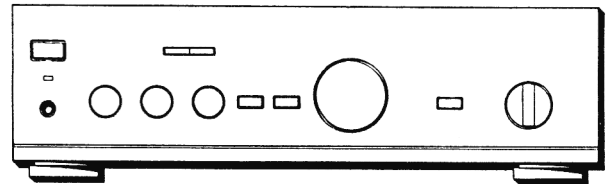


AIWA®**XA-003****SERVICE
MANUAL**

STEREO INTEGRATED AMPLIFIER

• TYPE. H,E,K,Z

SPECIFICATIONS

Common**Power requirements**

XA-003H
AC 120 V/220 V/240 V
switchable, 50/60 Hz
XA-003E, Z
AC 220 V, 50 Hz
XA-003K
AC 240 V, 50 Hz

Power consumption

XA-003H 100 W
XA-003E, K, Z 260 W

Power amplifier**Effective output power**

53 W+53 W
(4 ohms, T.H.D. 0.9%, 1 kHz)
40 W+40 W
(8 ohms, T.H.D. 0.9%, 1 kHz)

Total harmonic distortion

0.02%
(20 Hz-20 kHz, 30 W,
8 ohms)

Output bandwidth

20 Hz-50 kHz
(less than 0.07%)
[Both channels driven,
8 ohms]

Frequency response

5 Hz-100 kHz
(+0.5/-3 dB)

Preamplifier**S/N ratio**

IHF A curve short
circuited
PHONO (MM) 88dB
(5mV input)
TUNER, CD, AUX, TAPE/DAT
105 dB

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

PHONO (MM)
2.5 mV/47 kohms
TUNER, CD, AUX, TAPE/DAT
150 mV/47 kohms

PHONO overload level

85 mV (MM)
[1 kHz, T.H.D. 0.01%]

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

TAPE 150 mV/47 kohms
Headphones 8-32 ohms
Speakers 4-16 ohms
(A+B: 8-16 ohms)

RIAA deviation ±0.5 dB (30 Hz-15 kHz)**Maximum dimensions**

430(W) × 128(H) × 332(D) mm
(17 × 5¹/₈ × 13¹/₈ inches)

Weight

6.3 kg
(13.86 lb)

• Design and specifications are subject to change without notice.

AIWA Co., Ltd.**Tokyo Japan**

Printed in Japan

ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
=== IC ===			C82	★87-010-756-010	CAP, ELECT 6800-50
	87-001-383-010	IC, M5220P	C83	★87-010-260-019	CAP, ELECT 47-25 SME
	87-001-171-019	IC, NJM2068D	C84	★87-010-260-019	CAP, ELECT 47-25 SME
	87-027-897-019	IC, UPC1225H	C85	★87-010-260-019	CAP, ELECT 47-25 SME
	87-027-787-019	IC, UPC1237H	C86	★87-010-260-019	CAP, ELECT 47-25 SME
=== TRANSISTOR ===			C87	★87-010-247-019	CAP, ELECT 100-50 SME
	89-110-155-019	TRANSISTOR, 2SA1015GR	C109	★87-018-134-019	CAP, CERA-SOL SS 0.01-16(Z ONLY)
	89-118-032-310	TRANSISTOR, 2SA1803RO	C110	★87-018-134-019	CAP, CERA-SOL SS 0.01-16(Z ONLY)
	89-213-302-319	TRANSISTOR, 2SB1330	J1	★87-009-395-010	JACK PIN 6P EARTH(INPUT)
	89-322-405-019	TRANSISTOR, 2SC2240GR	J2	★87-009-392-010	JACK PIN 6P(INPUT, TAPE)
	89-334-194-010	TRANSISTOR, 2SC3419Y	J3	★87-033-210-010	TERMINAL, 8P SPKR(SPEAKERS) (H, K, Z)
	89-346-882-310	TRANSISTOR, 2SC4688RO	J3	★87-033-222-010	TERMINAL, 8P SPKR HOLE(SPEAKER) (E)
	89-420-062-319	TRANSISTOR, 2SD2006	L1	★87-005-366-010	COIL, 1UH
	87-026-369-019	TRANSISTOR, RN1207	L2	★87-005-366-010	COIL, 1UH
=== DIODE ===			L3	★87-005-154-019	COIL 220UH
	87-001-783-019	DIODE 1N4002-T	L4	★87-005-154-019	COIL 220UH
	87-001-749-010	DIODE D5SB20	L5	★87-005-154-019	COIL 220UH
	87-020-123-019	DIODE DS446-AT	L6	★87-005-154-019	COIL 220UH
	87-001-559-019	DIODE 1SS131	△R83	★81-AA3-619-010	RES, CEMENT 0.22-5W
	87-027-449-019	DIODE, ZENER HZ15-3L	△R84	★81-AA3-619-010	RES, CEMENT 0.22-5W
=== MAIN CIRCUIT BOARD SECTION ===			△R95	★87-025-487-019	RES, MF 10-1W
C3	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	△R96	★87-025-487-019	RES, MF 10-1W
C4	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	△R99	87-029-366-019	FUSE, RES 4.7-1/2W FM
C5	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	△R100	87-029-366-019	FUSE, RES 4.7-1/2W FM
C6	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	△R101	87-029-124-019	RES, FUSE 2.2-1/4W
C7	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	△R121	★87-025-476-019	RES, NF 33-1/4WJ
C8	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	△R122	★87-025-476-019	RES, NF 33-1/4WJ
C9	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	△R127	★87-025-471-019	RES, NF 4.7-1/4WJ
C10	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	△R128	★87-025-471-019	RES, NF 4.7-1/4WJ
C11	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	RY1	87-045-334-010	RELAY, G5Z-24SP
C12	★87-018-121-019	CAP, CERA-SOL SS 150P-50(Z ONLY)	S1	81-AA3-633-010	ROTARY SW 2-4-4(FUNCTION)
C21	★87-018-134-019	CAP, CERA-SOL SS 0.01-16	S2	80-AA1-635-110	PUSH SW 1-2-2(TAPE MONITOR)
C31	★87-010-404-019	CAP, ELECT 4.7-50 SME	S6	80-AA1-634-110	PUSH SW 1-2-2SP(SPEAKER A)
C32	★87-010-404-019	CAP, ELECT 4.7-50 SME	S7	80-AA1-634-110	PUSH SW 1-2-2SP(SPEAKER B)
C33	★87-018-125-019	CAP, CERA-SOL SS 330P-50	SFR1	★87-024-165-019	SFR, 220
C34	★87-018-125-019	CAP, CERA-SOL SS 330P-50	SFR2	★87-024-165-019	SFR, 220
C35	★87-010-370-019	CAP, ELECT 330-6.3 SME	=== FRONT CIRCUIT BOARD SECTION ===		
C36	★87-010-370-019	CAP, ELECT 330-6.3 SME	C121	★87-018-126-019	CAP, CERA-SOL SS 390P-50
C43	★87-010-260-019	CAP, ELECT 47-25 SME	C122	★87-018-126-019	CAP, CERA-SOL SS 390P-50
C44	★87-010-260-019	CAP, ELECT 47-25 SME	C125	★87-010-401-019	CAP, ELECT 1-50 SME
C45	★87-010-404-019	CAP, ELECT 4.7-50 SME	C126	★87-010-401-019	CAP, ELECT 1-50 SME
C46	★87-010-404-019	CAP, ELECT 4.7-50 SME	C127	★87-018-117-019	CAP, CERA-SOL SS 68P-50
C51	★87-010-405-019	CAP, ELECT 10-50 SME	C128	★87-018-117-019	CAP, CERA-SOL SS 68P-50
C52	★87-010-405-019	CAP, ELECT 10-50 SME	C129	★87-010-382-019	CAP, ELECT 22-25 SME
C53	★87-018-131-019	CAP, CERA-SOL SS 1000P-50	C130	★87-010-382-019	CAP, ELECT 22-25 SME
C54	★87-018-131-019	CAP, CERA-SOL SS 1000P-50	C137	★87-018-123-019	CAP, CERA-SOL SS 220P-50
C55	★87-010-247-019	CAP, ELECT 100-50 SME	C138	★87-018-123-019	CAP, CERA-SOL SS 220P-50
C56	★87-010-247-019	CAP, ELECT 100-50 SME	C141	★87-010-382-019	CAP, ELECT 22-25 SME
C61	★87-010-405-019	CAP, ELECT 10-50 SME	C142	★87-010-382-019	CAP, ELECT 22-25 SME
C62	★87-010-405-019	CAP, ELECT 10-50 SME	C143	★87-010-260-019	CAP, ELECT 47-25 SME
C67	★87-018-115-019	CAP, CERA-SOL SS 47P-50	C144	★87-010-260-019	CAP, ELECT 47-25 SME
C68	★87-018-115-019	CAP, CERA-SOL SS 47P-50	C145	★87-018-134-019	CAP, CERA-SOL SS 0.01-16
C69	★87-018-119-019	CAP, CERA-SOL SS 100P-50(Z ONLY)	C146	★87-018-134-019	CAP, CERA-SOL SS 0.01-16
C70	★87-010-401-019	CAP, ELECT 1-50 SME	S3	80-AA1-635-110	PUSH SW 1-2-2(LOUDNESS)
C71	★87-018-131-019	CAP, CERA-SOL SS 1000P-50	S4	80-AA1-636-110	PUSH SW 1-4-2(DIRECT)
C72	★87-010-762-019	CAP, ELECT, 220-10 BP	VR1	80-AA1-630-010	VOLUME, 100KB(VOLUME)
C74	★87-010-405-019	CAP, ELECT 10-50 SME	VR2	80-AA1-631-010	VOLUME, 100K(BALANCE)
C75	★87-010-260-019	CAP, ELECT 47-25 SME	VR3	80-AA1-632-010	VOLUME, 50KC(BASS)
C77	★87-018-131-019	CAP, CERA-SOL SS 1000P-50	VR4	80-AA1-632-010	VOLUME, 50KC(TREBLE)
C78	★87-018-131-019	CAP, CERA-SOL SS 1000P-50	=== POWER CIRCUIT BOARD SECTION ===		
C81	★87-010-756-010	CAP, ELECT 6800-50	△	★87-033-213-019	CLAMP FUSE
			C88	87-014-210-019	CAP, MYLER 0.047-250

REF. NO.	PART NO.	DESCRIPTION
C89	87-014-210-019	CAP, MYLER 0.047-250
△F1	87-035-224-019	FUSE T1.6A
△F2	87-035-224-019	FUSE T1.6A
△PT1	81-AA3-606-019	POWER TRANSFORMER H(H ONLY)
△PT1	81-AA3-608-019	POWER TRANSFORMER E(E, Z)
△PT1	81-AA3-609-019	POWER TRANSFORMER K(K ONLY)

=== POWER SW CIRCUIT BOARD SECTION ===

△C111	★87-019-112-019	SPARK KILLER 0.01 E
J4	87-009-043-019	JACK, 6.3(PHONES)
△S8	87-036-210-010	PUSH SW 1-1-1X1(POWER)

=== LED CIRCUIT BOARD SECTION ===

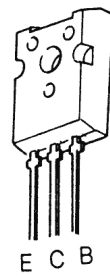
LED1	87-001-779-019	LED, SLH-56VC 70F165(POWER)
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=== AC VOLTAGE SW CIRCUIT BOARD SECTION (H ONLY) ===

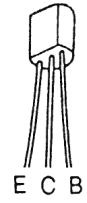
△S9	87-036-067-019	SLIDE SW 2-2-4(AC VOLTAGE)
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=== MISCELLANEOUS ===

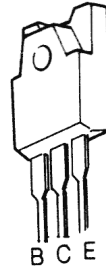
△	★82-187-796-019	AC CORD, BS(K ONLY)
△	★82-187-797-019	AC CORD, E(E, Z)
△	★87-034-749-019	AC CORD, H W/PLUG(H ONLY)
△	★87-085-184-010	BUSHING, AC CORD D(H ONLY)
△	★87-085-185-010	BUSHING, AC CORD E(E, K, Z)



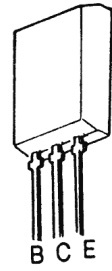
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2SA1015
2SC2240



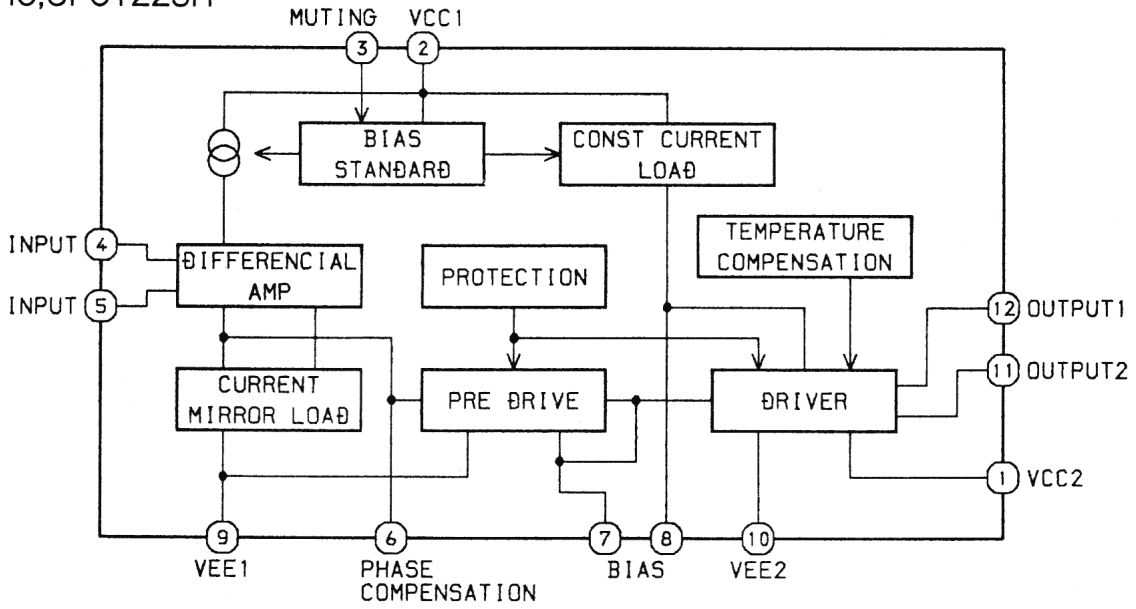
2SA1083
2SC4688



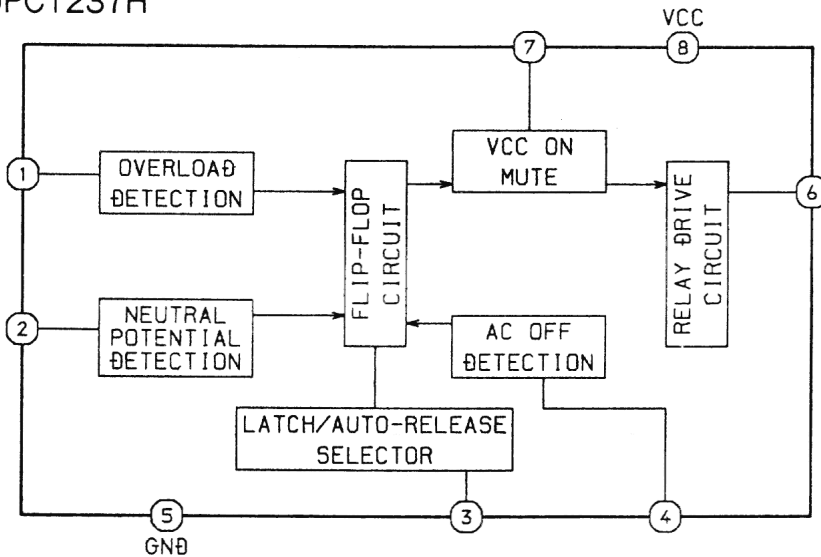
2SB1330
2SD2006

IC BLOCK DIAGRAM

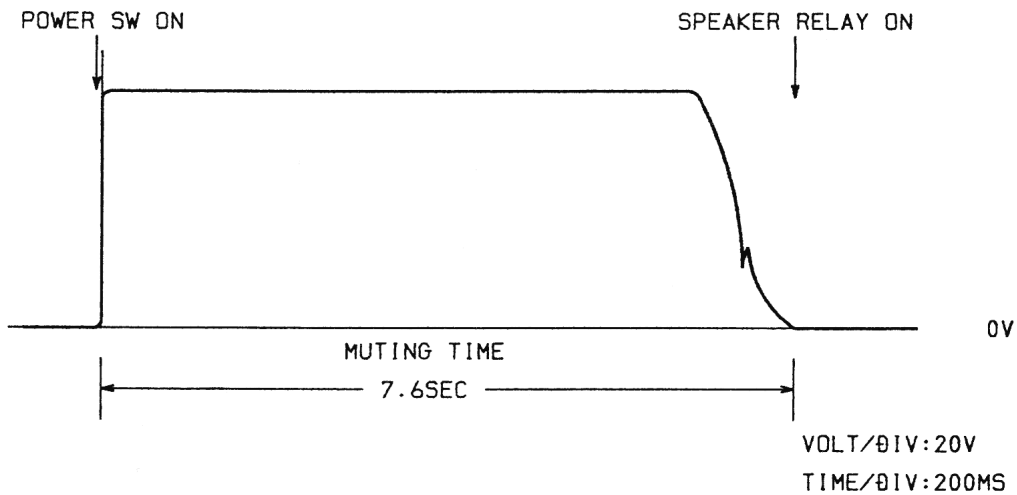
IC,UPC1225H



IC,UPC1237H

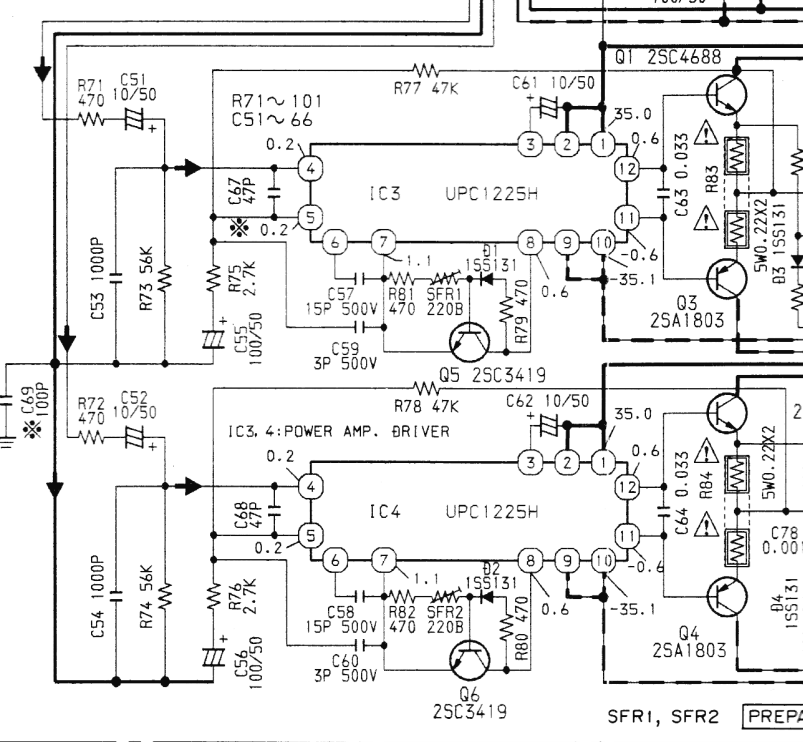
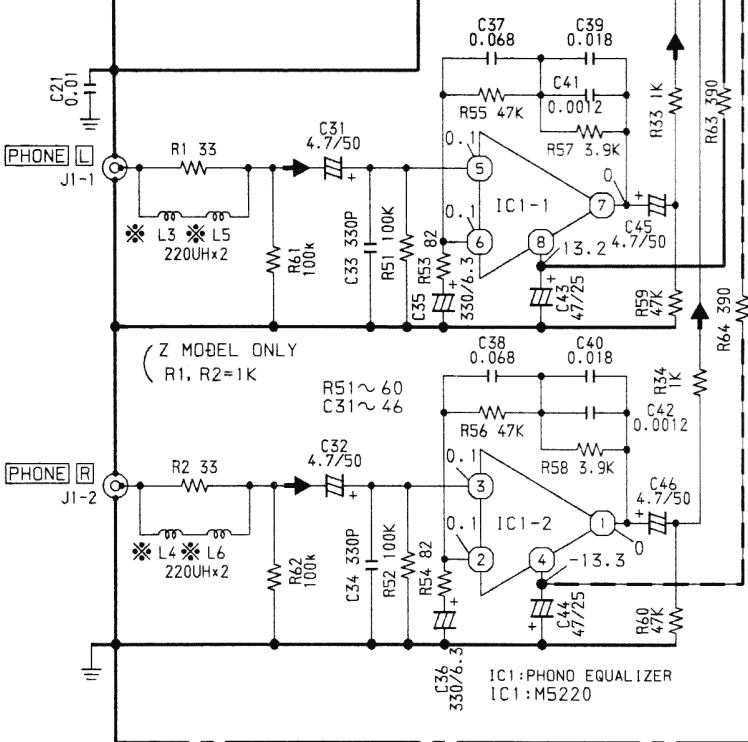
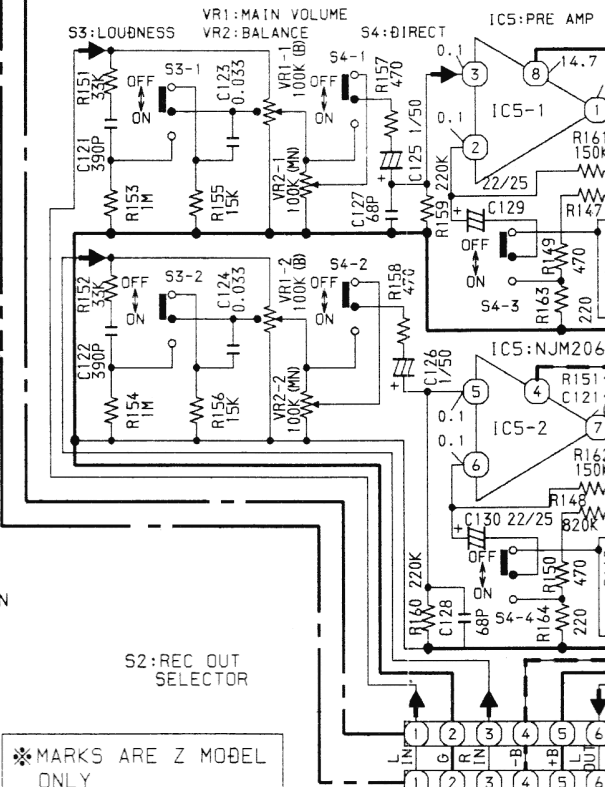
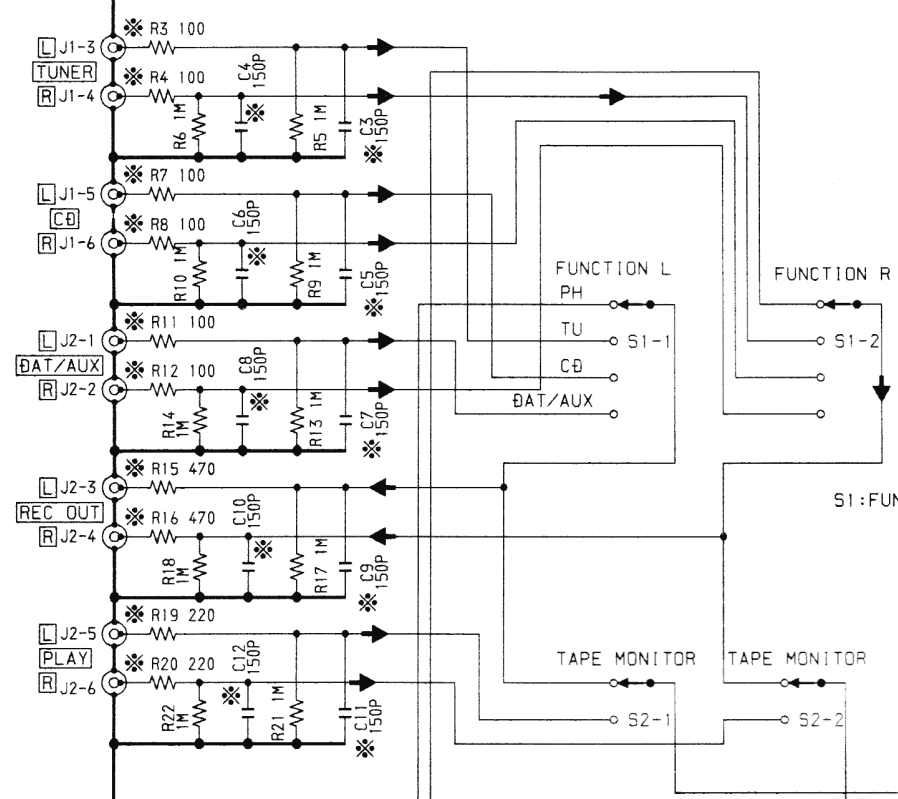


IC2 UPC1237H PIN ⑦ VOLTAGE WAVE FORM

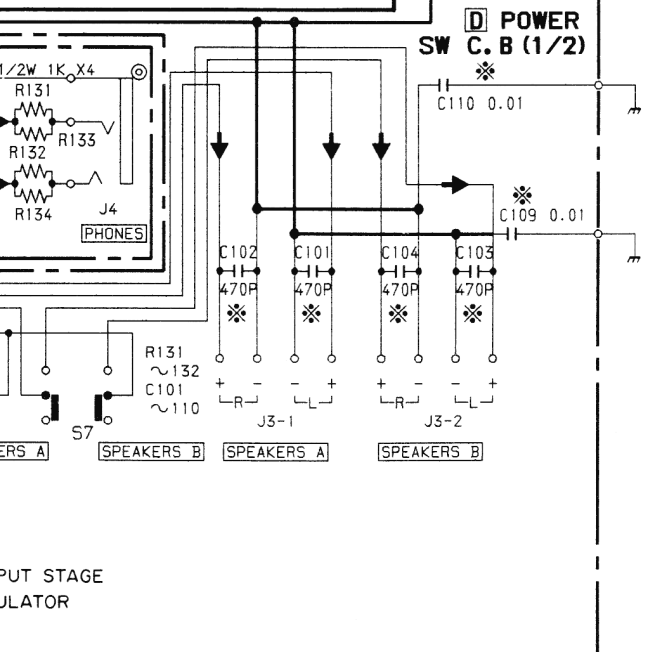
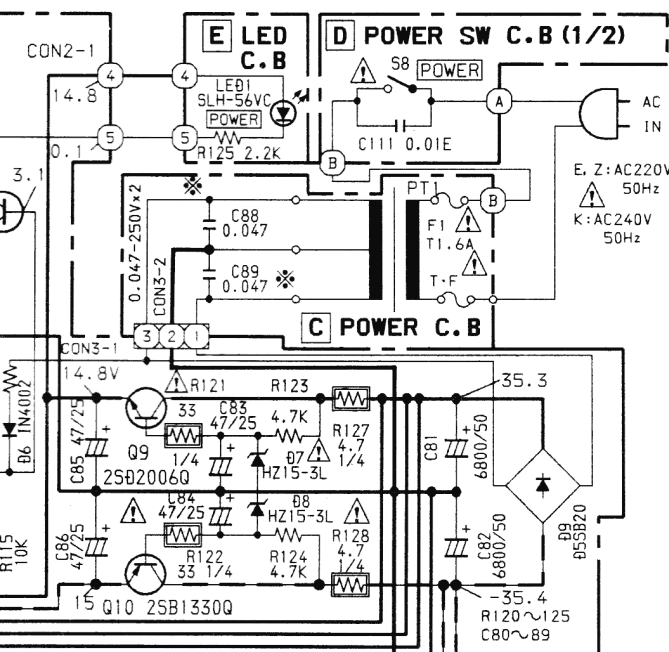
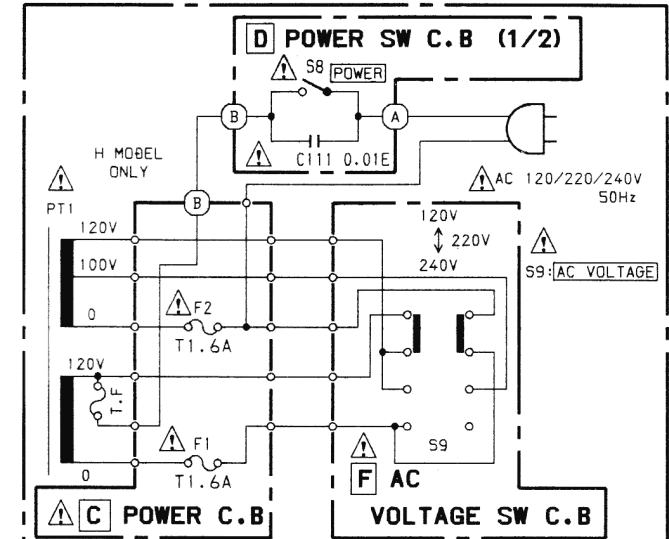
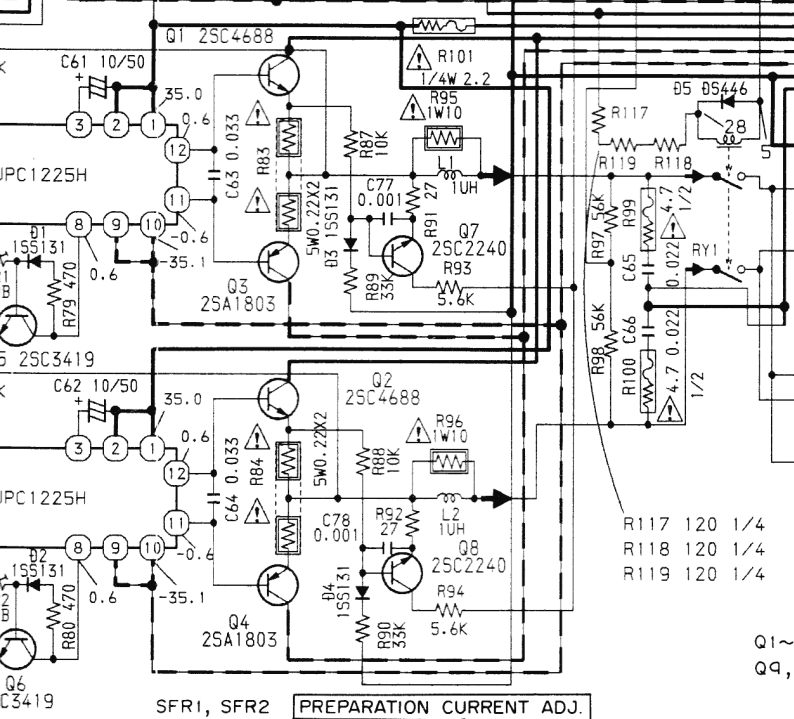
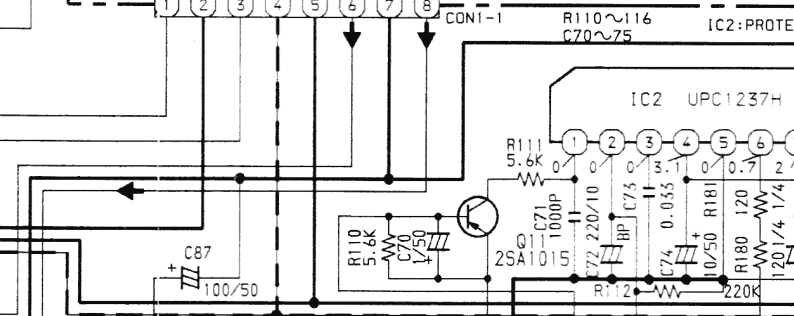
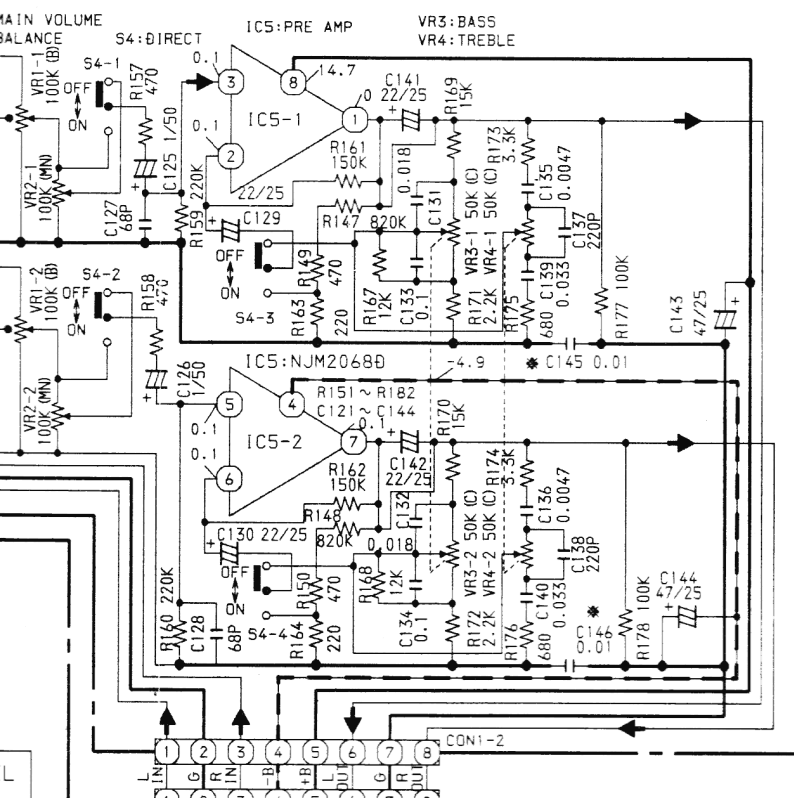


A MAIN C.B

B FRONT C.B



MAIN VOLUME BALANCE

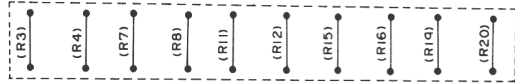


Q1~Q4 OUTPUT STAGE
Q9, Q10 REGULATOR

1 2 3 4 5 6 7 8

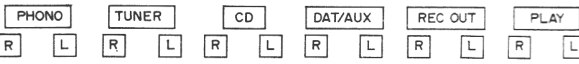
A
B
C
D
E
F
G
H
I
J
K

(EXCEPT Z MODEL)

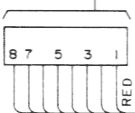
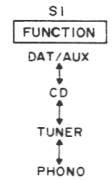
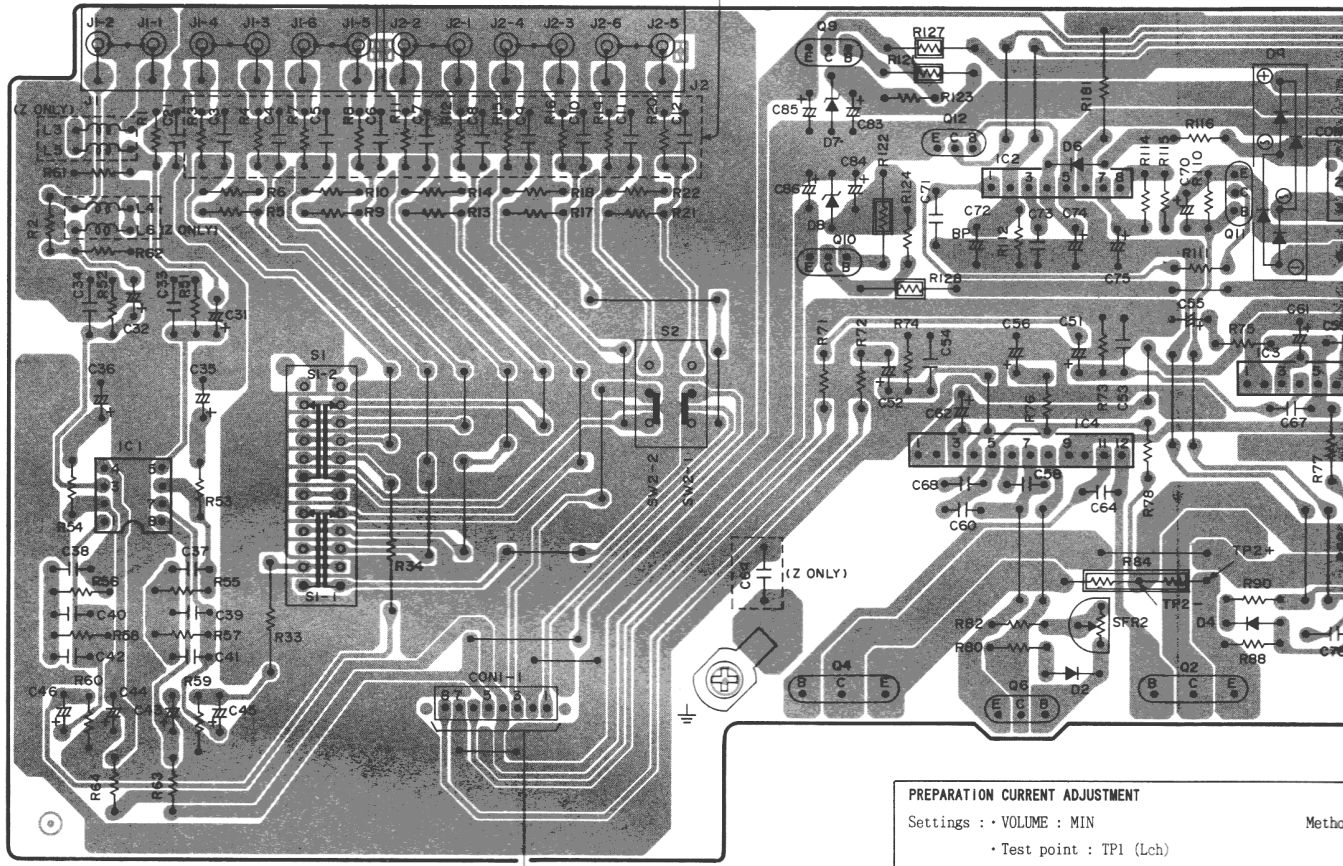


INPUT

TAPE



A MAIN C.B



PREPARATION CURRENT ADJUSTMENT
 Settings : VOLUME : MIN
 • Test point : TP1 (Lch)
 TP2 (Rch)
 • Adjustment location : SFR1 (Lch)
 SFR2 (Rch)

VR3 BASS

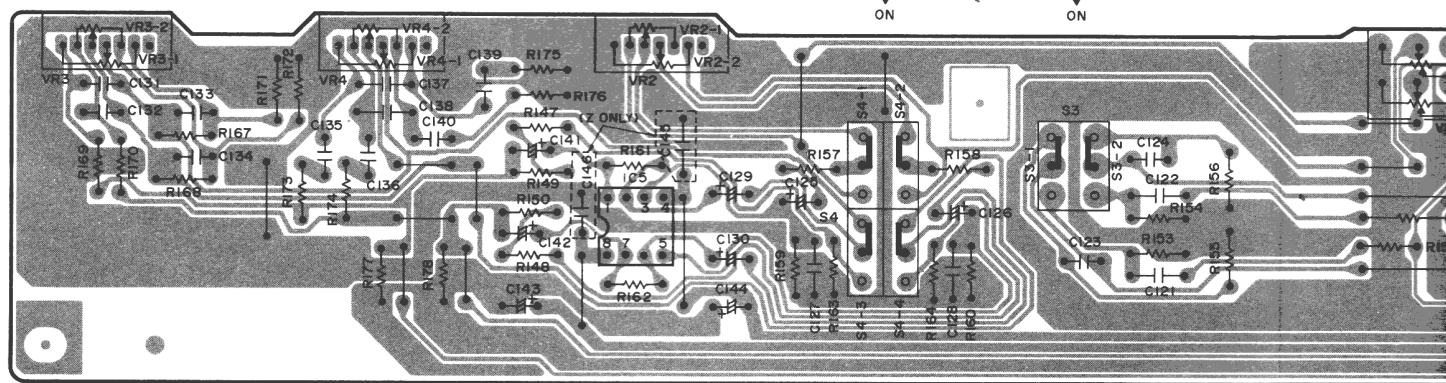
VR4 TREBLE

VR2 BALANCE

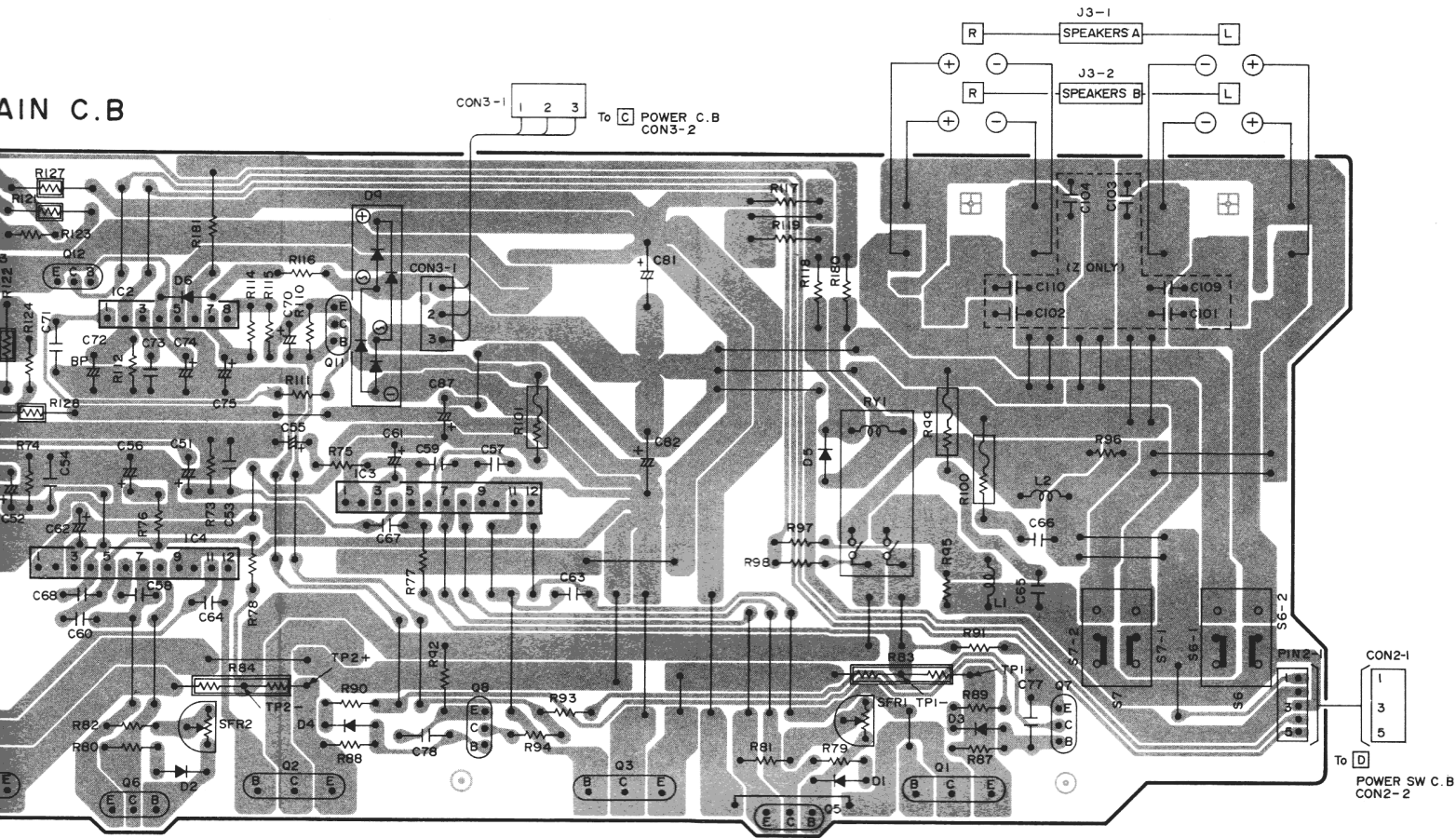
S4 DIRECT OFF ON

S3 LOUDNESS OFF ON

VR1 VOLUME



MAIN C.B

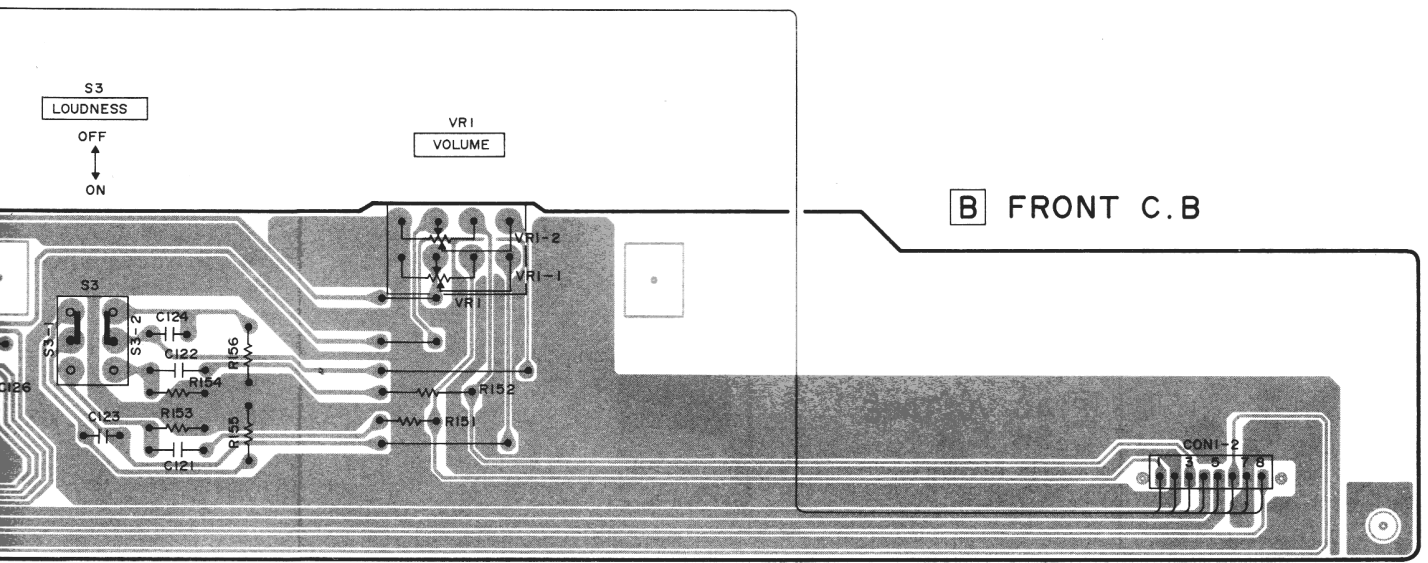
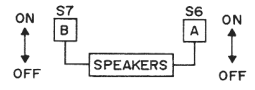


PREPARATION CURRENT ADJUSTMENT

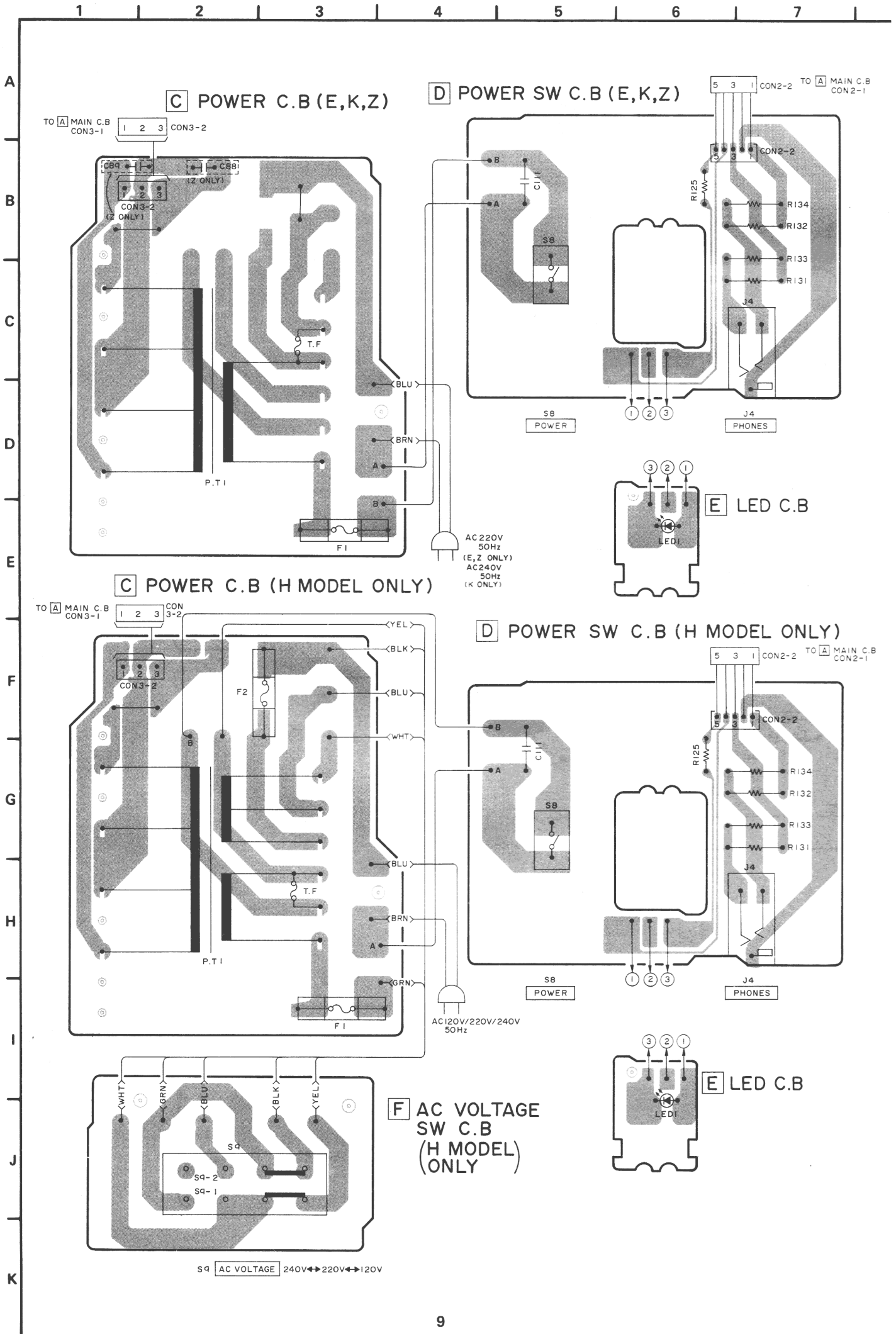
Settings : • VOLUME : MIN

- Test point : TP1 (Lch)
- TP2 (Rch)
- Adjustment location : SFR1 (Lch)
- SFR2 (Rch)

Method : • Connect a DC voltmeter across test points TP1, 2, adjust SFR1, 2 so that the voltage becomes $3.0 \pm 0.2mV$. (Adjustment after 20 minutes of power on.)

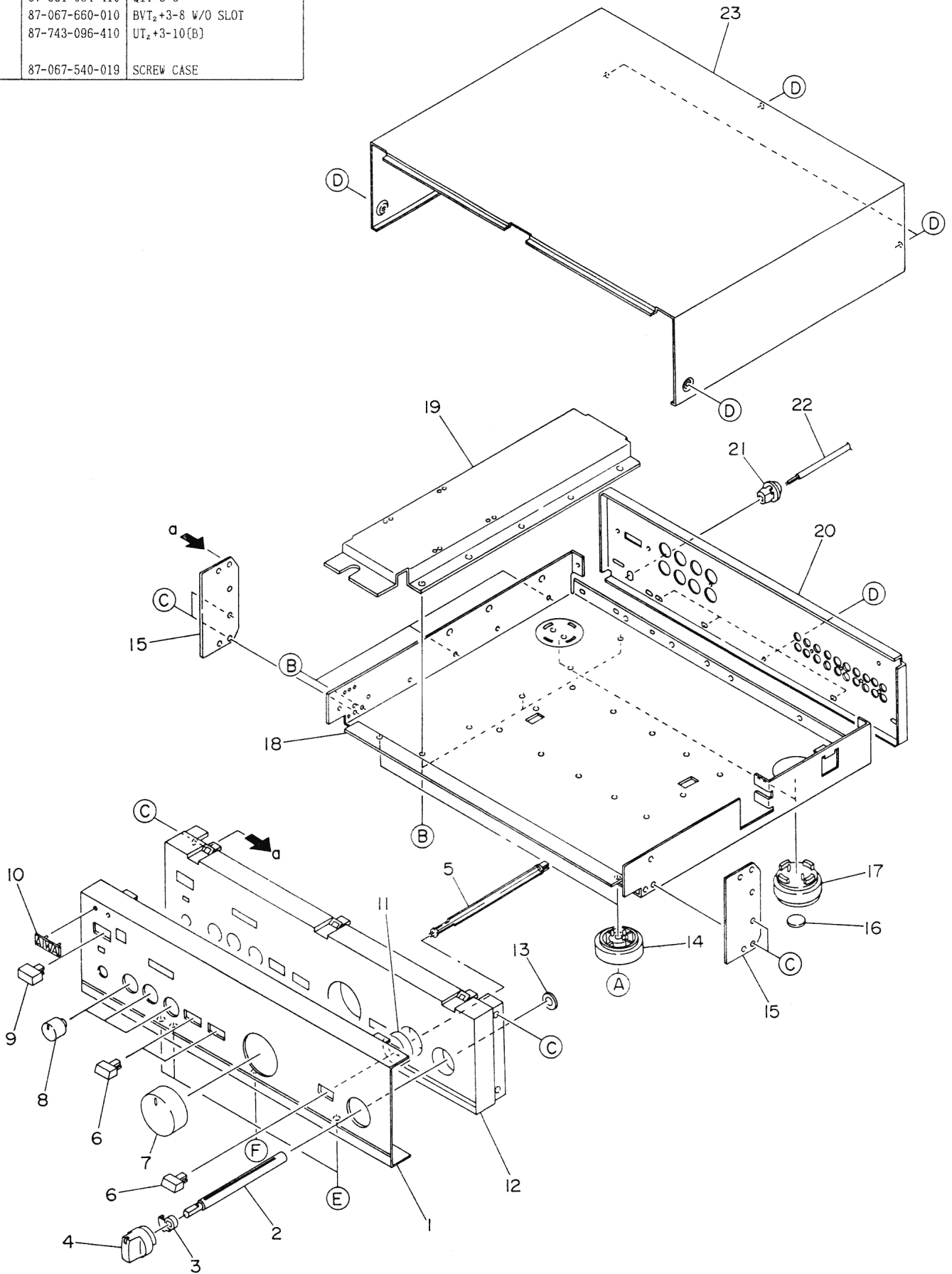


B FRONT C.B



EXPLODED VIEW - 1

REF.NO.	PART NO.	DESCRIPTION
A	87-067-579-010	BVT ₂ +3-8 W/O SLOT
B	87-067-689-010	BVT+3-8
C	87-591-094-410	QIT+3-6
D	87-067-660-010	BVT ₂ +3-8 W/O SLOT
E	87-743-096-410	UT ₂ +3-10(B)
F	87-067-540-019	SCREW CASE

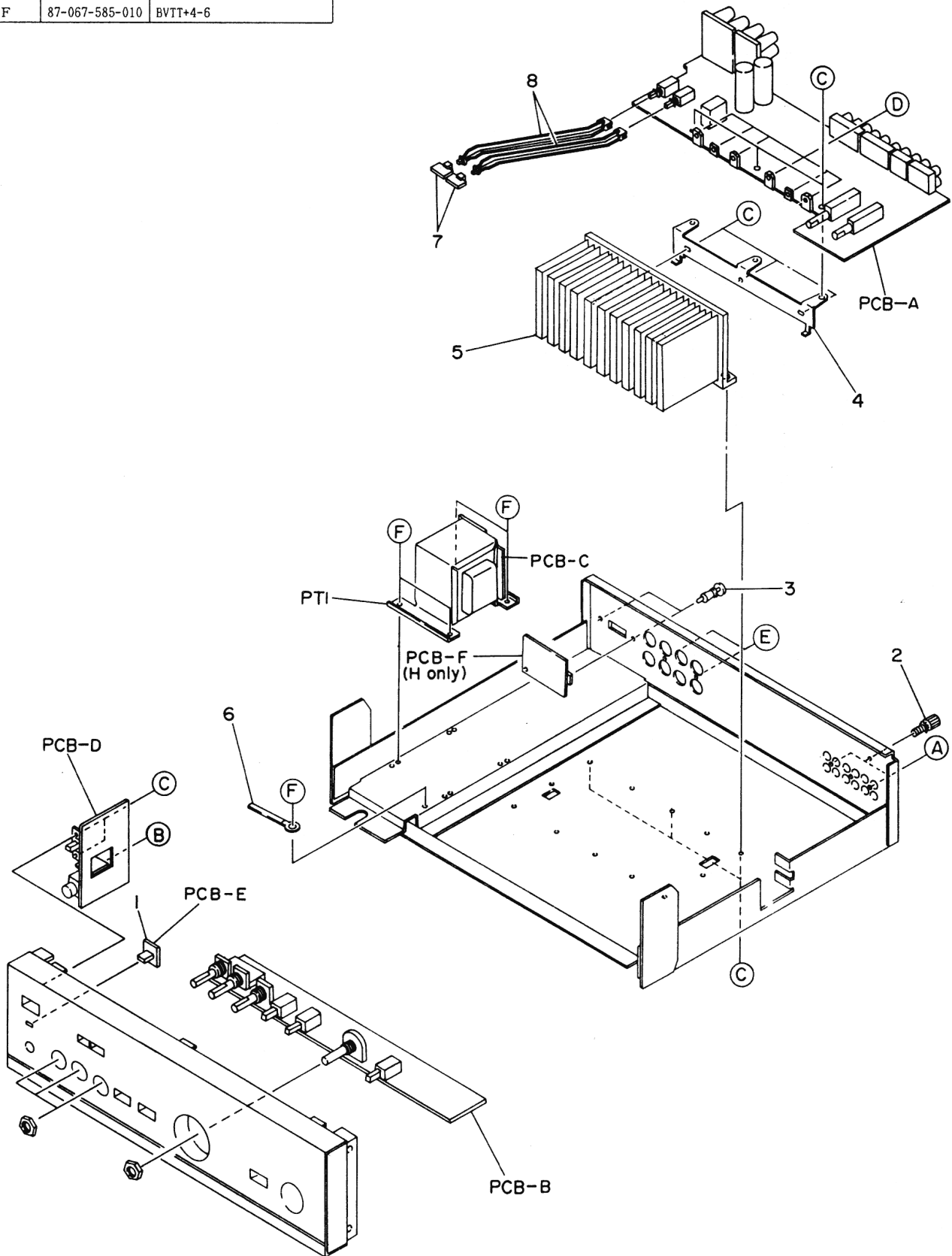


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q. TY
	1-1	★ 81-AA3-001-010	PANEL, FRONT	*	1
	1-2	★ 80-AA1-205-210	ROD, SELECT		1
	1-3	★ 81-AA3-205-019	STOPPER, SELECT	*	1
	1-4	★ 80-AA1-007-019	KNOB, SELECT		1
	1-5	★ 81-AA3-202-019	ROD, KEY	*	1
	1-6	★ 80-AA1-008-019	BUTTON, MUTE		3
	1-7	★ 80-AA1-005-010	KNOB, VOLUME		1
	1-8	★ 80-AA1-006-019	KNOB, BALANCE		3
	1-9	★ 81-DS1-008-019	BUTTON, POWER		1
	1-10	★ 84-764-009-119	BADGE, AIWA		1
	1-11	★ 81-AA3-201-019	GUIDE, BUTTON	*	1
	1-12	★ 80-AA1-001-110	CABINET, FRONT		1
	1-13	★ 81-663-213-019	CLOTH, DIA 18-8.7		1
	1-14	★ 81-DS2-018-010	FOOT		2
	1-15	★ 80-AA1-207-019	HOLDER, SIDE		2
	1-16	★ 80-DS3-206-019	G-CUSHION, DIA 15-1		2
	1-17	★ 80-DS3-014-119	FOOT, REAR ST		2
	1-18	---	CHASSIS, MAIN		1
	1-19	★ 80-AA1-203-219	HOLDER, PT		1
	1-20	★ 81-AA3-003-019	PANEL, REAR(H)	*	1
	1-20	★ 81-AA3-007-019	PANEL, REAR(E)	*	1
	1-20	★ 81-AA3-008-019	PANEL, REAR(K)	*	1
	1-20	★ 81-AA3-009-019	PANEL, REAR(Z)	*	1
	1-21	★ 87-085-184-010	BUSHING, AC CORD(H)		1
	1-21	★ 87-085-185-010	BUSHING, AC CORD(E, K, Z)		1
	1-22	★ 87-034-749-019	AC CORD, H(H)		1
	1-22	★ 82-187-797-019	AC CORD, E(E, Z)		1
	1-22	★ 82-187-796-019	AC CORD BS(K)		1
	1-23	★ 81-AA3-011-019	CABINET, STEEL	*	1

EXPLODED VIEW - 2

REF.NO.	PART NO.	DESCRIPTION
A	87-067-660-010	BVT ₂ +3-8 W/O SLOT[B]
B	87-561-096-210	VFT ₁ +3-10
C	87-067-579-010	BVT ₂ +3-8 W/O SLOT
D	87-067-703-010	BVT ₂ +3-10 W/O SLOT
E	87-751-096-410	VT ₂ +3-10
F	87-067-585-010	BVTT+4-6



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q. TY
2-1	★	89-AA1-022-119	GUIDE, LIGHT MUTE		1
2-2	★	87-033-209-010	TERMINAL, EARTH		1
2-3	★	87-084-063-019	RIVET, NYLON 3-5.5(H)		2
2-4		---	HOLDER, PCB	*	1
2-5		---	HEAT-SINK, MAIN	*	1
2-6		---	WIRE BINDER		1
2-7	★	80-MK4-024-019	BUTTON, TAPE		2
2-8	★	80-AA1-204-019	ROD, SPKR		2

■ ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q.TY
	1	★81-AA3-901-010	INSTRUCTION BOOKLET, EX	※	1
	2	★87-009-724-010	PLUG ADAPTOR, IR 39 (H)		1