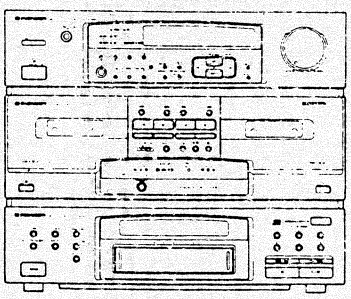
Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
ARP2650

MULTI CD DOUBLE DECK AMPLIFIER
XD-J115M

CD DOUBLE DECK AMPLIFIER
XD-J110

XD−J115M AND XD−J110 HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	XD−J115M	XD−J110		
HE	○	○	AC220V−230V, 240V (Switchable)*	
HB	○	○	AC220V−230V, 240V (Switchable)*	
HEWZIW	○	○	AC220V−230V, 240V (Switchable)*	

* Change the connection of the power transformer's primary wiring.

- **This manual is applicable to the following : XD−J115M/HE, HB and HEWZIW ; XD−J110/HE, HB and HEWZIW.**
- **For the following : XD−J115M/HB and HEWZIW ; XD−J110/HB and HEWZIW, refer to page 113.**
- **These products are systems components.**
  Each of these products does not function properly when independent ; to avoid malfunctions, be sure to connect it to the prescribed system component (s), otherwise damage may result.

CONTENTS

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DG JAN. 1993 Printed in Japan

1. SAFETY INFORMATION

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

LASER
Kuva 1
Lasersäteilyn varoitusmerkki

WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

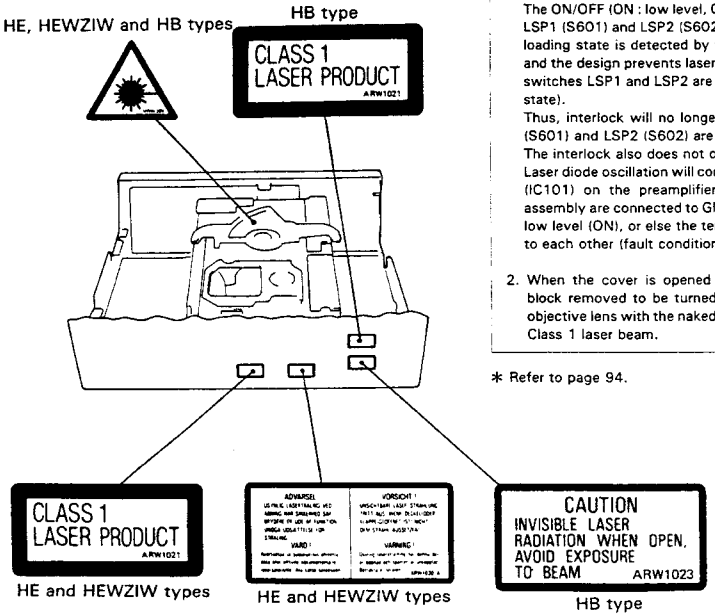
LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LASER
Picture 1
Warning sign for laser radiation

LABEL CHECK (MULTI MAGAZINE type)

HE, HEWZIW and HB types

HB type



HE and HEWZIW types

HE and HEWZIW types

HB type

Additional Laser Caution

1. Laser Interlock Mechanism
   The ON/OFF (ON : low level, OFF : high level) status of the LSP1 (S601) and LSP2 (S602) switches for detecting the loading state is detected by the system microprocessor, and the design prevents laser diode oscillation when both switches LSP1 and LSP2 are not ON (low level) (clamped state).
   Thus, interlock will no longer function if switches LSP1 (S601) and LSP2 (S602) are deliberately shorted.
   The interlock also does not operate in the test mode*.
   Laser diode oscillation will continue, if pin 1 of M51593FP (IC101) on the preamplifier board loaded on pick up assembly are connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

2. When the cover is opened with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

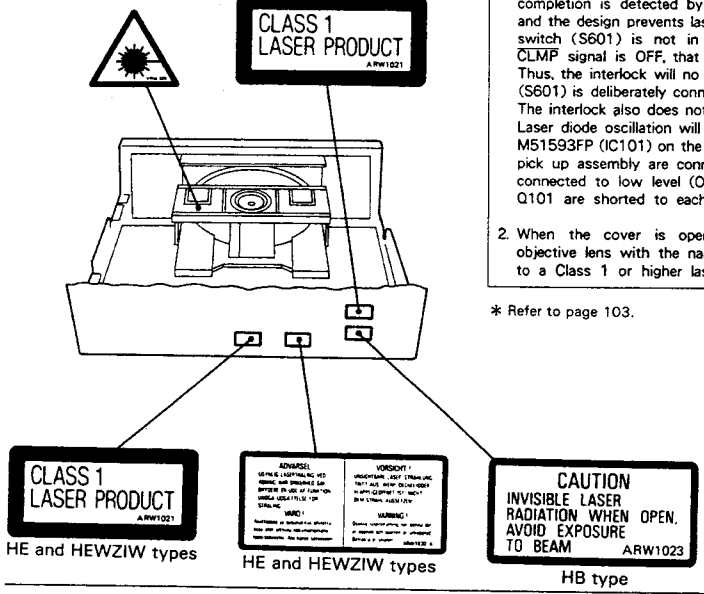
92M1A

* Refer to page 94.

LABEL CHECK (SINGLE MAGAZINE type)

HE, HEWZIW and HB types

HB type



HE and HEWZIW types

HE and HEWZIW types

HB type

Additional Laser Caution

1. Laser Interlock Mechanism
   The position of the switch (S601) for detecting loading completion is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch (S601) is not in $\overline{CLMP}$ terminal side (when $\overline{CLMP}$ signal is OFF, that is high level).
   Thus, the interlock will no longer function if the switch (S601) is deliberately connected to ground (low level). The interlock also does not operate in the test mode*.
   Laser diode oscillation will continue, if pins 1 and 2 of M51593FP (IC101) on the preamplifier board loaded on pick up assembly are connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 or higher laser beam.

* Refer to page 103.

LITHIUM BATTERY NOTICE

WARNING!
Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below.
Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.
The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

ADVARSEL!
Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Denne advarsel or angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anveisning.
Batterierne må kun udskiftes med batterier af samme type og mærke.

VARNING
Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier.
Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

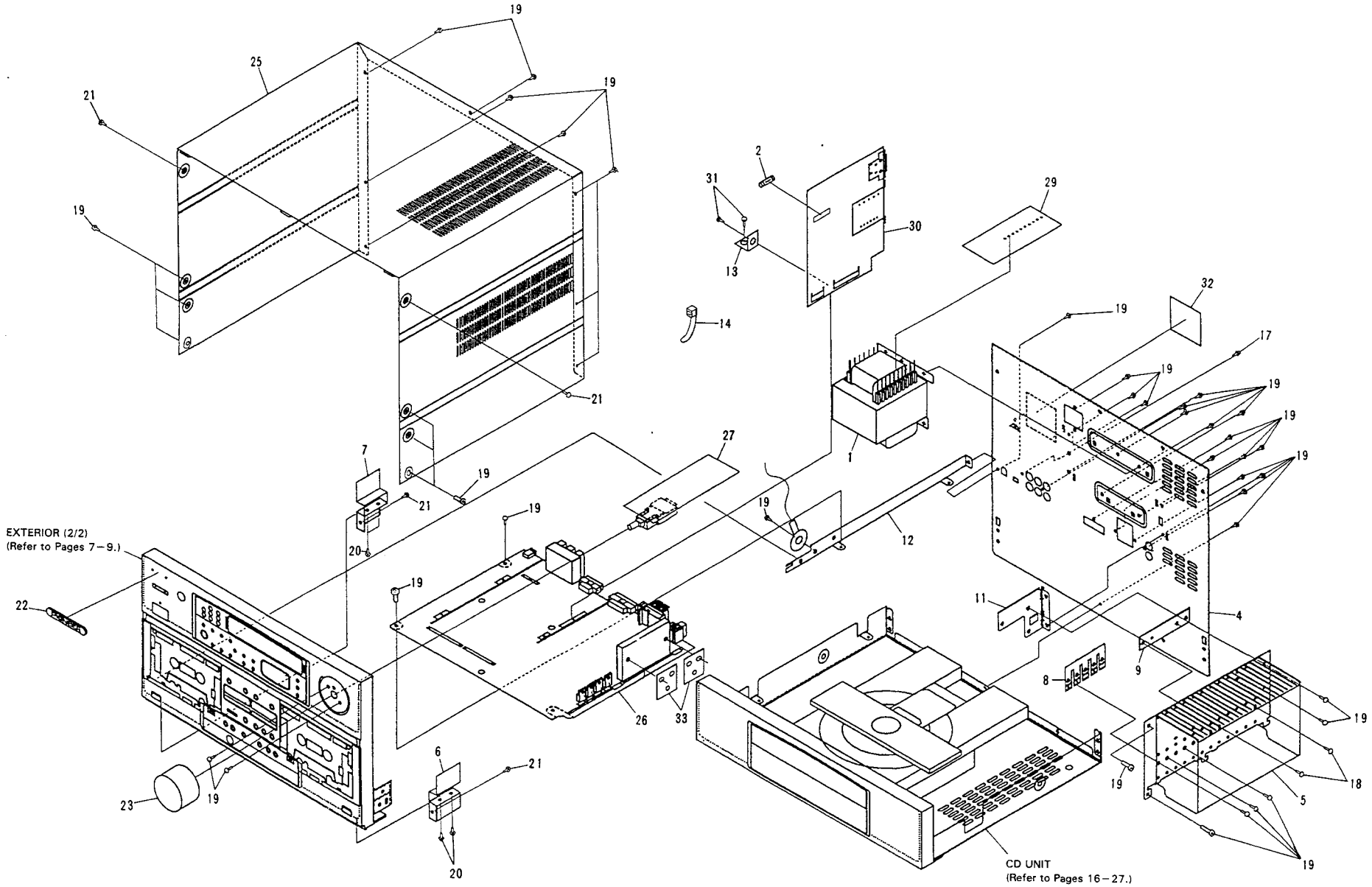
2.1 DECK AMP BLOCK (XD−J115M AND XD−J110)

2.1.1 Exterior (1/2)

Parts list

Mark	No.	Description	Parts No.
⚠	1	POWER TRANSFORMER (T)	ATS1469
⚠	2	FUSE (T800mA/250V, FU1102)	AEK−507
	3	.....	
	4	REAR PANEL (MTL)	ANC2008
	5	HEAT SINK (AL)	ANH1408
	6	PLATE L	ANG1536
	7	PLATE R	ANG1537
NSP	8	PLATE	ANG1561
NSP	9	HOLDER	ANG1600
	10	.....	
	11	HEAT SINK HOLDER (MTL)	ANG1777
	12	PCB HOLDER B (MTL)	ANG1779
	13	PCB HOLDER (MTL)	ANG1838
NSP	14	BINDER	AEC−093
	15	.....	
	16	.....	
	17	SCREW	ABA−222
	18	SCREW (3×18)	ABA1018
	19	SCREW	BBZ30P080FZK
	20	SCREW	BBZ30P100FZK
	21	SCREW	VPZ30P080FZK
	22	BADGE (ABS)	AAM1047
	23	VOL KNOB	AAB1337
	24	.....	AAB1339
	25	BONNET CASE (MTL)	ANE1390
	26	AF ASSEMBLY	AWZ4645
	27	VOLUME ASSEMBLY	AWZ4653
	28	.....	
NSP	29	TRANS CONNECT ASSEMBLY	AWZ4672
	30	SUB TRANS ASSEMBLY	AWZ4678
	31	NYLON RIVET	AEC1160
NSP	32	NAME PLATE (For XD−J115M)	AAL2022
NSP	32	NAME PLATE (For XD−J110)	AAL2019
	33	MICA SHEET	AEP−313

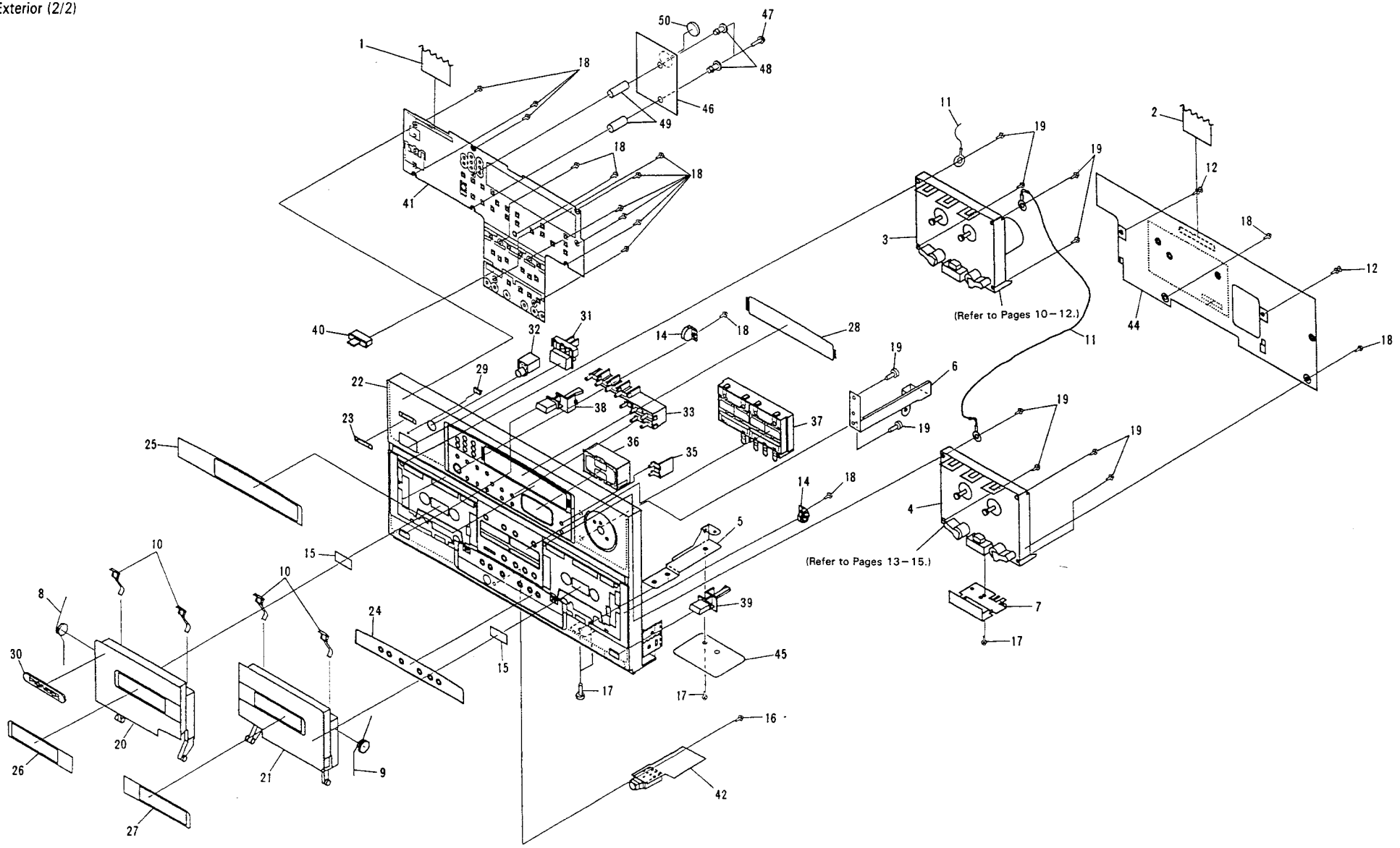
● Exterior (1/2)



NOTE : Screws adjacent to ▼ mark on the product are used for disassembly.

2.1.2 Exterior (2/2)

● Exterior (2/2)



Parts list

Mark	No.	Description	Parts No.
△NSP	1	FLAT CABLE (J112)	ADD1112
△	2	FLAT CABLE (J105)	ADD1116
	3	CASSETTE 1 MECHA UNIT	EXK2026
	4	CASSETTE 2 MECHA UNIT	EXK2056
	5	PCB HOLDER A (MTL)	ANG1778
	6	HEAT SINK HOLDER (MTL)	ANG1837
	7	SHIELD PLATE (MECHA)	ANK1157
	8	DOOR SPRING L	ABH1085
	9	DOOR SPRING R	ABH1086
	10	KEEP PLATE	ABK1017
NSP	11	EARTH LEAD	ADB1006
	12	NYLON RIVET	AEC1160
	13	.....	
	14	DAMPER ASSEMBLY	AXA1008
	15	SHEET	AAX1301
	16	SCREW (2.6×8)	ABA1095
	17	SCREW	BBZ30P080FZK
	18	SCREW	BPZ26P080FMC
	19	SCREW	VPZ30P080FZK
	20	CASSETTE DOOR L (PLS)	AAN1365
	21	CASSETTE DOOR R (PLS)	AAN1376
	22	FRONT PANEL (For XD−J115M)	AMB2094
	22	FRONT PANEL (For XD−J110)	AMB2093
	23	FILTER (REMOCON)	AAK2376
	24	DECORATIVE PLATE (DECK)	AAK2398
	25	DECORATIVE PLATE (AMP)	AAK2441
	26	DECORATIVE PLATE (DOOR) L	AAK2400
	27	DECORATIVE PLATE (DOOR) R	AAK2402
	28	FL FILTER (PVC)	AAK2430
	29	POWER LENS (PLS)	AAK2442
	30	BADGE (ABS)	AAM1047
	31	BUTTON (POWER)	AAD2370
	32	BUTTON (FUNCTION)	AAD2372
	33	BUTTON (GEQ)	AAD2373
	34	.....	
	35	BUTTON (AUDITION)	AAD2375
	36	CURSOR BUTTON	AAD2377
	37	BUTTON (DECK)	AAD2379
	38	EJECT BUTTON L (PLS)	AAD2380
	39	EJECT BUTTON R (PLS)	AAD2381
	40	SLIDE KNOB (PLS)	AAE1160
	41	DISPLAY ASSEMBLY	AWZ4656
	42	HEADPHONE ASSEMBLY	AWZ4666
	43	.....	
	44	TAPE ASSEMBLY	AWV1335
NSP	45	SHIELD PLATE	ANK1159
	46	SW ASSEMBLY	AWK1746
	47	SCREW	PBZ26P250FMC
NSP	48	BUSH	AEC1326
NSP	49	COLLAR	AEC1327
△	50	LITHIUM BATTERY	AEX1014

XD-J115M, XD-J110

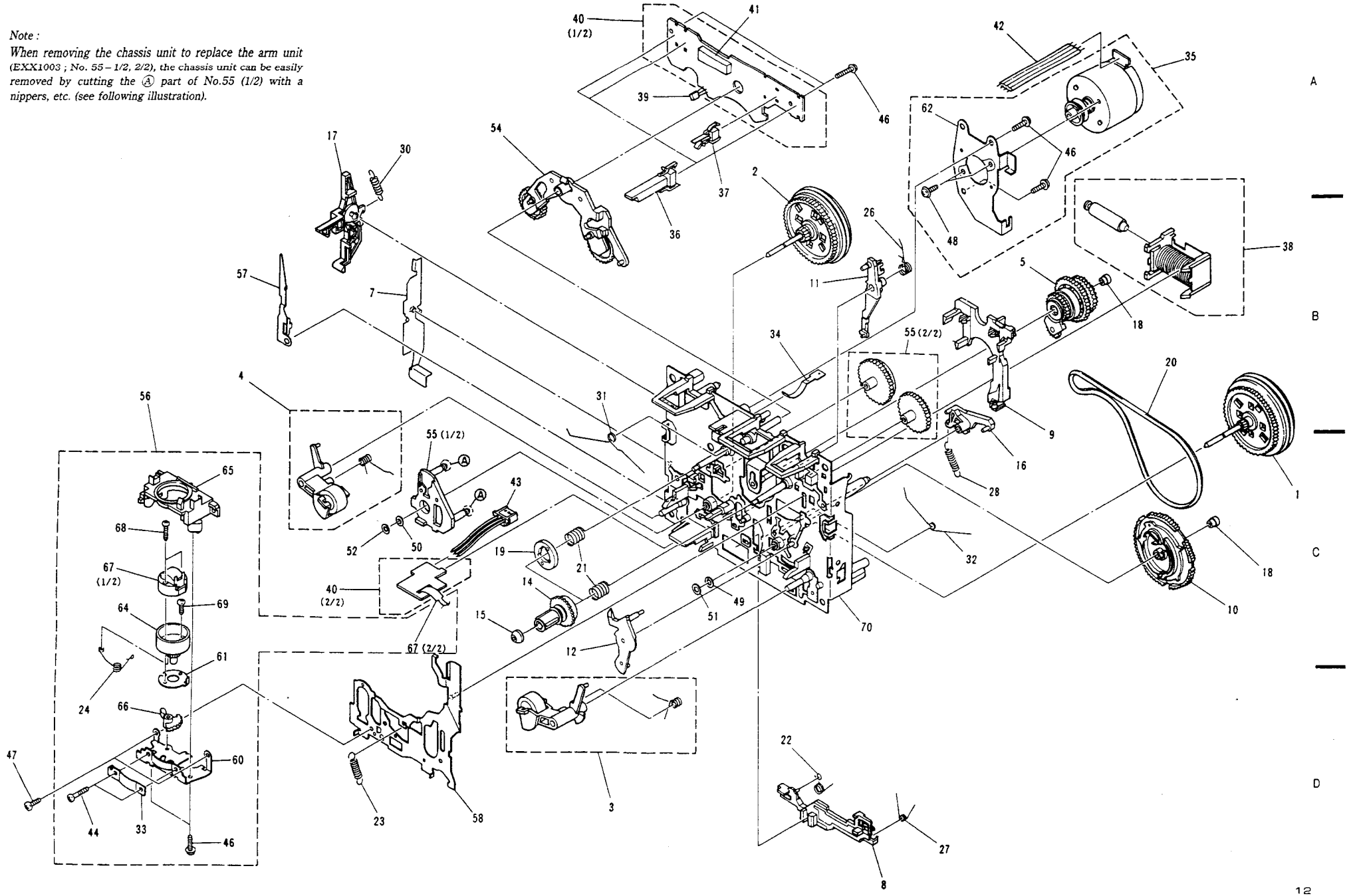
2.1.3 Cassette 1 Mecha Unit

Parts list

Mark	No.	Description	Parts No.
	1	FLYWHEEL UNIT (FWD)	EXA1222
	2	FLYWHEEL UNIT (RVS)	EXA1223
	3	ROLLER UNIT (FWD)	EXA1224
	4	ROLLER UNIT (RVS)	EXA1225
	5	LIMITER UNIT	EXA1226
	6	.....	
	7	EJECT LEVER L2	AZN2063
	8	LEVER	ENV1305
	9	BRAKE	ENV1317
	10	GEAR	ENV1318
	11	LOCK ARM	ENV1159
	12	NR ARM	ENV1163
	13	.....	
	14	REEL	ENV1335
	15	REEL BUSH	ENV1338
	16	ARM	ENV1330
	17	EJECT LEVER L1	AZN2108
	18	BUSH	ENV1184
	19	MAGNET	ENV1336
	20	BELT	ENT1023
	21	SPRING	EBH1424
	22	SPRING	EBH1401
	23	SPRING	EBH1203
	24	SPRING	EBH1402
	25	.....	
	26	SPRING	EBH1406
	27	SPRING	EBH1407
	28	SPRING	EBH1408
	29	.....	
	30	SPRING	EBH1409
	31	SPRING	EBH1410
	32	SPRING	EBH1256
	33	SPRING	EBL1013
	34	SPRING	EBL1014
	35	MOTOR UNIT	EXA1241
	36	SWITCH (Detect)	ESN1009
	37	SWITCH (Mode)	ESN1010
	38	SOLENOID	EXP1005
	39	HALL IC	DN6847SE
	40	COMPLEX PCB	ENX1020
	41	CONNECTOR (10P)	EKS1013
	42	LEAD WIRE (4P)	EDD1003
	43	CONNECTOR (3P)	EDE1009
	44	SCREW (AZIMUTH)	EBA1020
	45	.....	
	46	SCREW (M2×8)	ATZ20P080FMC
	47	SCREW	BSZ20P050FMC
	48	SCREW	PMS26P025FUC
	49	WASHER	EBF1008
	50	WASHER	EBF1009
	51	WASHER	EBF1010
	52	WASHER	EBF1011
	53	.....	
	54	ARM UNIT	EXX1006
	55	ARM UNIT	EXX1003
	56	P HEAD ASSEMBLY	EXX1008
	57	ARM	ENC1288
	58	HEAD BASE UNIT	EXA1230
	59	.....	
NSP	60	BRACKET	ENC1284
NSP	61	PLATE	ENC1285
NSP	62	BRACKET	ENC1199
	63	.....	
NSP	64	HOLDER	ENV1161
NSP	65	HOLDER	ENV1301
NSP	66	GEAR	ENV1177
NSP	67	P HEAD UNIT	EXA1110
NSP	68	SCREW	JGZ14P085FNI
NSP	69	SCREW	JGZ14P040FNI
NSP	70	CHASSIS UNIT	.....

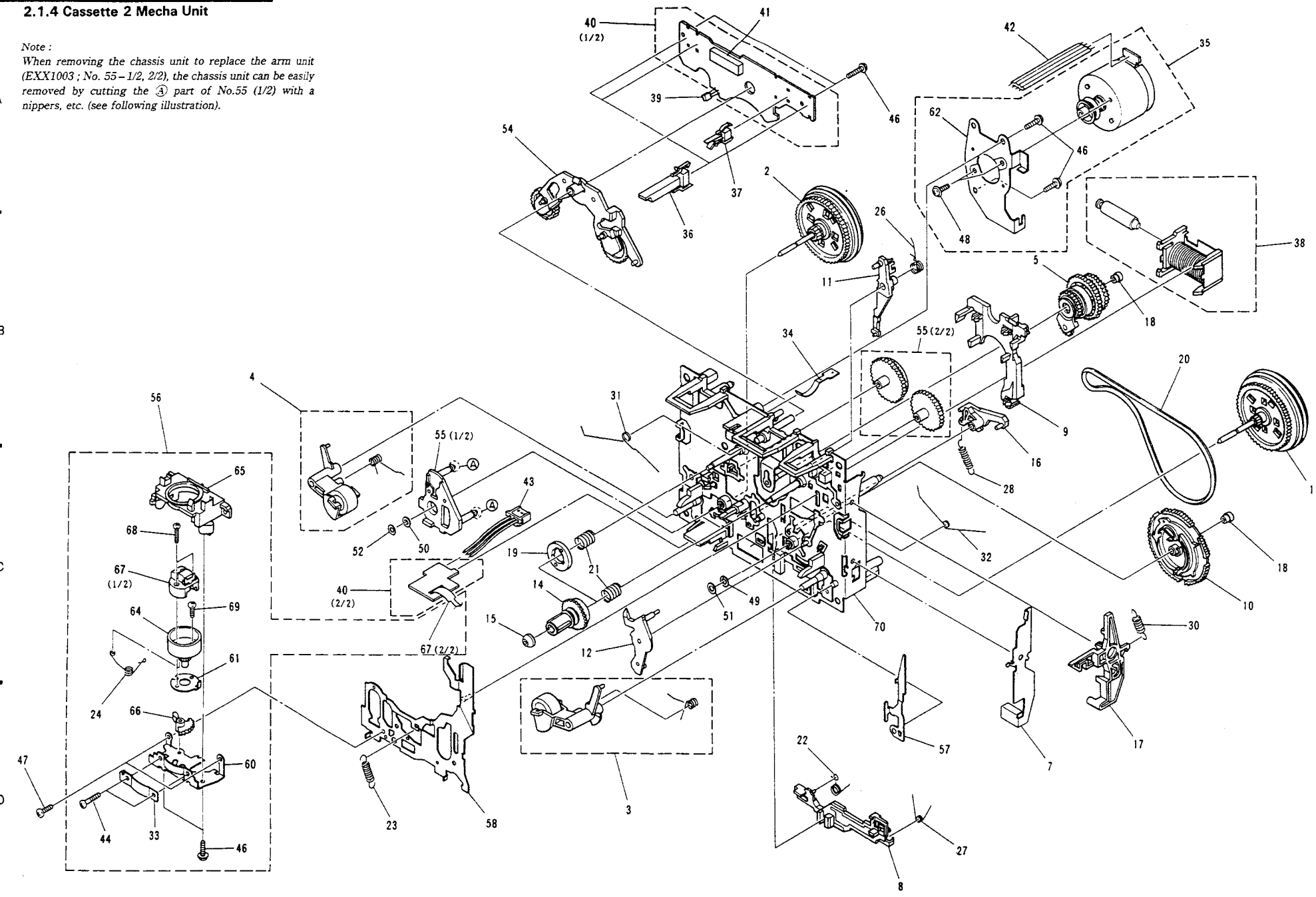
Note :

When removing the chassis unit to replace the arm unit (EXX1003 ; No. 55 – 1/2, 2/2), the chassis unit can be easily removed by cutting the Ⓐ part of No.55 (1/2) with a nippers, etc. (see following illustration).



2.1.4 Cassette 2 Mecha Unit

Note :
When removing the chassis unit to replace the arm unit (EXX1003 ; No. 55 – 1/2, 2/2), the chassis unit can be easily removed by cutting the Ⓐ part of No.55 (1/2) with a nippers, etc. (see following illustration).

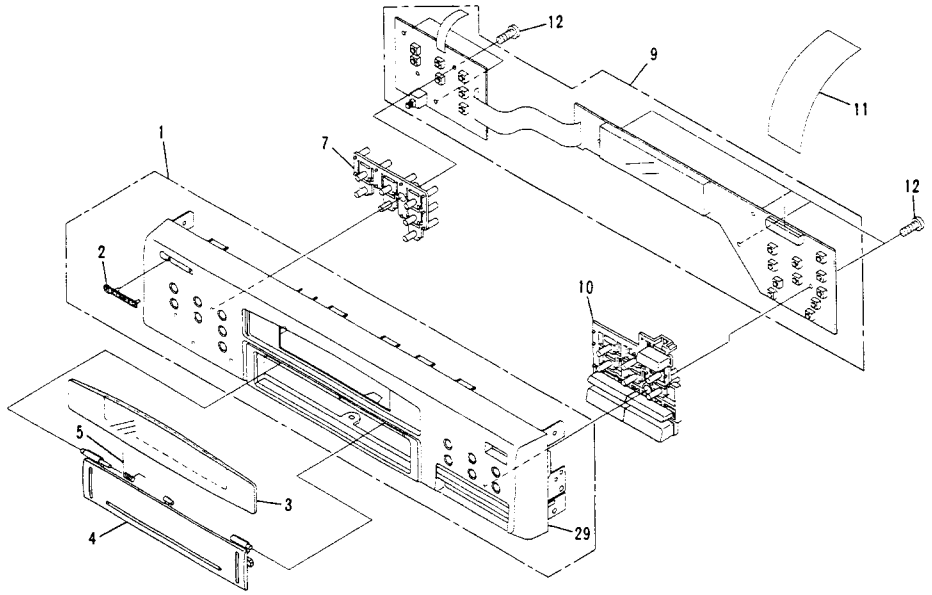


Parts list

Mark	No.	Description	Parts No.
	1	FLYWHEEL UNIT (FWD)	EXA1222
	2	FLYWHEEL UNIT (RVS)	EXA1223
	3	ROLLER UNIT (FWD)	EXA1224
	4	ROLLER UNIT (RVS)	EXA1225
	5	LIMITER UNIT	EXA1226
	6	.....	
	7	EJECT LEVER R2	AZN2064
	8	NR LEVER	ENV1305
	9	BRAKE	ENV1317
	10	CAM GEAR	ENV1318
	11	LOCK ARM	ENV1159
	12	NR ARM	ENV1163
	13	.....	
	14	REEL	ENV1335
	15	REEL BUSH	ENV1338
	16	ARM	ENV1330
	17	EJECT LEVER R1	AZN2109
	18	BUSH	ENV1184
	19	MAGNET	ENV1336
	20	BELT	ENT1023
	21	SPRING	EBH1424
	22	SPRING	EBH1401
	23	SPRING	EBH1203
	24	SPRING	EBH1402
	25	.....	
	26	SPRING	EBH1406
	27	SPRING	EBH1407
	28	SPRING	EBH1408
	29	.....	
	30	SPRING	EBH1409
	31	SPRING	EBH1410
	32	SPRING	EBH1256
	33	SPRING	EBL1013
	34	SPRING	EBL1014
	35	MOTOR UNIT	EXA1241
	36	SWITCH (Detect)	ESN1009
	37	SWITCH (Mode)	ESN1010
	38	SOLENOID	EXP1005
	39	HALL IC	DN6847SE
	40	SUB COMPLEX PCB	ENX1019
	41	CONNECTOR (15P)	EKS1012
	42	LEAD WIRE (4P)	EDD1003
	43	CONNECTOR (5P)	EDE1008
	44	SCREW (AZIMUTH)	EBA1020
	45	.....	
	46	SCREW (M2×8)	ATZ20P080FMC
	47	SCREW	BSZ20P050FMC
	48	SCREW	PMS26P025FUC
	49	WASHER	EBF1008
	50	WASHER	EBF1009
	51	WASHER	EBF1010
	52	WASHER	EBF1011
	53	.....	
	54	ARM UNIT	EXX1006
	55	ARM UNIT	EXX1003
	56	R/P HEAD ASSEMBLY	EXX1013
	57	ARM	ENC1289
	58	HEAD BASE UNIT	EXA1230
	59	.....	
NSP	60	BRACKET	ENC1284
NSP	61	PLATE	ENC1285
NSP	62	BRACKET	ENC1289
	63	.....	
NSP	64	HOLDER	ENV1161
NSP	65	HOLDER	ENV1301
NSP	66	GEAR	ENV1177
NSP	67	R/P HEAD UNIT	EXA1234
NSP	68	SCREW	JGZ14P085FNI
NSP	69	SCREW	JGZ14P040FNI
NSP	70	CHASSIS UNIT	.....

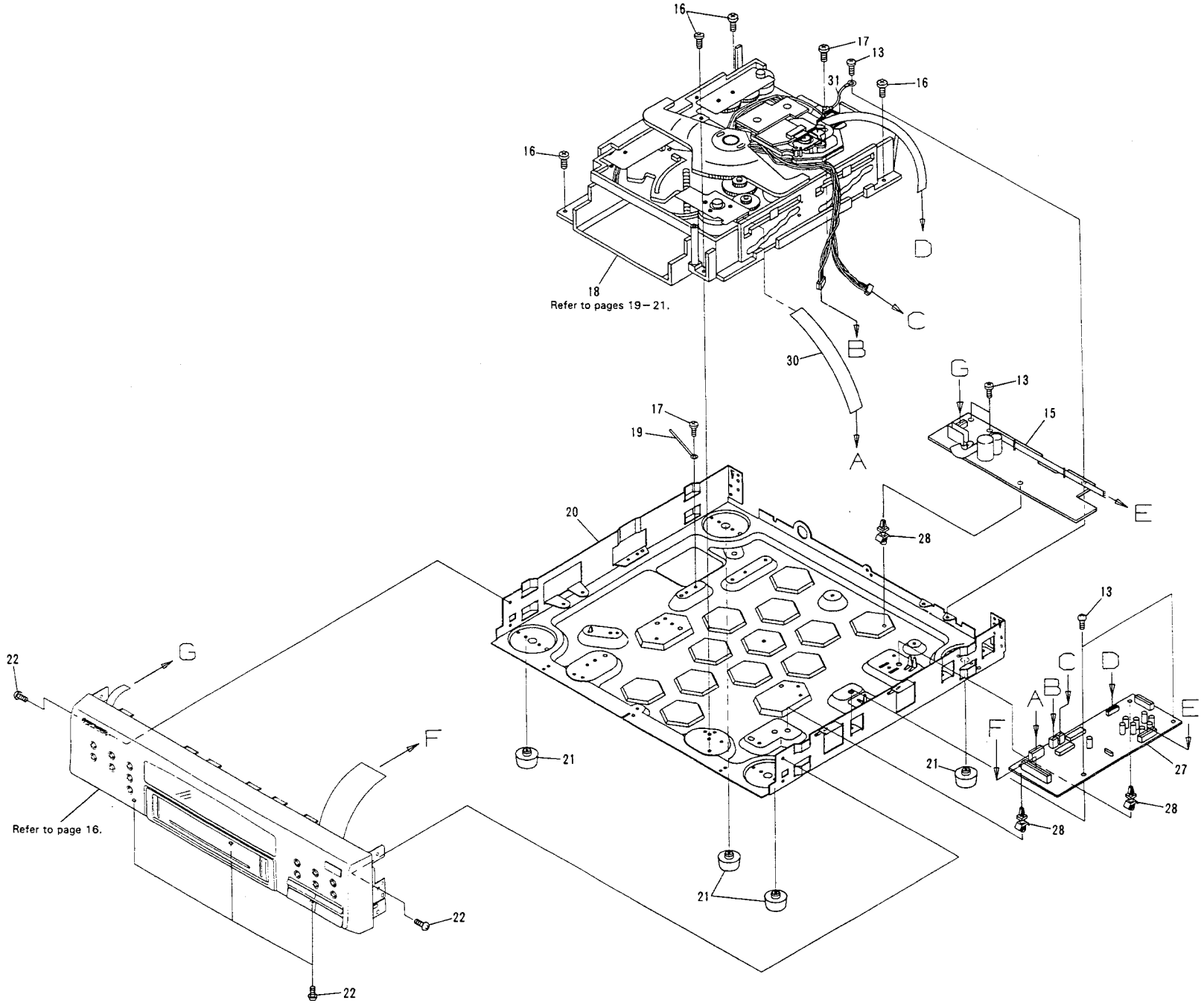
2.2 CD BLOCK

2.2.1 Multi CD Unit (For XD−J115M)



Parts list

Mark	No.	Description	Parts No.
	1	FUNCTION PANEL ASSEMBLY	PEA1270
	2	NAME PLATE	AAM1047
	3	DISPLAY WINDOW	PAM1595
	4	DOOR	PNW2267
	5	DOOR SPRING	PBH1022
	6	.....	
	7	MODE BUTTON	PAC1706
	8	.....	
	9	DISPLAY BOARD ASSEMBLY	PWZ2443
	10	CONTROL BUTTON	PAC1705
	11	22P F • F • C/30V	PDD1114
	12	SCREW	PPZ30P080FMC
	13	SCREW	BBZ30P060FCC
	14	.....	
	15	POWER BOARD ASSEMBLY	PWZ2442
	16	SCREW	IBZ30P080FCC
	17	SCREW	PDZ30P050FMC
NSP	18	MULTI MECHA ASSEMBLY	PXA1469
	19	CORD CLAMPER	RNH−184
NSP	20	UNDER BASE	PNA1967
	21	FOOT ASSEMBLY	PXA1201
	22	SCREW	BBZ30P080FCC
	23	.....	
	24	.....	
	25	.....	
	26	.....	
	27	MOTHER BOARD ASSEMBLY	PWM1728
NSP	28	PCB HOLDER	PNW2100
NSP	29	FUNCTION PANEL	PNW2327
NSP	30	FLAT CABLE	D20PYY0615
NSP	31	EARTH LEAD	XDF−503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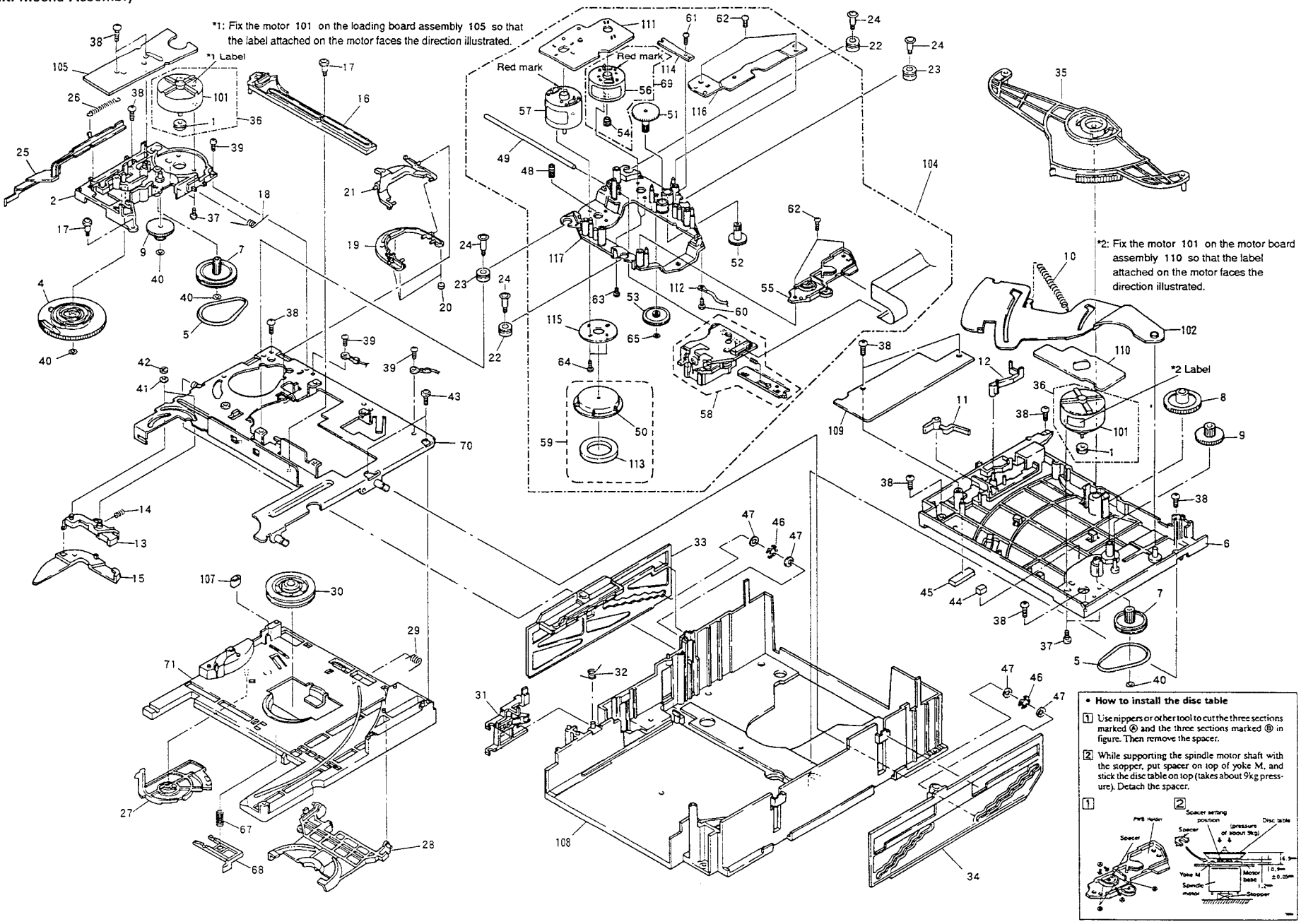
2.2.2 Multi Mecha Assembly

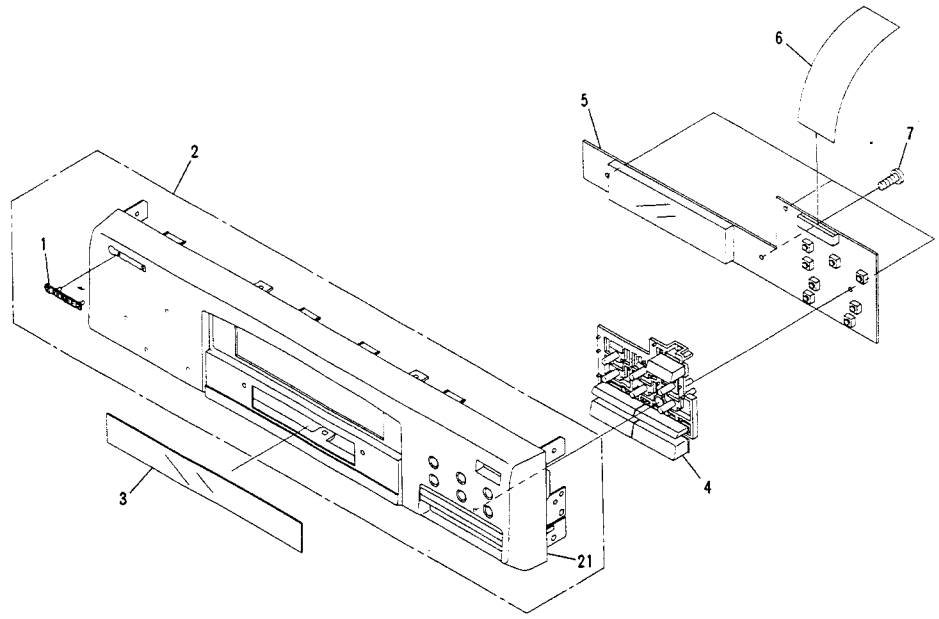


Parts list

Mark	No.	Description	Part No.
	1	Motor pulley	PNW1634
	2	Gear holder	PNW1929
	3	• • • • •	
	4	Cam gear	PNW1923
	5	Belt	PEB1138
	6	Top guide	PNW2061
	7	Gear pulley	PNW1918
	8	Gear S	PNW1919
	9	Gear L	PNW1920
	10	Eject spring	PBH1107
	11	Switch lever	PNW1927
	12	Seven bar	PNW1931
	13	Sub rotary lever	PNW1933
	14	Sub rotary lever spring	PBH1111
	15	Rotary lever	PNW1932
	16	Drive plate	PNW1930
	17	Motor screw	PBA-112
	18	Holder lever spring	PBH1110
	19	Disc holder	PNW1924
	20	Cushion A	PED1001
	21	Holder lever	PNW1925
	22	Float rubber	PEB1014
	23	Float rubber	PEB1132
	24	Float screw	PBA1073
	25	Release lever	PNW1934
	26	Release spring	PBH1106
	27	Clamper cam	PNW1922
	28	Clamper holder	PNW1921
	29	Clamper spring	PBH1109
	30	Clamper	PNW1857
	31	Lock lever	PNW1917
	32	Lock spring	PBH1108
	33	Stair L	PNW1915
	34	Stair R	PNW1916
	35	Synchronize lever	PNW1926
	36	Motor assembly (LOADING, DISC SELECT)	PEA1130
	37	Screw	PMZ26P040FMC
	38	Screw	PPZ30P080FMC
	39	Screw	BBZ30P060FMC
	40	Washer	WT26D047D025
	41	Washer	WA31D054D025
	42	E ring	Z39-010
	43	Screw	IPZ30P080FMC
	44	Rubber spacer	PEB1238
	45	Rubber spacer	PEB1179
	46	Silent ring	PBK1093
	47	Washer	WA62D130D025
	48	Earth spring	PBH1132

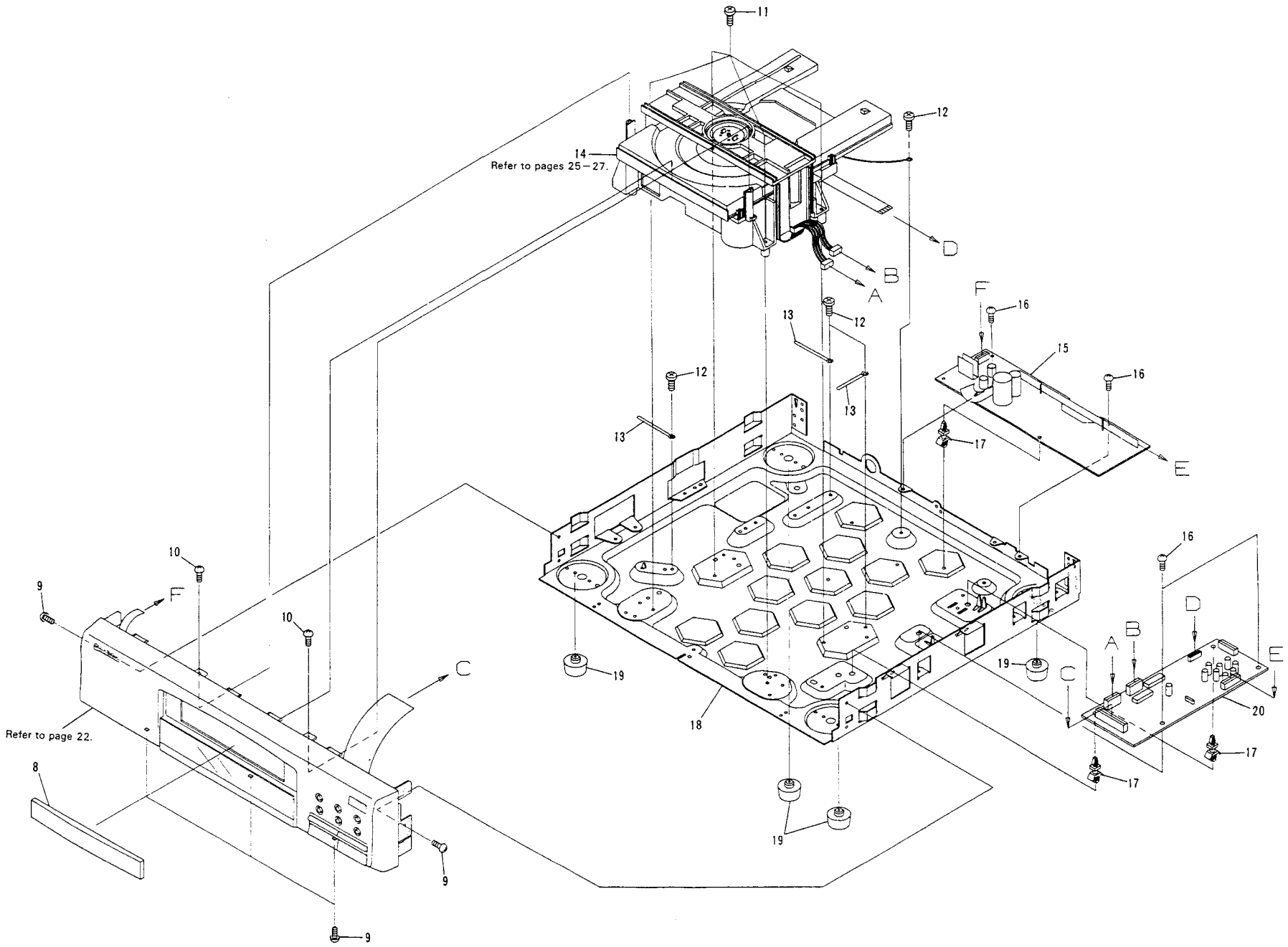
Mark	No.	Description	Part No.
	49	Guide bar	PLA1094
	50	Disc table	PNW1067
	51	Gear 1	PNW2052
	52	Gear 2	PNW2053
	53	Gear 3	PNW2054
	54	Pinion gear	PNW2055
	55	PWB holder	PNW2057
	56	Carriage DC motor / 0.3W	PXM1027
	57	D.C. motor assembly (spindle, with oil)	PEA1235
	58	Pickup assembly	PEA1285
	59	Disc table assembly	PEA1035
	60	Screw	BBZ26P060FMC
	61	Screw	BPZ20P060FMC
	62	Screw	BPZ26P100FMC
	63	Screw	JFZ17P025FZK
	64	Screw	JFZ20P040FMC
	65	Washer	WT12D032D025
	66	• • • • •	
	67	Stopper spring	PBH1131
	68	Stopper	PNW2069
	69	D.C. motor assembly (CARRIAGE)	PEA1246
	70	Upper chassis	PNB1267
	71	Sub chassis	PNW2073
NSP	101	Motor	VXM1033
NSP	102	Eject lever	PNB1306
	103	• • • • •	
NSP	104	Servo mechanism assembly M	PXA1417
NSP	105	Loading board assembly	PWZ2038
	106	• • • • •	
NSP	107	Rubber tube	PEB1171
NSP	108	Main chassis	PNW2074
NSP	109	Select board assembly	PWZ2533
NSP	110	Motor board assembly	PWZ2040
NSP	111	Mechanism board assembly	PWX1192
NSP	112	Earth lead unit	PDF1074
NSP	113	Clamp magnet	PMF1014
NSP	114	Gear stopper	PNB1303
NSP	115	Yoke M	PNB1312
NSP	116	AV angle	PNB1405
	117	Carriage base	PNW2058

2.2.3 Single CD Unit (For XD-J110)

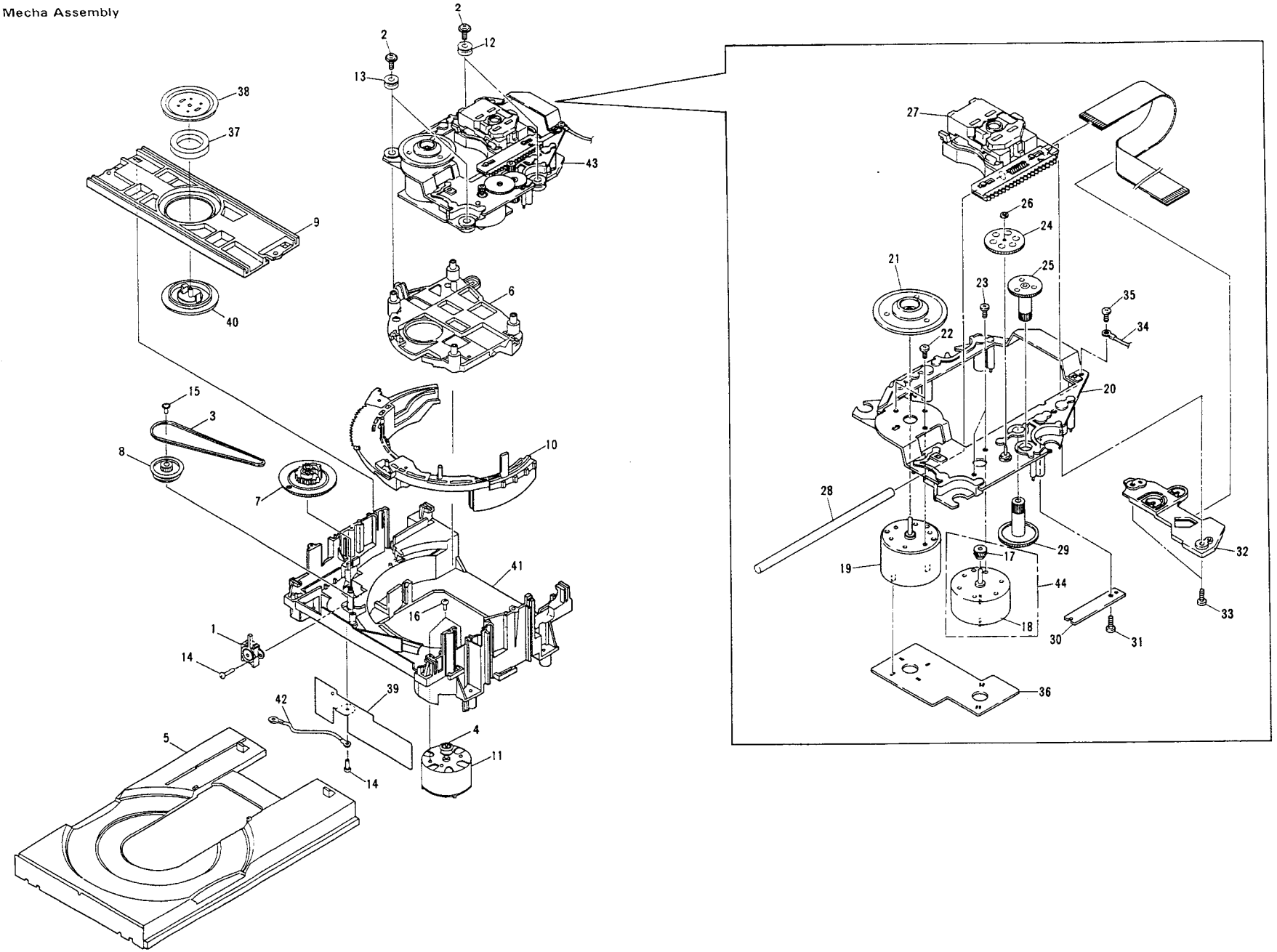


Parts list

Mark	No.	Description	Parts No.
	1	NAME PLATE	AAM1047
	2	FUNCTION PANEL ASSEMBLY	PEA1272
	3	DISPLAY WINDOW	PAM1594
	4	CONTROL BUTTON	PAC1705
	5	DISPLAY BOARD ASSEMBLY	PWZ2433
	6	24P F • F • C/30V	PDD1113
	7	SCREW	PPZ30P080FMC
	8	NAME PLATE	PNW2234
	9	SCREW	BBZ30P080FCC
	10	SCREW	PPZ30P120FMC
	11	SCREW	BBZ30P160FMC
	12	SCREW	PDZ30P050FMC
	13	CORD CLAMPER	RNH-184
NSP	14	SINGLE MECHA ASSEMBLY	PXA1495
	15	POWER BOARD ASSEMBLY	PWZ2437
	16	SCREW	BBZ30P060FCC
NSP	17	PCB HOLDER	PNW2100
NSP	18	UNDER BASE	PNA1967
	19	FOOT ASSEMBLY	PXA1201
⚠	20	MOTHER BOARD ASSEMBLY	PWM1729
NSP	21	FUNCTION PANEL	PNW2325


11
12
14
Refer to pages 25–27.
D
B
A
F
16
13
12
15
16
12
13
13
17
E
16
10
9
F
10
D
A
B
E
C
19
C
19
20
18
17
17
Refer to page 22.
8
19
9
9

2.2.4 Single Mecha Assembly



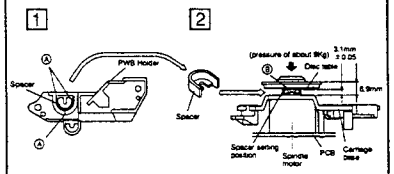
Parts list

Mark	No.	Description	Part No.
	1	Lever switch (CLAMP)	DSK1003
	2	Float screw	PBA1048
	3	Rubber belt	PEB1193
	4	Motor pulley	PNW1634
	5	Tray	PNW2290
	6	Float base	PNW2032
	7	Drive gear	PNW2266
	8	Gear pulley	PNW2034
	9	Clamper base	PNW2035
	10	Clamp cam	PNW2036
	11	DC motor/0.75W (LOADING)	PXM1010
	12	Float rubber	PEB1014
	13	Float rubber	PEB1132
	14	Screw	BPZ26P080FMC
	15	Screw	Z39 – 018
	16	Screw	PMZ26P040FMC
	17	Pinion gear	PNW2055
	18	DC motor (CARRIAGE)	PXM1027
	19	DC motor assembly (SPINDLE,with oil)	PEA1235
	20	Carridge base	PNW2058
	21	Disc table	PNW1068
	22	Screw	JFZ20P030FNI
	23	Screw	JFZ17P025FZK
	24	Gear 3	PNW2054
	25	Gear 2	PNW2053
	26	Washer	WT12D032D025
	27	Pickup assembly	PEA1179
	28	Guide bar	PLA1094
	29	Gear 1	PNW2052
NSP	30	Gear stopper	PNB1303
	31	Screw	BPZ20P060FMC
	32	PWB holder	PNW2057
	33	Screw	BPZ26P100FMC
NSP	34	Earth lead unit	PDF1104
	35	Screw	BBZ26P060FMC
NSP	36	Mechanism board assembly	PWX1192
NSP	37	Clamp magnet	PMF1014
NSP	38	Yoke	PNB1216
NSP	39	Shield plate	PNB1317
NSP	40	Clamper S	PNW1609
NSP	41	Loading base	PNW2030
NSP	42	Earth lead unit	XDF – 502
NSP	43	Servo mechanism assembly	PXA1478
	44	DC motor assembly (CARRIAGE)	PEA1246

• How to install the disc table

1 Use nipper or other tool to cut the three sections marked Ⓐ figure 1. Then remove the spacer.

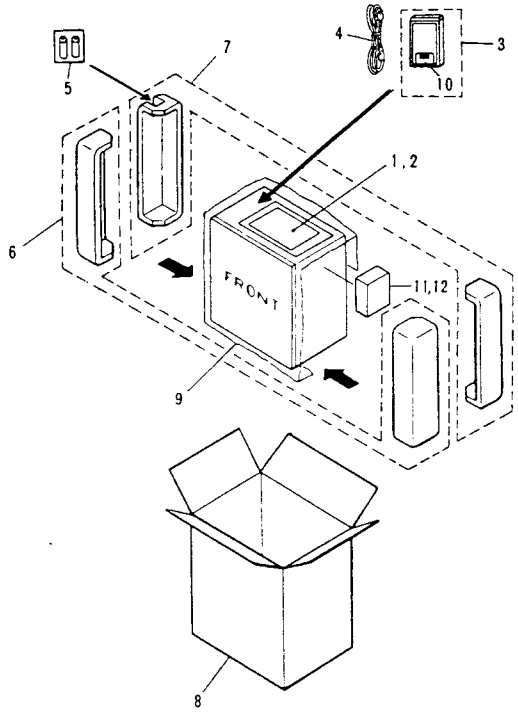
2 While supporting the spindle motor shaft with the stopper, put spacer on top of the motor base (angled so it doesn't touch section Ⓑ),and stick the disc table on top (takes about 9Kg pressure). Take off the spacer.



2.3 PACKING

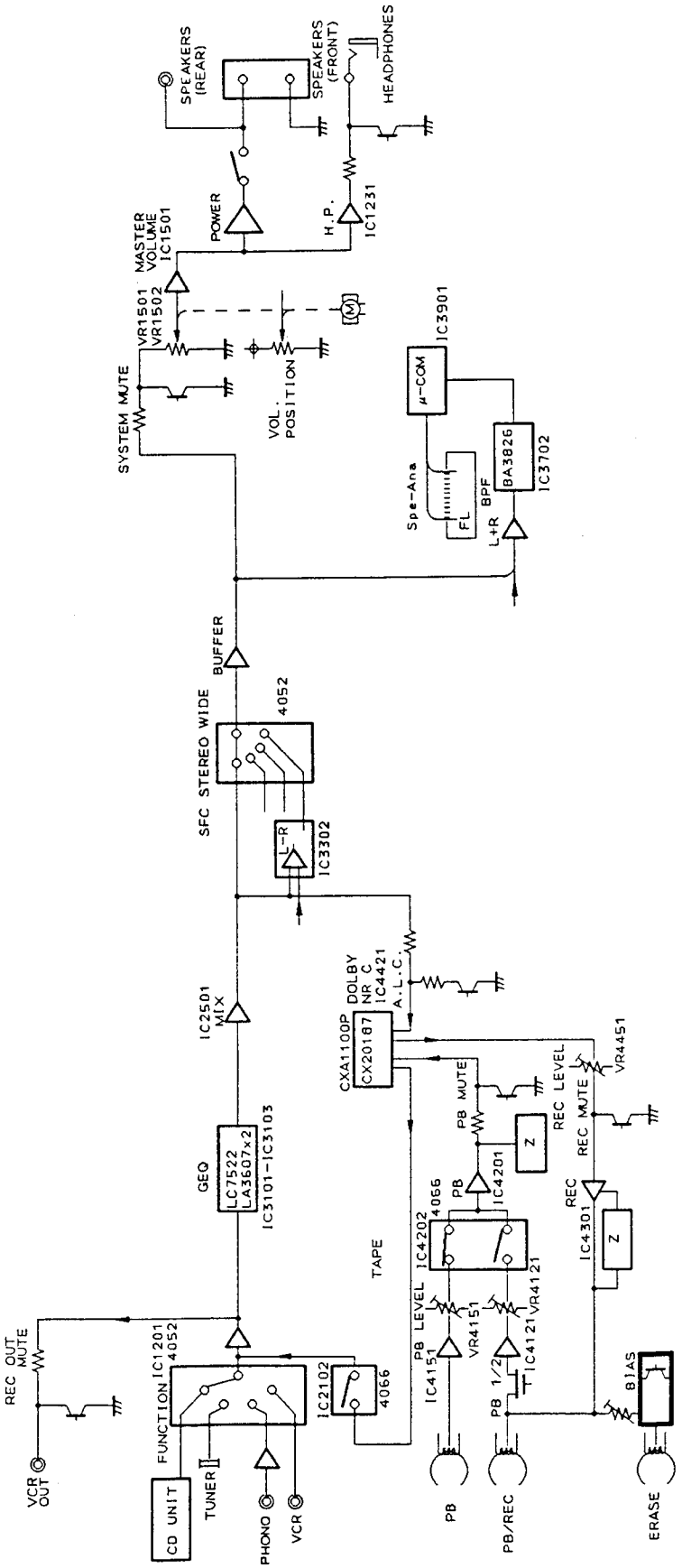
Parts list

Mark	No.	Description	Parts No.
	1	OPERATING INSTRUCTIONS (English, French, German, Italian) (For XD–J115M)	ARE1266
		OPERATING INSTRUCTIONS (English, French, German, Italian) (For XD–J110)	ARE1264
	2	OPERATING INSTRUCTIONS (Dutch, Swedish, Spanish, Portuguese) (For XD–J115M)	ARE1267
		OPERATING INSTRUCTIONS (Dutch, Swedish, Spanish, Portuguese) (For XD–J110)	ARE1265
	3	REMOTE CONTROL UNIT (CU–DC030)	AXD1337
	4	AC POWER CORD	ADG1127
NSP	5	BATTERY (R03, AAA)	AEX–021
	6	FRONT PAD L, R	AHA1559
	7	REAR PAD L, R	AHA1560
	8	PACKING CASE (For XD–J115M)	AHD2507
		PACKING CASE (For XD–J110)	AHD2506
NSP	9	PACKING SHEET	AHG1151
	10	BATTERY COVER	AZN2236
	11	PP CASE (XD–J115M only)	PYY1169
	12	MAGAZINE ASSEMBLY (XD–J115M only)	PXA1507



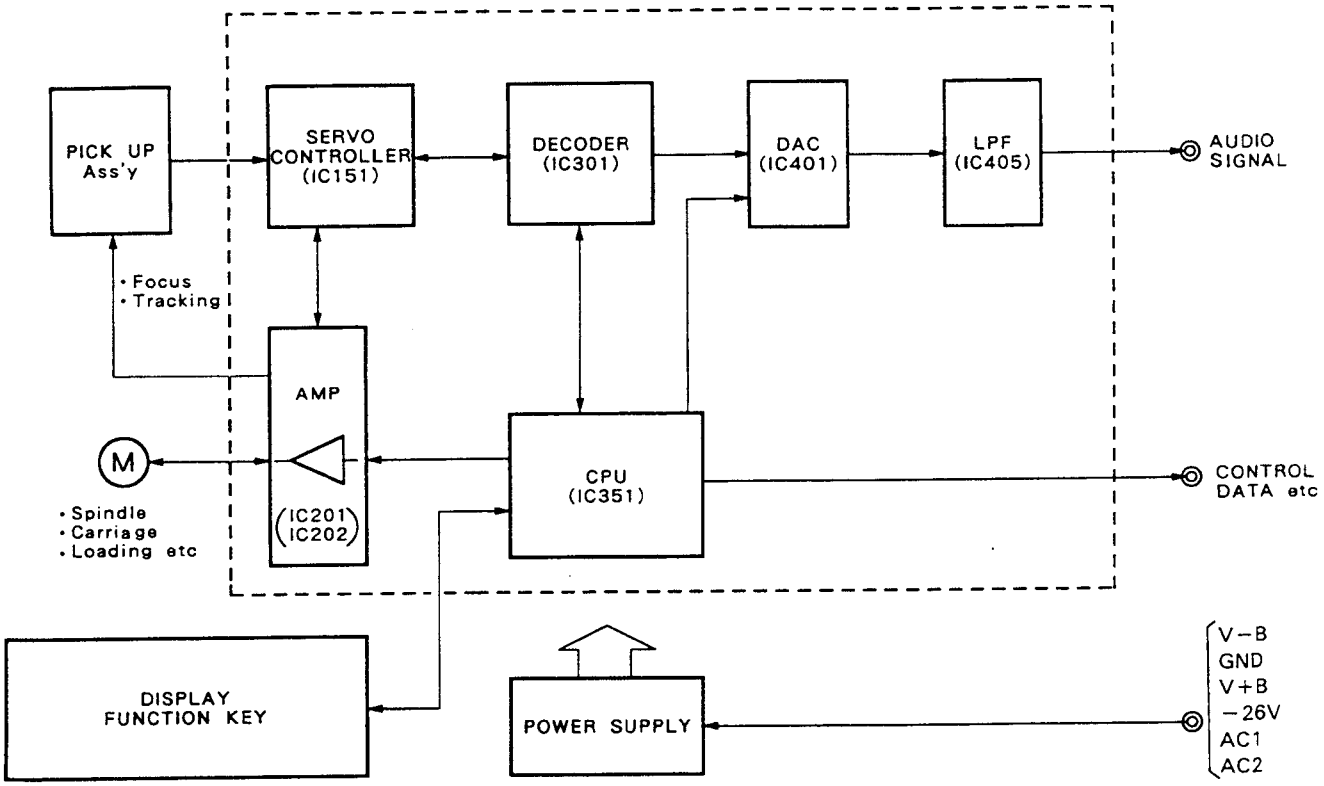
3. BLOCK DIAGRAM

3.1 DECK AMP BLOCK (For XD−J115M and XD−J110)



3.2 CD BLOCK

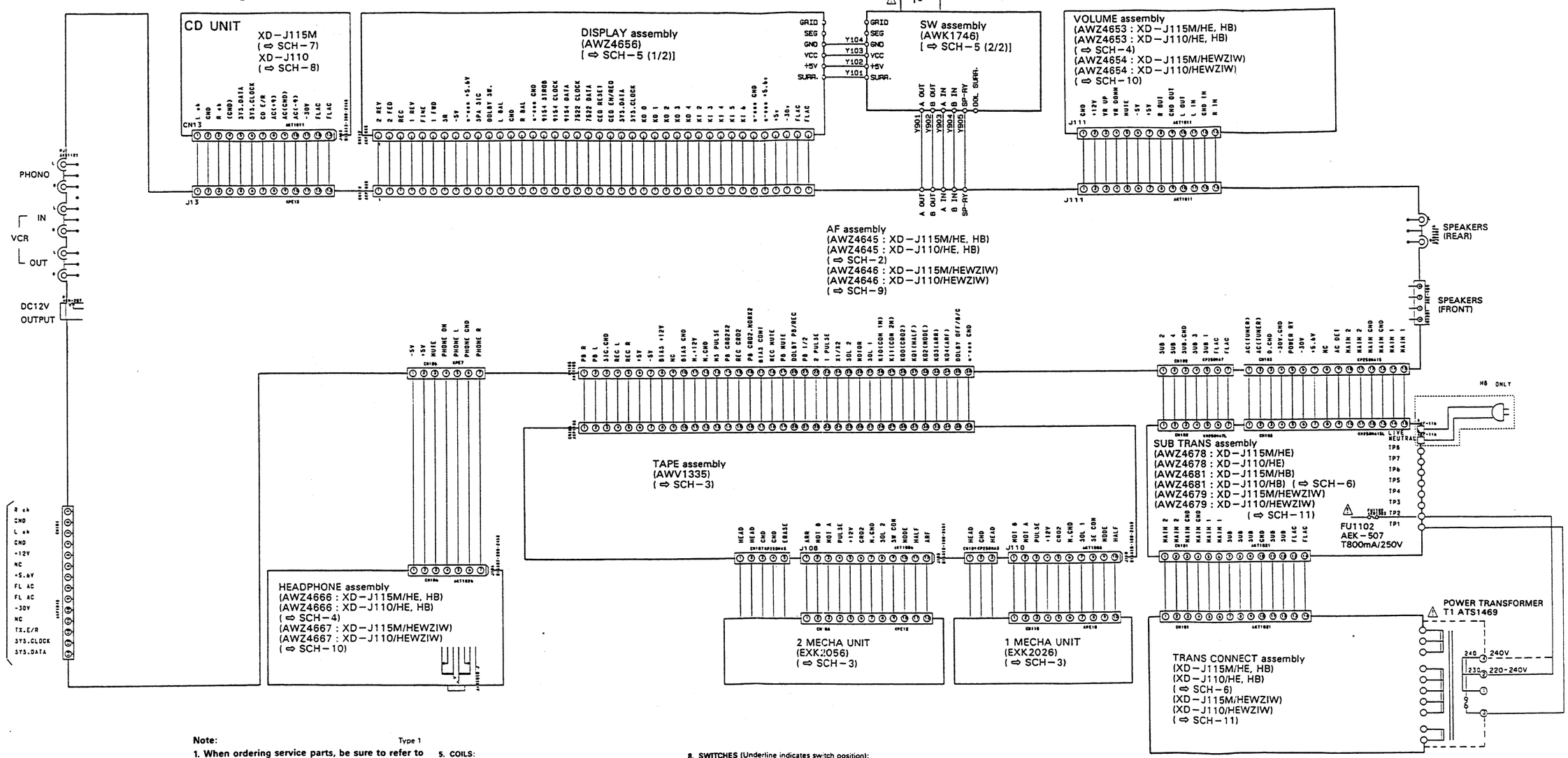
● Multi CD Unit (For XD−J115M) and Single CD Unit (For XD−J110)



4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

4.1 DECK AMP BLOCK
(For XD−J115M/HE, HB and XD−J110/HE, HB)

4.1.1 Overall Schematic Diagram



Note: Type 1

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   V : Signal voltage at rated output.
   ⟶ : DC voltage (V) at no input signal unless otherwise noted. Value in ( ) is DC voltage at rated power.
   ⇦ mA or − mA : DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼ : Measurement point.
   - The △ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

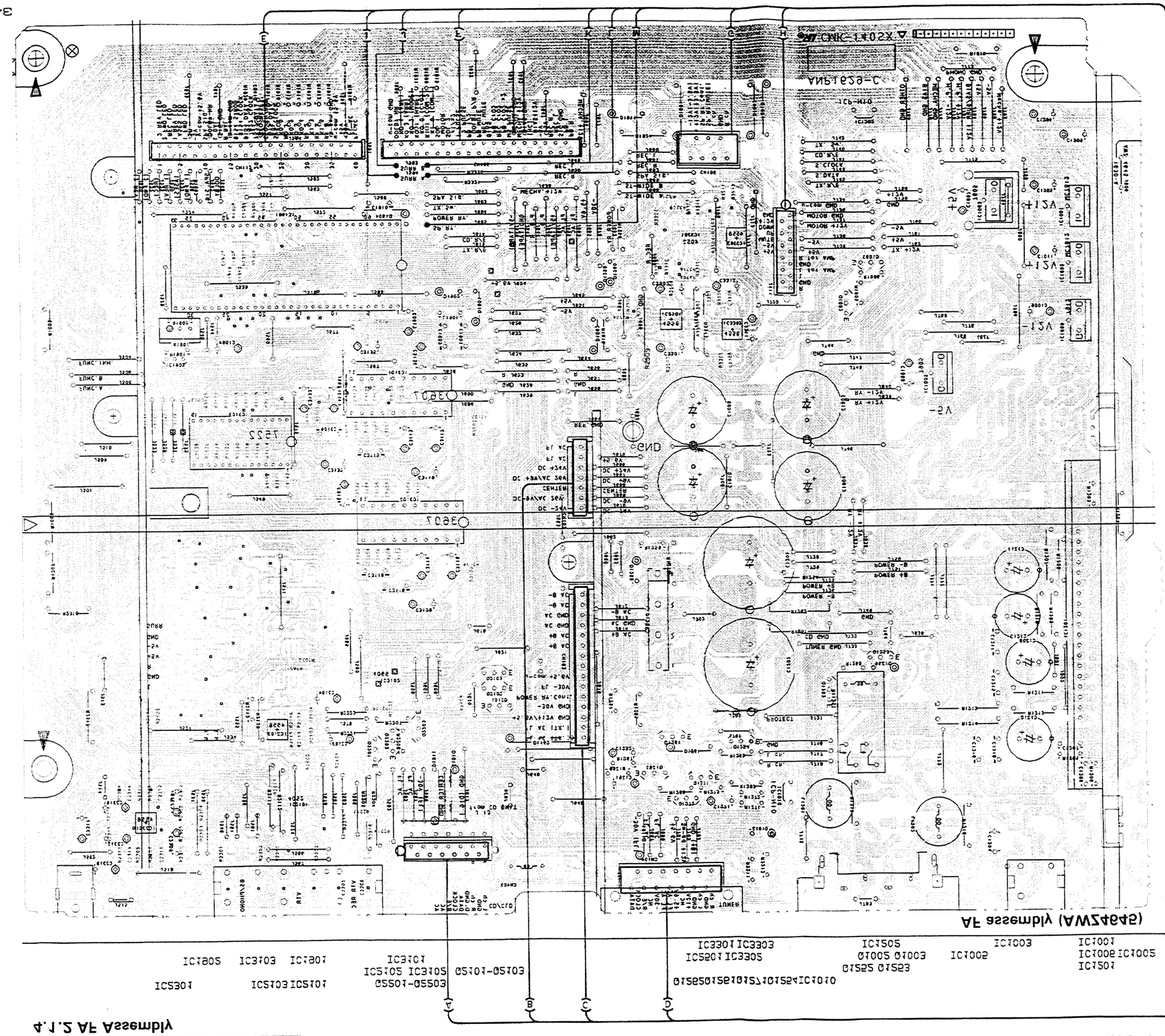
DISPLAY assembly

S1801	AI BGM	S1819	ASES
S1802	FUNCTION	S1820	2 REC PAUSE
S1804	AI MEMORY	S1901	DOLBY ON/OFF
S1805	POWER	S3801	GEQ FREQ UP
S1806	1 REV	S3802	GEQ LEVEL DOWN
S1807	1 PLAY	S3806	SURROUND & WIDE
S1808	1 STOP	S3807	GEQ LEVEL UP
S1809	2 REW	S3808	GEQ MODE
S1810	2 FF	S3809	SOUND SELECTOR
S1811	1 REW	S3810	PRESET/PGM
S1812	1 FF	S3811	GEQ ON/OFF
S1813	2 STOP	S3813	SFC MOVIE/A
S1814	2 REV	S3814	SFC DISCO/B
S1815	2 PLAY	S3815	SFC HALL/C
S1816	COPY	S3816	SFC MEMO
S1818	2 REC MUTE	S3817	SFC CLEAR

9. **For SCH−□ on the schematic diagram**
   - **SCH−□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)**

SCH−1 Overall Schematic Diagram

SCH−1 Overall Schematic Diagram

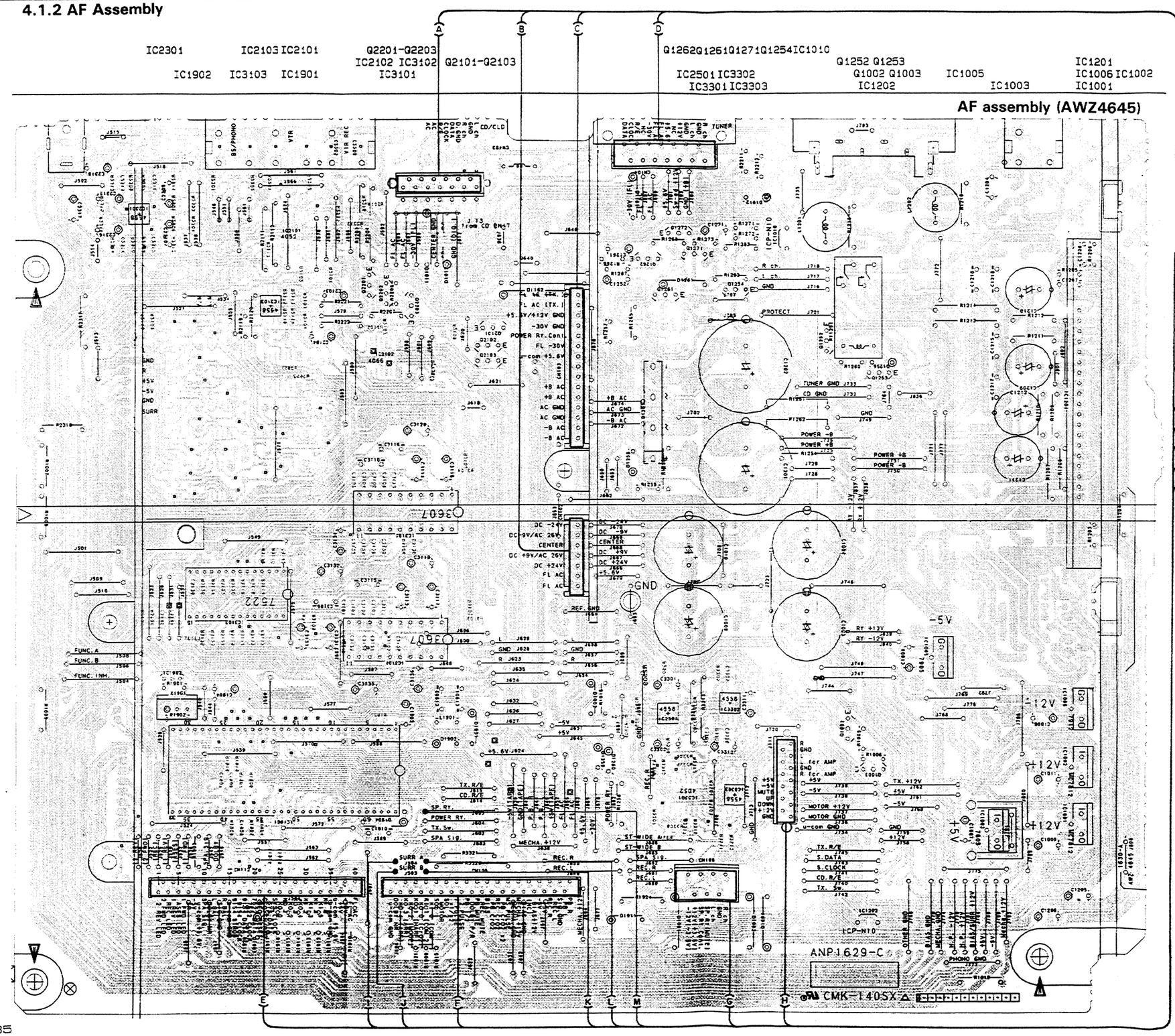


4.1.2 AF Assembly

This PCB connection diagram is viwed from the foil side.

4.1.2 AF Assembly

This PCB connection diagram is viewd from the parts mounted side.



NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E C B	E C B or E C B	Transistor
Q215	E C B or E C B	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	C513	Capacitor (Polarized)
C518	C518	Capacitor (Non-polarized)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ⊖ (double circles) shows negative terminal.
4. The diode terminal marked with ⊖ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

SCH−2

AF assembly

: MAIN SIGNAL
: TAPE 1 PLAY SIGNAL
: TAPE 2 REC SIGNAL

To HEADPHONE assembly CN106 (⇨ SCH−4)

AF assembly (AWZ4645)

DC12V OUTPUT

PHONO IN

VCR OUT

IC2101 : FUNCTION

Q2201−2203 : MUTE

IC2102 : FUNCTION (TAPE)

IC1901 : DECK AMP CONTROL MICRO-COMPUTER

IC2501 : MIC MIX

+6.9dB

MIX

IC2101
MC14052BF

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0.2	9	0
2	0	10	0
3	0.2	11	-
4	-	12	0
5	0	13	0
6	0	14	-
7	-5	15	0
8	0	16	5

IC2301, IC2103, IC2501, IC3302, IC3303
XRA4558F-P

Pin No.	Voltage (V)
1-3	0
4	-5
5-7	0
8	5

IC2102
MC14066BF

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	8	0
2	0	9	0
3	-	10	0
4	0.15	11	0
5	0	12	-5
6	-	13	-5
7	-5	14	5

IC1901
PD5214A

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1-2	5	28-29	0
3	0	30-31	2.1
4	3.2	32-39	0
5-8	0	40-46	5
9	5	47-51	3.5
10-16	0	52-53	5
17-20	5	54-59	4
21-23	0	60-61	0
24	5	62	5
25-26	0	63	0
27	5	64	5

From TUNER: Rch, CND, Lch, CND, +12v, NC, +5.6v, AC (TUNER), AC (TUNER), -30v, NC, TX.E/R, SYS.CLOCK, SYS.DATA

From CD BLOCK POWER BOARD assembly CN13 (⇨ SCH−7) or (⇨ SCH−8): (CD), Lch, CND, Rch, (GND), SYS.DATA, SYS.CLOCK, CD E/R, AC (+9), AC (GND), AC(-9), -30V, AC (TUNER), AC (TUNER)

To TAPE assembly CN105 (⇨ SCH−3): PB R, PB L, CND, REC L, REC R, +5v, -5v, BIAS 12v, NC, BIAS CND, MECHA 12v, MECHA CND, M5 PULSE, PB Cr02x2, REC Cr02, PB Cr02, BIAS, REC MUTE, PB MUTE, DOLBY P/R, PB 1/2, 2 PULSE, 1 PULSE, x1/x2, SOL 2, MOTOR, SOL 1, KI 0(COME IN), KI 1(CON 2M), KO 0(Cr02), KO 1(HARF), KO 2(MODE), KO 3(ARR), KO 4(ARF), DOLBY NR, u-com GND

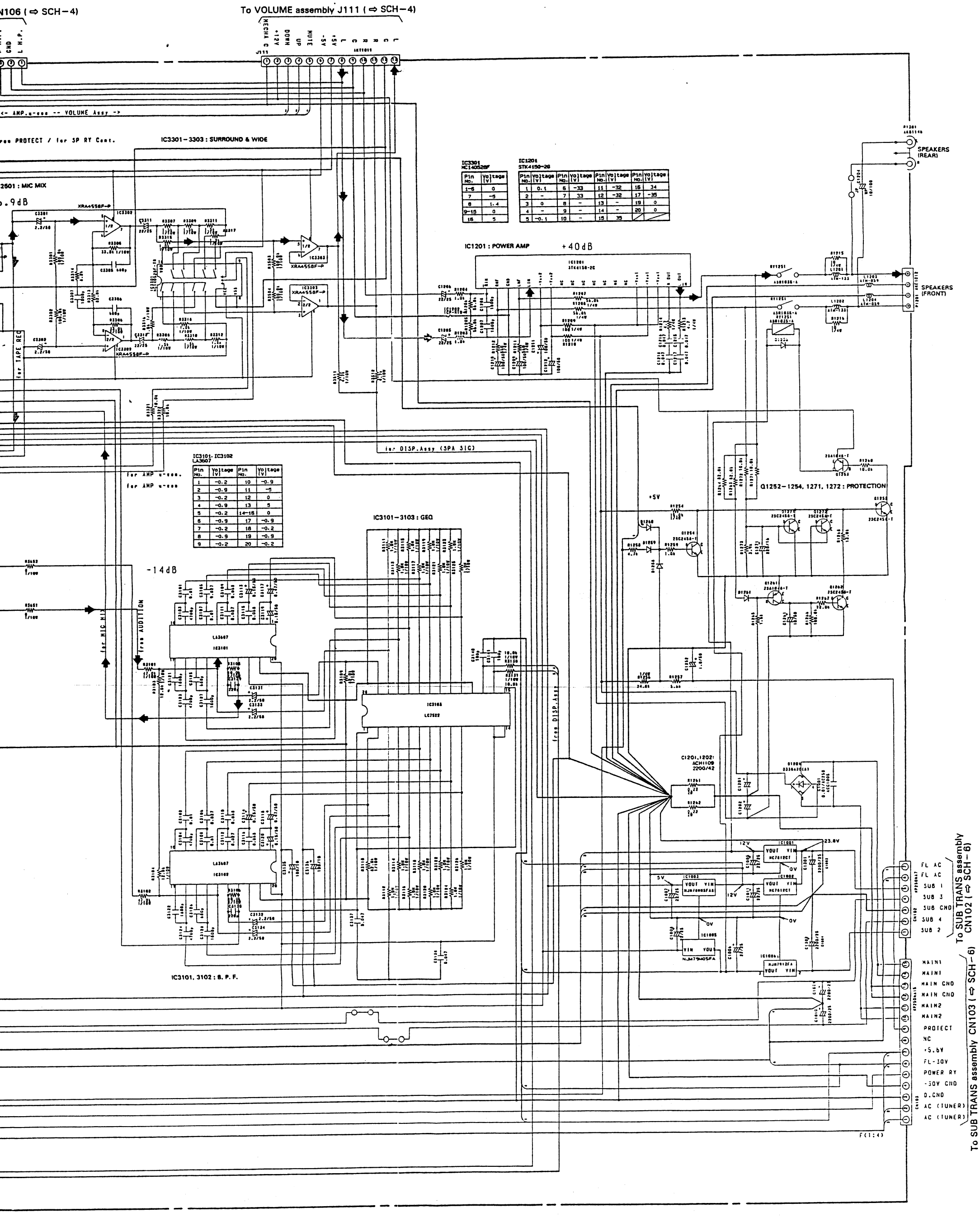
TUNER +12V (Switched)
TUNER System BUS
CD System BUS
POWER RY
SP RY
TX SW
SURR.A
SURR.B
KI 1
KI 0
KI 7
KI 6
KI 5
KI 4
KI 3
KI 2
KO 4
KO 3
KO 2
KO 1
KO 0
S CLOCK
S DATA
TX EN/REC
CD EN/REC
CEQ EN/REC
CEQ RESET
SR
S.BASS
1 FWD
FINE(FADE)
1 REV
REC
2 FWD
2 REV
VDD
Vref
GND
VR POSITION
UP
DOWN
MUTE
INH
A
B
V MUTE
M5 PULSE
PB Cr02x2
REC Cr02
PB Cr02
BIAS
REC MUTE
PB MUTE
DOLBY P/R
PB1/2
2 PULSE
1 PULSE
X1/X2
SOL 2
MOTOR
GND ref
RESET
SOL 1

To DISPLAY assembly CN112 [⇨ SCH−5 (1/2)]

B OUT (Y902) — To SW assembly Y902 [⇨ SCH−5 (2/2)]
A OUT (Y901) — To SW assembly Y901 [⇨ SCH−5 (2/2)]
A IN (Y903) — To SW assembly Y903 [⇨ SCH−5 (2/2)]
B IN (Y904) — To SW assembly Y904 [⇨ SCH−5 (2/2)]
SP-RY (Y905) — To SW assembly Y905 [⇨ SCH−5 (2/2)]

+5V (Signal)
-5V (Signal)
<- TAPE Assy & TUNER -- P.S. ->
<- DISP.Assy & CD -- P.S. ->
SP RY Cont.
u-com GND
POWER RY Cont.
u-com.+5.6V
<- TUNER & DISP.Assy -- SUB P.S.->
<- DISP.Assy -- SURR.Assy & CEQ ->

5 6 7 8



IC3301
MC14052BF

Pin No.	Voltage (V)
1−6	0
7	−5
8	1.4
9−15	0
16	5

IC1201
STK4150-2E

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0.1	6	−33	11	−32	16	34
2	−	7	33	12	−32	17	−35
3	0	8	−	13	−	19	0
4	−	9	−	14	−	20	0
5	−0.1	10	−	15	35		

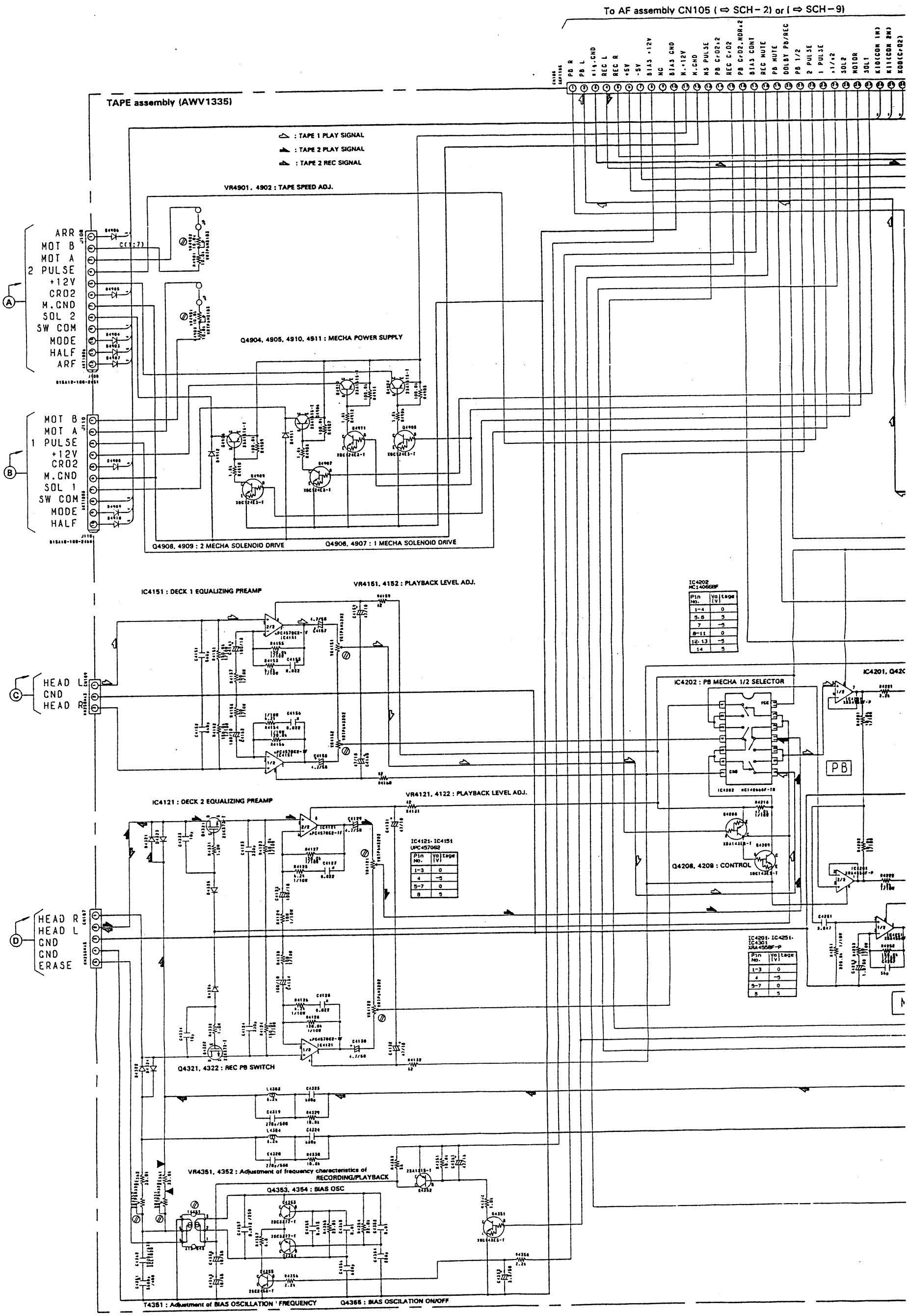
IC3101, IC3102
LA3607

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	−0.2	10	−0.9
2	−0.9	11	−5
3	−0.2	12	0
4	−0.9	13	5
5	−0.2	14−16	0
6	−0.9	17	−0.9
7	−0.2	18	−0.2
8	−0.9	19	−0.9
9	−0.2	20	−0.2

SCH−2

AF assembly

4.1.3 TAPE Assembly, 1 Mecha Unit and 2 Mecha Unit



IC4202 MC14066BF	
Pin No.	Voltage (V)
1-4	0
5.6	5
7	-5
8-11	0
12.13	-5
14	5

IC4121. IC4151 UPC457062	
Pin No.	Voltage (V)
1-3	0
4	-5
5-7	0
8	5

IC4201. IC4251. IC4301 XRA4558F-P	
Pin No.	Voltage (V)
1-3	0
4	-5
5-7	0
8	5

SCH-3 TAPE assembly
1 Mecha Unit
2 Mecha Unit

(⇨ SCH-2) or (⇨ SCH-9)

REC C-02
PB C-02.NOR:2
BIAS CONT
REC MUTE
PB MUTE
DOLBY PB/REC
PB 1/2
2 PULSE
1 PULSE
1/2
SOL2
MOTOR
SOL1
K10(COM 1H)
K11(COM 2H)
K00(C-02)
K01(HARF)
K02(MODE)
K03(ARR)
K04(ARF)
DOLBY OFF/B/C
GND

2 MECHA UNIT (EXK2056)

CN108
12
ARF
HALF
MODE
SW COM
SOL 2
M. GND
C-02
+12V
2 PULSE
MOT A
MOT B
ARR
1
SOLENOID
HALL IC
OUT
M
REC/PB HEAD
ERASE HEAD
HEAD R
HEAD L
GND
ERASE
A
D

1 MECHA UNIT (EXK2026)

CN110
10
HALF
MODE
SW COM
SOL 1
M. GND
C-02
+12V
1 PULSE
MOT A
MOT B
1
SOLENOID
IC
OUT
M
PB HEAD
HEAD L
GND
HEAD R
B
C

Q4207 : MUTE SW

IC4201, Q4203, 4204 : PB EQ

CHA 1/2 SELECTOR

PB

CONTROL

Q4205, 4206 : PB MUTE

Q4351, 4352 : CrO2/NORM. SWITCHING

ALC

DOLBY

IC4201, IC4251, IC4301 XRA4558F-P

Pin No.	Voltage (V)
1-3	0
4	-5
5-7	0
8	5

MS PULSE

REC AMP

IC4301, 4302 : REC AMP

Q4461, 4462 : REC MUTE

Q4460 : MUTE CONTROL

VR4451, 4452 : REC LEVEL ADJ.

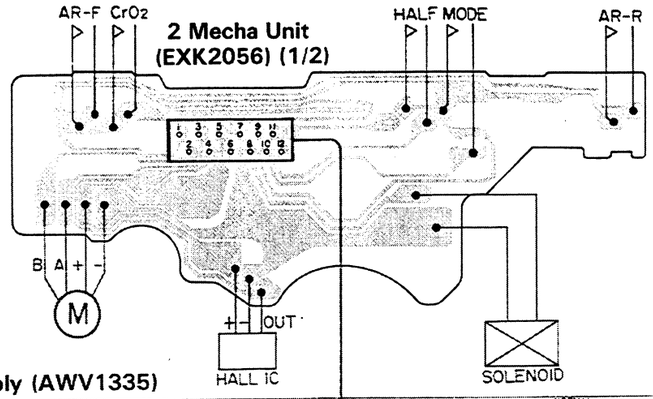
IC4302 SN74LS09N

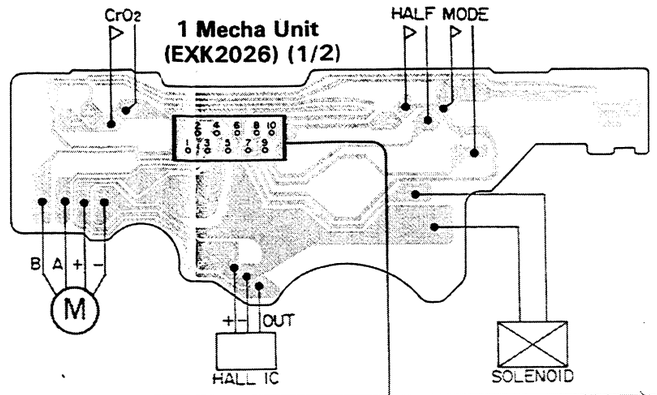
Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	8	0
2	-	9	5
3	0.4	10	7.2
4	0	11	0.4
5	4.5	12	-
6	0	13	0
7	0	14	5

TAPE assembly
1 Mecha Unit
2 Mecha Unit

SCH-3

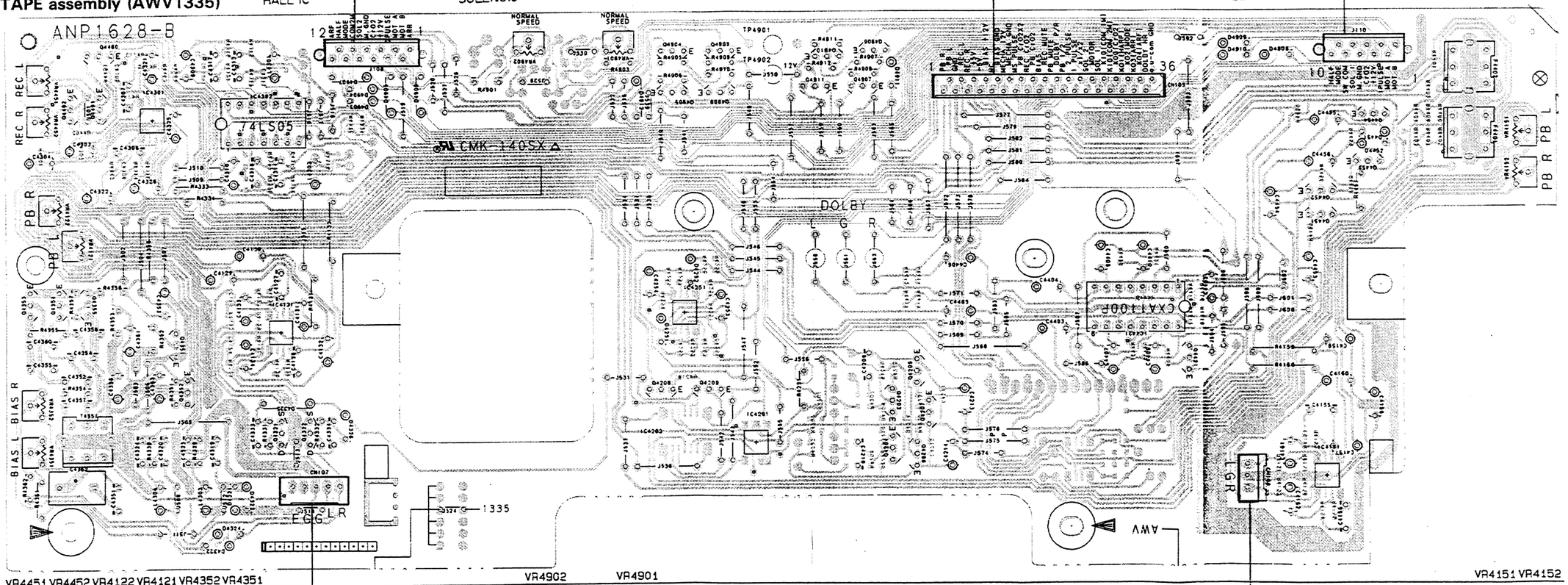
This PCB connection diagram is viewd from the parts mounted side.

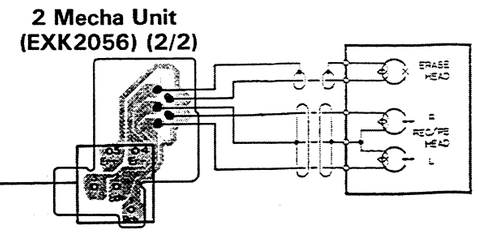


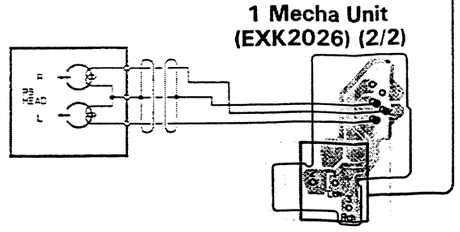


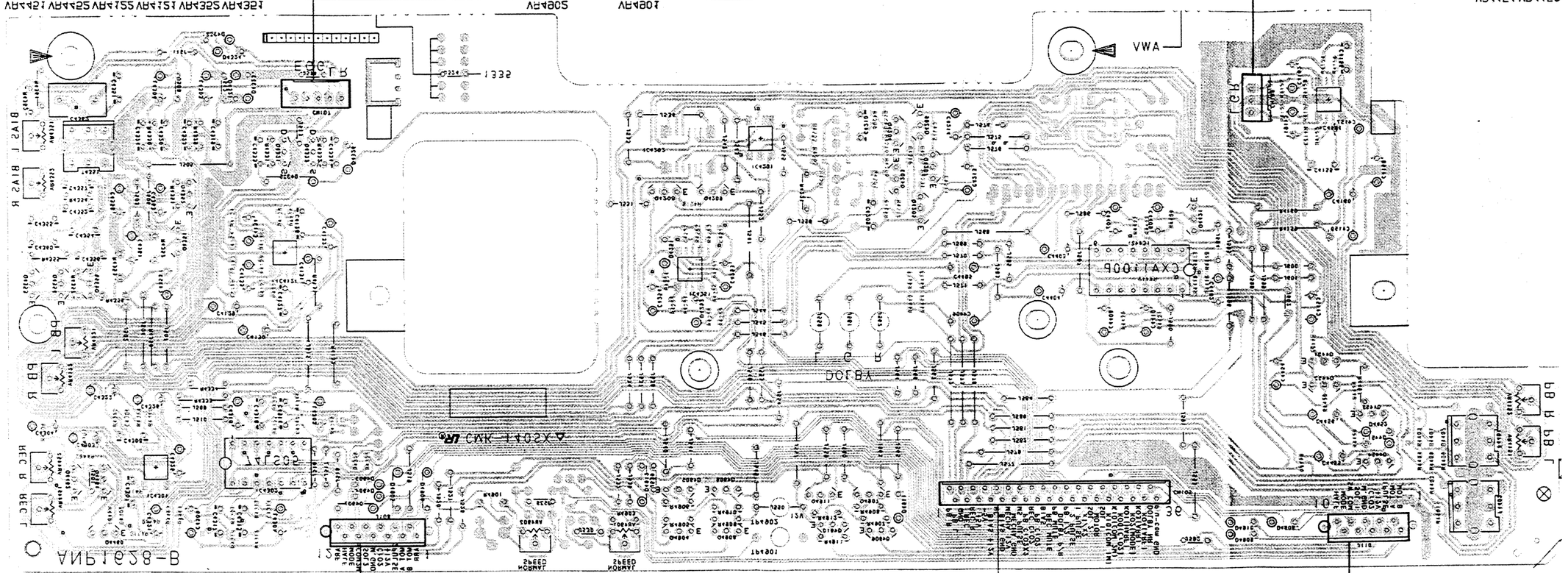
To AF assembly CN105

TAPE assembly (AWV1335)







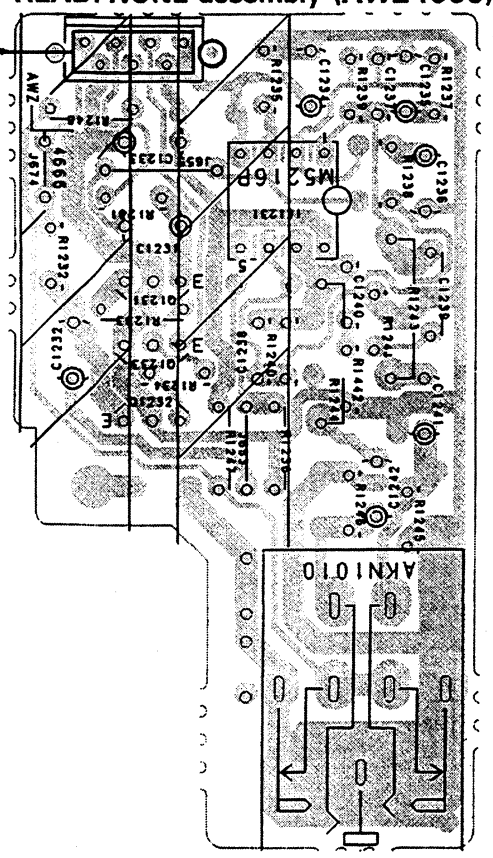


This PCB connection diagram is viewed from the foil side.

4.1.4 HEADPHONE Assembly and VOLUME Assembly

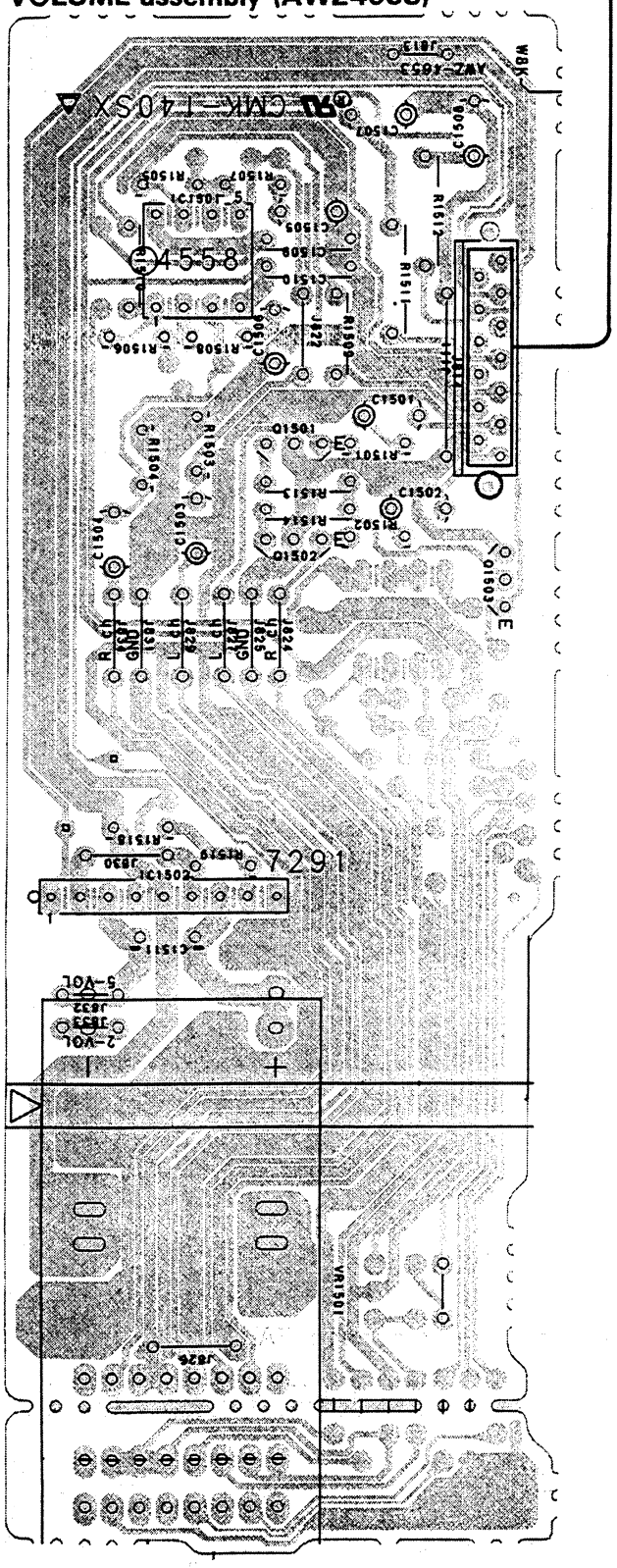
To AF assembly CN106

HEADPHONE assembly (AWZ4666)



To AF assembly J111

VOLUME assembly (AWZ4653)

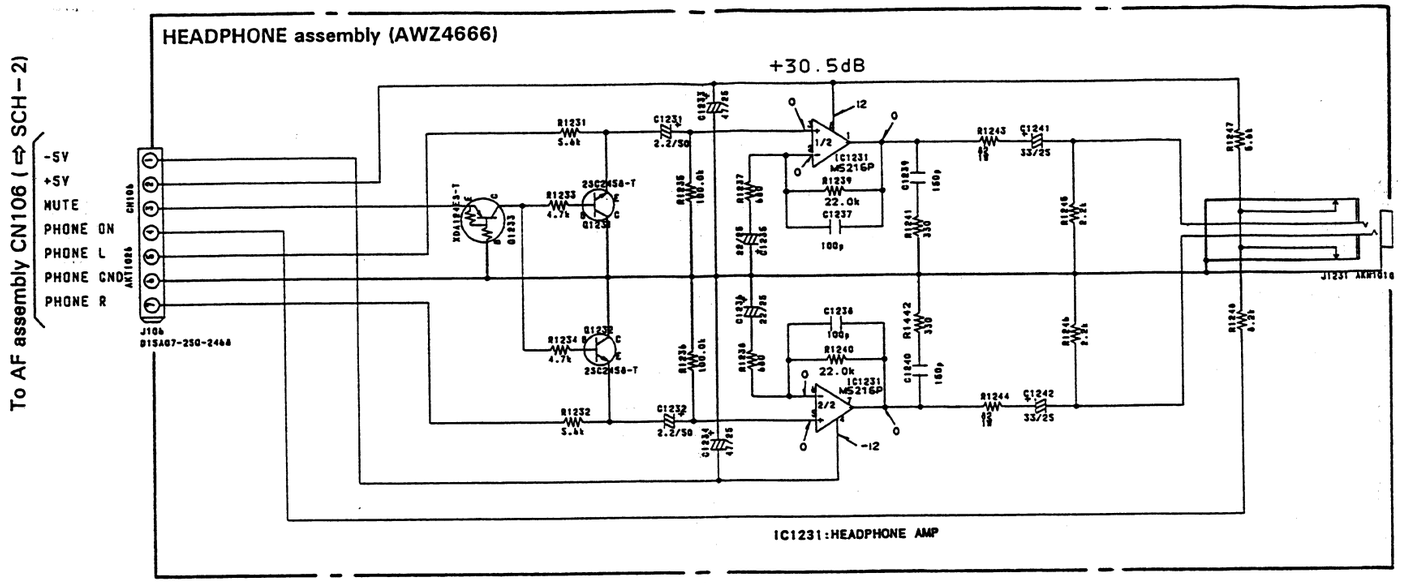


This PCB connection diagram is viewd from the parts mounted side.

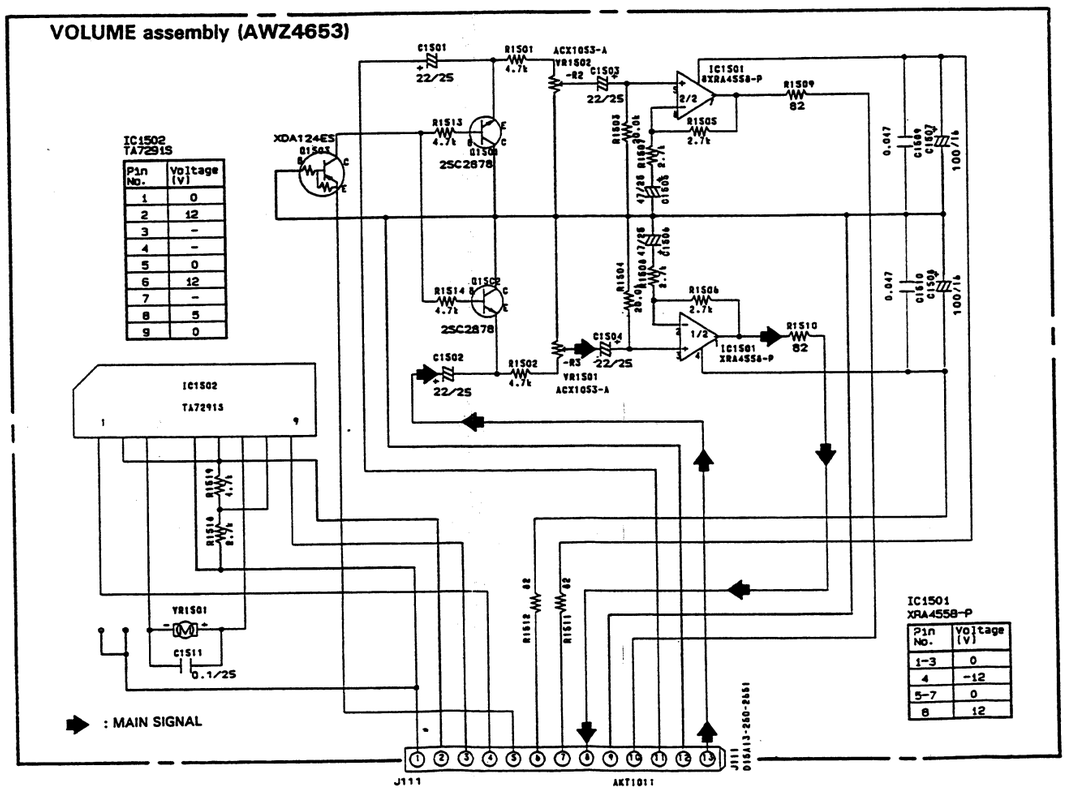
4.1.4 HEADPHONE Assembly and VOLUME Assembly

This PCB connection diagram is viwed from the foil side.

HEADPHONE assembly (AWZ4666)



VOLUME assembly (AWZ4653)

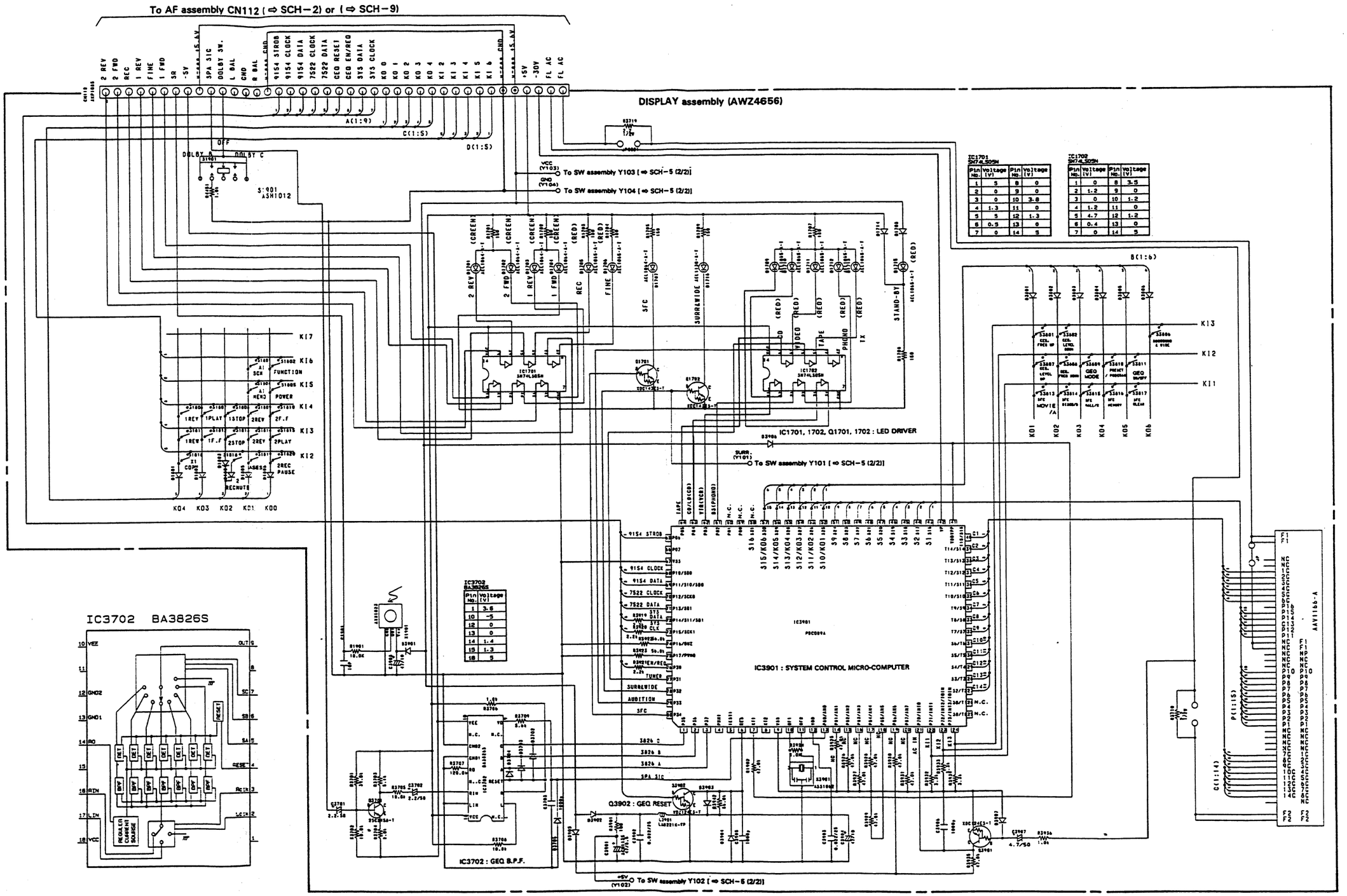


IC1502 TA72915	
Pin No.	Voltage (V)
1	0
2	12
3	-
4	-
5	0
6	12
7	-
8	5
9	0

IC1501 XRA4558-P	
Pin No.	Voltage (V)
1-3	0
4	-12
5-7	0
8	12

SCH-4 HEADPHONE assembly VOLUME assembly

4.1.5 DISPLAY Assembly and SW Assembly



IC3702 BA3826S

IC3703 BA3826S

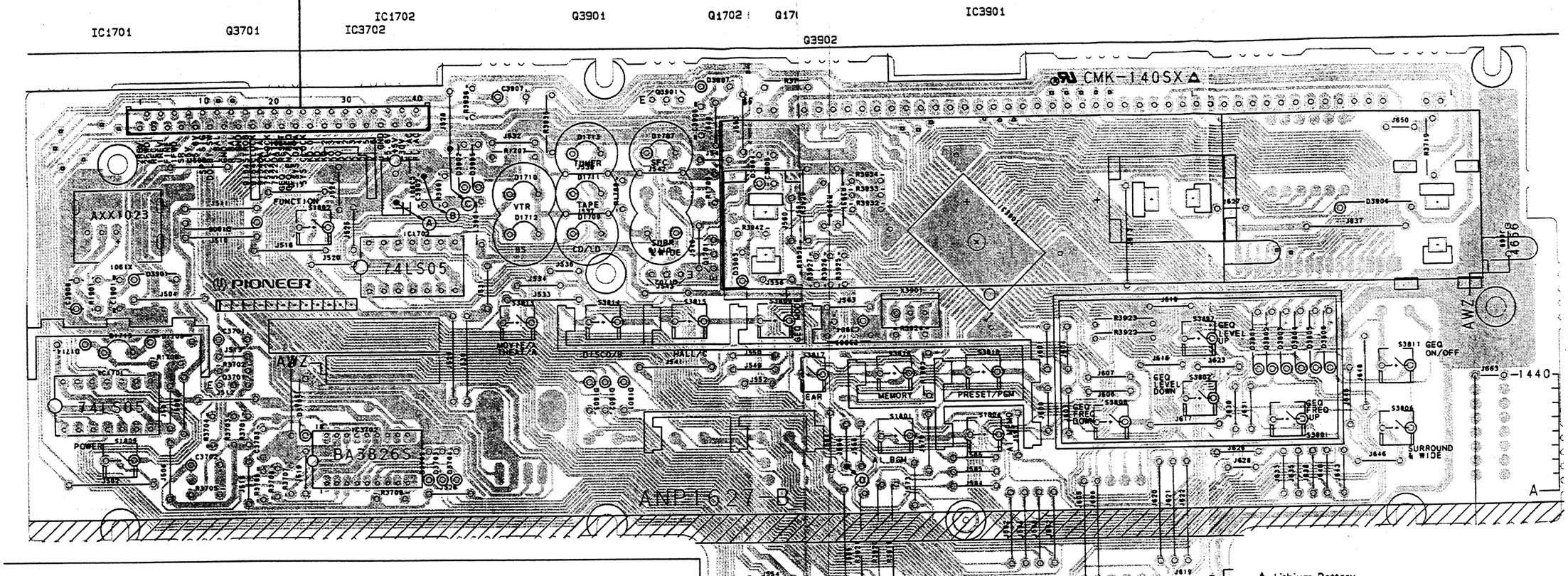
Pin No.	Voltage (V)
1	3.6
10	-5
12	0
13	0
14	1.4
15	1.3
16	5

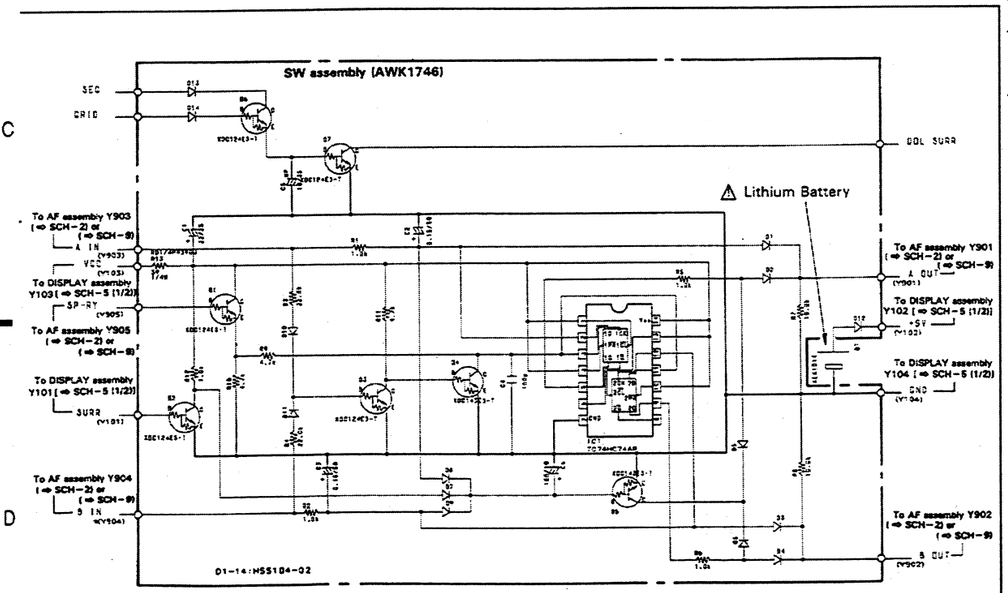
SCH−5 −(1/2) DISPLAY assembly

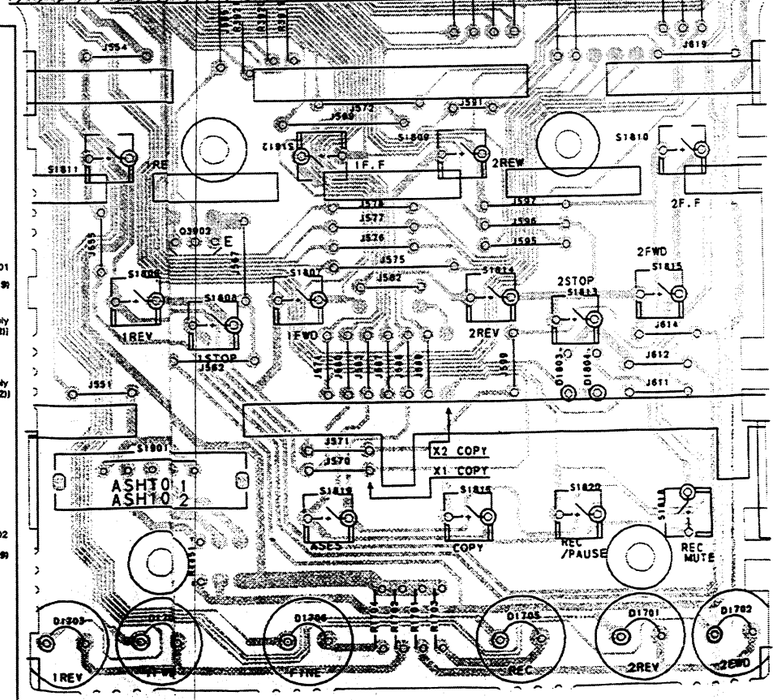
DISPLAY assembly **SCH−5** −(1/2)

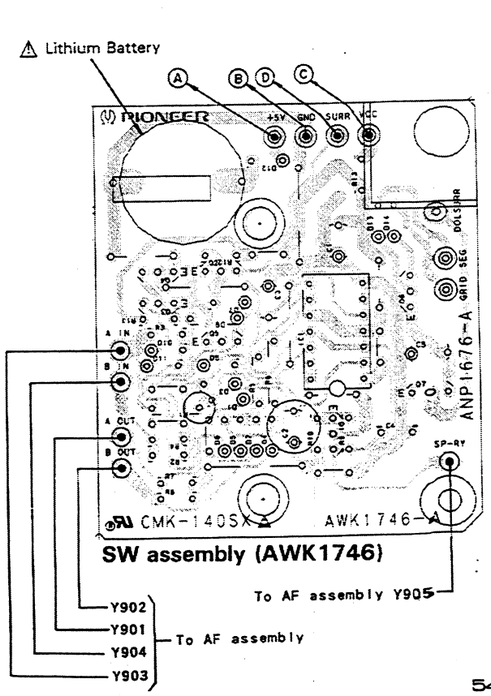
DISPLAY assembly (AWZ4656) — To AF assembly CN112

This PCB connection diagram is viewd from the parts mounted side.



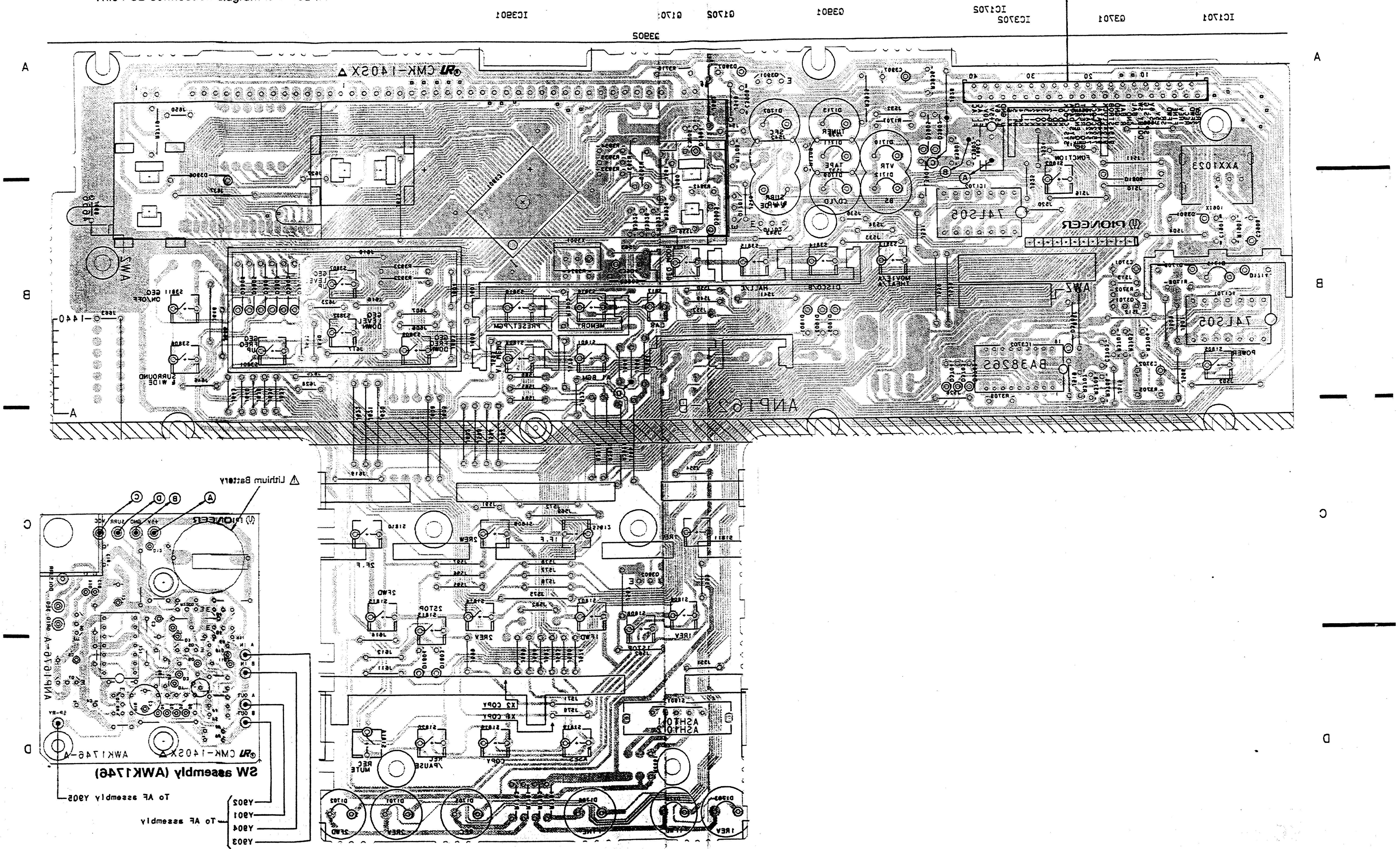




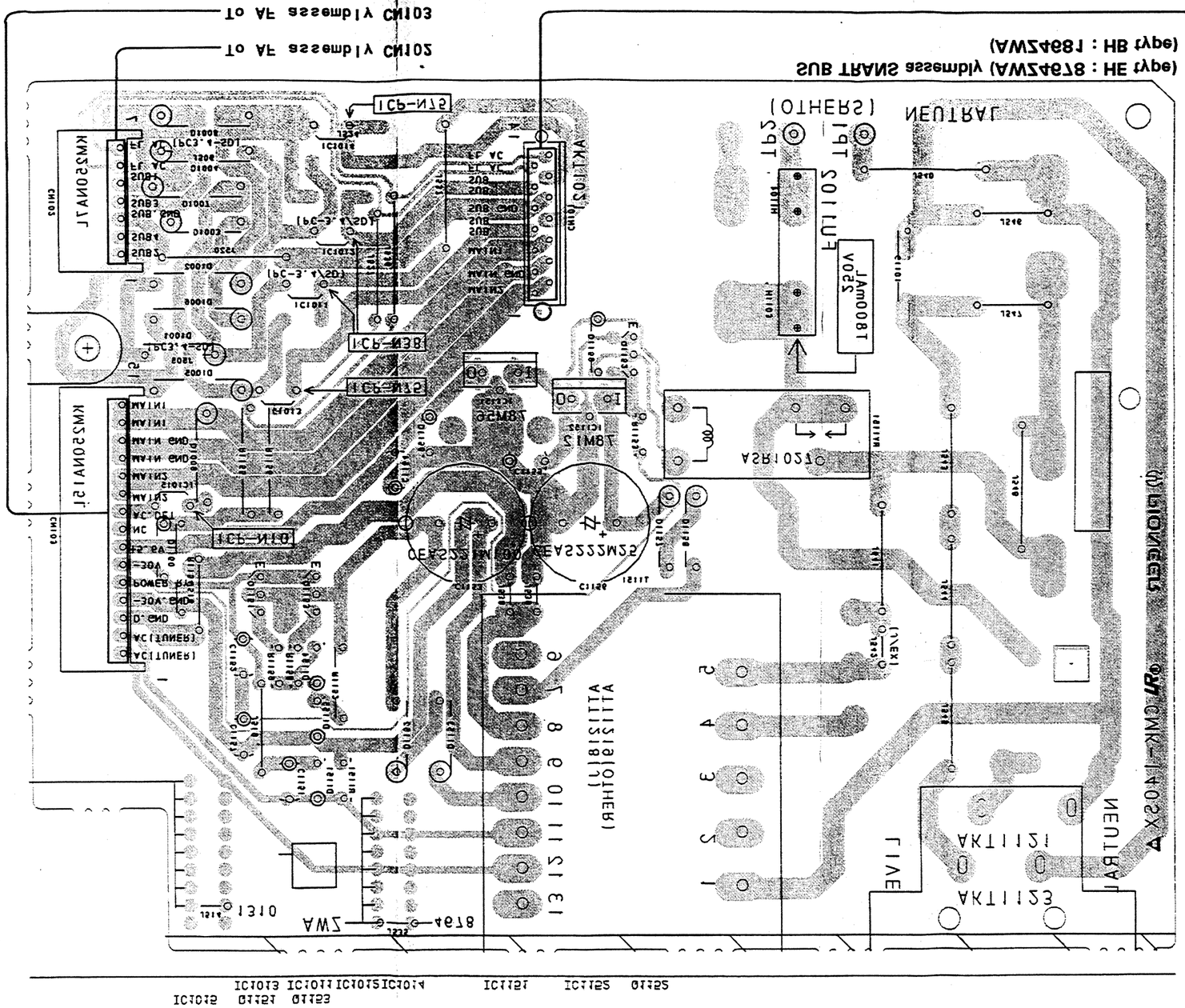


SCH-5 -(2/2) SW assembly

This PCB connection diagram is viwed from the foil side.



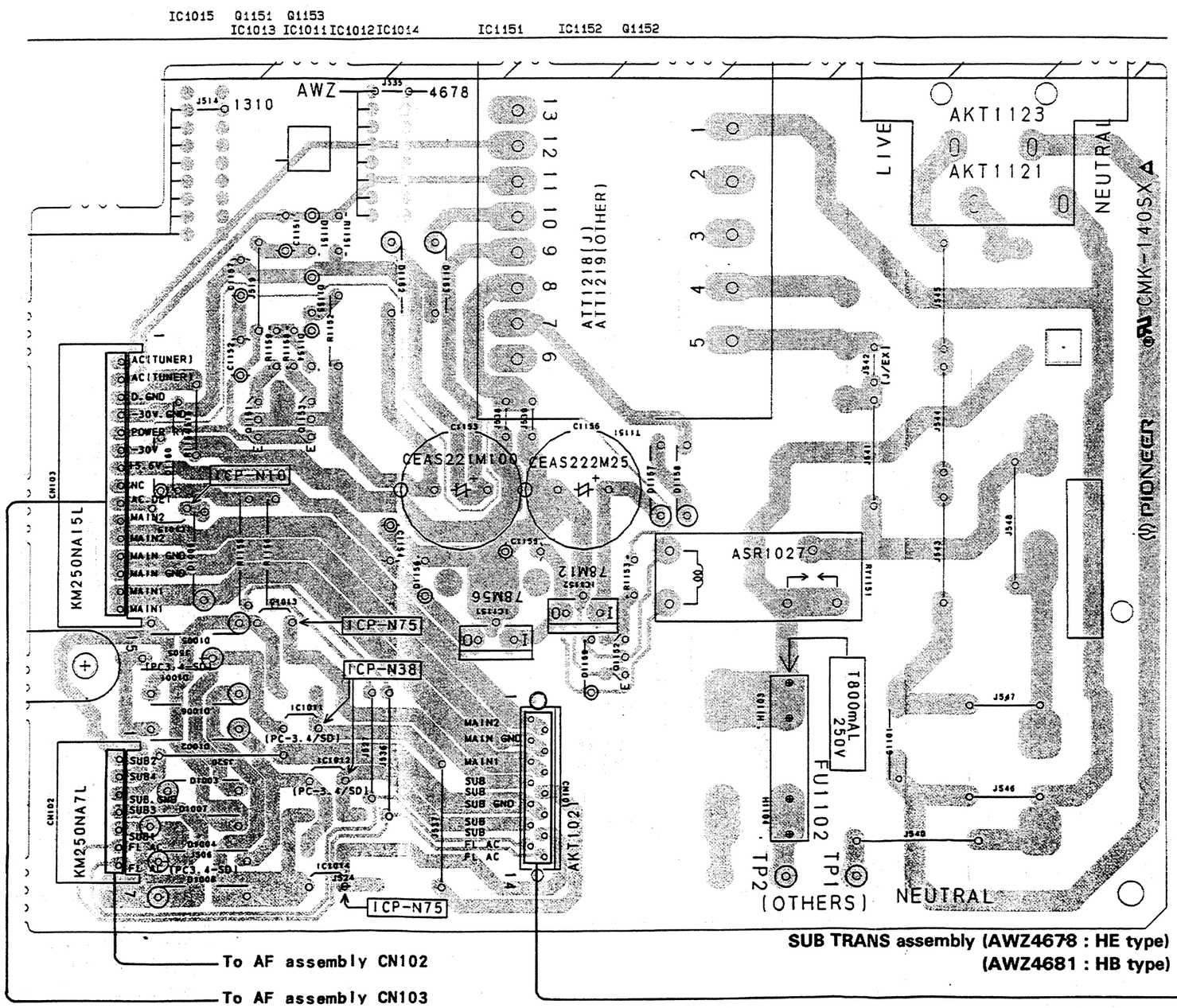
This PCB connection diagram is viewed from the foil side.



A.F.3 SUB TRANS Assembly and TRANS CONNECT Assembly

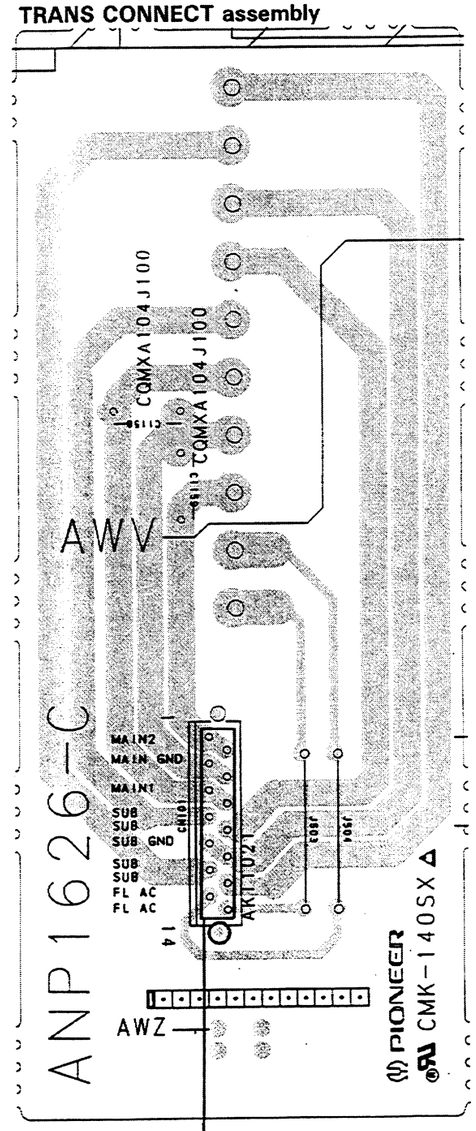
XD-LLJ75M, XD-LLJ70

4.1.6 SUB TRANS Assembly and TRANS CONNECT Assembly

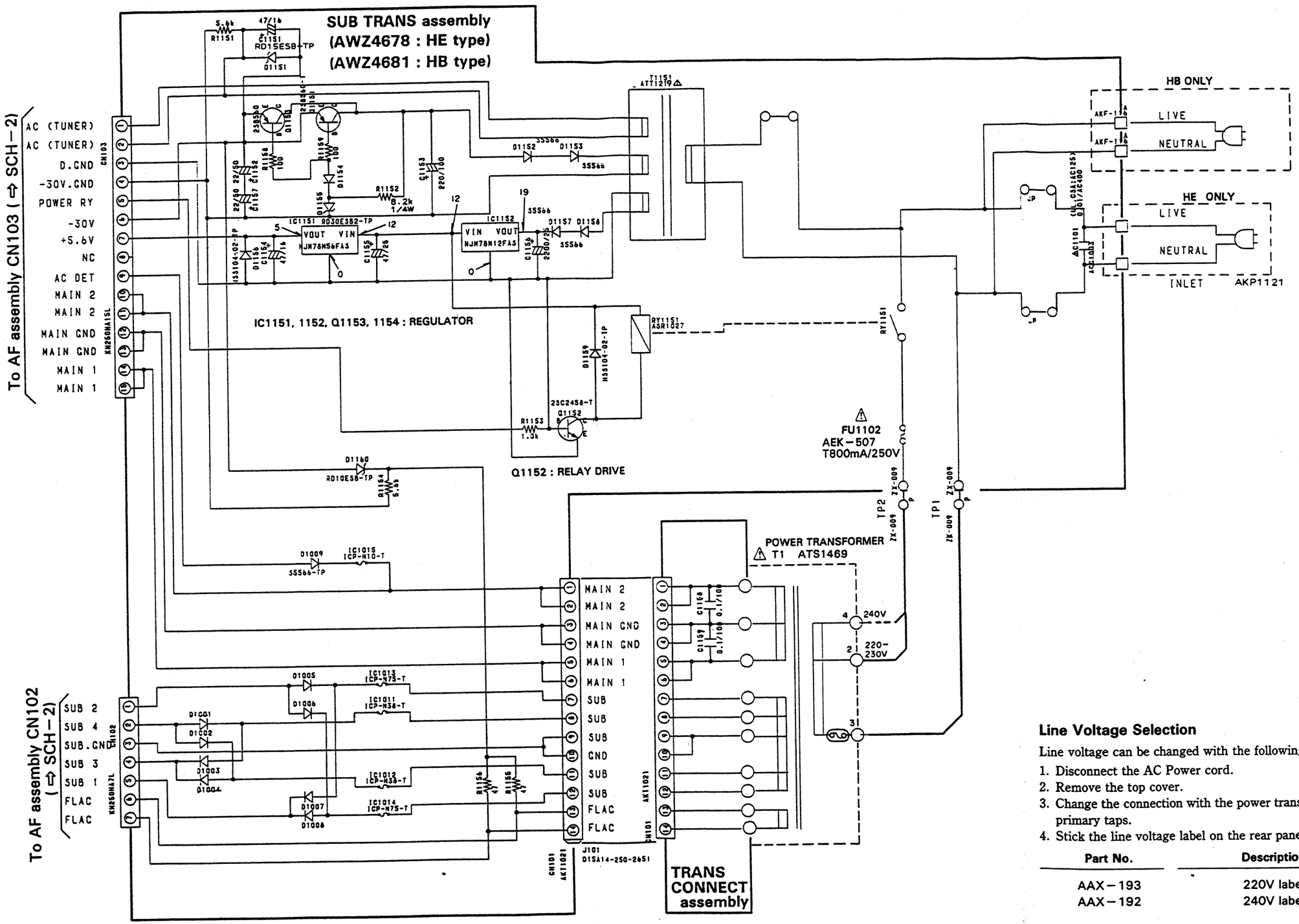


SUB TRANS assembly (AWZ4678 : HE type)
(AWZ4681 : HB type)

TRANS CONNECT assembly



This PCB connection diagram is viewd from the parts mounted side.



Line Voltage Selection

Line voltage can be changed with the following steps.

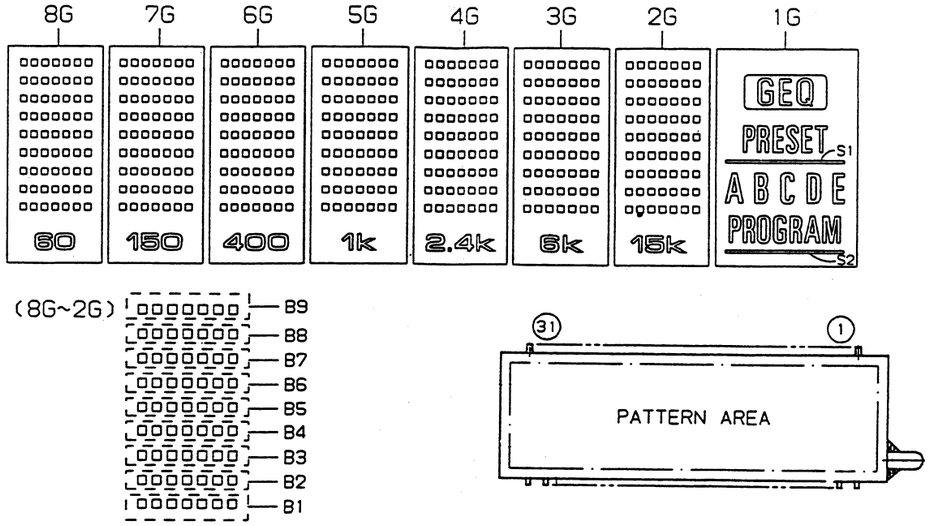
1. Disconnect the AC Power cord.
2. Remove the top cover.
3. Change the connection with the power transformer (T1) primary taps.
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

■ AAV1166 (V3901 : DISPLAY ASSEMBLY)

● FL Tube

● Grid Assignment



● Pin Connection

PIN NO.	31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
CONNECTION	F2 F1 NP NC 8G 7G 6G 5G 4G 3G 2G 1G NC NC NC NC P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 NC NC NC P DL DL

NOTE 1) F1,F2 --- Filament
2) NP ------ No pin
3) NC ------ No connection
4) 1G~8G --- Grid
5) DL ------ Datum Line

● Anode Connection

	8G	7G	6G	5G	4G	3G	2G	1G
P1	60	150	400	1k	2.4k	6k	15k	S2
P2	B1	B1	B1	B1	B1	B1	B1	PROGRAM
P3	B2	B2	B2	B2	B2	B2	B2	A
P4	B3	B3	B3	B3	B3	B3	B3	B
P5	B4	B4	B4	B4	B4	B4	B4	C
P6	B5	B5	B5	B5	B5	B5	B5	D
P7	B6	B6	B6	B6	B6	B6	B6	E
P8	B7	B7	B7	B7	B7	B7	B7	S1
P9	B8	B8	B8	B8	B8	B8	B8	PRESET
P10	B9	B9	B9	B9	B9	B9	B9	GEQ

4.2 CD UNIT

P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with O shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

Note: (Type 4)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ⎓ : DC voltage (V) in PLAY mode unless otherwise noted.
   ⇨ mA or ⇦ mA : DC current in PLAY mode unless otherwise noted.
   Value in ( ) is DC current in STOP mode.
7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼ (Red) : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

(For XD−J115M)

MOTHER BOARD assembly

S351	TEST MODE

DISPLAY BOARD assembly

S701	4
S702	PROGRAM
S703	⏮/◀◀
S704	5
S705	EJECT
S706	▶/⏸
S707	2
S708	RANDOM
S709	REPEAT
S710	6
S711	▶▶/⏭
S712	■
S713	1
S714	TIME
S715	HI−LITE SCAN
S716	3
S717	EDIT
S718	DELETE

(For XD−J110)

MOTHER BOARD assembly

S351	TEST MODE

DISPLAY BOARD assembly

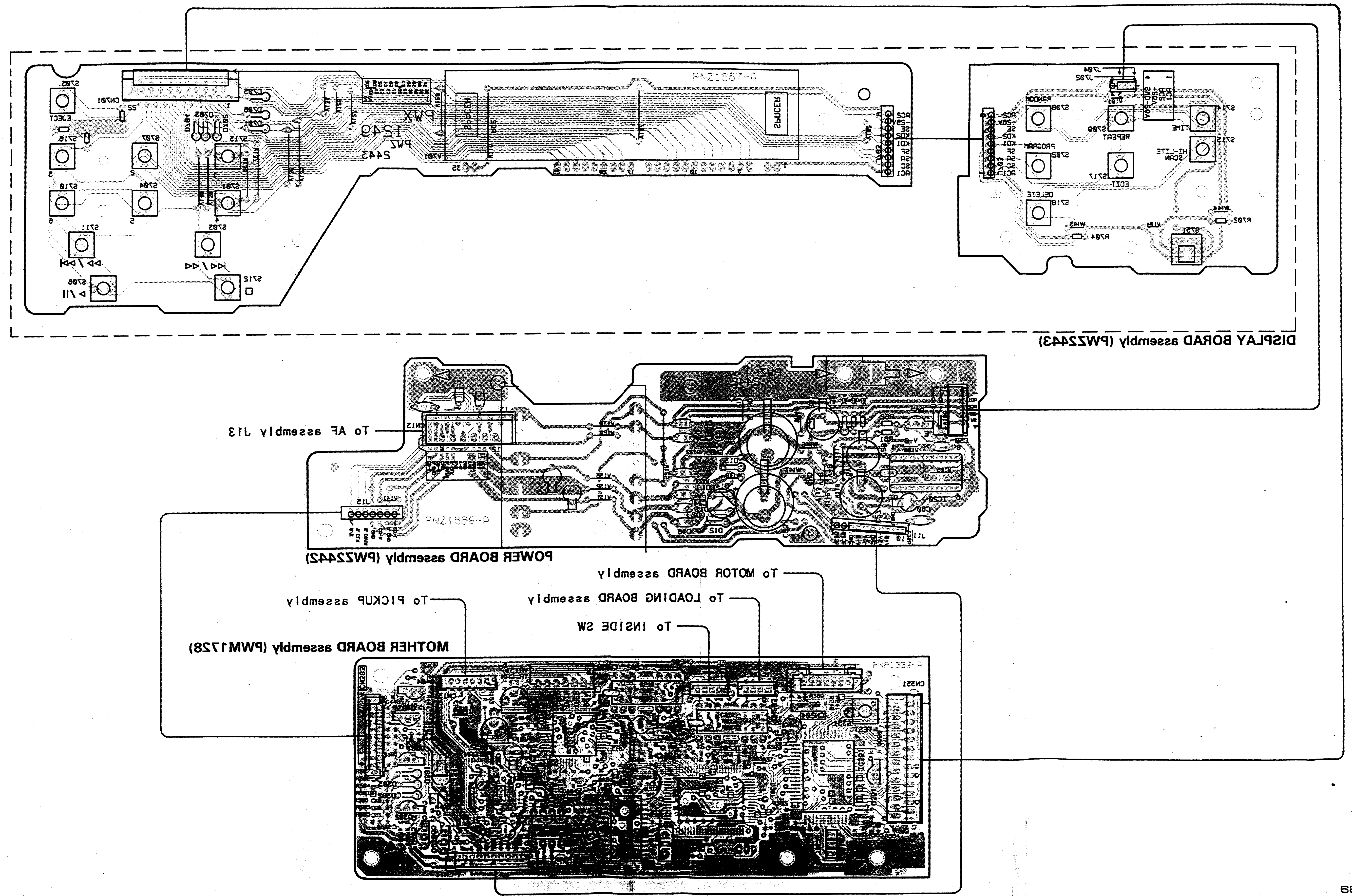
S707	REPEAT
S708	TIME
S709	RANDOM
S710	EDIT
S711	▶/⏸
S712	■
S713	▶▶/⏭
S714	⏮/◀◀
S716	O/C
S717	PROGRAM
S718	HI−LITE SCAN

9. For SCH−□ on the schematic diagram

- SCH−□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

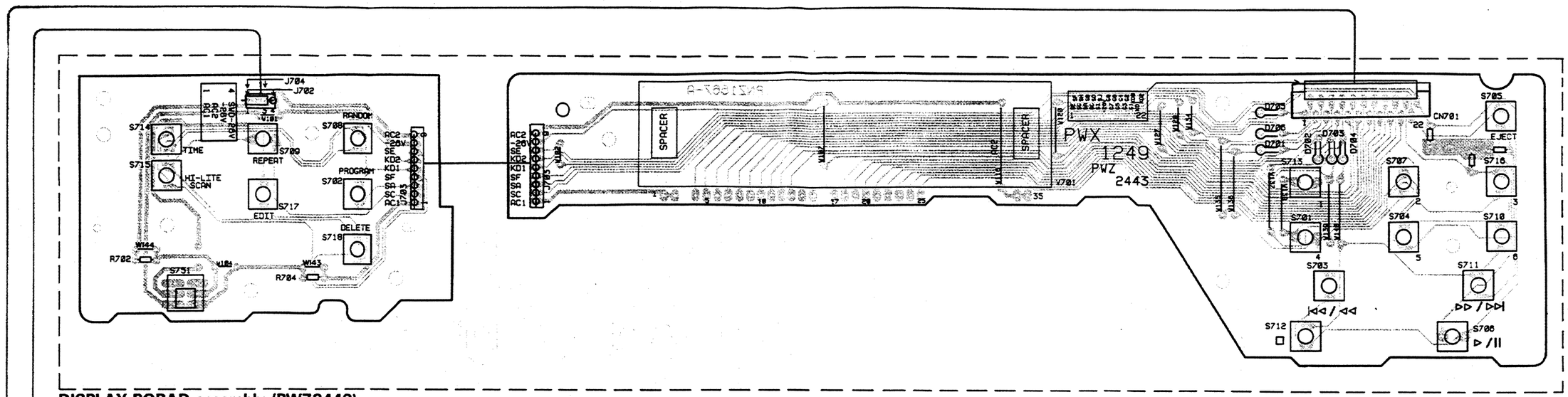
4.2.1 Multi CD Unit (For XD-J115M)

This PCB connection diagram is viwed from the foil side.



4.2.1 Multi CD Unit (For XD−J115M)

This PCB connection diagram is viewd from the parts mounted side.



DISPLAY BORAD assembly (PWZ2443)

POWER BOARD assembly (PWZ2442)

MOTHER BOARD assembly (PWM1728)

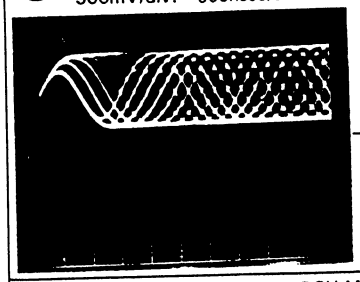
Waveforms

Note: The encircled numbers denote measuring points in the schematic diagram.

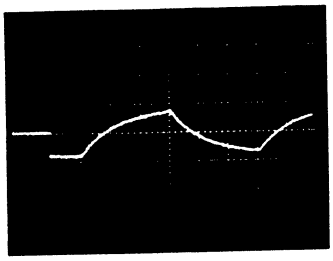
*1 50T-JUMP: After switching to the pause mode, press the manual search key.

*2 FOCUS-IN: Press the key without loading a disc.

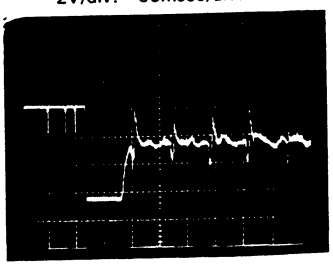
② TP1 – Pin 1 : PLAY MODE
(RF)
500mV/div. 500nsec/div.



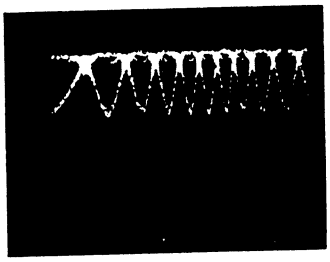
⑤ IC202 – Pin4 : FOCUS – IN (*2) MODE
(FODR)
1V/div. 200msec/div.



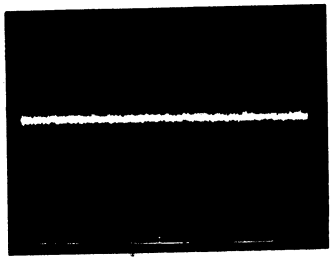
⑦ IC201 – Pin3 : TRACK SEARCH MODE
(SPDR)
2V/div. 50msec/div.



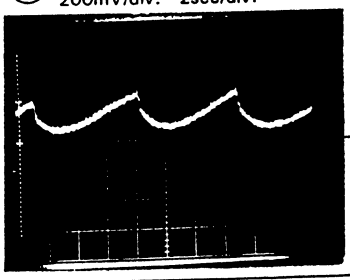
② TP1 – Pin 1 : TRACK SEARCH MODE
(RF)
500mV/div. 200μsec/div.



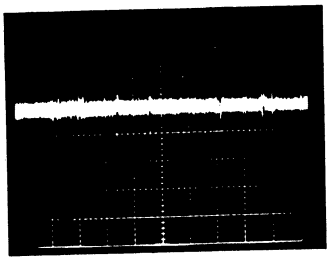
⑤ IC202 – Pin4 : PLAY MODE
(FODR)
1V/div. 1msec/div.



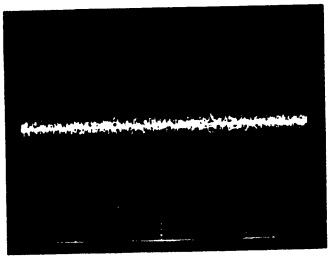
⑧ IC202 – Pin9 : PLAY MODE
(CADR)
200mV/div. 2sec/div.



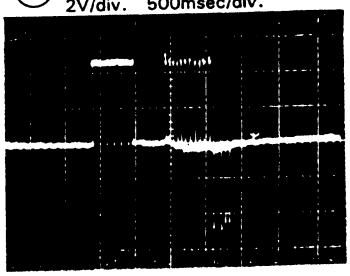
③ TP1 – Pin 6 : PLAY MODE
(FOER)
100mV/div. 10msec/div.



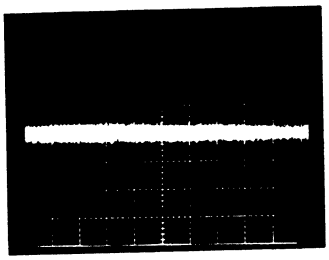
⑥ IC202 – Pin3 : PLAY MODE
(TRDR)
500mV/div. 1msec/div.



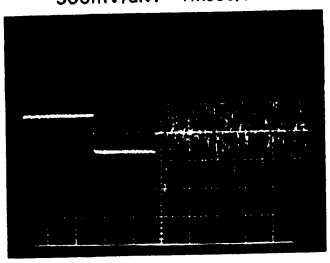
⑧ IC202 – Pin9 : TRACK SEARCH MODE
(CADR)
2V/div. 500msec/div.



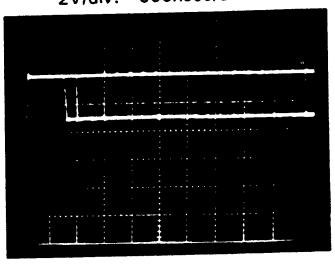
④ TP1 – Pin 2 : PLAY MODE
(TRER)
1V/div. 10msec/div.



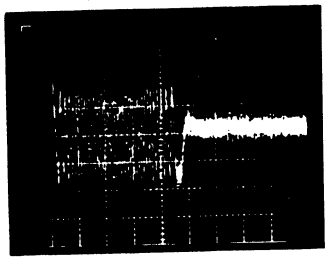
⑥ IC202 – Pin3 : 50T – JUMP (*1) MODE
(TRDR)
500mV/div. 1msec/div.



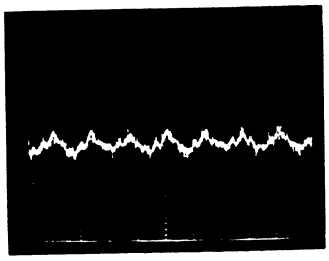
⑨ IC151 – Pin32 : PLAY MODE
(EFM)
2V/div. 500nsec/div.



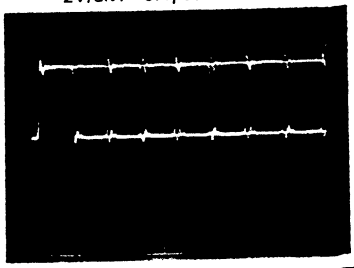
④ TP1 – Pin 2 : 50T – JUMP (*1) MODE
(TRER)
1V/div. 1msec/div.



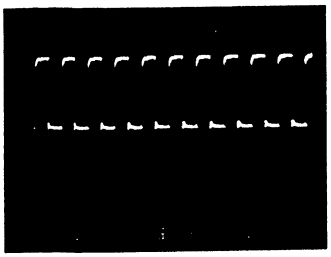
⑦ IC201 – Pin3 : PLAY MODE
(SPDR)
1V/div. 50msec/div.



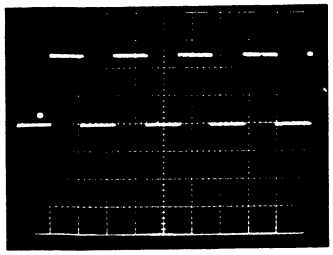
⑩ IC401 – Pin9 : PLAY MODE
(LO) (D/A DATA OUT)
2V/div. 0.1μsec/div.



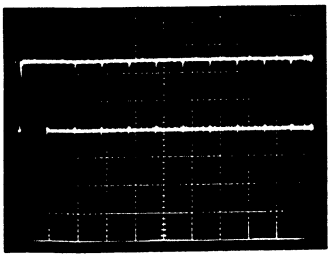
⑯ IC301 – Pin35 : PLAY MODE (1kHz)
(BCLK)
2V/div. 500nsec/div.



⑱ IC301 – Pin32 : PLAY MODE (1kHz)
(LRCK)
2V/div. 10μsec/div.

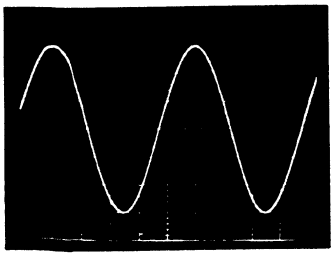


⑲ IC301 – Pin34 : PLAY MODE (1kHz)
(DATA)
2V/div. 500nsec/div.

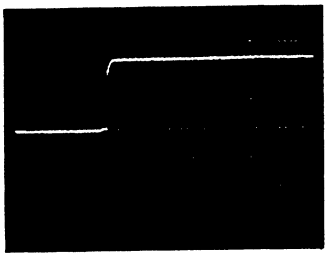


⑳

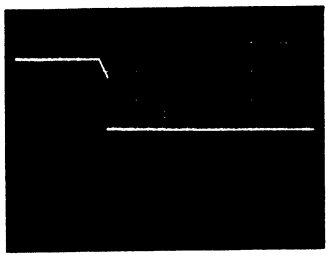
㉑ CN383 – Pin1 : PLAY MODE (1kHz)
(Lch OUTPUT)
1V/div. 200μsec/div.



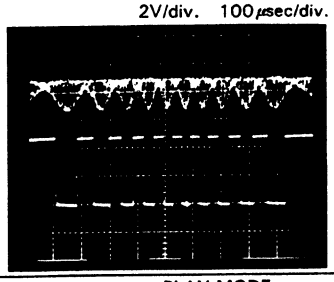
㉒ IC20 – Pin9 : POWER SWITCH – ON
(RSET)
2V/div. 100msec/div.



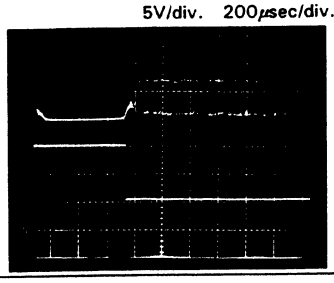
㉒ IC20 – Pin9 : POWER SWITCH – OFF
(RSET)
2V/div. 100msec/div



㉓ : TRACK SEARCH MODE
Upper : TP1 – Pin1 (RF) 1V/div.
Lower : IC151 – Pin29 (MIRR)
2V/div. 100μsec/div.



㉔ : PLAY MODE
Upper : TP1 – Pin1 (RF) 1V/div.
Lower : IC151 – Pin30 (DFCT)
5V/div. 200μsec/div.



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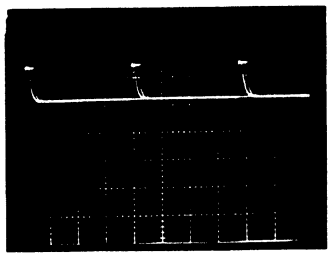
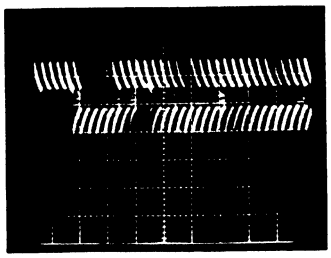
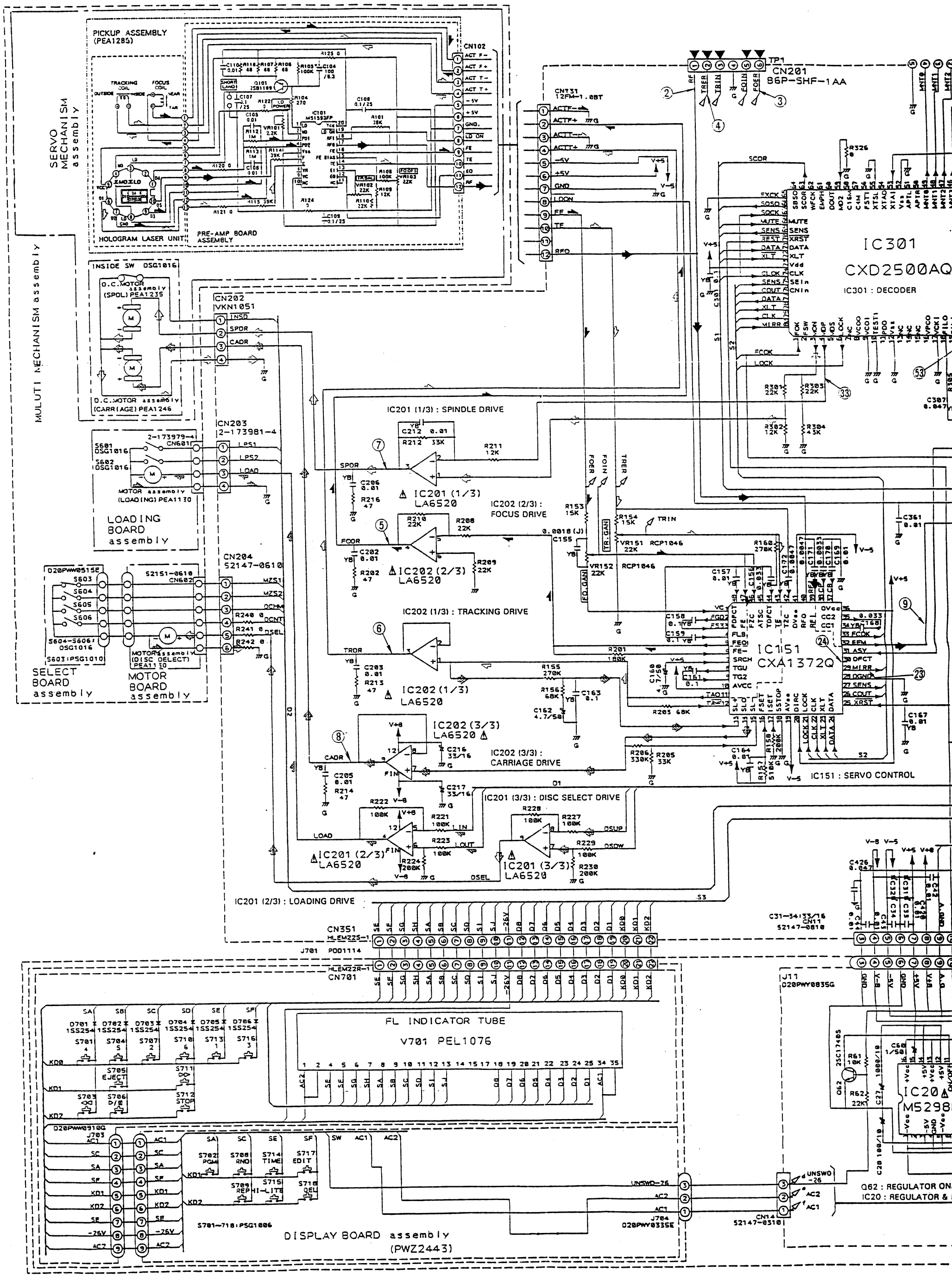
㉝ IC301 – Pin4 : PLAY MODE
(MDP)
2V/div. 2μsec/div.



㊸ IC301 – Pin20 : PLAY MODE
(PCO)
2V/div. 10μsec/div.





SCH-7

MOTHER BOARD assembly
POWER BOARD assembly
DISPLAY BORAD assembly

: SIGNAL ROUTE
: FOCUS SERVO LOOP LINE
: LOADING MOTOR ROUTE
: TRACKING SERVO LOOP LINE
: SPINDLE MOTOR ROUTE
: CARRIAGE MOTOR ROUTE
: DISC SELECT MOTOR ROUTE

▼: Measurement point

CN201
P-SHF-1AA

⚠ MOTHER BOARD assembly
(PWM1728)

IC301 : DECODER

IC401 : D/A CONVERTER & DIGITAL FILTER

IC405 : LOW PASS FILTER
Q403, Q404 : LINE MUTE

IC151 : SERVO CONTROL

Q406 : INVERTER BUFFER
Q405 : MUTE DRIVE

Q381, Q382 : BUFFER

Q361 : BUFFER

Q62 : REGULATOR ON/OFF
IC20 : REGULATOR & RESET

D381–D383 : 1SS133X

R371–374 : 100K

To DECK AMP SECTION
AF assembly J13 (⇨ SCH – 2) or (⇨ SCH – 9)

⚠ SUB BOARD assembly(1/2)

⚠ POWER BOARD assembly(1/2)
(PWZ2442)

⚠ POWER BOARD assembly (2/2)
(PWZ2442)

⚠ SUB BOARD assembly (2/2)

IC401 (TC9237BF)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5	15	0
2	0	16	2.4
3	5	17	2.7
4	5	18	5
5	2.7	19	2.8
6	2.4	20	0
7	0	21	0
8	0	22	0
9	2.4	23	0
10	2.8	24	5
11	5	25	2.5
12	0	26	2.4
13	N.C.	27	2.5
14	0	28	5

IC20 (M5298P)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	−10	9	5
2	N.C.	10	N.C.
3	−5	11	0.6
4	0	12	5
5	−10	13	9.3
6	N.C.	14	5
7	N.C.	15	1.2
8	N.C.	16	9.3

IC151 (CXA1372Q)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	25	5
2	0	26	0
3	0	27	5
4	0	28	0
5	0.3	29	0
6	0	30	N.C.
7	0.3	31	2.5
8	0	32	2.5
9	0	33	5
10	5	34	−1.7
11	0	35	−1.9
12	0	36	5
13	0	37	−0.9
14	0.2 to 0.8	38	−1.9
15	0	39	0
16	−4	40	0.9
17	1.2	41	−5
18	0	42	0
19	−5	43	0
20	5	44	0
21	5	45	0
22	5	46	0
23	5	47	0
24	5	48	0

IC351 (PD4439A)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5	33	5
2	N.C.	34	4
3	N.C.	35	5
4	−25	36	0
5	−25	37	5
6	−25	38	2.4
7	−25	39	0
8	−25	40	5
9	−25	41	N.C.
10	−25	42	0
11	−25	43	0.5
12	0	44	5
13	0	45	5
14	0	46	0
15	0	47	0
16	N.C.	48	0
17	N.C.	49	0
18	−28	50	N.C.
19	−5	51	0
20	−7.8	52	0
21	−16.3	53	5
22	−11 to 14	54	5
23	−9 to 12	55	0
24	−6 to 9	56	2.4
25	−11 to 15	57	2.4
26	5	58	0
27	−18.7	59	0
28	−18.7	60	N.C.
29	−15 to 18	61	0
30	9 to 11	62	0
31	0	63	0
32	5	64	0

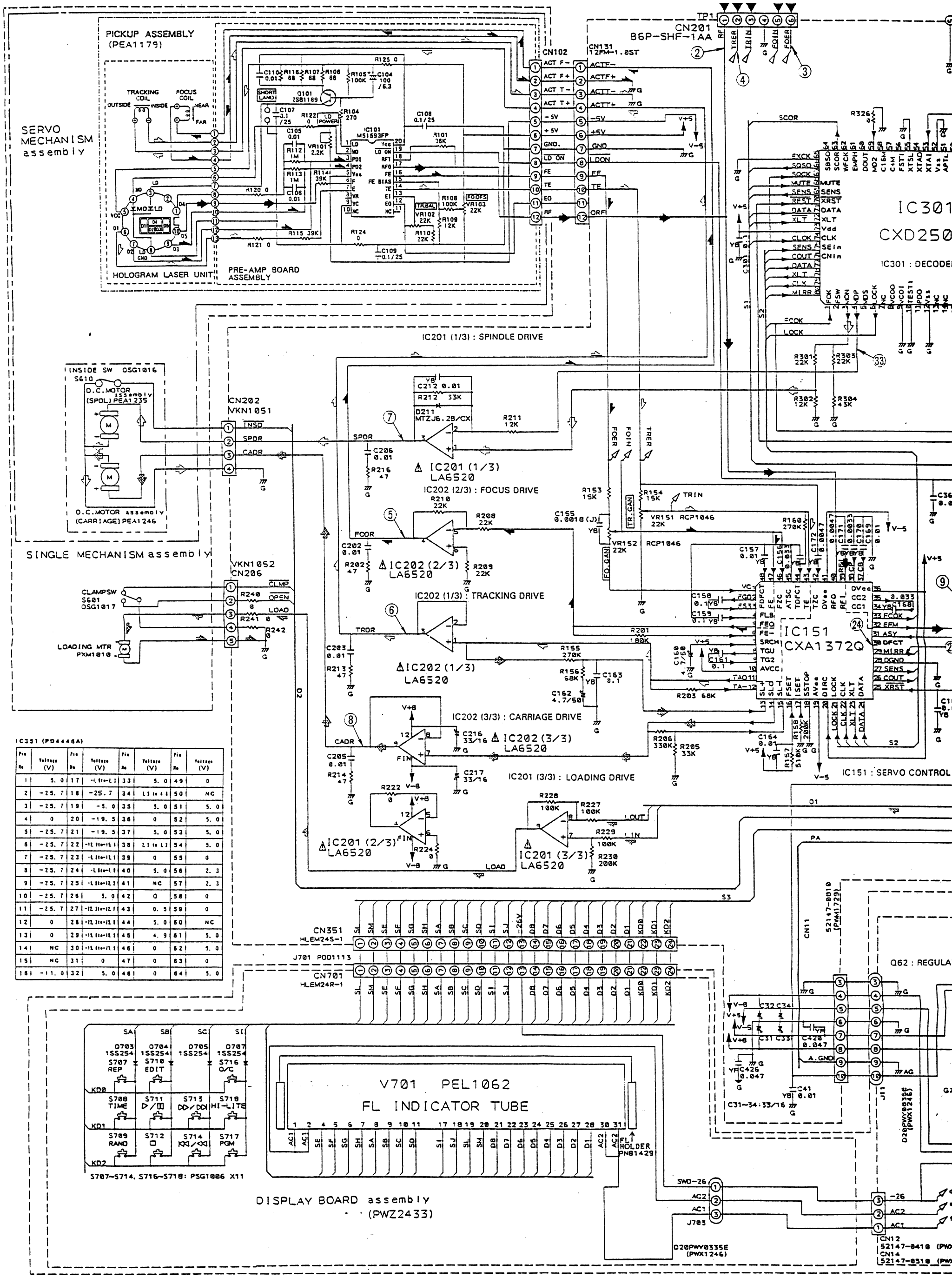
IC301 (CX02500AQ)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5	41	N.C.
2	N.C.	42	5
3	5	43	N.C.
4	2.6	44	N.C.
5	N.C.	45	N.C.
6	5	46	4.4
7	N.C.	47	0
8	N.C.	48	0
9	0	49	0
10	0	50	N.C.
11	N.C.	51	N.C.
12	0	52	0
13	N.C.	53	2.5
14	N.C.	54	N.C.
15	N.C.	55	0
16	N.C.	56	N.C.
17	0	57	N.C.
18	2.4	58	N.C.
19	2.4	59	0
20	2.4	60	N.C.
21	0	61	N.C.
22	3	62	N.C.
23	5	63	0.1
24	2.5	64	N.C.
25	N.C.	65	0
26	0	66	3.3 to 4.6
27	2.5	67	5
28	0	68	0
29	N.C.	69	2.1 to 3
30	0	70	5
31	N.C.	71	5
32	2.5	72	5
33	5	73	5
34	2.5	74	5
35	2.2	75	5
36	N.C.	76	0
37	N.C.	77	5
38	N.C.	78	5
39	N.C.	79	5
40	N.C.	80	0

MOTHER BOARD assembly
POWER BOARD assembly
DISPLAY BORAD assembly

SCH – 7

4.2.2 Single CD Unit (For XD−J110)



IC351 (PD4446A)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5.0	17	-1.5 to-1.1	33	5.0	49	0
2	-25.7	18	-25.7	34	L5 to 4.8	50	NC
3	-25.7	19	-5.0	35	5.0	51	5.0
4	0	20	-19.5	36	0	52	5.0
5	-25.7	21	-19.5	37	5.0	53	5.0
6	-25.7	22	-12.3 to-13.4	38	2.1 to 4.2	54	5.0
7	-25.7	23	-1.5 to-11.1	39	0	55	0
8	-25.7	24	-1.5 to-1.8	40	5.0	56	2.3
9	-25.7	25	-1.5 to-12.7	41	NC	57	2.3
10	-25.7	26	5.0	42	0	58	0
11	-25.7	27	-12.3 to-12.7	43	0.5	59	0
12	0	28	-12.3 to-13.5	44	5.0	60	NC
13	0	29	-13.5 to-13.9	45	4.9	61	5.0
14	NC	30	-13.5 to-11.5	46	0	62	5.0
15	NC	31	0	47	0	63	0
16	-11.0	32	5.0	48	0	64	5.0

SCH−8 MOTHER BOARD assembly
POWER BOARD assembly
DISPLAY BORAD assembly

▼ : Measurement point

⚠ MOTHER BOARD assembly (PWM1729)

: SIGNAL ROUTE
: FOCUS SERVO LOOP LINE
: LOADING MOTOR ROUTE
: TRACKING SERVO LOOP LINE
: SPINDLE MOTOR ROUTE
: CARRIAGE MOTOR ROUTE

IC301 CXD2500AQ
IC301 : DECODER

IC401 TC9237BF
IC401 : D/A CONVERTER & DIGITAL FILTER

IC405 : LOW PASS FILTER
Q403, Q404 : LINE MUTE
IC405 (2/2) NJM4565D-0
NJM4565D-0 IC405 (1/2)

Q406 : INVERTER BUFFER
Q405 : MUTE DRIVE

IC151 CXA1372Q
IC151 : SERVO CONTROL

IC351 PD4446A
IC351 : SYSTEM CONTROL

Q381, Q382 : BUFFER

IC20 M5298P
IC20 : REGULATOR & RESET

Q62 : REGULATOR ON/OFF

⚠ POWER BOARD assembly (2/2) (PWZ2437)

⚠ SUB BOARD assembly (2/2) (PWX1246)

⚠ SUS BOARD assembly

⚠ POWER BOARD assembly (PWZ2437)

To DECK AMP SECTION AF assembly J13 (⇨ SCH – 2) or (⇦ SCH – 9)

IC151 (CXA1372Q)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	25	5.0
2	0	26	0
3	0	27	4.9
4	0	28	0
5	0.4	29	0
6	0	30	NC
7	0.3	31	2.5
8	0	32	2.6
9	0	33	4.9
10	5.0	34	-1.7
11	0	35	-1.9
12	0	36	5.0
13	0	37	-0.9
14	L1 to L1	38	-2.1
15	0	39	0
16	-4.0	40	0.9
17	1.2	41	-5.0
18	0	42	0
19	-5.0	43	0
20	5.0	44	0
21	5.0	45	0
22	4.9	46	0
23	5.0	47	0
24	4.9	48	0

IC401 (TC9237BF)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5.0	15	0
2	0	16	2.5
3	5.0	17	2.8
4	5.0	18	5.0
5	2.8	19	3.0
6	2.5	20	0
7	0	21	0
8	0	22	0
9	2.5	23	0
10	2.8	24	5.0
11	5.0	25	2.5
12	0	26	2.4
13	NC	27	2.5
14	0	28	5.0

IC301 (CXD2500AQ)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5.0	21	0	41	NC	61	NC
2	NC	22	2.8	42	5.0	62	NC
3	5.0	23	5.0	43	NC	63	1 to L1
4	2.6	24	2.5	44	NC	64	NC
5	N.C.	25	NC	45	NC	65	0
6	5.0	26	0	46	4.4	66	L1 to 4.6
7	NC	27	2.5	47	0	67	4.9
8	NC	28	0	48	0	68	0
9	0	29	NC*	49	0	69	L1 to L1
10	0	30	0	50	NC	70	5.0
11	NC	31	NC	51	NC	71	5.0
12	0	32	2.5	52	0	72	5.0
13	NC	33	5.0	53	2.5	73	5.0
14	NC	34	2.5	54	NC	74	5.0
15	NC	35	2.3	55	0	75	5.0
16	NC	36	NC	56	NC	76	0
17	0	37	NC	57	NC	77	5.0
18	2.8	38	NC	58	NC	78	5.0
19	2.4	39	NC	59	0	79	5.0
20	2.4	40	NC	60	NC	80	0

IC20 (M5298P)

Pin No.	Voltage (V)
1	-10.0
2	NC
3	-5.0
4	0
5	-10.0
6	NC
7	NC
8	NC
9	5.0
10	NC
11	0.5
12	5.0
13	9.6
14	5.0
15	1.2
16	9.6

MOTHER BOARD assembly
POWER BOARD assembly
DISPLAY BORAD assembly

SCH–8

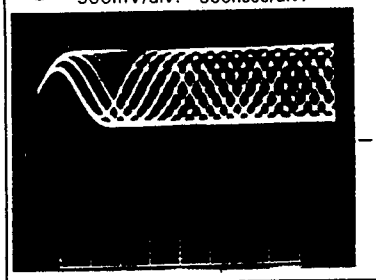
Waveforms

Note: The encircled numbers denote measuring points in the schematic diagram.

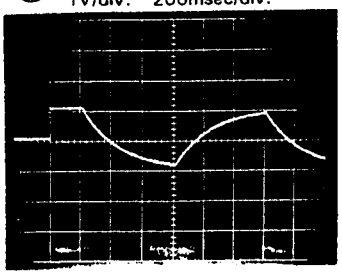
*1 50T-JUMP: After switching to the pause mode, press the manual search key.

*2 FOCUS-IN: Press the key without loading a disc.

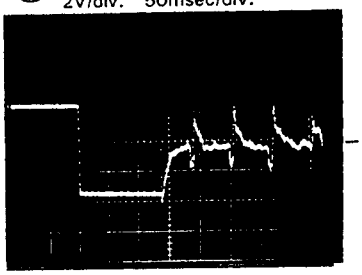
② TP1 – Pin 1 : PLAY MODE
(RF)
500mV/div. 500nsec/div.



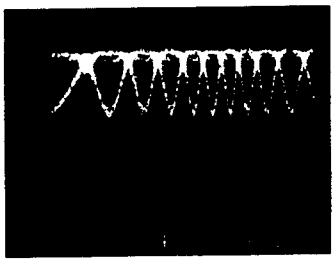
⑤ IC202 – Pin4 : FOCUS – IN (*2) MODE
(FODR)
1V/div. 200msec/div.



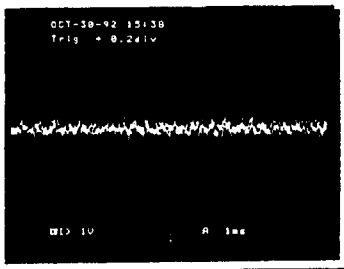
⑦ IC201 – Pin3 : TRACK SEARCH MODE
(SPDR)
2V/div. 50msec/div.



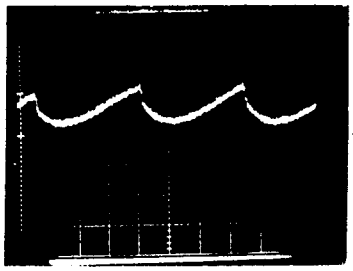
② TP1 – Pin 1 : TRACK SEARCH MODE
(RF)
500mV/div. 200μsec/div.



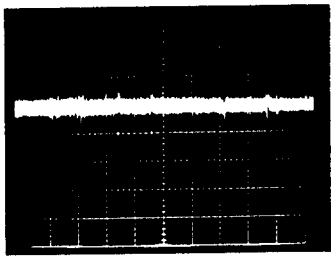
⑤ IC202 – Pin4 : PLAY MODE
(FODR)
1V/div. 1msec/div.



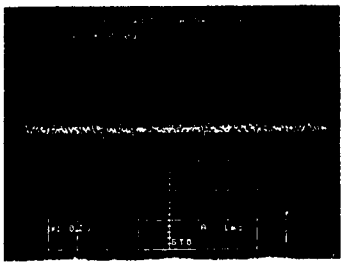
⑧ IC202 – Pin9 : PLAY MODE
(CADR)
200mV/div. 2sec/div.



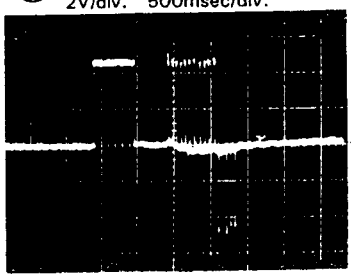
③ TP1 – Pin 6 : PLAY MODE
(FOER)
100mV/div. 10msec/div.



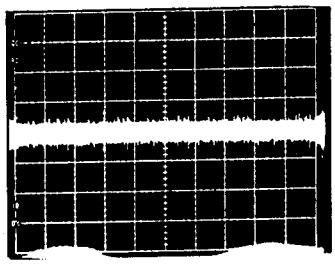
⑥ IC202 – Pin3 : PLAY MODE
(TRDR)
500mV/div. 1msec/div.



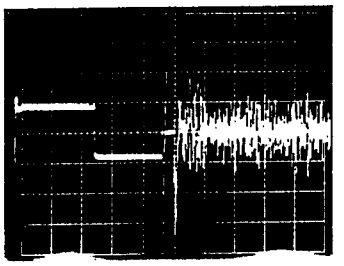
⑧ IC202 – Pin9 : TRACK SEARCH MODE
(CADR)
2V/div. 500msec/div.



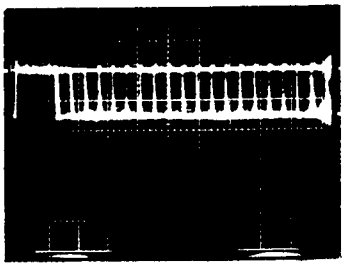
④ TP1 – Pin 2 : PLAY MODE
(TRER)
1V/div. 10msec/div.



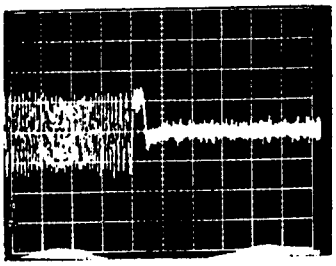
⑥ IC202 – Pin3 : 50T – JUMP (*1) MODE
(TRDR)
500mV/div. 1msec/div.



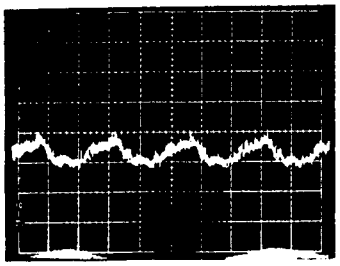
⑨ IC151 – Pin32 : PLAY MODE
(EFM)
2V/div. 500nsec/div.



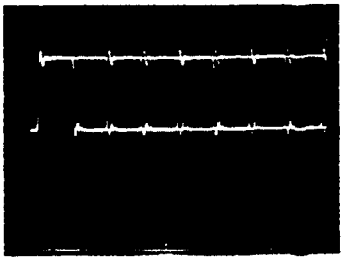
④ TP1 – Pin 2 : 50T – JUMP (*1) MODE
(TRER)
1V/div. 1msec/div.



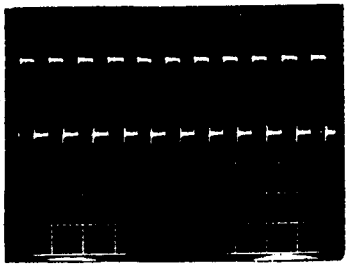
⑦ IC201 – Pin3 : PLAY MODE
(SPDR)
1V/div. 50msec/div.



⑩ IC401 – Pin9 : PLAY MODE
(LO) (D/A DATA OUT)
2V/div. 0.1μsec/div.

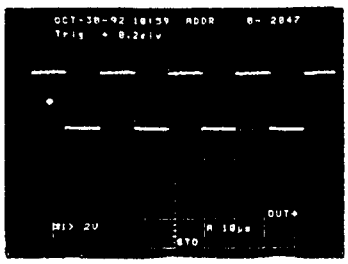


⑯ IC301－Pin35 : PLAY MODE (1kHz)
(BCLK)
2V/div. 500nsec/div.



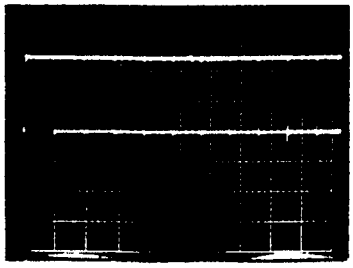
－GND

⑱ IC301－Pin32 : PLAY MODE (1kHz)
(LRCK)
2V/div. 10μsec/div.



－GND

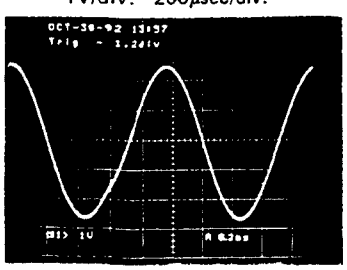
⑲ IC301－Pin34 : PLAY MODE (1kHz)
(DATA)
2V/div. 500nsec/div.



－GND

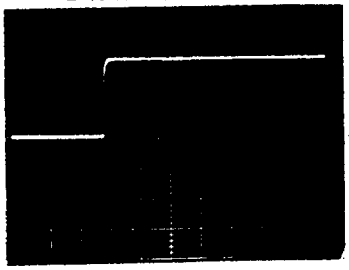
⑳

㉑ CN383－Pin1 : PLAY MODE (1kHz)
(Lch OUTPUT)
1V/div. 200μsec/div.



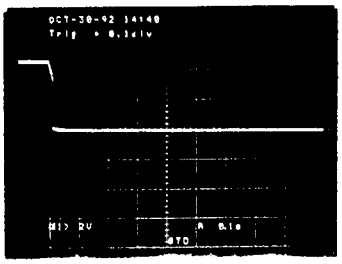
－GND

㉒ IC20－Pin9 : POWER SWITCH－ON
(RSET)
2V/div. 100msec/div.



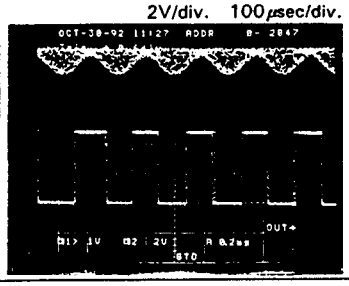
－GND

㉒ IC20－Pin9 : POWER SWITCH－OFF
(RSET)
2V/div. 100msec/div.



－GND

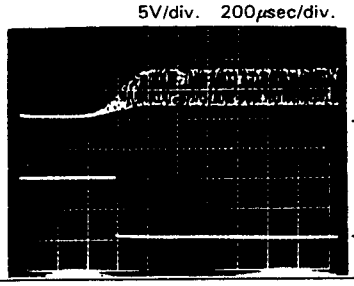
㉓ : TRACK SEARCH MODE
Upper : TP1－Pin1 (RF) 1V/div.
Lower : IC151－Pin29 (MIRR)
2V/div. 100μsec/div.



－GND

－GND

㉔ : PLAY MODE
Upper : TP1－Pin1 (RF) 1V/div.
Lower : IC151－Pin30 (DFCT)
5V/div. 200μsec/div.



－GND

－GND

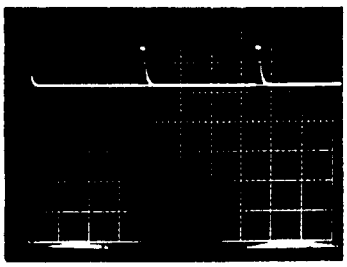
㉕

㉖

㉗

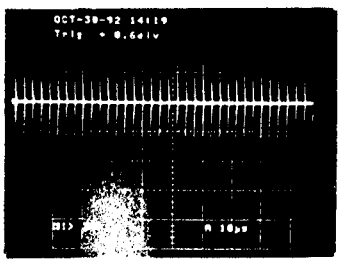
㉘

㉝ IC301－Pin4 : PLAY MODE
(MDP)
2V/div. 2μsec/div.



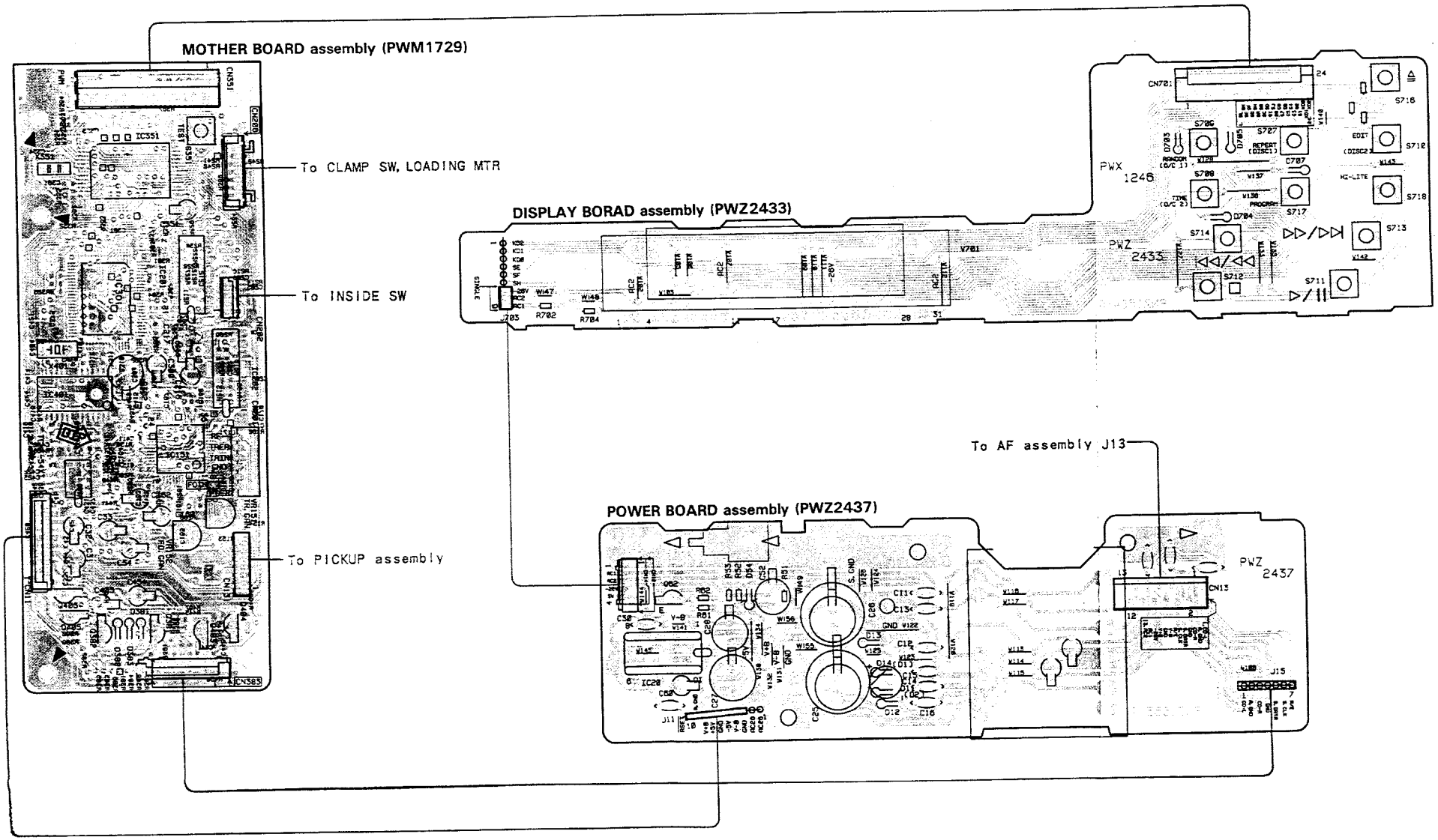
－GND

㊸ IC301－Pin20 : PLAY MODE
(PCO)
2V/div. 10μsec/div.



－GND

This PCB connection diagram is viewd from the parts mounted side.



This PCB connection diagram is viwed from the foil side.

5. PCB PARTS LIST

NOTES :

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω → 56 × 10¹ → 561 ····· RD1/8PM 3 6 1 J
47kΩ → 47 × 10³ → 473 ····· RD1/4PS 4 7 3 J
0.5Ω → 0R5 ····· RN2H C R 5 K
1Ω → 010 ····· RS1P C J 0 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ → 562 × 10¹ → 5621 ····· RM1/4PC 3 6 2 1 F

5.1 FOR XD-J115M/HE

Mark	No.	Description	Parts No.
LIST OF ASSEMBLIES			
DECK AMP BLOCK			
		AF ASSEMBLY	AWZ4645
		VOLUME ASSEMBLY	AWZ4653
		DISPLAY ASSEMBLY	AWZ4656
		HEADPHONE ASSEMBLY	AWZ4666
NSP		TRANS CONNECT ASSEMBLY	AWZ4672
		SUB TRANS ASSEMBLY	AWZ4678
		TAPE ASSEMBLY	AWV1335
		SW ASSEMBLY	AWK1746
CD BLOCK			
		MOTHER BOARD ASSEMBLY	PWM1728
		POWER BOARD ASSEMBLY	PWZ2442
		DISPLAY BOARD ASSEMBLY	PWZ2443
NSP		LOADING BOARD ASSEMBLY	PWZ2038
NSP		SELECT BOARD ASSEMBLY	PWZ2533
NSP		MOTOR BOARD ASSEMBLY	PWZ2040
DECK AMP BLOCK			
AF ASSEMBLY			
SEMICONDUCTORS			
	IC1010, IC1202		ICP-N10
	IC3101, IC3102		LA3607
	IC3103		LC7522
	IC1902		M51951BSL
	IC2101, IC3301		MC14052BF
	IC2102		MC14066BF
	IC1001, IC1002		MC7812CT
	IC1003		NJM78M05FAS
	IC1006		NJM7912FA
	IC1005		NJM79M05FA
	IC1901		PD5214A
	IC1201		STK4150-2G
	IC2103, IC2301, IC2501, IC3302, IC3303		XRA4558F-P
	Q1253, Q1261		2SA1048
	Q1002		2SA1515
	Q1252, Q1254, Q1262, Q1271, Q1272, Q2201, Q2202		2SC2458
	Q2102, Q2103, Q2203		XDA143ES
	Q1003		XDC124ES
	Q2101		XDC143ES
	D1201		D3SBA20 (A)
	D1001, D1002, D1256, D1258-D1261, D1901-D1903		HSS104-02
	D1161, D1162		RD5.1ESB2
	D1904, D1911, D1912		RD5.6ESB
	D1003, D1004, D1011, D1012		S5566
RELAY			
	RY1251		ASR1035
COILS			
	L1201, L1202		ATH-133
	L1901		LAU221K
CAPACITORS			
	C1003, C1201, C1202 (2200/42)		ACH1109
	C2305, C2306		CCSQCH101J50
	C3307		CCSQCH102J50
	C3129, C3130		CCSQCH221J50
	C3125, C3126, C3305, C3306		CCSQCH681J50
	C3140, C3141		CCSQSL101J50
	C1204		CEANP100M100
	C1252, C1904		CEAS010M50
	C1261, C2103, C2104		CEAS100M50
	C3135, C3136		CEAS101M10
	C1903		CEAS101M16
	C1209-C1212		CEAS101M50
	C1004		CEAS102M35
	C1005, C1006, C1011, C1205, C1206, C3311, C3312		CEAS220M25

Mark	No.	Description	Parts No.
	C1271		CEAS221M16
	C1009, C1010		CEAS222M25
	C2309, C2310, C2315, C2316, C3131–C3134, C3301, C3302		CEAS2R2M50
	C2317, C2318		CEAS330M25
	C3113, C3114, C3119, C3120		CEASR15M50
	C3117, C3118		CEASR47M50
	C1007, C1008		CEHAQ220M16
	C1901, C1902, C1910		CKCYF473Z50
	C3109, C3110, C3115, C3116		CKCYX683M25
	C1207, C1208		CKPUYX182M16
	C1905–C1909		CKSQYB102K50
	C2311, C2312		CKSQYB152K50
	C3121, C3122, C3127, C3128		CKSQYB182K50
	C3105, C3106, C3111, C3112		CKSQYB273K50
	C3103, C3104, C3123, C3124		CKSQYB472K50
	C2313, C2314		CKSQYB562K50
	C3101, C3102, C3107, C3108		CKSQYF103Z50
	C3137, C3138, C3142		CKSQYF473Z50
	C1215–C1218		CQMA473J50
RESISTORS			
	R1007–R1010		RD1/2PMFL100J
	R1254		RD1/4PM153J
	R1256		RD1/4PM243J
	R1015		RD1/4PM331J
	R1213, R1214		RD1/4PM4R7J
	R1211, R1212		RD1/4PM561J
	R1207, R1208		RD1/4PM563J
	R2317, R2318		RD1/4PM820J
	R1215, R1216		RD1/4PMFL100J
	R1209, R1210		RD1/4PMFL101J
	R3651, R3652		RS1/10S000J
	R2313, R2314		RS1/10S101J
	R2303, R2304, R3315–R3318		RS1/10S102J
	R1927, R2113–R2117, R2213, R2114, R3105, R3106, R3130, R3131		RS1/10S103J
	R2108, R2315, R2316, R3301, R3302, R3503, R3504		RS1/10S104J
	R3111–R3126		RS1/10S105J
	R2311, R2312		RS1/10S122J
	R2101, R2102, R3103, R3104		RS1/10S123J
	R2103, R2104		RS1/10S133J
	R3307–R3312		RS1/10S152J
	R2507, R2508		RS1/10S153J
	R2215, R2216		RS1/10S203J
	R2201, R2202, R2301, R2302		RS1/10S221J
	R1904–R1908		RS1/10S222J
	R2105, R2106		RS1/10S332J
	R3305, R3306		RS1/10S333J
	R2501, R2502		RS1/10S392J
	R2109, R2110, R3511, R3512		RS1/10S472J
	R2107, R2305–R2308, R3101, R3102		RS1/10S473J
	R2309, R2310		RS1/10S474J
	R1918, R1919		RS1/10S563J
	R2503, R2504		RS1/10S682J
	R3109, R3110		RS1/10S823J

Mark	No.	Description	Parts No.
	R1261, R1262		RS2LMFR22J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	X1901	(8.00MHz)	ASS1015
		6P PIN JACK	AKB1121
		2P PIN JACK	AKB1146
		4P SPEAKER TERMINAL	AKE1012
		DC JACK	AKN–203
		14P SOCKET	AKP1048
	CN112	40P SOCKET	AKP1085
	CN105	36P SOCKET	AKP1105
	CN106	7P JUMPER CONNECTOR	KPE7
		SCREW	BBZ30P080FZK
VOLUME ASSEMBLY			
SEMICONDUCTORS			
	IC1502		TA7291S
	IC1501		XRA4558–P
	Q1501, Q1502		2SC2878
	Q1503		XDA124ES
CAPACITORS			
	C1507, C1508		CEAS101M16
	C1501–C1504		CEAS220M25
	C1505, C1506		CEAS470M25
	C1511		CKDYX104M25
	C1509, C1510		CKPUYF473Z16
RESISTORS			
	VR1501	(100k–4B*2)	ACX1053
	R1511, R1512		RD1/4PM820J
	Other Resistors		RD1/8PM□□□J
DISPLAY ASSEMBLY			
SEMICONDUCTORS			
	IC3702		BA3826S
	IC3901		PDC009A
	IC1701, IC1702		SN74LS05N
	Q3701		2SC2458
	Q3901, Q3902		XDC124ES
	Q1701, Q1702		XDC143ES
	D1701–D1704, D1707, D1716		AEL1064
	D1705, D1706, D1709–D1713, D1715		AEL1065
	D1708, D1714, D1801–D1806, D3702–D3705, D3801–D3806, D3901–D3907		HSS104–02
SWITCHES			
	S1801, S1802, S1804–S1816, S1818–S1820, S3801, S3802, S3806–S3811, S3813–S3817		ASG1034
	S1901		ASH1012

Mark	No.	Description	Parts No.
COIL			
	L3901		LAU221K
CAPACITORS			
	C3901		ACH1135
	C1901		CCCSL100D50
	C3907		CEAS100M50
	C3904, C3908		CEAS470M10
	C3701, C3702		CEJA2R2M50
	C3906		CKCYB102K50
	C3703, C3905		CKPUYB102K50
	C3902, C3903		CKPUYF223Z25
RESISTORS			
	R3710, R3719		RD1/2PM2R2J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	X3901	(12MHz)	ASS1062
	CN1901	40P SOCKET	AKP1085
	V3901	FL TUBE	AAV1166
		REMOTE CONTROL SENSOR UNIT	AXX1023
HEADPHONE ASSEMBLY			
SEMICONDUCTORS			
	IC1231		M5216P
	Q1231, Q1232		2SC2458
	Q1233		XDA124ES
CAPACITORS			
	C1235, C1236		CEAS220M25
	C1231		CEAS2R2M50
	C1241, C1242		CEAS330M25
	C1233, C1234		CEAS470M25
	C1232		CEJA2R2M50
	C1237, C1238		CKPUYB101K50
	C1239, C1240		CKPUYB151K50
RESISTORS			
	R1243, R1244		RS1LMF820J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	HEADPHONE JACK		AKN1010
TRANS CONNECT ASSEMBLY			
CAPACITORS			
	C1158, C1159		CQMXA104J100

Mark	No.	Description	Parts No.
SUB TRANS ASSEMBLY			
SEMICONDUCTORS			
	IC1015		ICP–N10
	IC1011, IC1012		ICP–N38
	IC1013, IC1014		ICP–N75
	IC1152		NJM78M12FAS
	IC1151		NJM78M56FAS
	Q1151, Q1153		2SB560
	Q1152		2SC2458
	D1154, D1156, D1159		HSS104–02
	D1160		RD10ESB
	D1151		RD15ESB
	D1155		RD36ESB2
	D1001–D1009, D1152, D1153, D1157, D1158		S5566
RELAY			
	RY1151		ASR1027
TRANSFORMER			
	T1151		ATT1219
CAPACITORS			
	C1101	(0.01/400)	ACG1003
	C1152, C1157		CEAS220M50
	C1153		CEAS221M100
	C1156		CEAS222M25
	C1151, C1154		CEAS470M16
	C1155		CEAS470M25
RESISTORS			
	R1152		RD1/4PM273J
	R1155, R1556		RD1/4PM470J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	CN	1P AC INLET	AKP1121
TAPE ASSEMBLY			
SEMICONDUCTORS			
	IC4421		CXA1100P
	IC4202		MC14066BF
	IC4302		SN74LS05N
	IC4121, IC4151		UPC4570G2
	IC4201, IC4251, IC4301		XRA4558F–P
	Q4352, Q4904, Q4906, Q4908, Q4910		2SA1515
	Q4203, Q4204, Q4355, Q4451–Q4454		2SC2458
	Q4205, Q4206, Q4461, Q4462		2SC2878
	Q4353, Q4354		2SC3377
	Q4321, Q4322		2SK373
	Q4207, Q4421, Q4460		XDA124ES
	Q4208		XDA143ES
	Q4905, Q4907, Q4909, Q4911		XDC124ES
	Q4209, Q4351		XDC143ES

Mark	No.	Description	Parts No.
	D4251, D4252, D4321 – D4326, D4451, D4452, D4903 – D4912		HSS104 – 02
	COILS & TRANSFORMERS		
	F4401, F4402		ATF1064
	T4351		ATX – 043
	L4301, L4302		LTA392J
	L4303, L4304		LTA822J
	CAPACITORS		
	C4362	(2000p/630)	ACE1020
	C4333, C4334		CCCSL100D50
	C4354		CCCSL221J50
	C4319, C4320		CCDSL271K500
	C4123, C4124		CCSQCH331J50
	C4252		CCSQCH560J50
	C4151, C4152		CCSQCH561J50
	C4253, C4303, C4304, C4403, C4404, C4453, C4454		CEAS010M50
	C4254		CEAS0R1M50
	C4213, C4214, C4358, C4363, C4405, C4406, C4409, C4410		CEAS100M50
	C4133, C4134, C4161, C4162, C4402		CEAS101M10
	C4455, C4456		CEAS220M16
	C4321, C4322		CEAS2R2M50
	C4309, C4310		CEAS330M16
	C4353		CEAS3R3M50
	C4131, C4132, C4159, C4160		CEAS470M10
	C4325, C4326, C4361		CEAS470M16
	C4129, C4130, C4157, C4158		CEAS4R7M50
	C4407, C4408		CEASR22M50
	C4307, C4308		CFTXA823J50
	C4323, C4324, C4356		CKCYB681K50
	C4352, C4360		CKCYF103Z50
	C4211, C4212		CKSQYB152K50
	C4311, C4312		CKSQYB223K50
	C4305, C4306		CKSQYB272K50
	C4251		CKSQYB473K50
	C4357		CQMA123K250
	C4355		CQMA153J50
	C4209, C4210		CQMA183J50
	C4127, C4128, C4155, C4156		CQMA223J50
	C4317, C4318		CQMA333J50
	C4351		CQMA562K400
	C4313, C4314		CQMA822J50
	RESISTORS		
	VR4901, VR4902		VRTP6HS103
	VR4121, VR4122, VR4151, VR4152, VR4451, VR4452		VRTP6HS202
	VR4351, VR4352		VRTP6HS204
	R4449		RS1/10S000J
	R4129, R4130, R4157, R4158		RS1/10S101J
	R4315, R4316, R4461, R4462		RS1/10S102J
	R4201, R4202, R4409, R4416 – R4418, R4420, R4422		RS1/10S103J
	R4307, R4308, R4419		RS1/10S104J
	R4209, R4210, R4459		RS1/10S105J

Mark	No.	Description	Parts No.
	R4257, R4421		RS1/10S123J
	R4127, R4128, R4155, R4156		RS1/10S124J
	R4123, R4124, R4151, R4152, R4219, R4220, R4252		RS1/10S154J
	R4253		RS1/10S181J
	R4222, R4321, R4322, R4413, R4414, R4458		RS1/10S222J
	R4254, R4259		RS1/10S223J
	R4251		RS1/10S224J
	R4401, R4402		RS1/10S242J
	R4407, R4408, R4411, R4412		RS1/10S273J
	R4319, R4320		RS1/10S302J
	R4207, R4208		RS1/10S332J
	R4311, R4312		RS1/10S333J
	R4403, R4404		RS1/10S362J
	R4313, R4314		RS1/10S393J
	R4427		RS1/10S433J
	R4455, R4456		RS1/10S471J
	R4215, R4216, R4231, R4450		RS1/10S472J
	R4218, R4230, R4256, R4258		RS1/10S473J
	R4255		RS1/10S514J
	R4125, R4126, R4153, R4154		RS1/10S622J
	R4325, R4326		RS1/10S681J
	R4405, R4406, R4463, R4464		RS1/10S682J
	R4309, R4310		RS1/10S683J
	R4317, R4318		RS1/10S820J
	Other Resistors		RD1/8PM□□□J
	OTHERS		
	CN	36P SOCKET	AKP1105
	SW ASSEMBLY		
	SEMICONDUCTORS		
	IC1		TC74HC74AP
	Q1 – Q3, Q6, Q7		XDC124ES
	Q4, Q5		XDC143ES
	D1 – D14		HSS104 – 02
	CAPACITORS		
	C4		CCCSL101J50
	C5		CEANP100M35
	C2, C3		CEASR15M50
	C6		CEAS101M10
	C1		CEAS220M25
	RESISTORS		
	R13		RD1/4PM390J
	Other Resistors		RD1/8PM□□□J

XD-J115M

Mark	No.	Description	Parts No.
	CD BLOCK		
	MOTHER BOARD ASSEMBLY		
	SEMICONDUCTORS		
	IC151		CXA1372Q
	IC301		CXD2500AQ
⚠	IC201, IC202		LA6520
	IC405		NJM4565D – D,
	IC351		PD4439A
	IC401		TC9237BF
	Q361, Q381, Q382		2SC1740S
	Q403, Q404		2SD2144S
	Q406		DTA124ES
	Q405		DTC124ES
	D381 – D383		1SS133X
	SWITCH		
	S351		PSG1006
	CAPACITORS		
	C403, C404		CCSQCH180J50
	C435 – C438		CCSQCH390J50
	C429, C430		CCSQCH560J50
	C433, C434		CEAS220M25
	C31 – C34, C216, C217, C302, C351		CEAS330M16
	C160, C162		CEAS4R7M50
	C309		CEASR47M50
	C157, C164, C167, C169, C202, C203, C205, C206, C212, C308, C354, C375		CKSQYB103K50
	C158, C159, C161, C163, C301, C304		CKSQYB104K25
	C306, C441, C442		CKSQYB152K50
	C155		CKSQYB182K50
	C170		CKSQYB332K50
	C156, C168		CKSQYB333K25
	C171, C172		CKSQYB472K50
	C307		CKSQYB473K25
	C41 – C44, C353, C356, C361, C420		CKSQYF103Z50
	C410, C411, C414 – C416, C418, C419, C422, C423, C431, C432		CKSQYF104Z25
	C421, C424, C426		CKSQYF473Z25
	RESISTORS		
	VR151, VR152	(22k)	RCP1046
	Other Resistors		RS1/10S□□□J
	OTHERS		
	CN131	12P FFC CONNECTOR	12FM – 1.0BT
	CN201	6P TOP POST	B6P – SHF
	CN351	22P FFC CONNECTOR	HLEM22S
	X401	(16.9344MHz)	PSS1008
	X351	(4.19MHz)	VSS1014

Mark	No.	Description	Parts No.
	POWER BOARD ASSEMBLY		
	SEMICONDUCTORS		
⚠	IC20		M5298P
	Q62		2SC1740S
⚠	D1, D2		11ES2
	CAPACITORS		
	C60		CEAS010M50
	C28		CEAS101M10
	C27		CEAS102M10
	C11 – C16		CKCYF103Z50
	RESISTORS		
	All Resistors		RD1/6PM□□□J
	OTHERS		
	CN13	13P JUMPER CONNECTOR	KPE13
	DISPLAY BOARD ASSEMBLY		
	SEMICONDUCTORS		
	D701 – D706		1SS254
	SWITCHES		
	S701 – S718		PSG1006
	OTHERS		
	CN701	22P FFC CONNECTOR	HLEM22R
	V701	FL TUBE	PEL1076
	LOADING BOARD ASSEMBLY		
	SWITCHES		
	S601, S602	PUSH SWITCH	DSG1016
	SELECT BOARD ASSEMBLY		
	SWITCHES		
	S604 – S606	PUSH SWITCH	DSG1016
	S603	DETECTOR SWITCH	PSG1010
	MOTOR BOARD ASSEMBLY		
	MOTOR BOARD assembly has no service part.		

5.2 FOR XD-J110/HE

Mark	No.	Description	Parts No.
		LIST OF ASSEMBLIES	
		DECK AMP BLOCK	
		AF ASSEMBLY	AWZ4645
		VOLUME ASSEMBLY	AWZ4653
		DISPLAY ASSEMBLY	AWZ4656
		HEAD PHONE ASSEMBLY	AWZ4666
NSP		TRANS CONNECT ASSEMBLY	AWZ4672
		SUB TRANS ASSEMBLY	AWZ4678
		TAPE ASSEMBLY	AWV1335
		SW ASSEMBLY	AWK1746
		CD BLOCK	
⚠		MOTHER BOARD ASSEMBLY	PWM1729
		DISPLAY BOARD ASSEMBLY	PWZ2433
		POWER BOARD ASSEMBLY	PWZ2437
NSP		MECHANISM BOARD ASSEMBLY	PWX1192

NOTE :
The DECK AMP BLOCK of XD-J110/HE is the same as that of XD-J115M/HE.
Refer to "6.1 FOR XD-J115M/HE".

MOTHER BOARD ASSEMBLY

SEMICONDUCTORS

	IC151	CXA1372Q
	IC301	CXD2500AQ
⚠	IC201, IC202	LA6520
	IC405	NJM4565D-D
	IC351	PD4446A
	IC401	TC9237BF
	Q381, Q382	2SC1740S
	Q403, Q404	2SD2144S
	Q406	DTA124ES
	Q405	DTC124ES
	D381-D383	1SS133X

SWITCH

	S351	PSG1006

CAPACITORS

	C403, C404	CCSQCH180J50
	C435-C438	CCSQCH390J50
	C429, C430	CCSQCH560J50
	C433, R434	CEAS220M25
	C31-C34, C216, C217, C302, C351	CEAS330M16
	C160, C162	CEAS4R7M50
	C309	CEASR47M50
	C157, C164, C167, C169, C212, C308, C354, C375	CKSQYB103K50
	C158, C159, C161, C163, C301, C304 C306, C441, C442	CKSQYB104K25 CKSQYB152K50
	C155	CKSQYB182K50
	C170	CKSQYB332K50
	C156, C168	CKSQYB333K25
	C171, C172	CKSQYB472K50
	C307	CKSQYB473K25
	C41-C44, C202, C203, C205, C206, C353, C356, C361, C420	CKSQYF103Z50
	C410, C411, C414-C416, C418, C419, C422, C423, C431, C432	CKSQYF104Z25
	C421, C424, C426	CKSQYF473Z25

RESISTORS

	VR151, VR152 (22k)	RCP1046
	Other Resistors	RS1/10S□□□J

OTHERS

	CN131 12P FFC CONNECTOR	12FM-1.0BT
	CN201 6P TOP POST	B6P-SHF
	CN351 24P FFC CONNECTOR	HLEM24S
	X401 (16.9344MHz)	PSS1008
	X351 (4.19MHz)	VSS1014

DISPLAY BOARD ASSEMBLY

SEMICONDUCTORS

	D703-D705, D707	1SS254

SWITCHES

	S707-S714, S716-S718	PSG1006

OTHERS

	CN701 24P FFC CONNECTOR	HLEM24R
	V701 FL TUBE	PEL1062

POWER BOARD ASSEMBLY

SEMICONDUCTORS

⚠	IC20	M5298P
	Q62	2SC1740S
⚠	D1, D2	11ES2

CAPACITORS

	C60	CEAS010M50
	C28	CEAS101M10
	C27	CEAS222M6R3
	C11-C16	CKCYF103Z50

RESISTORS

	All Resistors	RD1/6PM□□□J

OTHERS

	CN13 13P JUMPER CONNECTOR	KPE13

MECHANISM BOARD ASSEMBLY

SWITCH

	S610 PUSH SWITCH	DSG1016

6. ADJUSTMENTS

6.1 DECK AMP BLOCK (XD-J115M AND XD-J110)

6.1.1 Adjustment of Mechanical Section

- The adjustment location and the measuring location, refer to Fig. 6-4.
- Set the function switch to "TAPE".
- Test tape : STD-301 (3kHz 30min)

1. Adjustment of tape speed

No.	Mode	Input signal & Test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1	PLAY	Playback the STD-301 tape to 3kHz.	Deck I	TAPE assembly VR4901	JP-L (Lch)	Press the PLAY button and adjust the frequency to 3010Hz ±10Hz. Make sure that the wow and flutter is 3010Hz ±55Hz.	
2	PLAY (Double speed mode)			—		Press the PLAY button in double speed mode and confirm that the frequency is 6000Hz ±1000Hz. Note down the figure.	Release the double speed mode after adjustment.
3	PLAY (Double speed mode)		Deck II	TAPE assembly VR4903	JP-L (Lch)	Press the PLAY button in double speed mode and adjust the frequency to be within ±30Hz of the figure recorded at step No. 2.	Release the double speed mode after adjustment.
4	PLAY			TAPE assembly VR4902		Press the PLAY button and adjust the frequency to 3010Hz ±10Hz. Make sure that the wow and flutter is 3010Hz ±55Hz.	

Double-speed mode : The double-speed mode can be entered by short circuiting the line between TP4901 and TP4902. The mode is canceled by opening the short circuited line and switching the power to OFF.

6.1.2 Adjustment of Electrical Section

■ Check and conduct the following before adjusting the electric section.

1. Adjustment of tape speed has been completed.
2. Clean and demagnetize the head using a head eraser.
3. When measured, the level should be 0dBV = 1Vrms.
4. Use side A of the specified tape for adjustment.
   STD-331E : For adjustment of playback system.
   STD-631 : NORMAL blank tape
5. Prepare the following measuring devices :
   - AC millivoltmeter
   - Low-frequency oscillator
   - Attenuator
   - Oscilloscope
6. Adjust both L and R channels, unless specified otherwise.
7. Set the DOLBY NR switches to OFF, unless specified otherwise.
8. Warm up the unit for several minutes before adjustment. Especially before adjusting the frequency characteristics of recording and playback, warm up for 3 to 5 minutes in REC/PLAY mode.
9. Make sure to follow the proper order of the adjustment procedure. Any change in the order may cause an improper result.

■ **List of Adjustment**

Deck I
1. Head azimuth adjustment
2. Playback level adjustment

Deck II
1. Head azimuth adjustment
2. Playback level adjustment
3. Bias oscillation frequency adjustment
4. Recording level adjustment
5. Adjustment of frequency characteristics of recording/playback

**As the reference recording level is 250nwb/m for STD-331E, the recording level will be higher by 4 dB for STD-331B (160nwb/m). When adjusting, pay carefull attention to the type of tape used.*

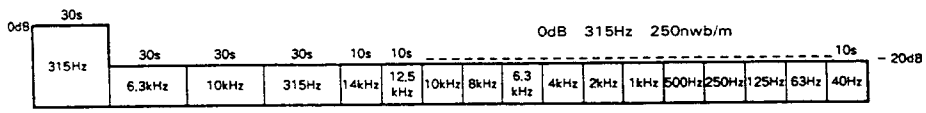
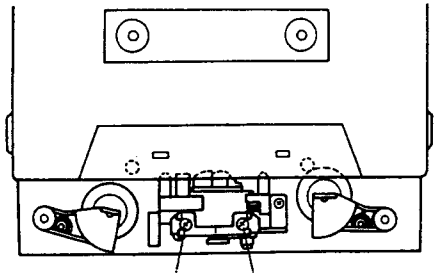


Fig. 6-1 Test Tape STD-331E



NOTE : Before adjusting, remove the deck panel.

Fig. 6-2 Head Azimuth Adjustment

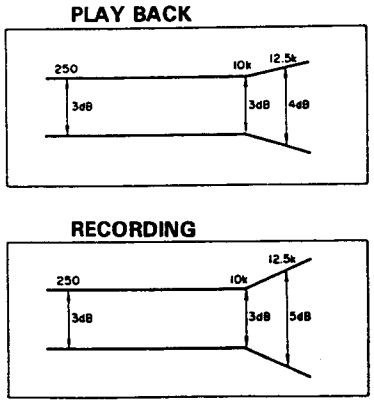


Fig. 6-3 Frequency Characteristics

■ Head Adjustment of Deck I

- Deck I is provided with an automatic tape selector mechanism.
- Note : Do not switch over FWD and REV while the screw driver is inserted.

1. Head Azimuth Adjustment

Procedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331E (10kHz, -20dB).	Head azimuth adjustment screw (Fig. 6-2)	TAPE assembly JP-L (Lch) JP-R (Rch)	Maximum playback signal level.	Lock the screw with screw lock after completing adjustment.

2. Playback Level Adjustment

- Be sure to make a careful adjustment, as the adjustment determines the DOLBY NR level for playback.

Procedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331E (315Hz, 0dB).	TAPE assembly VR4151 (Lch) VR4152 (Rch)	TAPE assembly JP-L (Lch) JP-R (Rch)	-6.3dBV	

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■ Head Adjustment of Deck II

- Deck II is provided with an automatic tape selector mechanism.
- Note : Do not switch over FWD and REV while the screw driver is inserted.

1. Head Azimuth Adjustment

Procedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331E (10kHz, -20dB).	Head azimuth adjustment screw (Fig. 6-2)	TAPE assembly JP-L (Lch) JP-R (Rch)	Maximum playback signal level.	Lock the screw with screw lock after completing adjustment.

2. Playback Level Adjustment

- Be sure to make a careful adjustment, as the adjustment determines the DOLBY NR level for playback.

Procedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331E (315Hz, 0dB).	TAPE assembly VR4121 (Lch) VR4122 (Rch)	TAPE assembly JP-L (Lch) JP-R (Rch)	-6.3dBV	

3. Bias Oscillation Frequency Adjustment

Procedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Load the test tape STD-631 and set to record mode.	TAPE assembly T4351	Area between Ⓐ and Ⓑ (TAPE assembly) shown in Fig. 6-4.	The oscillation frequency is 105kHz ±5kHz.	

4. Recording Level Adjustment

Procedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Apply a signal of 315Hz to the VCR input terminal and set the function to "VCR".	Input signal level	TAPE assembly JP-L (Lch) JP-R (Rch)	-10.3dBV	
2	NORM	REC/ PLAY	Record and playback the test tape STD-631 (315Hz).	TAPE assembly VR4451 (Lch) VR4452 (Rch)	TAPE assembly JP-L (Lch) JP-R (Rch)	Repeat the recording/playback, and make adjustment so that the playback level of 315Hz is -10.3dBV.	

5. Adjustment of Frequency Characteristics of Recording/playback

- As this procedure is for adjustment of the recording bias, be careful not to increase the distortion by underadjusting the bias.

Procedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Apply a signal of 315Hz to the VCR input terminal and set the function to "VCR".	Input signal level	TAPE assembly JP-L (Lch) JP-R (Rch)	−30.3dBV	
2	NORM	REC/ PLAY	Record and playback the test tape STD-631 (315Hz and 10kHz).	TAPE assembly VR4351 (Lch) VR4352 (Rch)	TAPE assembly JP-L (Lch) JP-R (Rch)	Repeat the recording/playback, and make adjustment so that the playback level of 10kHz remains 0 ±0.5dB in relation to 315Hz.	

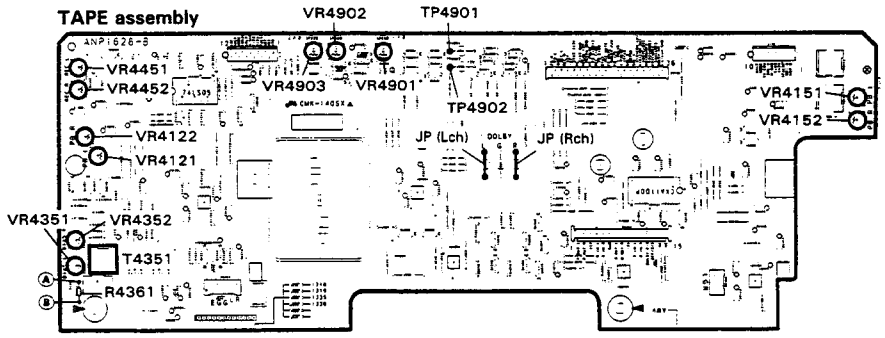


Fig. 6-4 Adjustment Points

6.2 CD BLOCK

6.2.1 Multi CD Unit (For XD-J115M)

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

● Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1 − 4, the pickup block may be defective.

Step	Item	Test Point	Adjustment Location
1	Focus offset verification	TP1, Pin 6 (FCS. ERR)	None
2	Tracking error balance verification	TP1, Pin 2 (TRK. ERR)	None
3	Pickup radial/tangential direction tilt adjustment	TP1, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
4	RF level verification	TP1, Pin 1 (RF)	None
5	Focus servo loop gain adjustment	TP1, Pin 5 (FCS. IN) TP1, Pin 6 (FCS. ERR)	VR152 (FCS. GAN)
6	Tracking servo loop gain adjustment	TP1, Pin 3 (TRK. IN) TP1, Pin 2 (TRK. ERR)	VR151 (TRK. GAN)

● **Abbreviation table**

FCS. ERR :Focus Error
TRK. ERR :Tracking Error
FCS GAN :Focus Gain
TRK GAN :Tracking Gain
FCS. IN :Focus In
TRK. IN :Tracking In

● Measuring Instruments and Tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7)
4. Low pass filter (39kΩ +0.001 μF)
5. Resistor (100 kΩ)
6. Standard tools

● Test Point and Adjustment Variable Resistor Positions

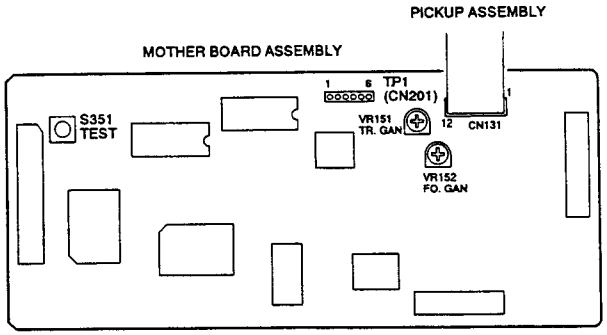


Figure 1. Adjustment Locations

● Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

● Test Mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.
1. Turn off the power switch of DECK AMP.
2. Press the TEST mode switch (S351). (See Figure 1.)
3. Turn on the power switch of DECK AMP.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1 – 3.

XD-J115M

[Release from test mode]

Here is the procedure for releasing the test mode:
1. Press the STOP key and stop all operations.
2. Turn off the power switch of DECK AMP.

[Operations of the keys in test mode]

Code	Key Name	Function In Test Mode	Explanation
	PGM (PROGRAM)	Focus servo close	The laser diode is lit up and the focus actuator is lifted up, then lowered slowly and the focus servo is closed at the point where the objective lens is focused on the disc. With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo. If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled up, then the actuator is lowered and raised three times and returned to its original position.
▶/II	PLAY/PAUSE	Spindle servo ON	Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop. Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed. If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.
▶/II	PLAY/PAUSE	Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal. If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.

Code	Key Name	Function in Test Mode	Explanation
⏮ · ◀◀	MANUAL / TRACK SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
▶▶ · ⏭	MANUAL / TRACK SEARCH FWD	Carriage forward (outwards)	Moves the pickup position toward the outer diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
■	STOP	Stop	Initializes and the disc rotation stops. The pickup and disc remain where they are when this key is pressed.
⏏	EJECT	CD magazine eject	Stores Disc 1 in the CD magazine, then ejects the CD magazine. However, even though the CD magazine is ejected, the pickup does not return to the park position. Even if the CD magazine is mounted again, the pickup remains where it is.

Note : When inserting the magazine, disc 1 of the magazine is loaded automatically.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.
Here is the key operation sequence for playing back a disc in test mode.

PGM(PROGRAM) — Lights up the laser diode and closes the focus servo.
⇩
PLAY/PAUSE ▶/⏸ — Starts the spindle motor and closes the spindle servo.
⇩
PLAY/PAUSE ▶/⏸ — Closes the tracking servo.

Wait at least 2-3 seconds between each of these operations.

XD-J115M

1. Focus Offset Verification

● Objective	Verify the DC offset for the focus error amp.		
● Symptom when out of adjustment	The model does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 6 (FCS. ERR) [Settings] 5 mV/division 10 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, stopped (just the Power switch on) None None needed

[Procedure]

Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is 0 ± 50 mV.

Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 – 4, the pickup block may be defective.

2. Tracking Error Balance Verification

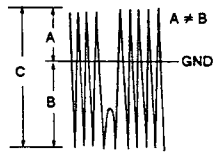
● Objective	To verify that there is no variation in the sensitivity of the tracking photo diode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter. [Settings] 50 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, focus and spindle servos closed and tracking servo open None YEDS-7

[Procedure]

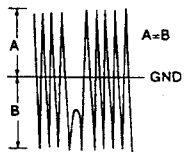
1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL / TRACK SEARCH FWD ▶▶ · ⏭ or REV ⏮ · ◀◀ key.
2. Press the PGM (PROGRAM) key, then the PLAY/PAUSE ▶/⏸ key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.

When $A \geqq B$, $\frac{A-B}{C} \times \frac{1}{2} \leqq 0.1$

When $A < B$, $\frac{B-A}{C} \times \frac{1}{2} \leqq 0.1$



When there is a DC component



When there is no DC component

3. Pickup Radial/Tangential Tilt Adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken;some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF). [Settings] 20 mV/division 200 ns/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play Pickup radial tilt adjustment screw and tangential tilt adjustment screw YEDS-7

[Procedure]

1. Press the MANUAL / TRACK SEARCH FWD ▶▶ · ▶▶| or REV |◀◀ · ◀◀ key to move the pickup to halfway across the disc (R=35mm).
   Press the PGM (PROGRAM) key, the PLAY/PAUSE ▶/ ❚❚ key twice in that order to close the respective servos and put the player into play mode.
2. First, adjust the radial tilt adjustment screw with a Phillips screwdriver so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
3. Next, adjust the tangential tilt adjustment screw with a Phillips screwdriver so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
5. When the adjustment is completed, lock the radial and tangential adjustment screw.
   Note:Radial and tangential mean the directions relative to the disc shown in Figure 2.

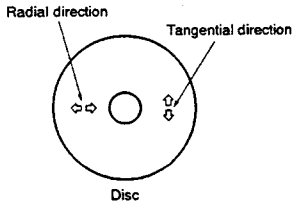
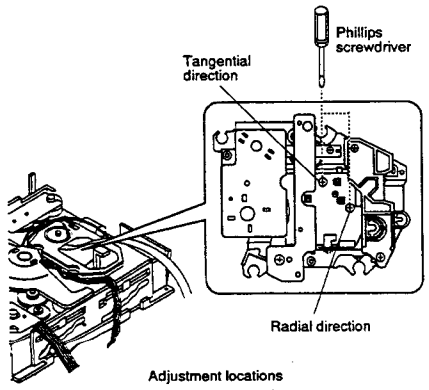


Figure 2



Adjustment locations

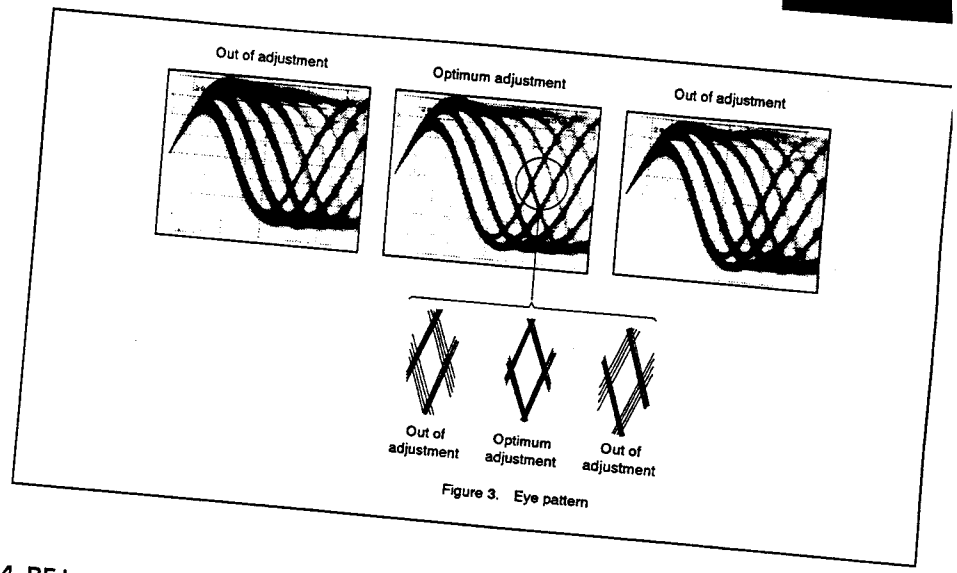


Figure 3. Eye pattern

4. RF Level Verification

● Objective	To verify the playback RF signal amplitude		
● Symptom when out of adjustment	No play or no search		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF). [Settings] 50 mV/division 10 ms/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play None YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL / TRACK SEARCH FWD ▶▶ · ▶▶| or REV |◀◀ · ◀◀ key, then press the PGM (PROGRAM) key, the PLAY/PAUSE ▶/ ❚❚ key twice in that order to close the respective servos and put the player into play mode.
2. Verify the RF signal amplitude is 1.2 Vp-p ± 0.2 V.

5. Focus Servo Loop Gain Adjustment

● Objective	To optimize the focus servo loop gain.		
● Symptom when out of adjustment	Playback does not start or focus actuator noisy.		
● Measurement instrument connections	See figure 4. [Settings] CH1 CH2 20 mV/division 5 mV/division X-Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR152 (FCS. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the MANUAL / TRACK SEARCH FWD ▶▶ · ▶▶| or REV |◀◀ · ◀◀ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY/PAUSE ▶/ ❚❚ key twice in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR152 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

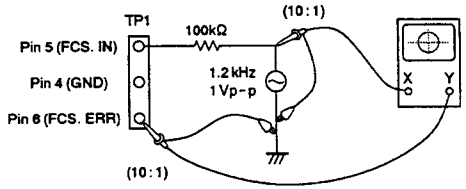
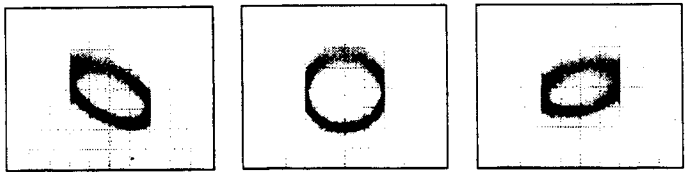


Figure 4

Focus Gain Adjustment



Higher gain | Optimum gain | Lower gain

6. Tracking Servo Loop Gain Adjustment

● Objective	To optimize the tracking servo loop gain.		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Figure 5. [Settings] CH1 CH2 50 mV/division 20 mV/division X-Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR151 (TRK. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the MANUAL / TRACK SEARCH FWD ▶▶ · ▶▶| or REV |◀◀ · ◀◀ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY/PAUSE ▶/ ❚❚ key twice in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR151 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

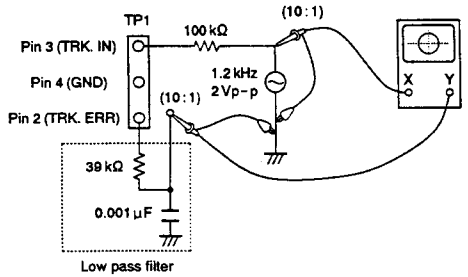


Figure 5

Tracking Gain Adjustment

Higher gain | Optimum gain | Lower gain

6.2.2 Single CD Unit (For XD−J110)

● Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

● Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1 − 4, the pickup block may be defective.

Step	Item	Test Point	Adjustment Location
1	Focus offset verification	TP1, Pin 6 (FCS. ERR)	None
2	Tracking error balance verification	TP1, Pin 2 (TRK. ERR)	None
3	Pickup radial/tangential direction tilt adjustment	TP1, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
4	RF level verification	TP1, Pin 1 (RF)	None
5	Focus servo loop gain adjustment	TP1, Pin 5 (FCS. IN) TP1, Pin 6 (FCS. ERR)	VR152 (FCS. GAN)
6	Tracking servo loop gain adjustment	TP1, Pin 3 (TRK. IN) TP1, Pin 2 (TRK. ERR)	VR151 (TRK. GAN)

● **Abbreviation table**

FCS. ERR :Focus Error
TRK. ERR :Tracking Error
FCS GAN :Focus Gain
TRK GAN :Tracking Gain
FCS. IN :Focus In
TRK. IN :Tracking In

● Measuring Instruments and Tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7, 8cm disc)
4. Resistor (100 kΩ)
5. Standard tools

● Test Point and Adjustment Variable Resistor Positions

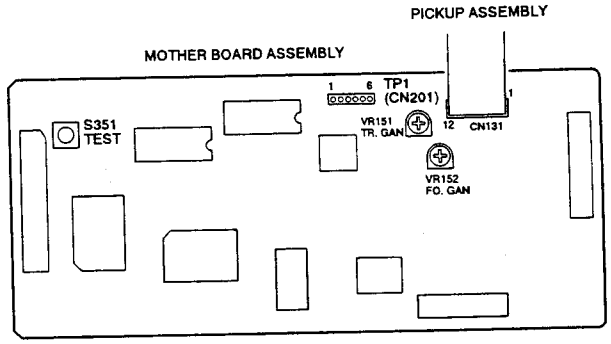


Figure 1. Adjustment Locations

● Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

● Test Mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.

1. Turn off the power switch of DECK AMP.
2. Press the TEST mode switch (S351). (See Figure 1.)
3. Turn on the power switch of DECK AMP.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1 − 3.

[Release from test mode]

Here is the procedure for releasing the test mode:

1. Press the STOP key and stop all operations.
2. Turn off the power switch of DECK AMP.

[Operations of the keys in test mode]

Code	Key Name	Function In Test Mode	Explanation
	PROGRAM	Focus servo close	The laser diode is lit up and the focus actuator is lifted up, then lowered slowly and the focus servo is closed at the point where the objective lens is focused on the disc. With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo. If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled up, then the actuator is lowered and raised three times and returned to its original position.
►/II	PLAY/PAUSE	Spindle servo ON	Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop. Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed. If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.
►/II	PLAY/PAUSE	Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal. If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.

Code	Key Name	Function In Test Mode	Explanation
⏮•◀◀	MANUAL/ TRACK SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
▶▶•⏭	MANUAL/ TRACK SEARCH FWD	Carriage forward (outwards)	Moves the pickup position toward the outer diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
■	STOP	Stop	Initializes and the disc rotation stops. The pickup and disc remain where they are when this key is pressed.
▲	OPEN/CLOSE	Disc tray open / close	Stores Disc 1 in the CD magazine, then ejects the CD magazine. However, even though the CD magazine is ejected, the pickup does not return to the park position. Even if the CD magazine is mounted again, the pickup remains where it is.

Note : When inserting the magazine, disc 1 of the magazine is loaded automatically.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.
Here is the key operation sequence for playing back a disc in test mode.

PROGRAM	Lights up the laser diode and closes the focus servo.
⇩	
PLAY/PAUSE ▶/II	Starts the spindle motor and closes the spindle servo.
⇩	
PLAY/PAUSE ▶/II	Closes the tracking servo.

Wait at least 2-3 seconds between each of these operations.

1. Focus Offset Verification

● Objective	Verify the DC offset for the focus error amp.		
● Symptom when out of adjustment	The model does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 6 (FCS. ERR) [Settings] 5 mV/division 10 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, stopped (just the Power switch on) None None needed

[Procedure]

Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is 0 ± 50 mV.

Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 – 4, the pickup block may be defective.

2. Tracking Error Balance Verification

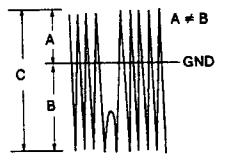
● Objective	To verify that there is no variation in the sensitivity of the tracking photo diode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter. [Settings] 50 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, focus and spindle servos closed and tracking servo open None YEDS-7

[Procedure]

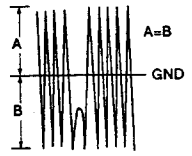
1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL / TRACK SEARCH FWD ▶▶ · ▶▶| or REV |◀◀ · ◀◀ key.
2. Press the PGM (PROGRAM) key, then the PLAY/PAUSE ▶/ II key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.

When $A \geqq B$, $\frac{A-B}{C} \times \frac{1}{2} \leqq 0.1$

When $A < B$, $\frac{B-A}{C} \times \frac{1}{2} \leqq 0.1$



When there is a DC component



When there is no DC component

2. Tracking Error Balance Verification

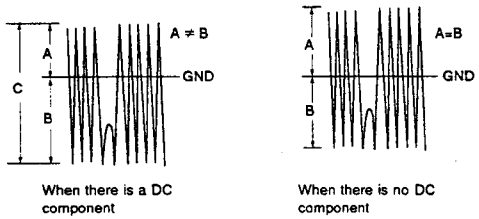
● Objective	To verify that there is no variation in the sensitivity of the tracking photo diode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter. [Settings] 50 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, focus and spindle servos closed and tracking servo open None YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL / TRACK SEARCH FWD ▶▶ • ▶▶| or |◀◀ • ◀◀ key.
2. Press the PROGRAM key, then the PLAY/PAUSE ▶/❚❚ key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.

$$\text{When } A \geqq B,\ \frac{A-B}{C} \times \frac{1}{2} \leqq 0.1$$

$$\text{When } A < B,\ \frac{B-A}{C} \times \frac{1}{2} \leqq 0.1$$



When there is a DC component

When there is no DC component

3. Pickup Radial/Tangential Tilt Adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken;some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF). [Settings] 20 mV/division 200 ns/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play Pickup radial tilt adjustment screw and tangential tilt adjustment screw 8 cm disc (However, those with approx. 20 min of audio signal (music).)

[Procedure]

1. Press the MANUAL / TRACK SEARCH FWD ▶▶ • ▶▶| or |◀◀ • ◀◀ key to move the pickup to the external circumference of the disc.
   Press the PROGRAM key, the PLAY/PAUSE ▶/❚❚ key, then the PLAY/PAUSE ▶/❚❚ key in that order to close the respective servos and put the player into play mode.
2. First, adjust the radial tilt adjustment screw with a hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
3. Next, adjust the tangential tilt adjustment screw with a ball-point type hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
   ※ The ball-point type hexagonal wrench is used because the disc will get in the way if a normal hexagonal wrench is used.
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
5. When the adjustment is completed, lock the radial and tangential adjustment screw.

Note:Radial and tangential mean the directions relati

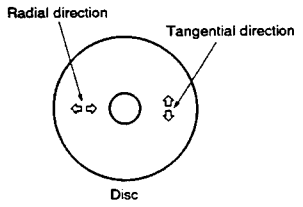
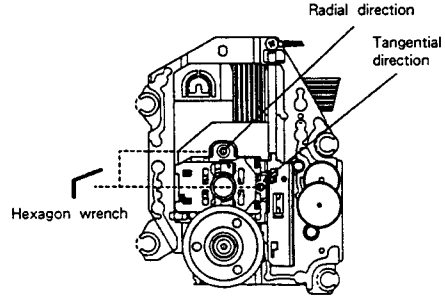


Figure 2



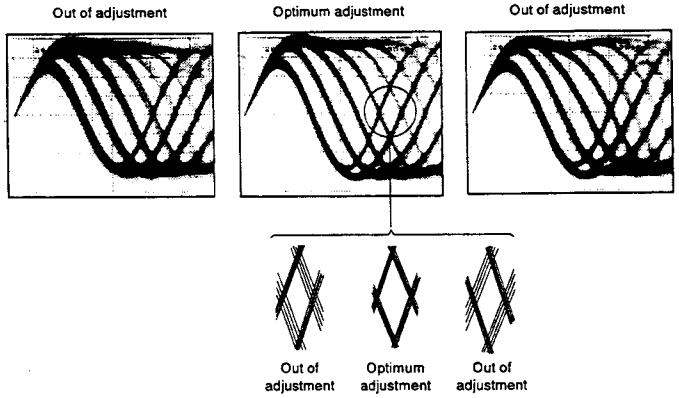


Figure 3 Eye pattern

4. RF Level Verification

● Objective	To verify the playback RF signal amplitude		
● Symptom when out of adjustment	No play or no search		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF). [Settings] 50 mV/division 10 ms/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play None YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL/TRACK SEARCH FWD ▶▶ • ▶▶| or |◀◀ • ◀◀ key, then press the PROGRAM key, the PLAY/PAUSE ▶/❚❚ key, then the PLAY/PAUSE ▶/❚❚ key in that order to close the respective servos and put the player into play mode.
2. Verify the RF signal amplitude is 1.2 Vp-p ± 0.2 V.

5. Focus Servo Loop Gain Adjustment

● Objective	To optimize the focus servo loop gain.		
● Symptom when out of adjustment	Playback does not start or focus actuator noisy.		
● Measurement instrument connections	See figure 4. [Settings] CH1 CH2 20 mV/division 5 mV/division X-Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR152 (FCS. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the MANUAL/TRACK SEARCH FWD ▶▶ • ▶▶| or |◀◀ • ◀◀ key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key, the PLAY/PAUSE ▶/❚❚ key, then the PLAY/PAUSE ▶/❚❚ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR152 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

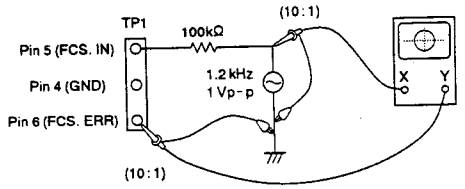
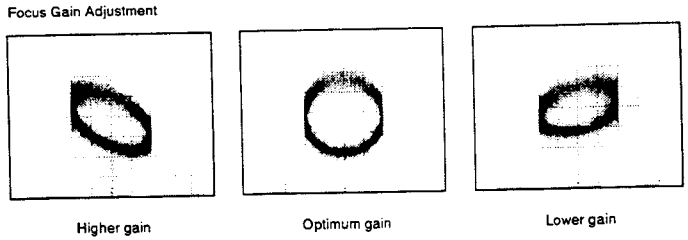


Figure 4



6. Tracking Servo Loop Gain Adjustment

● Objective	To optimize the tracking servo loop gain.		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Figure 5. [Settings] CH1 CH2 50 mV/division 20 mV/division X-Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR151 (TRK. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the MANUAL/TRACK SEARCH FWD ▶▶ • ▶▶| or |◀◀ • ◀◀ key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key, the PLAY/PAUSE ▶/❚❚ key, then the PLAY/PAUSE ▶/❚❚ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR151 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

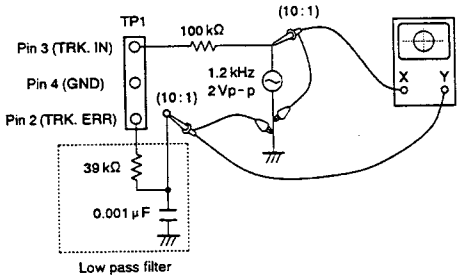
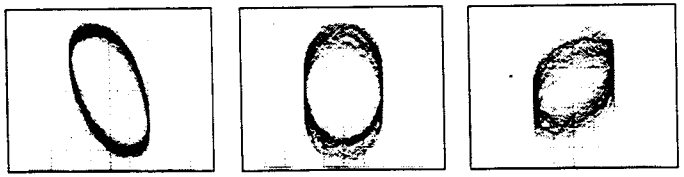


Figure 5

Tracking Gain Adjustment



Higher gain | Optimum gain | Lower gain

7. FOR XD-J115M/HB, HEWZIW, XD-J110/HB AND HEWZIW TYPES

NOTES :

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

7.1 FOR XD-J115M/HB AND HEWZIW

Contrast of Miscellaneous Parts

XD-J115M/HB, HEWZIW and HE have the same construction except for the following :

Mark	Symbol & Description	Part No. HE type	Part No. HB type	Part No. HEWZIW type	Remarks
	AF assembly	AWZ4645	AWZ4645	AWZ4646	
	VOLUME assembly	AWZ4653	AWZ4653	AWZ4654	
	HEADPHONE assembly	AWZ4666	AWZ4666	AWZ4667	
NSP	TRANS CONNECT assembly	AWZ4672	AWZ4672	AWZ4673	
	SUB TRANS assembly	AWZ4678	AWZ4681	AWZ4679	
⚠	AC Power cord	ADG1127	ADG1118	ADG1127	
⚠	Strain relief	.....	AEC-882	.....	
	Rear panel	ANC2008	ANC2009	ANC2008	
	Screw (GND)	.....	.....	ABA1047	(Rear panel)
NSP	Name plate	AAL2022	AAL2021	AAL2023	
	Operating instructions (English, French, German, Italian)	ARE1266	.....	.....	
	Operating instructions (Dutch, Swedish, Spanish, Portuguese)	ARE1267	.....	.....	
	Operating instructions (English)	.....	ARB1409	.....	
	Operating instructions (German, Italian)	.....	.....	ARC1399	

VOLUME Assembly

AWZ4654 and AWZ 4653 have the same construction except for the following :

Mark	Symbol & Description	Part No. AWZ4653	Part No. AWZ4654	Remarks
	C1513, C1514	.....	CCPUSL330J50	

AF Assembl
AWZ4646

Mark	
	L1
	C1
	C1
	C1
	C1
	C1
	C2
	C3
	C2
	C2
	C2
	C2
	C2
	C2
	R1
	R1
	R1
	R1

TRANS C
AWZ467

Mark	
	C

SUB TRA
AWZ468

Mark	

AF Assembly

AWZ4646 and AWZ 4645 have the same construction except for the following :

Mark	Symbol & Description	Part No. AWZ4645	Part No. AWZ4646	Remarks
	L1201, L1202	ATH−133	ATH−059	
	C1219, C1220	.....	CKDYF473Z50	
	C1221, C1222, C1312	.....	CKCYB103K50	
	C1223, C1224	.....	CCPUSL470J50	
	C1311	.....	CKDYB103K50	
	C1317	.....	CKCYF473Z50	
	C2101, C2102, C2307, C2308,	.....	CCSQCH101J50	
	C3303, C3304, C3501, C3502	.....	CCSQCH391J50	
	C2201−C2206, C2301, C2302	.....	CKCYB391K50	
	C2207−2210	.....	CKSQYB222K50	
	C2303, C2304	CCSQCH101J50	.....	
	C2305, C2306	.....	CKSQYB472K50	
	C2319, C2320, C2503, C2504	.....	CKSQYB102K50	
	C2321, C2322	RD1/4PMFL100J	RD1/4PMFL101J	
	R1215, R1216	.....	RD1/4PM100J	
	R1217, R1218	.....	RD1/8PM100J	
	R1313	RS1/10S221J	RS1/10S102J	
	R2301, R2302			
	2P Pin jack	AKB1146	AKB1100	

TRANS CONNECT Assembly

AWZ4673 and AWZ4672 have the same construction except for the following :

Mark	Symbol & Description	Part No. AWZ4672	Part No. AWZ4673	Remarks
	C1160, C1161	.....	CQMXA104J100	

SUB TRANS Assembly

AWZ4681, AWZ4679 and AWZ4678 have the same construction except for the following :

Mark	Symbol & Description	Part No. AWZ4678	Part No. AWZ4681	Part No. AWZ4679	Remarks
	L1101	.....	.....	ATF−151	
	C1162	.....	.....	CQMXA104J100	
	CN 1P AC inlet	AKP1121	.....	AKP1121	

HEADPHONE Assembly

AWZ4667 and AWZ4666 have the same construction except for the following :

Mark	Symbol & Description	Part No. AWZ4666	Part No. AWZ4667	Remarks
	C1243, C1244, C1249, C1250	.....	CKPUYB101K50	
	C1245, C1246, C1248	.....	CKPUYF473Z16	

7.2 FOR XD−J110/HB AND HEWZIW

Contrast of Miscellaneous Parts

XD−J110/HB, HEWZIW and HE have the same construction except for the following :

Mark	Symbol & Description	Part No. HE type	Part No. HB type	Part No. HEWZIW type	Remarks
	AF assembly	AWZ4645	AWZ4645	AWZ4646	
	VOLUME assembly	AWZ4653	AWZ4653	AWZ4654	
	HEADPHONE assembly	AWZ4666	AWZ4666	AWZ4667	
NSP	TRANS CONNECT assembly	AWZ4672	AWZ4672	AWZ4673	
	SUB TRANS assembly	AWZ4678	AWZ4681	AWZ4679	
△	AC Power cord	ADG1127	ADG1118	ADG1127	
△	Strain relief	.....	AEC−882	.....	
	Rear panel	ANC2008	ANC2009	ANC2008	
	Screw (GND)	.....	.....	ABA1047	(Rear panel)
NSP	Name plate	AAL2019	AAL2018	AAL2020	
	Operating instructions (English, French, German, Italian)	ARE1264	.....	.....	
	Operating instructions (Dutch, Swedish, Spanish, Portuguese)	ARE1265	.....	.....	
	Operating instructions (English)	.....	ARB1408	.....	
	Operating instructions (German, Italian)	.....	.....	ARC1398	

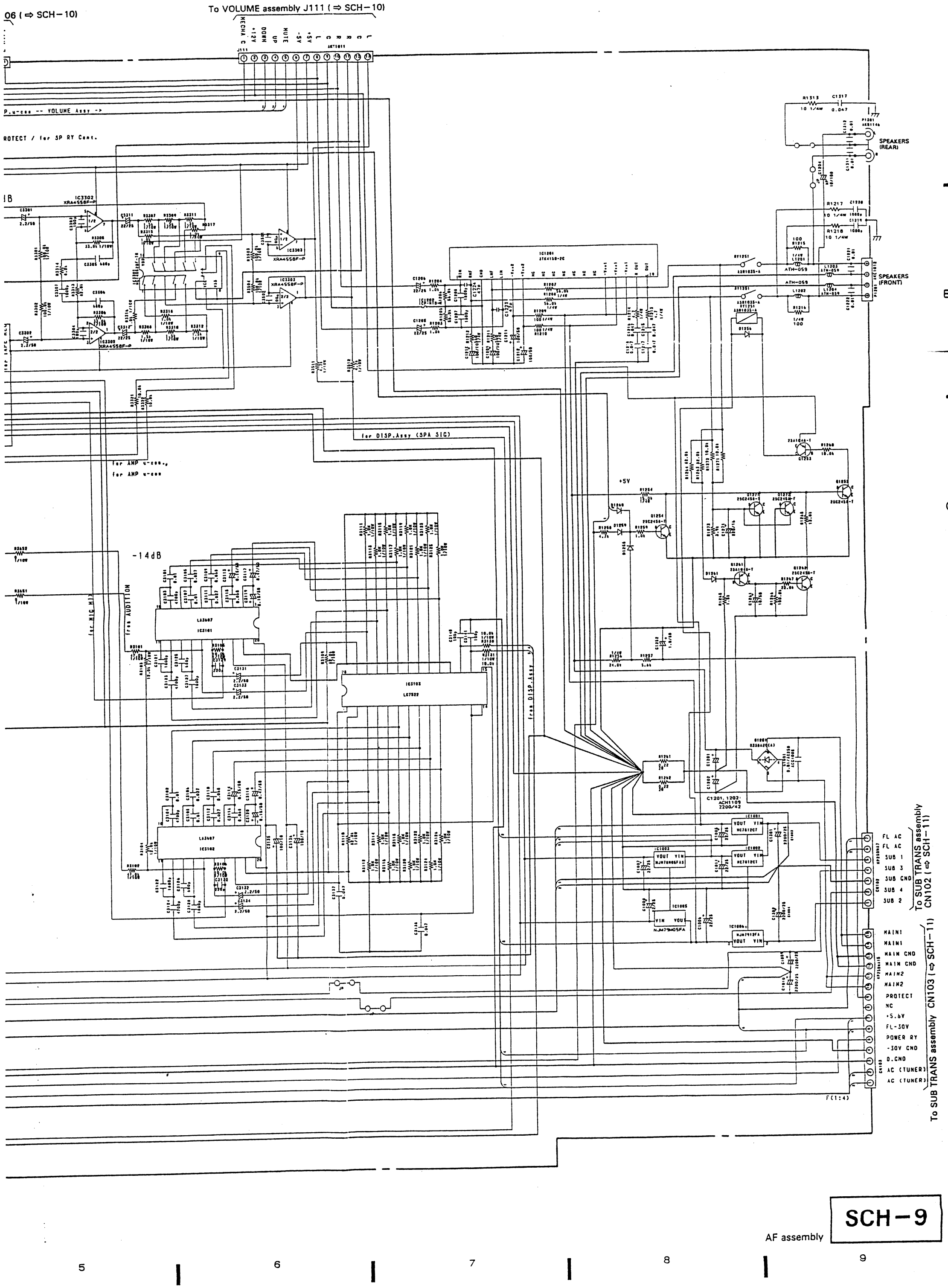
Note : All assemblies of XD−J110/HB and HEWZIW are the same as those of XD−J115M/HB and HEWZI. Refer to "7.1 XD−J115M/HB AND HEWZIW".

7.3 SCHEMATIC DIAGRAMS AND PCB PATTRENS
(For XD−J115M/HEWZIW and XD−J110/HEWZIW)

7.3.1 AF Assembly

AF assembly

SCH−9



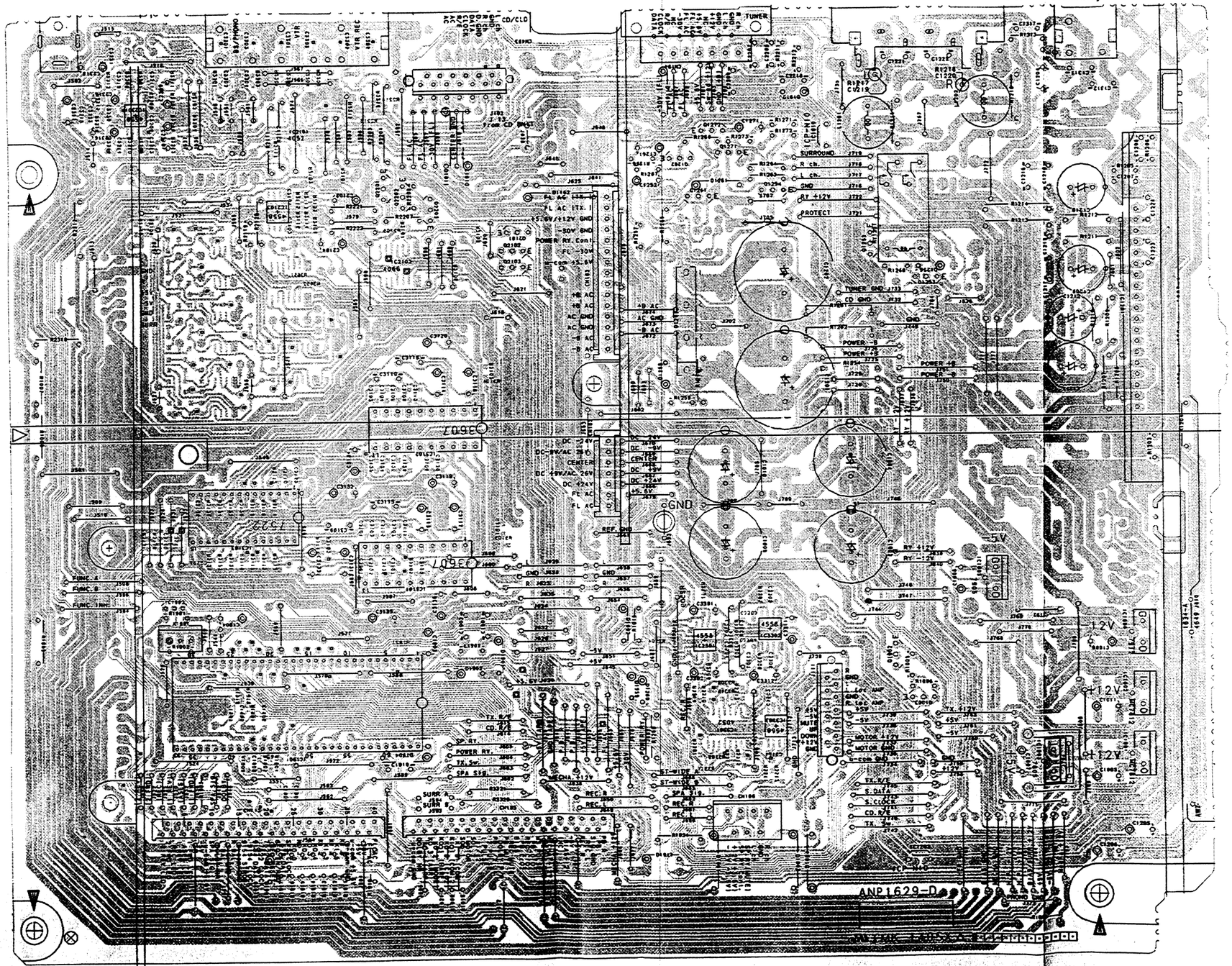
AF assembly

SCH−9

This PCB connection diagram is viewd from the parts mounted side.

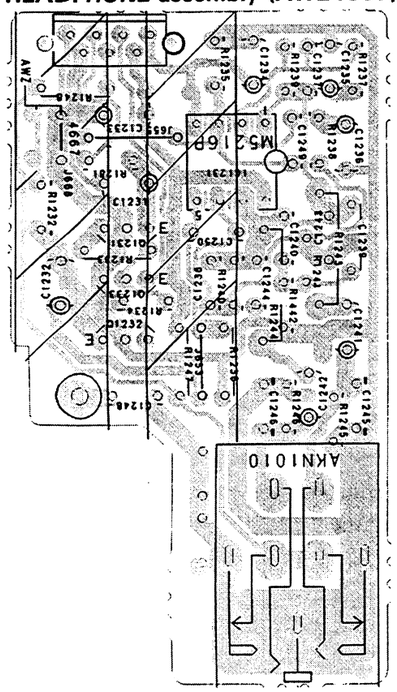
IC2301 IC2103 IC2101 Q2201-Q2203 Q1262 Q1261 Q1272 Q1271 Q1254 IC1010 Q1252 Q1253 IC1201
IC2102 IC3102 Q2101-Q2103 IC2501 IC3302 Q1002 Q1003 IC1005 IC1006 IC1002
IC1902 IC3103 IC1901 IC3101 IC3301 IC3303 IC1202 IC1003 IC1001

AF assembly (AWZ4646)

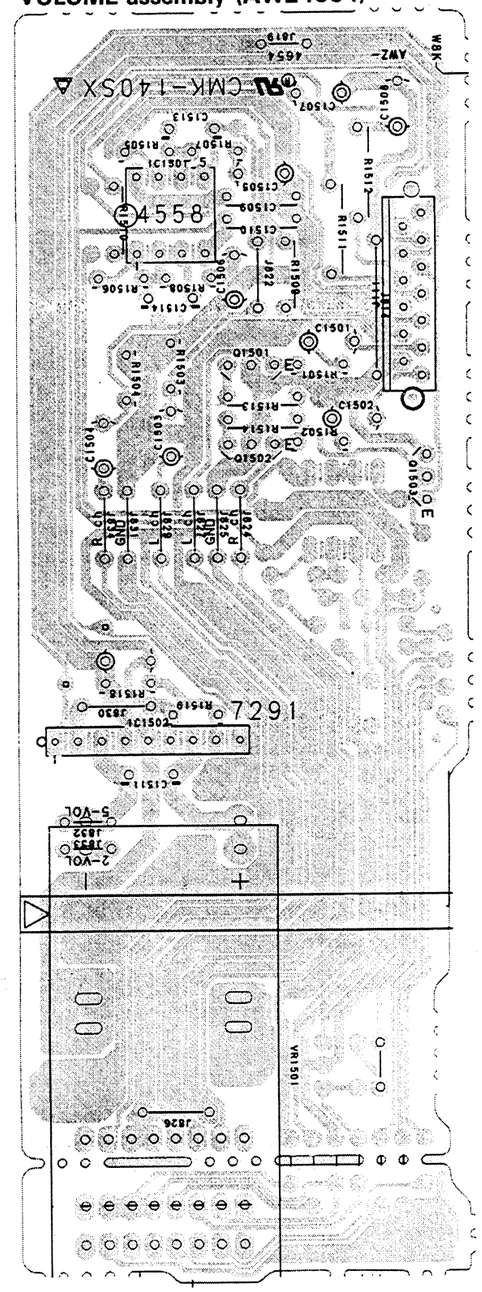


7.3.2 HEADPHONE Assembly and VOLUME Assembly

HEADPHONE assembly (AWZ4667)

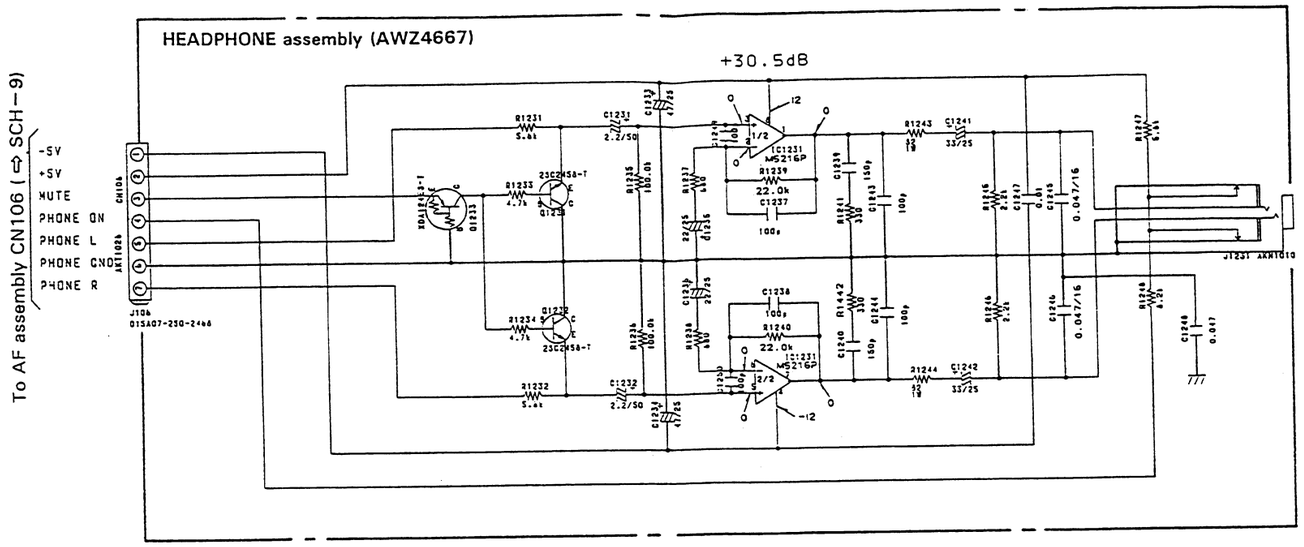


VOLUME assembly (AWZ4654)

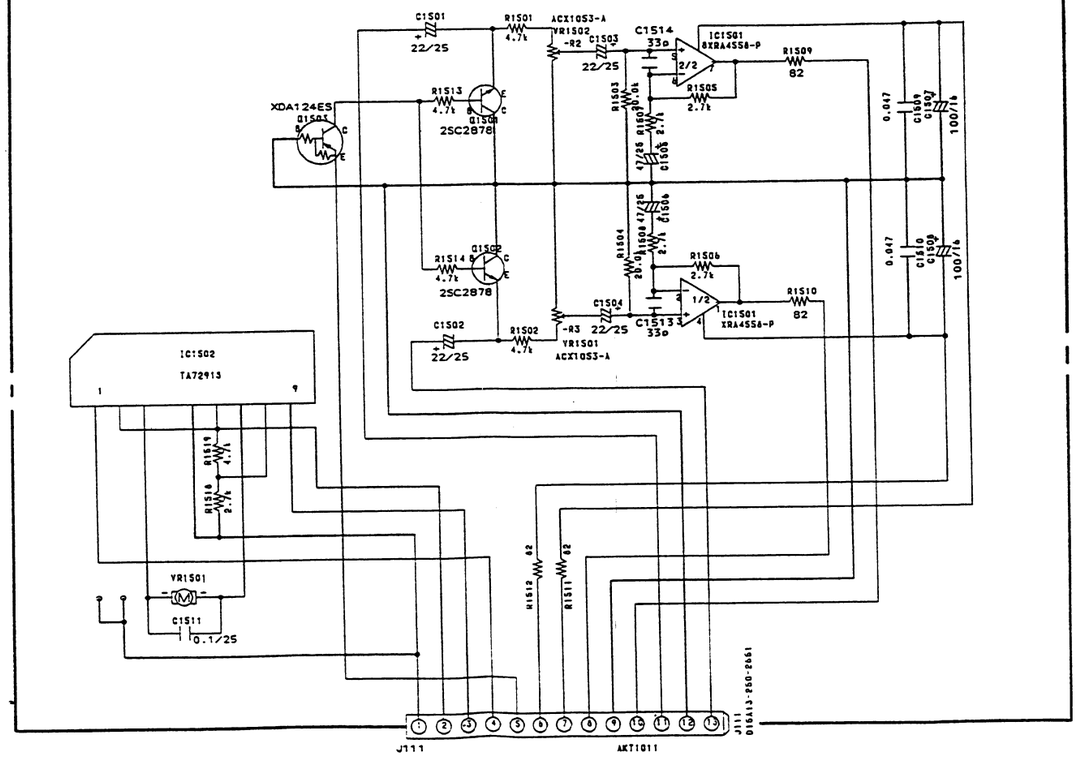


This PCB connection diagram is viewd from the parts mounted side.

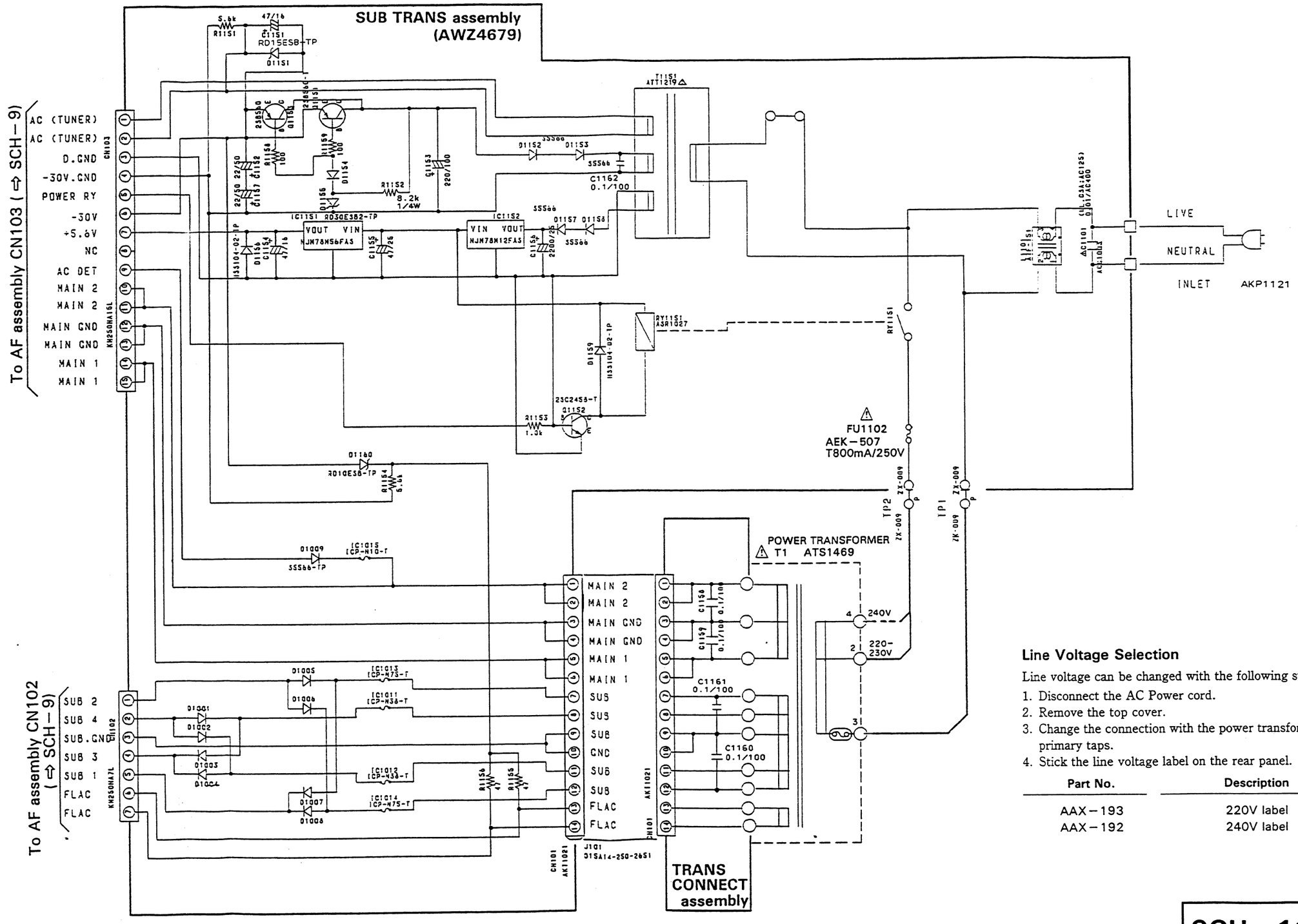
HEADPHONE assembly (AWZ4667)



VOLUME assembly (AWZ4654)



7.3.3 SUB TRANS Assembly and TRANS CONNECT Assembly



Line Voltage Selection

Line voltage can be changed with the following steps.

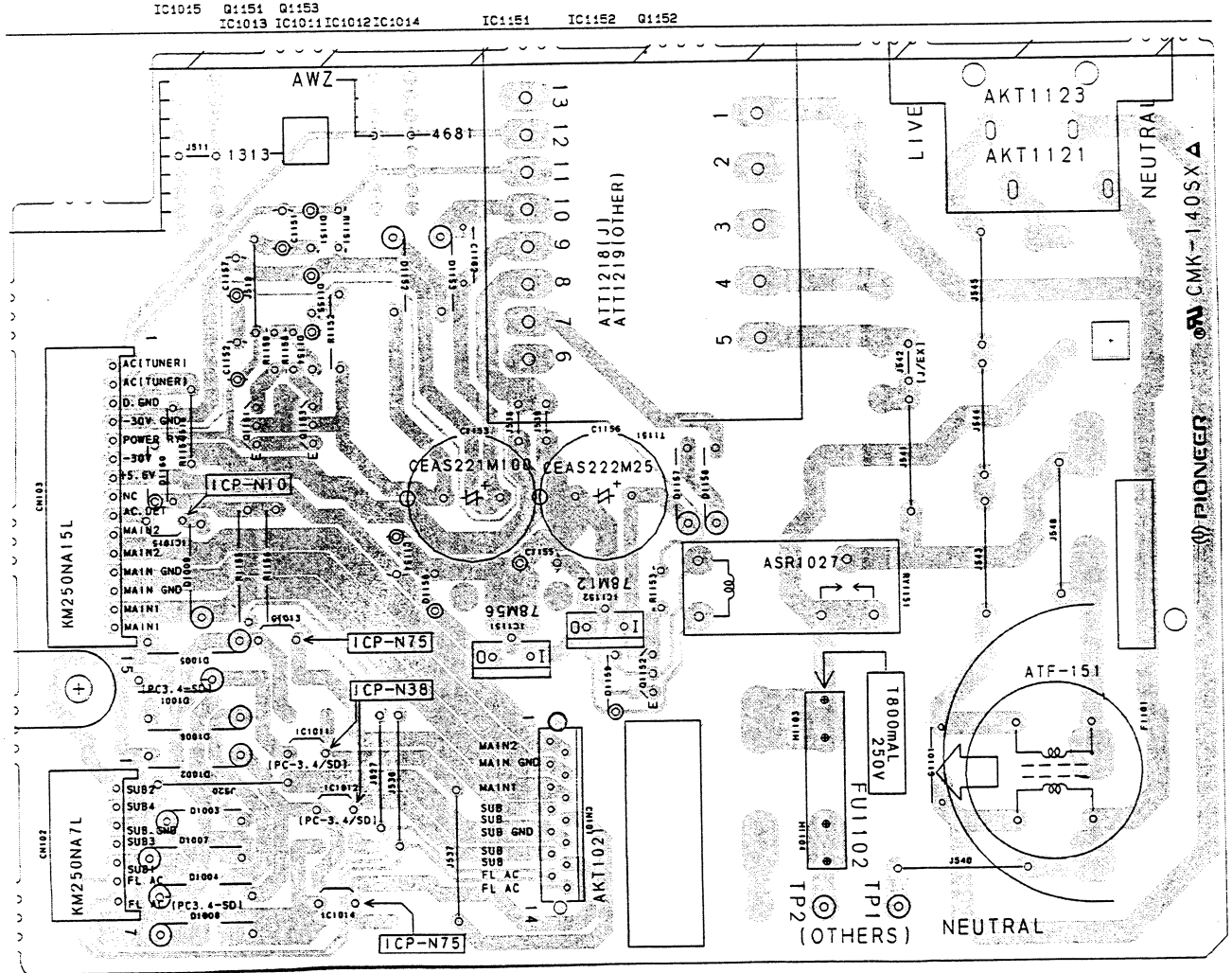
1. Disconnect the AC Power cord.
2. Remove the top cover.
3. Change the connection with the power transformer (T1) primary taps.
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX–193	220V label
AAX–192	240V label

SUB TRANS assembly
TRANS CONNECT assembly

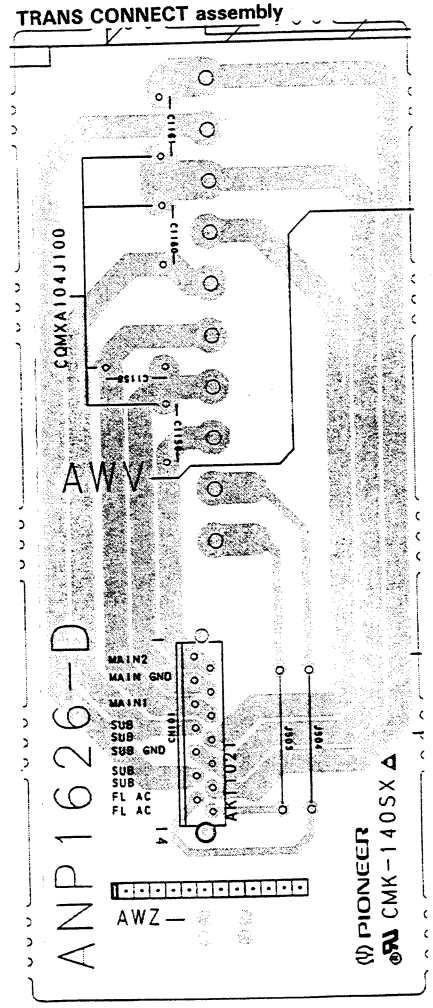
SCH–11

This PCB connection diagram is viewd from the parts mounted side.



SUB TRANS assembly (AWZ4679)

TRANS CONNECT assembly

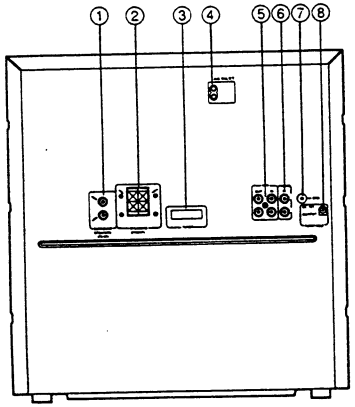


This PCB connection diagram is viwed from the foil side.

8. PANEL FACILITIES

REAR PANEL FACILITIES

XD-J115M/XD-J110



Multi-CD cassette deck amplifier: XD-J115M
CD cassette deck amplifier: XD-J110

① SURROUND SPEAKERS jacks

Connect the surround speaker systems.

NOTE:
Connect a speaker system having a nominal impedance of 16 Ω or more.

② SPEAKERS terminals

L: Connect the left speaker system as seen from the listening position.
R: Connect the right speaker system as seen from the listening position.

NOTE:
Connect a speaker system having a nominal impedance ranging from 8 Ω to 16 Ω.

③ TUNER jacks

Connect the tuner flat cable here.

④ AC INLET jack

Connect the power cord here.

⑤ VCR IN/OUT jacks

IN : Connect to audio output jacks of VCR.
OUT : Connect to audio input jacks of VCR.

⑥ PHONO input jacks

Connect the audio cord of the turntable to these jacks.

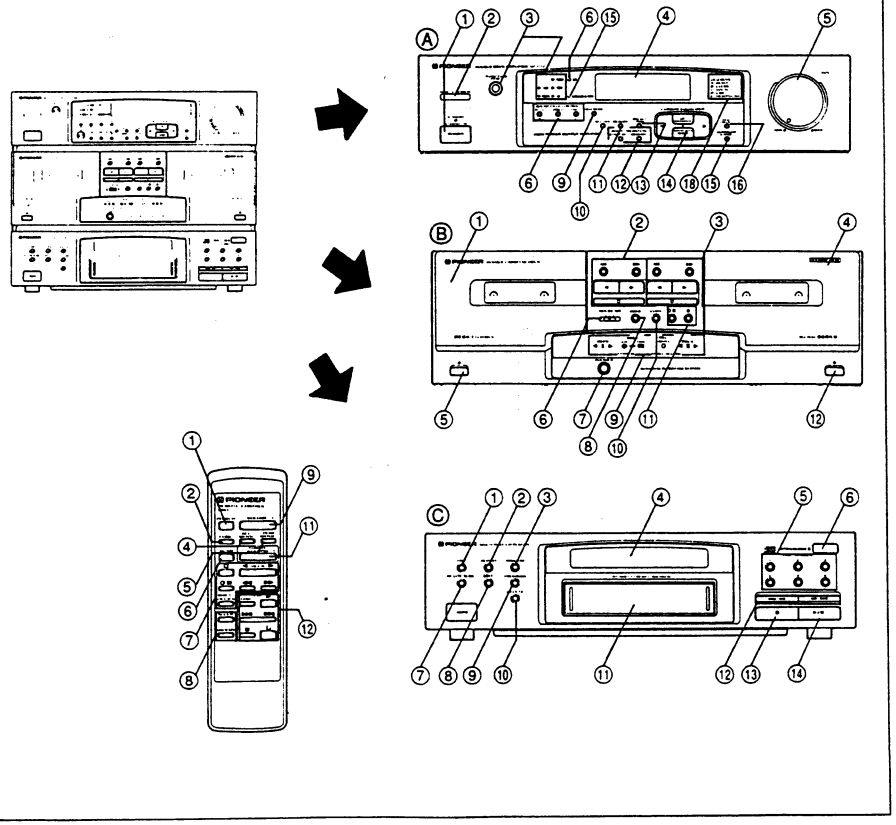
⑦ Ground terminal (GND)

Connect this to the ground terminal on the turntable (except for PL-J210)

⑧ TURNTABLE (DC 12V OUTPUT) jack

This jack supplies power to the turntable PL-J210.
Connect the power supply cord of the turntable to this jack.

[XD-J115M]



FRONT PANEL FACILITIES

Multi-CD cassette deck amplifier: XD-J115M

- This unit has an automatic tape type selector.
- Tapes can be played back on deck I; tapes can be played back and recorded on deck II.
- Sound can be recorded as adjusted by the graphic equalizer (excluding synchro copy).
- Use a TYPE I (normal) or TYPE II (High/CrO_2) tape.

Ⓐ : Amplifier section

① POWER STANDBY/ON switch, STANDBY indicator

This is the switch for electric power.

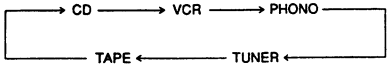
ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.
The unit is in STANDBY when only the STANDBY indicator above the POWER switch is lit.

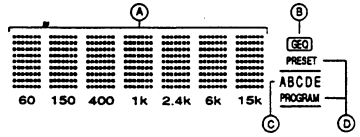
② REMOTE SENSOR window

③ FUNCTION (DEMO) button and indicators

Used to select the desired source. Each time this button is pressed, the source switches as follows. The desired indicator lights.



④ Display section



Ⓐ Visual display of spectrum analyzer and graphic equalizer.
Ⓑ This lights when the GEQ ON/OFF button is on.
Ⓒ Display of the memory being recalled with the GEQ MODE button (A, B, C, D or E lights) or SOUND FIELD CONTROL button (A, B or C lights).
Ⓓ These under lines indicate the memory (PRESET or PROGRAM) that can be recalled with the PRESET/PGM or GEQ MODE button.

⑤ VOL. (Volume) control

⑥ SOUND FIELD CONTROL buttons and indicators

Used for calling the preset memory (MOVIE, DISCO, HALL) of the sound field control and for setting your own original memory (PROGRAM A, B, C). The SFC will light when MOVIE, DISCO, or HALL is called.

⑨ GEQ MODE button

Use to recall preset equalization settings. Also use to program into memory and recall desired sound field settings.

⑩ SFC OFF button

Press to reset the sound field control to no effect.
Turns off SURROUND & WIDE and adjusts GEQ to FLAT.

⑪ MEMORY button

Use to memorize your desired sound field control setting.

⑫ SMART OPERATION buttons

[START/SET]
Use when programming memory and operating SMART OPERATION.
[MEMORY]
Use when programming SMART OPERATION into memory.

⑬ PRESET/PGM button

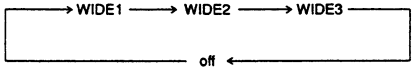
Use to switch between recall of PRESET memory settings and your own original memory settings (PROGRAM) with the GEQ MODE button or SOUND FIELD CONTROL buttons. The memory being recalled is indicated by the indicator in the display section.

⑭ CUSOR EQUALIZER buttons

Use to adjust graphic equalizer settings.
[◄ , ►] : Use these to change the frequency range to be adjusted.
[UP, DOWN] : Use these to adjust the degree of equalization.

⑮ SURROUND & WIDE button and indicator

By turning this switch ON, you can enjoy surround reproduction when surround speakers are used.
By turning this button ON, you can enjoy WIDE reproduction with greater left-right spread when surround speakers are not used.
Each time this button is pressed, WIDE effects switches as follows.



The WIDE effects of the sound intensify in the order of WIDE 1→2→3.
The SURROUND & WIDE indicator will light.

NOTE:
In the case of monaural source, SURROUND & WIDE effects cannot be obtained.

⑯ GEQ ON/OFF button

This switches the graphic equalizer on/off. When it's on, the GEQ indicator in the display section lights.

⑱ GEQ MODE printed indicators

Displays of the preset equalization pattern name being recalled with the GEQ MODE button.

Ⓑ : Cassette deck section

① Deck I cassette door

② Deck I operation buttons

► (PLAY: FWD) : For playing back a tape in the forward mode.
◄ (PLAY: REV) : For playing back a tape in the reverse mode.
■ (STOP) : For stopping the tape.
►► (FAST) : Fast forward in forward mode, rewind in reverse mode. Music Search can also be carried out.
◄◄ (FAST) : Rewind in forward mode, fast forward in reverse mode. Music Search can also be carried out.

③ Deck II operations buttons

Same as Deck I operation buttons ②.

④ Deck II cassette door

⑤ Deck I EJECT button (▲)

⑥ DOLBY* NR switch

Only the Dolby B-type NR for XD-J115M.

•

Manufactured under license from Dolby Laboratories Licensing Corporation.
DOLBY and the double - D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

⑦ PHONES (Head phones) jack

For stereo headphones.

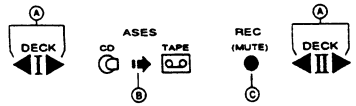
NOTE:
There is no output from the speakers when headphones are plugged into the PHONES jack.

⑧ ASES button

Used for recording a CD on a cassette tape automatically.

NOTE:
- *FINE is the mode when performing CD player EDIT (Computer Allocated Program Editing).*
- *The NORMAL mode provide a blank space of about five seconds between songs.*

⑨ Operation indicators



Ⓐ **Direction (◄, ►):** Indicates direction of tape travel during recording or playback.
Ⓑ **ASES:** Lights when in the ASES mode.
Ⓒ **REC (MUTE):** Lights when in REC or REC mute.

⑩ COPY button

Used for tape copying.
Copying from the deck I tape to the deck II tape at normal recording/playback speed.

⑪ Deck II control buttons

● II (REC PAUSE) : Pressing this button sets recording standby mode. Pressing the play button (◄ or ►) next starts recording. Pressing this button during recording sets Rec pause mode.
Temporarily stops tape travel. Cancels pause mode when pressed again or press the play button.

O (MUTE) : Used for creating a blank space between songs. Pressing this button once creates an unrecorded 4-second space.
Continuing to press the button creates an unrecorded space as long as the time the button is pressed.

⑫ Deck II EJECT button (▲)

Ⓒ : CD player section

① TIME button

Use to select the method for displaying the playing time on the display section.
Each time the button is pressed, the indication changes from TIME, REMAIN (track remain) and REMAIN (disc remain): This will not be displayed during programmed playback to TOTAL in that order.

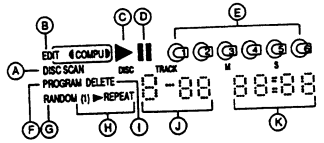
② REPEAT button

Press this button for repeat playback. Pressing the button once, twice or three times will change the repeat mode from single track repeat, to all tracks repeat, and repeat playback cancellation respectirely.

③ RANDOM

Press to begin random playback.

④ Display section



Ⓐ **DISC SCAN** : Lights after pressing the HI-LITE SCAN button.
Ⓑ **EDIT COMPU** : Normally EDIT COMPU is light. When the EDIT button is pressed, ◖ ◗ mark lights up.
Ⓒ ► : Lights during playback.
Ⓓ II : Lights during temporarily interrupted playback.
Ⓔ **C**<DISC symbol> : If a nonexistent disc is searched for, the corresponding disc symbol goes off.
Ⓕ **PROGRAM** : Lights after programming (after program has been memorized).
Ⓖ **RANDOM** : Lights during random playback.
Ⓗ **(1) ►REPEAT** : Lights during repeat playback of one tune. (1) extinguishes during repeat playback of all tunes.
Ⓘ **DELETE** : Lights during delete.
Ⓙ DISC 8 TRACK 88 : Indicates the disc and the track currently being heard.
Ⓚ 88:88 : Displays the minutes and seconds of the elapsed time, total palyback time, and remaining time.

NOTE:
When power is tuned on, the CD player section indicators show different indications depending on the condition (disc loaded or not, etc.) prior to when the power was turned off. This is not a malfunction.

⑤ DISC NUMBER buttons (1—6)

Use to select disc numbers for playback or programming.

⑥ EJECT button (▲)

Press to eject a magazine. When pressed, any magazine inside is expelled forward.

⑦ HI-LITE SCAN button

If this button is pressed while the unit is stopped, the first 10 seconds after the first minute of the first tune on each of the discs from DISC 1 to DISC 6 are played back in sequence (DISC SCAN). If this button is pressed during DISC SCAN, the first ten seconds after the first minute of all the tunes on each of discs from DISC 1 to DISC 6 are played back (TRACK SCAN).
To reset the start-up time of HI-LITE SCAN, press the HI-LITE SCAN button during normal playback.
Enter the time of current playback in memory and 10-second passages on all the remaining tracks are played back at the memorized time.

⑧ EDIT button

Press this button and designate the number of minutes of tape for recording with the Manual/Track search button. The CD player then selects tunes and programs them automatically for recording so that the unrecorded portion at the end of the tape is at the shortest distance.

⑨ PROGRAM button

Use to program a sequence of tracks.
- When this button is pressed, the "PROGRAM" indicator will light. Select a desired disc and track with DISC NUMBER buttons and Manual/Track search buttons. Tunes will be added to the order in which they are specified.
- If only a DISC NUMBER button is pressed, all tracks on the specified disc will be added to the program. The letters "AL" will appear on the indicator.

⑩ DELETE button

Pressing this button and then selecting the discs with the DISC NUMBER buttons (1 through 6) of selecting the tracks with the Manual/Track search buttons will result in the selected discs and tracks not being played even when the PLAY/PAUSE button is pressed.

⑪ Magazine insertion slot

⑫ Manual/Track search buttons (⏮ · ◄◄ , ►► · ⏭)

These buttons are used for track search and manual search during normal playback, programmed playback or pause. When these buttons are pressed, either the previous tune or the next tune is established. If they are kept depressed, either fast forward or reverse is established, depending upon the direction of pressing.

⑬ STOP button (■)

Press to stop playback. When pressed, the player goes into the stop mode and all operations stop.
[LAST DISC MEMORY]
If no program had been input when the STOP button (■) is pressed to stop the disc, the number of the disc that was just played will be displayed. (the song number is "01").
When the STOP button (■) is pressed another time, the DISC NUMBER displayed will change to "1".
If a program had been input, the disc will be stopped with the DISC NUMBER of the first step and song number displayed.

⑭ PLAY/PAUSE button (►/II)

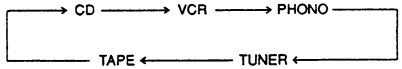
During stop, press this button to start playback. During playback, press this button to pause.
When this button is pressed during highlight scanning, the highlight scan will be released, and the disc will be played normally.

Remote control unit

① POWER button

② FUNCTION button

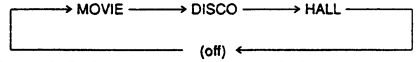
The amplifier function automatically switches to the music source being operated when you press the CD playback (►) cassette deck playback (◄, ►) or tuner station controls.
Use to switch the input.
Each time this button is pressed, it is switches as follows:



The desired indicator lights.

④ SFC MODE button

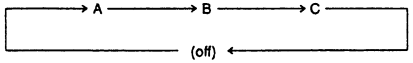
Use to select one of the preset sound fields. Each time the button is pressed, one of the preset sound fields will be selected, in the following order:



Turn off SURROUND & WIDE and adjusts GEQ to FLAT.

⑤ PGM MODE button

This button is used when selecting one of your own personally created sound fields. Each time the button is pressed, one of the sound fields will be selected, in the following order:



Turn off SURROUND & WIDE and adjusts GEQ to FLAT.

⑥ SCAN button

Press to perform automatic scan of the broadcast stations preset in the unit's memory.

⑦ Deck operation buttons.

◄, ► : Begins playback
◄◄, ►► : Fast forward or rewind
■ : Stop
● II : Pressing this button sets recording standby mode. Pressing the play button (◄ or ►) next starts recording. Pressing this button during recording sets REC PAUSE mode. Temporarily stops tape travel. Cancels pause mode press the play button.
SHIFT TAPE I : To operate deck I, press the desired deck operation while pressing this button.

⑧ Timer operation buttons

SLEEP : Sets the sleep timer.
SNOOZE : Turns off power if pressed after timer playback begins. Timer playback begins again approx. 5 minutes later.
WAKE-UP : Timer playback setting/cancellation can be performed when the timer playback time has been set.

⑨ VOLUME + (UP)/– (DOWN) buttons

When pressed, VOLUME on the amplifier is actually moved by a motor.

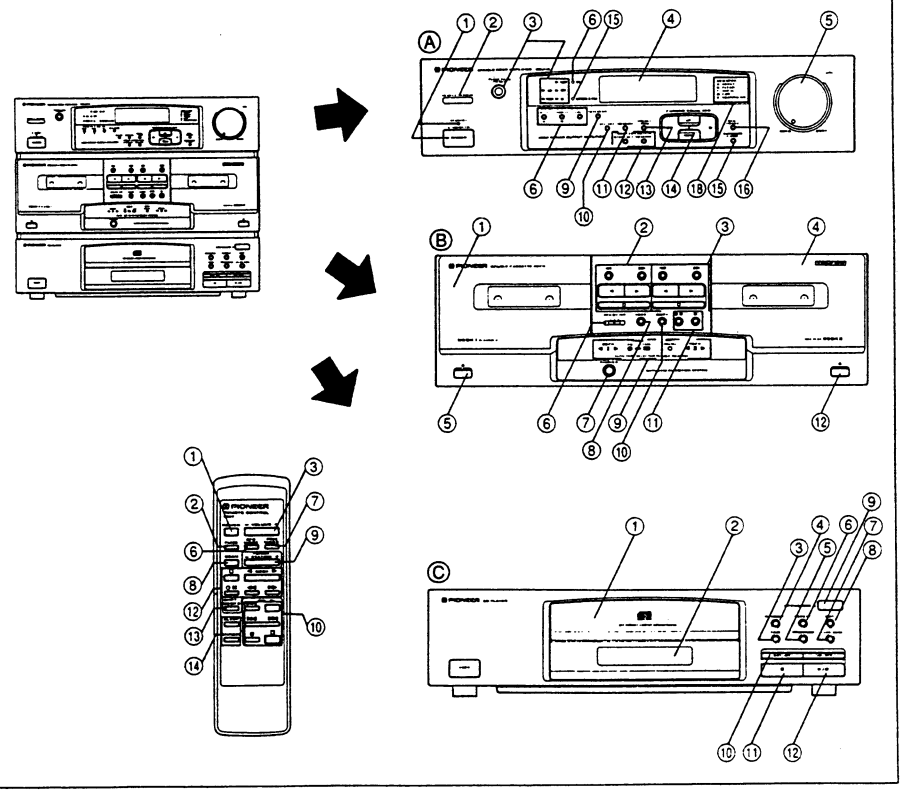
⑪ TUNER STATION – (DOWN), + (UP) buttons

Used for locating stations. (see page 20)
– (DOWN) : Stations change in order in the downward direction.
+ (UP) : Stations change in order in the upward direction.

⑫ CD operation buttons

► : Play
DISC : DISC selection
■ : Stop
II : Pause (To release, press PAUSE button once more, press PLAY button, or press the PLAY/PAUSE button of the main unit.)
⏮, ⏭ : Track search

XD-J110



FRONT PANEL FACILITIES

CD cassette deck amplifier: XD-J110

- This unit has an automatic tape type selector.
- Tapes can be played back on deck I; tapes can be played back and recorded on deck II.
- Sound can be recorded as adjusted by the graphic equalizer (excluding synchro copy).
- Use a TYPE I (normal) or TYPE II (High/CrO_2) tape.

Ⓐ : Amplifier section

① POWER STANDBY/ON switch/STANDBY indicator

This is the switch for electric power.

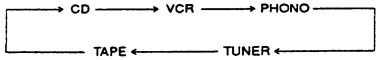
ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.
The unit is in STANDBY when only the STANDBY indicator above the POWER switch is lit.

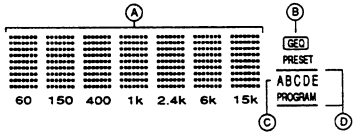
② REMOTE SENSOR window

③ FUNCTION (DEMO) button and indicators

Used to select the desired source. Each time this button is pressed, the source switches as follows. The desired indicator lights.



④ Display section



Ⓐ Visual display of spectrum analyzer and graphic equalizer.
Ⓑ This lights when the GEQ ON/OFF button is on.
Ⓒ Display of the memory being recalled with the GEQ MODE button (A, B, C, D or E lights) or SOUND FIELD CONTROL button (A, B or C lights).
Ⓓ These under lines indicate the memory (PRESET or PROGRAM) that can be recalled with the PRESET/PGM or GEQ MODE button.

⑤ VOL. (Volume) control

⑥ SOUND FIELD CONTROL buttons and indicator (MOVIE/A, DISCO/B, HALL/C)

Used when calling the preset memory (MOVIE, DISCO, HALL) of sound field control and setting your own original memory (PROGRAM-A, B, C).
The SFC and SURROUND & WIDE indicators will light when MOVIE, DISCO, or HALL is called.

⑨ GEQ MODE button

Use to recall preset equalization settings. Also use to program into memory desired sound field settings.

⑩ SFC OFF button

Press to reset the sound field control to no effect.
Turns off SURROUND & WIDE and adjusts GEQ to FLAT.

⑪ MEMORY button

Use to memorize your desired sound field control setting.

⑫ SMART OPERATION buttons

[START/SET]
Use when programming memory and operating SMART OPERATION.
[MEMORY]
Use when programming SMART OPERATION into memory.

⑬ PRESET/PGM (PROGRAM) button

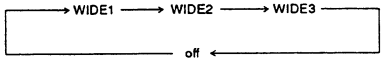
Use to switch between recall of PRESET memory settings and your own original memory settings (PROGRAM) with the GEQ MODE button or SOUND FIELD CONTROL buttons. The memory being recalled is indicated by the indicator in the display section.

⑭ CUSOR EQUALIZER buttons

Use to adjust graphic equalizer settings.
[◄, ►] : Use these to change the frequency range to be adjusted.
[UP, DOWN] : Use these to adjust the degree of equalization.

⑮ SURROUND & WIDE button and indicator

By turning this switch ON, you can enjoy surround reproduction when surround speakers are used.
By turning this button ON, you can enjoy WIDE reproduction with greater left-right spread when surround speakers are not used.
Each time this button is pressed, WIDE effects switches as follows.



The WIDE effects of the sound intensify in the order of WIDE 1→2→3.
The SURROUND & WIDE indicator will light.

NOTE:
In the case of monaural source, SURROUND & WIDE effects cannot be obtained.

⑯ GEQ ON/OFF button

This switches the graphic equalizer ON/OFF. When it's ON the GEQ indicator in the display section lights.

NOTE:
Sound comes from the surround speakers regardless of whether this button is on or off.

⑱ GEQ MODE printed indecations

Displays of the preset equalization pattern name being recalled with the GEQ MODE button.

XD-J110

Ⓑ : Cassette Deck Section

① Deck I cassette door

② Deck I operation buttons

► (PLAY: FWD) : For playing back a tape in the forward mode.
◄ (PLAY: REV) : For playing back a tape in the reverse mode.
■ (STOP) : For stopping the tape.
►► (FAST) : Fast forward in forward mode, rewind in reverse mode. Music Search can also be carried out.
◄◄ (FAST) : Rewind in forward mode, fast forward in reverse mode. Music Search can also be carried out.

③ Deck II operations buttons

Same as Deck I operation buttons ②.

④ Deck II cassette door

⑤ Deck I EJECT button (⏏)

⑥ DOLBY* NR switch

Only the Dolby B-type NR for XD-J110.

*
- *Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.*
- *"DOLBY" and the double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.*

⑦ PHONES (Headphones) jack

For stereo headphones.

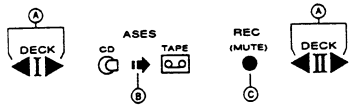
NOTE:
There is no output from the speakers when headphones are plugged into the PHONES jack.

⑧ ASES button

Used for recording a CD on a cassette tape automatically.

NOTE:
- *FINE is the mode when performing CD player EDIT (Computer Allocated Program Editing).*
- *The NORMAL mode provides a blank space of about five seconds between songs.*

⑨ Operation indicators



Ⓐ Direction (◄, ►):
Indicates direction of tape travel during recording or playback.
Flashes slowly in Pause mode.
Flashes rapidly during Music Search (MS).

Ⓑ ASES:
Lights when in the ASES mode.

Ⓒ REC (MUTE):
Lights when it flashes during tape copying.

⑩ COPY button

Used for tape copying.
Copying from the deck I tape to the deck II tape at normal recording/playback speed.

⑪ Deck II CONTROL buttons

● II (REC PAUSE) : Pressing this button sets recording standby mode. Pressing the PLAY button (◄ or ►) next starts recording. Pressing this button during recording sets REC PAUSE mode.
Temporarily stops tape travel. Cancels pause mode when pressed again or press the PLAY button.

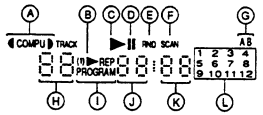
O (MUTE) : Used for creating a blank space between songs. Pressing this button once creates an unrecorded 4-second space.
Continuing to press the button creates an unrecorded space as long as the time the button is pressed.

⑫ Deck II EJECT button (⏏)

Ⓒ : CD player section

① Disc tray

② Display section



Ⓐ ◖◗ : Display when Compu PGM editing is set or used.
Ⓑ (1) ► REP : Lights during repeat playback of single track or all tracks.
Ⓒ ► : Lights during playback.
Ⓓ II : Lights during temporarily interrupted playback.
Ⓔ RND : Lights during random playback.
Ⓕ SCAN : Lights during HI-LITE scan playback.
Ⓖ A/B (music calendar) : TAPE SIDE A/TAPE SIDE B
After editing, the track numbers that can be recorded on the A (B) side of the tape will light.
Ⓗ TRACK (figure) : Displays the current track number (during normal playback and programmed playback) or the track being programmed (during programmed operation).
① PROGRAM : Lights after programming (after program has been memorized).
Ⓙ Minutes (figure) : Displays the minutes of the elapsed time, total playback time, and remaining time.
Ⓚ Seconds (figure) : Displays the seconds of the elapsed time, total playback time, and remaining time.
Ⓛ 1–12 (music calendar) : Displays the track numbers.

NOTE:
- *When power is turned ON, the CD player section indicators show different indications depending on the condition (disc loaded or not, etc.) prior to when the power was turned off. This is not a malfunction.*

③ TIME button

This button selects the display mode. Each time the button is pressed, the display changes from Time, Remain, to Total in that order.

- **Time** : Displays the track number of the track being played (TRACK) and the elapsed time (minutes and seconds).
- **Remain** : Displays the remaining time on the track being played. When the TIME button is pressed again, the remaining time on the disc being played will be displayed.
- **Total** : Displays the total number of tracks on the disc (TRACK) and the total playback time will be displayed. During playback, the display goes on for about 5 seconds before changing to the time display.

④ RANDOM Play button

Press to begin random playback.

⑤ PROGRAM button

Use to program a sequence of tracks.
- Press this button after selecting a desired track with track search button. Tunes will be added to the program in the order in which they are specified.

⑥ REPEAT button

Press this button for repeat playback. Pressing the button once, twice, or three times will change the repeat mode from single track repeat, all tracks repeat, to repeat playback cancellation, respectively.

⑦ HI-LITE SCAN button

10 second passages are played starting from the first minute of each track on the CD, in sequence, beginning with the first track.
To set the point in the tracks you want to scan, press this button during playback. The elapsed time is memorized, and then ten second passages of all the remaining tracks are played at the memorized time.

⑧ EDIT button

Press this button, and with the Manual/Track search buttons (⏮ • ◄◄, ►► • ⏭) specify the length of tape you want to use for recording. Before recording, the CD player automatically programs the order of tracks to minimize the amount of unused tape at the end of a selected tape length.

⑨ OPEN/CLOSE button

Press when you wish to eject a disc. Each time the button is pressed, the tray is alternately pushed out or pulled in.

⑩ MANUAL/TRACK SEARCH buttons (⏮ • ◄◄, ►► • ⏭)

Use these buttons to perform track search and manual search during regular playback, programmed playback, or during pause.
Press a button to skip to the previous or the next track. You will continue moving to the next track in the direction of the button you pressed as long as you continue pressing the button.
Keep the button depressed until you come to the part you want to listen to.

⑪ STOP button (■)

Press to stop playback. When pressed, the player goes into stop mode and all operations stop.
Press to clear a program. When pressed during stop mode, the program stored in memory is cleared.

⑫ PLAY/PAUSE button (► / II)

Press to begin playback.
When playing back, press to temporarily interrupt playback. When pressed again, the pause mode is canceled and playback resumes.

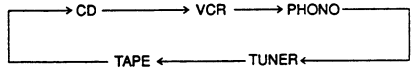
XD-J110

Remote control unit

① POWER button

② FUNCTION button

The amplifier function automatically switches to the music source being operated when you press the CD playback (►) cassette deck playback (◄, ►), or tuner station controls.
Used to switch the input. Each time this button is pressed, it switches as follows.



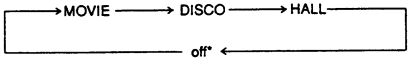
The desired indicator lights.

③ VOLUME + (UP)/– (DOWN) buttons

When pressed, VOLUME on the amplifier is actually moved by a motor.

⑥ SFC MODE button

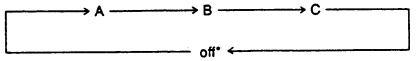
Use to select one of the preset sound fields. Each time the button is pressed, one of the preset sound fields will be selected, in the following order:



* Turn off SURROUND & WIDE and adjusts GEQ to FLAT.

⑦ PGM (PROGRAM) MODE button

This button is used when selecting one of your own personally created sound fields. Each time the button is pressed, one of the sound fields will be selected, in the following order:



* Turn off SURROUND & WIDE and adjusts GEQ to FLAT.

⑧ SCAN button

Use to select the display mode (frequency mode or station mode).

⑨ TUNER STATION – (DOWN), + (up) buttons

- Used for locating stations.

+: Stations change in order in the upward direction.
–: Stations change in order in the downward direction.

⑩ CD operation buttons

► : PLAY
DISC : This button does not function.
■ : STOP
II : PAUSE
⏮, ⏭ : TRACK SEARCH

⑫ TAPE II operation buttons

[For XD-J110]:
Same as Deck I operation buttons and Deck II control buttons on the CD cassette deck amplifier (Except for MUTE).

●(REC): To set to recording standby mode. The REC indicator lights and the direction indicators (◄ and ►) flash. Recording begins when you press the PLAY button (◄ or ►).
II(PAUSE): Temporarily stops tape travel. Cancels pause mode when pressed again or press the PLAY button.

⑬ SHIFT TAPE I button

To operate Deck I, press the desired deck operation while pressing this button. ●II (REC PAUSE) button does not function.

⑭ Timer operation buttons

SLEEP: Sets the sleep timer.
WAKE-UP: Timer playback setting/cancellation can be performed when the timer playback time has been set.

SNOOZE: Turns off power if pressed after timer playback begins. Timer playback begins again approx. 5 minutes later.

9. SPECIFICATIONS

Multi CD double deck amplifier: XD-J115M

Amplifier Section

[XD-J115M]

Music power (DIN) ..... 60W+60W (1 kHz, T.H.D. 1%, 8Ω)
Continuous Power Output (DIN) ..... 34W+34W
(1 kHz T.H.D. 1%, 8Ω)

Graphic equalizer frequency band ..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz, ±7 dB
S/N (DIN, continuous power/50 mW)
PHONO ..... 68 dB/60 dB
Total Harmonic Distortion (40 Hz to 20,000 Hz, 22.5W, 8Ω)* ..... No more than 0.2%
Input sensitivity/impedance
PHONO (MM) ..... 2.5 mV/47 kΩ
VCR ..... 150 mV/25 kΩ

Double Deck Section

Systems ..... 4 track, 2-channel stereo
Heads ..... Recording/playback head x 1
Erasing head x 1
Playback head x 1
Motor ..... DC servo 2 speed motor x 2
Wow and Flutter ..... No more than 0.09% (W.PEAK)
Fast Winding Time ..... Approximately 105 seconds (C-60 tape)
Frequency Response (–20 dB recording):
Type I (Normal) tape ..... 35 Hz to 14,000 Hz ±6 dB (EIAJ)
Type II (HIGH/CrO2) tape ..... 35 Hz to 15,000 Hz ±6 dB (EIAJ)
Signal-to-Noise ratio
Dolby NR OFF ..... 56 dB
Noise Reduction Effect
Dolby B-type NR ON ..... More than 5 dB (at 5 kHz)

CD Section

Type ..... Compact disc digital audio system
Frequency response ..... 4 Hz—20 kHz
Number of channels ..... 2 channels (stereo)

Furnished Parts

Operating Instructions 1
Remote Control Unit 1
Dry Cell Batteries 2
Six-Compact disc-Magazine 1
Power cord 1

Miscellaneous

Power requirements ..... a.c. 220 Volts—, 50/60 Hz
Power Consumption 275W
Dimensions ..... 360 (W) x 300.5 (H) x 344 (D) mm
Weight (without package) ..... 10 kg

The Magazine Type Multi-Play CD Players with mark and the Magazines with the same mark are compatible for 5-inch (12 cm) discs.

CD double deck amplifier: XD-J110

Amplifier Section

[XD-J110]
Music Power (DIN) ..... 60W+60W (1 kHz T.H.D. 1%, 8Ω)
Continuous Power Output ..... 34W+34W
(1 kHz T.H.D. 1%, 8Ω)

Graphic equalizer frequency band ..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz, ±7 dB
S/N (DIN, continuous power/50mW)
PHONO 68dB/60dB
Total Harmonic Distortion (40 Hz to 20,000 Hz, 22.5W, 8Ω)* ..... No more than 0.2%
Input sensitivity/impedance
PHONO (MM) ..... 2.5 mV/47 kΩ
VCR ..... 150 mV/22 kΩ

Double Deck Section

Systems ..... 4 track, 2-channel stereo
Heads ..... Recording/playback head x 1
Erasing head x 1
Playback head x 1
Motor ..... DC servo 2 speed motor x 2
Wow and Flutter ..... No more than 0.09% (W.PEAK)
Fast Winding Time ..... Approximately 105 seconds (C-60 tape)
Frequency Response (–20 dB recording):
Type I (Normal) tape ..... 35 Hz to 14,000 Hz ±6 dB (EIAJ)
Type II (HIGH/CrO2) tape ..... 35 Hz to 15,000 Hz ±6 dB (EIAJ)
Signal-to-Noise ratio
Dolby NR OFF ..... 56 dB
Noise Reduction Effect
Dolby B-type NR ON ..... More than 5 dB (at 5 kHz)

CD Section

Type ..... Compact disc digital audio system
Frequency response ..... 4 Hz—20 kHz
Number of channels ..... 2 channels (stereo)

Furnished Parts

Operating Instructions 1
Remote Control Unit 1
Dry Cell Batteries 2
Power cord 1

Miscellaneous

Power requirements ..... a.c. 220 Volts—, 50/60 Hz
Power Consumption 275W
Dimensions ..... 360 (W) x 300.5 (H) x 344 (D) mm
Weight (without package)
XD-J110 ..... 9kg

- *Specifications and design subject to possible modification without notice due to improvement.*
- Measured By Audio Spectrum Analyzer.