, REC, STOP, PAUSE)
D911	87-027-542-01	LED, LN217RP
D912	87-027-543-01	LED, LN317GP
D913	87-027-671-01	LED, LN417YP
◀LED CIRCUIT BOARD SECTION▶		
PCB-D	*	LED circuit board
D902,905, 909	87-027-772-01	LED, GL9PR4
D903,910	87-027-773-01	LED, GL9NG4
D904	87-027-774-01	LED, GL9HY4
D906,907, 908	87-027-775-01	LED, LT903DI
◀SWITCH CIRCUIT BOARD SECTION▶		
PCB-E	*	Switch circuit board
D901	87-027-097-01	Diode, IS1555

Symbol No.	Part No.	Description
	87-034-962-01	AC power cord (H, HU model only)
	87-034-674-01	AC power cord (E model only)
	87-788-673-01	AC power cord (K model only)
	87-034-892-01	AC power cord (G model only)
	87-085-165-01	Cord bushing (H, HU model only)
	87-085-166-01	Holder, AC power cord (E,K,G model only)

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 82-184-621-31

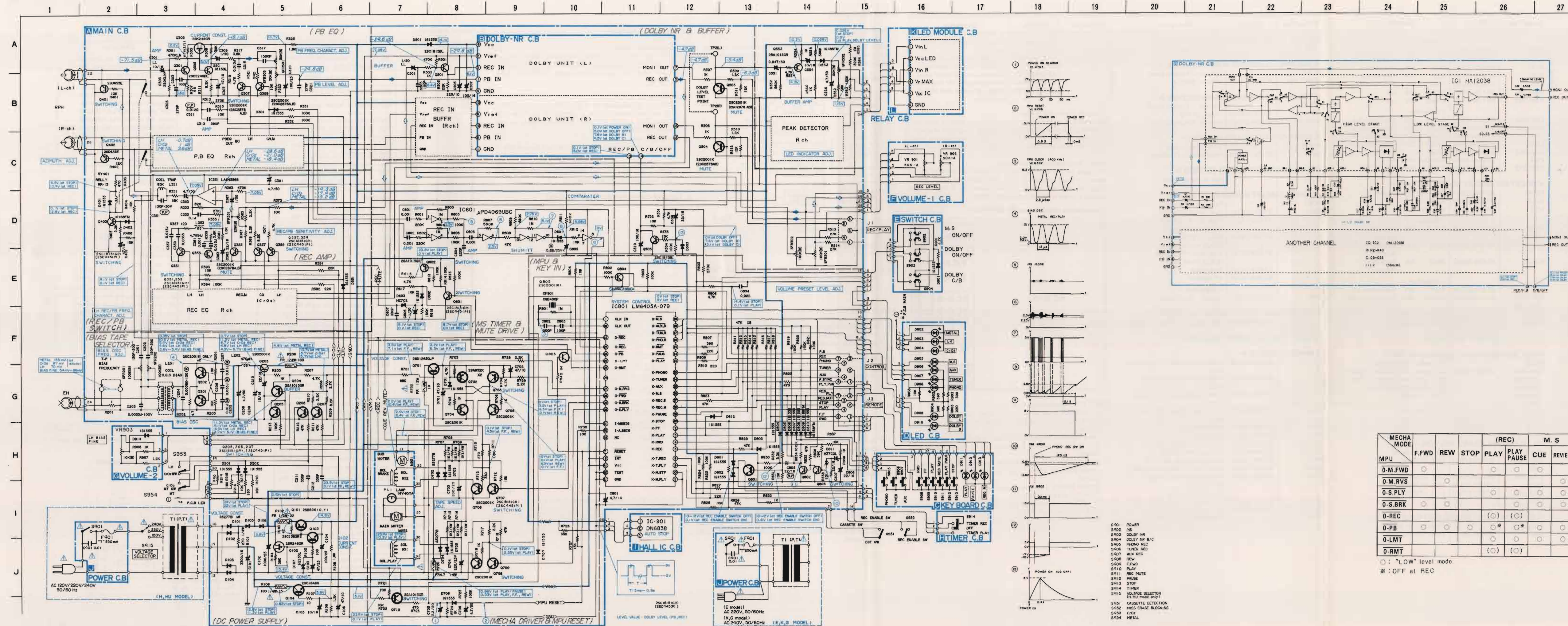
C-MOS IC handling precaution

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°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.
4. The IC's on the electrical parts which are indicated by an C-MOS IC symbol mark ().

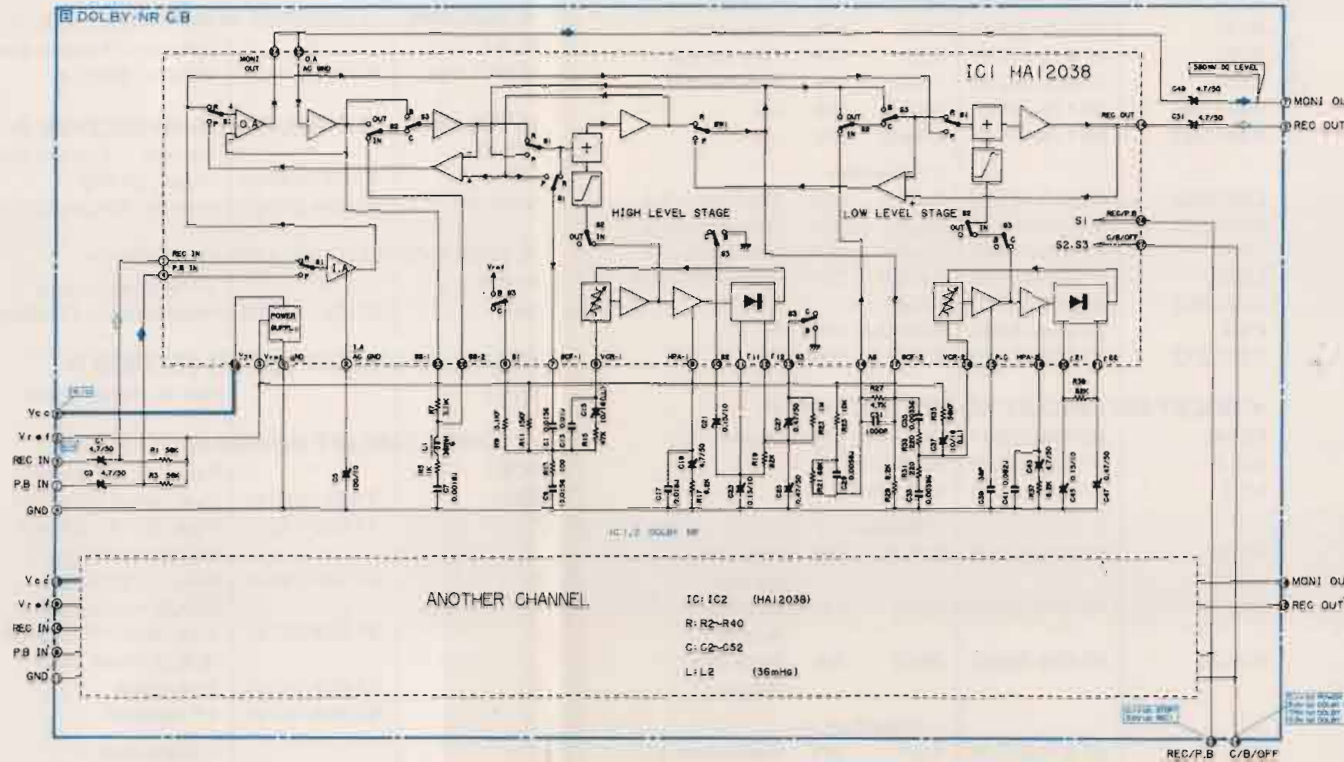
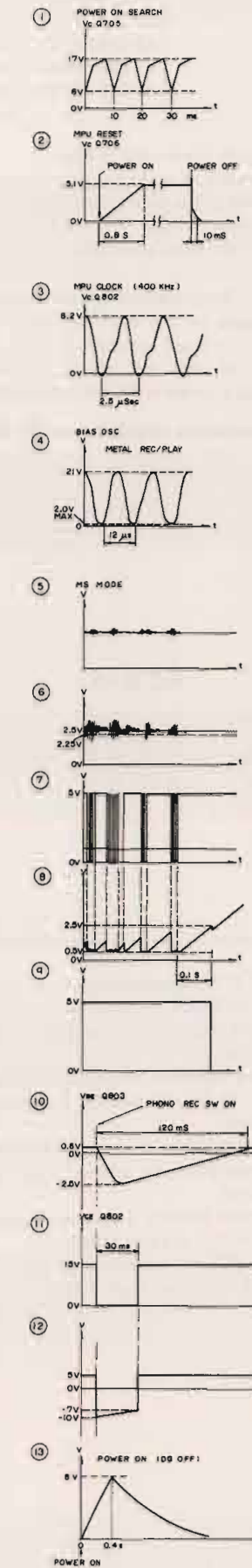
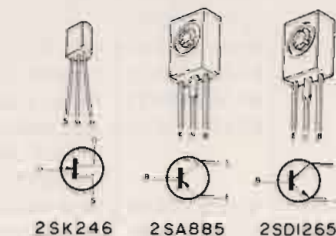
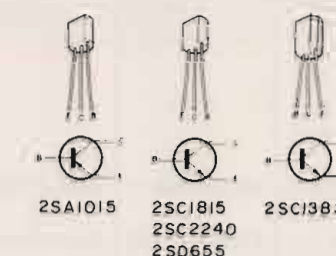
Fig. 4

SCHEMATIC DIAGRAM



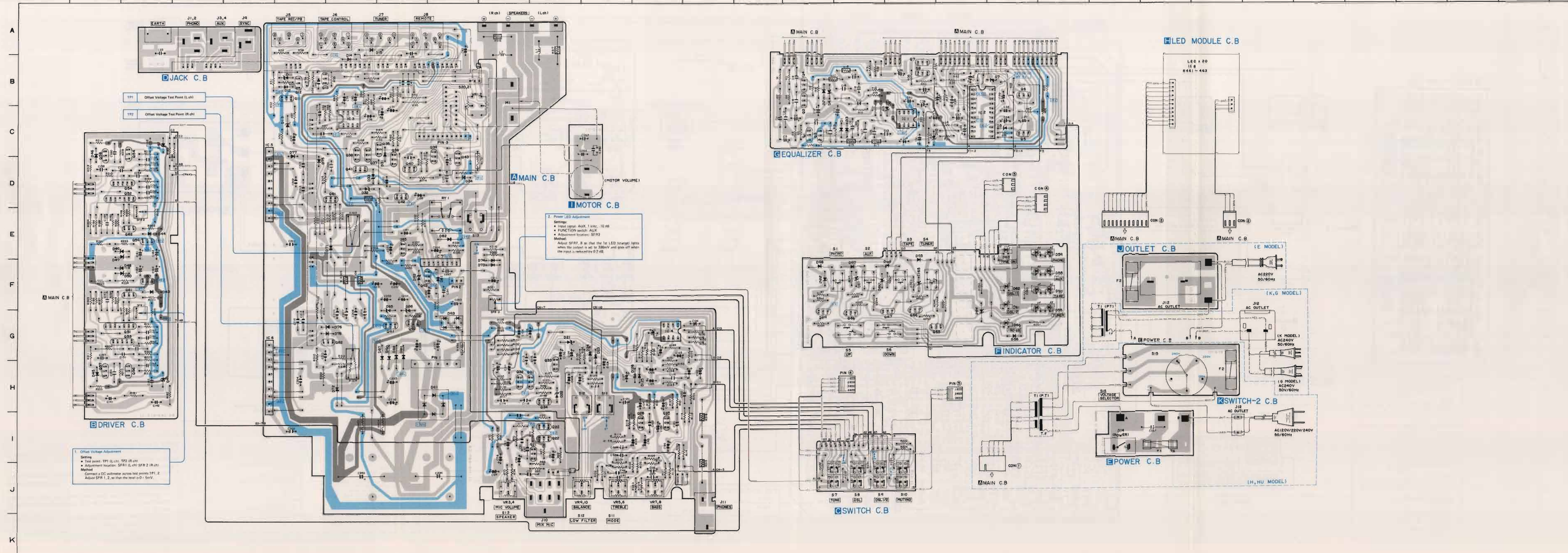
NOTES:

- 1) B (+) power supply
- 2) Signal path
- 3) Rec path
- 3) The voltage is the reference value measured with a tester (20 k-ohms/V DCI) when there are no signals. But () is with recording.
- 4) An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
- 5) Resistors with no designation have a rated power of 1/8W and a tolerance of $\pm 5\%$.
- 6) Capacitors with no designation have a dielectric strength of less than 50WV.
- 7) The only capacitor tolerance indicated are $\pm 5\%$ (J) and $\pm 10\%$ (K).
- 8) Ceramic capacitor symbols:
 - For temperature compensation (SL)
 - High dielectric constant system (YY)
 - High dielectric constant system (YW, YP, YZ)
 - Semiconductor ceramic
- 9) Explanation of symbols:
 - Mylar capacitor
 - Aluminum solid capacitor
 - Polypropylene film capacitor
 - Bi-polarized capacitor
 - Low-leakage capacitor
 - Fuse resistor
 - Nonflammable resistor
 - Low noise resistor
- 10) 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.
- 11) This schematic diagram is subject to change without notice in the interests of improved performance.



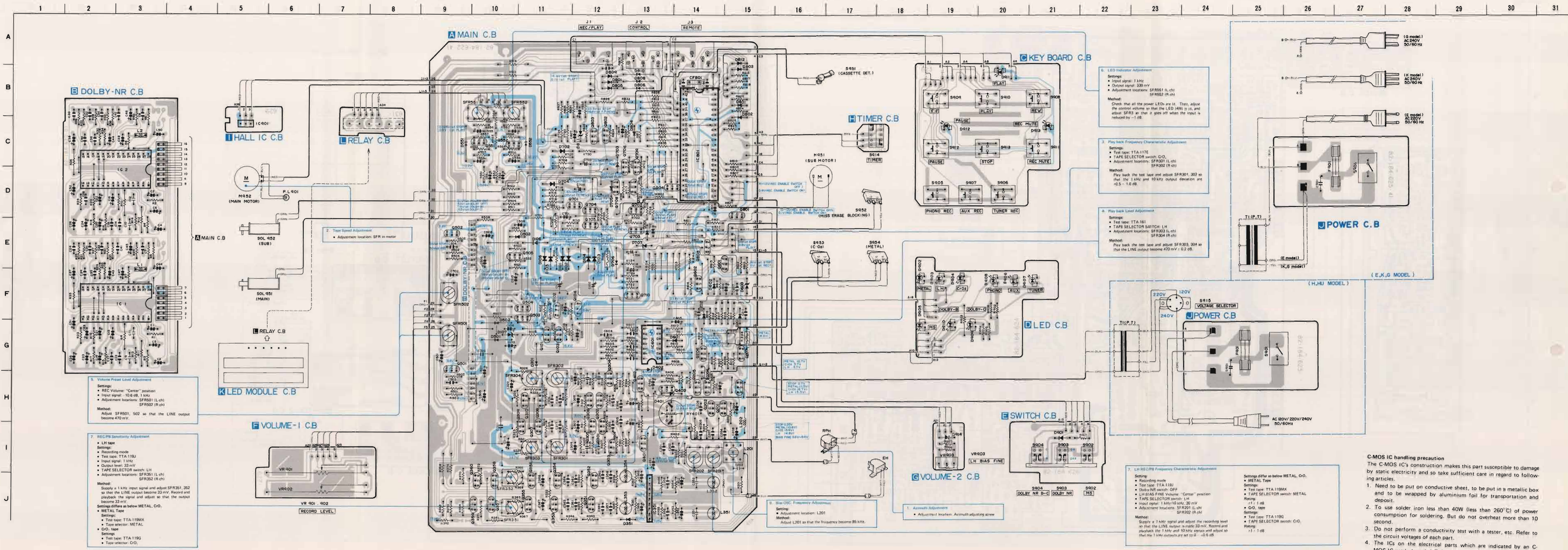
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NOTES (1)  B(+) Pattern  B (-) Pattern  Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals



NOTES (1) B(+) Pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.



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°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.
4. The ICs on the electrical parts which are indicated by an C-MOS IC symbol mark (Φ).

ELECTRICAL MAIN PARTS LIST

Symbol No.	Part No.	Description
◀ MAIN CIRCUIT BOARD SECTION ▶		
PCB-A	*	Main circuit board
IC3,4	87-027-629-01	IC, 4558DX
IC5,6	87-027-871-01	IC, STK-0060, 2
IC7	87-027-787-01	IC, μ PC1237H
Q11	89-304-954-01	Transistor, 2SC495 (Y)
Q12,13,41	89-318-154-01	Transistor, 2SC1815 (Y)
Q21	89-107-336-01	Transistor, 2SA733 (P)
Q22,23,25, 26,31,32	89-309-456-01	Transistor, 2SC945L (P)
Q33,34,39 40,43	89-320-011-21	Transistor, 2SC2001 (L)
Q35,37	89-110-154-01	Transistor, 2SA1015 (Y)
Q36,38	89-109-521-01	Transistor, 2SA952 (K)
Q42,93	89-313-846-01	Transistor, 2SC1384 (R)
Q81,82	89-318-156-01	Transistor, 2SC1815 (BL)
Q85	89-110-155-01	Transistor, 2SA1015 (GR)
Q91	89-412-653-01	Transistor, 2SD1265 (OP)
Q92	89-209-412-31	Transistor, 2SB941 (PQ)
D11	87-027-686-01	Zener diode, HZ-12A1
D12,14,15, 23,24,31 71,72,73, 74,81,125, 126	87-027-219-01	Diode, MA-150
D13	87-027-347-01	Zener diode, HZ 18-2L
D21,22	87-027-393-01	Zener diode, HZ4C2
D32,33	87-027-416-01	Zener diode, HZ3C2
D34	87-027-405-01	Zener diode, RD2,2EB
D75,76,77, 78	*87-027-628-01	Variable capacitor SV-03
D82	87-027-365-01	Diode, S5277B
D85,86	87-027-661-01	Zener diode, HZ30-2L
D87,88,89, 90	87-027-626-01	Diode, S5277D
D91	87-027-788-01	Diode, D5FB20
D92	87-027-469-01	Zener diode, HZ16-2
D93	87-027-376-01	Diode, 1B4B41
L1,2	82-499-639-01	Inductor coil, 1 μ H
J5,6,7,8	82-788-621-01	Pin jack ass'y (REC/PB, TAPE CONTROL, TUNER)
J10	87-049-067-01	Jack, 6.3 ϕ (MIC)
J11	87-049-089-01	Jack, 6.3 ϕ (PHONES)
RY1	87-045-167-01	Relay, 24V
VR1,2,M1 S20,21	87-021-714-01	Motor volume, 50k Ω -A (VOLUME, MOTOR, VOLUME CONTROL, MOTOR CONTROL)
VR3,4	87-021-713-01	Volume, 50k Ω -B (MIC MIX)
VR5,6,7,8	87-021-715-01	Volume, 50k Ω -B (TREBLE, BASS)
VR9,10	87-021-716-01	Volume, 10k Ω -MN (BALANCE)
S11,12	82-788-623-01	Push switch (MODE, FILTER)
S13	87-031-699-01	Push switch (SPEAKER)
SFR3	87-021-613-01	Semi-fixed resistor, 10k Ω -B
	82-788-624-01	Speaker terminal, 4P
PIN-2	87-049-109-01	Pin, 3P
PIN-1	82-481-697-01	Pin, 5P
PIN-3	87-049-108-01	Pin, 11P
< Resistors >		
R453,454	87-029-114-01	4.7 Ω $\frac{1}{4}$ W Fuse resistor
R456	87-029-117-01	10 Ω $\frac{1}{4}$ W Fuse resistor
R303,304	87-025-250-01	0.22 Ω 3W Cement resistor

Symbol No.	Part No.	Description
R305,306	87-025-193-01	10 Ω 2W Metal film resistor
R173	87-025-331-01	8 Ω 2W Metal film resistor
R315,316	87-025-055-01	270 Ω 2W Metal film resistor
R317,318	87-025-318-01	10 Ω 1W Metal film resistor
< Capacitors >		
C237,238	87-015-916-01	22 μ F 100V Electrolytic
C235,236	87-015-914-01	47 μ F 100V Electrolytic
C239,240	87-015-945-01	15000 μ F 56V Electrolytic
C36,254	87-015-379-01	1 μ F 50V Electrolytic BP
C225	87-015-450-01	220 μ F 25V Electrolytic BP
◀ DRIVER CIRCUIT BOARD SECTION ▶		
PCB-B	*	Driver circuit board
Q51,52	89-501-505-01	FET, 2SK150GR
Q53,54	89-315-834-01	Transistor, 2SC1583 (F)
Q55,56	89-111-246-01	Transistor, 2SA1124 (R)
Q57,58	89-326-326-01	Transistor, 2SC2632 (R)
Q59	89-322-354-01	Transistor, 2SC2235 (Y)
Q60	89-109-654-01	Transistor, 2SA965Y
Q61,62	89-318-154-01	Transistor, 2SC1815 (Y)
D41,42,47, 48	87-027-323-01	Zener diode, HZ22-2L
D49,50	87-027-402-01	Zener diode, HZ24-2L
SFR1,2	87-021-559-01	Semi-fixed resistor, 100 Ω -B
PIN	87-032-633-01	Pin, 3P
◀ SWITCH-1 CIRCUIT BOARD SECTION ▶		
PCB-C	*	Switch-1 circuit board
S7,8,9,10	82-788-622-01	Push-switch (TONE, DSL, DSL1,2, MUTING)
PIN5	82-788-661-01	Pin, 3P
PIN4	82-788-663-01	Pin, 4P
◀ JACK CIRCUIT BOARD SECTION ▶		
PCB-D	*	Jack circuit board
J1,2,3,4,9	82-788-621-01	Pin jack ass'y (PHONO, AUX, SYNC, GND)
◀ POWER CIRCUIT BOARD SECTION ▶		
PCB-E	*	Power circuit board
S14	87-031-700-01	Push-switch (POWER) (H, HU model only)
F1	87-035-312-01	Fuse, 7A (H, HU model only)
	87-098-079-01	Fuse label, 7A (H, HU model only)
F1	87-035-190-01	Fuse, "T" 2A (E,K,G model only)
	87-098-019-01	Fuse label, "T" 2A (E, K, G model only)
	87-033-147-01	Fuse clamp
< Capacitor >		
C51	87-019-112-01	0.01 μ F Spark killer
◀ INDICATOR CIRCUIT BOARD SECTION ▶		
PCB-F	*	Indicator, circuit board
Q65	89-318-154-01	Transistor, 2SC1815 (Y)
Q66,67,68 69	89-110-154-01	Transistor, 2SA1015 (Y)
D7	88-052-188-11	Diode, IS188 (FM)

Symbol No.	Part No.	Description
D55,57,58, 59	87-027-820-01	LED, LT9030N
D56	87-027-219-01	Diode, MA150
D60,61,62, 63	87-027-772-01	LED, GL-9PR4
D64	87-027-320-01	Zener diode, HZ7C2
D65,66,67,68	87-027-584-01	Zener diode, HZ9CIL
S1,2,3,4	87-031-712-01	Tact switch (PHONO, AUX, TAPE, TUNER)
S5,6	87-031-698-01	W tact switch (UP, DOWN) KHF-10901
CON5	82-788-662-01	Connector ass'y, 3P
CON4	82-788-664-01	Connector ass'y, 4P
◀ EQ CIRCUIT BOARD SECTION ▶		
PCB-G	*	EQ circuit board
IC1	87-027-629-01	IC, 4558DX
IC2	87-027-829-01	IC, TK10321
Q1,2,3,4	89-109-916-01	Transistor, 2SA991 (F)
Q5,6	89-406-555-01	Transistor, 2SD655E
Q7,8	89-318-154-01	Transistor, 2SC1815 (Y)
D1,2,3,4	87-027-219-01	Diode, MA150
D5	87-027-584-01	Zener diode, HZ9CIL
D8	87-027-097-01	Diode, IS1555
D9,10	87-027-347-01	Zener diode, HZ18-2L
D95,96,97, 98	88-052-188-11	Diode, IS188FM
PIN	87-032-633-01	Pin, 3P
PIN	87-032-634-01	Pin, 4P
PIN	87-032-637-01	Pin, 7P
PIN	87-032-640-01	Pin, 10P
< Resistors >		
R17,18	87-025-280-01	3.9k Ω $\frac{1}{4}$ W Metal film resistor
R19,20	87-025-288-01	47k Ω $\frac{1}{4}$ W Metal film resistor
< Capacitors >		
C3,4	87-015-643-01	2.2 μ F 50V Electrolytic LL
C13,14	87-014-122-01	0.018 μ F PP
C17,18	87-014-123-01	0.068 μ F PP
◀ LED MODULE CIRCUIT BOARD SECTION ▶		
	87-027-869-01	LED module (with PCB-H)
◀ MOTOR CIRCUIT BOARD SECTION ▶		
PCB-I	*	Motor circuit board
◀ OUTLET CIRCUIT BOARD SECTION ▶ = "E model only"		
PCB-J	*	Outlet circuit board
J12	87-049-014-01	AC outlet
F2	87-035-219-01	Fuse, "T" 500mA
	87-098-013-01	Fuse label, "T" 500mA
	87-033-147-01	Fuse clamp
◀ SWITCH-2 CIRCUIT BOARD SECTION ▶ = "H, HU model only"		
PCB-K	*	Switch-2 circuit board
S15	87-031-731-01	Rotary switch (VOLTAGE SELECTOR)
F2	87-035-256-01	Fuse 3, 15A
	87-098-045-01	Fuse label, 3.15A
	87-033-147-01	Fuse clamp

Symbol No.	Part No.	Description
◀ MISCELLANEOUS ▶		
T1	82-788-606-01	Power transformer (H, HU model only)
T1	82-788-608-01	Power transformer (E model only)
T1	82-788-609-01	Power transformer (K, G model only)
J12	87-049-070-01	AC outlet (H, HU model only)
J12	87-032-996-01	AC outlet (K, G model only)
	87-034-962-01	AC power cord (H, HU model only)
	87-788-674-01	AC power cord (E model only)
	87-788-673-01	AC power cord (K model only)
	87-034-892-01	AC power cord (G model only)
	87-085-181-01	Cord bushing A (H, HU model only)
	87-085-166-01	Holder, AC power cord (E, K, G model only)

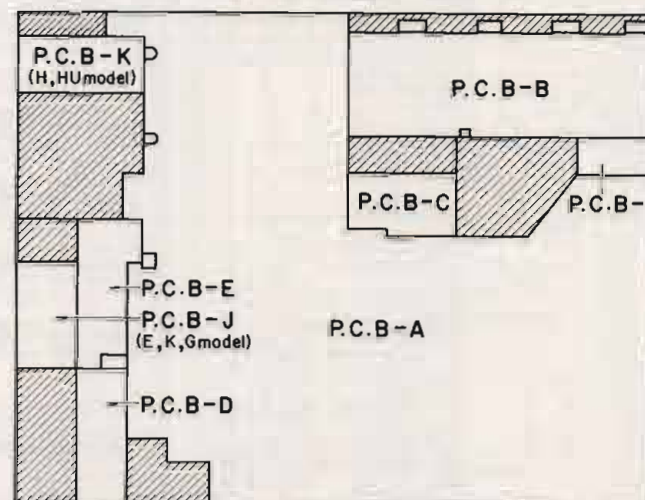
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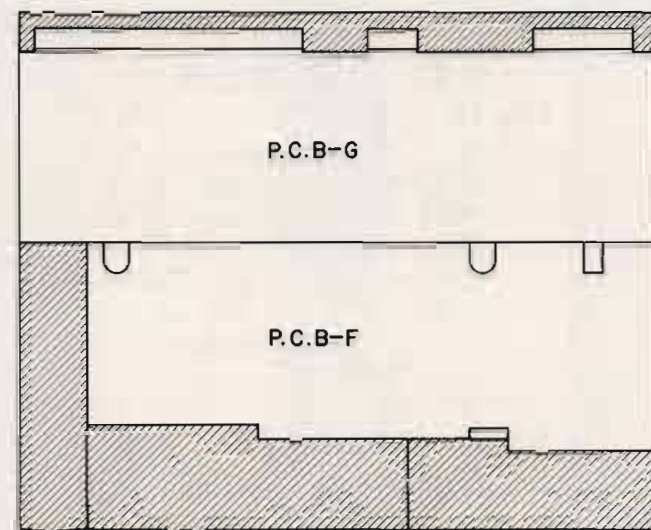
Note; Combination Circuit Board

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Combination circuit board A 82-788-610-21

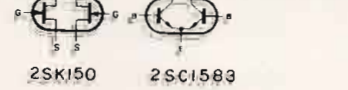


Combination circuit board B 82-788-640-21



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2SK150 2SC1583