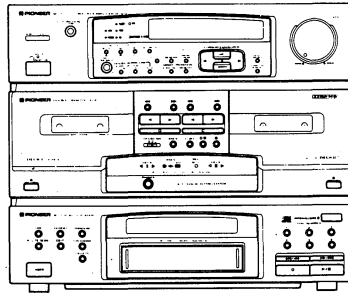


# Service Manual



The Art of Entertainment



ORDER NO.  
ARP2649

## MULTI CD DOUBLE DECK AMPLIFIER

# XD-J215M

## CD DOUBLE DECK AMPLIFIER

# XD-J210

XD-J215M AND XD-J210 HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	XD-J215M	XD-J210		
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-J215M/HE, HB and HEWZIW ; XD-J210/HE, HB and HEWZIW.
- For the following : XD-J215M/HB and HEWZIW ; XD-J210/HB and HEWZIW, refer to page 130.
- 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.

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DG JAN. 1993

## 1. SAFETY INFORMATION

(FOR EUROPEAN MODEL ONLY)

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

**ADVERSEL:**  
USYNLIG LASERSTRÅLING VED ÅBNING NÄR 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  
varoituserkki

**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.

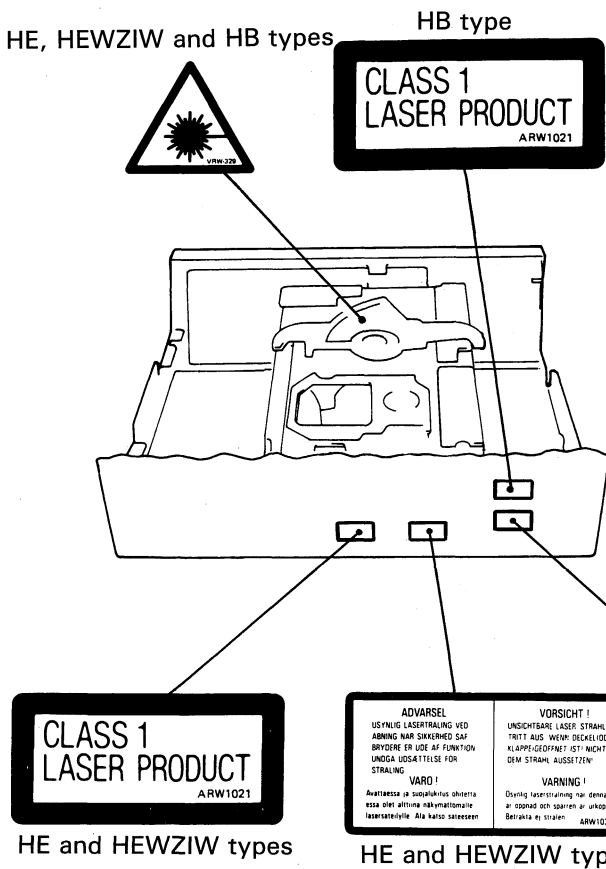


LASER  
Picture 1  
Warning sign for  
laser radiation

**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

### LABEL CHECK (MULTI MAGAZINE type)



### Additional Laser Caution

- 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).
- 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.

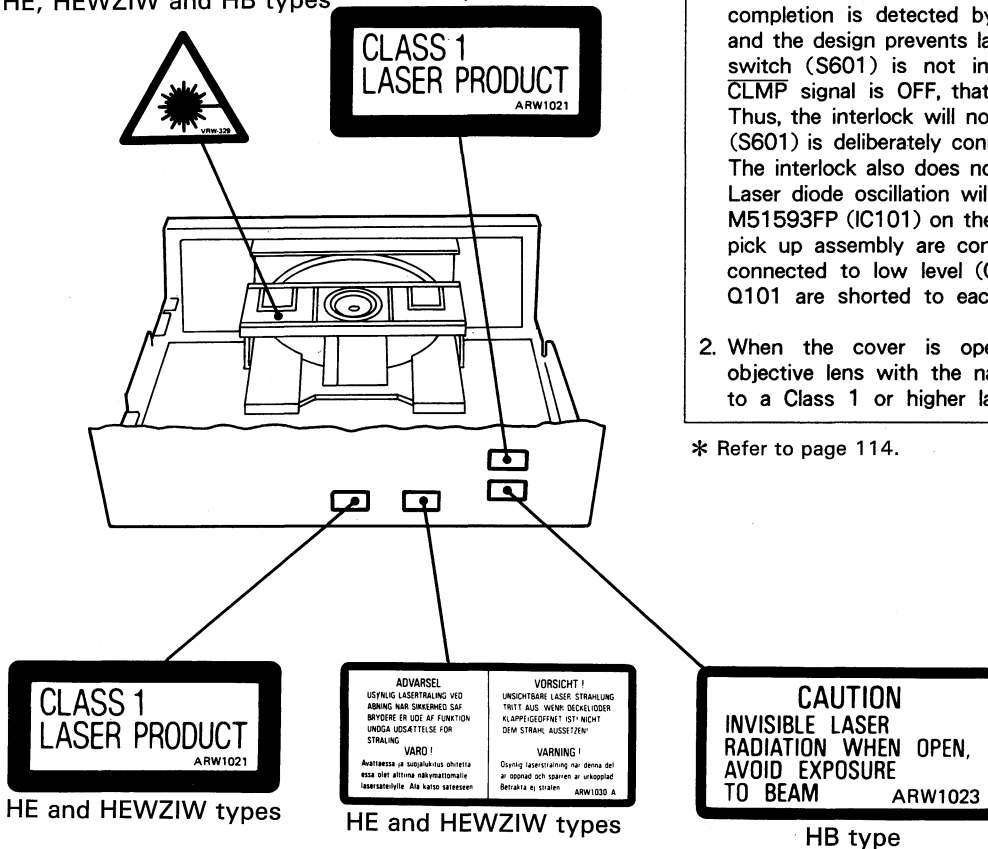
\*92M1A

\* Refer to page 105.

## 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 CLMP terminal side (when 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 114.

## 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 er angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anvisning.

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  $\triangle$  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-J215M AND XD-J210)

#### 2.1.1 Exterior (1/2)

#### Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
$\triangle$	1	POWER TRANSFORMER (T)	ATS1467		26	AF ASSEMBLY	AWZ4648
$\triangle$	2	FUSE (T1A/250V, FU1102)	AEK-508		27	VOLUME ASSEMBLY	AWZ4655
	3	.....			28	SURROUND ASSEMBLY	AWM1445
	4	REAR PANEL (MTL)	ANC2008	NSP	29	TRANS CONNECT ASSEMBLY	AWZ4672
	5	HEAT SINK (AL)	ANH1407		30	SUB TRANS ASSEMBLY	AWZ4678
	6	PLATE L	ANG1536		31	NYLON RIVET	AEC1160
	7	PLATE R	ANG1537	NSP	32	NAME PLATE	AAL2014
NSP	8	PLATE	ANG1561			(For XD-J215M)	
NSP	9	HOLDER	ANG1600	NSP	32	NAME PLATE	AAL2011
NSP	10	DUMMY JACK	ANG1736			(For XD-J210)	
	11	HEAT SINK HOLDER (MTL)	ANG1777		33	MICA SHEET	AEP-313
	12	PCB HOLDER B (MTL)	ANG1779				
	13	PCB HOLDER (MTL)	ANG1838				
NSP	14	BINDER	AEC-093				
	15	NYLON RIVET	AEC-525				
	16	BARRIER (PVC)	AEC1504				
	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	MIC KNOB	AAB1339				
	25	BONNET CASE (MTL)	ANE1390				



1

2

3

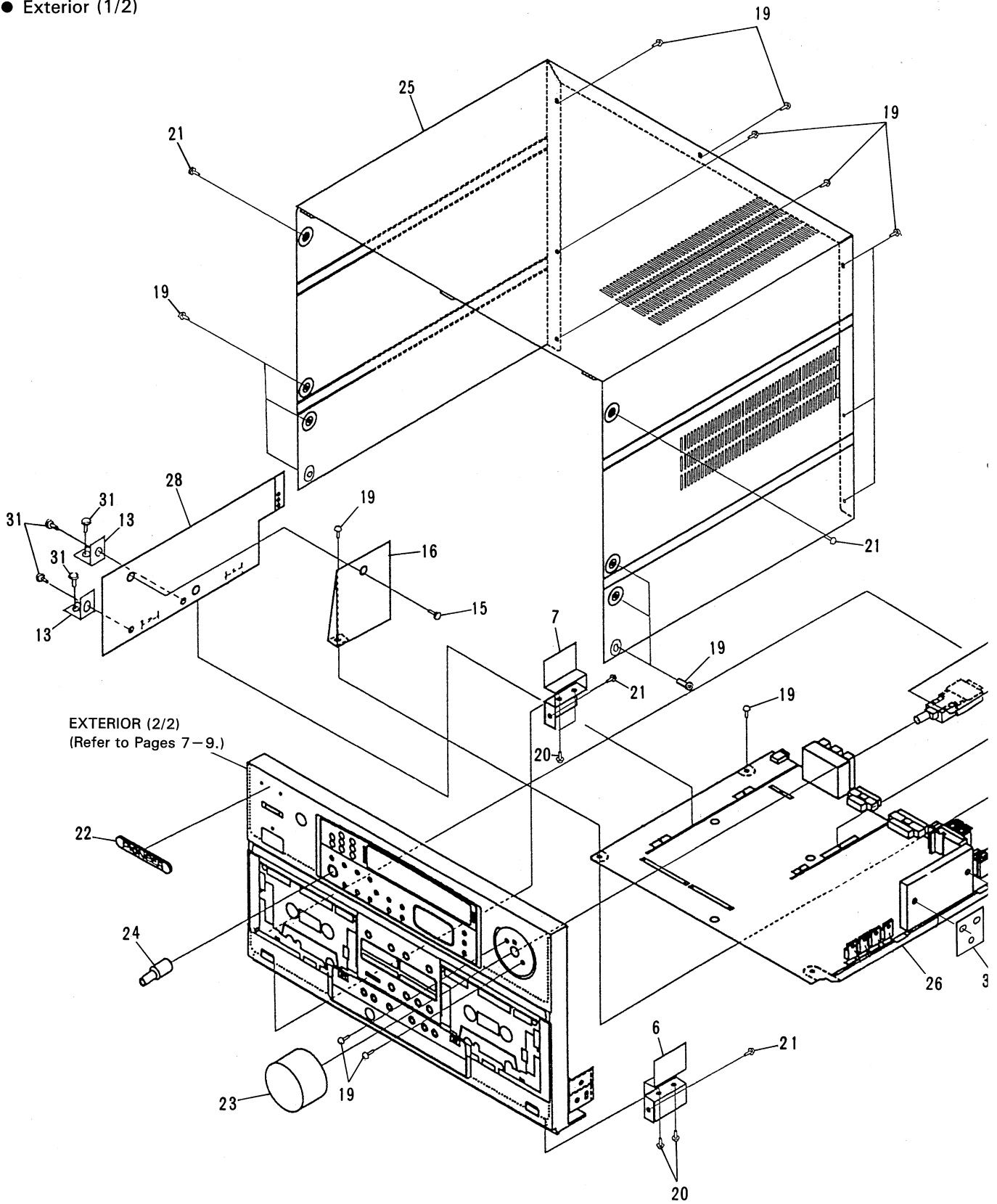
● Exterior (1/2)

A

B

C

D



EXTERIOR (2/2)  
(Refer to Pages 7-9.)

**NOTE : Screws adjacent to the front panel are used for**

1

2

3

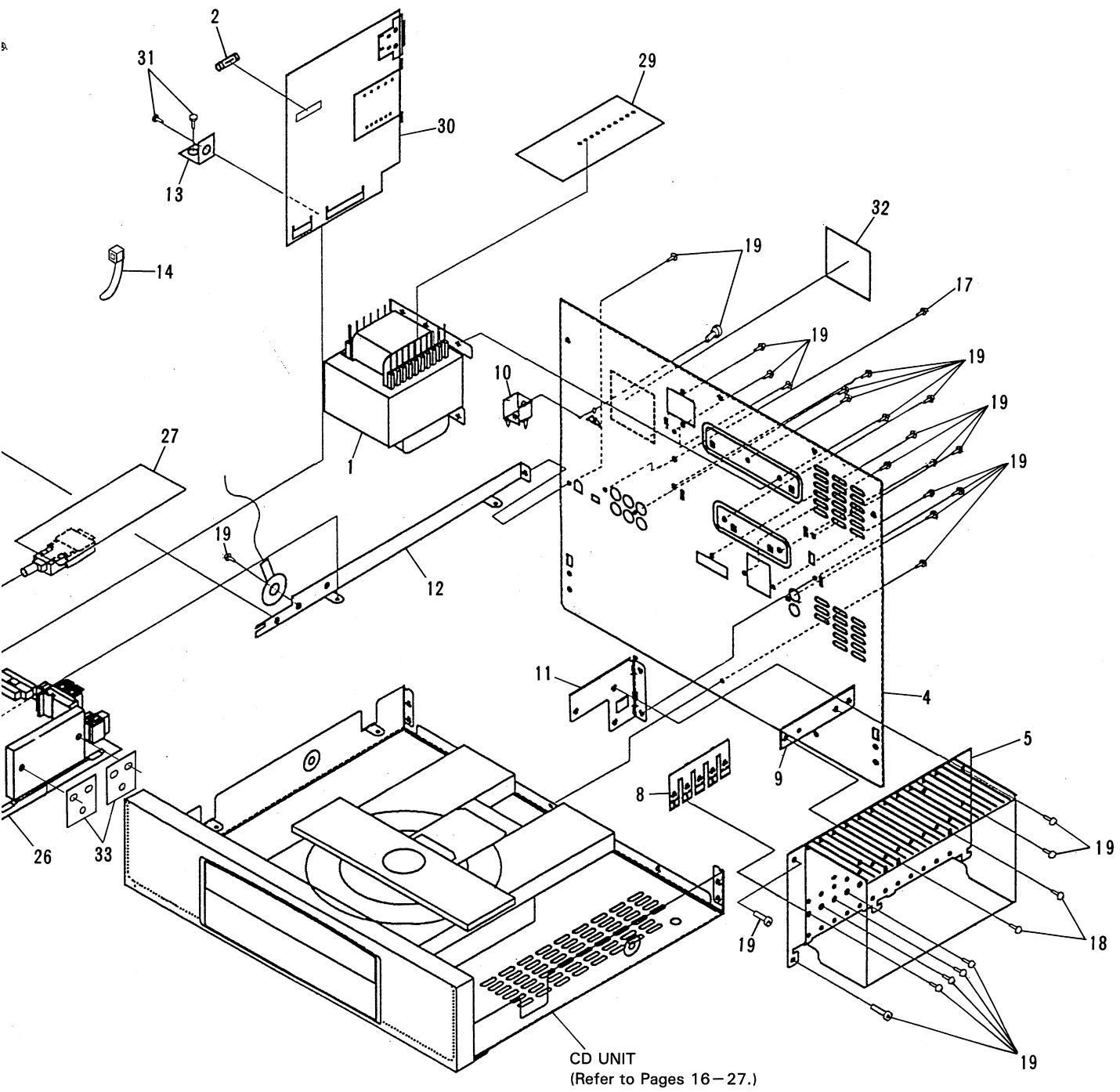
# XD-J215M, XD-J210

A

B

C

D



CD UNIT  
(Refer to Pages 16-27.)

Arrows adjacent to ▼ mark on the product used for disassembly.

# XD-J215M, XD-J210

## 2.1.2 Exterior (2/2)

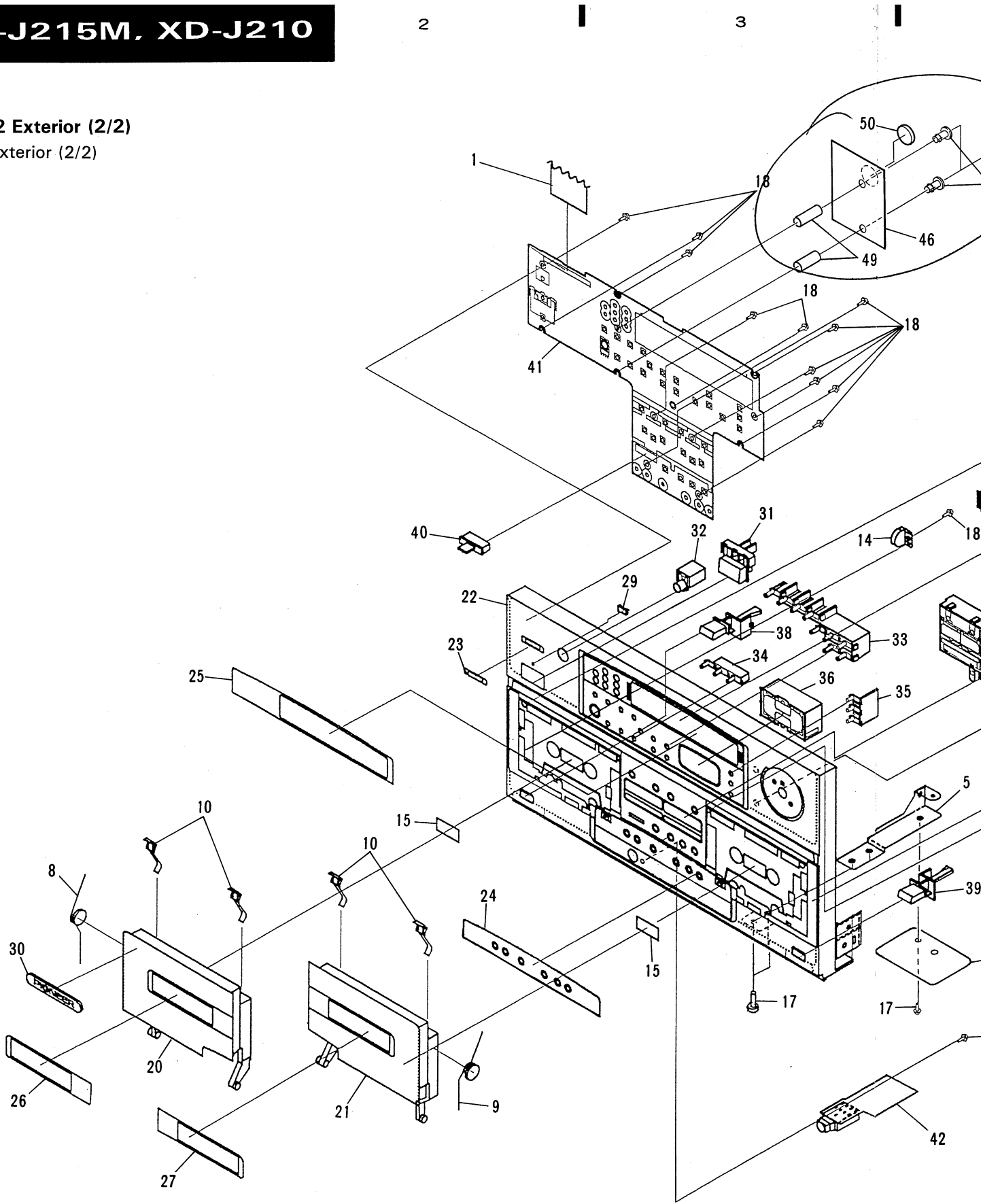
### ● Exterior (2/2)

A

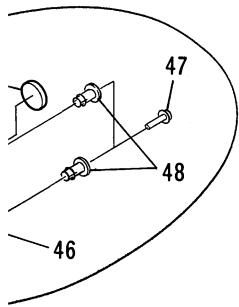
B

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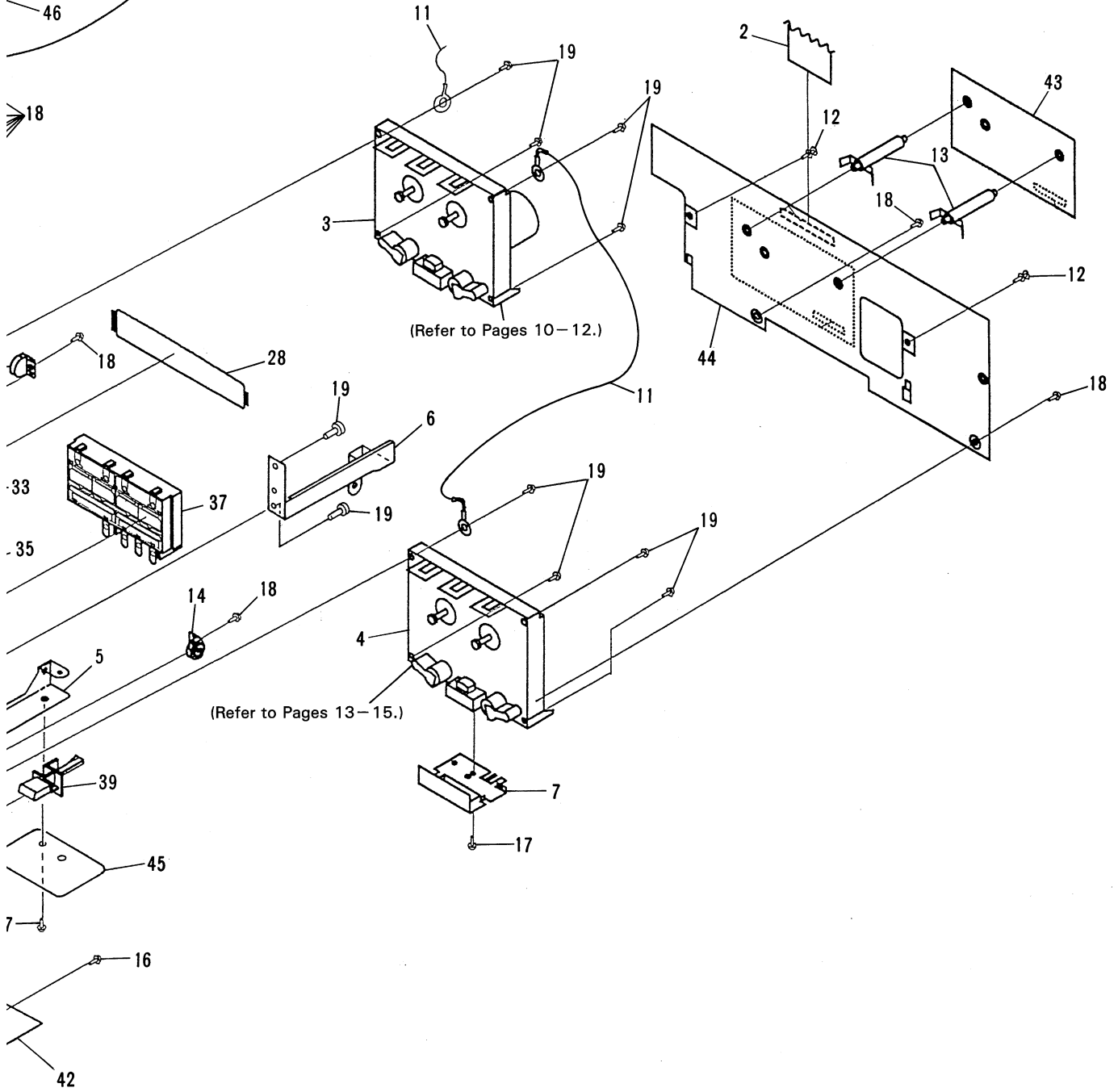






SI-A48019

18



A

B

C

D

**Parts list**

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
<del>△</del> NSP	1	FLAT CABLE (J112) <del>(SI-A47083)</del>	ADD1112		31	BUTTON (POWER)	AAD2370
△	2	FLAT CABLE (J105)	ADD1116		32	BUTTON (FUNCTION)	AAD2372
	3	CASSETTE 1 MECHA UNIT	EXK2026		33	BUTTON (GEQ)	AAD2373
●	4	CASSETTE 2 MECHA UNIT	EXK2056		34	BUTTON (DOLBY SURROUND)	AAD2374
	5	PCB HOLDER A (MTL)	ANG1778		35	BUTTON (AUDITION)	AAD2375
	6	HEAT SINK HOLDER (MTL)	ANG1837		36	CURSOR BUTTON	AAD2377
	7	SHIELD PLATE (MECHA)	ANK1157		37	BUTTON (DECK)	AAD2379
	8	DOOR SPRING L	ABH1085		38	EJECT BUTTON L (PLS)	AAD2380
	9	DOOR SPRING R	ABH1086		39	EJECT BUTTON R (PLS)	AAD2381
	10	KEEP PLATE	ABK1017		40	SLIDE KNOB (PLS)	AAE1160
NSP	11	EARTH LEAD	ADB1006		41	DISPLAY ASSEMBLY	AWZ4658
	12	NYLON RIVET	AEC1160		42	HEADPHONE ASSEMBLY	AWZ4666
NSP	13	PCB SPACER	AEC1446		43	DOLBY - C ASSEMBLY	AWZ4669
	14	DAMPER ASSEMBLY	AXA1008		44	TAPE ASSEMBLY	AWV1336
	15	SHEET	AAX1301		45	SHIELD PLATE	ANK1159
	16	SCREW (2.6 × 8)	ABA1095	NSP			
	17	SCREW	BBZ30P080FZK		46	SW ASSEMBLY <del>DELETED</del>	← AWK1746
	18	SCREW	BPZ26P080FMC	(Si-A47013) }	47	SCREW <del>BPZ26P080FMC</del>	← PBZ26P250FMC
	19	SCREW	VPZ30P080FZK	NSP	48	BUSH	AEC1326
	20	CASSETTE DOOR L (PLS)	AAN1365	NSP	49	COLLAR	AEC1327
	21	CASSETTE DOOR R (PLS)	AAN1366	△	50	LITHIUM BATTERY	AEX1014
	22	FRONT PANEL (For XD - J215M)	AMB2091				↓ <del>DELETED</del> (Si-A47008)
	22	FRONT PANEL (For XD - J210)	AMB2090				
	23	FILTER (REMOCON)	AAK2376				
	24	DECORATIVE PLATE (DECK)	AAK2398				
	25	DECORATIVE PLATE (AMP)	AAK2399				
	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				

# XD-J215M, XD-J210

## 2.1.3 Cassette 1 Mecha Unit

### Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	FLYWHEEL UNIT (FWD)	EXA1222		46	SCREW (M2×8)	ATZ20P080FMC
	2	FLYWHEEL UNIT (RVS)	EXA1223		47	SCREW	BSZ20P050FMC
	3	ROLLER UNIT (FWD)	EXA1224		48	SCREW	PMS26P025FUC
	4	ROLLER UNIT (RVS)	EXA1225		49	WASHER	EBF1008
	5	LIMITER UNIT	EXA1226		50	WASHER	EBF1009
	6	.....			51	WASHER	EBF1010
	7	EJECT LEVER L2	AZN2063		52	WASHER	EBF1011
	8	LEVER	ENV1305		53	.....	
	9	BRAKE	ENV1317		54	ARM UNIT	EXX1006
	10	GEAR	ENV1318		55	ARM UNIT	EXX1003
	11	LOCK ARM	ENV1159		56	P HEAD ASSEMBLY	EXX1008
	12	NR ARM	ENV1163		57	ARM	ENC1288
	13	.....			58	HEAD BASE UNIT	EXA1230
	14	REEL	ENV1335		59	.....	
	15	REEL BUSH	ENV1338	NSP	60	BRACKET	ENC1284
	16	ARM	ENV1330	NSP	61	PLATE	ENC1285
	17	EJECT LEVER L1	AZN2108	NSP	62	BRACKET	ENC1199
	18	BUSH	ENV1184		63	.....	
	19	MAGNET	ENV1336	NSP	64	HOLDER	ENV1161
	20	BELT	ENT1023	NSP	65	HOLDER	ENV1301
	21	SPRING	EBH1424	NSP	66	GEAR	ENV1177
	22	SPRING	EBH1401	NSP	67	P HEAD UNIT	EXA1110
	23	SPRING	EBH1203	NSP	68	SCREW	JGZ14P085FNI
	24	SPRING	EBH1402	NSP	69	SCREW	JGZ14P040FNI
	25	.....		NSP	70	CHASSIS UNIT	.....
	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	.....					



Note :

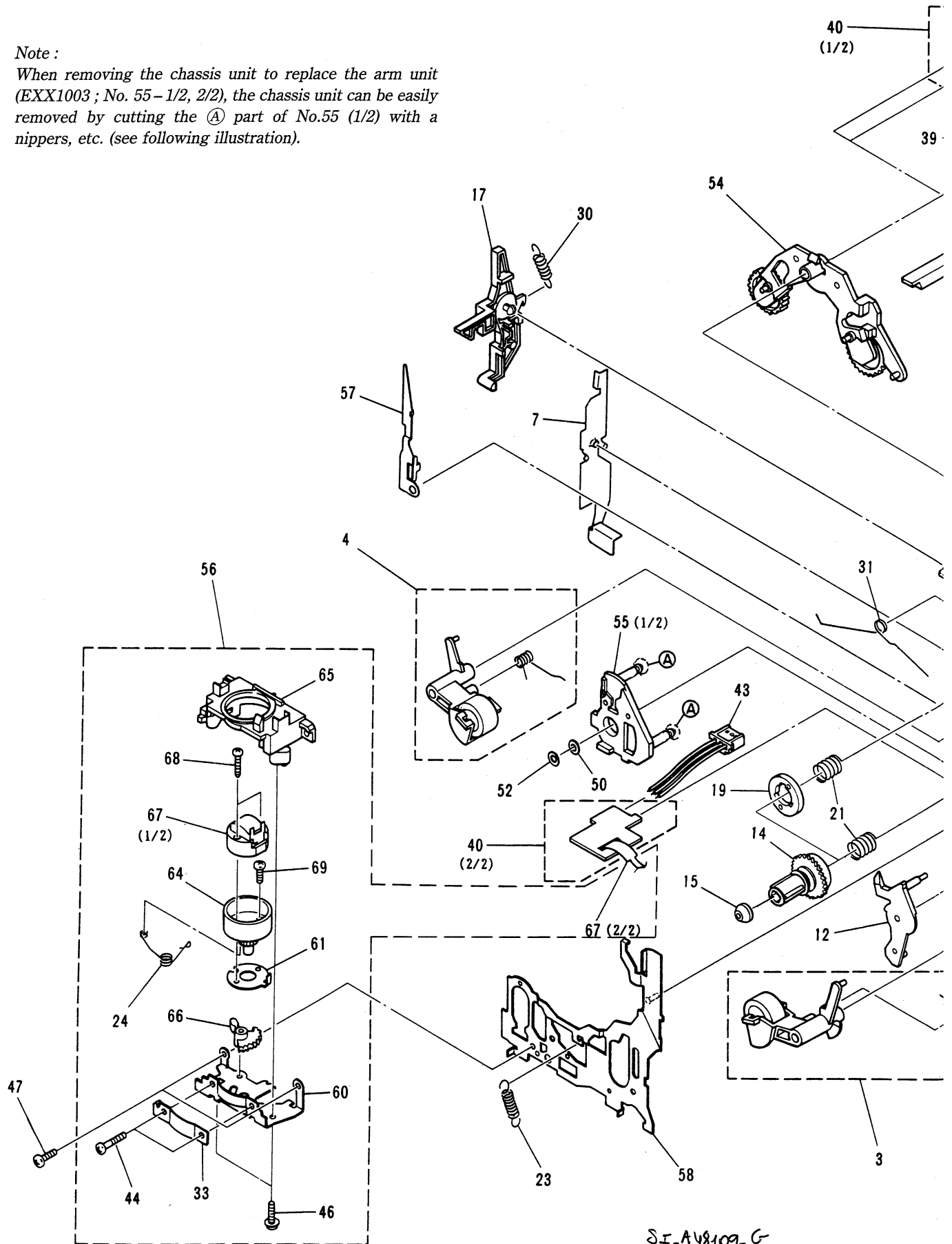
When removing the chassis unit to replace the arm unit (EXX1003 ; No. 55-1/2, 2/2), the chassis unit can be easily removed by cutting the (A) part of No.55 (1/2) with a nippers, etc. (see following illustration).

A

B

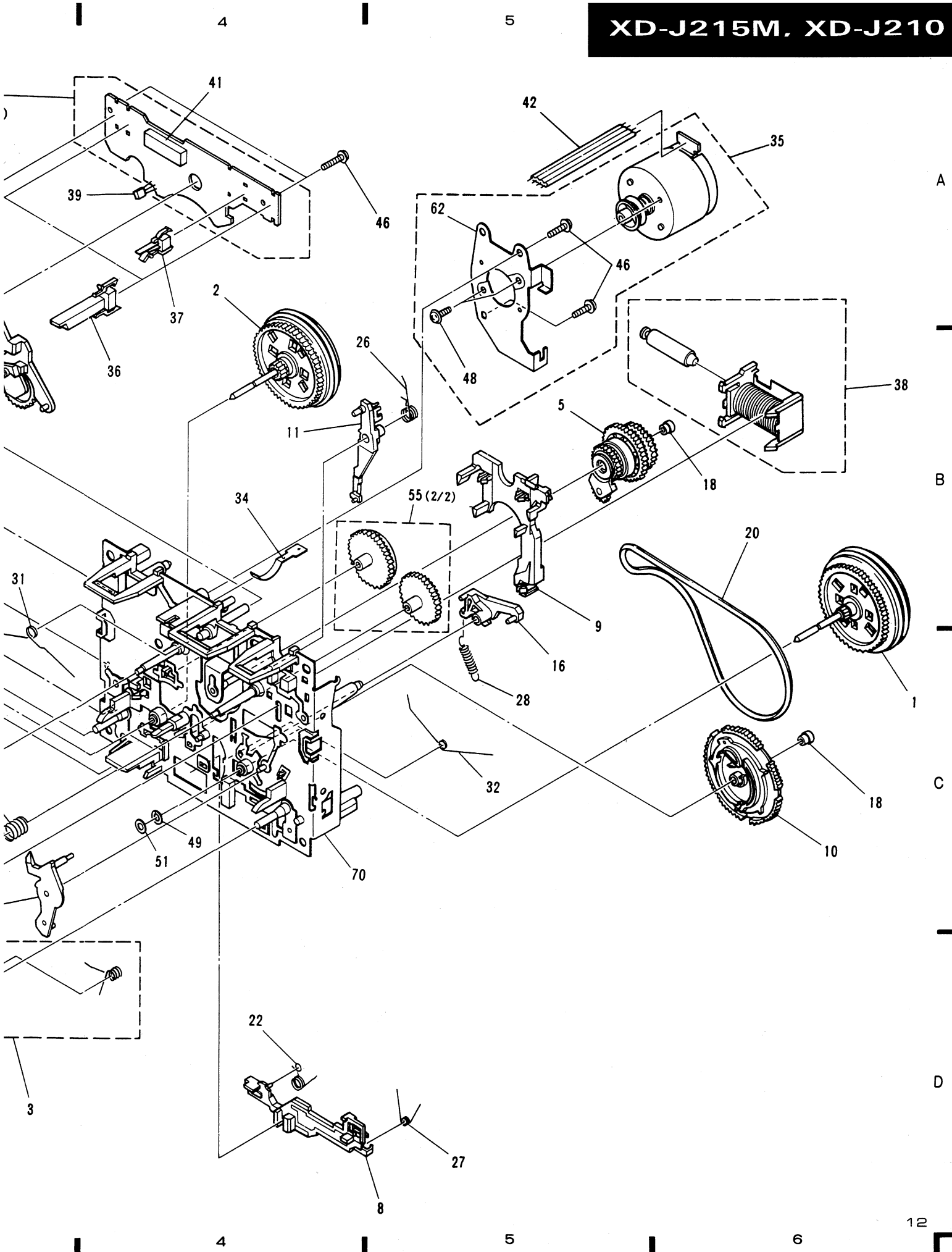
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D



SI-AV8109-G

**XD-J215M, XD-J210**



# XD-J215M, XD-J210

## 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 (A) part of No.55 (1/2) with a nippers, etc. (see following illustration).

A

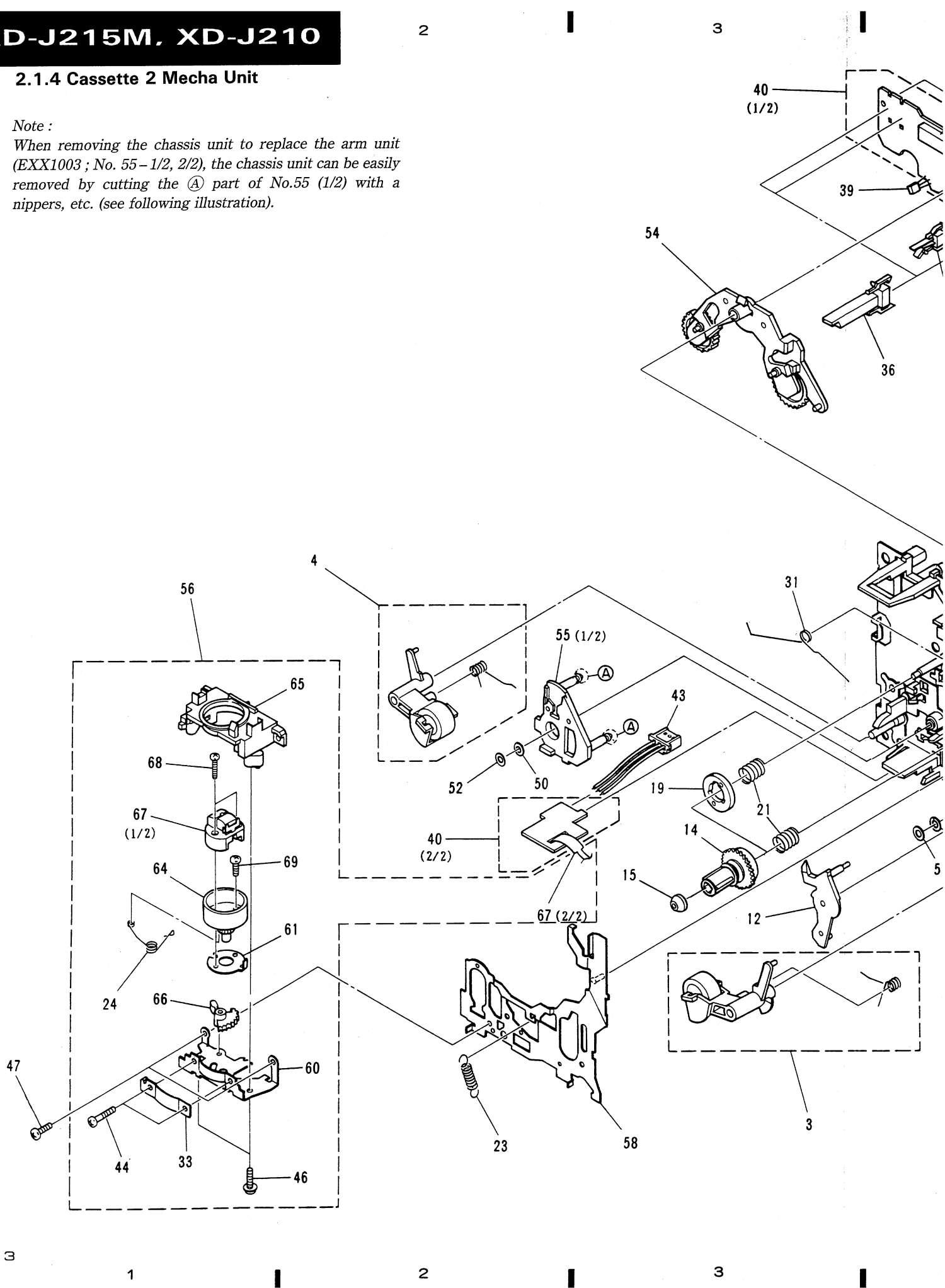
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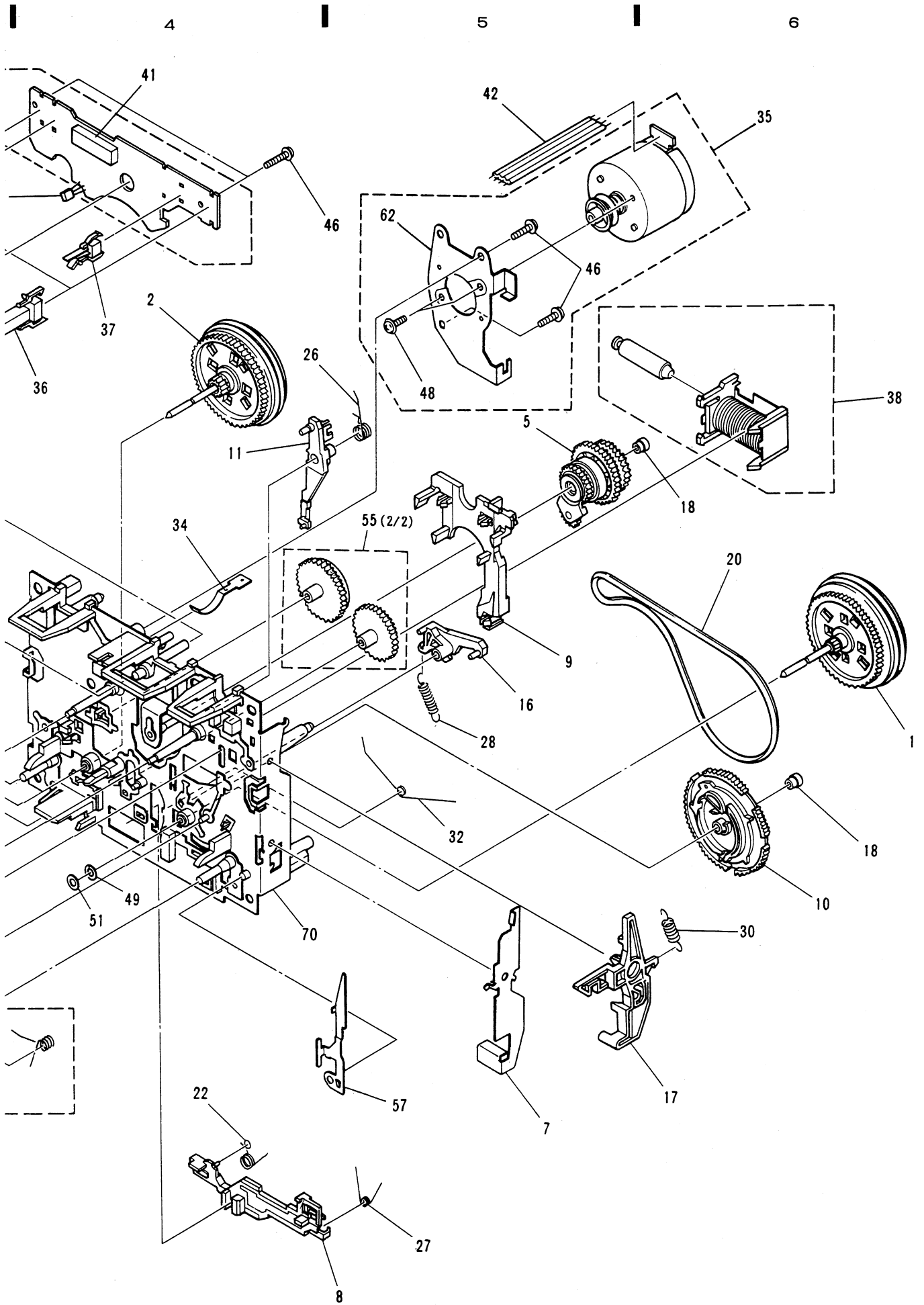
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# XD-J215M, XD-J210

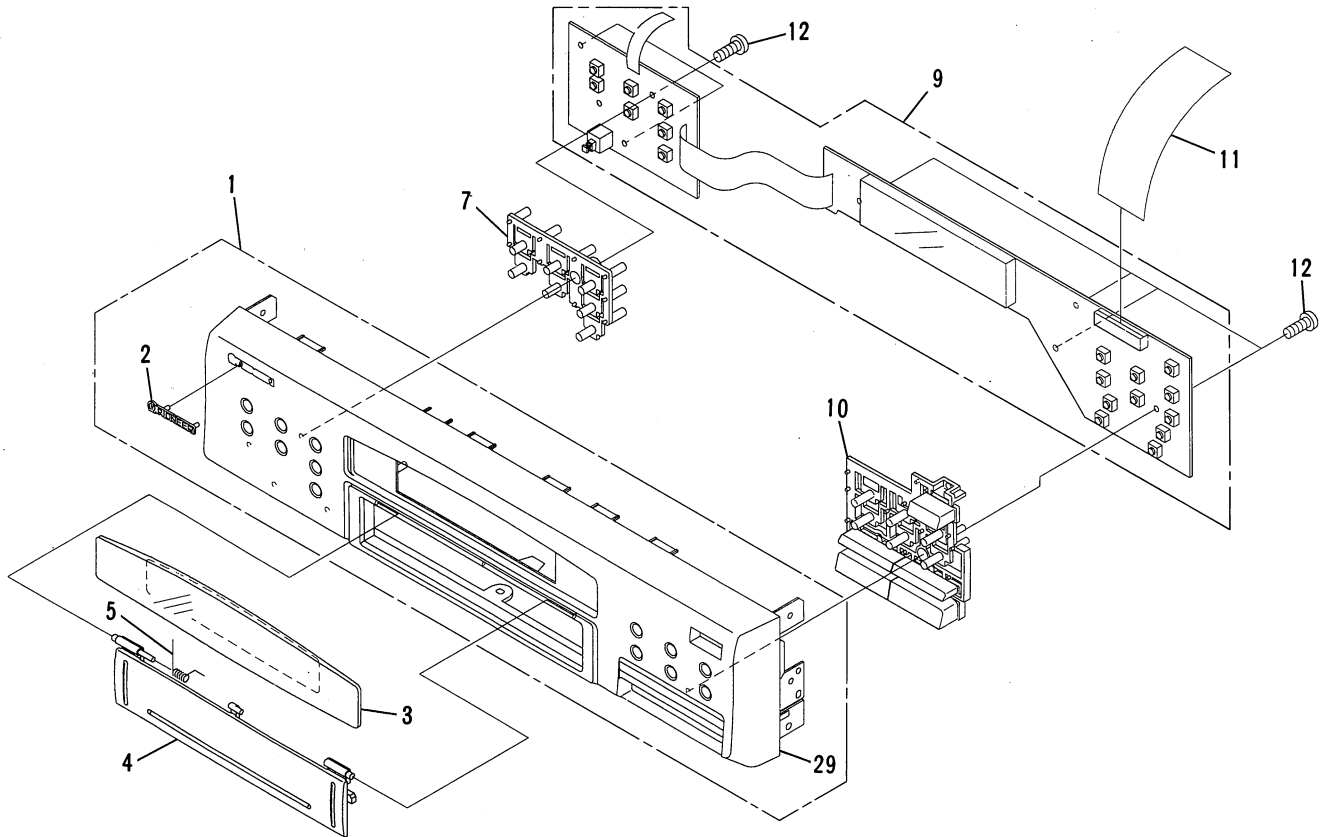
## Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	FLYWHEEL UNIT (FWD)	EXA1222		46	SCREW (M2×8)	ATZ20P080FMC
	2	FLYWHEEL UNIT (RVS)	EXA1223		47	SCREW <i>2x (SE. A48109-G)</i>	BSZ20P050FMC
	3	ROLLER UNIT (FWD)	EXA1224		48	SCREW	PMS26P025FUC
	4	ROLLER UNIT (RVS)	EXA1225		49	WASHER	EBF1008
	5	LIMITER UNIT	EXA1226		50	WASHER	EBF1009
	6	.....			51	WASHER	EBF1010
	7	EJECT LEVER R2	AZN2064		52	WASHER	EBF1011
	8	NR LEVER	ENV1305		53	.....	
	9	BRAKE	ENV1317		54	ARM UNIT	EXX1006
	10	CAM GEAR	ENV1318		55	ARM UNIT	EXX1003
	11	LOCK ARM	ENV1159		56	R/P HEAD ASSEMBLY	EXX1013
	12	NR ARM	ENV1163		57	ARM	ENC1289
	13	.....			58	HEAD BASE UNIT <i>(SE. A48109-G)</i>	EXA1230 → EXA 1363
	14	REEL	ENV1335		59	.....	
	15	REEL BUSH	ENV1338	NSP	60	BRACKET	ENC1284
	16	ARM	ENV1330	NSP	61	PLATE	ENC1285
	17	EJECT LEVER R1	AZN2109	NSP	62	BRACKET	ENC1289
	18	BUSH	ENV1184		63	.....	
	19	MAGNET	ENV1336	NSP	64	HOLDER	ENV1161
	20	BELT	ENT1023	NSP	65	HOLDER	ENV1301
	21	SPRING	EBH1424	NSP	66	GEAR	ENV1177
	22	SPRING	EBH1401	NSP	67	R/P HEAD UNIT	EXA1234
	23	SPRING	EBH1203	NSP	68	SCREW	JGZ14P085FNI
	24	SPRING	EBH1402	NSP	69	SCREW	JGZ14P040FNI
	25	.....		NSP	70	CHASSIS UNIT	.....
	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	.....					

# XD-J215M

## 2.2 CD BLOCK

### 2.2.1 Multi CD Unit (For XD-J215M)



#### Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	FUNCTION PANEL ASSEMBLY	PEA1270		21	FOOT ASSEMBLY	PXA1201
	2	NAME PLATE	AAM1047		22	SCREW	BBZ30P080FCC
	3	DISPLAY WINDOW	PAM1595		23	.....	
	4	DOOR	PNW2267		24	.....	
	5	DOOR SPRING	PBH1022		25	.....	
	6	.....			26	.....	
	7	MODE BUTTON	PAC1706		27	MOTHER BOARD ASSEMBLY	PWM1728
	8	.....		NSP	28	PCB HOLDER	PNW2100
	9	DISPLAY BOARD ASSEMBLY	PWZ2443	NSP	29	FUNCTION PANEL	PNW2327
	10	CONTROL BUTTON	PAC1705	NSP	30	FLAT CABLE	D20PYY0615
	11	22P F • F • C/30V	PDD1114	NSP	31	EARTH LEAD	XDF-503
	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				

1

2

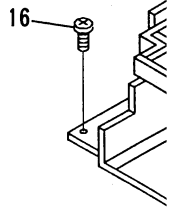
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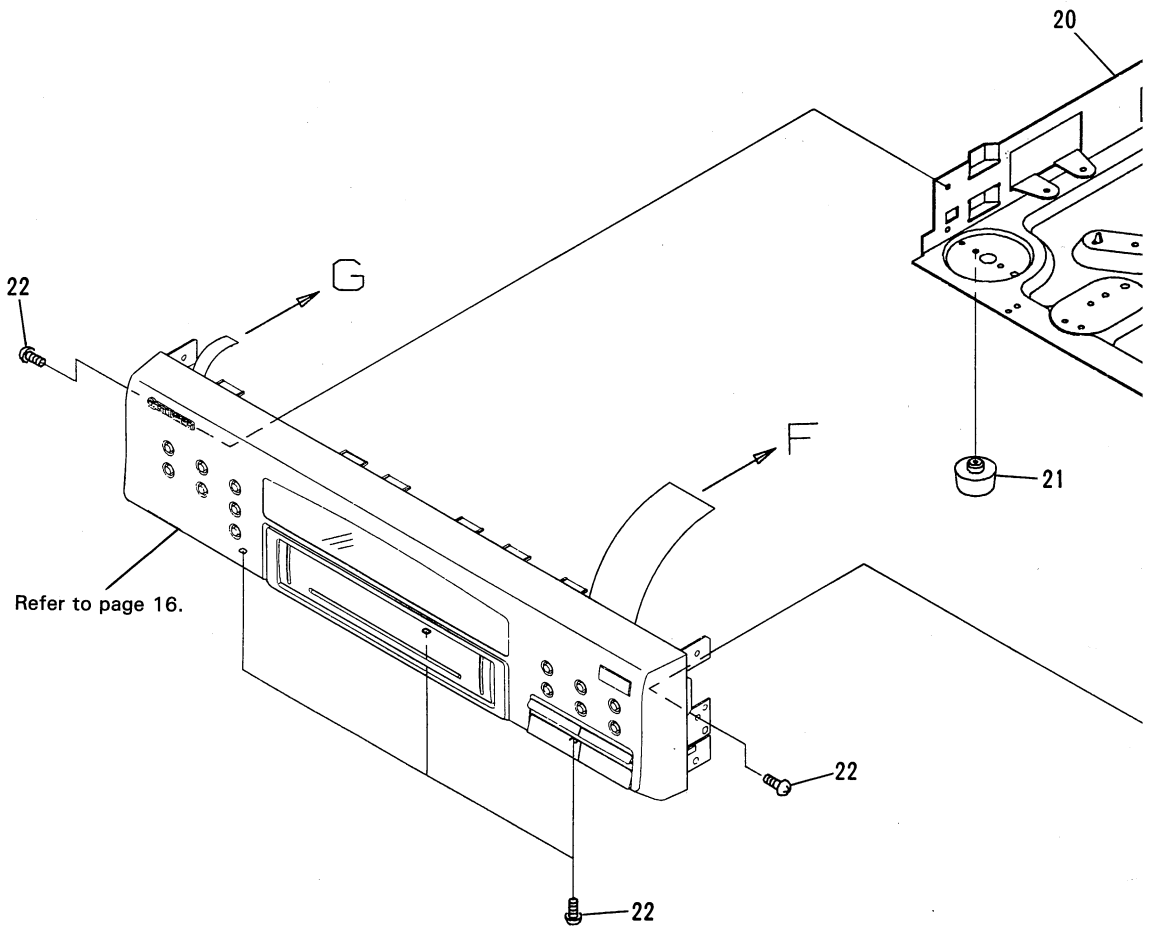
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16  
18  
Refer to page



1

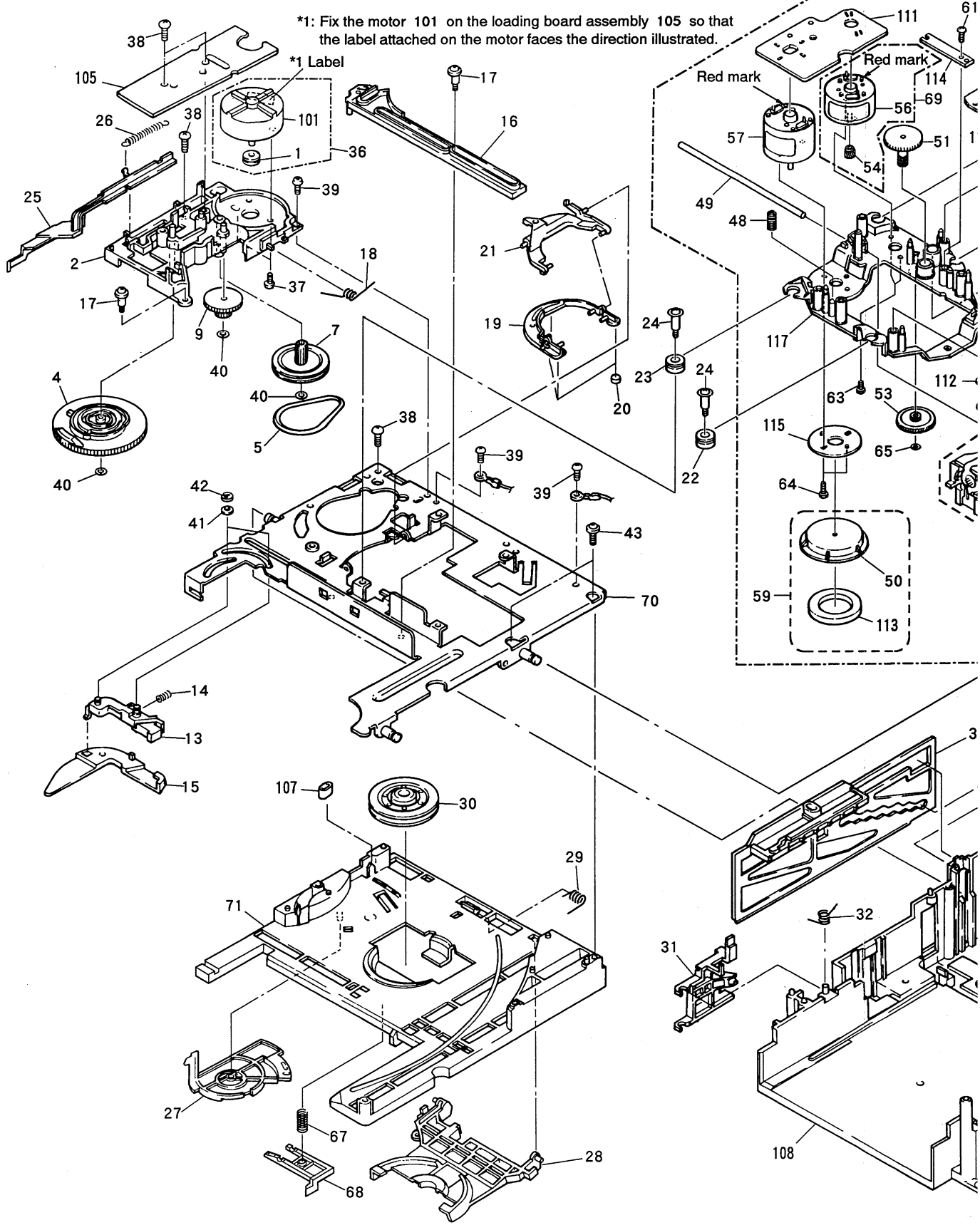
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3



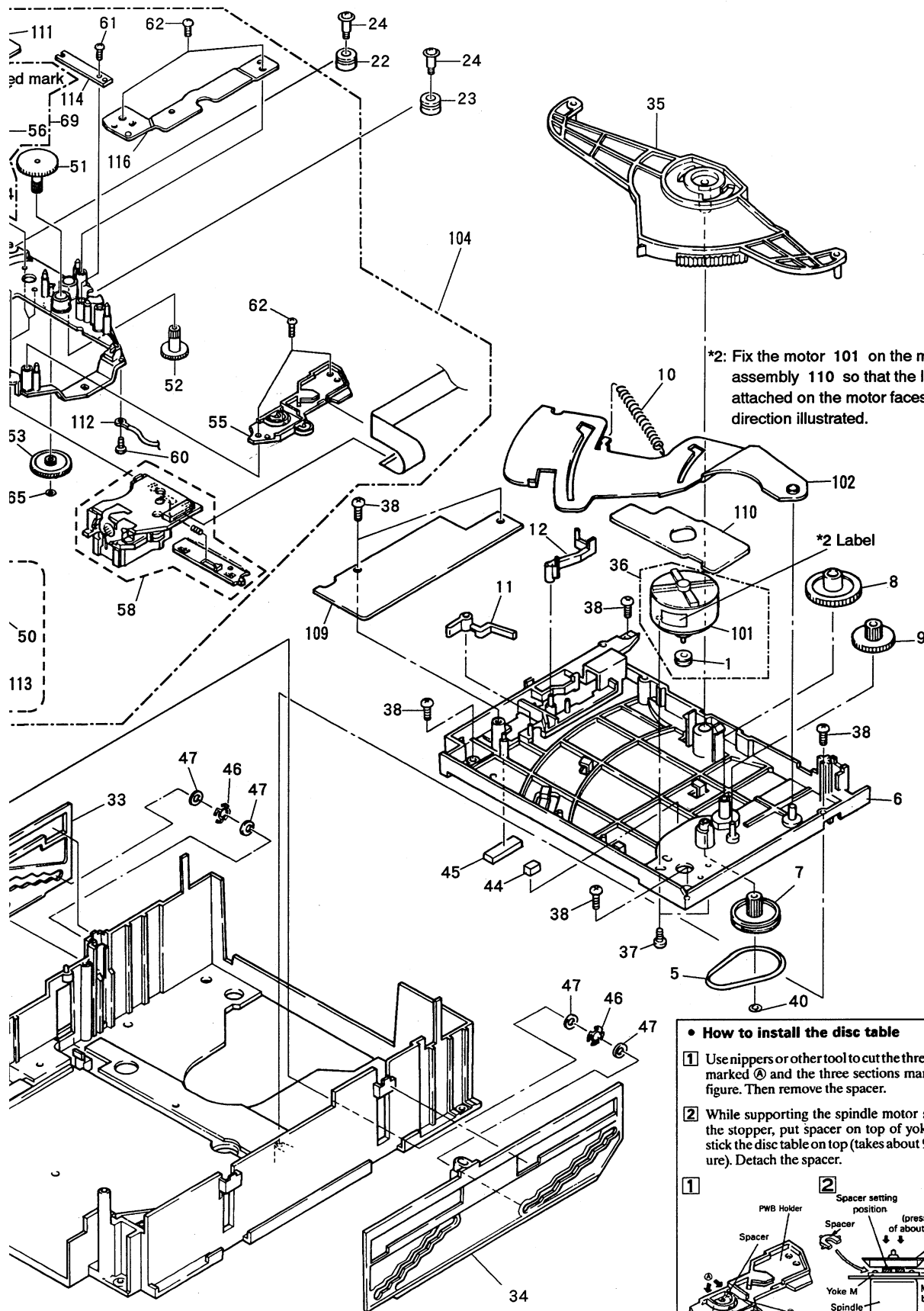
# XD-J215M

## 2.2.2 Multi Mecha Assembly



\*1: Fix the motor 101 on the loading board assembly 105 so that the label attached on the motor faces the direction illustrated.

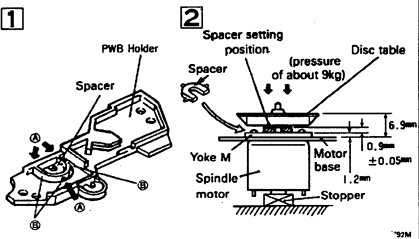
Red mark



\*2: Fix the motor 101 on the motor board assembly 110 so that the label attached on the motor faces the direction illustrated.

• How to install the disc table

- 1 Use nippers or other tool to cut the three sections marked ① and the three sections marked ② in figure. Then remove the spacer.
- 2 While supporting the spindle motor shaft with the stopper, put spacer on top of yoke M, and stick the disc table on top (takes about 9kg pressure). Detach the spacer.

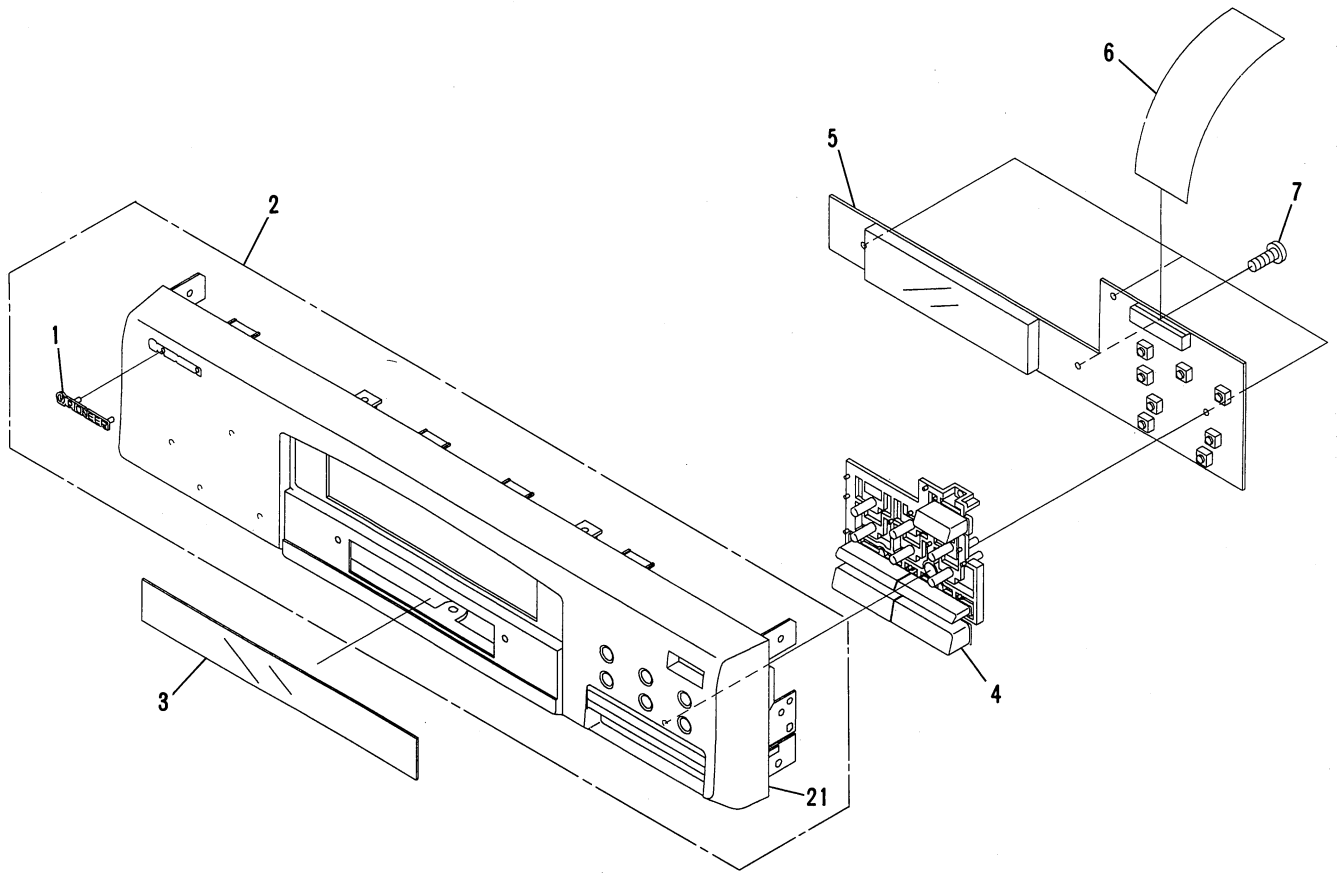


## Parts list

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Motor pulley	PNW1634	49	Guide bar	PLA1094
2	Gear holder	PNW1929	50	Disc table	PNW1067
3	•••••		51	Gear 1	PNW2052
4	Cam gear	PNW1923	52	Gear 2	PNW2053
5	Belt	PEB1138	53	Gear 3	PNW2054
6	Top guide	PNW2061	54	Pinion gear	PNW2055
7	Gear pulley	PNW1918	55	PWB holder	PNW2057
8	Gear S	PNW1919	56	Carriage DC motor / 0.3W	PXM1027
9	Gear L	PNW1920	57	D.C. motor assembly (spindle, with oil)	PEA1235
10	Eject spring	PBH1107			
11	Switch lever	PNW1927	58	Pickup assembly	PEA1285
12	Seven bar	PNW1931	59	Disc table assembly	PEA1035
13	Sub rotary lever	PNW1933	60	Screw	BBZ26P060FMC
14	Sub rotary lever spring	PBH1111	61	Screw	BPZ20P060FMC
15	Rotary lever	PNW1932	62	Screw	BPZ26P100FMC
16	Drive plate	PNW1930	63	Screw	JFZ17P025FZK
17	Motor screw	PBA-112	64	Screw	JFZ20P040FMC
18	Holder lever spring	PBH1110	65	Washer	WT12D032D025
19	Disc holder	PNW1924	66	•••••	
20	Cushion A	PED1001	67	Stopper spring	PBH1131
21	Holder lever	PNW1925	68	Stopper	PNW2069
22	Float rubber	PEB1014	69	D.C. motor assembly (CARRIAGE)	PEA1246
23	Float rubber	PEB1132	70	Upper chassis	PNB1267
24	Float screw	PBA1073	71	Sub chassis	PNW2073
25	Release lever	PNW1934			
26	Release spring	PBH1106			
27	Clamper cam	PNW1922	NSP 101	Motor	VXM1033
28	Clamper holder	PNW1921	NSP 102	Eject lever (S.S. F49001)	PNB1306
29	Clamper spring	PBH1109	103	•••••	
30	Clamper	PNW1857	NSP 104	Servo mechanism assembly M	PXA1417
31	Lock lever	PNW1917			
32	Lock spring	PBH1108	NSP 105	Loading board assembly	PWZ2038
33	Stair L	PNW1915	106	•••••	
34	Stair R	PNW1916	NSP 107	Rubber tube	PEB1171
35	Synchronize lever	PNW1926	NSP 108	Main chassis (S.S. F49001)	PNW2074
36	Motor assembly (LOADING, DISC SELECT)	PEA1130	NSP 109	Select board assembly	PWZ2533
37	Screw	PMZ26P040FMC	NSP 110	Motor board assembly	PWZ2040
38	Screw	PPZ30P080FMC	NSP 111	Mechanism board assembly	PWX1192
39	Screw	BBZ30P060FMC	NSP 112	Earth lead unit	PDF1074
40	Washer	WT26D047D025	NSP 113	Clamp magnet	PMF1014
41	Washer	WA31D054D025	NSP 114	Gear stopper	PNB1303
42	E ring	Z39-010			
43	Screw	IPZ30P080FMC	NSP 115	Yoke M	PNB1312
44	Rubber spacer	PEB1238	NSP 116	AV angle	PNB1405
45	Rubber spacer	PEB1179	117	Carriage base	PNW2058
46	Silent ring	PBK1093			
47	Washer	WA62D130D025			
48	Earth spring	PBH1132			

# XD-J210

## 2.2.3 Single CD Unit (For XD-J210)



### Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	NAME PLATE	AAM1047		11	SCREW	BBZ30P160FMC
	2	FUNCTION PANEL ASSEMBLY	PEA1272		12	SCREW	PDZ30P050FMC
	3	DISPLAY WINDOW	PAM1594		13	CORD CLAMPER	RNH-184
	4	CONTROL BUTTON	PAC1705	NSP	14	SINGLE MECHA ASSEMBLY	PXA1495
	5	DISPLAY BOARD ASSEMBLY	PWZ2433		15	POWER BOARD ASSEMBLY	PWZ2437
	6	24P F • F • C/30V	PDD1113		16	SCREW	BBZ30P060FCC
	7	SCREW	PPZ30P080FMC 931-240	NSP	17	PCB HOLDER	PNW2100
	8	NAME PLATE	PNW2234	NSP	18	UNDER BASE	PNW1967
	9	SCREW	BBZ30P080FCC		19	FOOT ASSEMBLY	PXA1201
	10	SCREW	PPZ30P120FMC		20	MOTHER BOARD ASSEMBLY	PWM1729
				NSP	21	FUNCTION PANEL	PNW2325



1

2

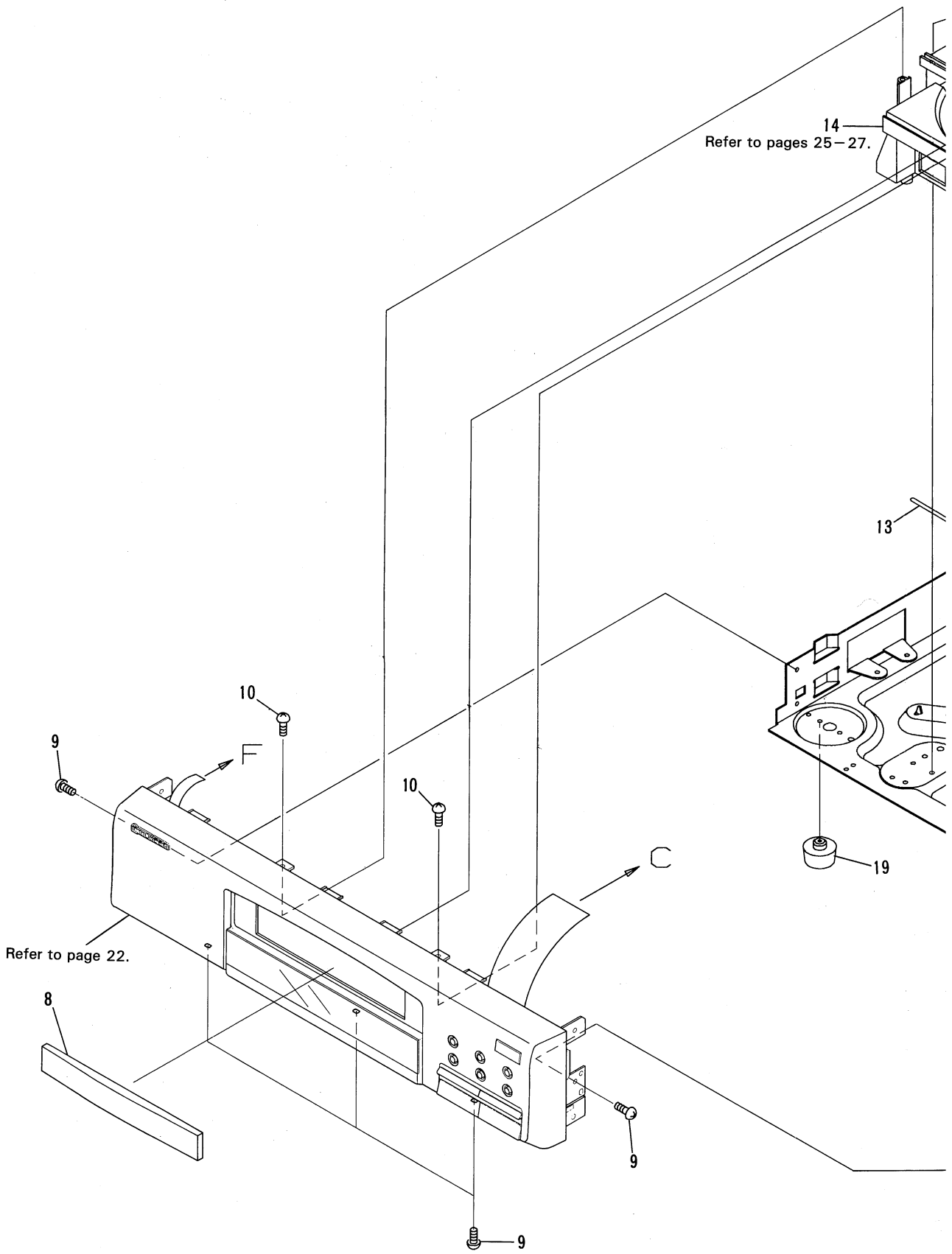
3

A

B

C

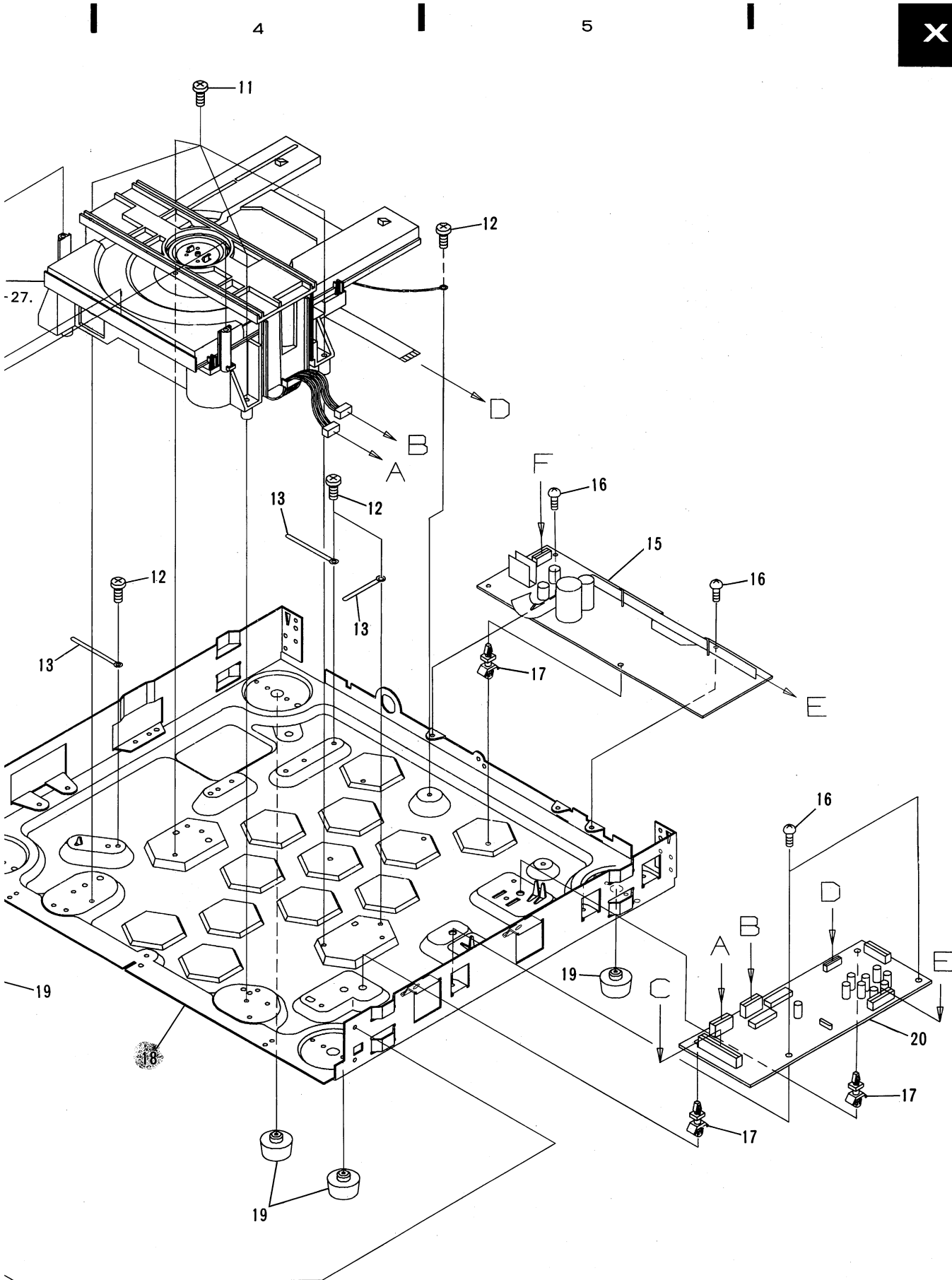
D



1

2

3



A  
B  
C  
D

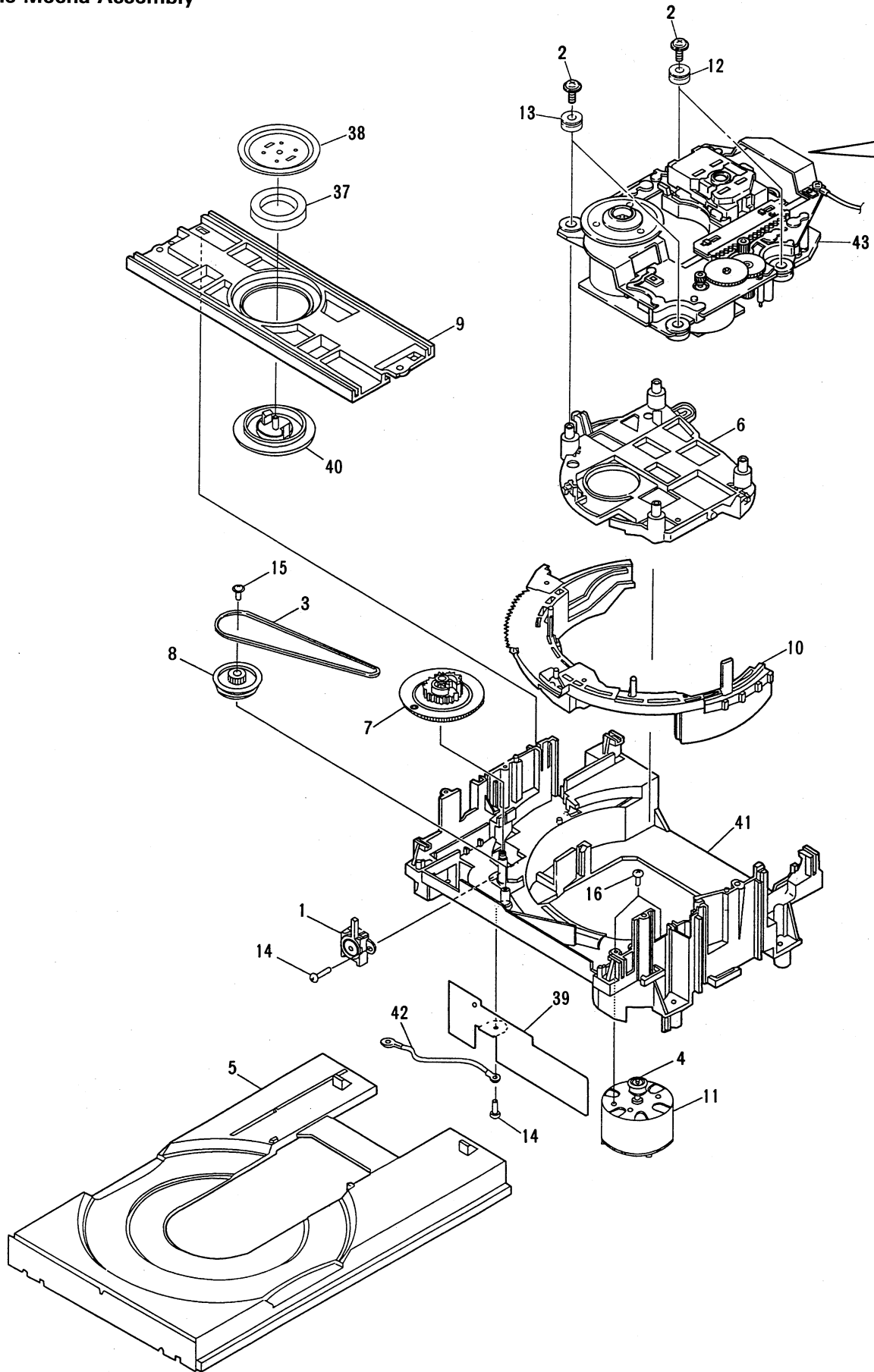
**2.2.4 Single Mecha Assembly**

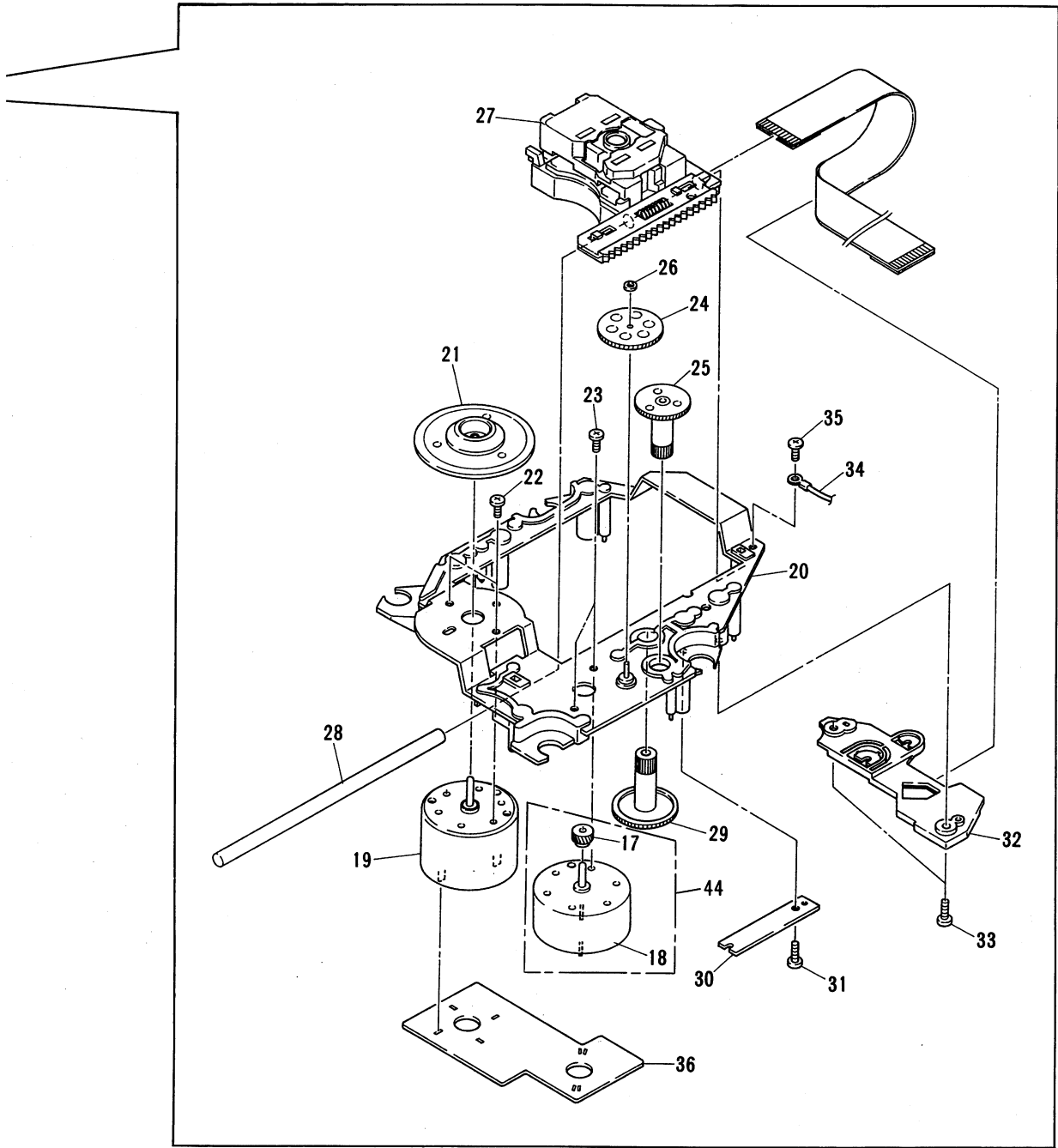
A

B

C

D





A

B

C

D

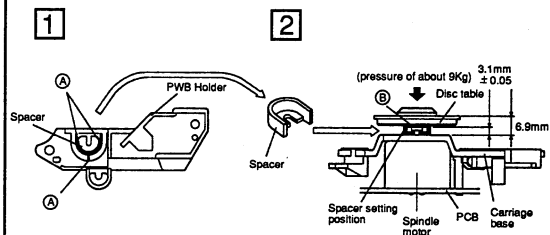
## Parts list

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 S (S.P.4900)	PNB1216
NSP	39	Shield plate	PNB1317
NSP	40	Clamper S (S.P.4900)	PNW1609
NSP	41	Loading base	PNW2030
NSP	42	Earth lead unit	XDF - 502
NSP	43	Servo mechanism assembly	PXA1478
NSP	44	DC motor assembly (CARRIAGE)	PEA1246

### • How to install the disc table

1 Use nipper or other tool to cut the three sections marked (A) 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 (B)), and stick the disc table on top (takes about 9Kg pressure). Take off the spacer.

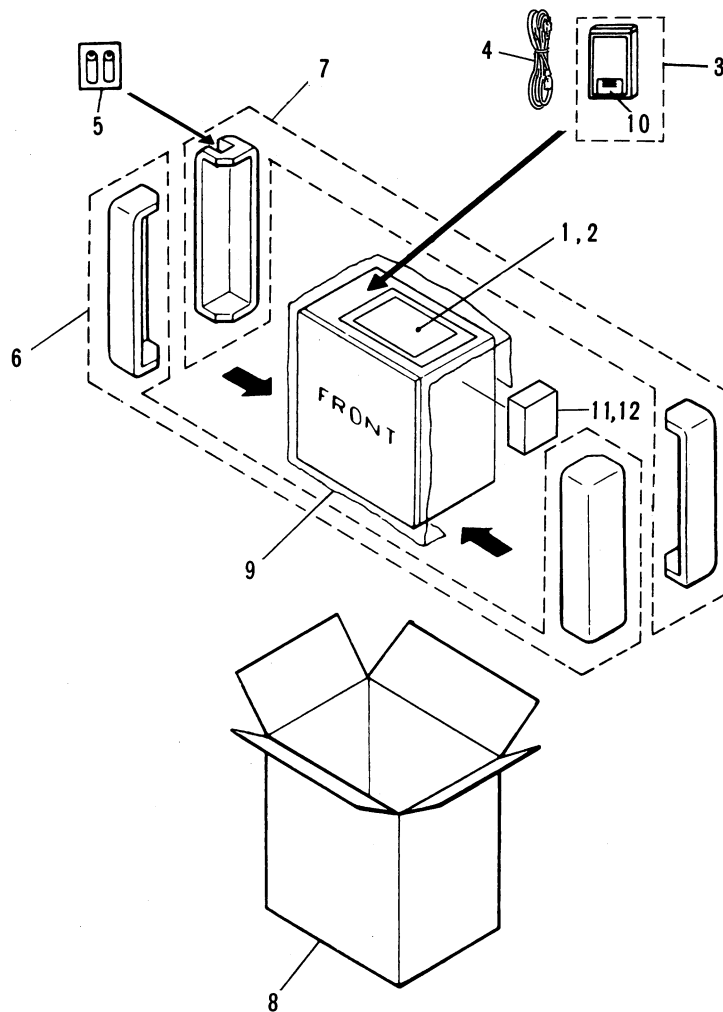


# XD-J215M, XD-J210

## 2.3 PACKING

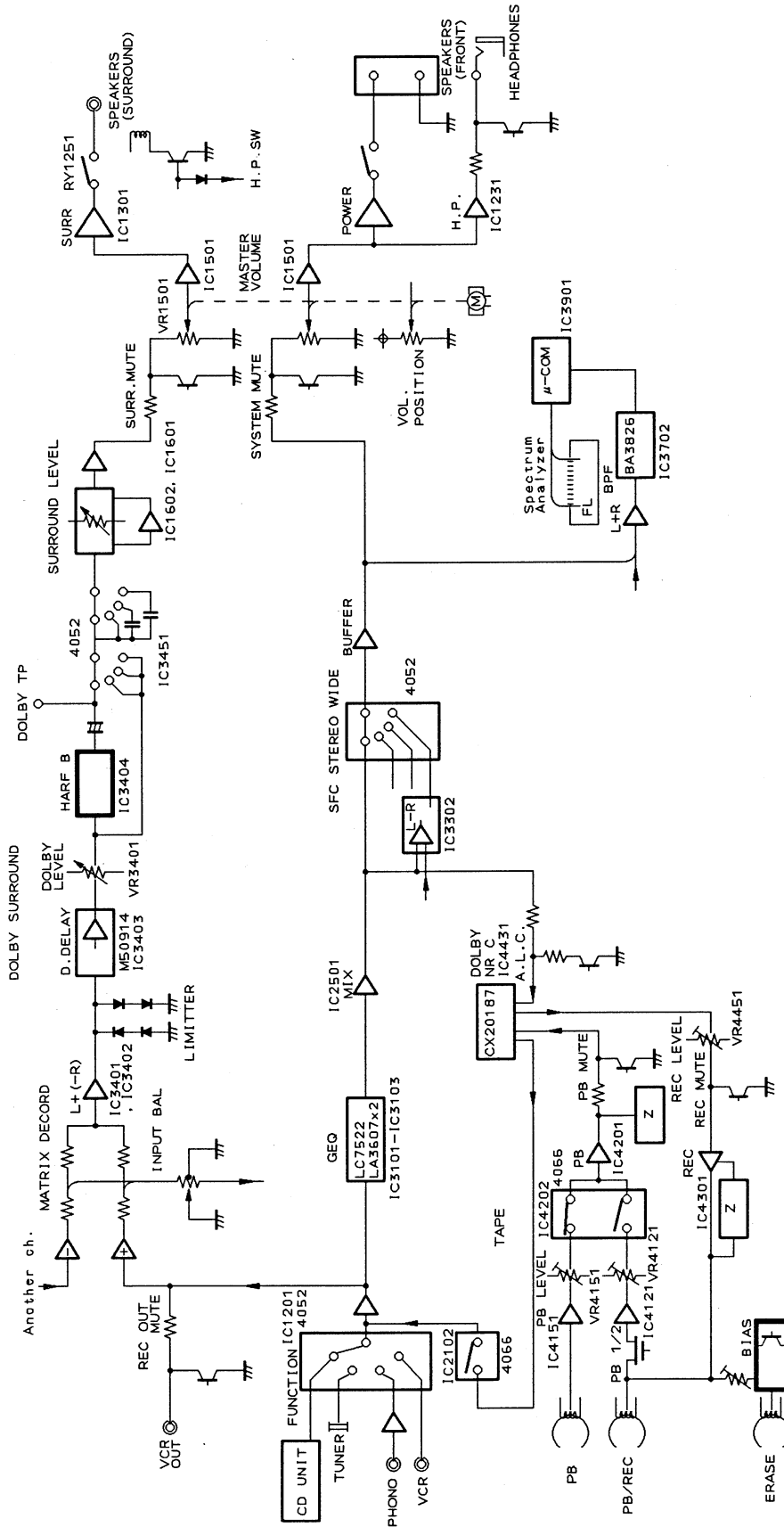
### Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	OPERATING INSTRUCTIONS (English, French, German, Italian) (For XD-J215M)	ARE1266		6	FRONT PAD L, R	AHA1559
	1	OPERATING INSTRUCTIONS (English, French, German, Italian) (For XD-J210)	ARE1264		7	REAR PAD L, R	AHA1560
	2	OPERATING INSTRUCTIONS (Dutch, Swedish, Spanish, Portuguese) (For XD-J215M)	ARE1267		8	PACKING CASE (For XD-J215M)	AHD2505
	2	OPERATING INSTRUCTIONS (Dutch, Swedish, Spanish, Portuguese) (For XD-J210)	ARE1265		8	PACKING CASE (For XD-J210)	AHD2504
	3	REMOTE CONTROL UNIT (CU-XD001)	AXD1326	NSP	9	PACKING SHEET	AHG1151
	4	AC POWER CORD	ADG1127		10	BATTERY COVER	AZN2235
NSP	5	BATTERY (R03, AAA)	AEX-021		11	PP CASE (XD-J215M only)	PYY1169
					12	MAGAGINE ASSEMBLY (XD-J215M only)	PXA1507



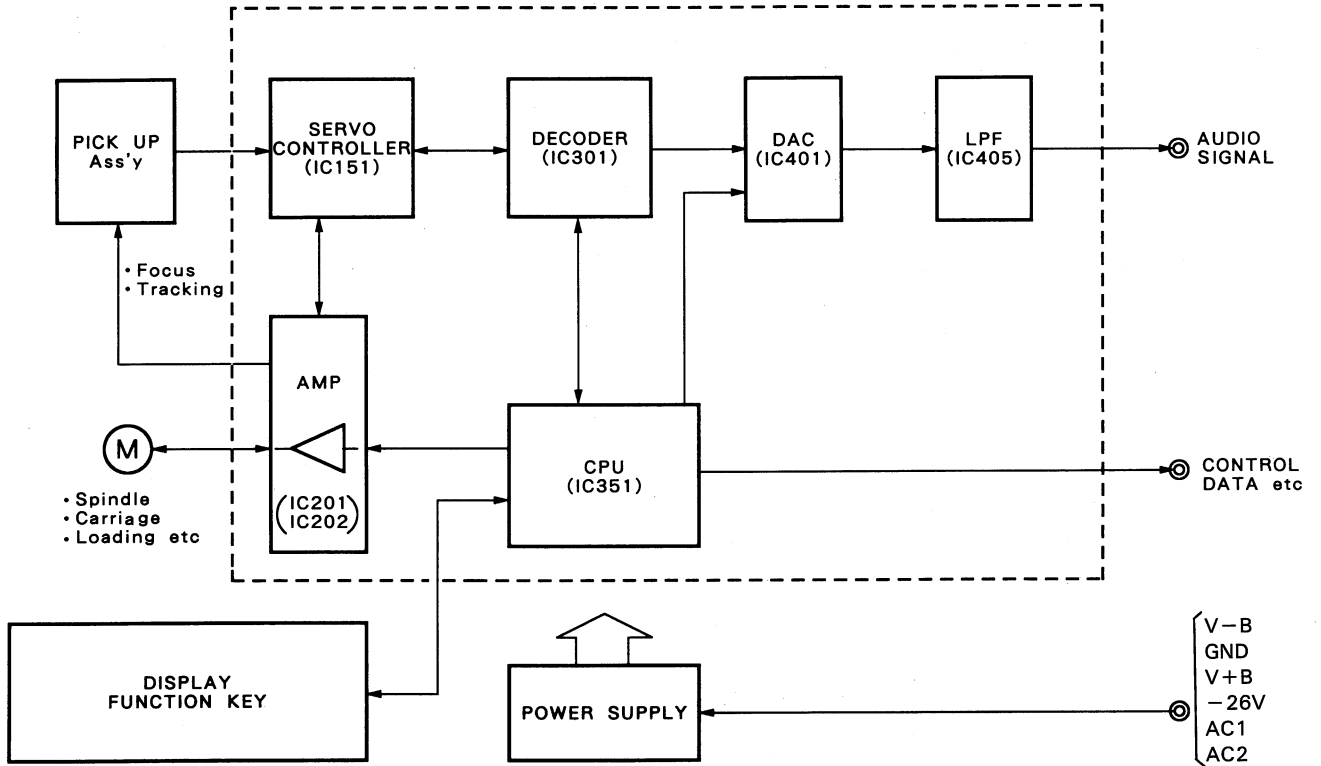
# 3. BLOCK DIAGRAM

## 3.1 DECK AMP BLOCK (For XD-J215M and XD-J210)



### 3.2 CD BLOCK

● Multi CD Unit (For XD-J215M) and Single CD Unit (For XD-J210)



A

B

C

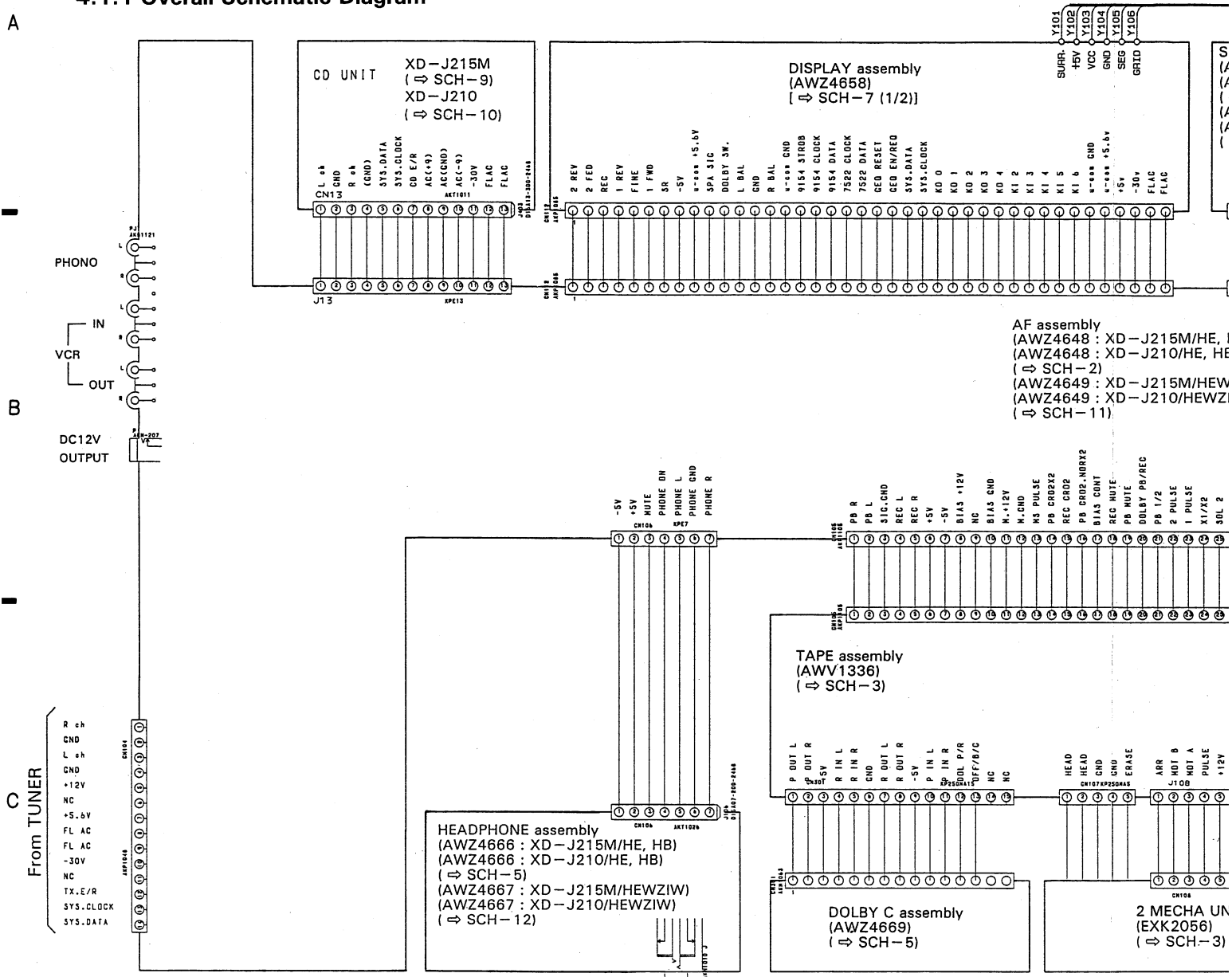
D



# 4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

## 4.1 DECK AMP BLOCK (For XD-J215M, XD-J210)

### 4.1.1 Overall Schematic Diagram



**Note:**

- When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- RESISTORS:**  
Unit: k:Ω, 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.
- CAPACITORS:**  
Unit: p:pF or μF unless otherwise noted.  
Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.  
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**  
Unit: m:mH or μH unless otherwise noted.
- VOLTAGE AND CURRENT:**  
□ : 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.

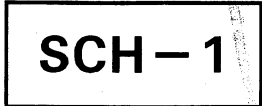
**7. OTHERS:**

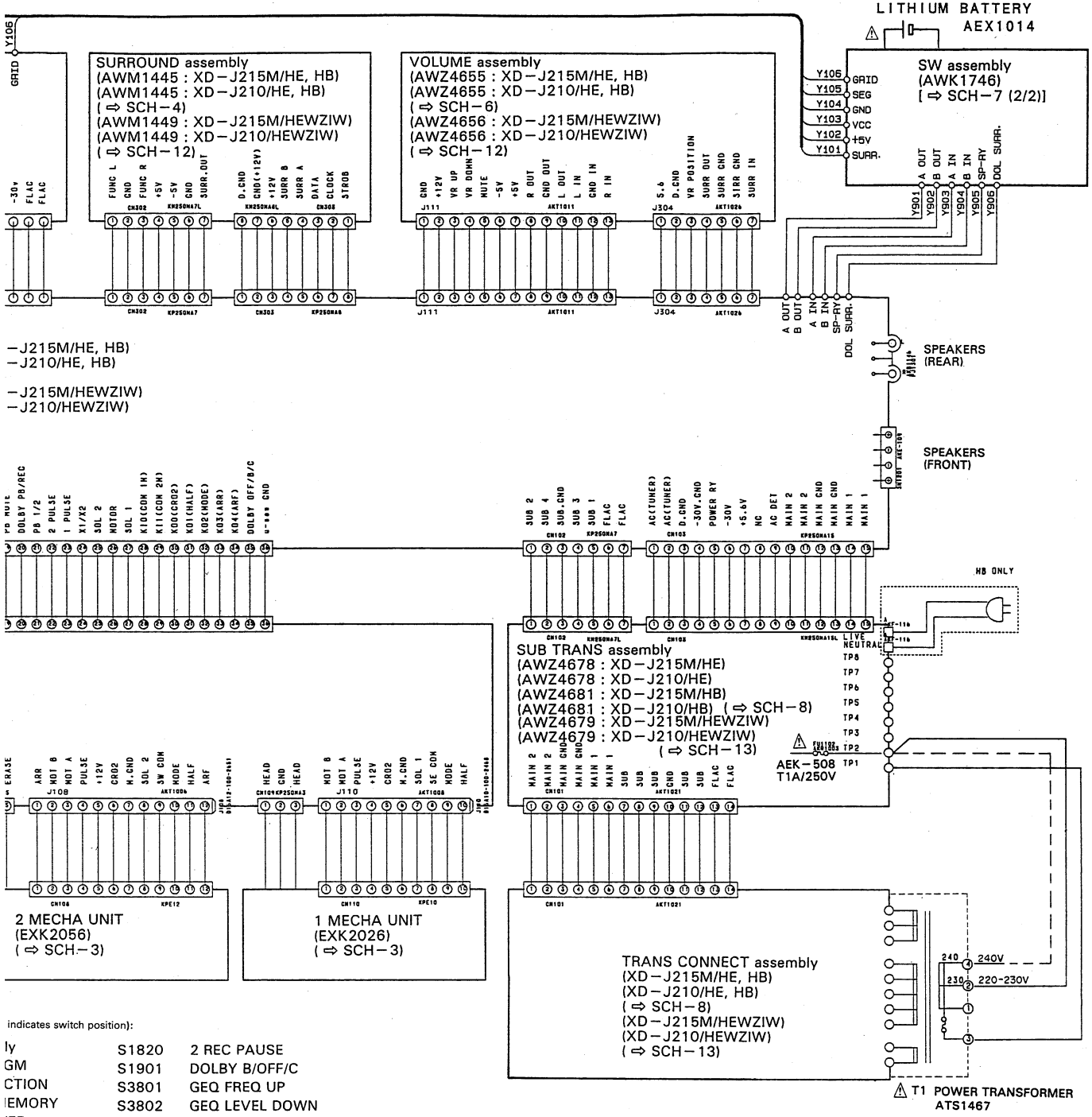
- : Signal route.
- ⊙ : Adjusting point.
- ▼ : Measurement point.
- The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

**8. SWITCHES** (Underline indicates switch position)

DISPLAY assembly	
S1801	AI BGM
S1802	FUNCTION
S1804	AI MEMORY
S1805	POWER
S1806	1 REV
S1807	1 PLAY
S1808	1 STOP
S1809	2 REV
S1810	2 FF
S1811	1 REW
S1812	1 FF
S1813	2 STOP
S1814	2 REV
S1815	2 PLAY
S1816	COPY
S1818	2 REC MUTE
S1819	ASES

Overall Schematic Diagram





- J215M/HE, HB)  
 - J210/HE, HB)  
 - J215M/HEWZIWI)  
 - J210/HEWZIWI)

indicates switch position):

ly	S1820	2 REC PAUSE
GM	S1901	DOLBY B/OFF/C
CTION	S3801	GEQ FREQ UP
EMORY	S3802	GEQ LEVEL DOWN
ER	S3803	DOLBY SURROUND ON/OFF
V	S3804	REAR LEVEL UP
AY	S3805	REAR LEVEL DOWN
OP	S3806	SURROUND & WIDE
W	S3807	GEQ LEVEL UP
	S3808	GEQ MODE
W	S3809	SOUND SELECTOR
	S3810	PRESET/PGM
OP	S3811	GEQ ON/OFF
V	S3813	SFC MOVIE/A
AY	S3814	SFC DISCO/B
Y	S3815	SFC HALL/C
C MUTE	S3816	SFC MEMO
3	S3817	SFC CLEAR

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

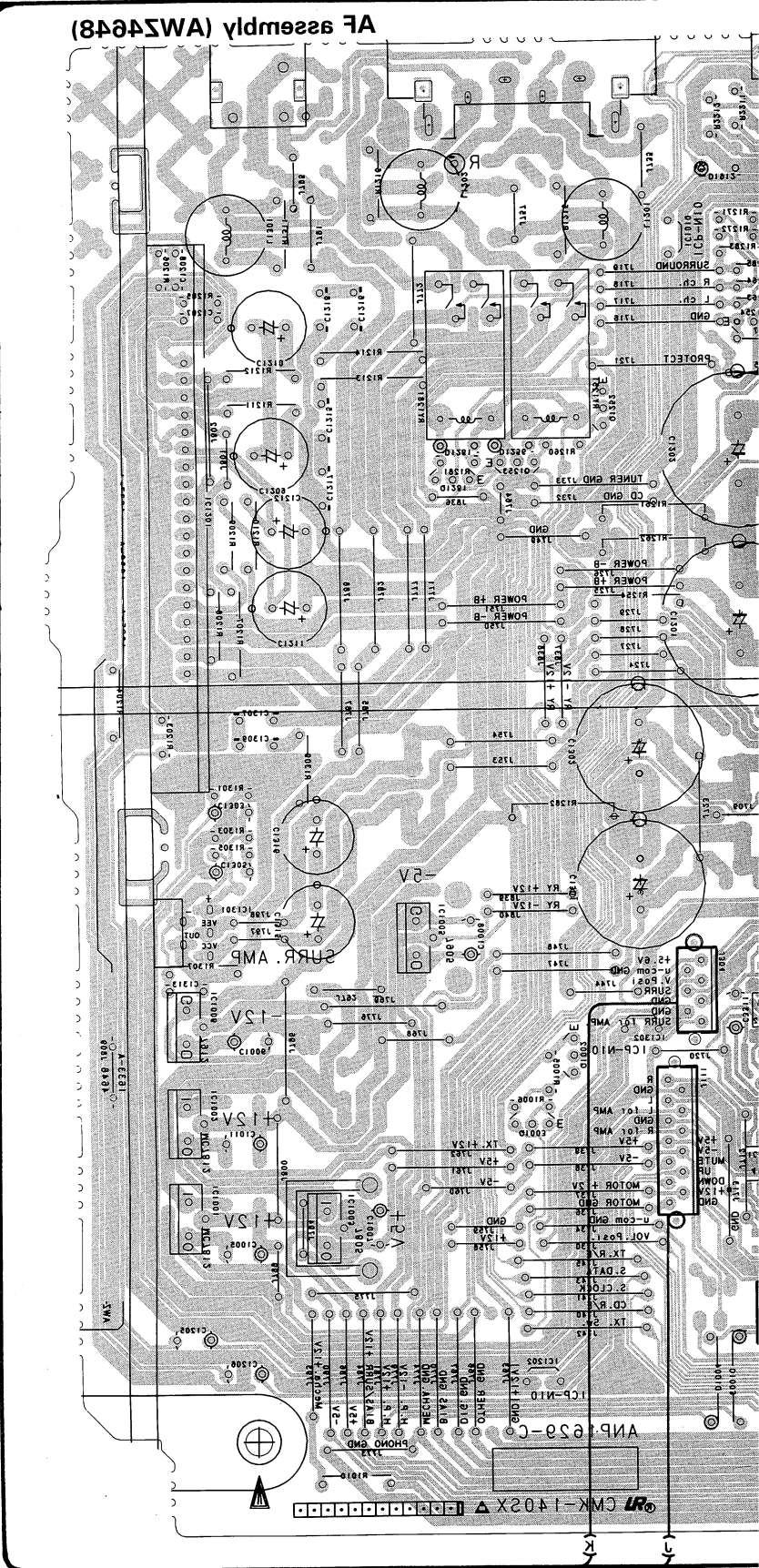
Overall Schematic Diagram  
**SCH-1**

This PCB connection diagram is viewed from the

IC303 IC1505 IC1003 IC1002 IC1501  
 IC1305 Q1005 Q1003 IC1005  
 IC1505 Q1503 Q1501 IC1010  
 IC1501

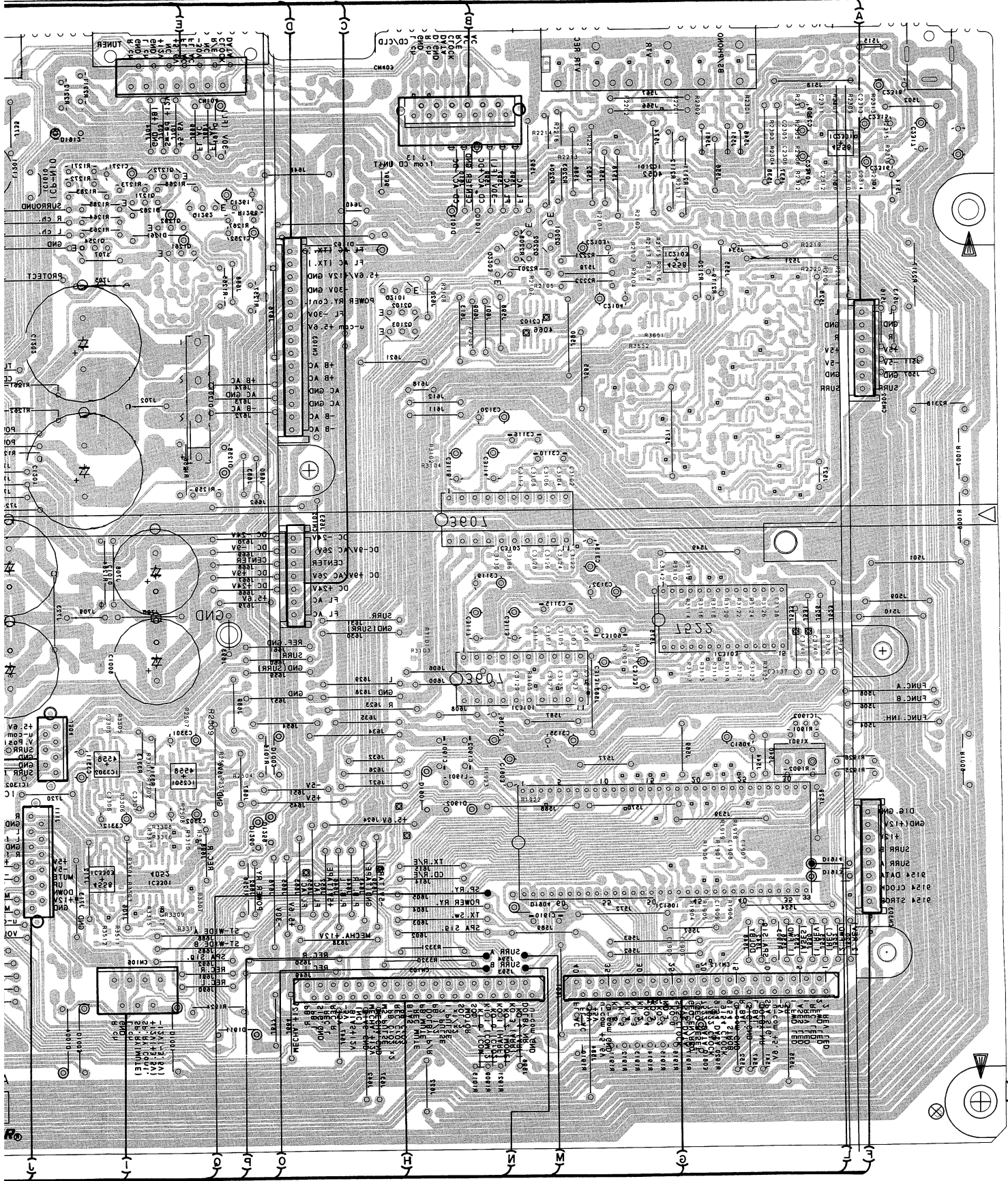
- A
- (A) TO SURROUND assembly CN305
  - (B) TO CD UNIT CN13
  - (C) TO SUB TRANS assembly CN105
  - (D) TO SUB TRANS assembly CN103
  - (E) TO TUNER assembly
  - (F) TO SURROUND assembly CN303
  - (G) TO DISPLAY assembly CN115
  - (H) TO TAPE assembly CN105
  - (I) TO HEAD PHONE assembly CN106
  - (J) TO VOLUME assembly CN111
  - (K) TO VOLUME assembly CN304
  - (L) DOL-SURR
  - (M) A IN
  - (N) B IN
  - (O) B OUT
  - (P) A OUT
  - (Q) SP-RY
- B
- C
- D

AF assembly (WAZ448)



ved from the foil side.

IC3301 IC3303  
IC3201 IC3305  
IC5010 IC3105 IC3107 IC5101-IC5103  
IC5501-IC5503



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

# XD-J215M, XD-J210

2

3

## 4.1.2 AF Assembly (si-CD003/PSE/G4)

This PCB connection

IC2301

IC2103 IC2101

Q2201-Q2203

Q1262Q1261Q1282Q1272Q1271Q

IC1902

IC3103 IC1901

IC2102 IC3102 Q2101-Q2103  
IC3101

IC2501 IC3302  
IC3301 IC3303

A

B

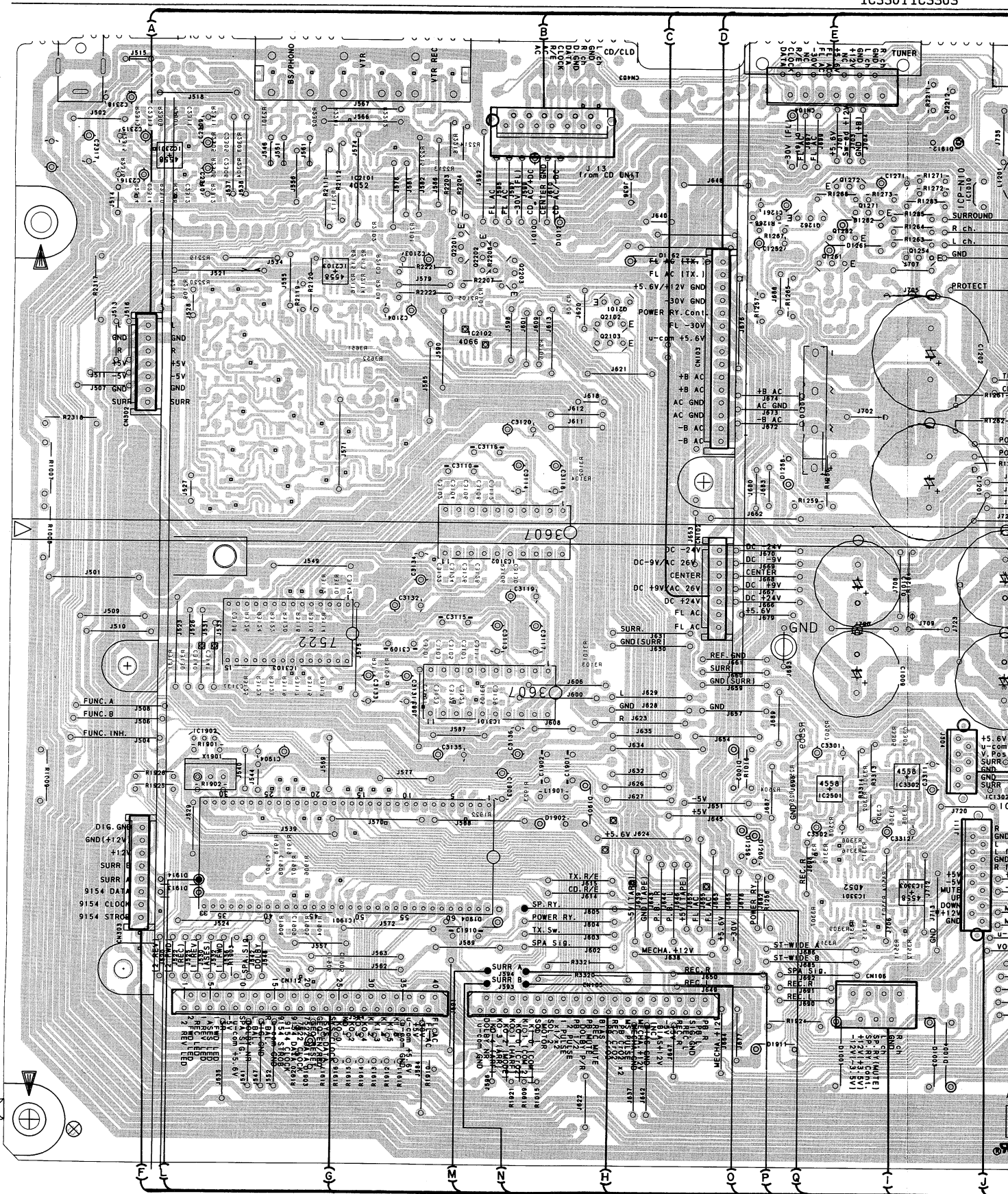
C

35

1

2

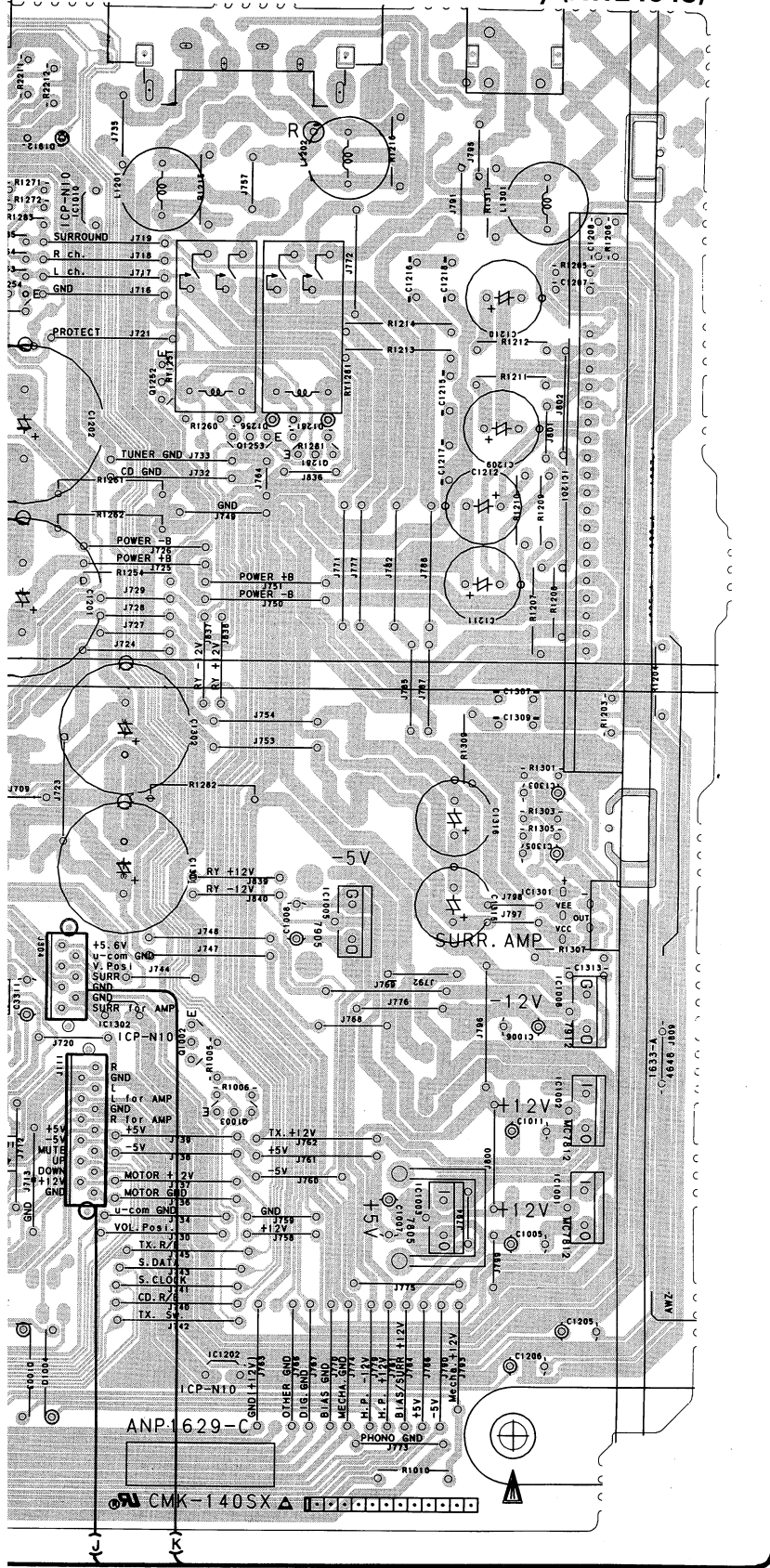
3



Connection diagram is viewed from the parts mounted side.

Q1272Q1271Q1254IC1010  
 Q1252 Q1253 Q1281 IC1201  
 302 IC1302 Q1002 Q1003 IC1005 IC1301 IC1006 IC1002  
 C3303 IC1202 IC1003 IC1001

### AF assembly (AWZ4648)



- (A) To SURROUND assembly CN302
- (B) To CD UNIT CN13
- (C) To SUB TRANS assembly CN102
- (D) To SUB TRANS assembly CN103
- (E) To TUNER assembly
- (F) To SURROUND assembly CN303
- (G) To DISPLAY assembly CN112
- (H) To TAPE assembly CN105
- (I) To HEAD PHONE assembly CN106
- (J) To VOLUME assembly CN111
- (K) To VOLUME assembly CN304
- (L) DOL-SURR
- (M) A IN
- (N) B IN
- (O) B OUT
- (P) A OUT
- (Q) SP-RY

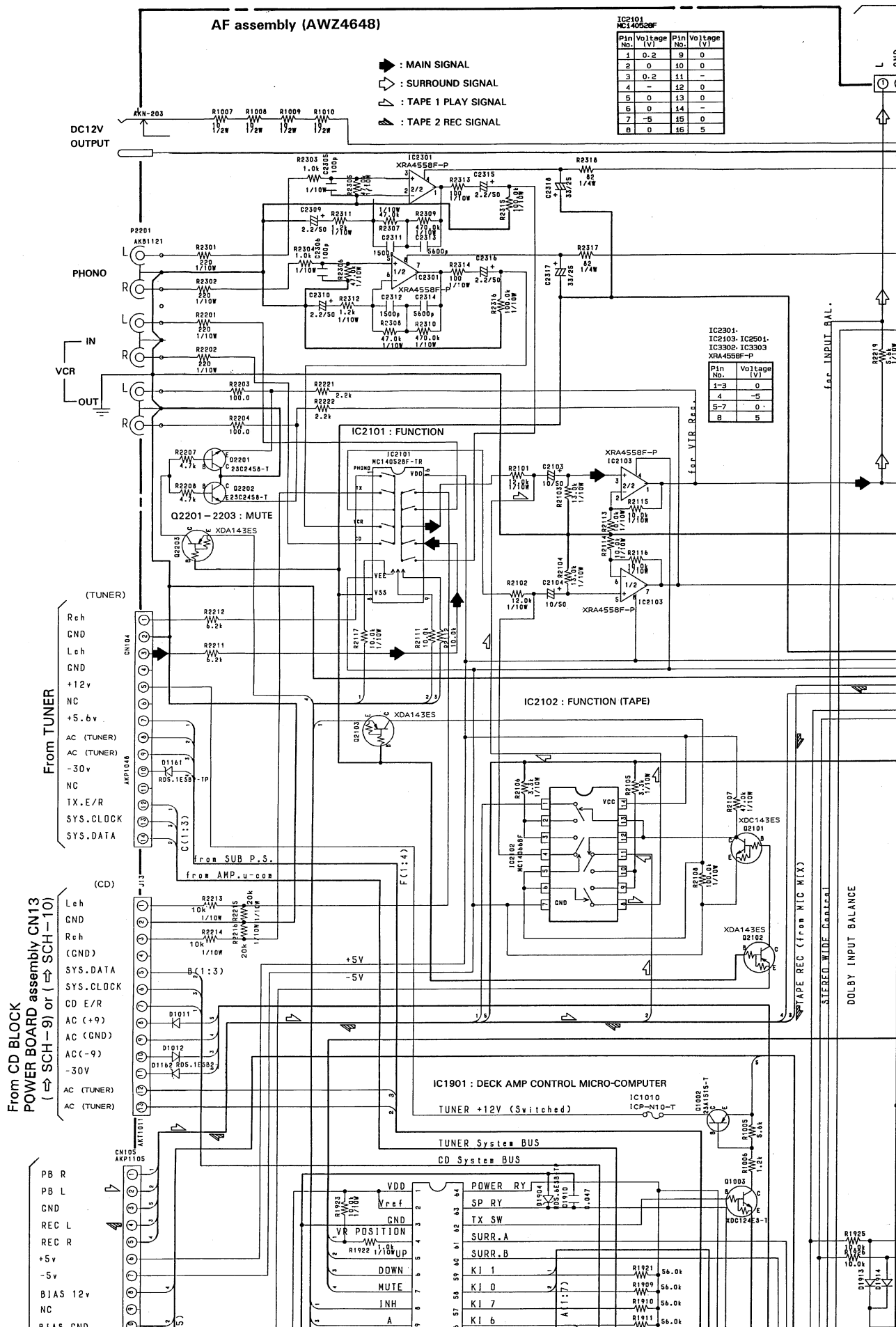
NOTE  
 1. This P.C.B connection diagram is viewed from the parts mounted side.  
 2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarized)
		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.



B

C

D

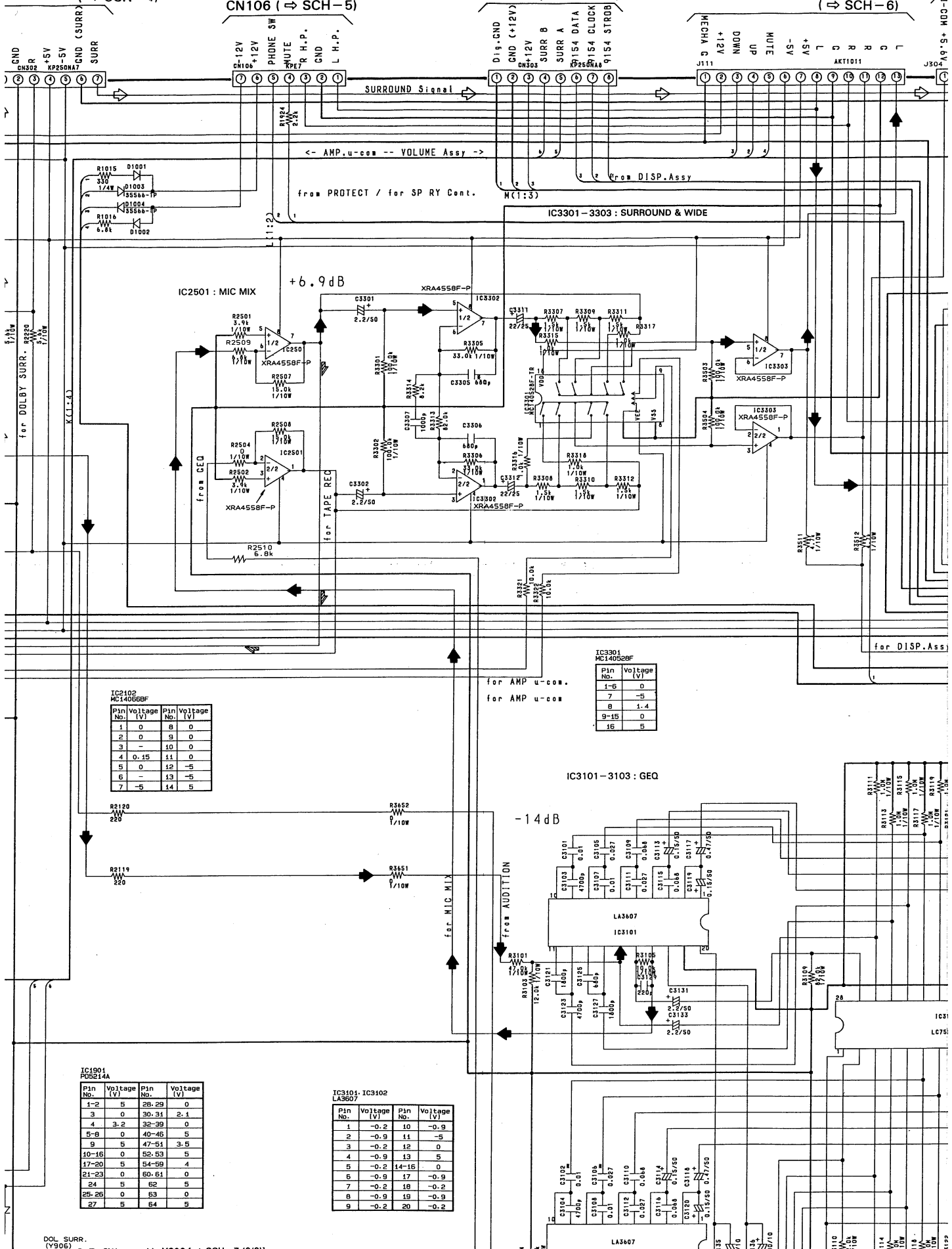
OUND assembly CN302 (SCH-4)

To HEADPHONE assembly CN106 (SCH-5)

To SURROUND assembly CN303 (SCH-4)

To VOLUME assembly CN111 (SCH-6)

To VC



IC2102  
MC14058BF

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

IC3301  
MC14058BF

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

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

DOL SURR. (Y906)

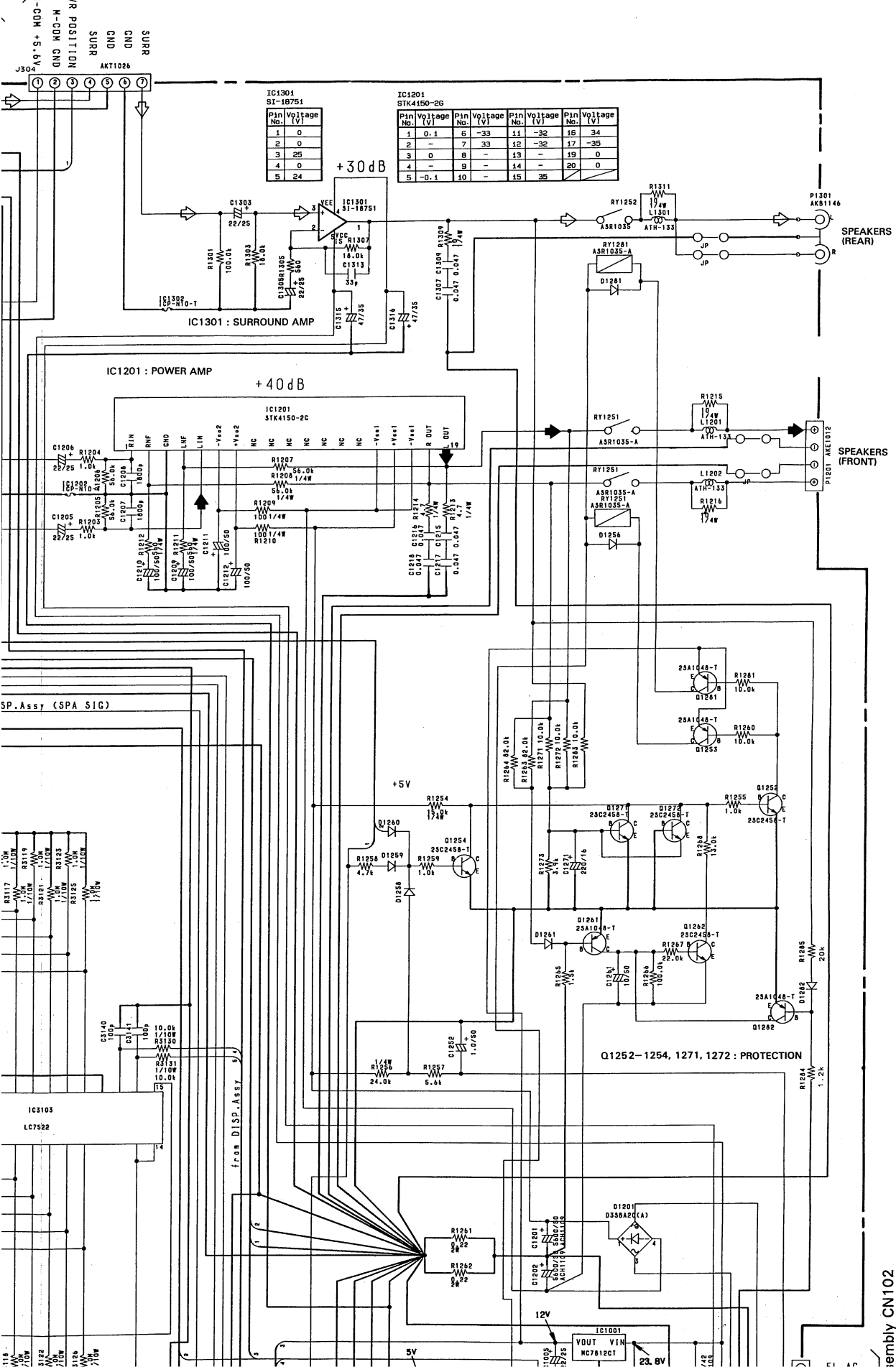
TO SURROUND assembly CN303 (SCH-4)

VC



# XD-J215M, XD-J210

To VOLUME assembly CN304  
(→ SCH-6)

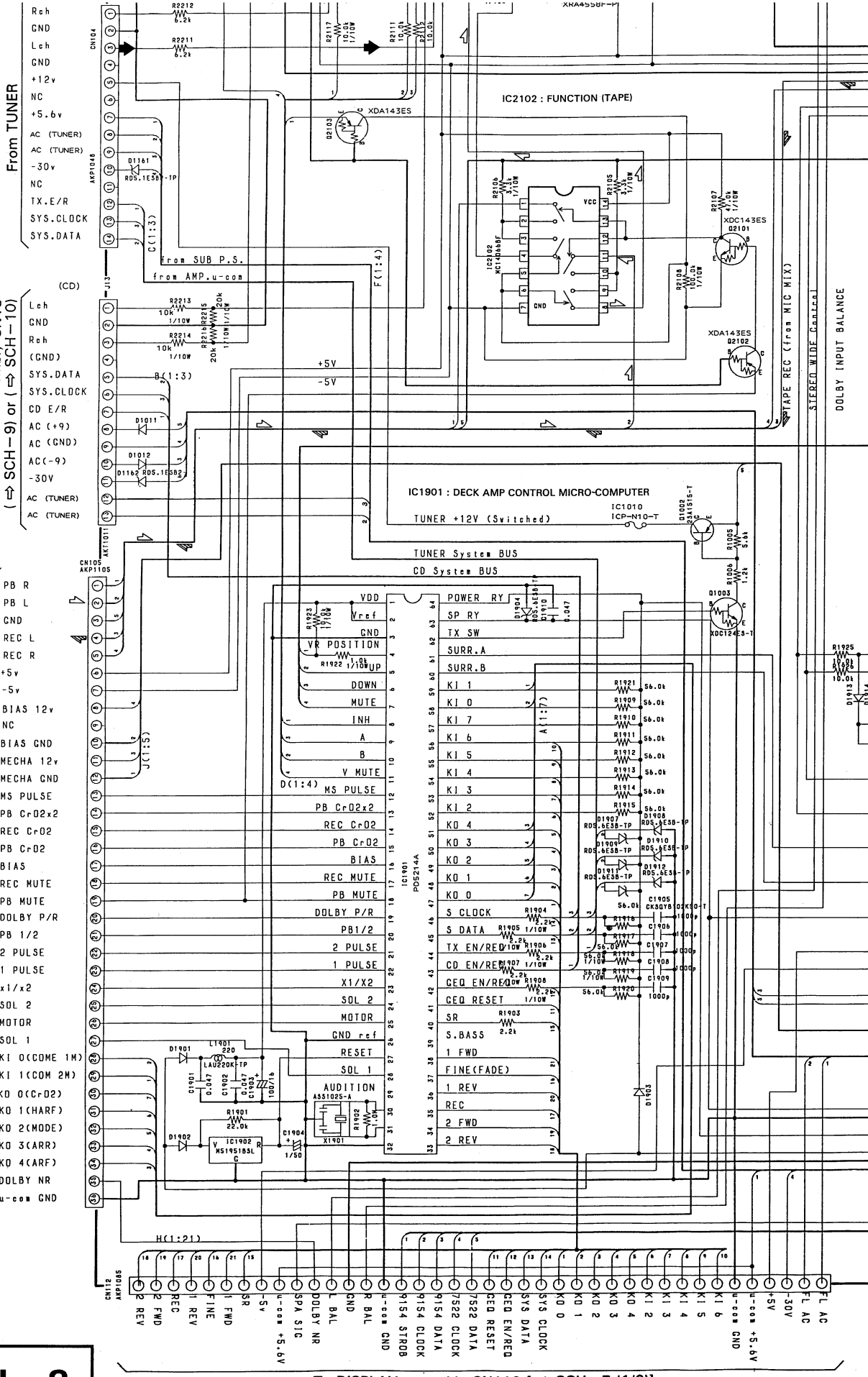


A  
B  
C  
D

Assembly CN102  
(→ SCH-8)

# SCH-2

AF assembly



From TUNER  
Rch  
GND  
Lch  
GND  
+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-9 or ( → SCH-10 )

(CD)  
Lch  
GND  
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  
GND  
REC L  
REC R  
+5v  
-5v  
BIAS 12v  
NC  
BIAS GND  
MECHA 12v  
MECHA GND  
MS 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 1M)  
KI 1(COM 2M)  
KD 0(Cr02)  
KD 1(HARF)  
KD 2(MODE)  
KD 3(ARR)  
KD 4(ARF)  
DOLBY NR  
u-con GND

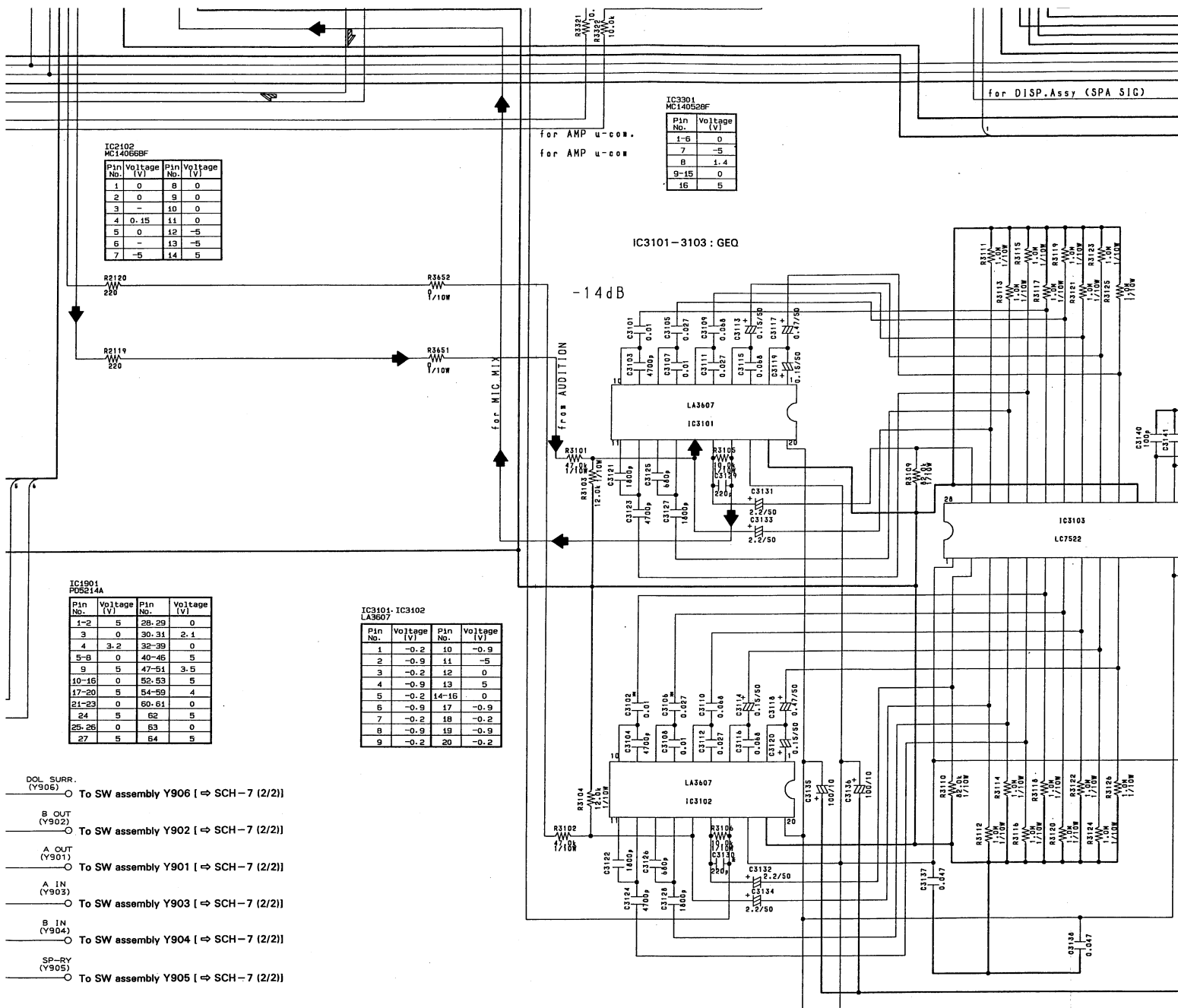
IC1901: DECK AMP CONTROL MICRO-COMPUTER

VDD	64
SP RY	63
TX SW	62
SURR.A	61
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KI 1	59
KI 0	58
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MS PULSE	11
MS PULSE	10
MS PULSE	9
MS PULSE	8
MS PULSE	7
MS PULSE	6
MS PULSE	5
MS PULSE	4
MS PULSE	3
MS PULSE	2
MS PULSE	1

IC1901: DECK AMP CONTROL MICRO-COMPUTER  
TUNER +12V (Switched)  
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To DISPLAY assembly CN112 ( → SCH-7 (1/2) )

TAPE REC (From MIC MIX)  
STEREO WIDE BALANCE  
DOLBY INPUT BALANCE



IC2102  
MC14052BF

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

IC3301  
MC14052BF

Pin No.	Voltage [V]
1-6	0
7	-5
8	1.4
9-15	0
16	5

IC1901  
PD9214A

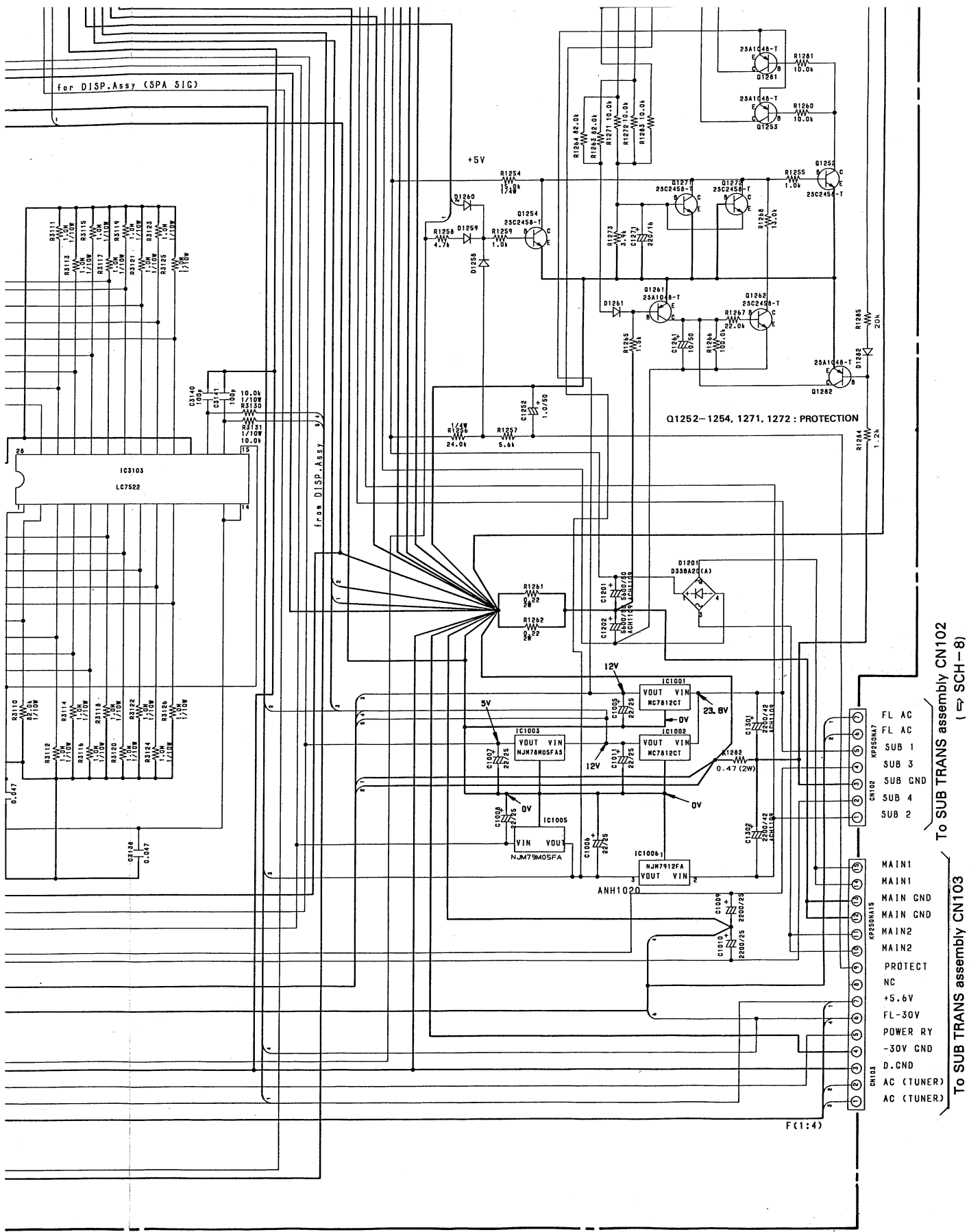
Pin No.	Voltage [V]	Pin No.	Voltage [V]
1-2	5	28-29	0
3	0	30-31	2.1
4	3.2	32-39	0
5-8	0	40-46	5
9	5	47-51	3.5
10-16	0	52-53	5
17-20	5	54-59	4
21-23	0	60-61	0
24	5	62	5
25-26	0	63	0
27	5	64	5

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	-0.9
8	-0.9	19	-0.9
9	-0.2	20	-0.2

- DOL SURR. (Y906) To SW assembly Y906 (⇒ SCH-7 (2/2))
- B OUT (Y902) To SW assembly Y902 (⇒ SCH-7 (2/2))
- A OUT (Y901) To SW assembly Y901 (⇒ SCH-7 (2/2))
- A IN (Y903) To SW assembly Y903 (⇒ SCH-7 (2/2))
- B IN (Y904) To SW assembly Y904 (⇒ SCH-7 (2/2))
- SP-RY (Y905) To SW assembly Y905 (⇒ SCH-7 (2/2))

- 5V (Signal)
- 5V (Signal)
- TAPE Assy & TUNER -- P.S. ->
- DISP.Assy & CD -- P.S. ->
- P RY Cont.
- com GND
- OWER RY Cont.
- com.+5.6V
- TUNER & DISP.Assy -- SUB P.S.->
- DISP.Assy -- SURR.Assy & GEO ->



for DISP.Assy (SPA SIG)

from DISP.Assy

Q1252-1254, 1271, 1272 : PROTECTION

To SUB TRANS assembly CN102  
(⇒ SCH-8)

To SUB TRANS assembly CN103  
(⇒ SCH-8)

F(1:4)

SI-AV8090-G

**SCH-2**

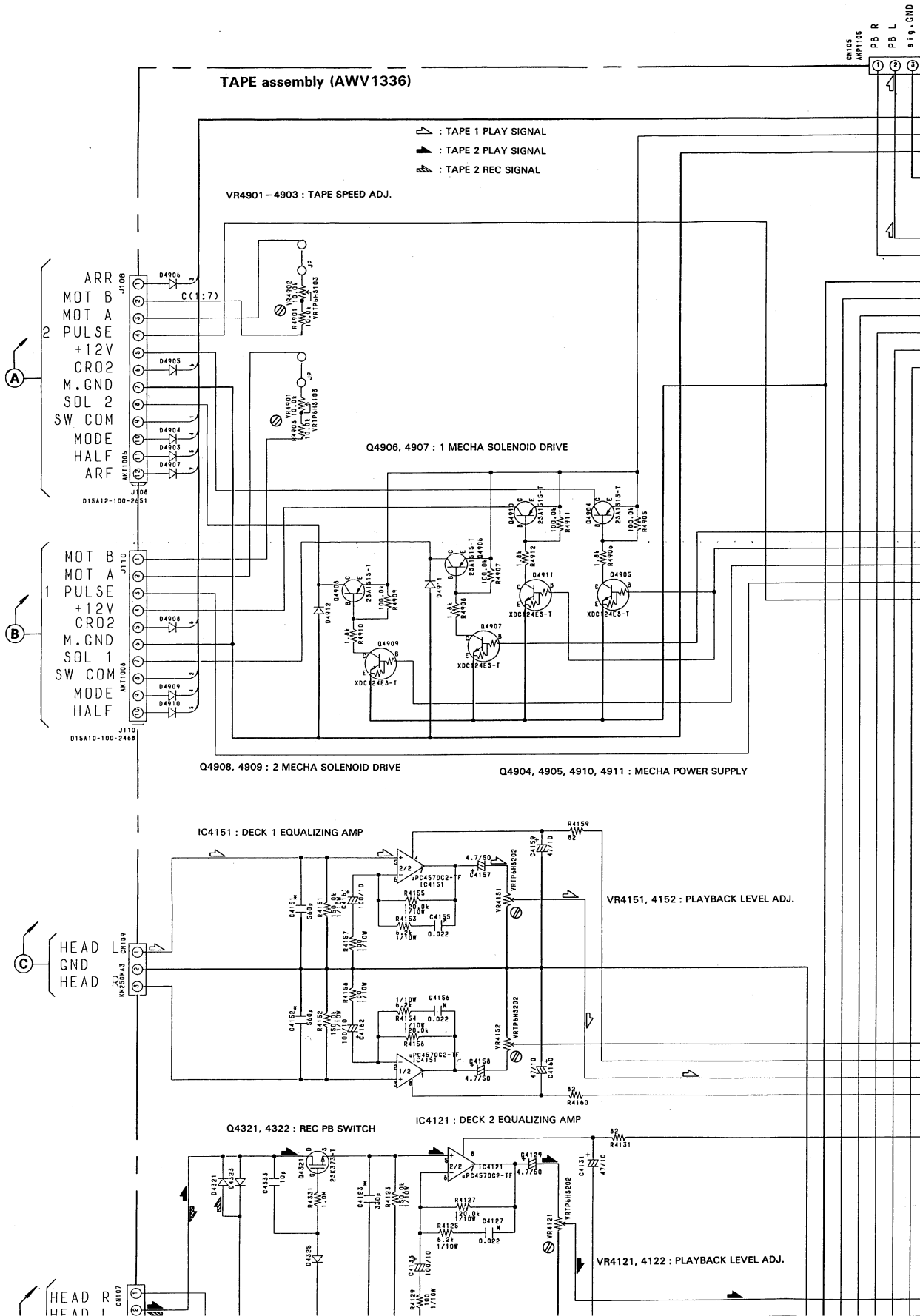
AF assembly

# XD-J215M, XD-J210

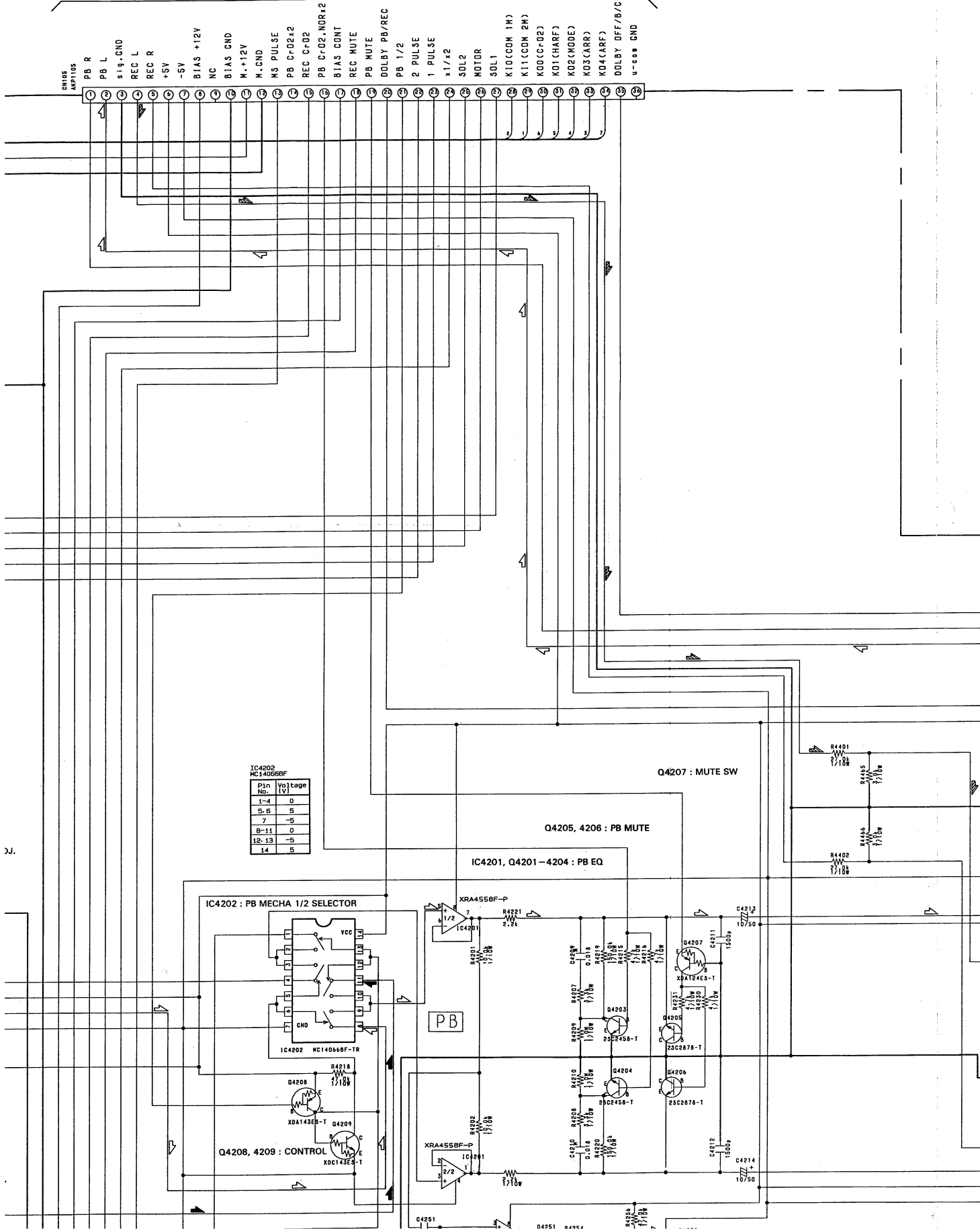
2

3

## 4.1.3 TAPE Assembly, 1 Mecha Unit and 2 Mecha Unit



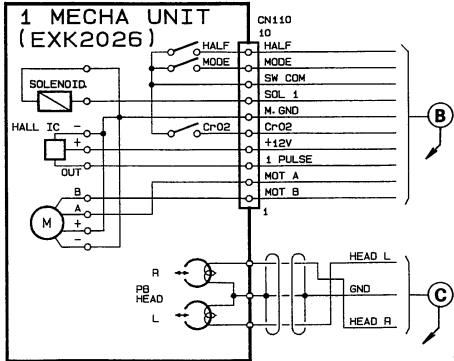
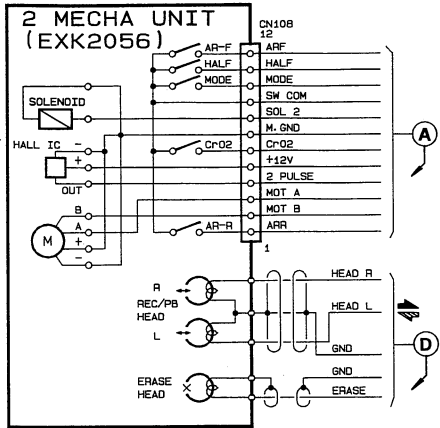
To AF assembly CN105 (⇒ SCH-2) or (⇒ SCH-11)



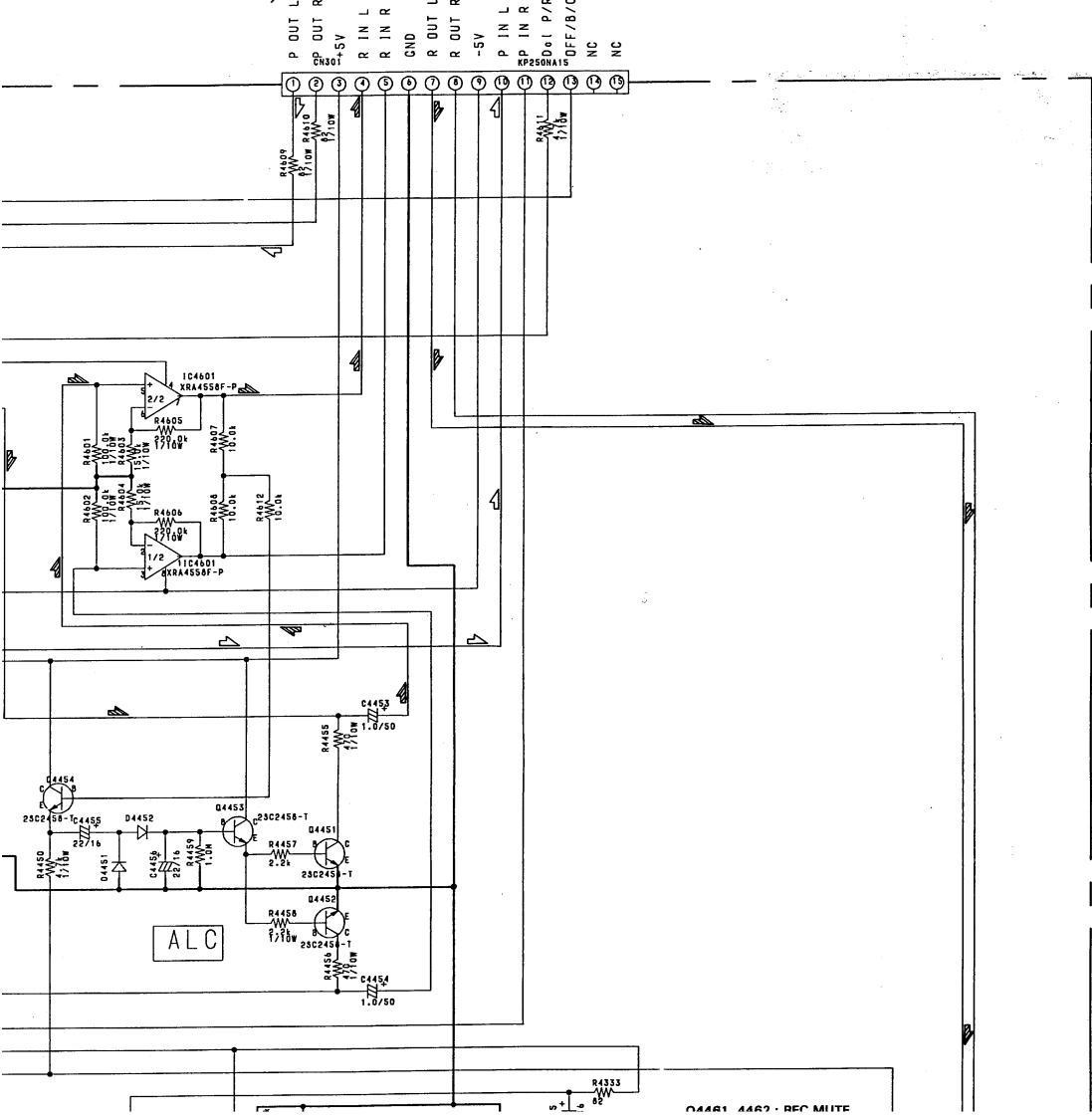
IC4202  
MC14068BF

Pin No.	Voltage (V)
1-4	0
5, 6	5
7	-5
8-11	0
12, 13	-5
14	5

3J.



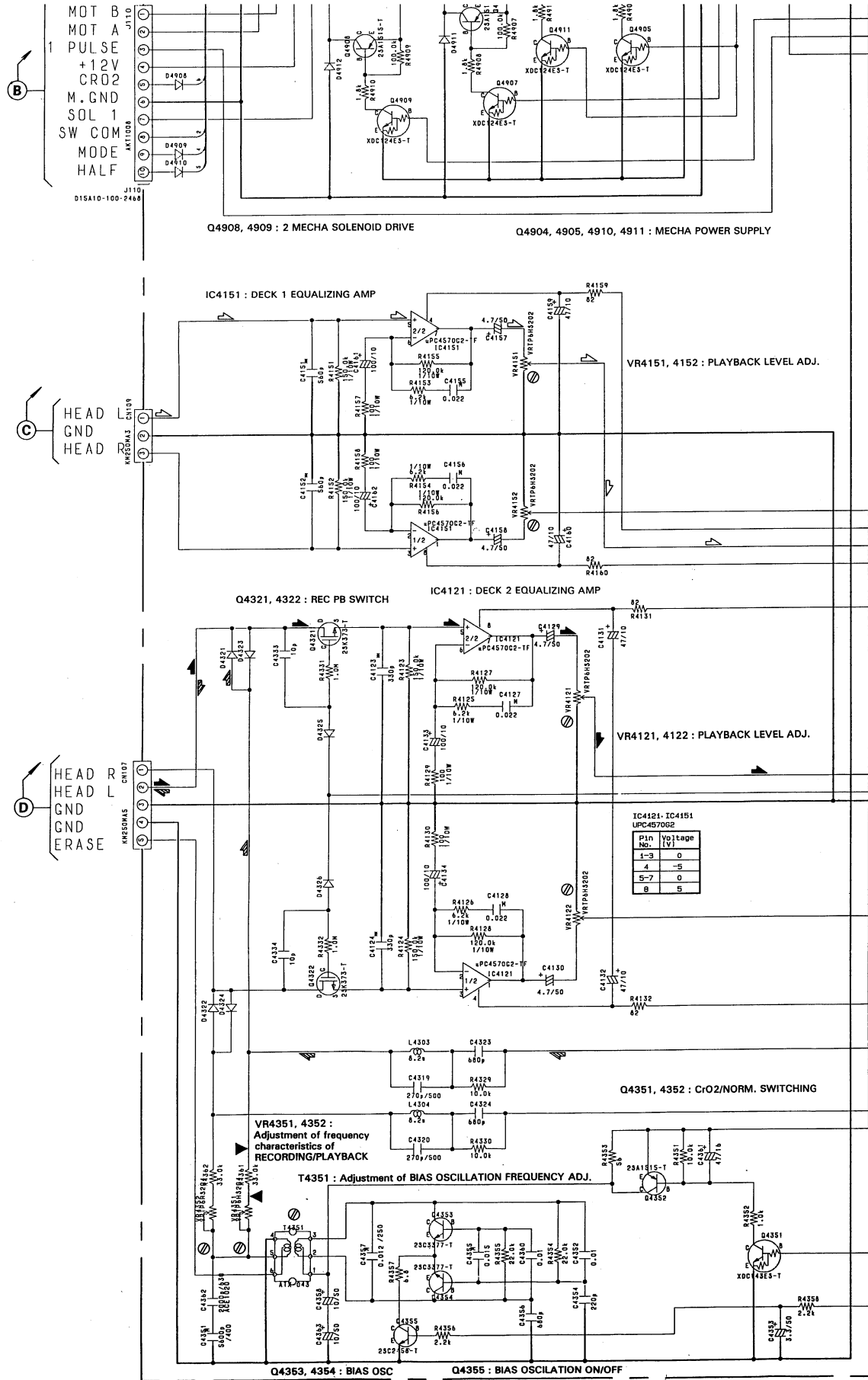
To DOLBY C assembly CN301 (⇨ SCH-5)



B

C

D



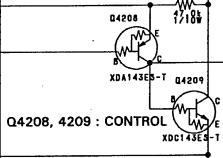
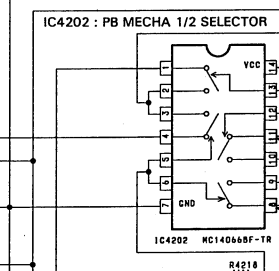
**SCH-3**

TAPE assembly  
1 Mecha Unit  
2 Mecha Unit



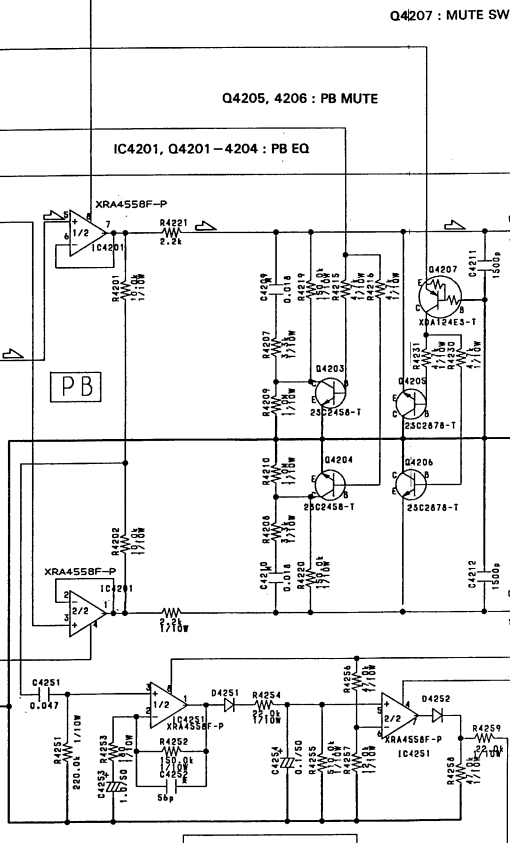
IC4202  
MC14066BF

Pin No.	Voltage (V)
1-4	0
5, 6	5
7	-5
8-11	0
12, 13	-5
14	5

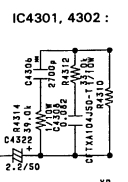
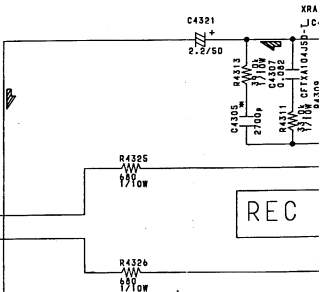


IC4201, IC4251, IC4301, IC4601, XRA455BF-P

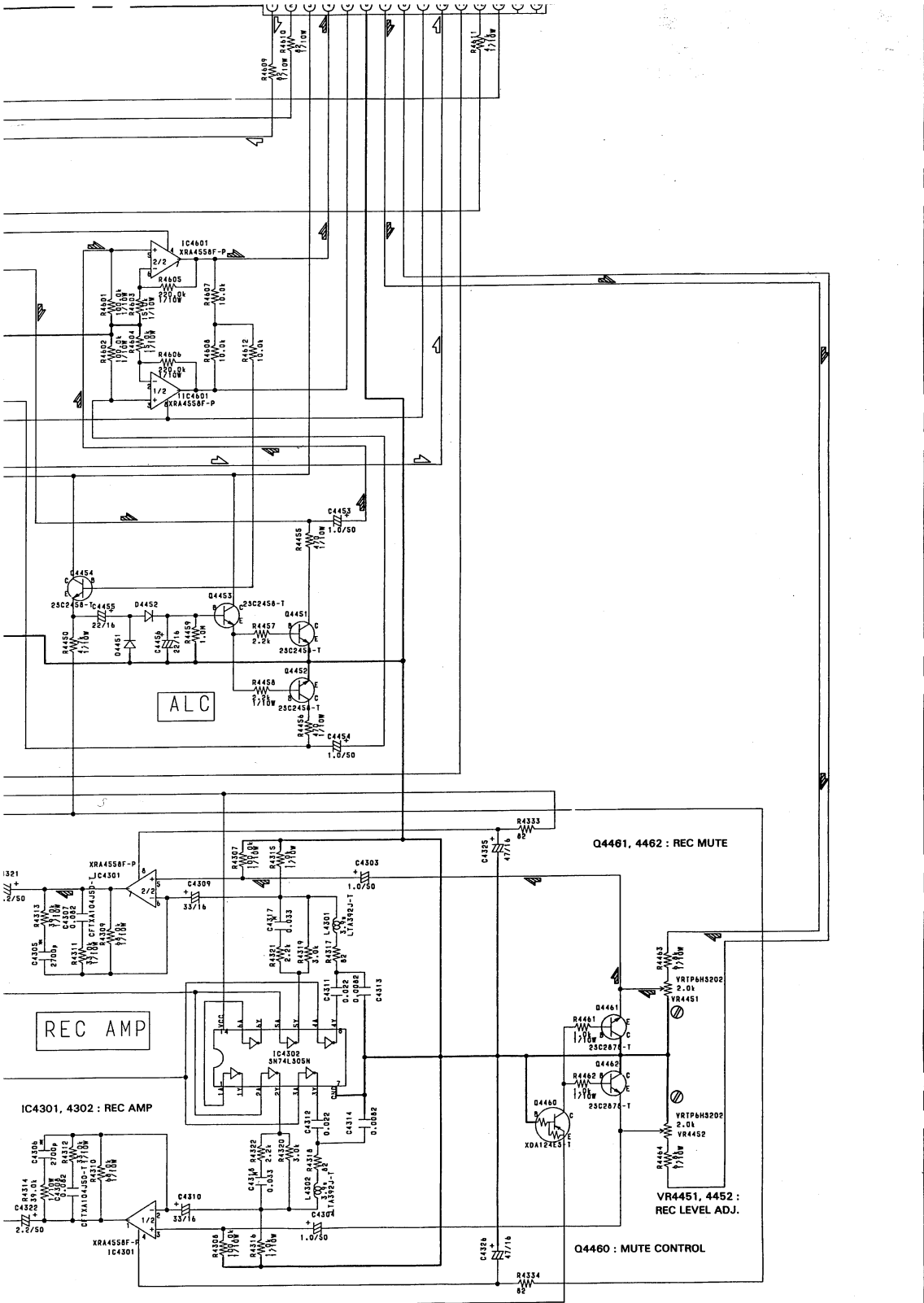
Pin No.	Voltage (V)
1-3	0
4	-5
5-7	0
8	5



MS PULSE



IC4301, 4302



IC4302  
SN74LS05N

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**





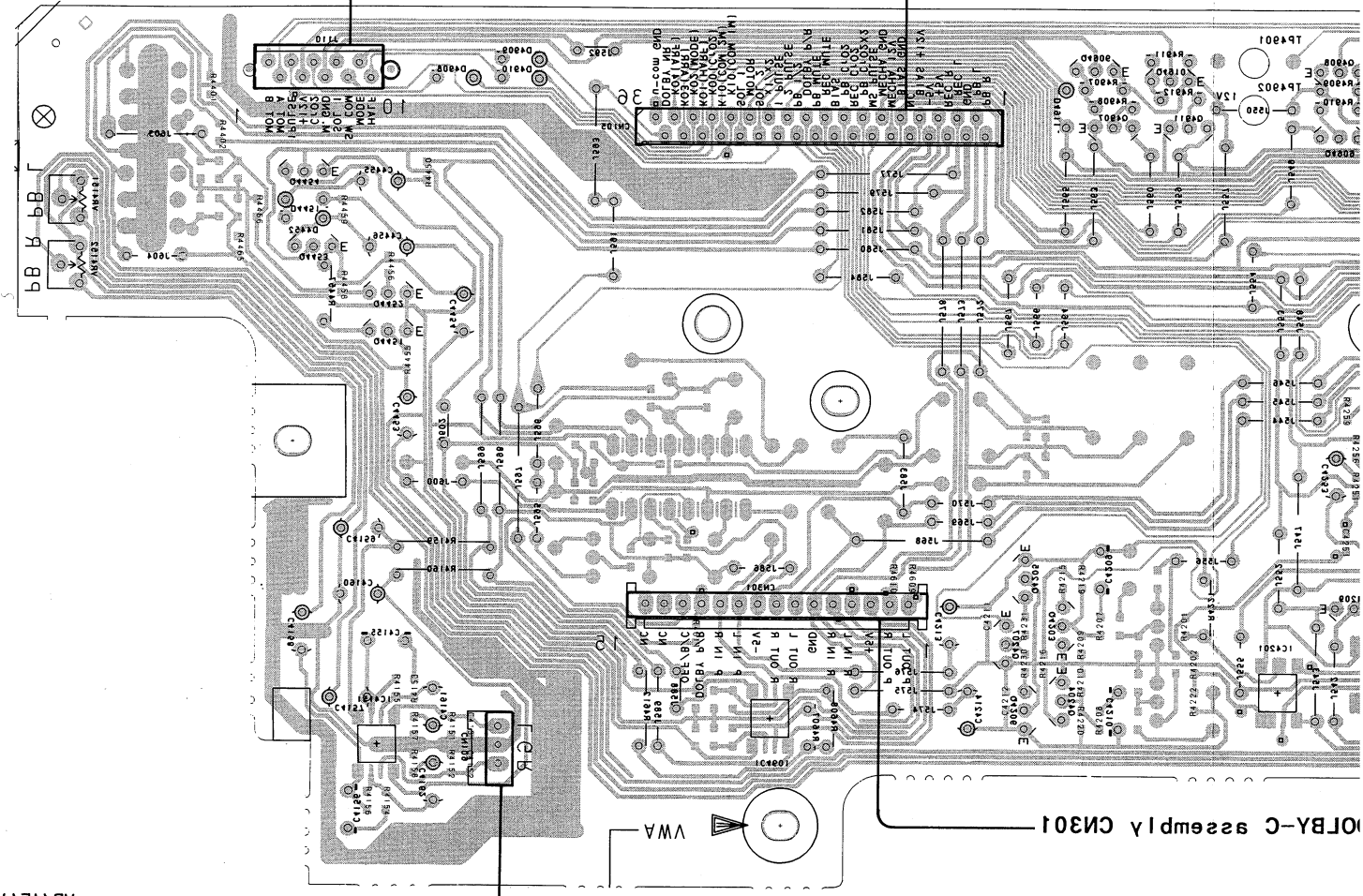
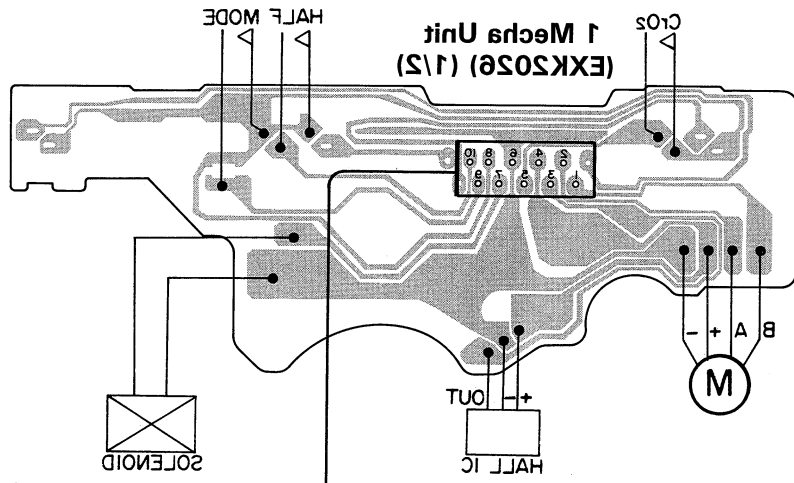
A

B

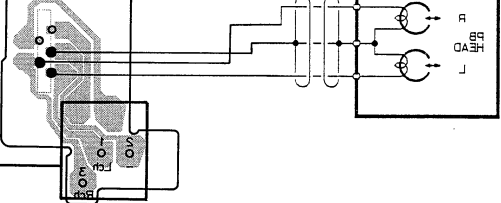
C

D

45



1 Mecha Unit (EXK206) (2/2)



04503-04507 IC4801  
 04505 IC4501  
 04504-04811  
 04421-04424 IC4121  
 AR4121 AR4125

AF assembly CN105

OTBY-C assembly CN301

2

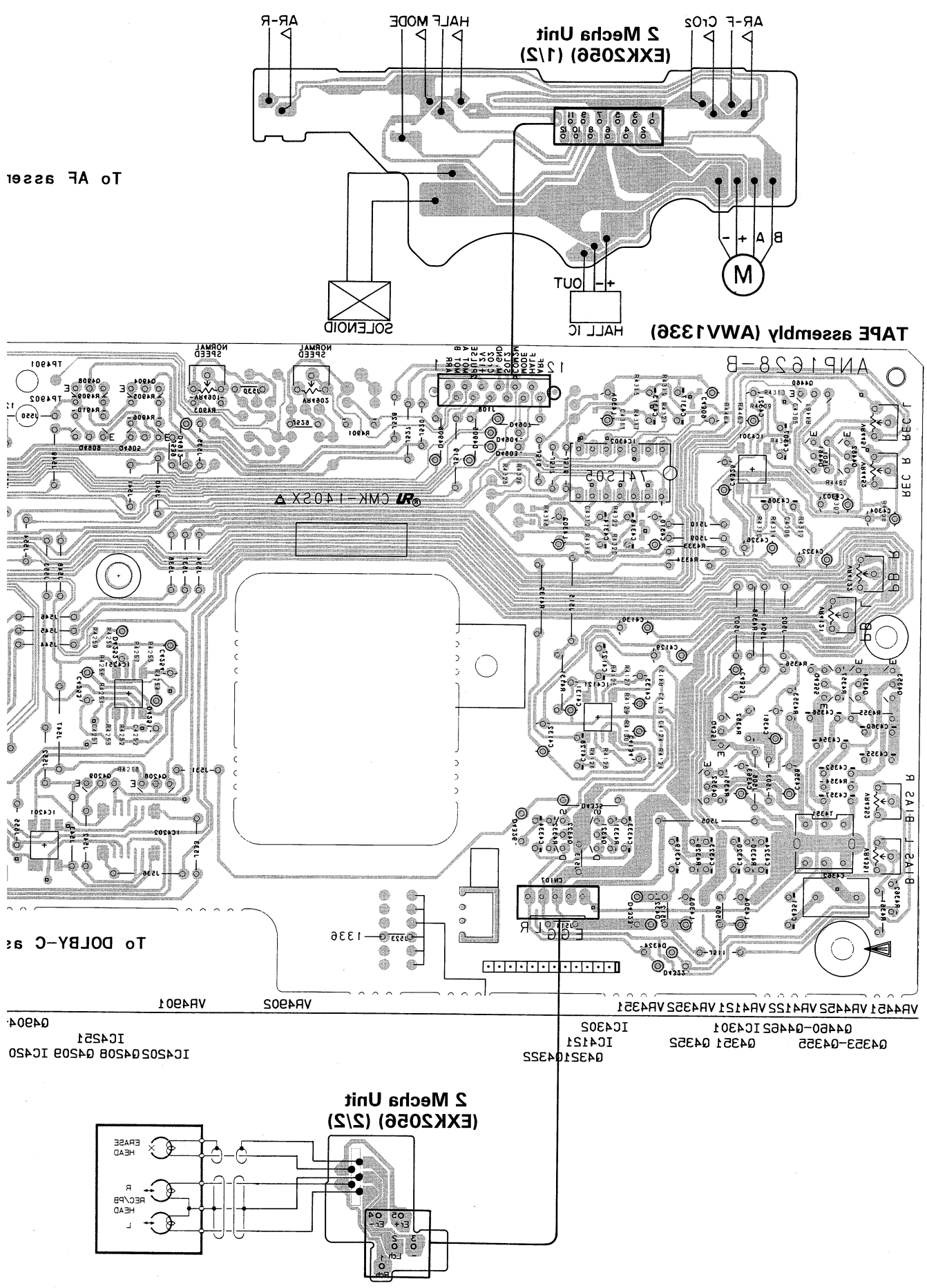
4

2

4

e

action diagram is viewed from the foil side.



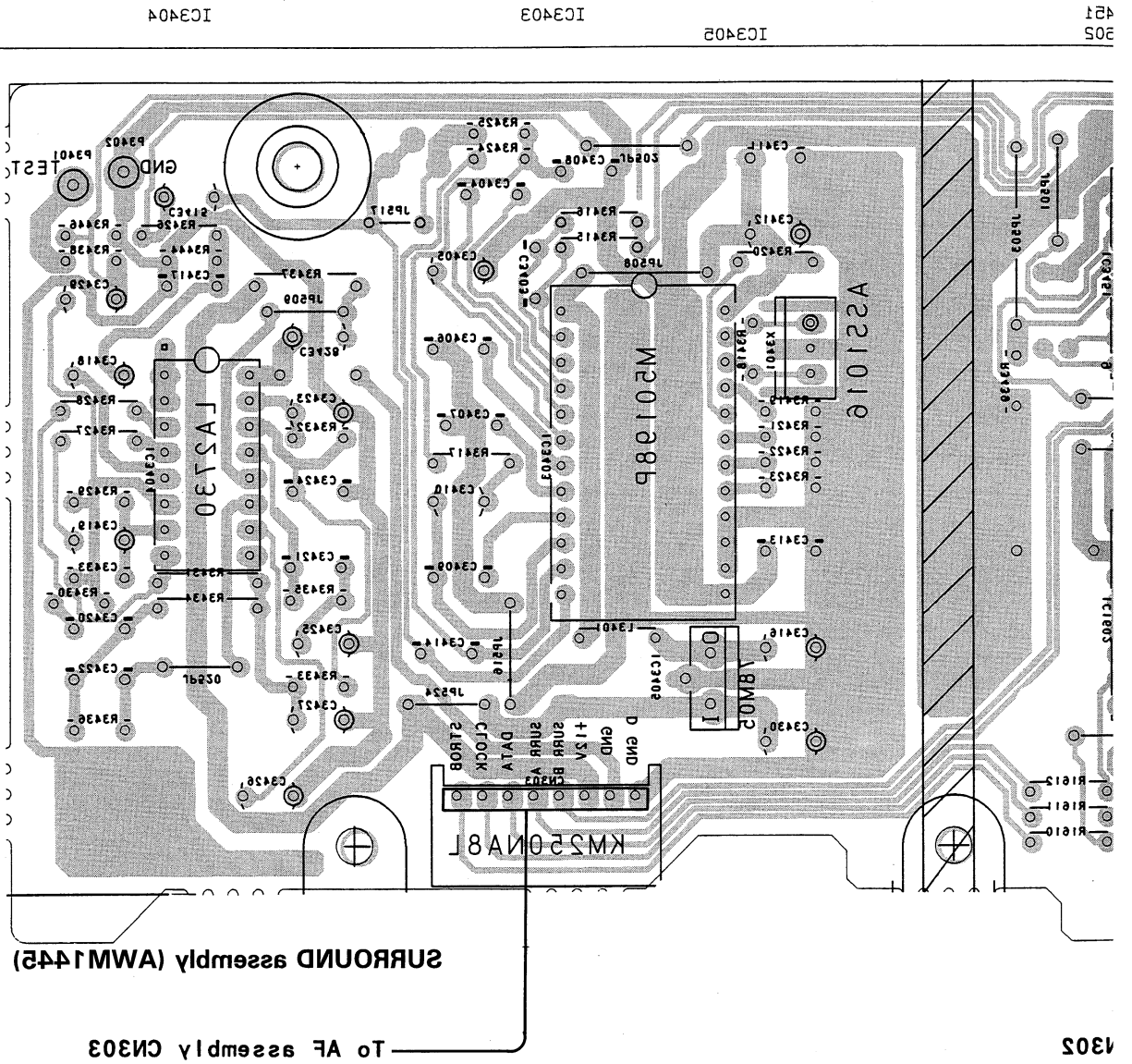
To AF assel

To DOLBY-C se

AV4421 AV4425 AV4155 AV4151 AV4325 AV4321  
 0432104355  
 IC4303 04321 04322 04321 04325  
 IC4305 04480-04485 IC4301 IC4151  
 IC4505 04508 04509 IC450 IC4521  
 AV4801  
 04804

A B C D

This PCB connection diagram



A

B

C

D

e

e

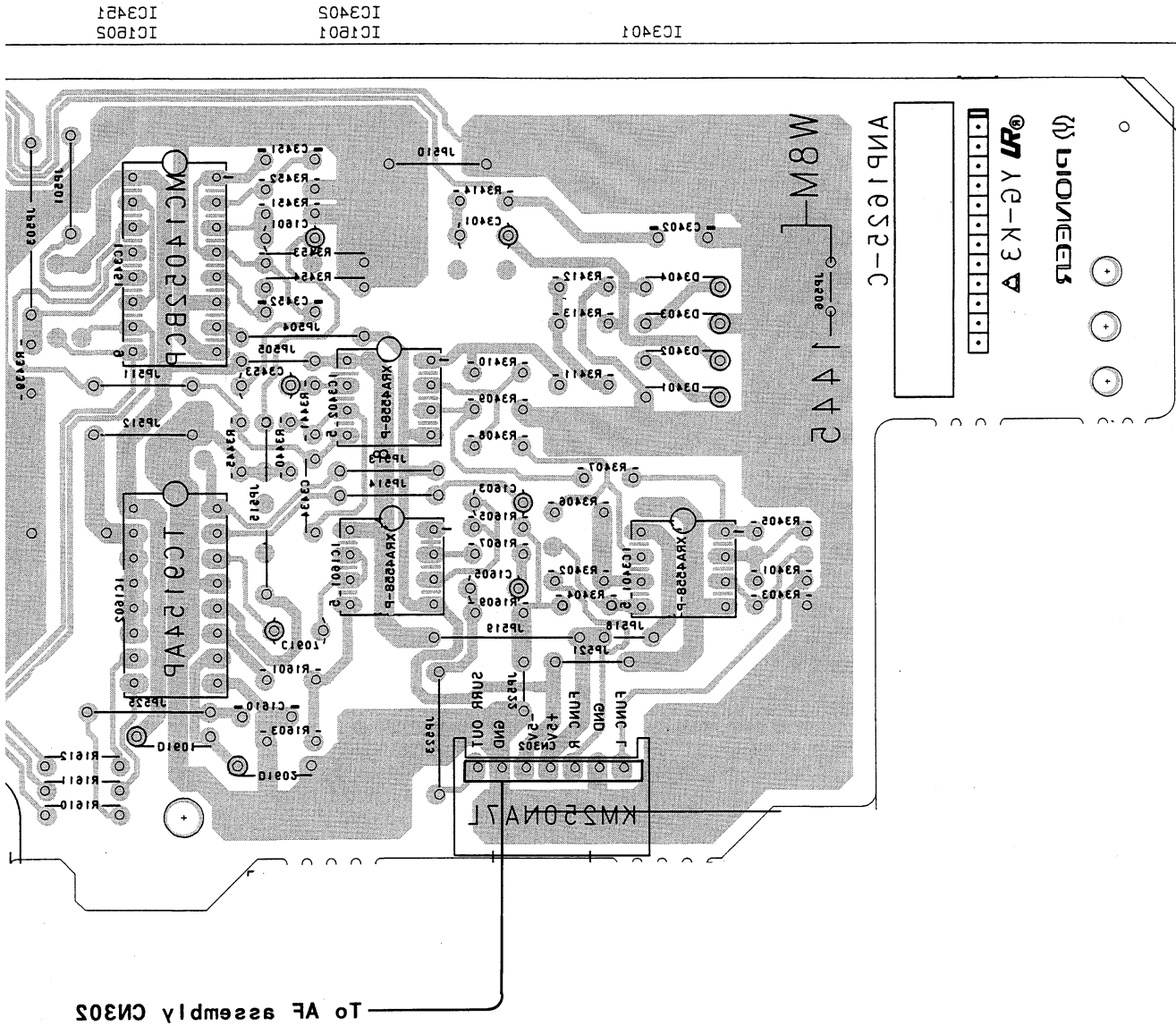
4

e

e

4

in diagram is viwed from the foil side.







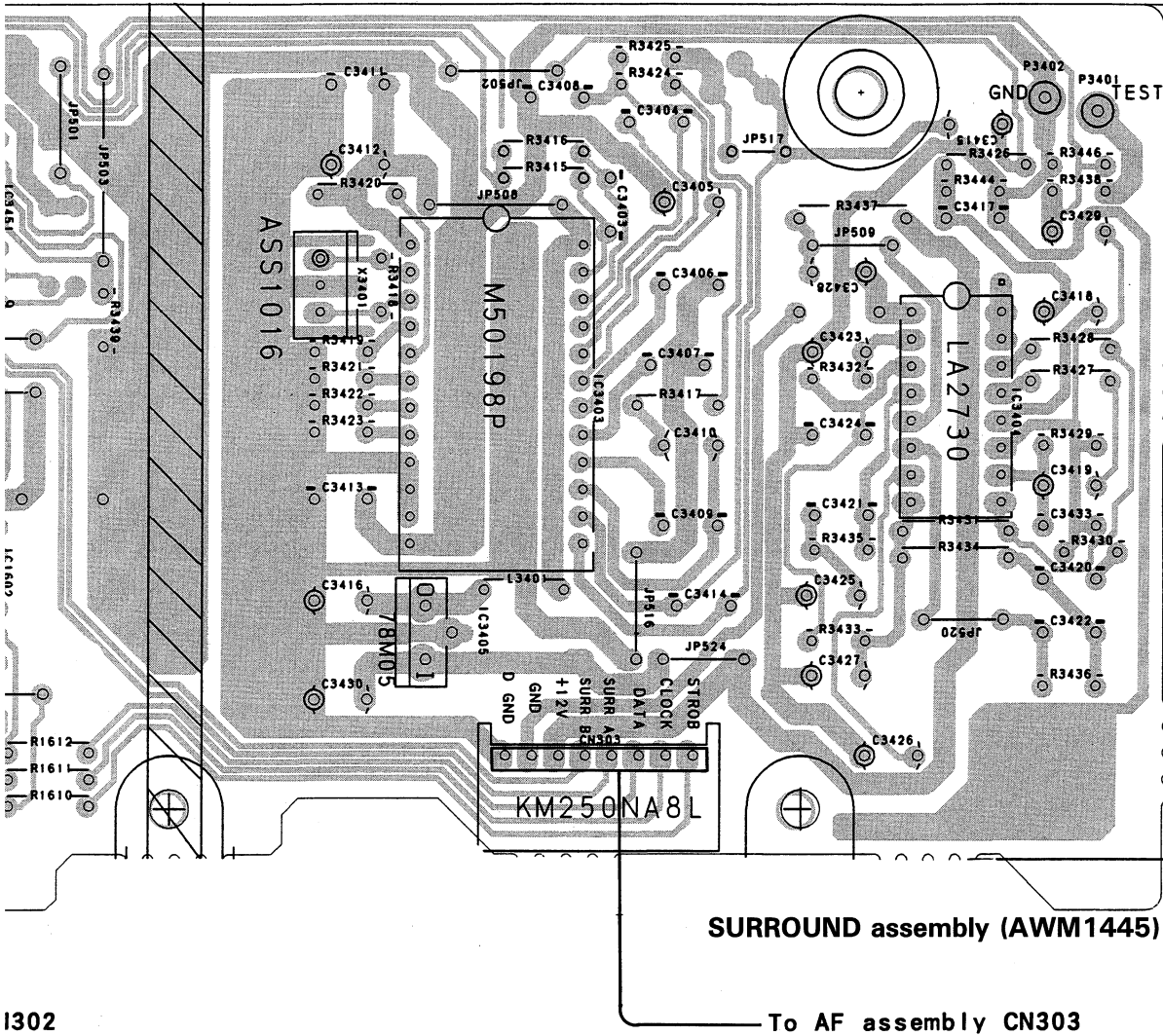
am is view from the parts mounted side.

151  
302

IC3405

IC3403

IC3404



1302

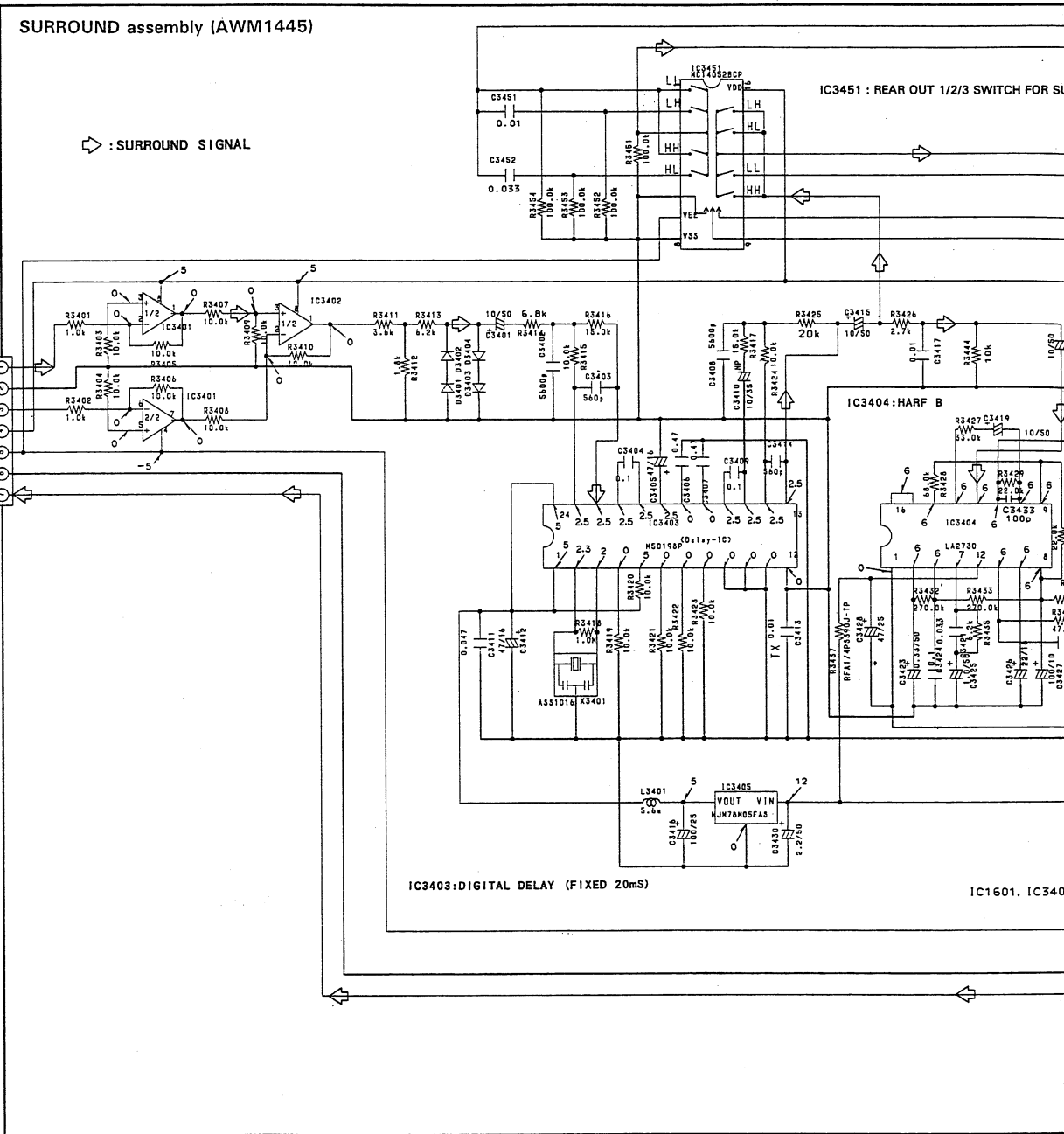
A

B

C

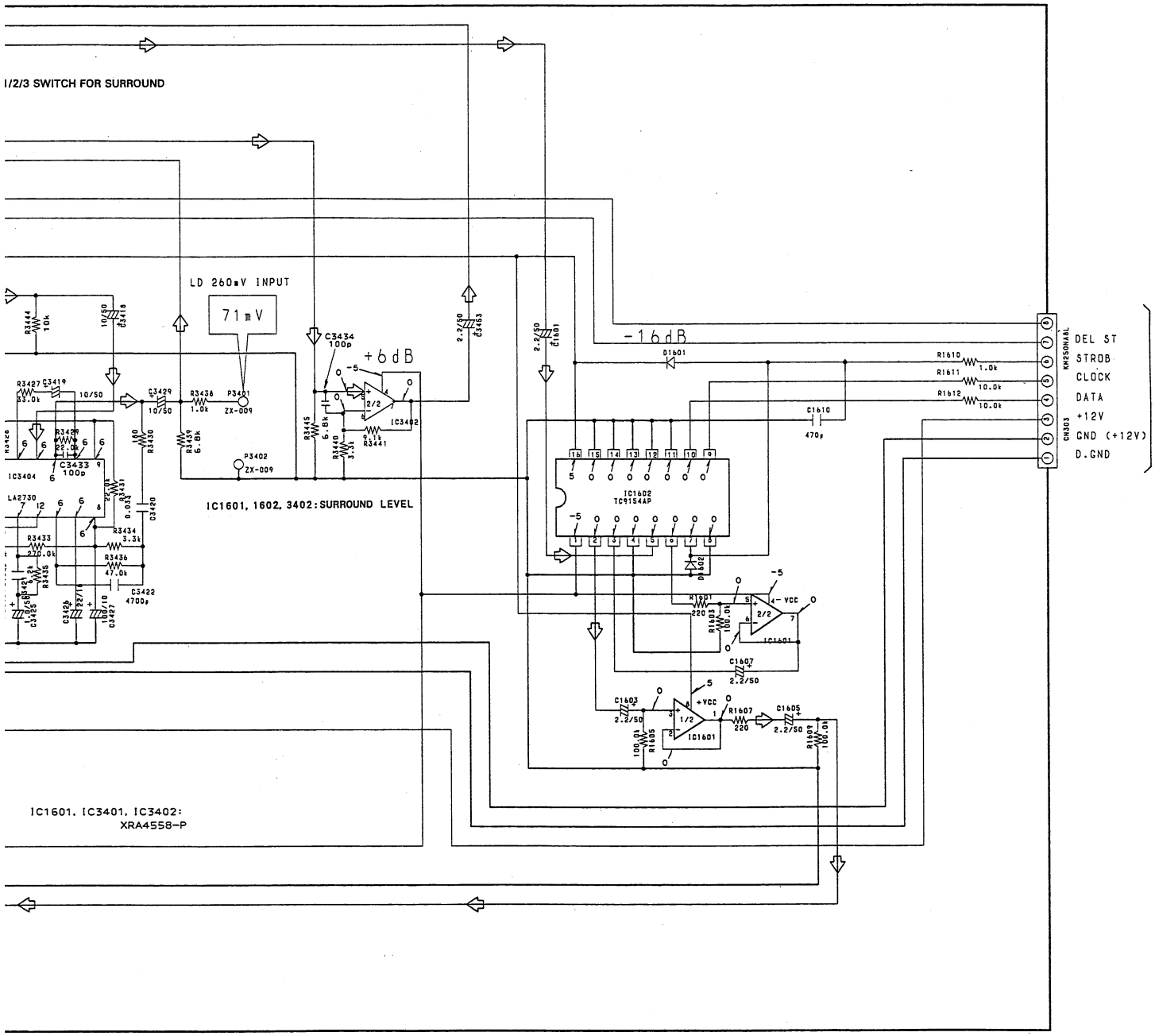
D

To AF assembly CN302 (⇒ SCH-2)



**SCH-4**

SURROUND assembly



To AF assembly CN303 (⇨ SCH-2)

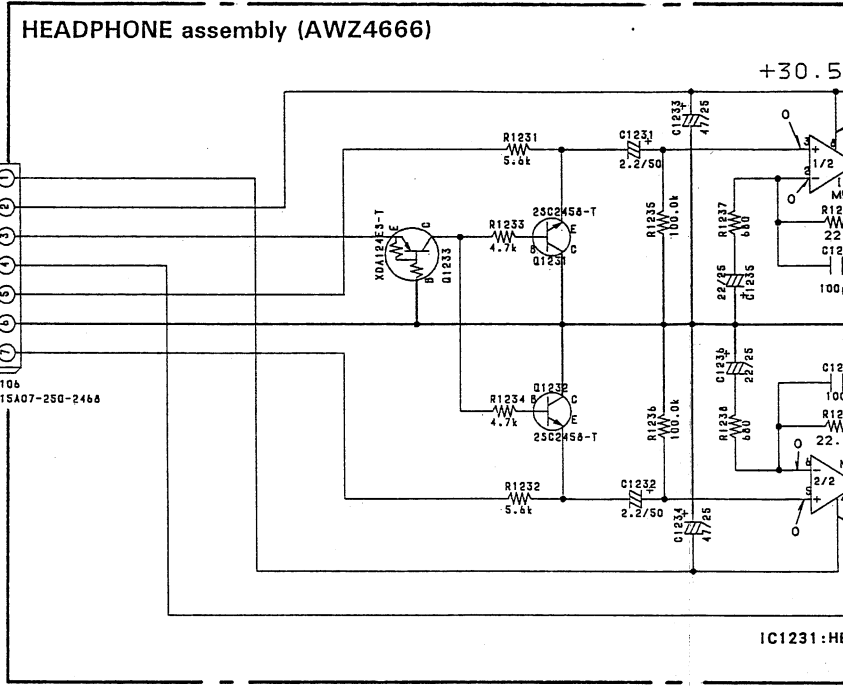
**SCH-4**

SURROUND assembly

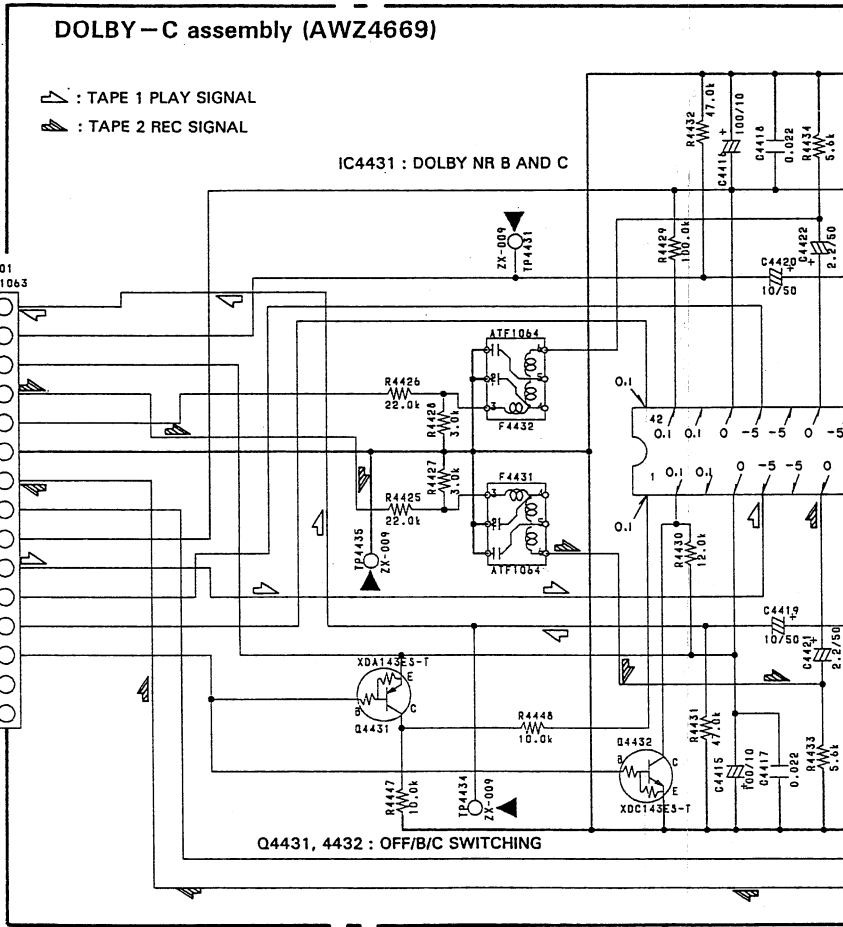
4.1.5 HEADPHONE Assembly and DOLBY - C Assembly

A  
B  
C  
D

To AF assembly CN106 (⇨ SCH-2)

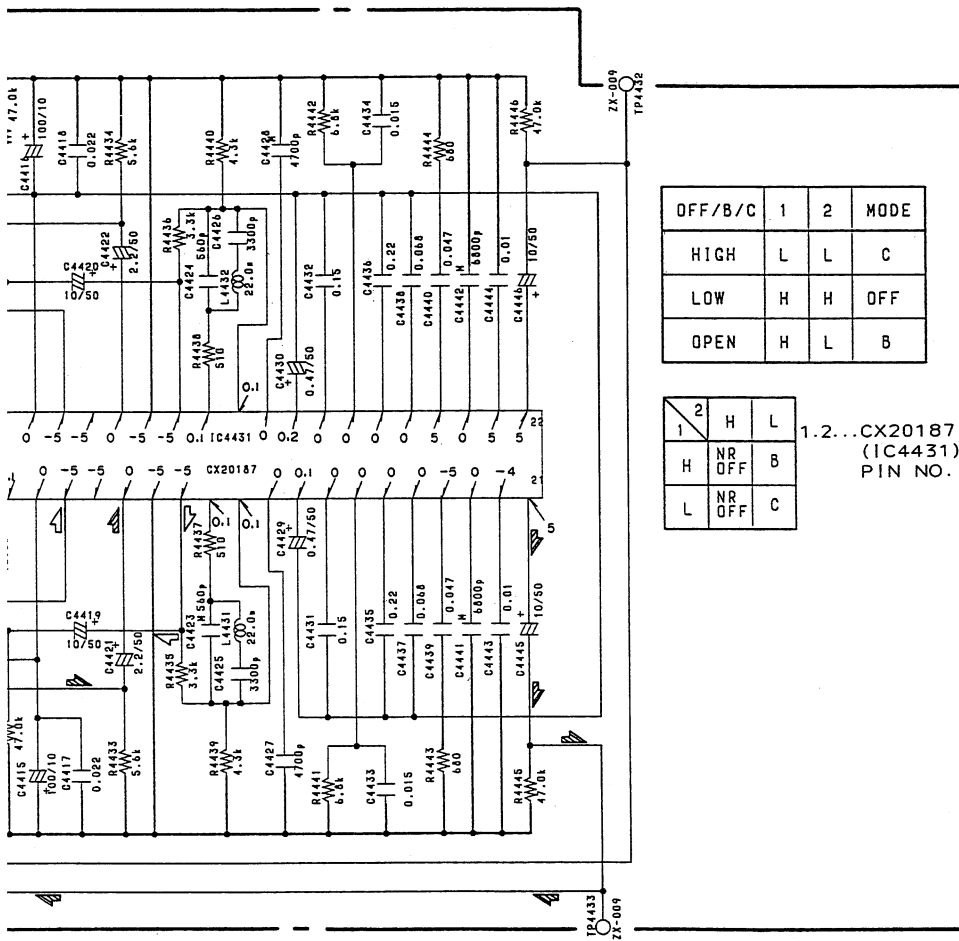
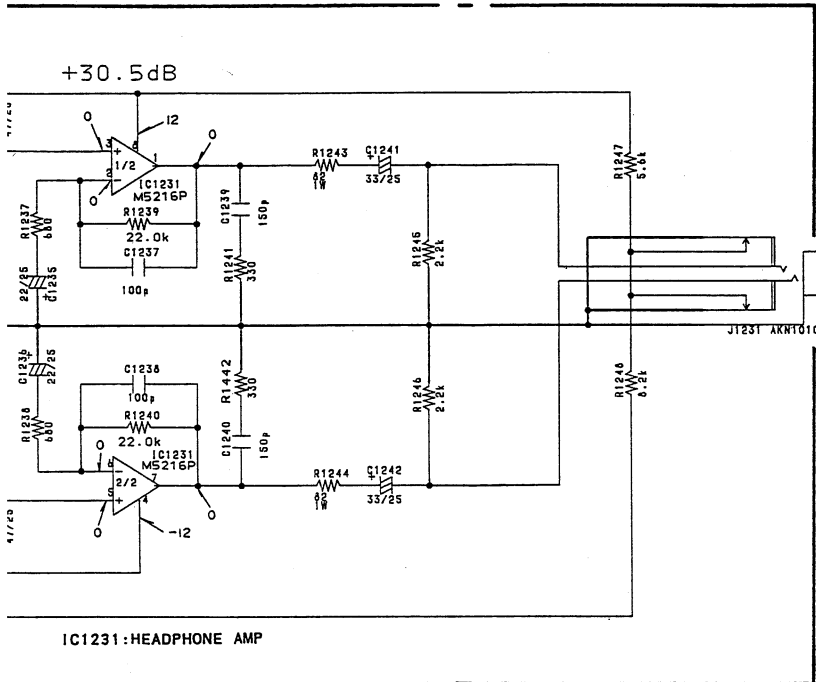


To TAPE assembly CN301 (⇨ SCH-3)



**SCH-5**

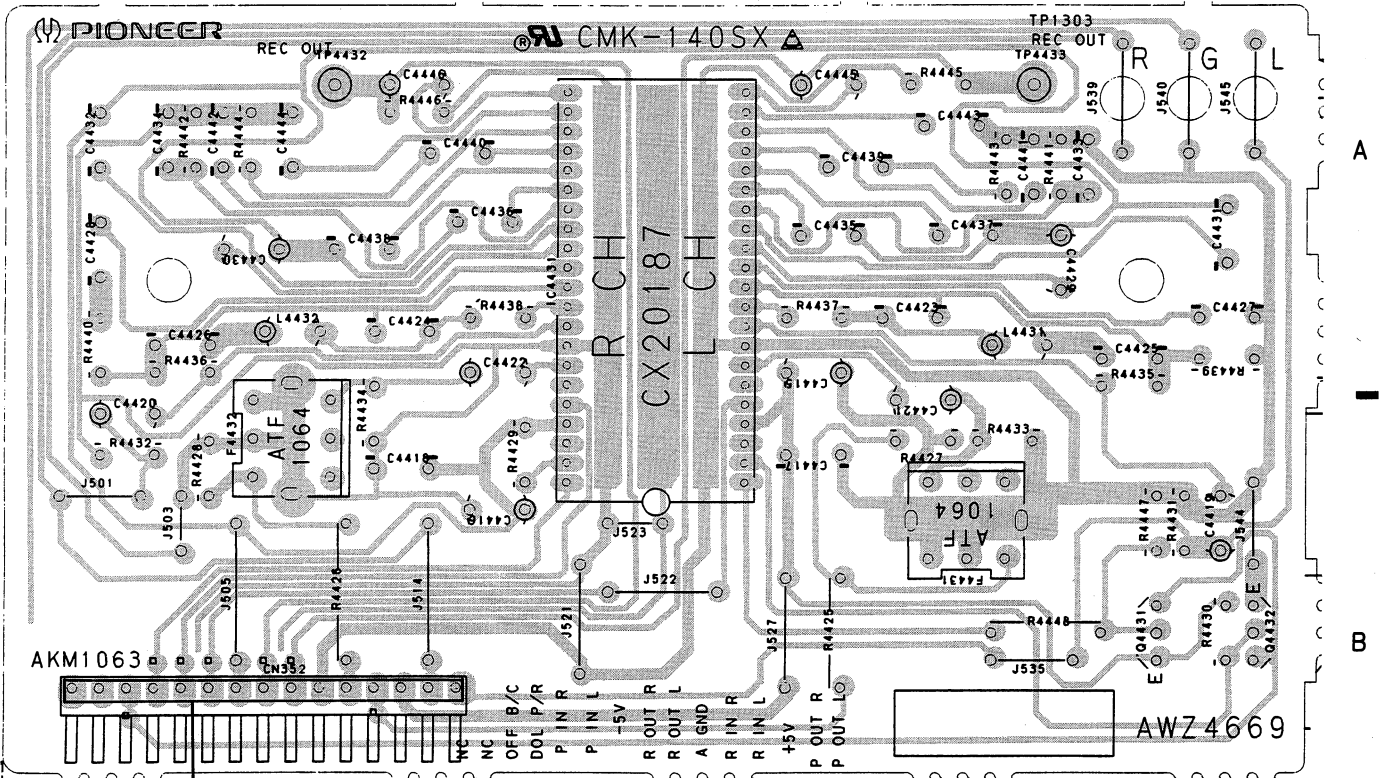
HEADPHONE assembly  
DOLBY - C assembly



HEADPHONE assembly  
DOLBY-C assembly

**SCH-5**

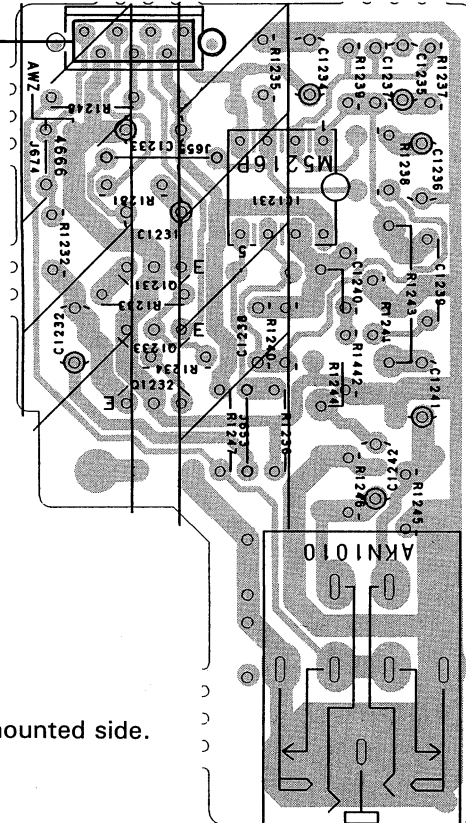
**DOLBY-C assembly (AWZ4669)**



To TAPE assembly CN301

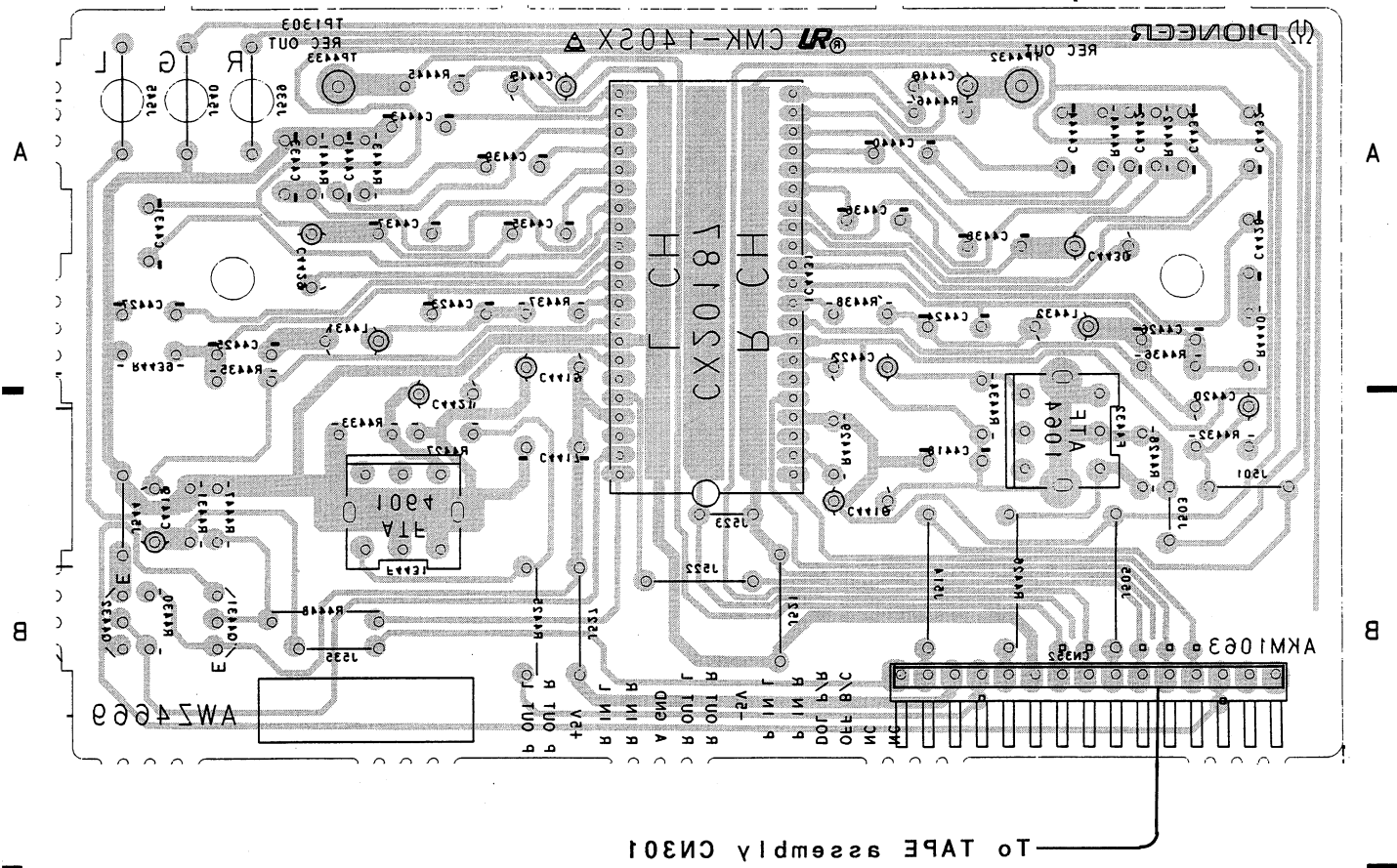
**HEADPHONE assembly (AWZ4666)**

To AF assembly CN106

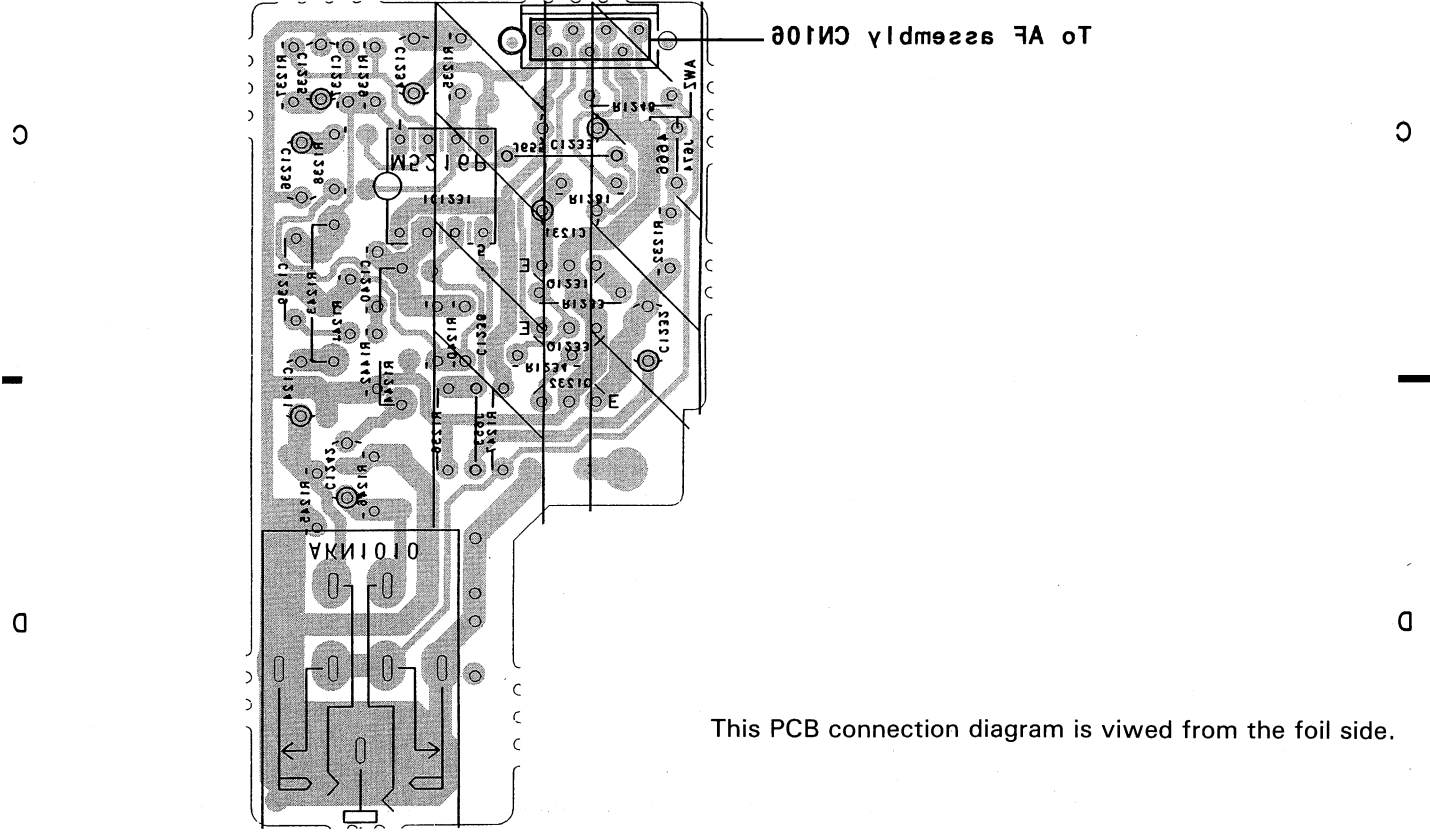


This PCB connection diagram is viewed from the parts mounted side.

**DOLBY - C assembly (AW2466)**



**HEADPHONE assembly (AW2466)**



This PCB connection diagram is viewed from the foil side.



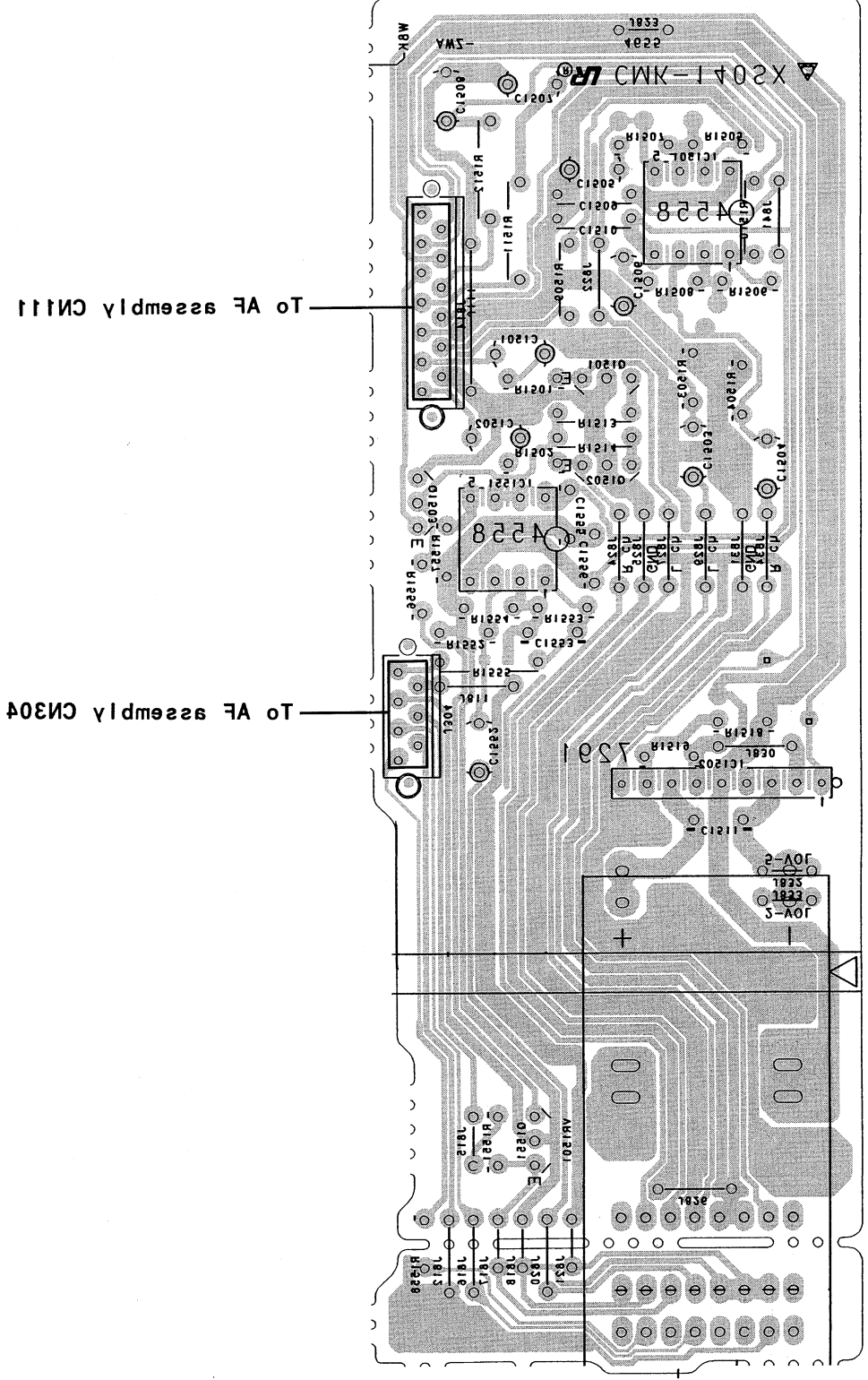
3

5

A

A

VOLUME assembly (AWS4652)



This PCB connection diagram is viewed from the foil side.

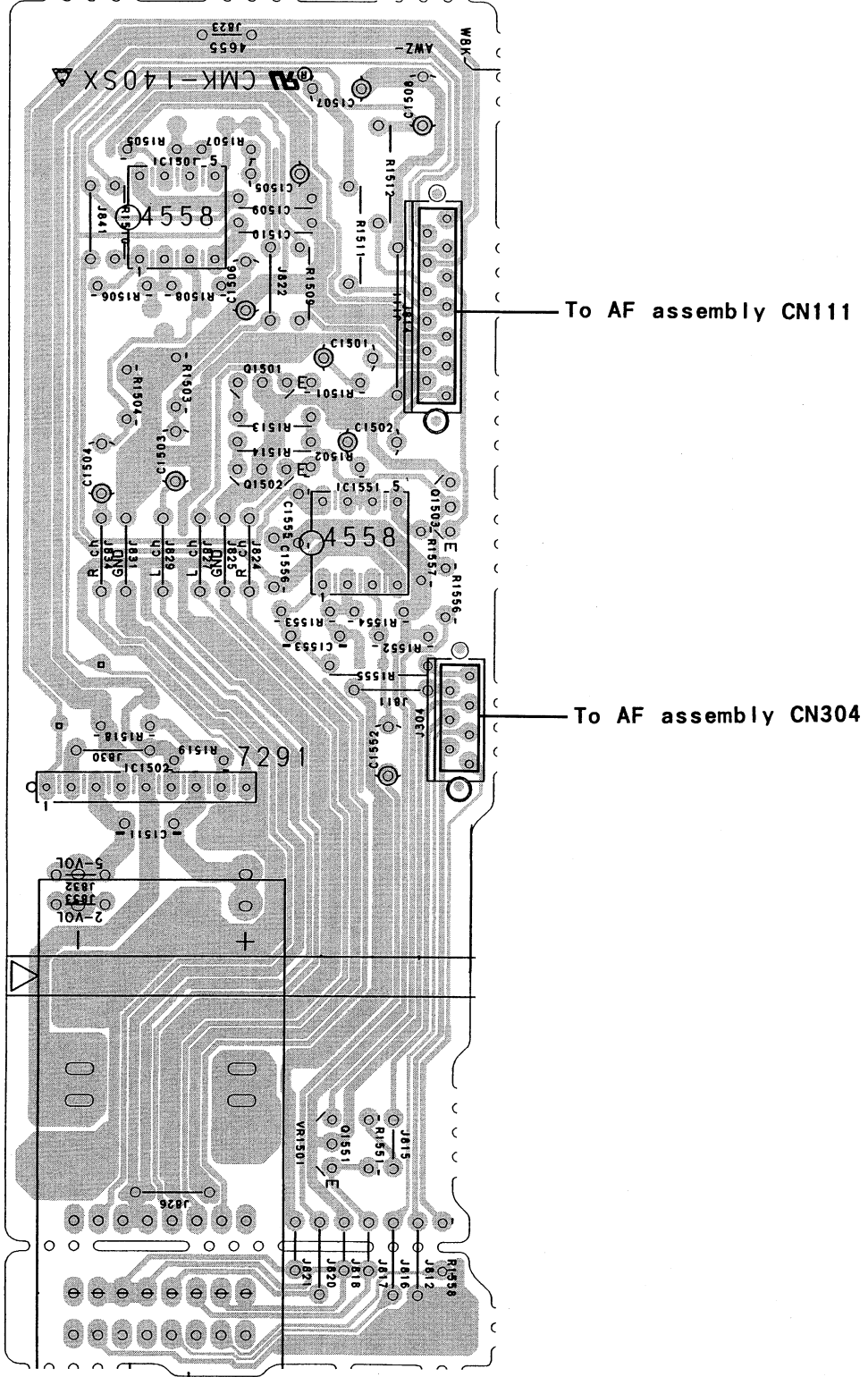
3

5

**4.1.6 VOLUME Assembly**

A

**VOLUME assembly (AWZ4655)**



To AF assembly CN111

To AF assembly CN304

B

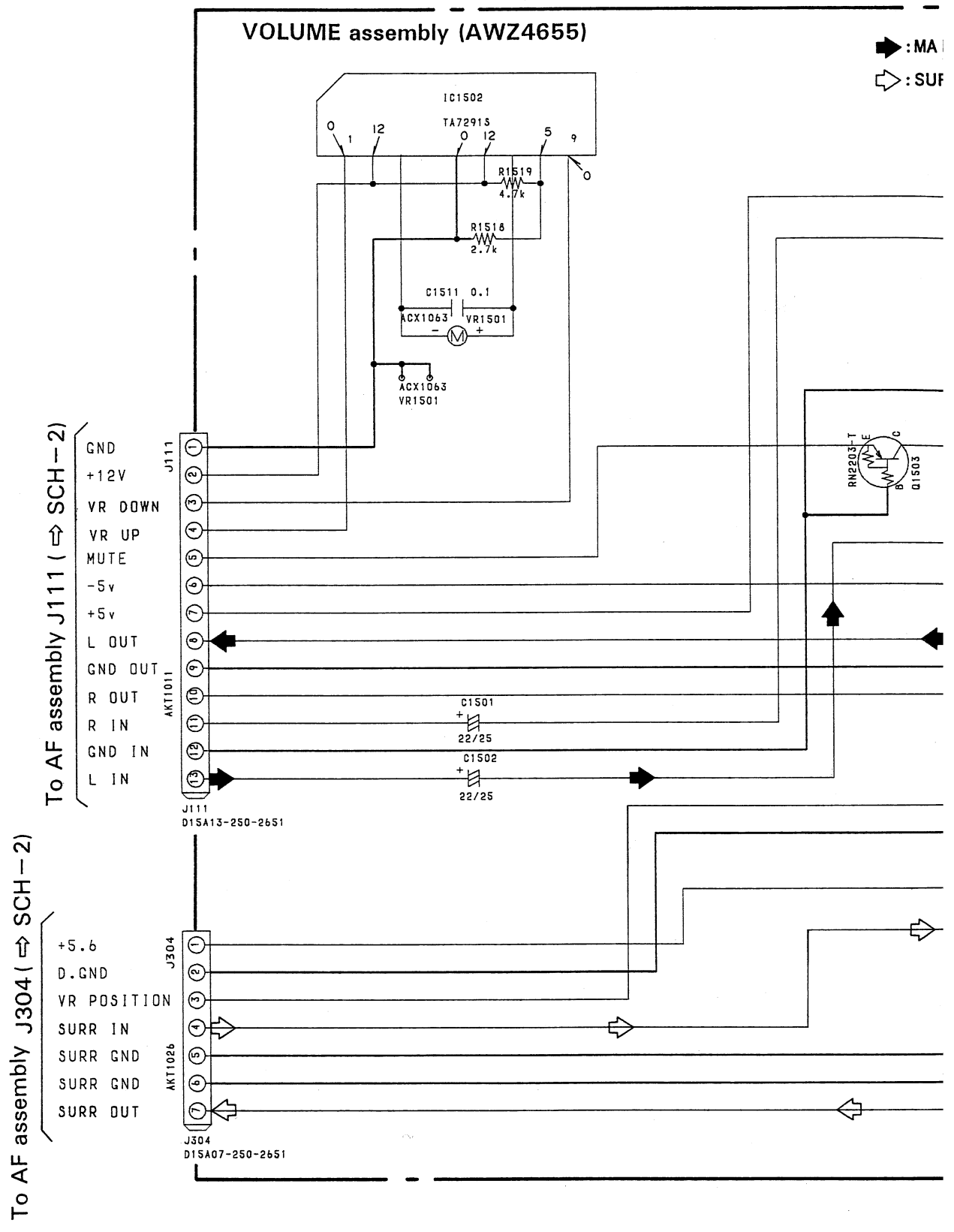
C

D

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

### VOLUME assembly (AWZ4655)

➔ : MA  
 ⇨ : SUF



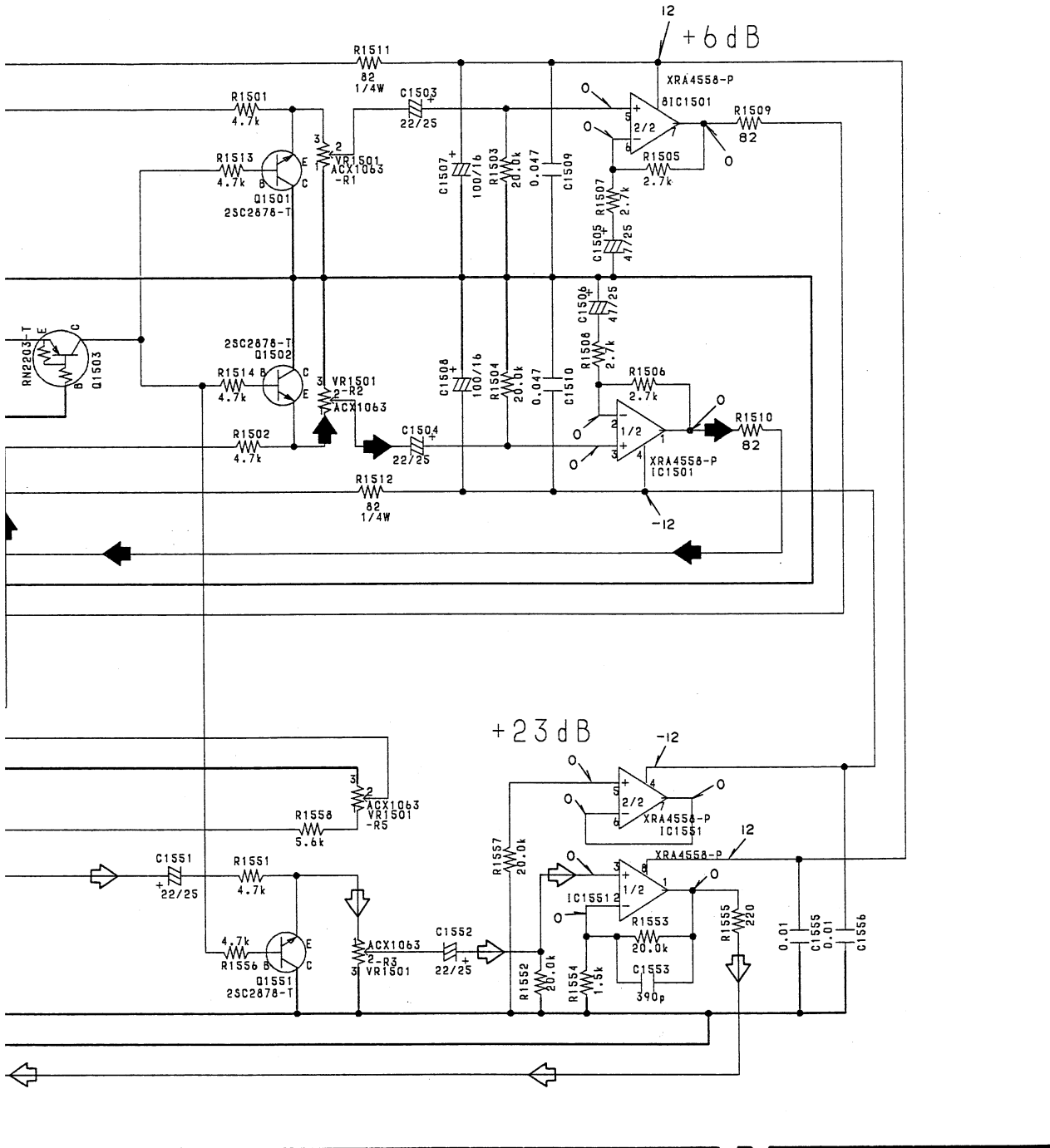
To AF assembly J111 (⇨ SCH-2)

To AF assembly J304 (⇨ SCH-2)

**SCH-6**

VOLUME assembly

➡: MAIN SIGNAL  
 ⇨: SURROUND SIGNAL



A  
B  
C  
D

**SCH-6**

VOLUME assembly

4.1.7 DISPLAY Assembly and SW Assembly

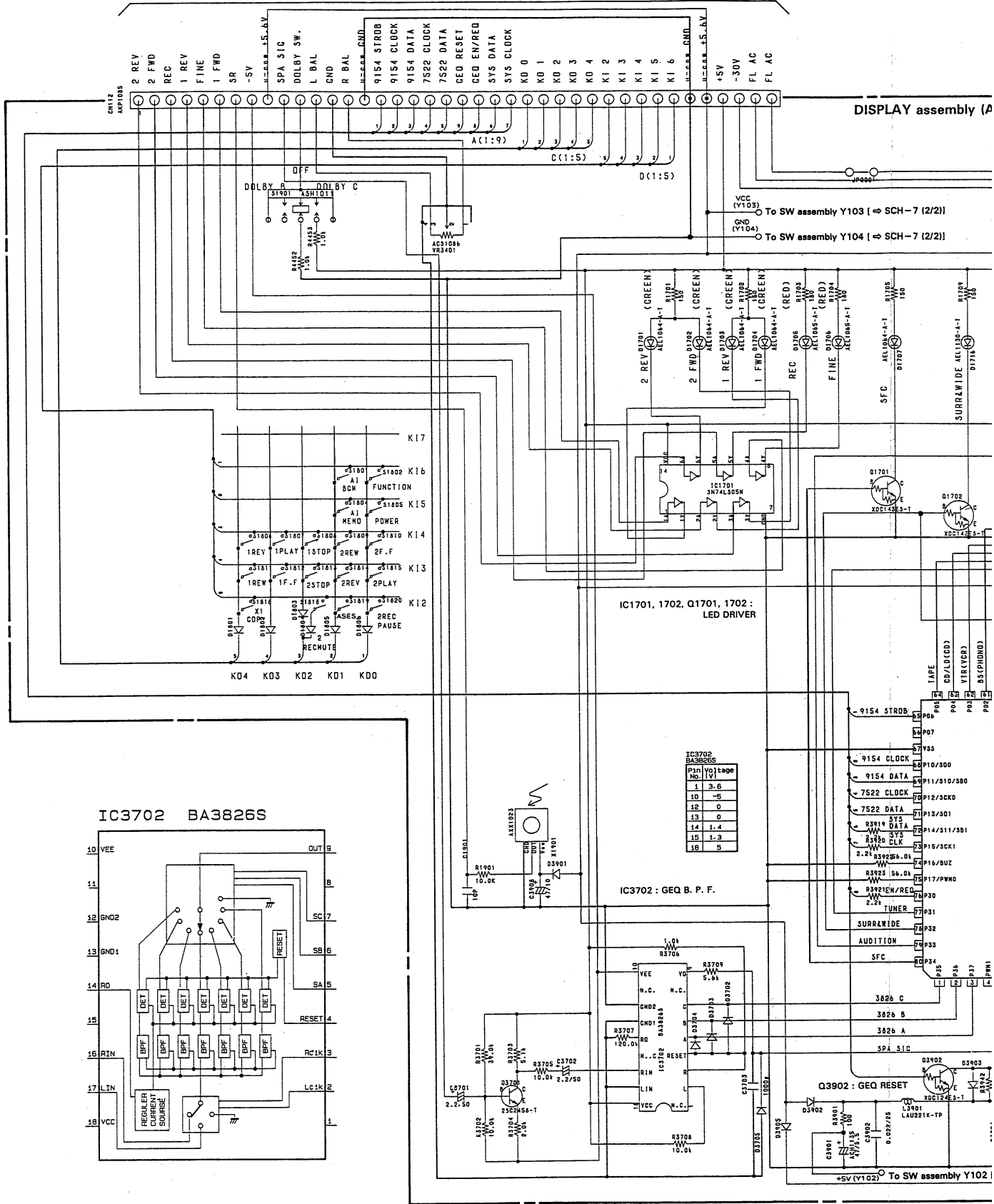
To AF assembly CN112 (→ SCH-2) or (→ SCH-11)

A

B

C

D



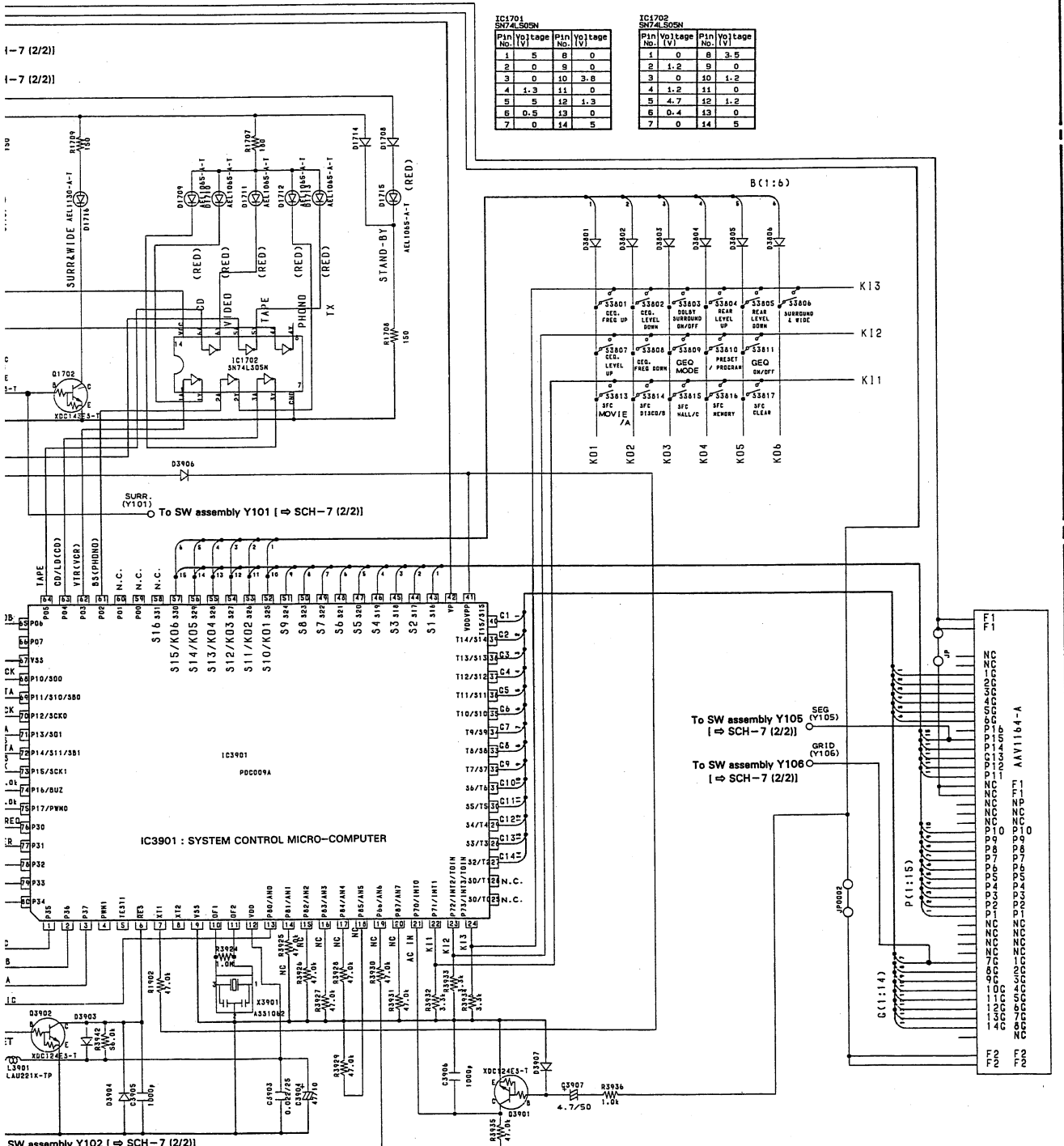
SCH-7  
-(1/2)

DISPLAY assembly

SI-A48079

Si-A4808

Y assembly (AWZ4658)



**SCH-7**  
- (1/2)

DISPLAY assembly

# DISPLAY assembly (AWZ4658)

To AF assembly CN112

IC1701

Q3701

IC1702  
IC3702

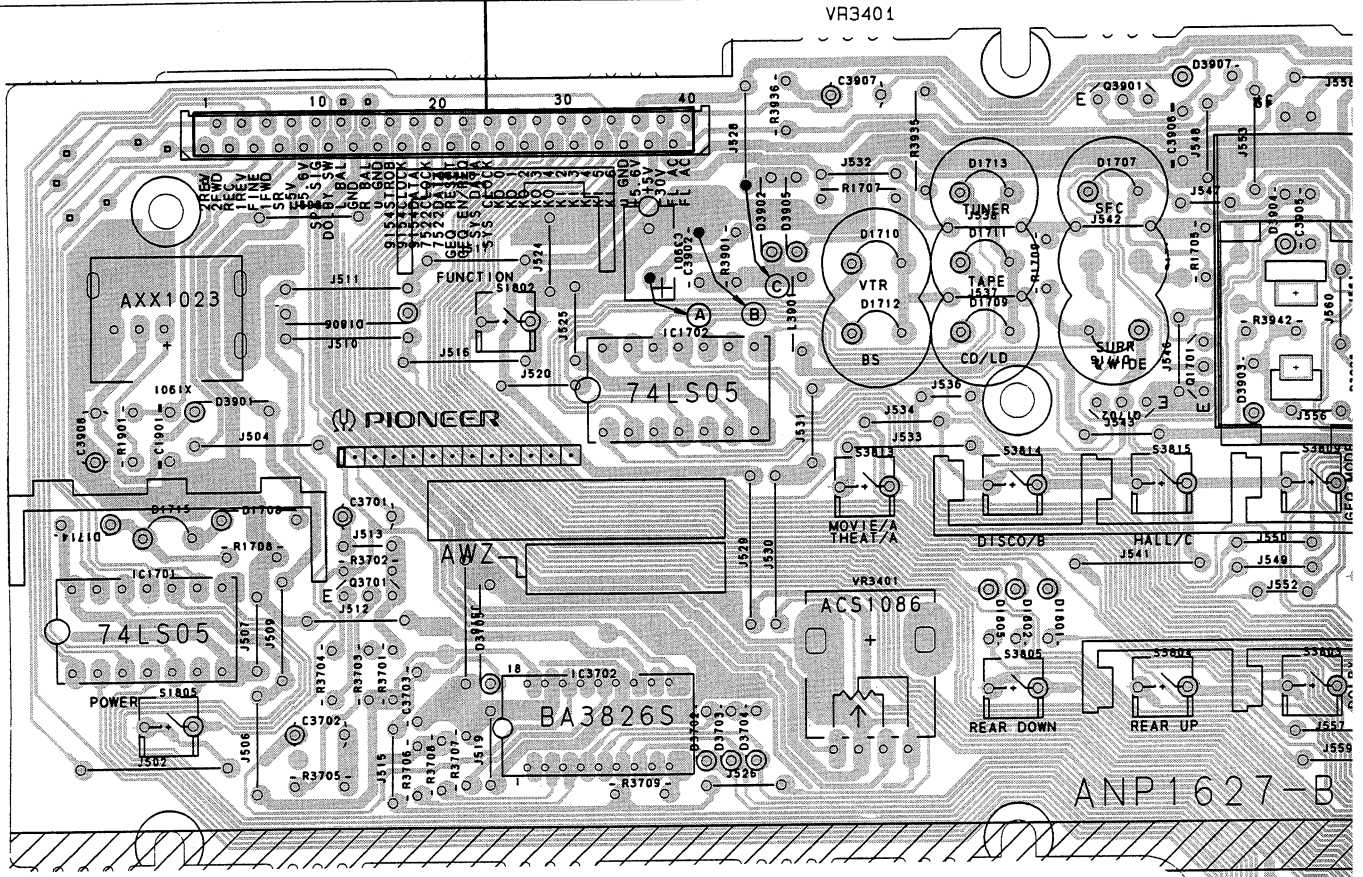
Q3901

Q1702

Q1701

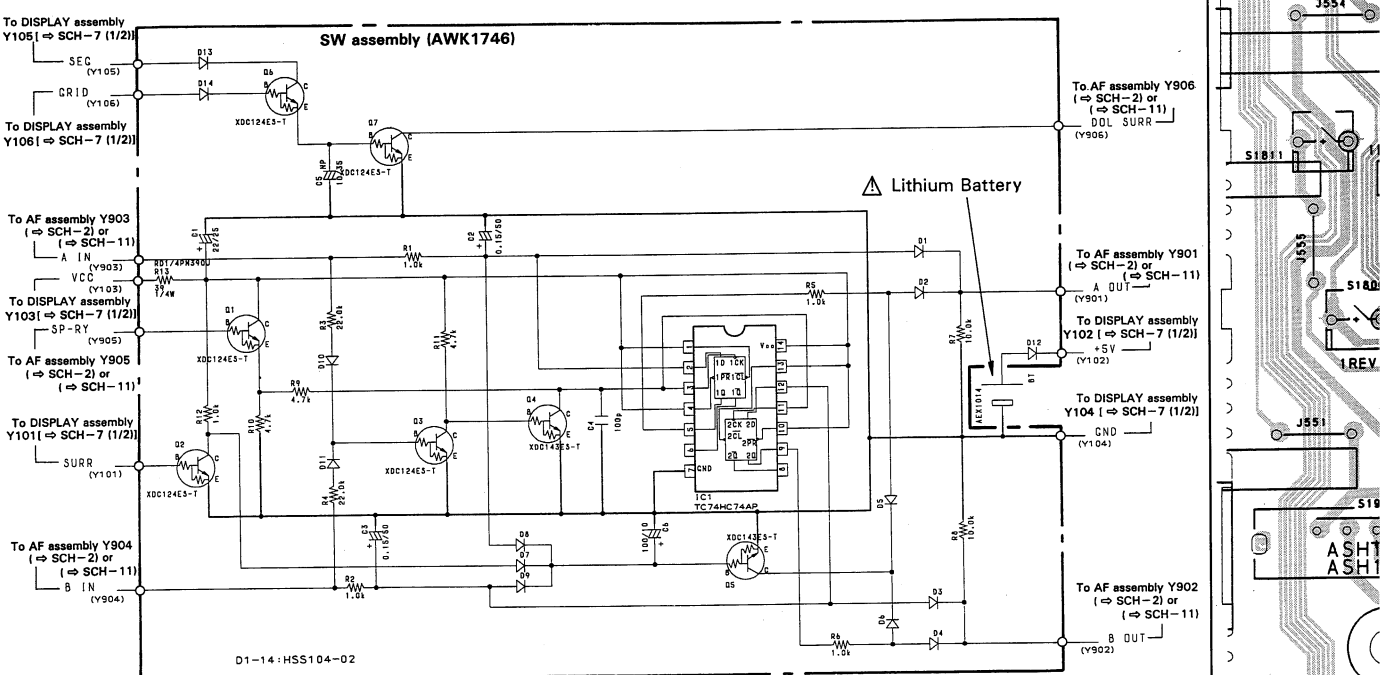
A

B



C

D

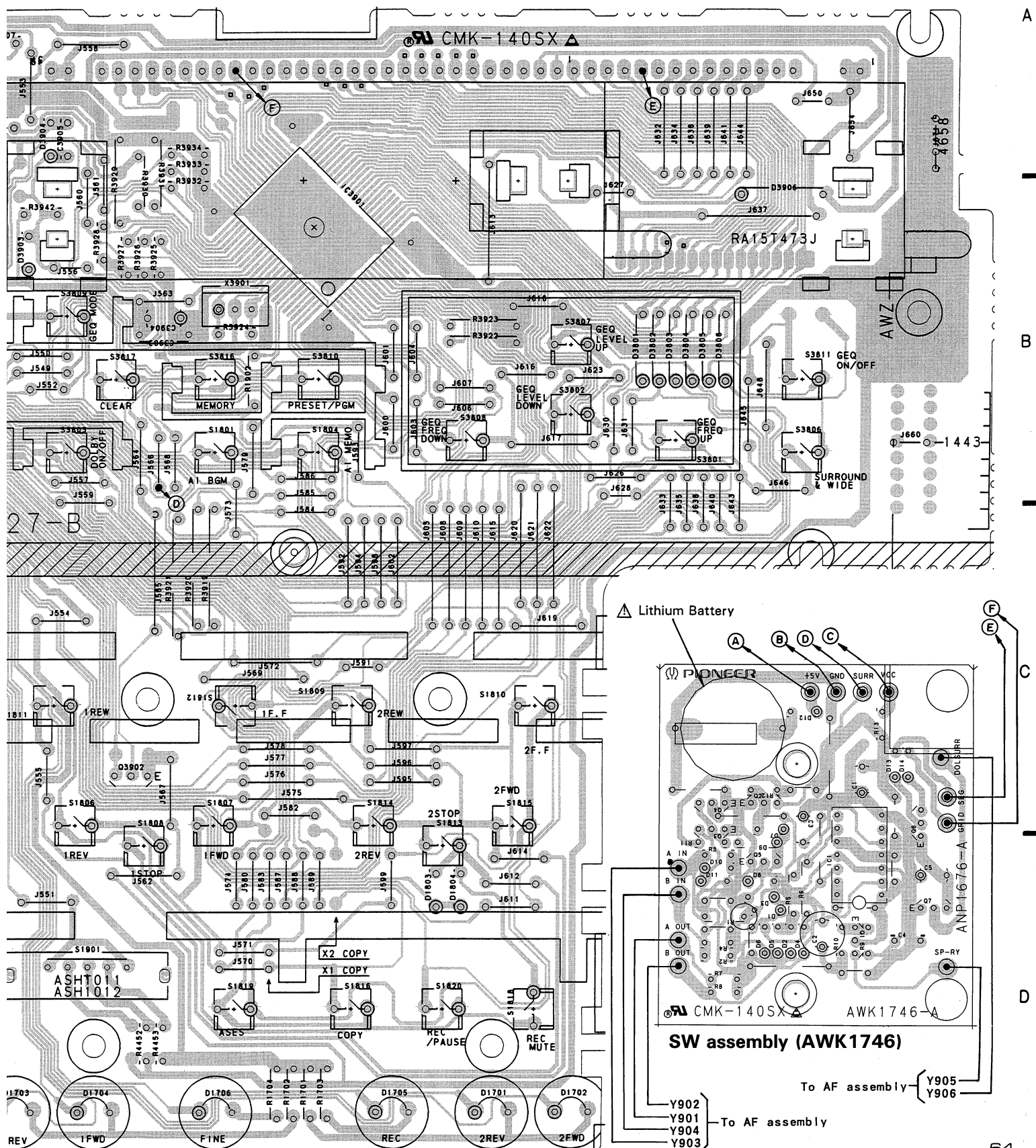


**SCH-7**  
-(2/2)

SW assembly

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

Q1701 IC3901 Q3902



A

B

C

D



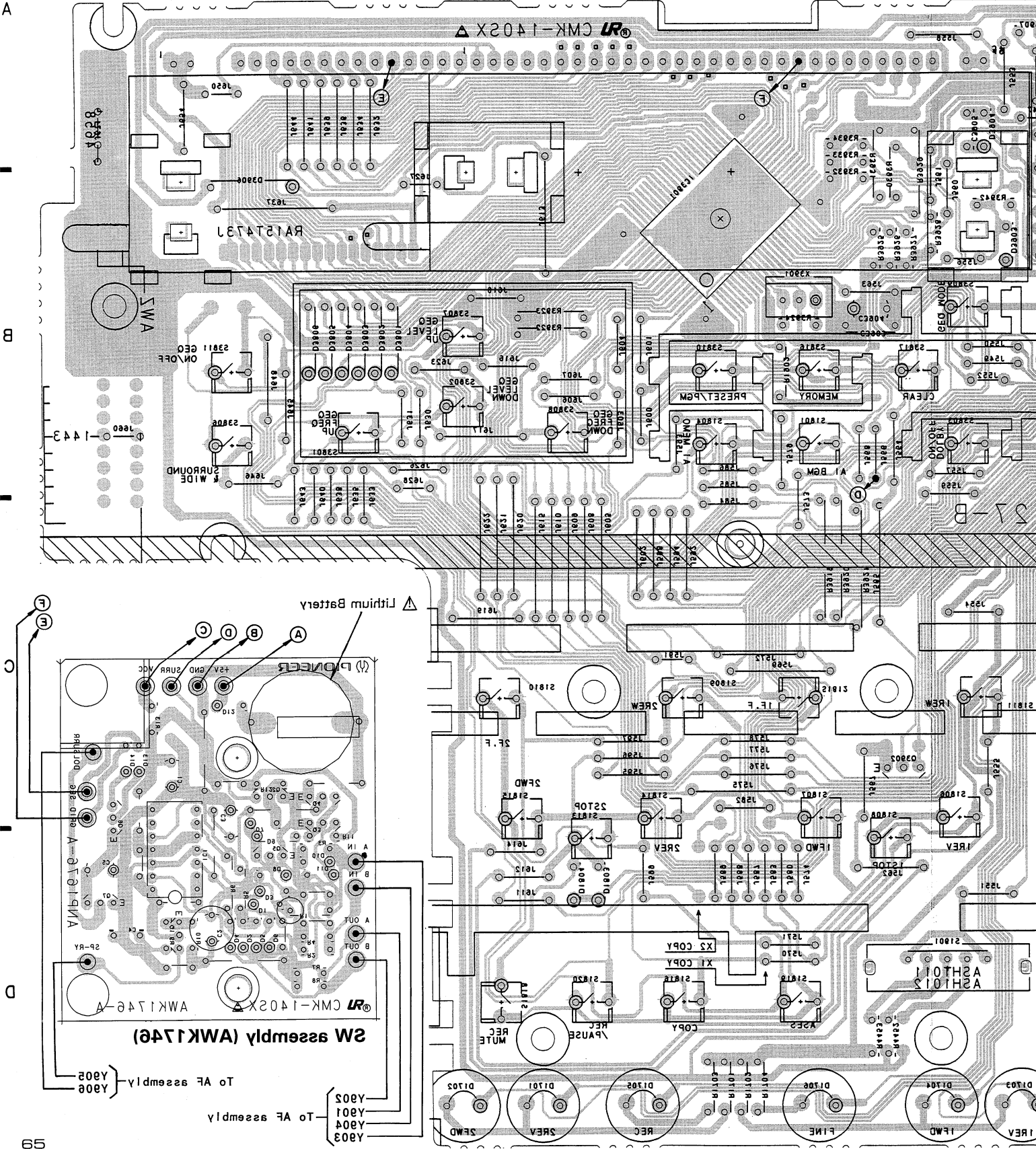
This PCB connection diagram is viewed from the foil side.

IC301

01701

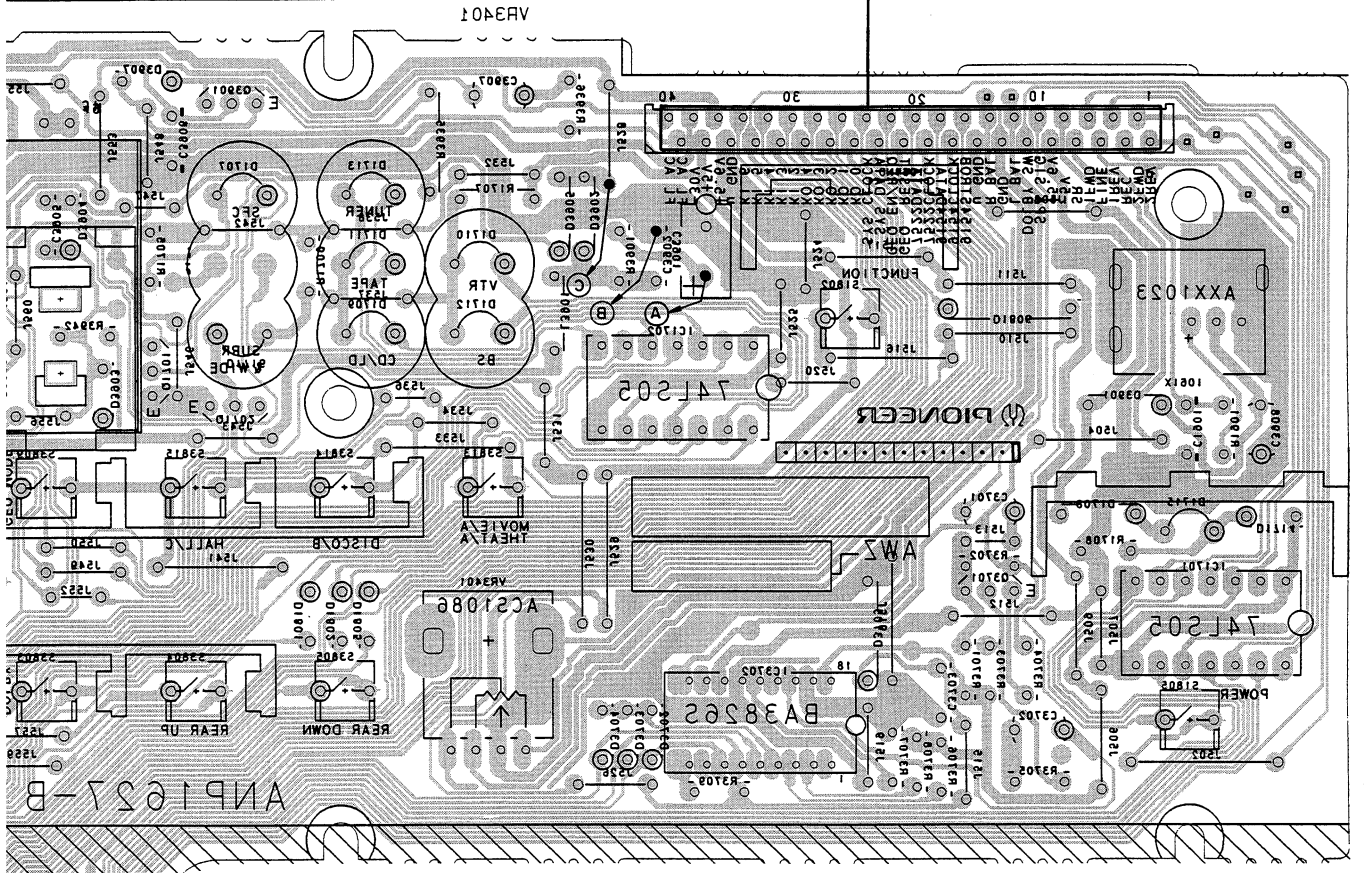
S05

0305



DISPLAY assembly (AW54658)

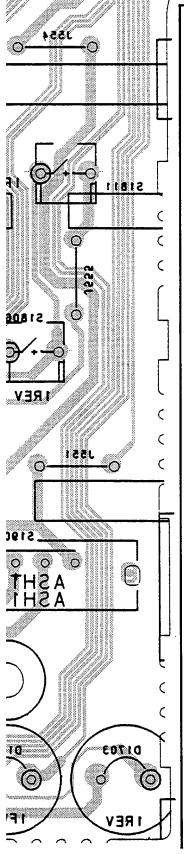
IC1701 IC3705 IC1705 Q301 Q1705 Q1701



A B C D

To AF assembly CN115

Q1701 Q1705 Q1701

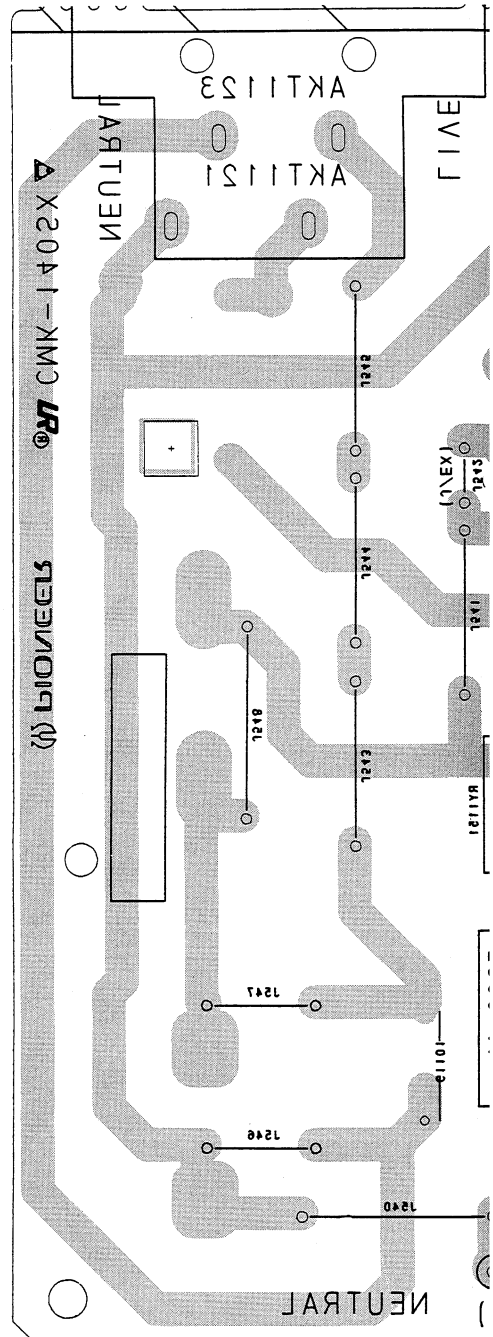


3

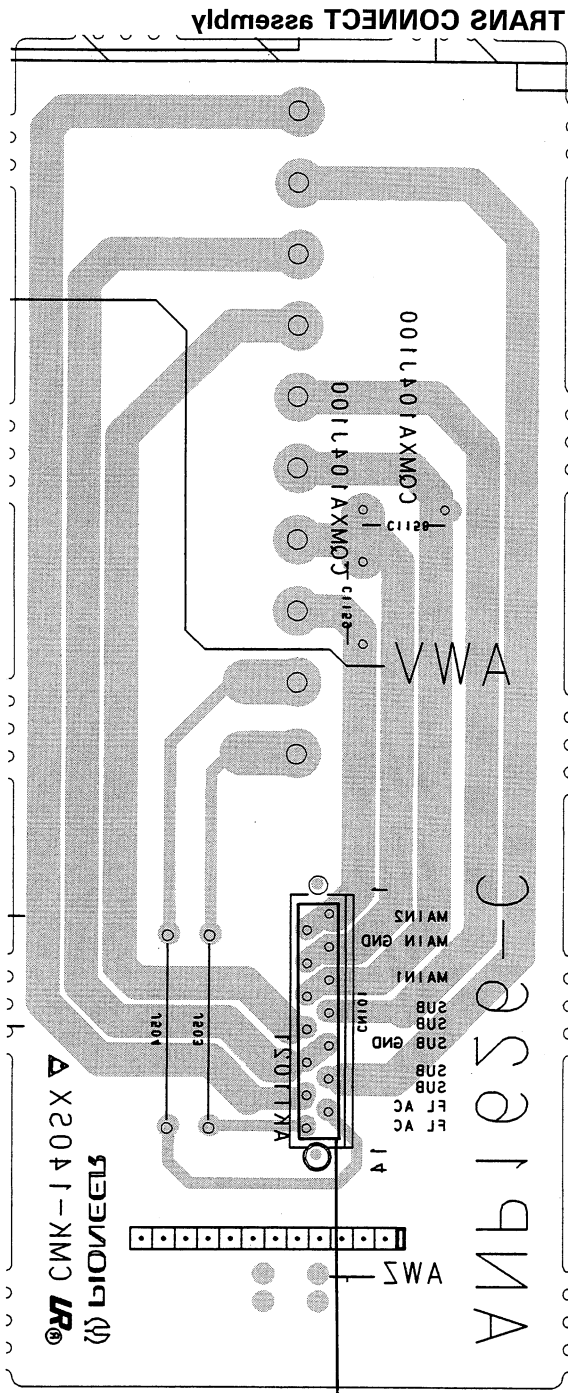
5

1

(AW24681 : HB type)  
 (AW24628 : HE type)  
 2 assembly

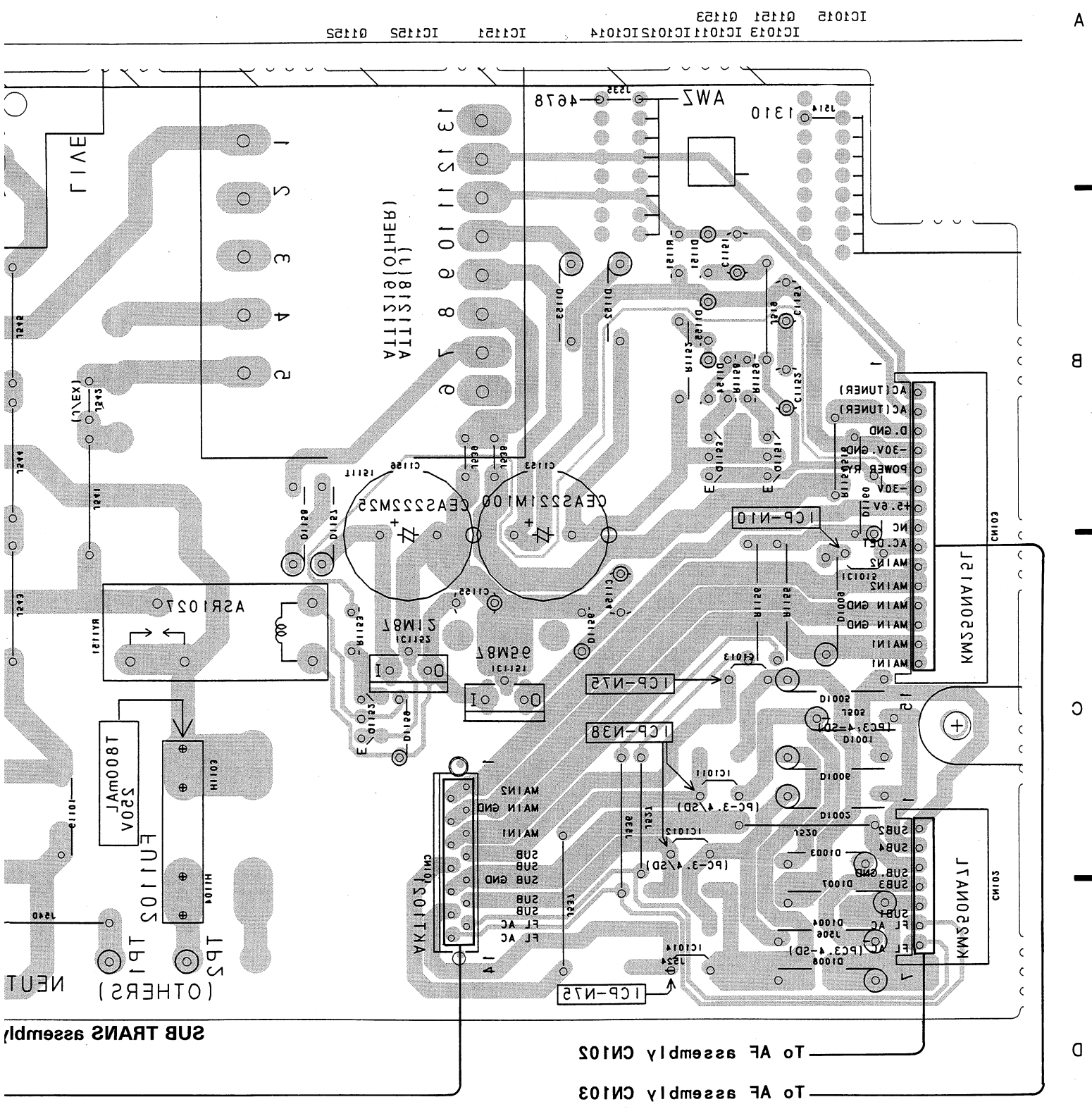


This PCB connection diagram i



This PCB connection diagram i

4.1.8 SUB TRANS ASSEMBLY AND TRANS CONNECT ASSEMBLY



IC1013 IC1011 IC1015 IC1014 IC1121 IC1125 IC1125 01125

A

B

C

D

To AF assembly CN103  
To AF assembly CN105

SUB TRANS ASSEMBLY

on diagram is viewed from the foil side.

## 4.1.8 SUB TRANS Assembly and TRANS CONNECT Assembly

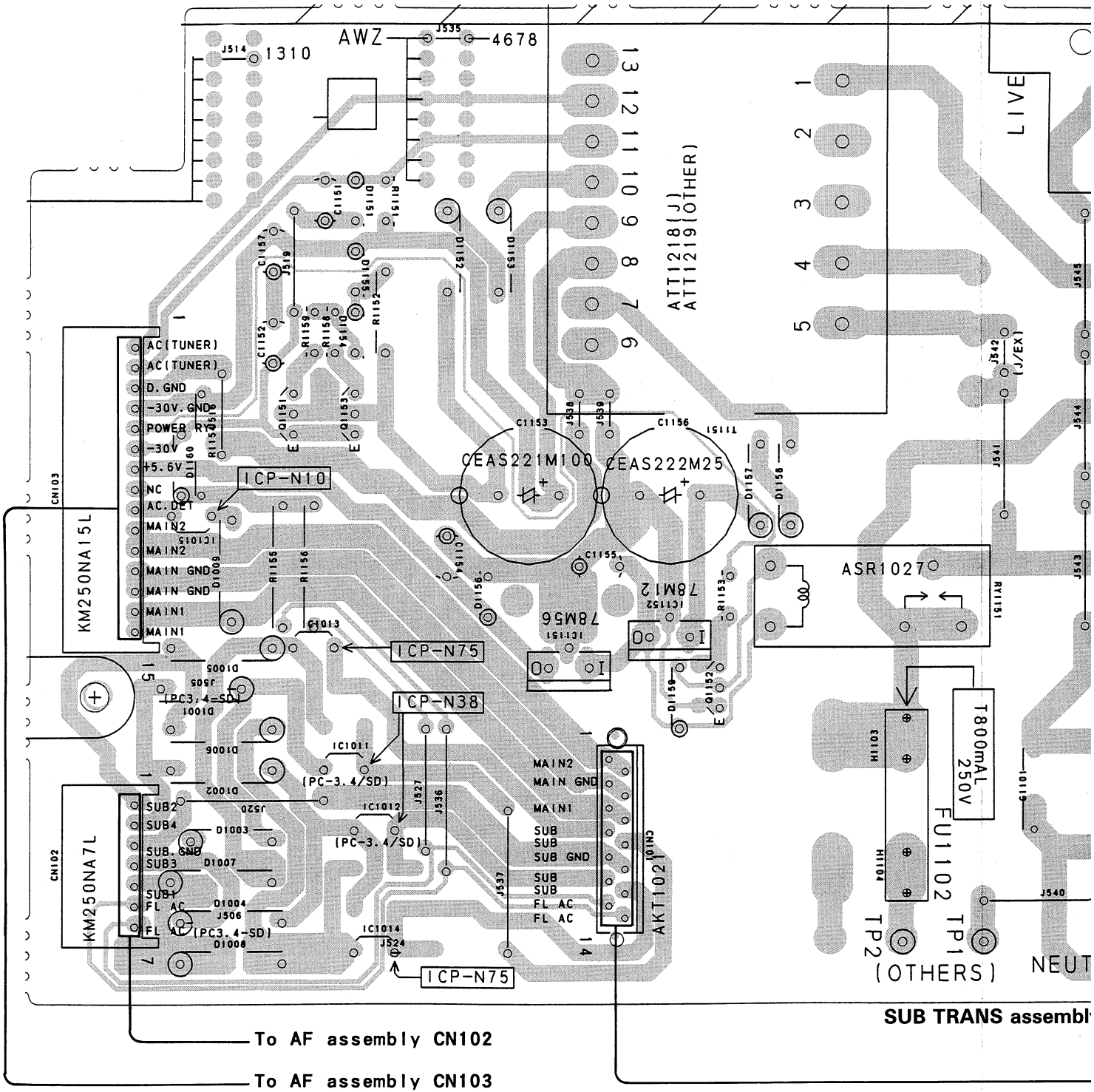
A

IC1015 Q1151 Q1153  
IC1013 IC1011 IC1012 IC1014 IC1151 IC1152 Q1152

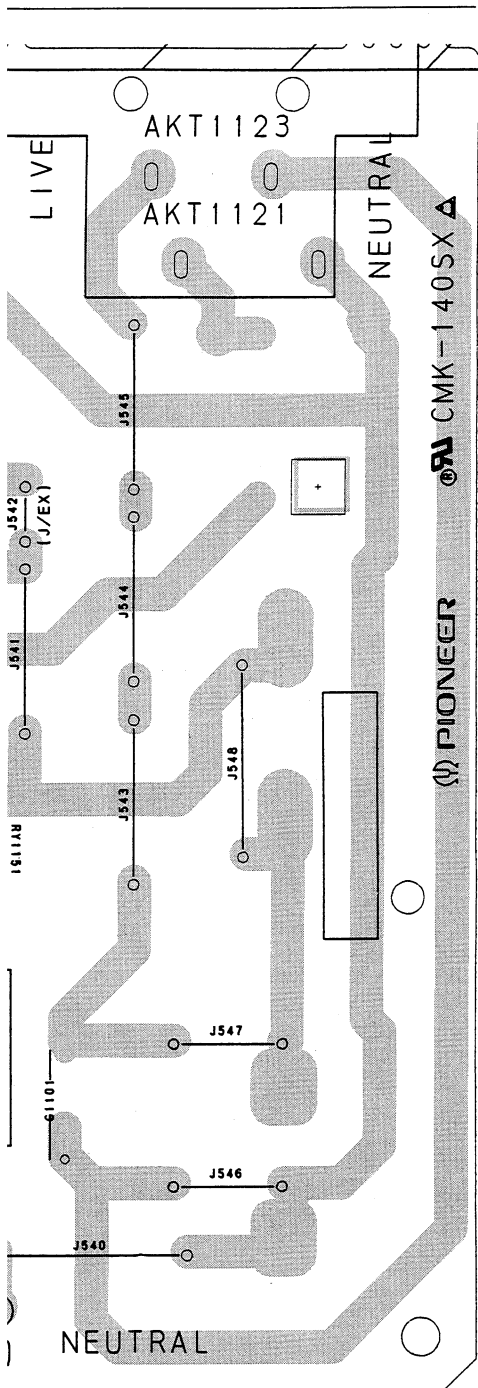
B

C

D

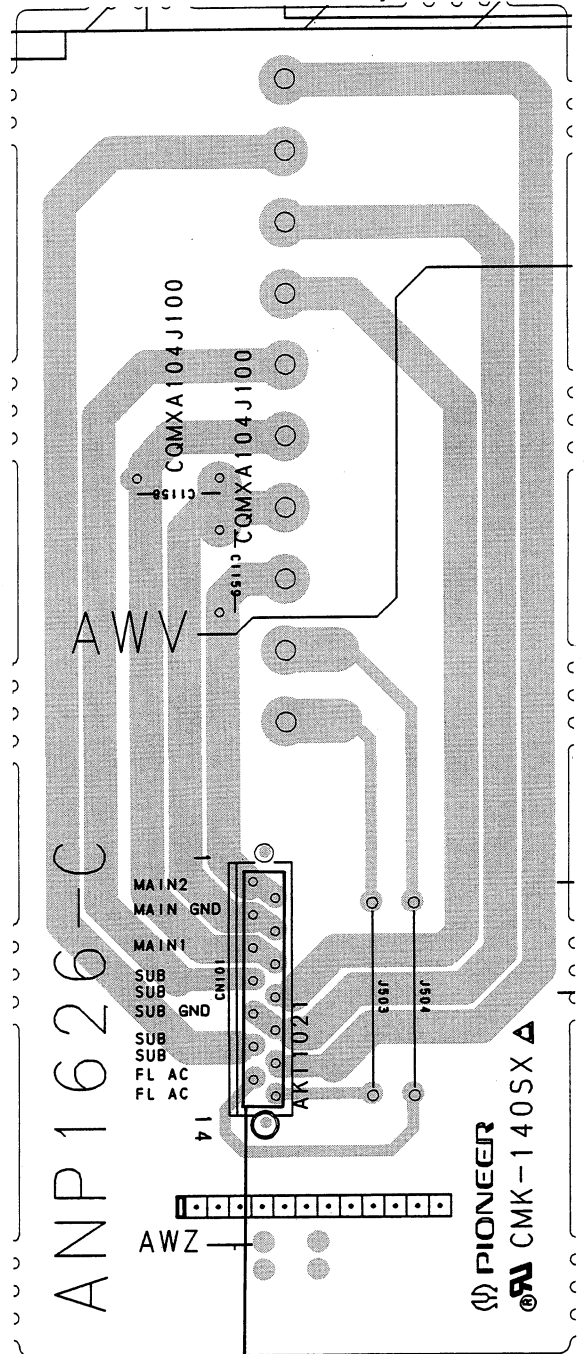


This PCB connection diagram is view



**S assembly (AWZ4678 : HE type)**  
**(AWZ4681 : HB type)**

**TRANS CONNECT assembly**



ram is viewed from the parts mounted side.

A

B

C

D

1 2 3

To AF assembly CN103 (⇒ SCH-2)

To AF assembly CN102 (⇒ SCH-2)

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

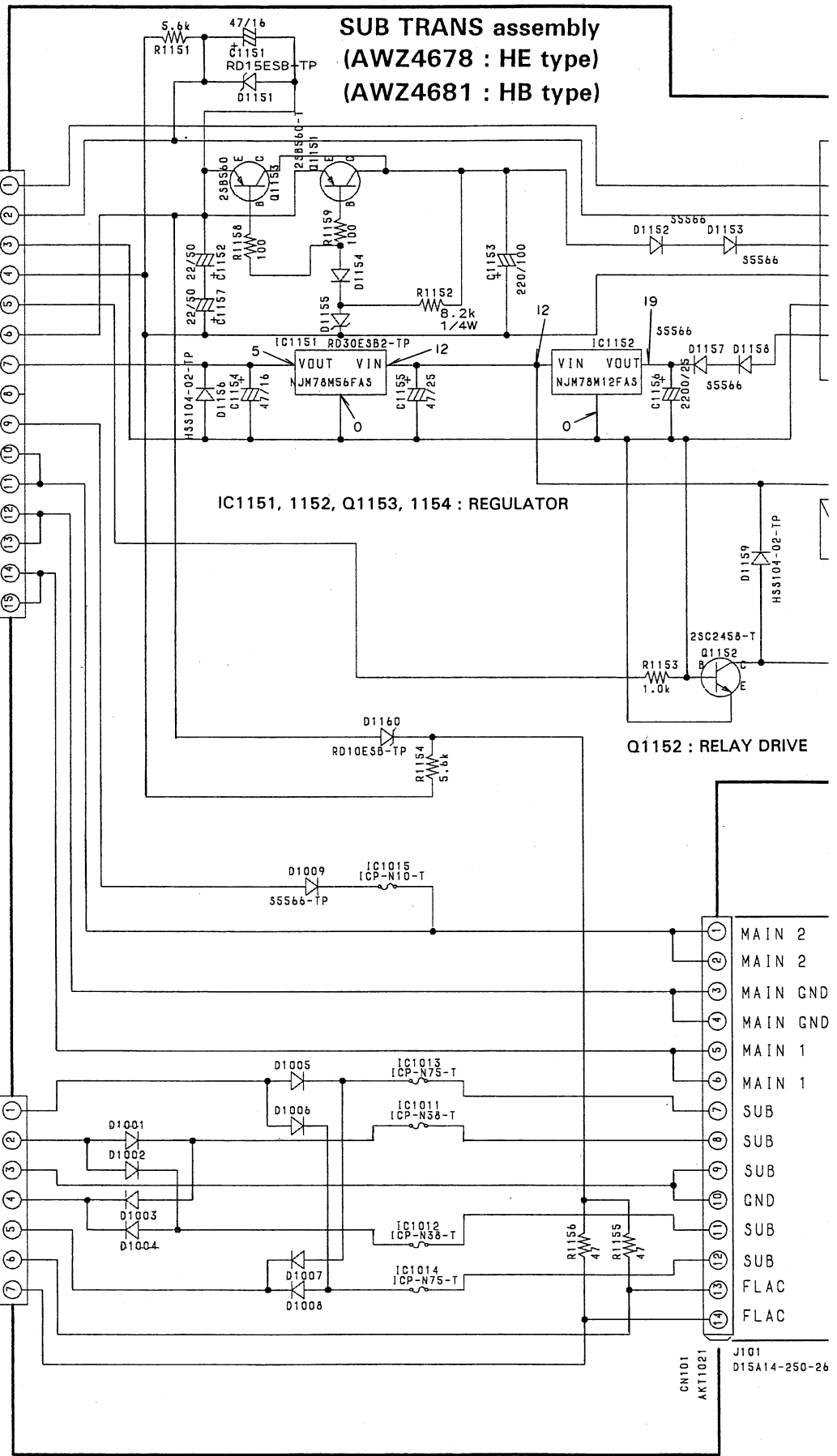
IC1151, 1152, Q1153, 1154 : REGULATOR

Q1152 : RELAY DRIVE

- ① AC (TUNER)
- ② AC (TUNER)
- ③ D.GND
- ④ -30V.GND
- ⑤ POWER RY
- ⑥ -30V
- ⑦ +5.6V
- ⑧ NC
- ⑨ AC DET
- ⑩ MAIN 2
- ⑪ MAIN 2
- ⑫ MAIN GND
- ⑬ MAIN GND
- ⑭ MAIN 1
- ⑮ MAIN 1

- ① SUB 2
- ② SUB 4
- ③ SUB.GND
- ④ SUB 3
- ⑤ SUB 1
- ⑥ FLAC
- ⑦ FLAC

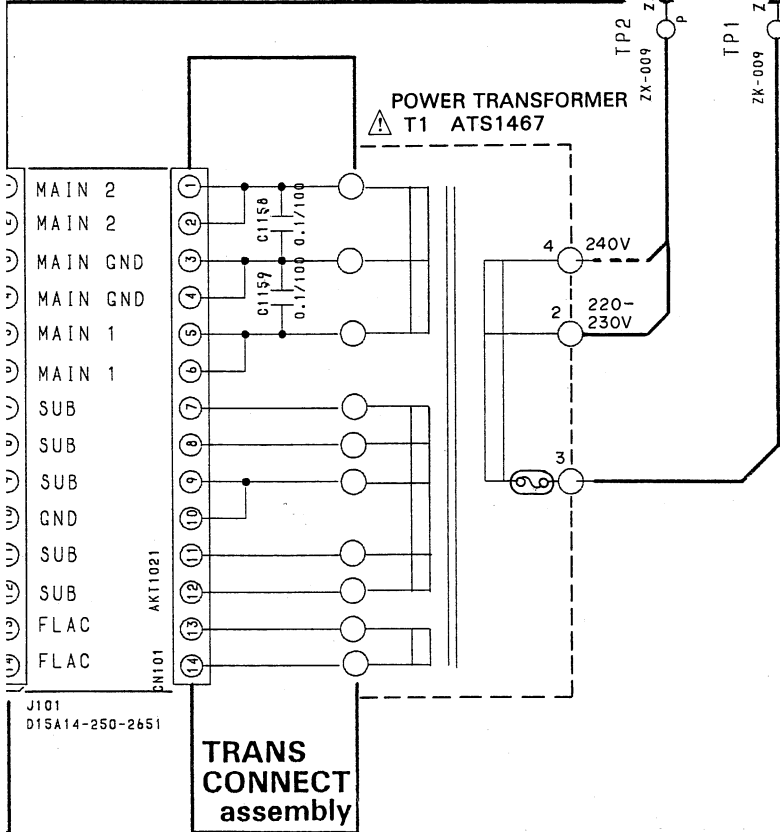
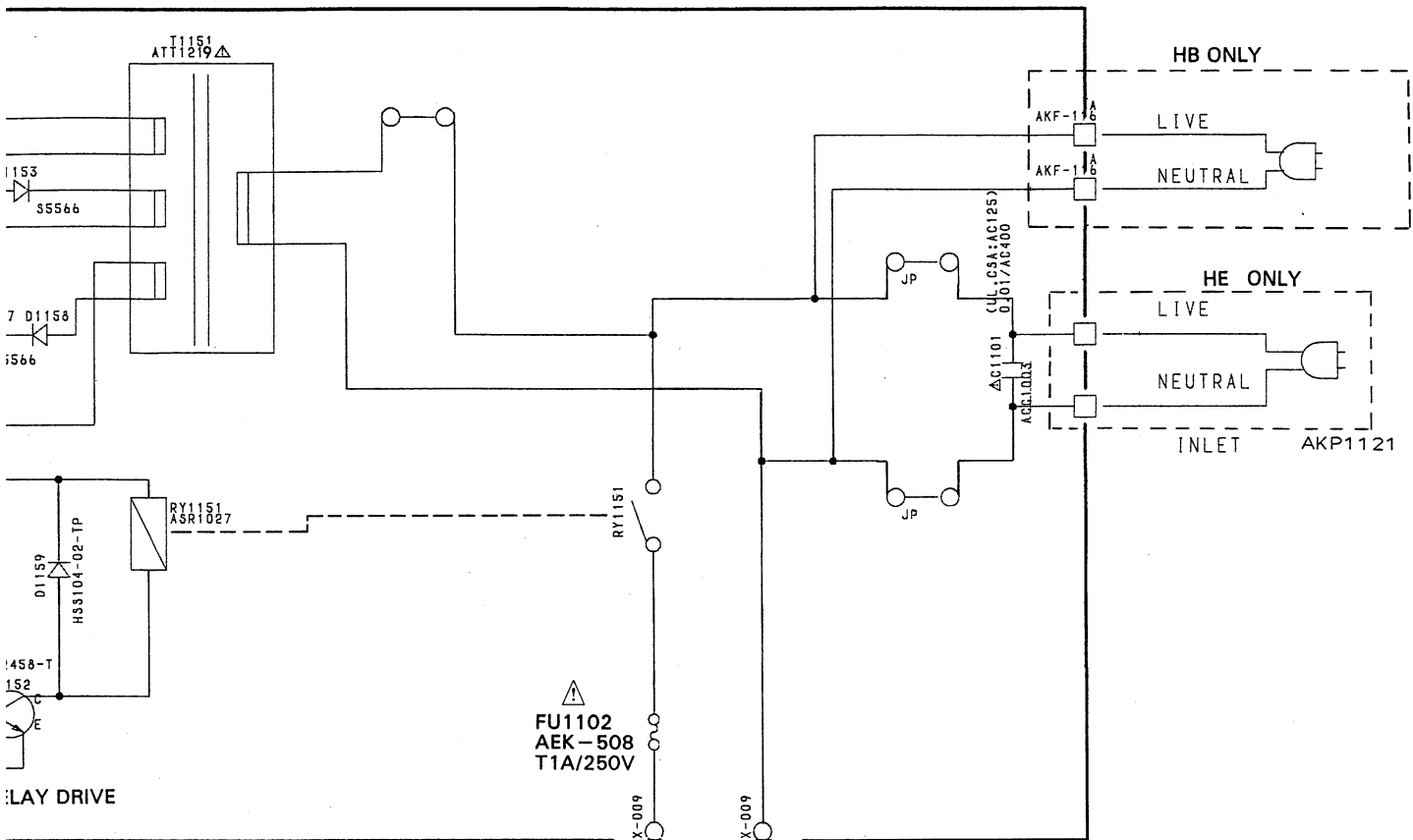
- ① MAIN 2
- ② MAIN 2
- ③ MAIN GND
- ④ MAIN GND
- ⑤ MAIN 1
- ⑥ MAIN 1
- ⑦ SUB
- ⑧ SUB
- ⑨ SUB
- ⑩ GND
- ⑪ SUB
- ⑫ SUB
- ⑬ FLAC
- ⑭ FLAC



**SCH-8**

SUB TRANS assembly  
TRANS CONNECT assembly

1 2 3



**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

SI-A49005  
**SCH-8**

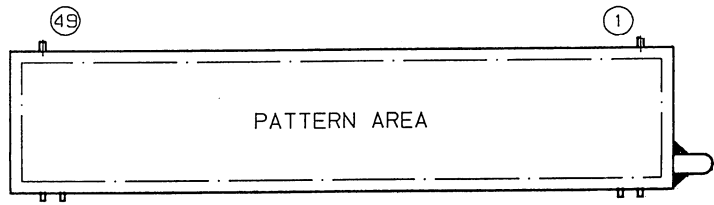
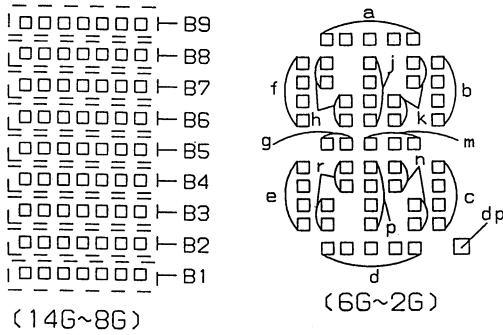
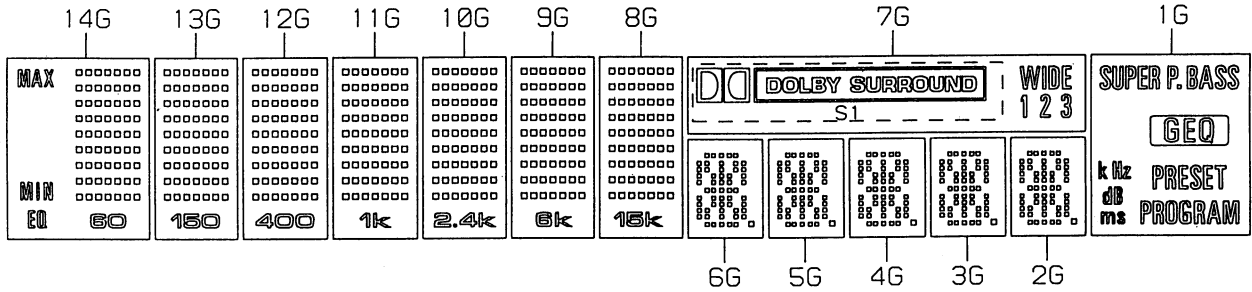
SUB TRANS assembly  
 TRANS CONNECT assembly



# XD-J215M, XD-J210

## AAV1164 (V3901 : DISPLAY ASSEMBLY)

- FL Tube
- Grid Assignment



### ● Pin Connection

PIN NO.	4	4	4	4	4	4	4	3	3	3	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	7	6	5	4	3	2	1									
CONNECTION	F	F	N	N	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
	2	2	P	P	G	G	G	G	G	G	G	C	C	C	1	2	3	4	5	6	7	8	9	0	C	C	C	C	1	2	3	4	5	C	G	G	G	G	C	C	P	P	1	1

NOTE 1) F1, F2 --- Filament      4) 1G~14G --- Grid  
 2) NP ----- No pin              5) DL ----- Datum Line  
 3) NC ----- No connection

### ● Anode Connection

	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	60	150	400	1k	2.4k	6k	15k	-	dp	dp	dp	dp	dp	-
P2	B1	B1	B1	B1	B1	B1	B1	-	d	d	d	d	d	-
P3	B2	B2	B2	B2	B2	B2	B2	-	p	p	p	p	p	-
P4	B3	B3	B3	B3	B3	B3	B3	-	n	n	n	n	n	-
P5	B4	B4	B4	B4	B4	B4	B4	-	r	r	r	r	r	-
P6	B5	B5	B5	B5	B5	B5	B5	-	e	e	e	e	e	ms
P7	B6	B6	B6	B6	B6	B6	B6	-	c	c	c	c	c	dB
P8	B7	B7	B7	B7	B7	B7	B7	-	m	m	m	m	m	Hz
P9	B8	B8	B8	B8	B8	B8	B8	-	g	g	g	g	g	k
P10	B9	B9	B9	B9	B9	B9	B9	-	f	f	f	f	f	PROGRAM
P11	MAX	-	-	-	-	-	-	3	b	b	b	b	b	PRESET
P12	MIN	-	-	-	-	-	-	2	k	k	k	k	k	GEQ
P13	EQ	-	-	-	-	-	-	1	h	h	h	h	h	BASS
P14	-	-	-	-	-	-	-	WIDE	j	j	j	j	j	P.
P15	-	-	-	-	-	-	-	S1	a	a	a	a	a	SUPER

## 4.2 CD UNIT

P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zener 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
		Resistor
		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 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:Ω, M:MΩ, or Ω unless otherwise noted.  
Rated power: 1/4W, 1/8W, 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 Δ 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-J215M)

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-J210)

MOTHER BOARD assembly  
S351 TEST MODE

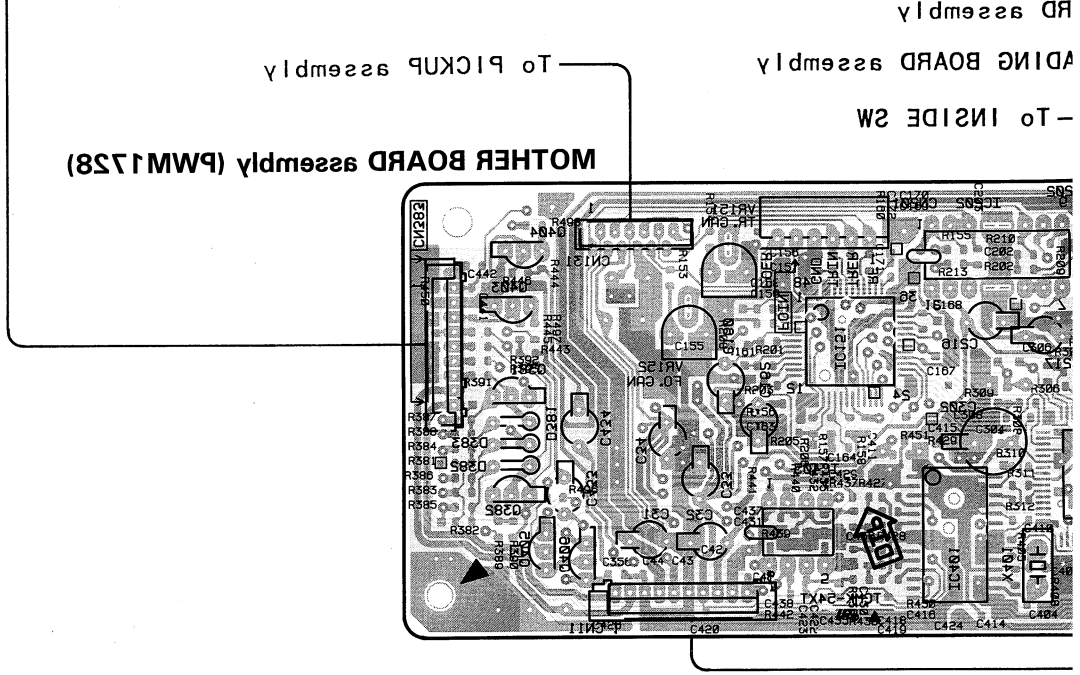
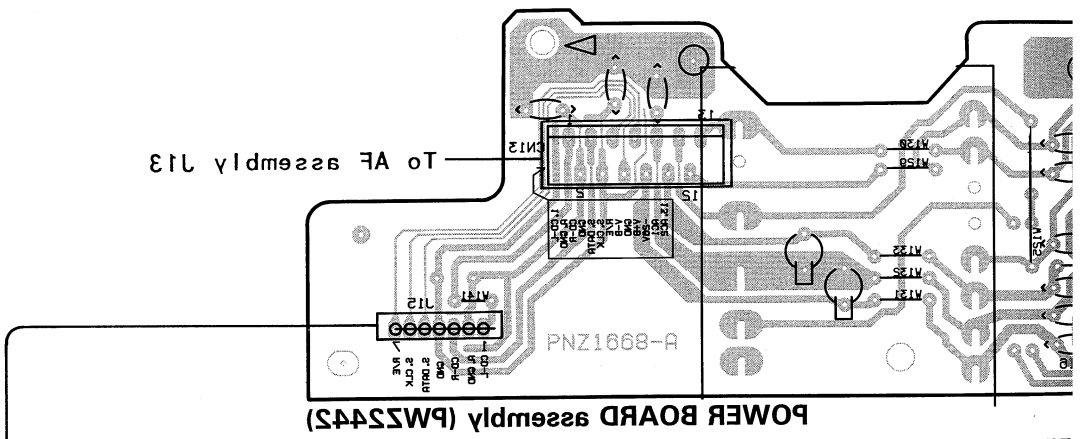
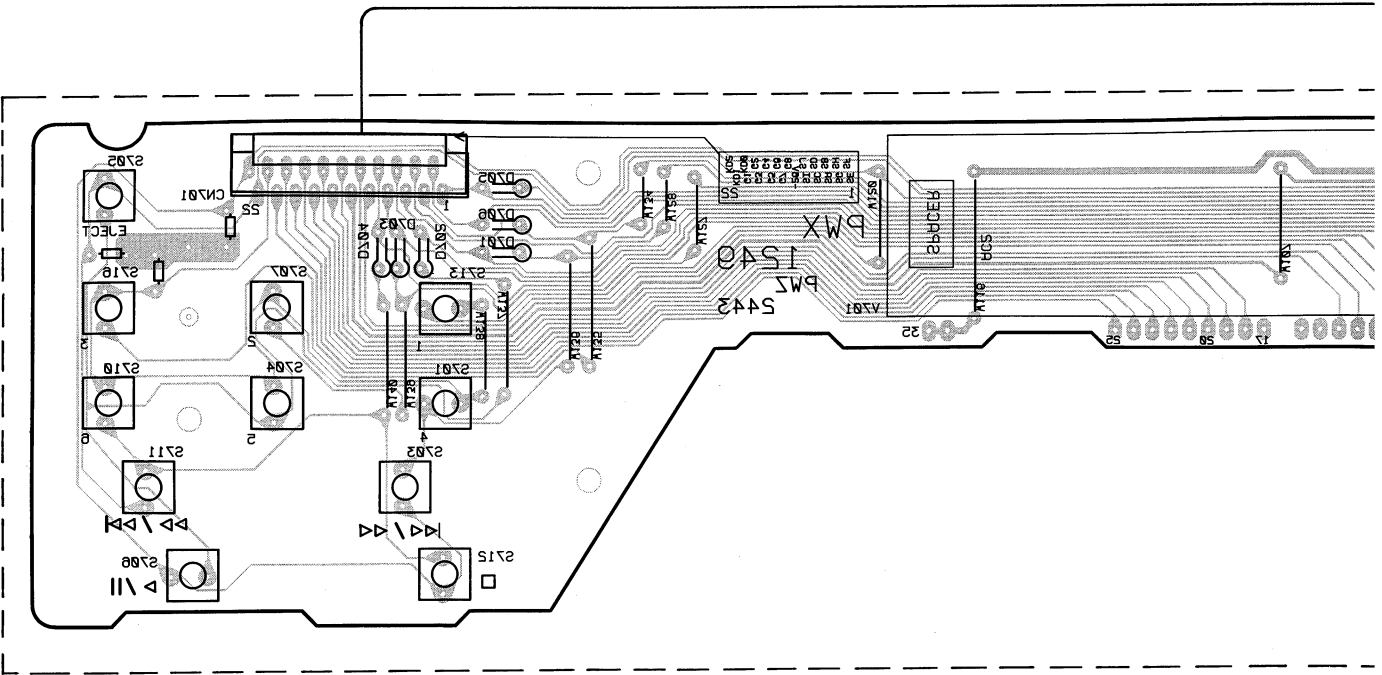
DISPLAY BOARD assembly

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.)

This PCB connection diagram



e

2

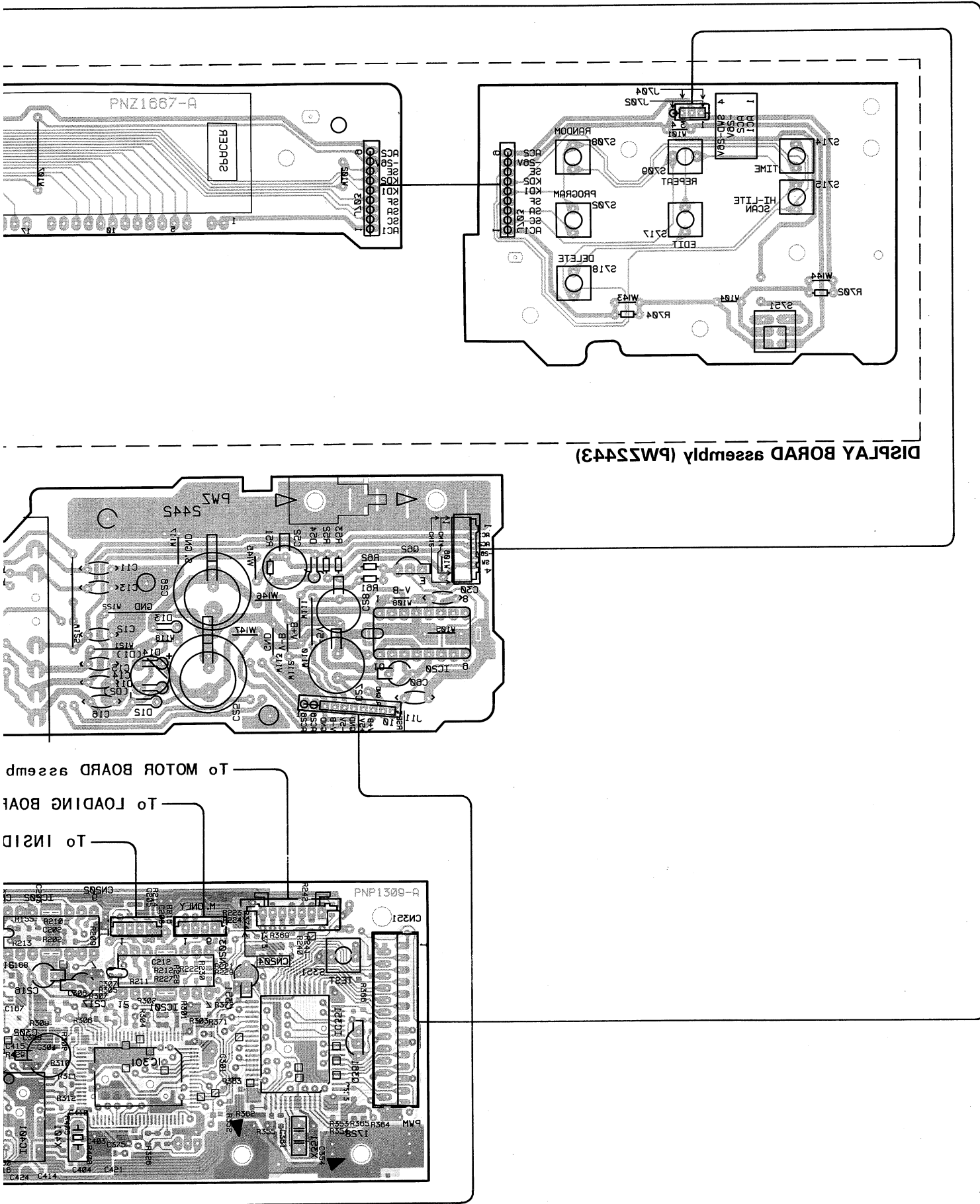
4

e

2

4

action diagram is viewed from the foil side.

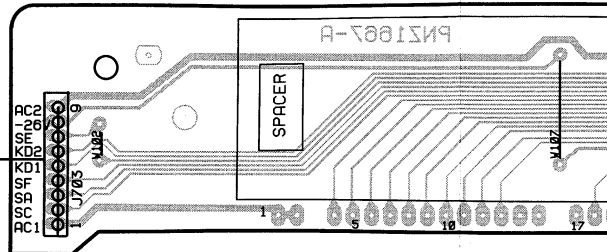
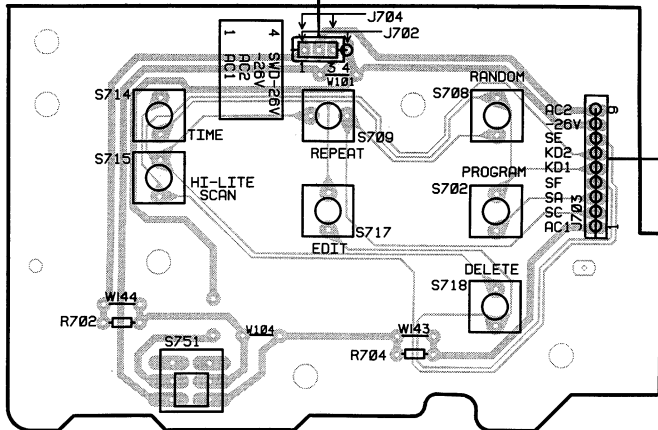


A  
B  
C  
D

4.2.1 Multi CD Unit (For XD-J215M)

This PCB connection diagram is viewed from

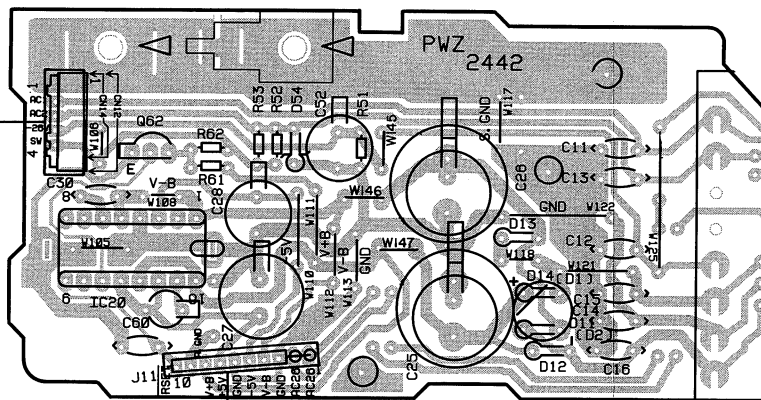
A



B

DISPLAY BOARD assembly (PWZ2443)

C

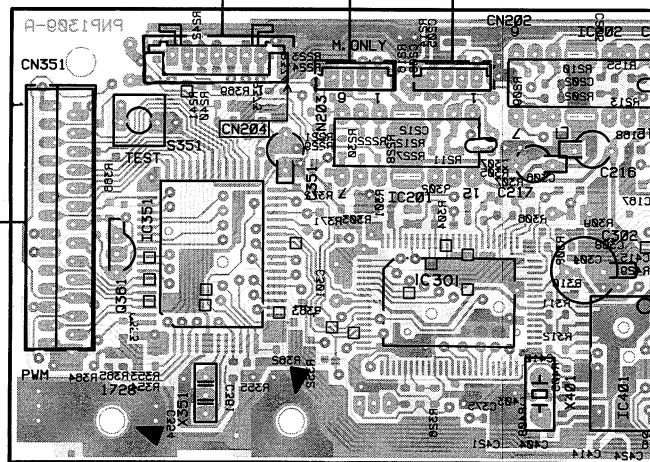


To MOTOR BOARD assemb

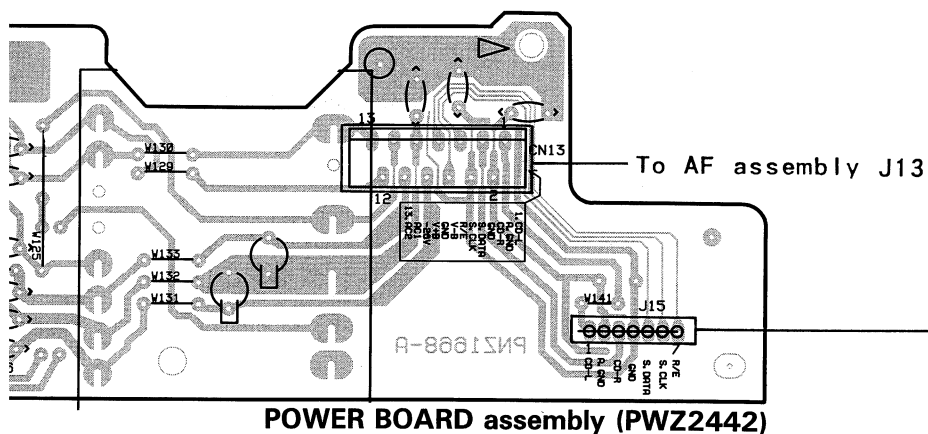
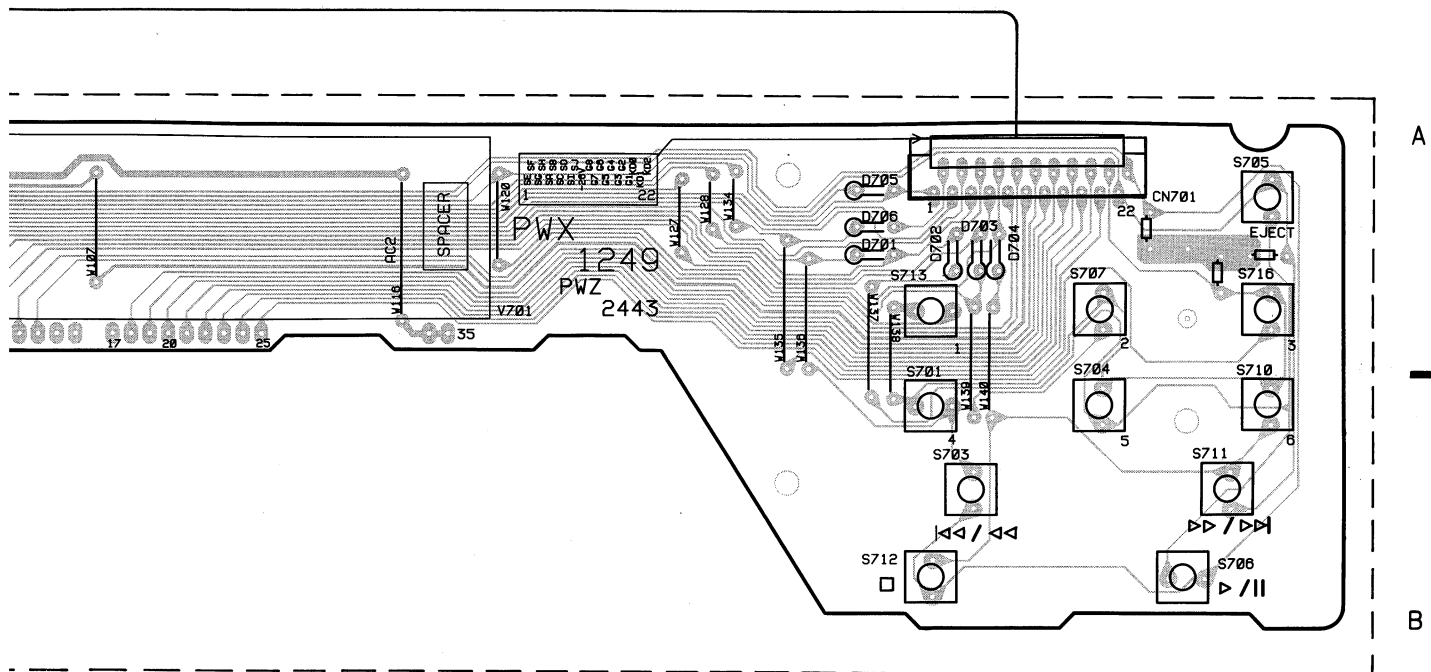
To LOADING BOAF

To INSID

D



is viewd from the parts mounted side.



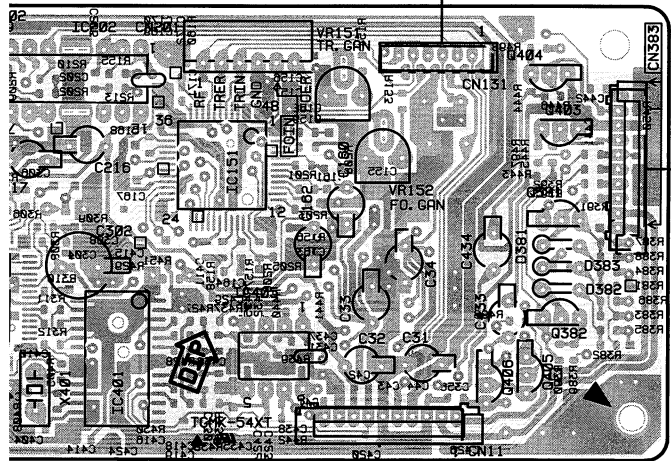
**POWER BOARD assembly (PWZ2442)**

RD assembly

DING BOARD assembly

-To INSIDE SW

**MOTHER BOARD assembly (PWM1728)**

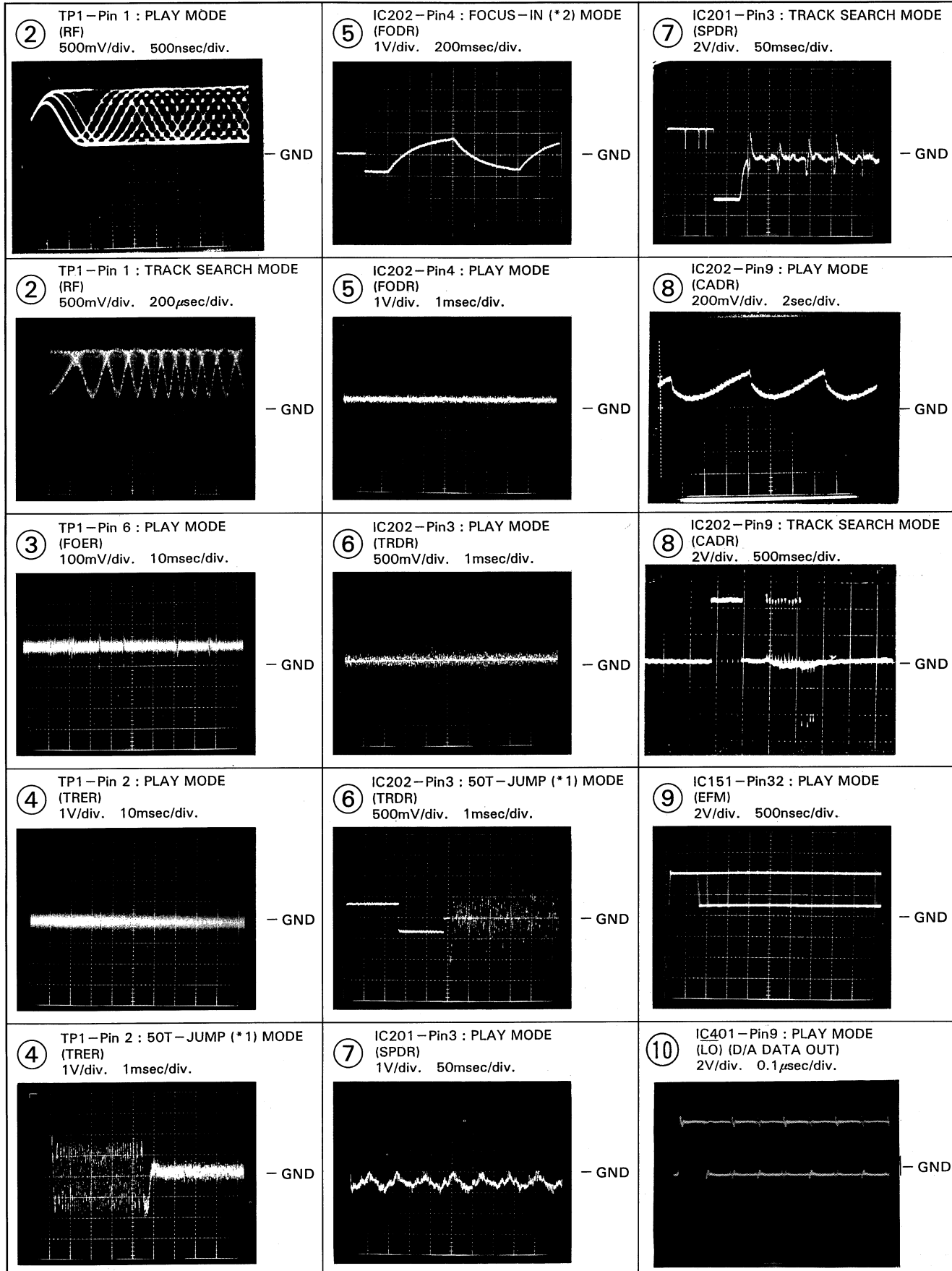


## Waveforms

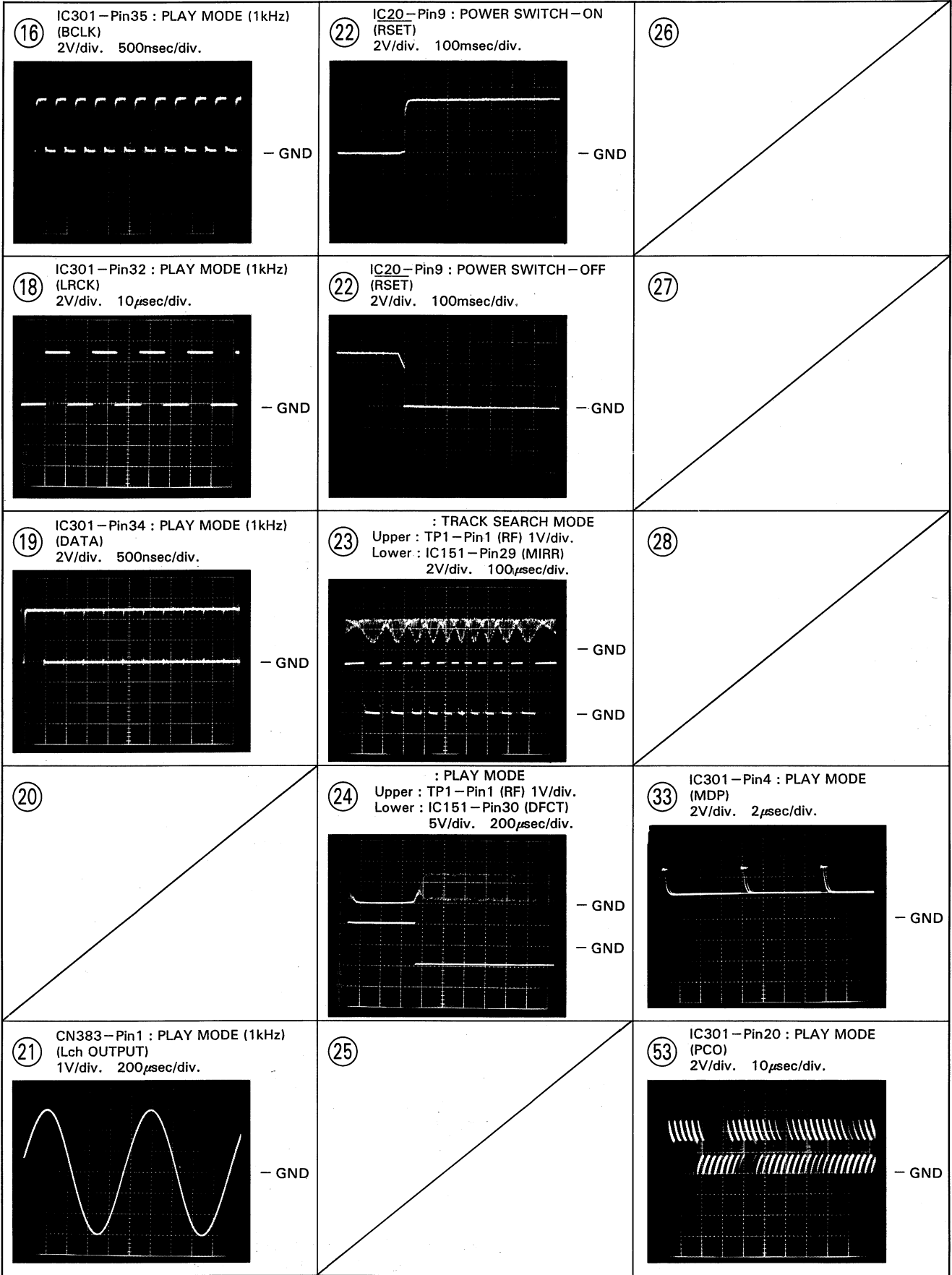
Note: The encircled numbers denote measuring points in the schematic diagram.

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

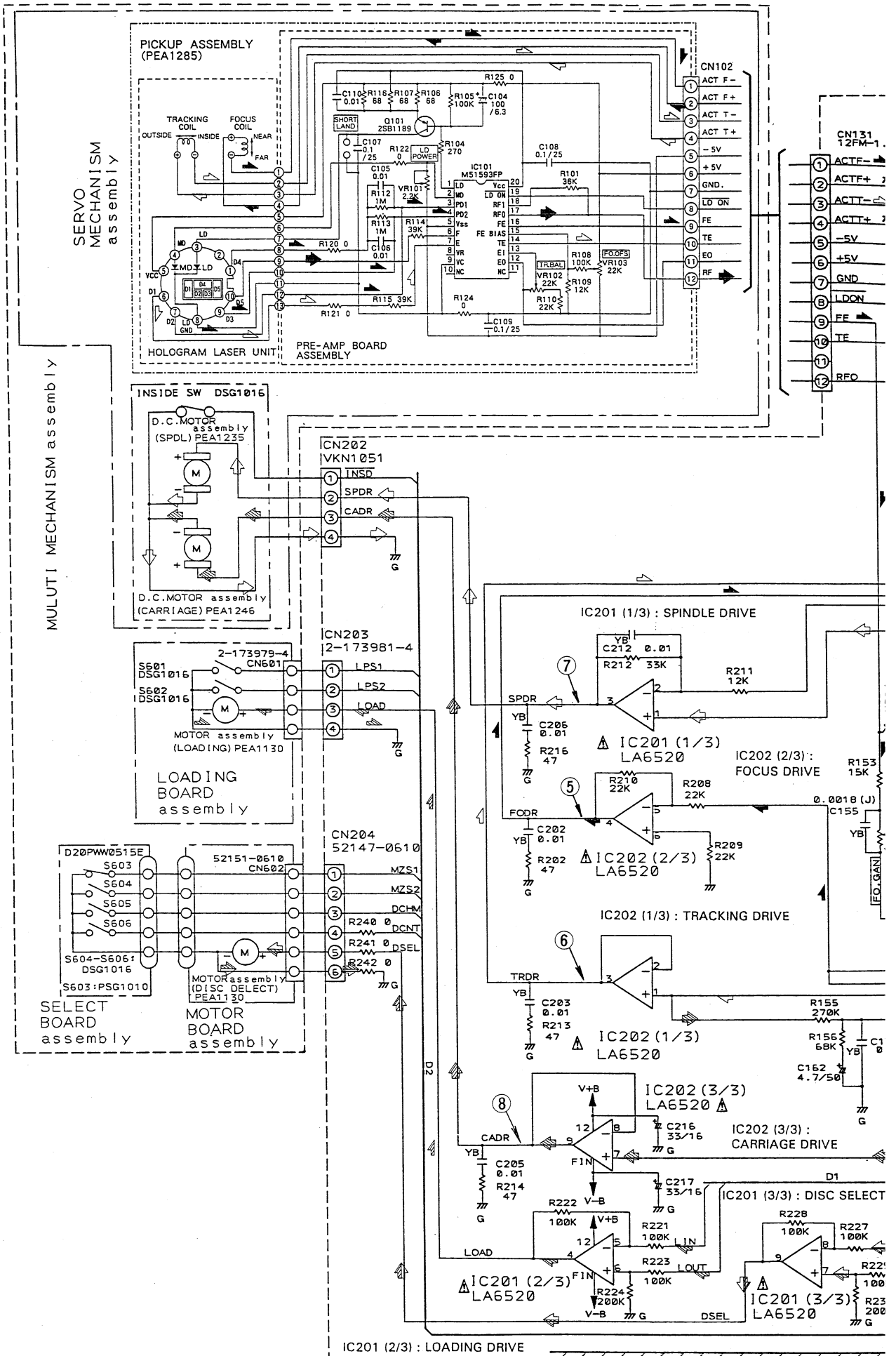
\*2 FOCUS-IN: Press the key without loading a disc.



# XD-J215M





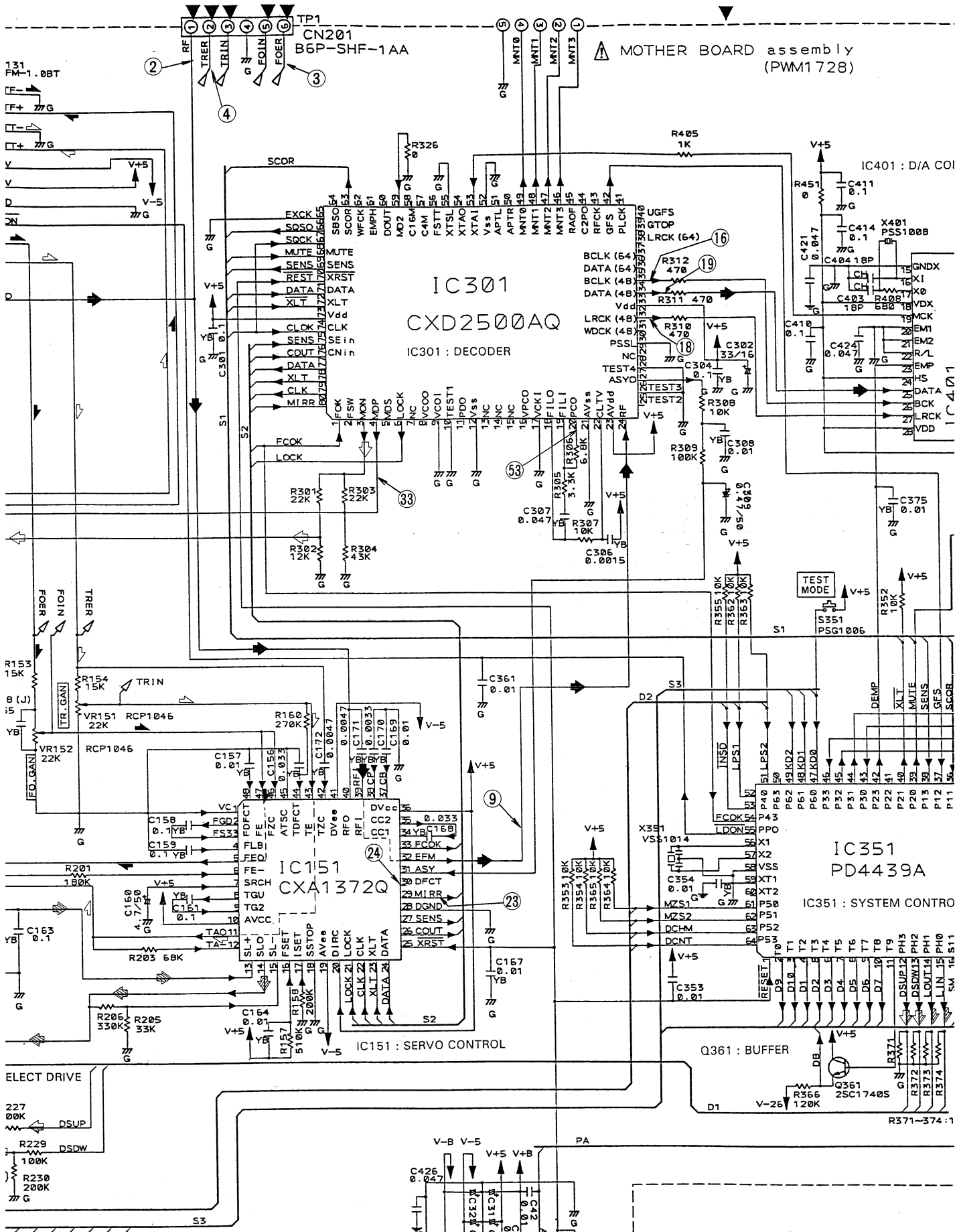


B

C

D

IC201 (2/3) : LOADING DRIVE



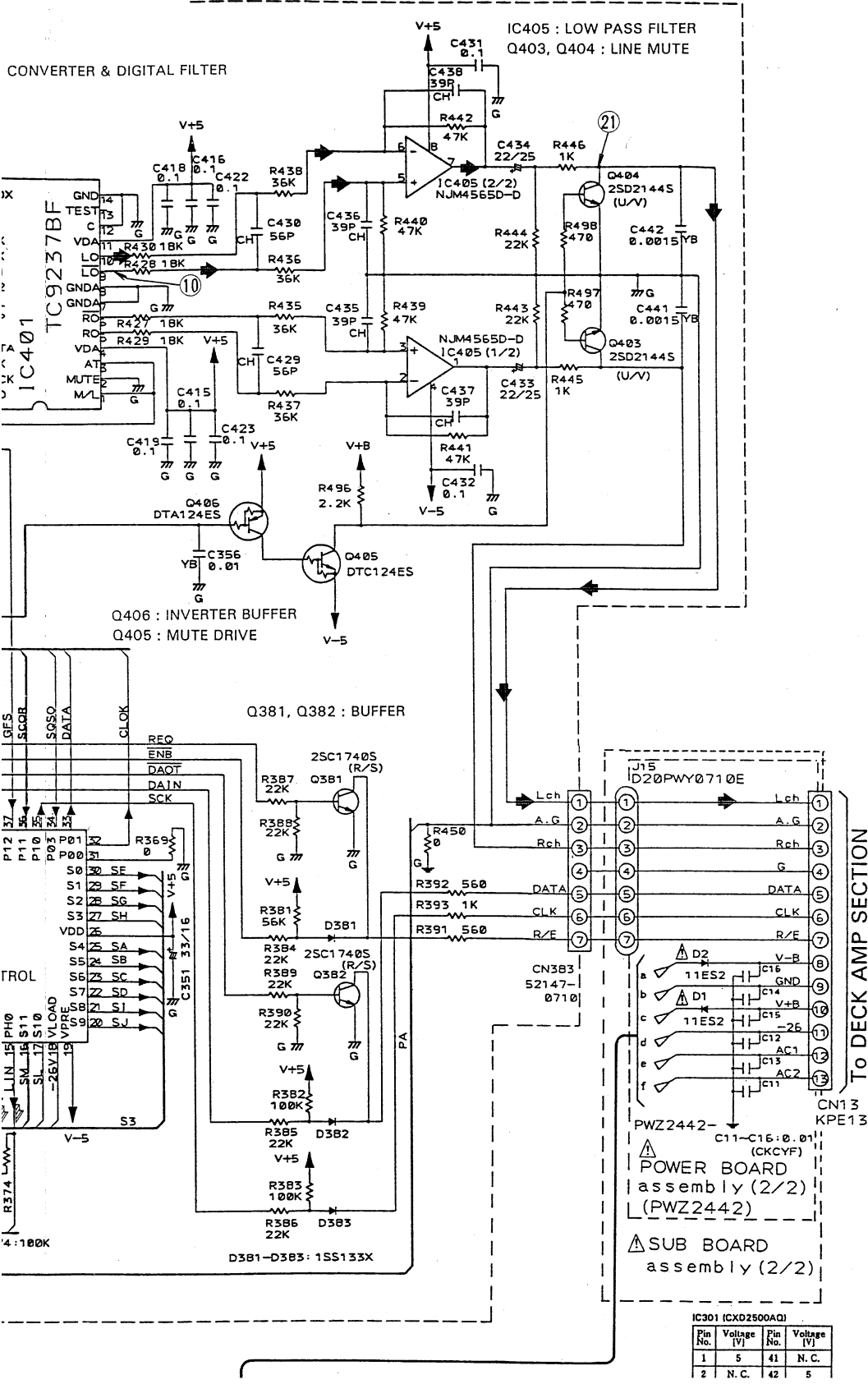
- ▶ : SIGNAL ROUTE
- ▶ : FOCUS SERVO LOOP LINE
- ▶ : LOADING MOTOR ROUTE
- ▶ : TRACKING SERVO LOOP LINE
- ▶ : SPINDLE MOTOR ROUTE
- ▶ : CARRIAGE MOTOR ROUTE
- ▶ : DISC SELECT MOTOR ROUTE

A

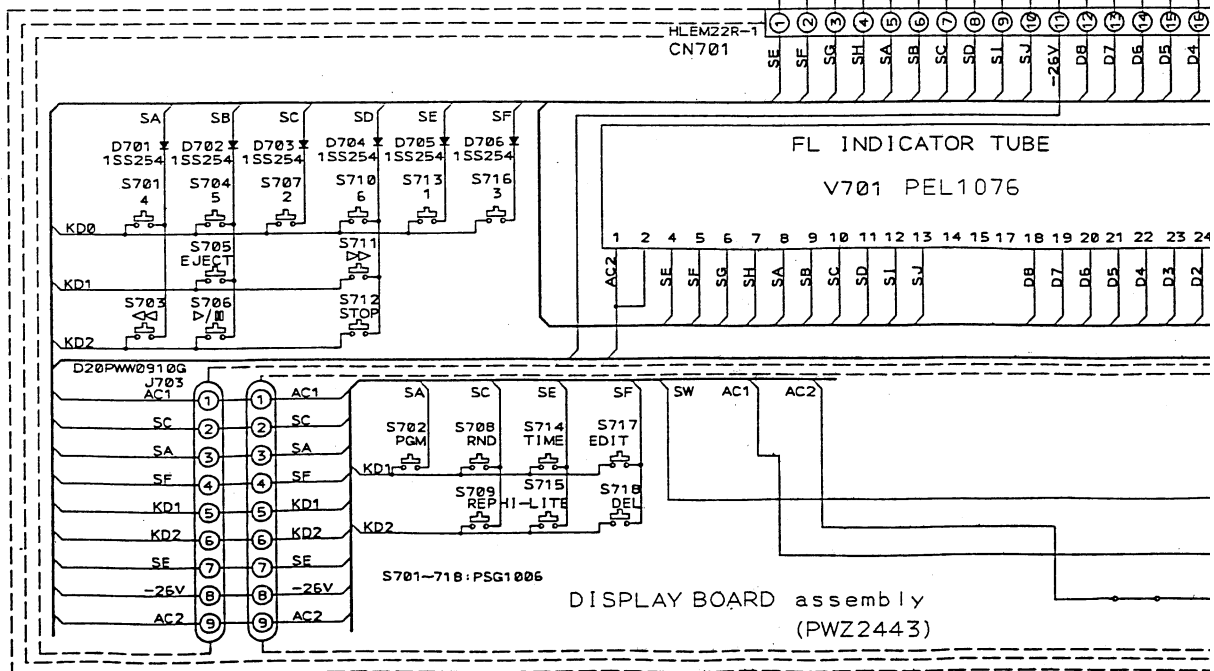
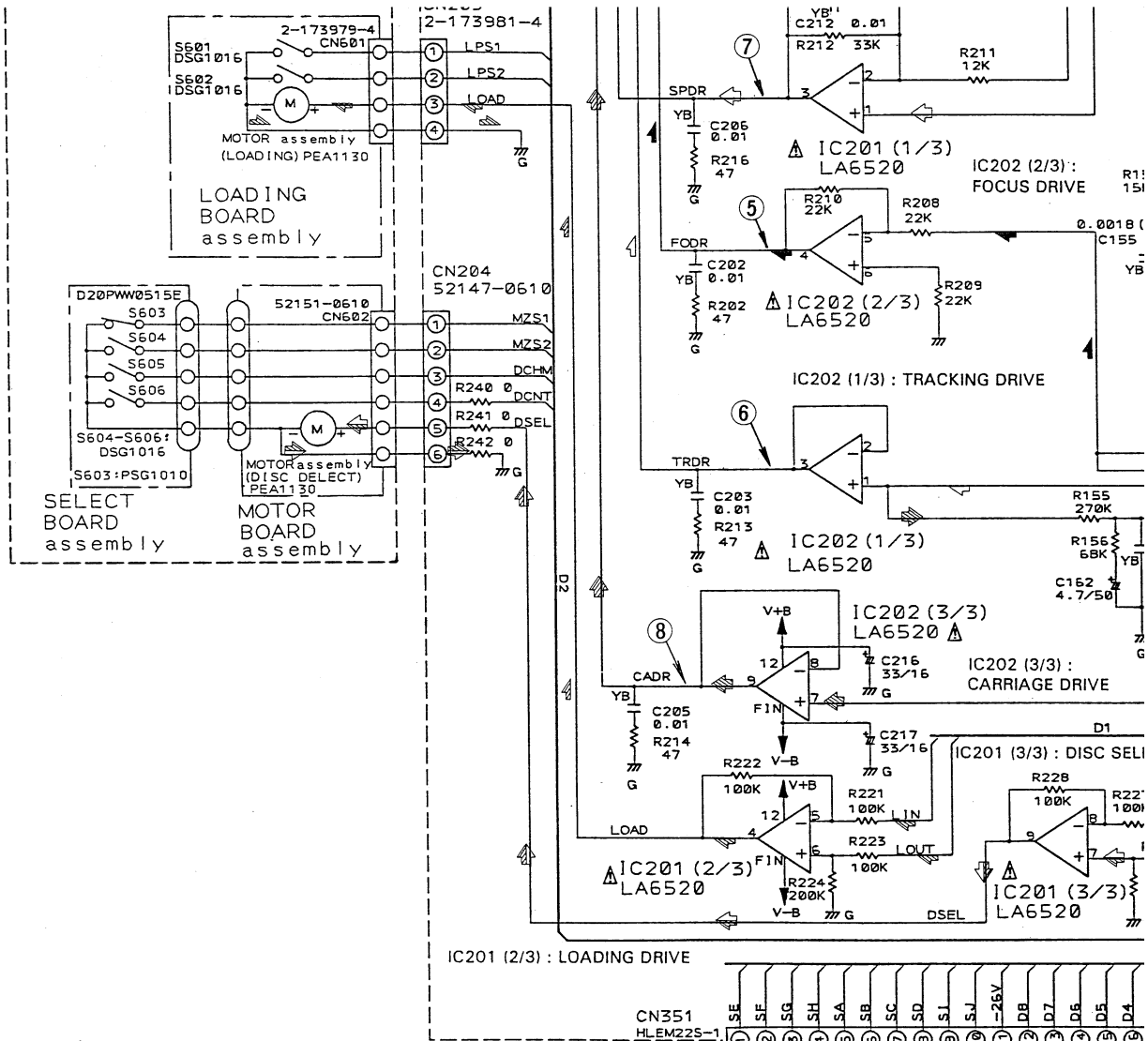
B

C

D

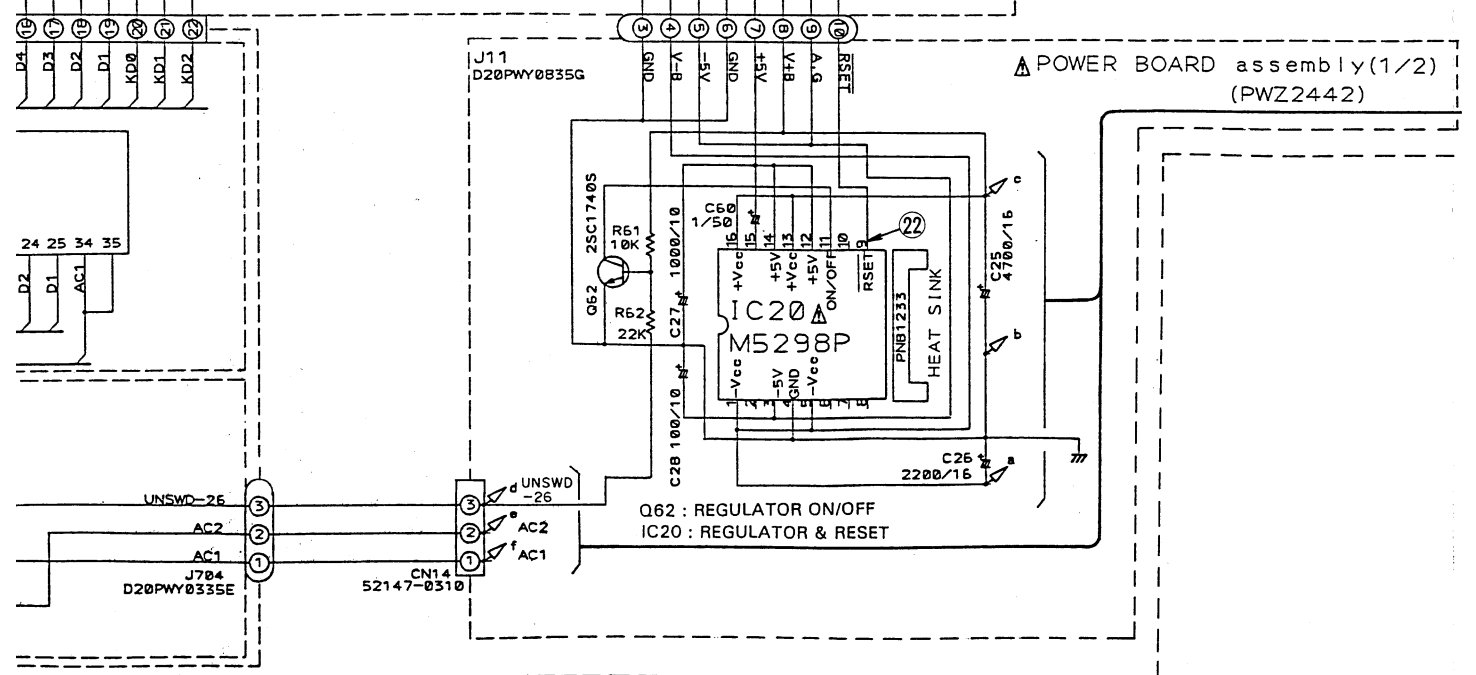
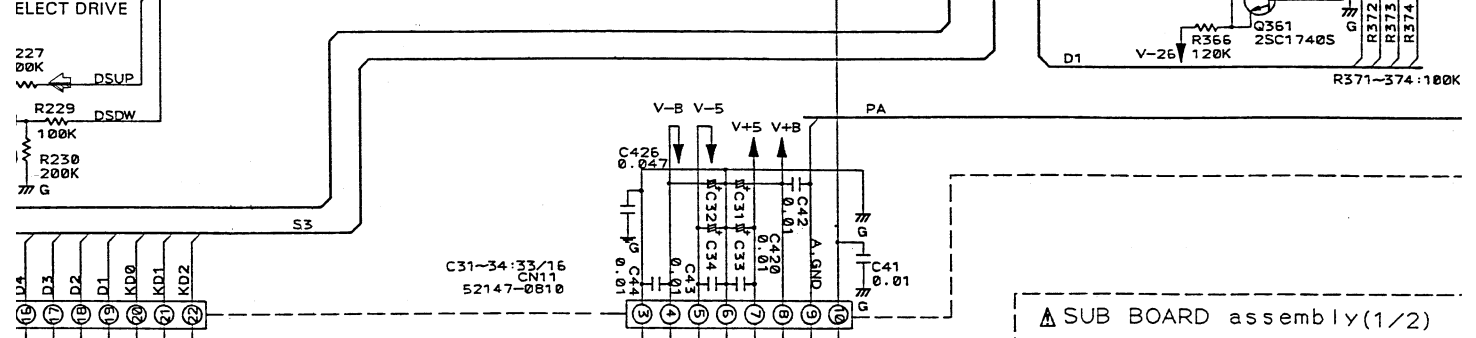
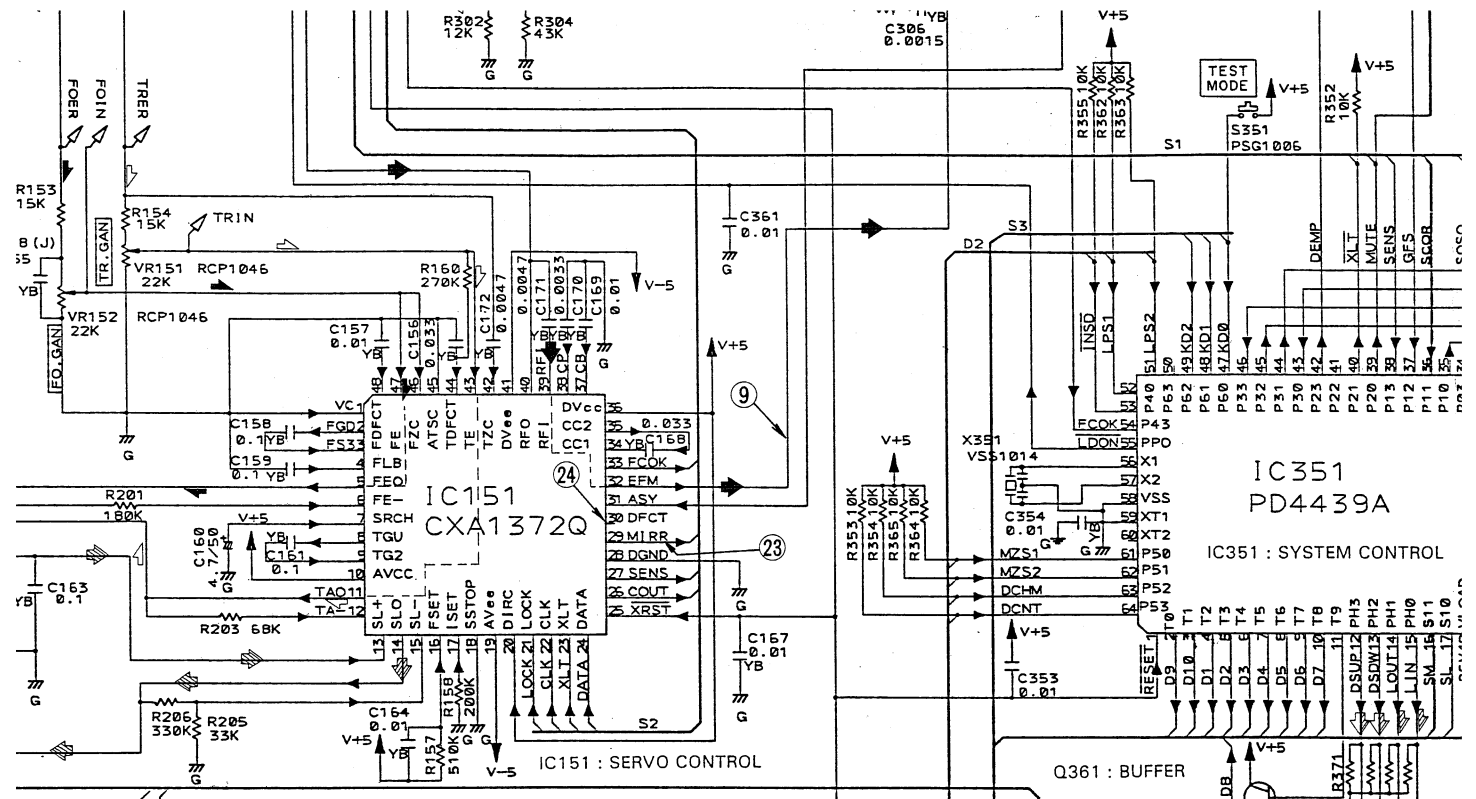


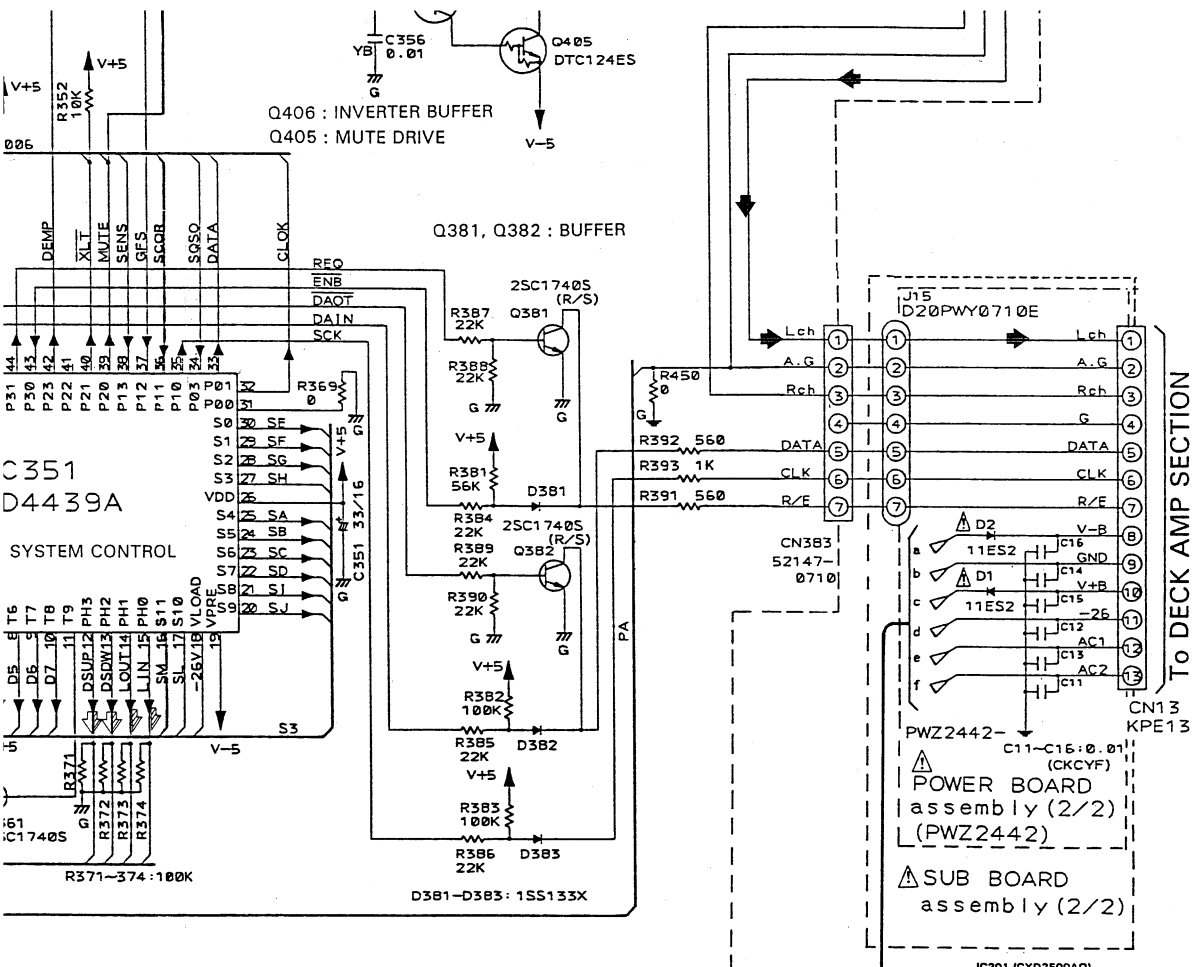
To DECK AMP SECTION  
 AF assembly J13 (⇔ SCH-2) or (⇔ SCH-11)



**SCH-9**

MOTHER BOARD assembly  
POWER BOARD assembly  
DISPLAY BOARD assembly





To DECK AMP SECTION  
 AF assembly J13 (⇔ SCH-2) or (⇔ SCH-11)

assembly (1/2)  
 assembly (1/2)  
 Z2442)

IC401 (TC92378P)

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	2.6
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

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

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

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

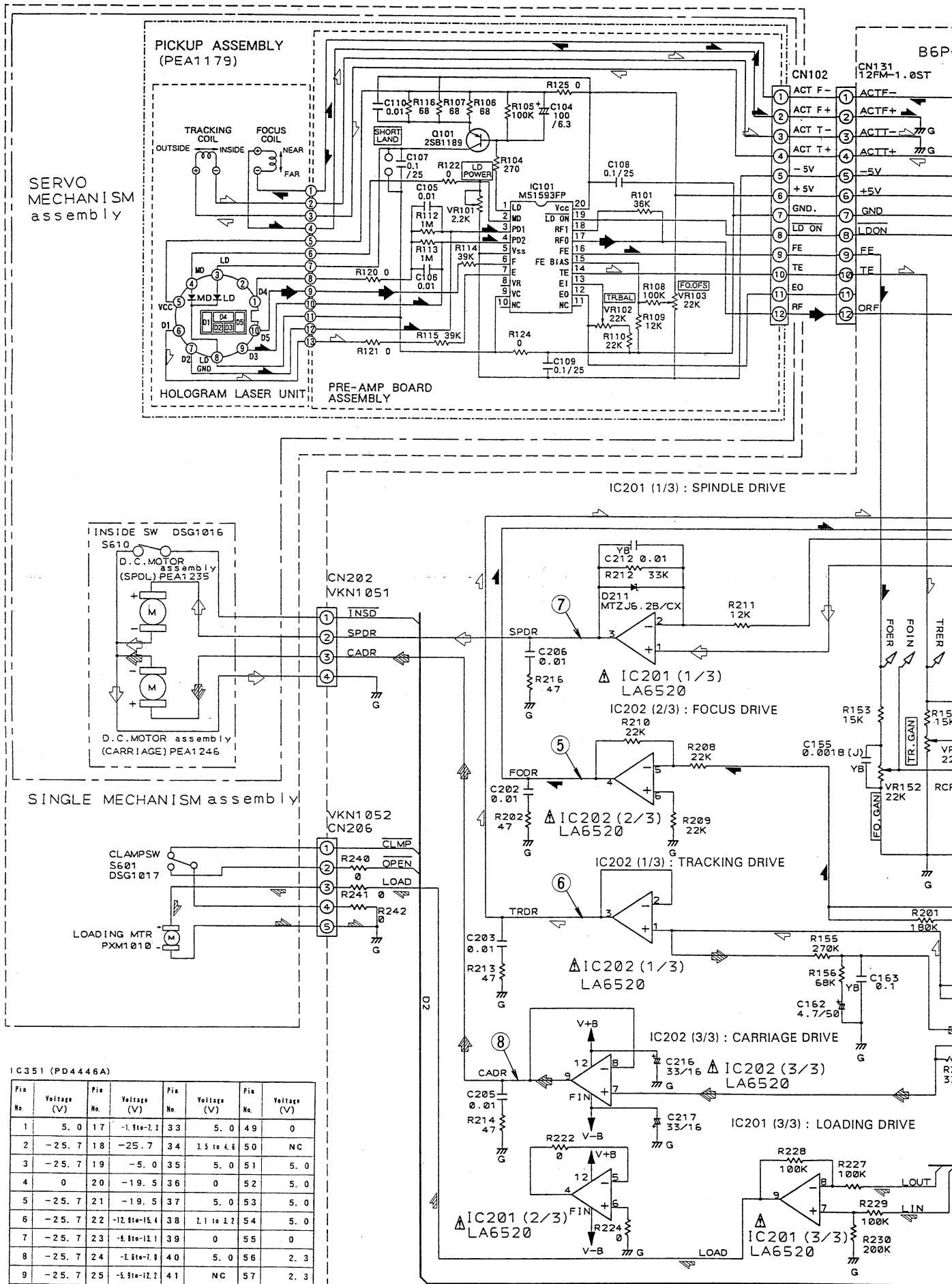
IC301 (CXD2500AQ)

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 BOARD assembly

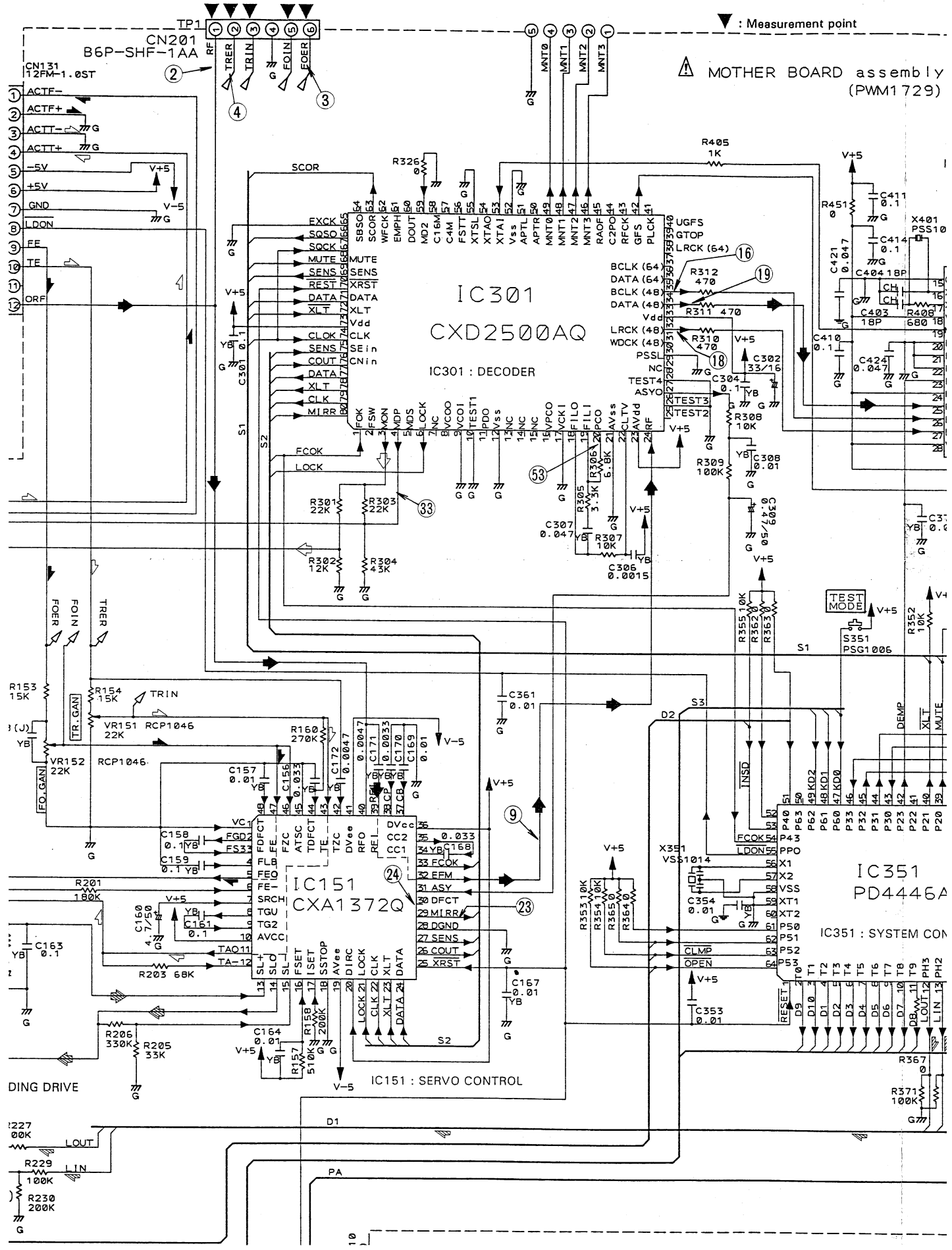
**SCH-9**

**4.2.2 Single CD Unit (For XD-J210)**



IC351 (PD4446A)

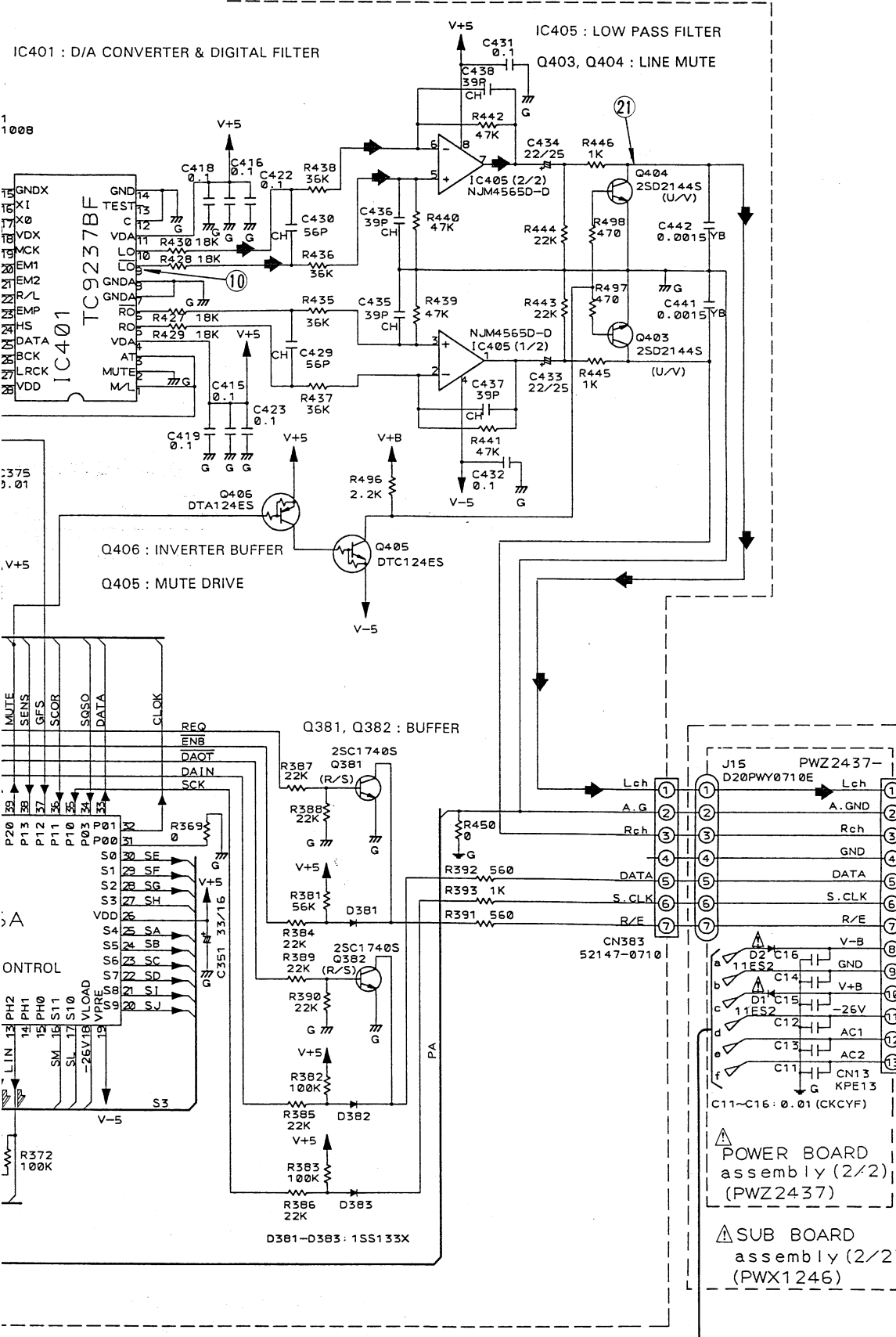
Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5.0	17	-1.9to-2.3	33	5.0	49	0
2	-25.7	18	-25.7	34	1.5 to 4.6	50	NC
3	-25.7	19	-5.0	35	5.0	51	5.0
4	0	20	-19.5	36	0	52	5.0
5	-25.7	21	-19.5	37	5.0	53	5.0
6	-25.7	22	-12.8to-15.4	38	2.1 to 2.2	54	5.0
7	-25.7	23	-8.8to-11.1	39	0	55	0
8	-25.7	24	-3.8to-7.8	40	5.0	56	2.3
9	-25.7	25	-5.3to-12.2	41	NC	57	2.3





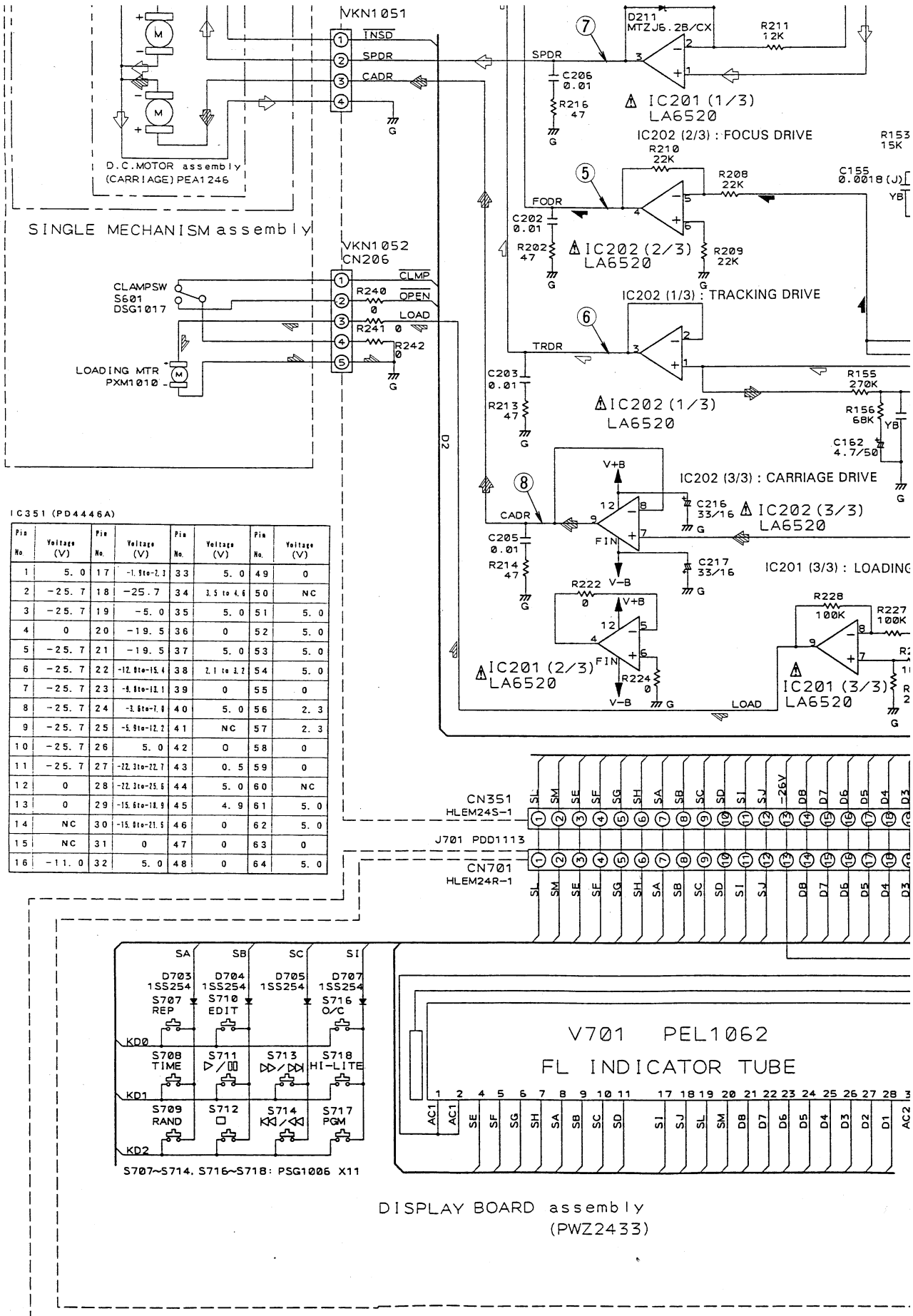
- : SIGNAL ROUTE
- : FOCUS SERVO LOOP LINE
- : LOADING MOTOR ROUTE

- ◁ : TRACKING SERVO LOOP LINE
- ◁ : SPINDLE MOTOR ROUTE
- ◁ : CARRIAGE MOTOR ROUTE



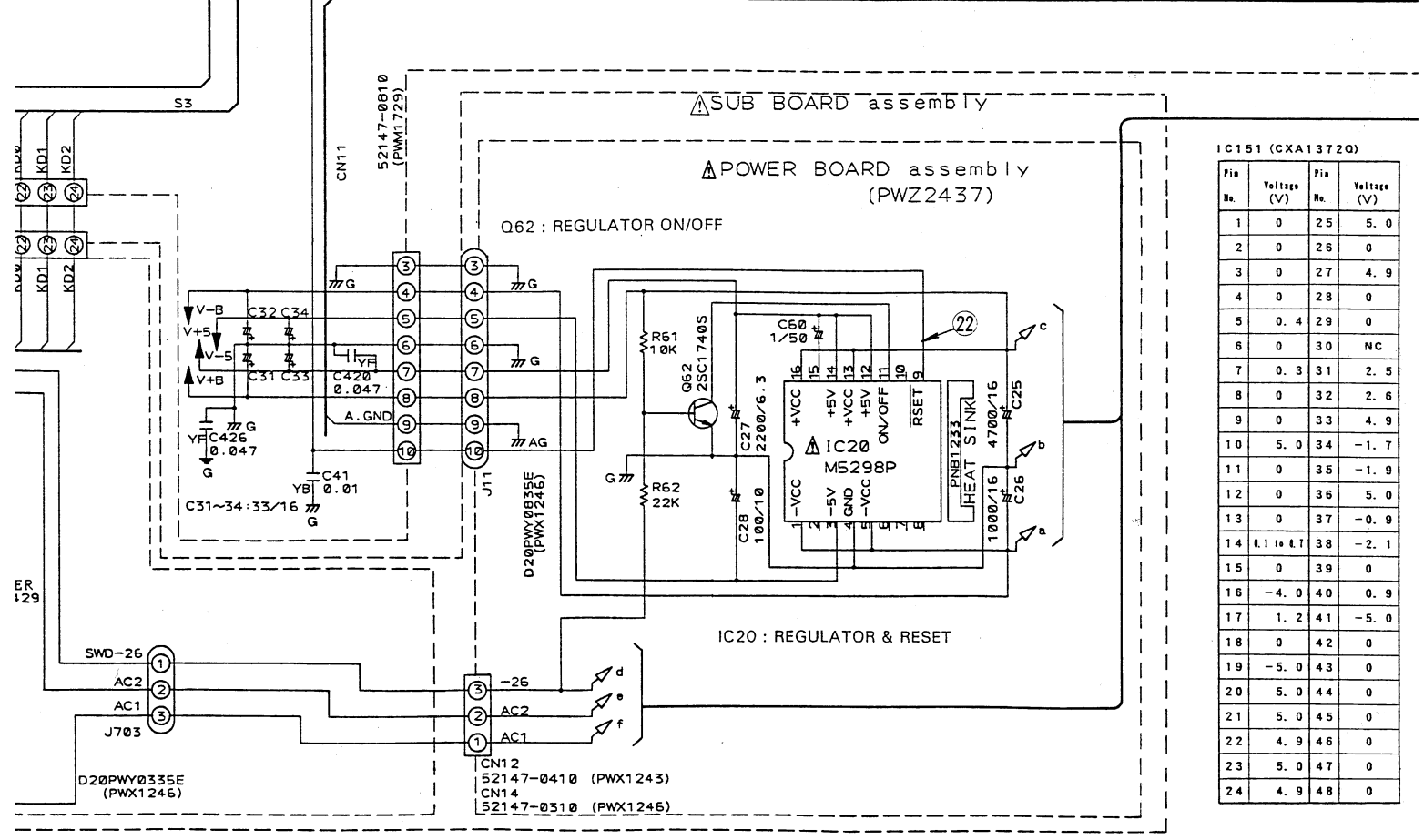
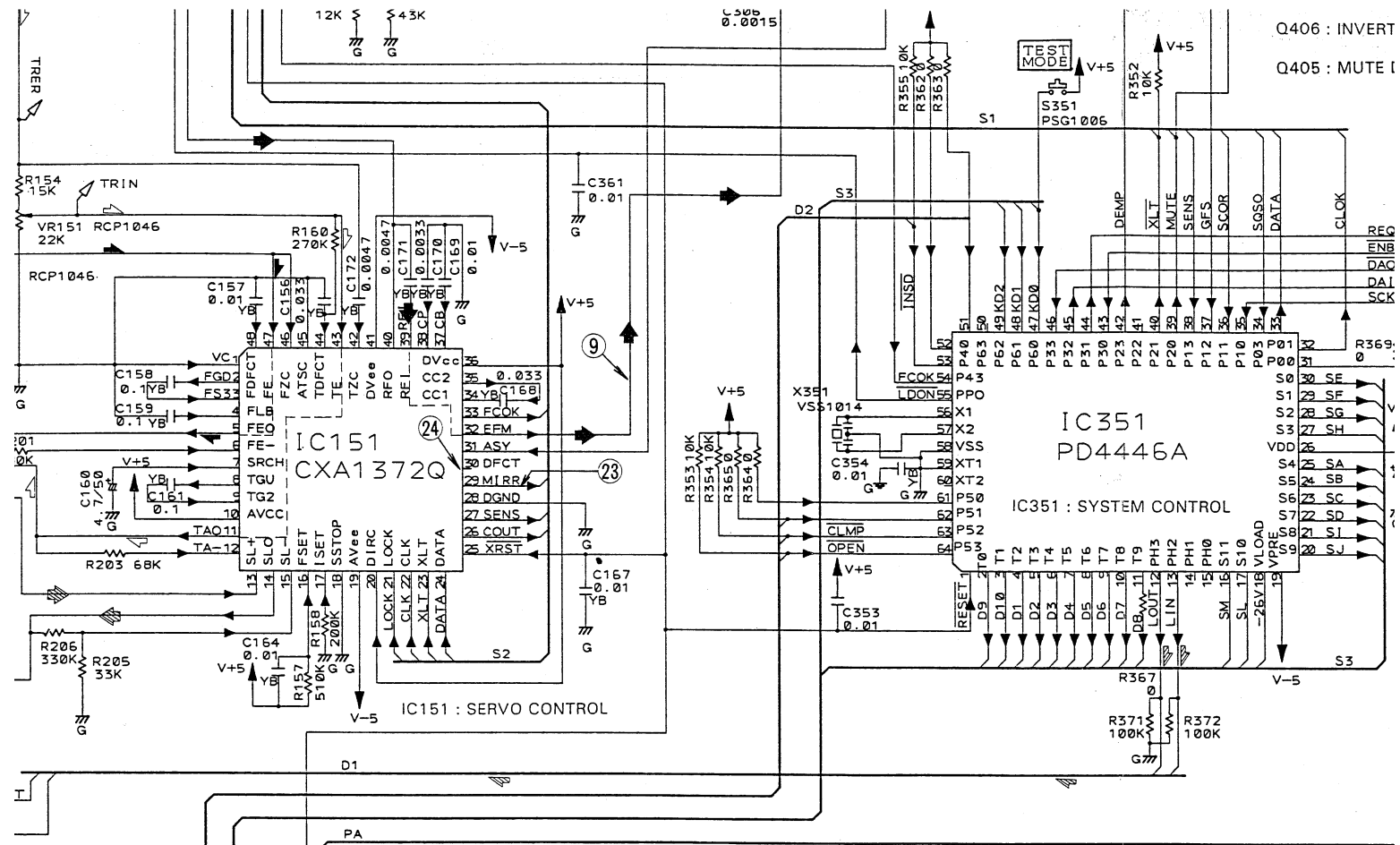
To DECK AMP SECTION AF assembly J13 (⇔ SCH-2) or (⇔ SCH-11)

I  
B  
C  
D



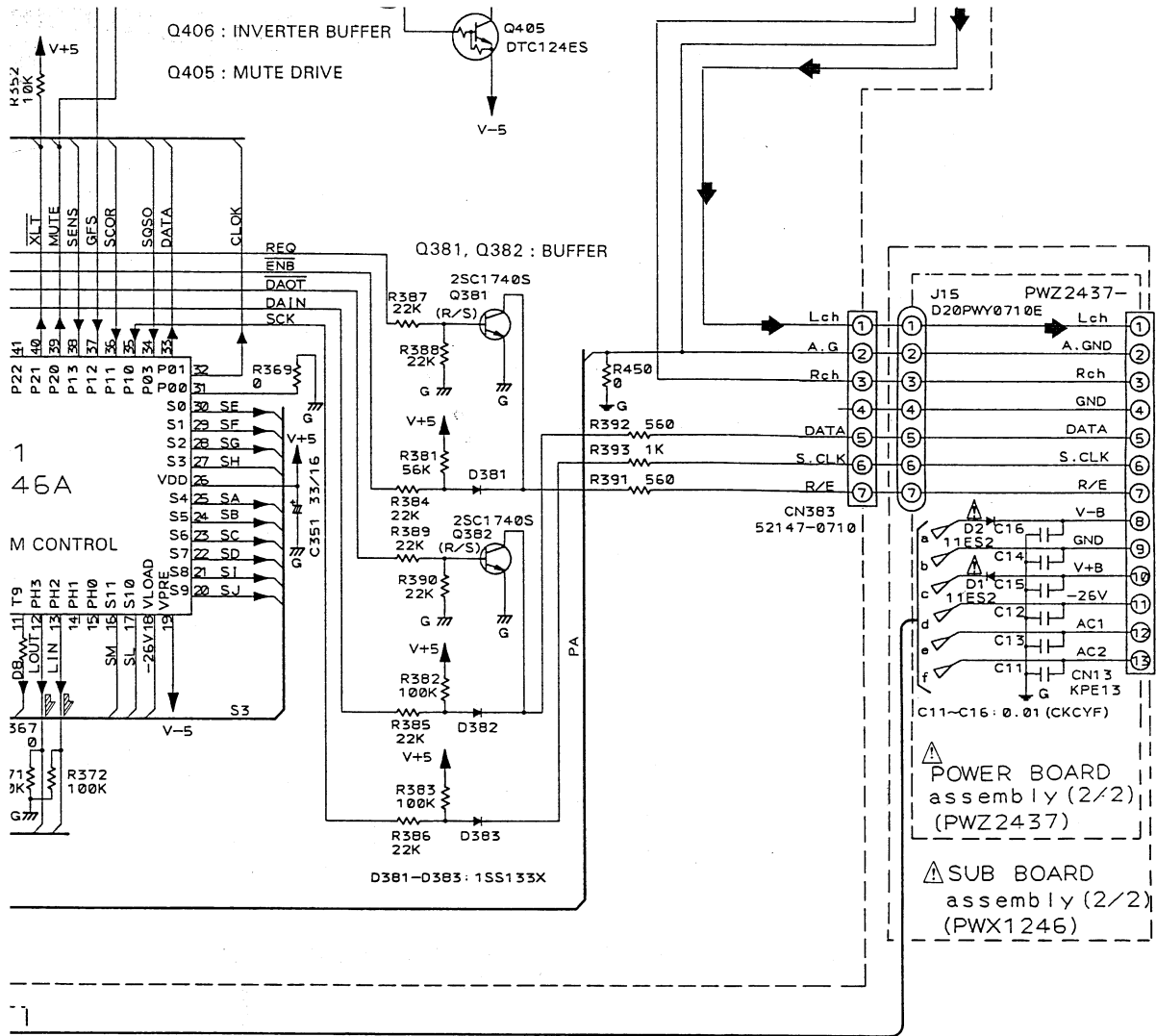
**SCH-10**

MOTHER BOARD assembly  
POWER BOARD assembly  
DISPLAY BOARD assembly



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	0.1 to 0.1	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



To DECK AMP SECTION AF assembly J13 (⇔ SCH-2) or (⇔

IC151 (CXA13720)

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	0.1 to 0.1	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	0 to 0.1
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	2.6 to 4.4
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	2.1 to 3.1
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 BOARD assembly

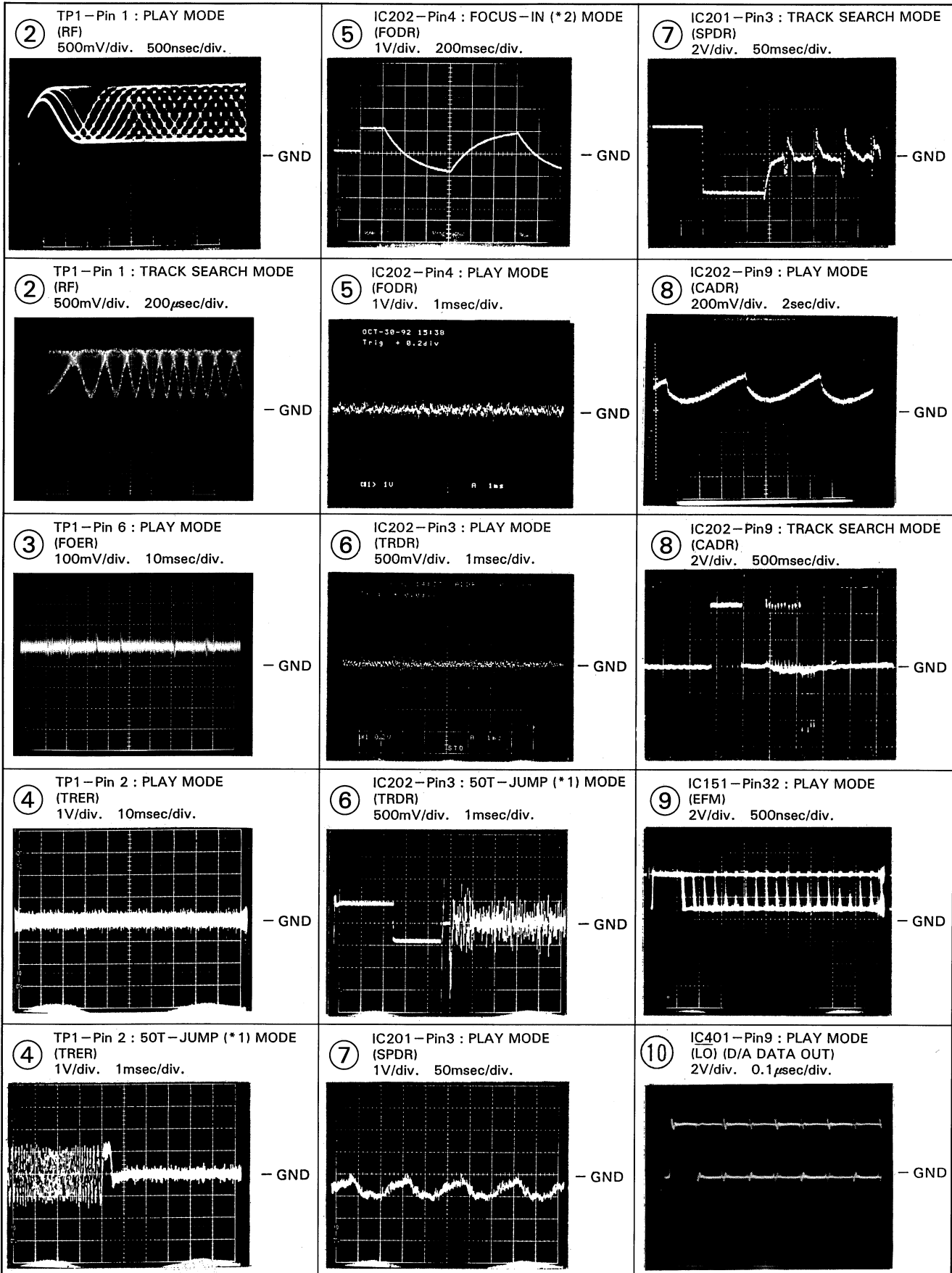
**SCH-10**

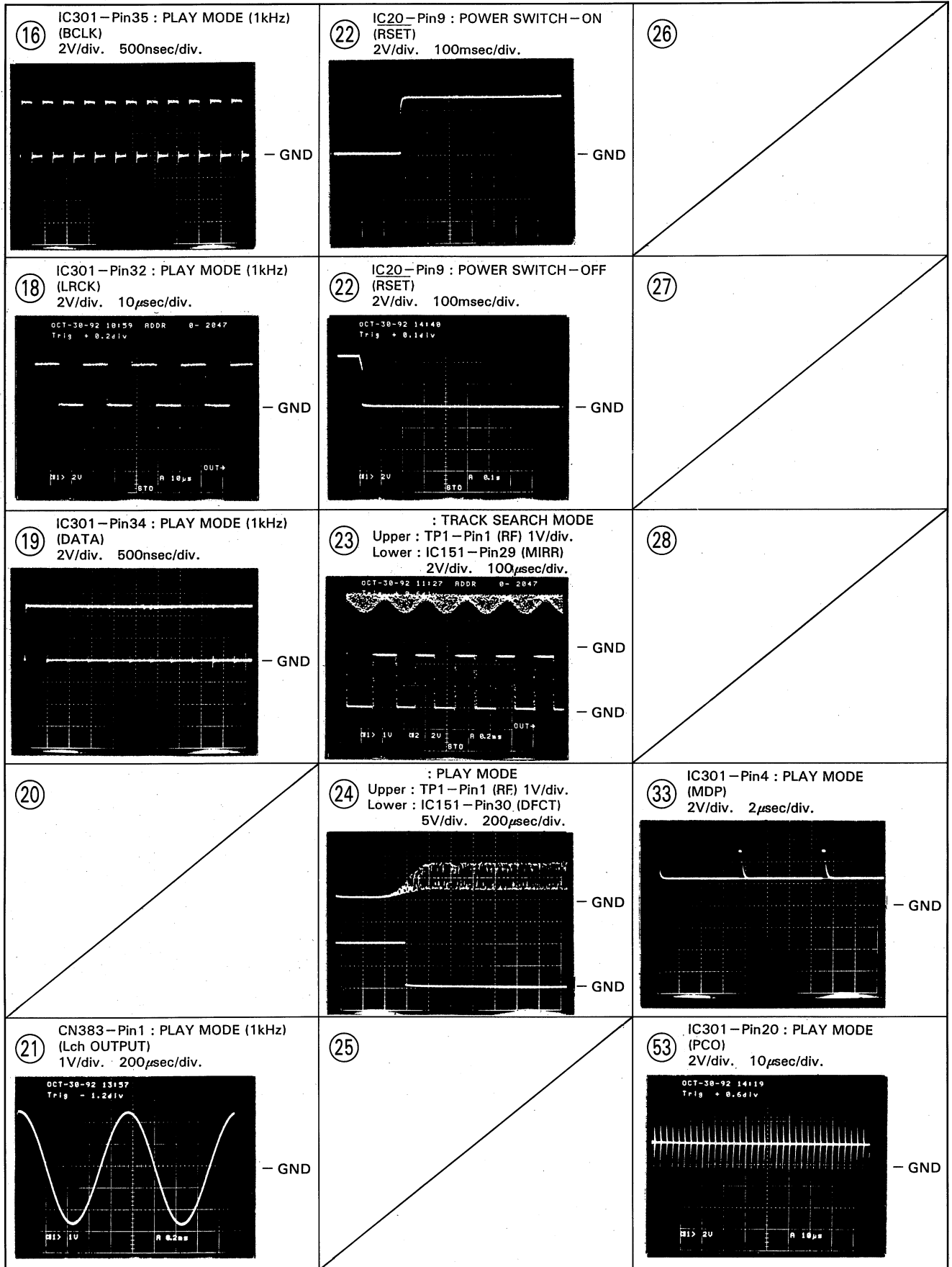
## Waveforms

Note: The circled 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.





This PCB connection diagram is:

A

B

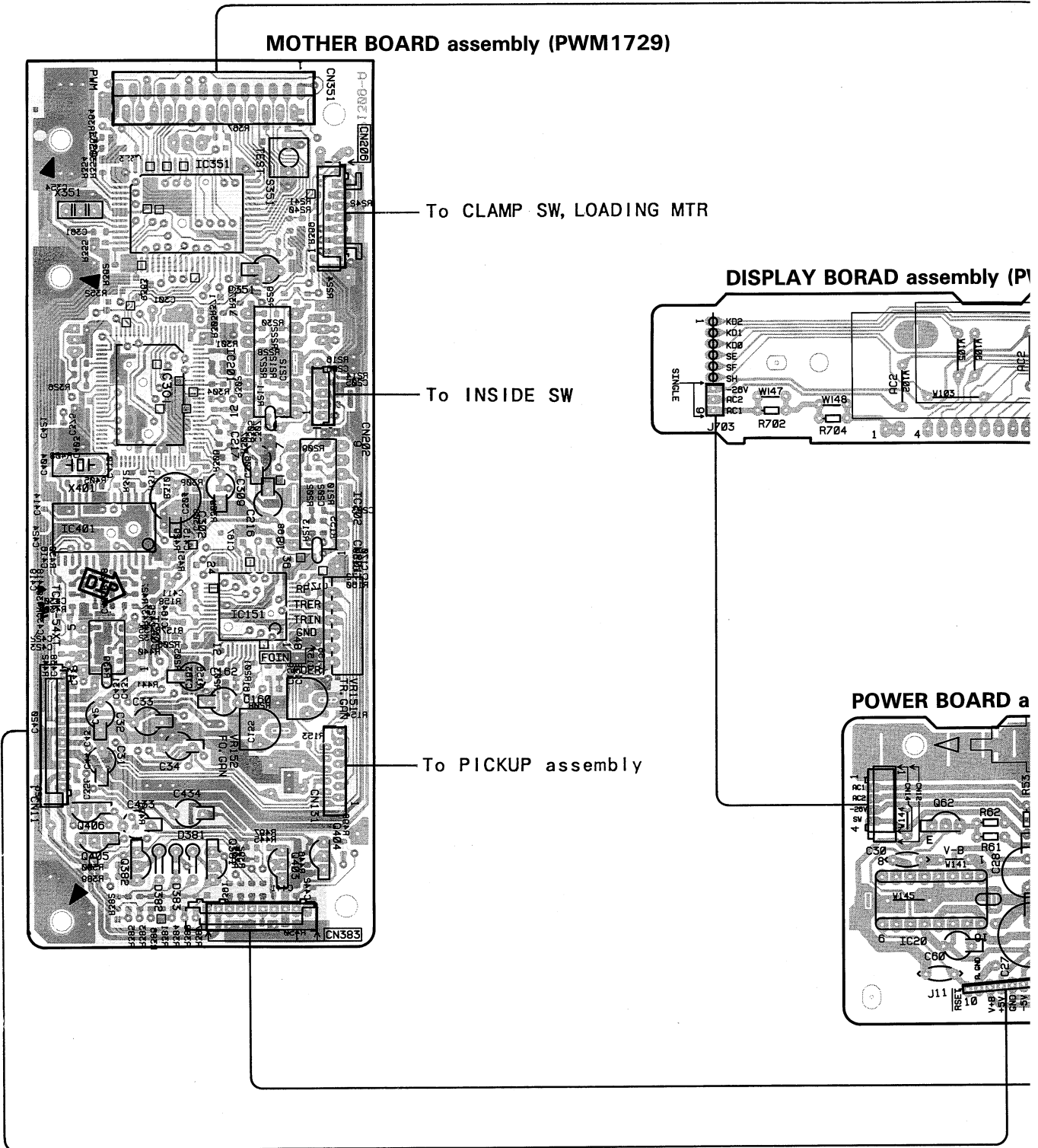
C

D

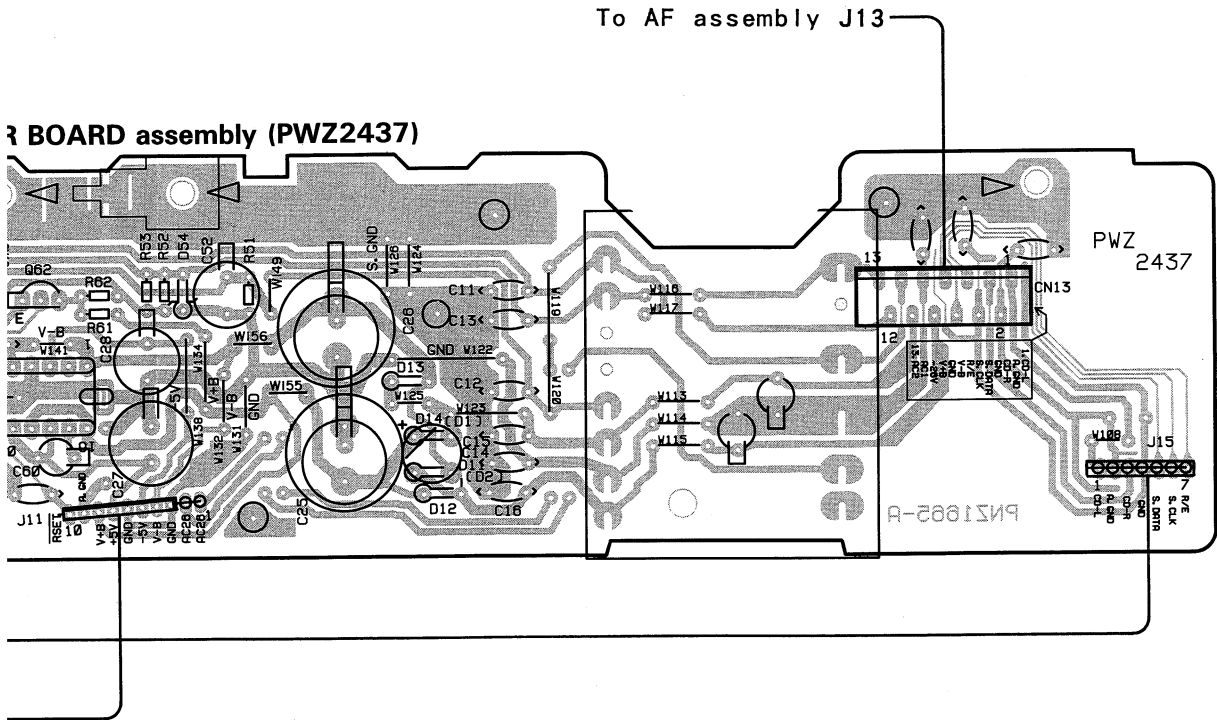
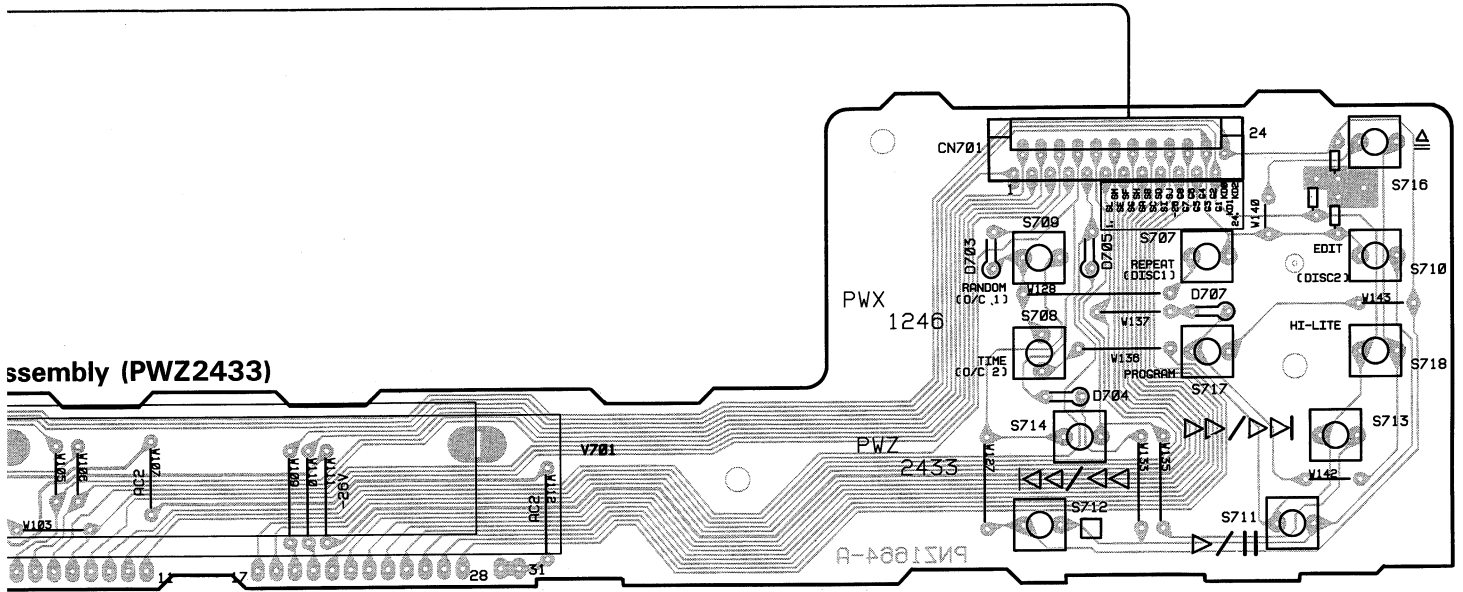
### MOTHER BOARD assembly (PWM1729)

### DISPLAY BOARD assembly (P)

### POWER BOARD a



on diagram is viewed from the parts mounted side.



A

B

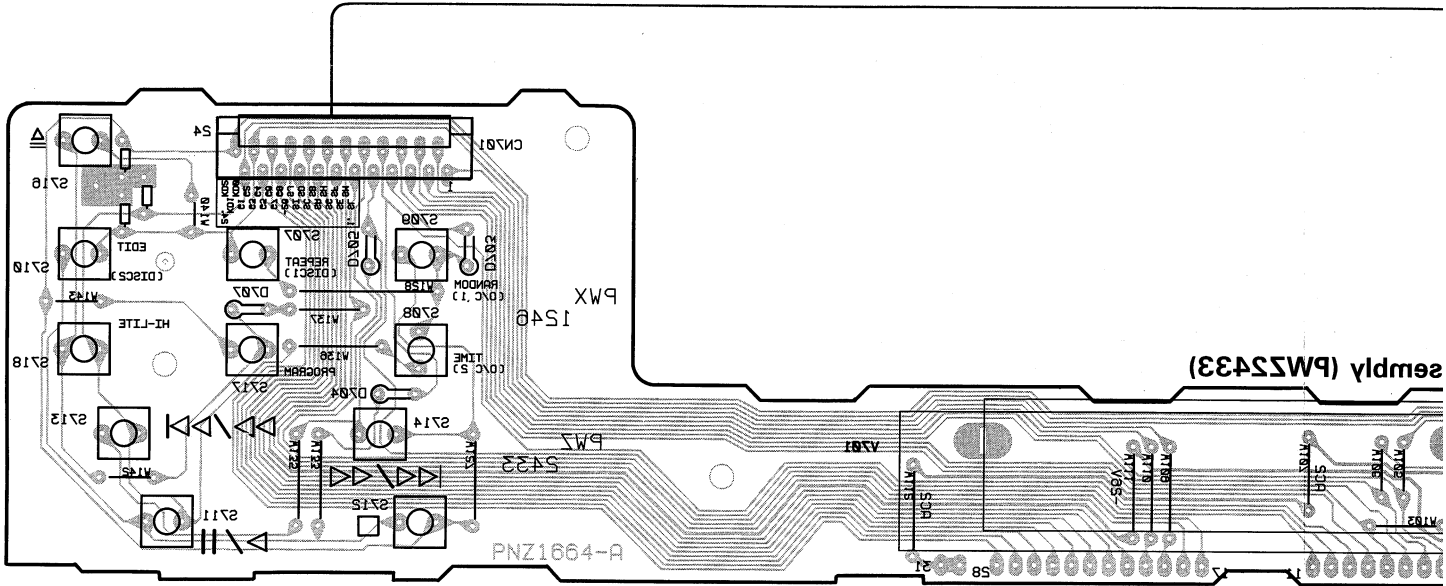
C

D



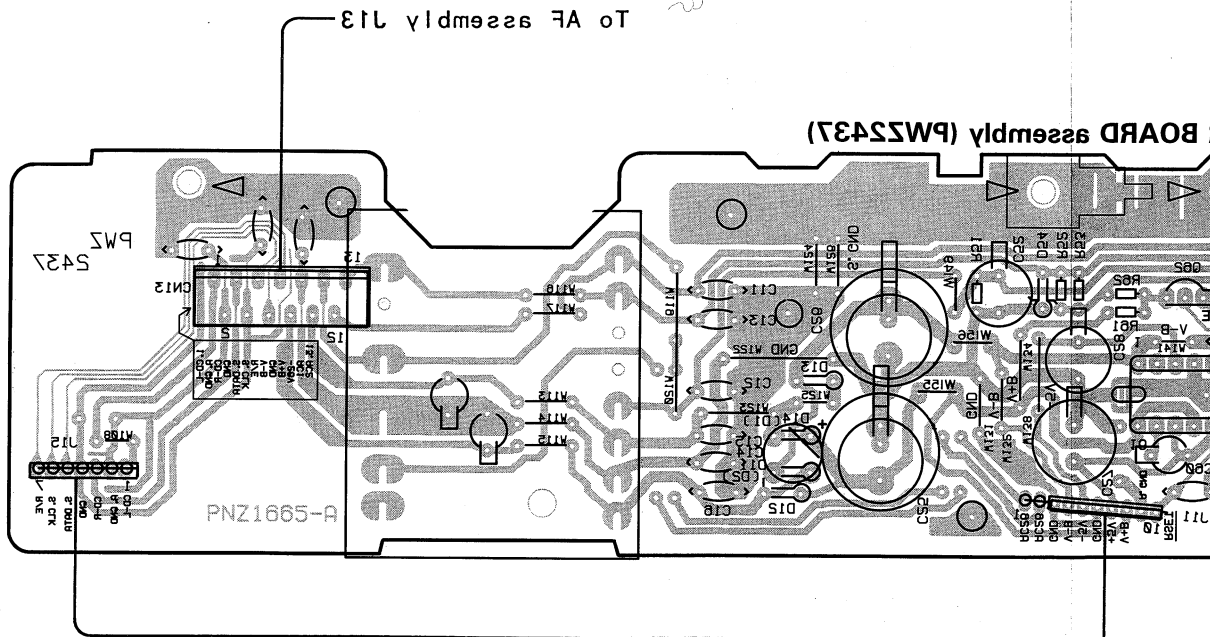
This PCB connection diagram is view

A



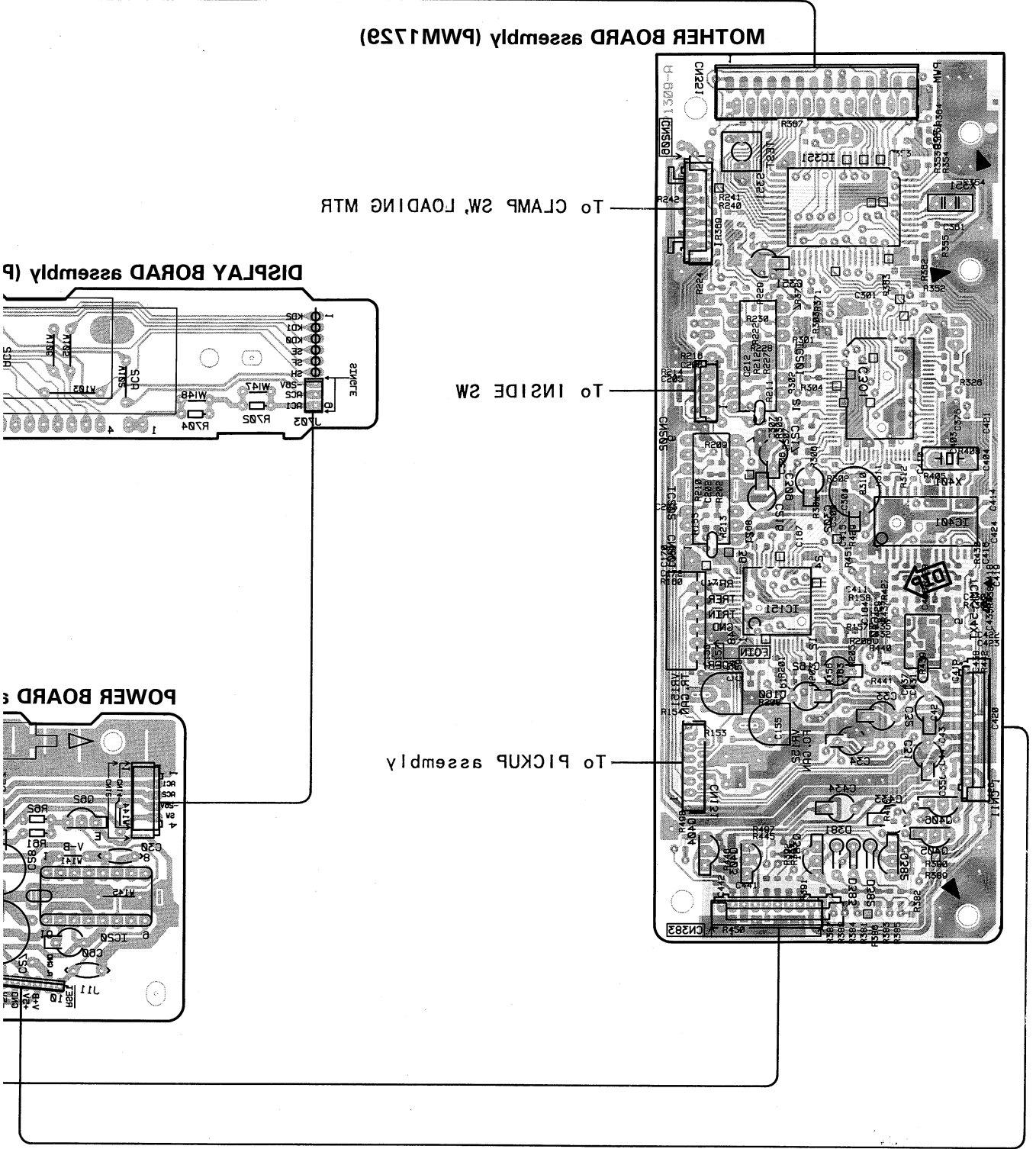
B

C



C

am is viewed 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  $\Delta$  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%).

560 $\Omega$  → 56 × 10<sup>1</sup> → 561 ..... RD1/8PM  $\square$   $\square$   $\square$  J  
 47k $\Omega$  → 47 × 10<sup>3</sup> → 473 ..... RD1/4PS  $\square$   $\square$   $\square$  J  
 0.5 $\Omega$  → 0R5 ..... RN2H  $\square$   $\square$   $\square$  K  
 1 $\Omega$  → 010 ..... RS1P  $\square$   $\square$   $\square$  K

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

5.62k $\Omega$  → 562 × 10<sup>1</sup> → 5621 ..... RN1/4PC  $\square$   $\square$   $\square$  F

### 5.1 FOR XD-J215M/HE

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
<b>LIST OF ASSEMBLIES</b>				IC2103, IC2301, IC2501, IC3302, IC3303			
<b>DECK AMP BLOCK</b>				XRA4558F-P			
		AF ASSEMBLY	AWZ4648			Q1253, Q1261, Q1281, Q1282	2SA1048
		VOLUME ASSEMBLY	AWZ4655			Q1002	2SA1515
		DISPLAY ASSEMBLY	AWZ4658			Q1252, Q1254, Q1262, Q1271, Q1272, Q2201, Q2202	2SC2458
		HEADPHONE ASSEMBLY	AWZ4666			Q2102, Q2103, Q2203	XDA143ES
		DOLBY-C ASSEMBLY	AWZ4669			Q1003	XDC124ES
		SURROUND ASSEMBLY	AWM1445				
NSP		TRANS CONNECT ASSEMBLY	AWZ4672			Q2101	XDC143ES
		SUB TRANS ASSEMBLY	AWZ4678				
		TAPE ASSEMBLY	AWV1336			D1201	D3SBA20 (A)
		SW ASSEMBLY	AWK1746			D1001, D1002, D1256, D1258-D1261, D1281, D1282, D1901-D1903, D1913, D1914	HSS104-02
<b>CD BLOCK</b>						D1161, D1162	RD5.1ESB2
		MOTHER BOARD ASSEMBLY	PWM1728			D1904, D1911, D1912	RD5.6ESB
		POWER BOARD ASSEMBLY	PWZ2442			D1003, D1004, D1011, D1012	S5566
		DISPLAY BOARD ASSEMBLY	PWZ2443	<b>RELAIES</b>			
NSP		LOADING BOARD ASSEMBLY	PWZ2038			RY1251, RY1281	ASR1035
NSP		SELECT BOARD ASSEMBLY	PWZ2533	<b>COILS</b>			
NSP		MOTOR BOARD ASSEMBLY	PWZ2040			L1201, L1202, L1301	ATH-133
						L1901	LAU221K
<b>DECK AMP BLOCK</b>				<b>CAPACITORS</b>			
<b>AF ASSEMBLY</b>						C1301, C1302 (2200/42)	ACH1109
<b>SEMICONDUCTORS</b>						C1201, C1202 (5600/50)	ACH1145
		IC1010, IC1202, IC1302	ICP-N10			C1313	CCPUSL330J50
		IC3101, IC3102	LA3607			C2305, C2306	CCSQCH101J50
		IC3103	LC7522			C3307	CCSQCH102J50
		IC1902	M51951BSL			C3129, C3130	CCSQCH221J50
		IC2101, IC3301	MC14052BF			C3125, C3126, C3305, C3306	CCSQCH681J50
						C3140, C3141	CCSQL101J50
		IC2102	MC14066BF			C1252, C1904	CEAS010M50
		IC1001, IC1002	MC7812CT			C1261, C2103, C2104	CEAS100M50
		IC1003	NJM78M05FAS				
		IC1006	NJM7912FA			C3135, C3136	CEAS101M10
		IC1005	NJM79M05FA				
		IC1901 (Si-A4300)	PD5214A → PD5214B				
		IC1301	SI-18751				
		IC1201	STK4150-2G				

# XD-J215M

Mark	No.	Description	Parts No.
	C1903		CEAS101M16
	C1209-C1212		CEAS101M50
	C1005, C1006, C1011, C1205, C1206, C1303, C1305, C3311, C3312		CEAS220M25
	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
	C1315, C1316		CEHAQ470M35
	C1307, C1309, 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
<b>RESISTORS</b> (51-00001/100/01)			
	R1007-R1010		RD1/2PMFL100J
	R1254		RD1/4PM153J
	R1256		RD1/4PM243J
	R1015		RD1/4PM331J
	R1013, R1014, R1213, R1214		RD1/4PM4R7J
	R1211, R1212		RD1/4PM561J
	R1207, R1208		RD1/4PM563J
	R2317, R2318		RD1/4PM820J
	R1309		RD1/4PMF100J
	R1215, R1216, R1311		RD1/4PMFL100J
	R1209, R1210		RD1/4PMFL101J
	R3651, R3652		RS1/10S000J
	R2313, R2314		RS1/10S101J
	R1922, R2303, R2304, R3315-R3318		RS1/10S102J
	R1923, R2113-R2117, R2213, R2214, 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
	R1904-1908		RS1/10S222J
	R2105, R2106		RS1/10S332J

Mark	No.	Description	Parts No.
	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
	R2219, R2220		RS1/10S562J
	R1918, R1919		RS1/10S563J
	R2503, R2504		RS1/10S682J
	R3109, R3110		RS1/10S823J
	R1261, R1262, R1282		RS2LMFR22J
	<i>R1282 (51-448000-0)</i>		<i>RD1/8PM153J</i>
	Other Resistors		RD1/8PM□□□□
	<i>R1282 (51-448000-0)</i>		<i>RD1/8PM153J</i>
<b>OTHERS</b>			
	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
<b>VOLUME ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	IC1502		TA7291S
	IC1501, IC1551		XRA4558-P
	Q1501, Q1502, Q1551		2SC2878
	Q1503		XDA124ES
<b>CAPACITORS</b>			
	C1507, C1508		CEAS101M16
	C1501-C1504, C1552		CEAS220M25
	C1505, C1506		CEAS470M25
	C1553		CKCYB391K50
	C1511		CKDYX104M25
	C1555, C1556		CKPUYF103Z25
	C1509, C1510		CKPUYF473Z16
<b>RESISTORS</b>			
	VR1501 (100k-4B*4 50k-6B)		ACX1063
	R1511, R1512		RD1/4PM820J
	Other Resistors		RD1/8PM□□□□
<b>DISPLAY ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	IC3702		BA3826S
	IC3901		PDC009A
	IC1701, IC1702		SN74LS05N

Mark	No.	Description	Parts No.
	Q3701		2SC2458
	Q3901, Q3902		XDC124ES
	Q1701, Q1702		XDC143ES
	D1701-D1704, D1707, D1716		AEL1064
	D1705, D1706, D1709-D1713, D1715		AEL1065
	D1708, D1714, D1801-D1806,		HSS104-02
	D3702-D3705, D3801-D3806,		
	D3901-D3907		

**SWITCHES**

S1801, S1802, S1804-S1816, S1818-S1820, S3801-S3811, S3813-S3817	ASG1034
S1901	ASH1011

**COIL**

L3901	LAU221K
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**CAPACITORS**

C3901	ACH1135
C1901	CCCSL100D50
C3907	CEAS100M50
C3904, C3908	CEAS470M10
C3701, C3702	CEJA2R2M50

C3906	CKCYB102K50
C3703, C3905	CKPUYB102K50
C3902, C3903	CKPUYF223Z25
C3901 (SI-41300)	CEAS100M50

**RESISTORS**

VR3401 (50k-B)	ACS1086
R3901 (SI-41300)	RD1/8PM□□□J
Other Resistors	RD1/8PM□□□J
R1243, R1244, R1245 (SI-448074)	RD1/8PM408J

**OTHERS**

X3901 (12MHz)	ASS1062
CN1901 40P SOCKET	AKP1085
V3901 FL TUBE	AAV1164
REMOTE CONTROL	AXX1023
SENSOR UNIT	

**HEADPHONE ASSEMBLY**

**SEMICONDUCTORS**

IC1231	M5216P
Q1231, Q1232	2SC2458
Q1233	XDA124ES

**CAPACITORS**

C1235, R1236	CEAS220M25
C1231	CEAS2R2M50
C1241, C1242	CEAS330M25
C1233, C1234	CEAS470M25
C1232	CEJA2R2M50

C1237, C1238	CKPUYB101K50
C1239, C1240	CKPUYB151K50

Mark	No.	Description	Parts No.
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**RESISTORS**

R1243, R1244	RS1LMF820J
Other Resistors	RD1/8PM□□□J

**OTHERS**

HEADPHONE JACK	AKN1010
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**DOLBY-C ASSEMBLY**

**SEMICONDUCTORS**

IC4431	CX20187
Q4431	XDA143ES
Q4432	XDC143ES

**COILS**

F4431, F4432	ATF1064
L4431, L4432	LTA223J

**CAPACITORS**

C4419, C4420, C4445, C4446	CEAS100M50
C4415, C4416	CEAS101M10
C4421, C4422	CEAS2R2M50
C4429, C4430	CEJAR47M50
C4443, C4444	CFTXA103J50

C4433, C4434	CFTXA153J50
C4431, C4432	CFTXA154J50
C4417, C4418	CFTXA223J50
C4435, C4436	CFTXA224J50
C4439, C4440	CFTXA473J50

C4437, C4438	CFTXA683J50
C4425, C4426	CQMA332J50
C4427, C4428	CQMA472J50
C4423, C4424	CQMA561J50
C4441, C4442	CQMA682J50

**RESISTORS**

All Resistors	RD1/8PM□□□J
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**OTHERS**

15P PLUG	AKM1063
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**SURROUND ASSEMBLY**

**SEMICONDUCTORS**

IC3404	LA2730
IC3403	M50198P
IC3451	MC14052BCP
IC3405	NJM78M05FAS
IC1602	TC9154AP

IC1601, IC3401, IC3402	XRA4558-P
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D1601, D1602, D3401-D3404	HSS104-02
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Mark	No.	Description	Parts No.
<b>COIL</b>			
	L3401		LAU5R6K
<b>CAPACITORS</b>			
	C3410		CEANP100M35
	C3425		CEAS010M50
	C3401, C3415, C3418, C3419, C3429		CEAS100M50
	C3427		CEAS101M10
	C3416		CEAS101M25
	C3426		CEAS220M16
	C1601, C1603, C1605, C1607, C3430, C3453		CEAS2R2M50
	C3405, C3412		CEAS470M16
	C3428		CEAS470M25
	C3423		CEASR33M50
	C3413		CFTXA103J50
	C3404, C3409, C3424		CFTXA104J50
	C3420, C3421		CFTXA333J50
	C3452		CFTXA334J50
	C3406, C3407		CFTXA474J50
	C1610		CKCYB471K50
	C3411		CKDYX473M16
	C3433, C3434		CKPUYB101K50
	C3451		CQMA104J50
	C3417		CQMA123J50
	C3422		CQMA472J50
	C3403, C3414		CQMA561J50
	C3402, C3408		CQMA562J50
<b>RESISTORS</b>			
	R3437		RFA1/4PS390J
	Other Resistors		RD1/8PM□□□J
<b>OTHERS</b>			
	X3401 (3.27MHz)		ASS1016
<b>TRANS CONNECT ASSEMBLY</b>			
<b>CAPACITORS</b>			
	C1158, C1159		CQMXA104J100
<b>SUB TRANS ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	IC1015		ICP-N10
	IC1011, IC1012		ICP-N38
	IC1013, IC1014		ICP-N75
	IC1152		NJM78M12FAS
	IC1151		NJM78M56FAS
	Q1151, Q1153		2SB560
	Q1152		2SC2458

Mark	No.	Description	Parts No.
	D1154, D1156, D1159		HSS104-02
	D1160		RD10ESB
	D1151		RD15ESB
	D1155		RD36ESB2
	D1001-D1009, D1152, D1153, D1157, D1158		S5566
<b>RELAY</b>			
	RY1151		ASR1027
<b>TRANSFORMER</b>			
	T1151		ATT1219
<b>CAPACITORS</b>			
	C1101 (0.01/400)		ACG1003
	C1152, C1157		CEAS220M50
	C1153		CEAS221M100
	C1156		CEAS222M25
	C1151, C1154		CEAS470M16
	C1155		CEAS470M25
<b>RESISTORS</b>			
	R1152		RD1/4PM273J
	R1155, R1156		RD1/4PM470J
	Other Resistors		RD1/8PM□□□J
<b>OTHERS</b>			
	CN 1P AC INLET		AKP1121
	UNION (S.S. & 1/2" DIA)		ATFL 471
	MISC. MGR. (S.S. 1/2" DIA)		AKR1502
<b>TAPE ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	IC4202		MC14066BF
	IC4302		SN74LS05N
	IC4121, IC4151		UPC4570G2
	IC4201, IC4251, IC4301, IC4601		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, Q4460		XDA124ES
	Q4208		XDA143ES
	Q4905, Q4907, Q4909, Q4911		XDC124ES
	Q4209, Q4351		XDC143ES
	D4251, D4252, D4321-D4326, D4451, D4452, D4903-D4912		HSS104-02
<b>COILS &amp; TRANSFORMERS</b>			
	T4351		ATX-043
	L4301, L4302		LTA392J
	L4303, L4304		LTA822J

Mark	No.	Description	Parts No.
<b>CAPACITORS</b>			
	C4362 (2000p/630)		ACE1020
	C4333, C4334		CCCSL100D50
	C4354		CCCSL221J50
	C4319, C4320		CCDSL271K500
	C4123, C4124		CCSQCH331J50
	C4252		CCSQCH560J50
	C4151, C4152		CCSQCH561J50
	C4253, C4303, C4304, C4453, C4454		CEAS010M50
	C4254		CEAS0R1M50
	C4213, C4214, C4358, C4363		CEAS100M50
	C4133, C4134, C4161, C4162		CEAS101M10
	C4455, C4456		CEAS220M16
	C4321, C4322		CEAS2R2M50
	C4309, C4310		CEAS330M16
	C4353		CEAS3R3M50
	C4131, C4132, C4159, C4160		CEAS470M10
	C4325, C4326, C4361		CEAS470M16
	C4129, C4130, R4157, R4158		CEAS4R7M50
	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
<b>RESISTORS</b>			
	VR4901, VR4902		VRTP6HS103
	VR4121, VR4122, VR4151, VR4152,		VRTP6HS202
	VR4451, VR4452		
	VR4351, VR4352		VRTP6HS204
	R4129, R4130, R4157, R4158		RS1/10S101J
	R4315, R4316, R4461, R4462		RS1/10S102J
	R4201, R4202		RS1/10S103J
	R4307, R4308, R4601, R4602		RS1/10S104J
	R4209, R4210, R4459		RS1/10S105J
	R4257		RS1/10S123J
	R4127, R4128, R4155, R4156		RS1/10S124J
	R4603, R4604		RS1/10S153J
	R4123, R4124, R4151, R4152, R4219,		RS1/10S154J
	R4220, R4252		
	R4253		RS1/10S181J
	R4222, R4321, R4322, R4458		RS1/10S222J
	R4254, R4259		RS1/10S223J
	R4251, R4605, R4606		RS1/10S224J
	R4401, R4402		RS1/10S273J
	R4319, R4320, R4465, R4466		RS1/10S302J

Mark	No.	Description	Parts No.
	R4207, R4208		RS1/10S332J
	R4311, R4312		RS1/10S333J
	R4313, R4314		RS1/10S393J
	R4455, R4456		RS1/10S471J
	R4215, R4216, R4231, R4450, R4611		RS1/10S472J
	R4218, R4230, R4256, R4258		RS1/10S473J
	R4255		RS1/10S514J
	R4125, R4126, R4153, R4154		RS1/10S622J
	R4325, R4326		RS1/10S681J
	R4463, R4464		RS1/10S682J
	R4309, R4310		RS1/10S683J
	R4317, R4318, R4609, R4610		RS1/10S820J
	Other Resistors		RD1/8PM□□□J
<b>OTHERS</b>			
	CN 36P SOCKET		AKP1105
<b>SW ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	IC1		TC74HC74AP
	Q1 - Q3, Q6, Q7		XDC124ES
	Q4, Q5		XDC143ES
	D1 - D14		HSS104 - 02
<b>CAPACITORS</b>			
	C4		CCCSL101J50
	C5		CEANP100M35
	C2, C3		CEASR15M50
	C6		CEAS101M10
	C1		CEAS220M25
<b>RESISTORS</b>			
	R13		RD1/4PM390J
	Other Resistors		RD1/8PM□□□J
<b>CD BOLCK</b>			
<b>MOTHER BOARD ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	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

# XD-J215M, XD-J210

Mark	No.	Description	Parts No.
<b>SWITCH</b>			
	S351		PSG1006
<b>CAPACITORS</b>			
	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
<b>RESISTORS</b>			
	VR151, VR152 (22k)		RCP1046
	Other Resistors		RS1/10S□□□J
<b>OTHERS</b>			
	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
<b>POWER BOARD ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
△	IC20		M5298P
	Q62		2SC1740S
△	D1, D2		11ES2
<b>CAPACITORS</b>			
	C60		CEAS010M50
	C28		CEAS101M10
	C27		CEAS102M10
	C11-C16		CKCYF103Z50
<b>RESISTORS</b>			
	All Resistors		RD1/6PM□□□J
<b>OTHERS</b>			
	CN13 13P JUMPER CONNECTOR		KPE13

Mark	No.	Description	Parts No.
<b>DISPLAY BOARD ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	D701-D706		1SS254
<b>SWITCHES</b>			
	S701-S718		PSG1006
<b>OTHERS</b>			
	CN701 22P FFC CONNECTOR		HLEM22R
	V701 FL TUBE		PEL1076
<b>LOADING BOARD ASSEMBLY</b>			
<b>SWITCHES</b>			
	S601, S602 PUSH SWITCH		DSG1016
<b>OTHERS</b>			
	CN601 AMP CONNECTOR (22-PIN)		4-173910-1
<b>SELECT BOARD ASSEMBLY</b>			
<b>SWITCHES</b>			
	S604-S606 PUSH SWITCH		DSG1016
	S603 DETECTOR SWITCH		PSG1010
<b>MOTOR BOARD ASSEMBLY</b>			
<i>MOTOR BOARD assembly has no service part.</i>			
<b>OTHERS</b>			
	CN602 AMP CONNECTOR (22-PIN)		4-173910-1
<b>5.2 FOR XD-J210/HE</b>			
Mark	No.	Description	Parts No.
<b>LIST OF ASSEMBLIES</b>			
<b>DECK AMP BLOCK</b>			
	AF ASSEMBLY		AWZ4648
	VOLUME ASSEMBLY		AWZ4655
	DISPLAY ASSEMBLY		AWZ4658
	HEADPHONE ASSEMBLY		AWZ4666
	DOLBY-C ASSEMBLY		AWZ4669
	SURROUND ASSEMBLY		AWM1445
NSP	TRANS CONNECT ASSEMBLY		AWZ4672
	SUB TRANS ASSEMBLY		AWZ4678
	TAPE ASSEMBLY		AWV1336
	SW ASSEMBLY		AWK1746
<b>CD BLOCK</b>			
	MOTHER BOARD ASSEMBLY		PWM1729
	DISPLAY BOARD ASSEMBLY		PWZ2433
	POWER BOARD ASSEMBLY		PWZ2437
NSP	MECHANISM BOARD ASSEMBLY		PWX1192
<b>NOTE :</b>			
<i>The DECK AMP BLOCK of XD-J210/HE is the same as that of XD-J215M/HE.</i>			
<i>Refer to "5.1 FOR XD-J215M/HE".</i>			



Mark	No.	Description	Parts No.
<b>CD BLOCK</b>			
<b>MOTHER BOARD ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	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
<b>SWITCH</b>			
	S351		PSG1006
<b>CAPACITORS</b>			
	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		CKSQYB104K25
	C306, C441, C442		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
<b>RESISTORS</b>			
	VR151, VR152 (22k)		RCP1046
	Other Resistors		RS1/10S□□□J
<b>OTHERS</b>			
	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

Mark	No.	Description	Parts No.
<b>DISPLAY BOARD ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
	D703-D705, D707		1SS254
<b>SWITCHES</b>			
	S707-S714, S716-S718		PSG1006
<b>OTHERS</b>			
	CN701 24P FFC CONNECTOR		HLEM24R
	V701 FL TUBE		PEL1062
<b>POWER BOARD ASSEMBLY</b>			
<b>SEMICONDUCTORS</b>			
△	IC20		M5298P
	Q62		2SC1740S
△	D1, D2		11ES2
<b>CAPACITORS</b>			
	C60		CEAS010M50
	C28		CEAS101M10
	C27		CEAS222M6R3
	C11-C16		CKCYF103Z50
<b>RESISTORS</b>			
	All Resistors		RD1/6PM□□□J
<b>OTHERS</b>			
	CN13 13P JUMPER CONNECTOR		KPE13
<b>MECHANISM BOARD ASSEMBLY</b>			
<b>SWITCH</b>			
	S610 PUSH SWITCH		DSG1016

## 6. ADJUSTMENTS

### 6.1 DECK AMP BLOCK (XD-J215M AND XD-J210)

#### 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 $\pm$ 10Hz. Make sure that the wow and flutter is 3010Hz $\pm$ 55Hz.	
2	PLAY (Double speed mode)			—		Press the PLAY button in double speed mode and confirm that the frequency is 6000Hz $\pm$ 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 $\pm$ 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 $\pm$ 10Hz. Make sure that the wow and flutter is 3010Hz $\pm$ 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.

- Adjustment of tape speed has been completed.
- Clean and demagnetize the head using a head eraser.
- When measured, the level should be 0dBV = 1Vrms.
- Use side A of the specified tape for adjustment.  
STD-331E : For adjustment of playback system.  
STD-631 : NORMAL blank tape
- Prepare the following measuring devices :
  - AC millivoltmeter
  - Low-frequency oscillator
  - Attenuator
  - Oscilloscope
- Adjust both L and R channels, unless specified otherwise.
- Set the DOLBY NR switches to OFF, unless specified otherwise.
- 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.
- Make sure to follow the proper order of the adjustment procedure. Any change in the order may cause an improper result.

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#### ■ List of Adjustment

##### Deck I

- Head azimuth adjustment
- Playback level adjustment

##### Deck II

- Head azimuth adjustment
- Playback level adjustment
- Bias oscillation frequency adjustment
- Recording level adjustment
- 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.

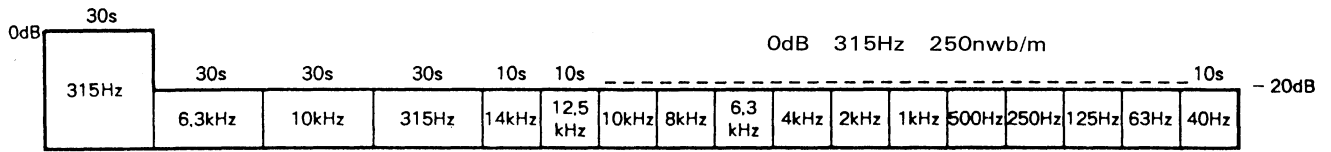
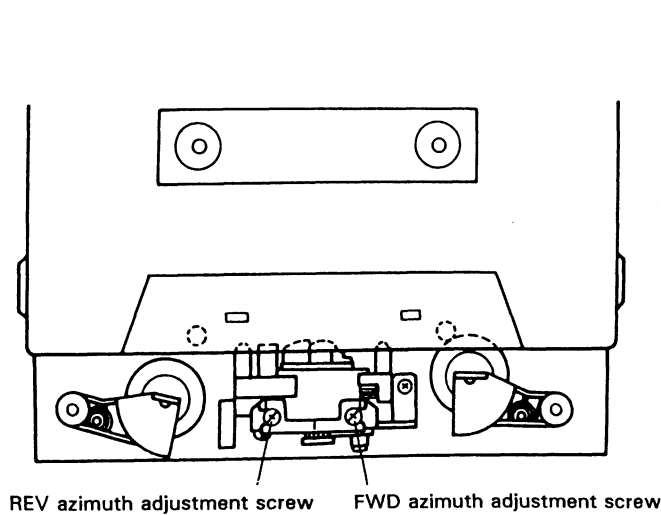


Fig. 6-1 Test Tape STD-331E



NOTE : Before adjusting, remove the deck panel.

Fig. 6-2 Head Azimuth Adjustment

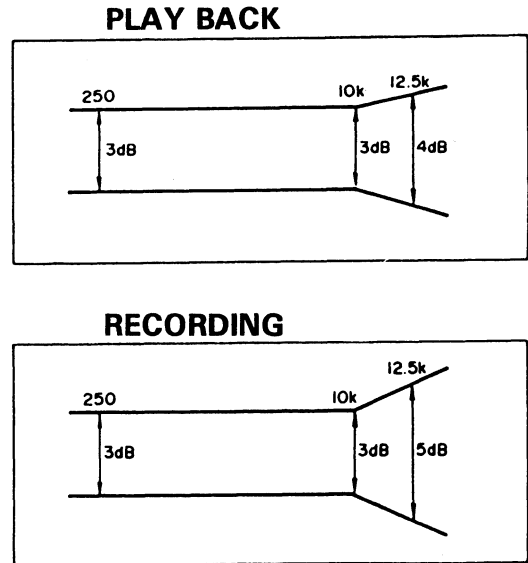


Fig. 6-3 Frequency Characteristics

## 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

Pro- cedure	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)	DOLBY-C 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.

Pro- cedure	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)	DOLBY-C assembly JP-L (Lch) JP-R (Rch)	-6.3dBV	

## 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)	DOLBY-C 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)	DOLBY-C 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 ① and ② (TAPE assembly) shown in Fig. 6-4.	The oscillation frequency is 105kHz $\pm$ 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	DOLBY-C 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)	DOLBY-C 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.

Pro- cedure	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	DOLBY-C 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)	DOLBY-C assembly JP-L (Lch) JP-R (Rch)	Repeat the recording/playback, and make adjustment so that the playback level of 10kHz remains $0 \pm 0.5\text{dB}$ in relation to 315Hz.	

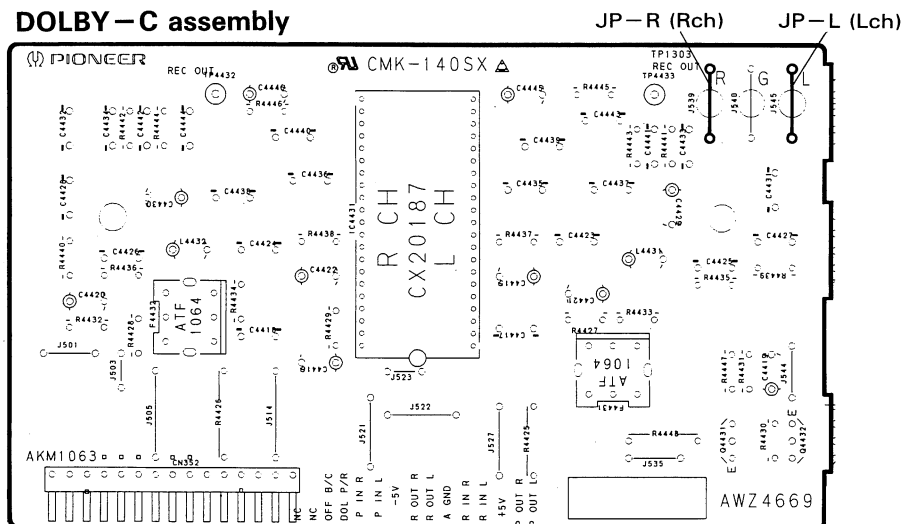
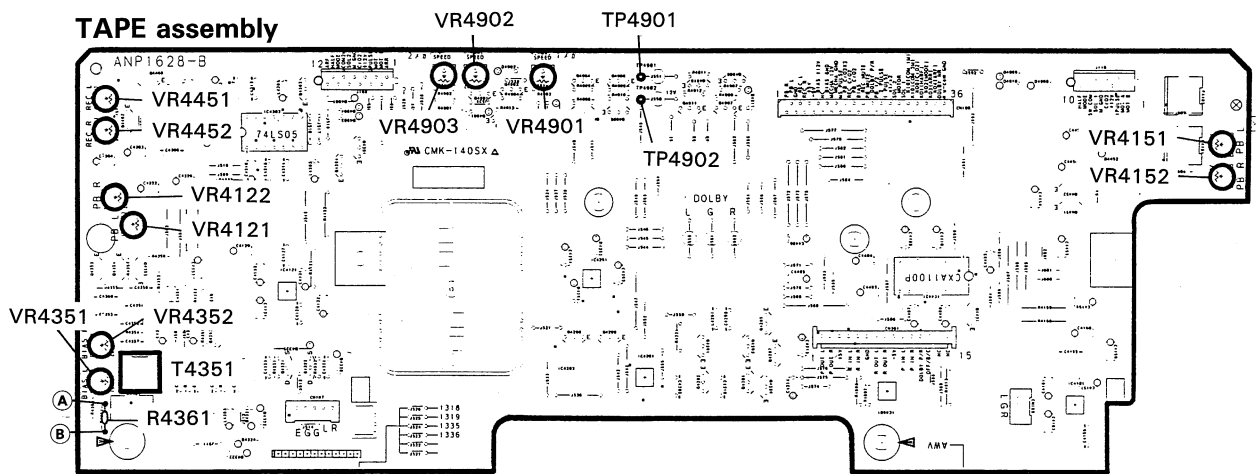


Fig. 6-4 Adjustment Points

## 6.2 CD BLOCK

### 6.2.1 Multi CD Unit (For XD-J215M)

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 (  $39k\Omega$  +  $0.001\mu F$  )
5. Resistor (100 k $\Omega$  )
6. Standard tools

● **Test Point and Adjustment Variable Resistor Positions**

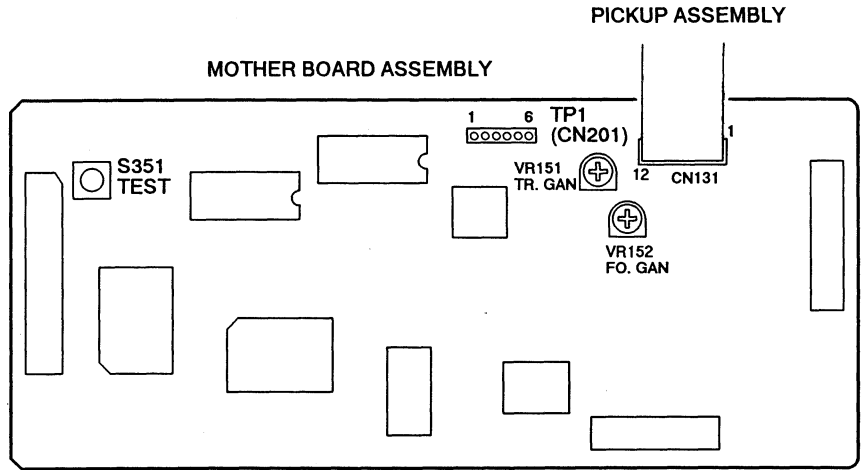


Figure 1. Adjustment Locations

● **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.

## [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	<p>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.</p> <p>With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo.</p> <p>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.</p>
▶ /	PLAY/PAUSE	Spindle servo ON	<p>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.</p> <p>Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed.</p> <p>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.</p>
▶ /	PLAY/PAUSE	Tracking servo close/open	<p>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.</p> <p>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.</p> <p>This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.</p>



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.

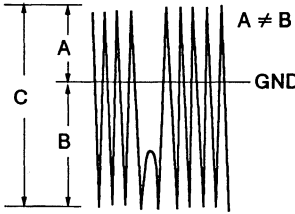
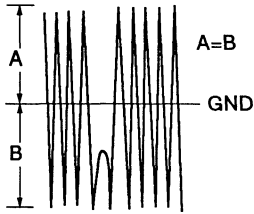
Wait at least 2-3 seconds between each of these operations.

## 1. Focus Offset Verification

<ul style="list-style-type: none"> <li>● Objective</li> <li>● Symptom when out of adjustment</li> </ul>	Verify the DC offset for the focus error amp.  The model does not focus in and the RF signal is dirty.		
<ul style="list-style-type: none"> <li>● Measurement instrument connections</li> </ul>	Connect the oscilloscope to TP1, Pin 6 (FCS. ERR)  [Settings] 5 mV/division 10 ms/division DC mode	<ul style="list-style-type: none"> <li>● Player state</li> <li>● Adjustment location</li> <li>● Disc</li> </ul>	Test mode, stopped (just the Power switch on)  None  None needed
<b>[Procedure]</b>  Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is $0 \pm 50$ 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

<ul style="list-style-type: none"> <li>● Objective</li> <li>● Symptom when out of adjustment</li> </ul>	To verify that there is no variation in the sensitivity of the tracking photo diode.  Play does not start or track search is impossible.		
<ul style="list-style-type: none"> <li>● Measurement instrument connections</li> </ul>	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	<ul style="list-style-type: none"> <li>● Player state</li> <li>● Adjustment location</li> <li>● Disc</li> </ul>	Test mode, focus and spindle servos closed and tracking servo open  None  YEDS-7
<b>[Procedure]</b> 1. Move the pickup to midway across the disc (R=35mm) with the MANUAL / TRACK SEARCH FWD $\blacktriangleright\blacktriangleright \cdot \blacktriangleright\blacktriangleright$ or REV $\blacktriangleleft\blacktriangleleft \cdot \blacktriangleleft\blacktriangleleft$ key. 2. Press the PGM (PROGRAM) key, then the PLAY/PAUSE $\blacktriangleright / \parallel$ 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 $A \geq B$ , $\frac{A-B}{C} \times \frac{1}{2} \leq 0.1$  When $A < B$ , $\frac{B-A}{C} \times \frac{1}{2} \leq 0.1$	 <p style="text-align: center;">When there is a DC component</p>	 <p style="text-align: center;">When there is no DC component</p>	

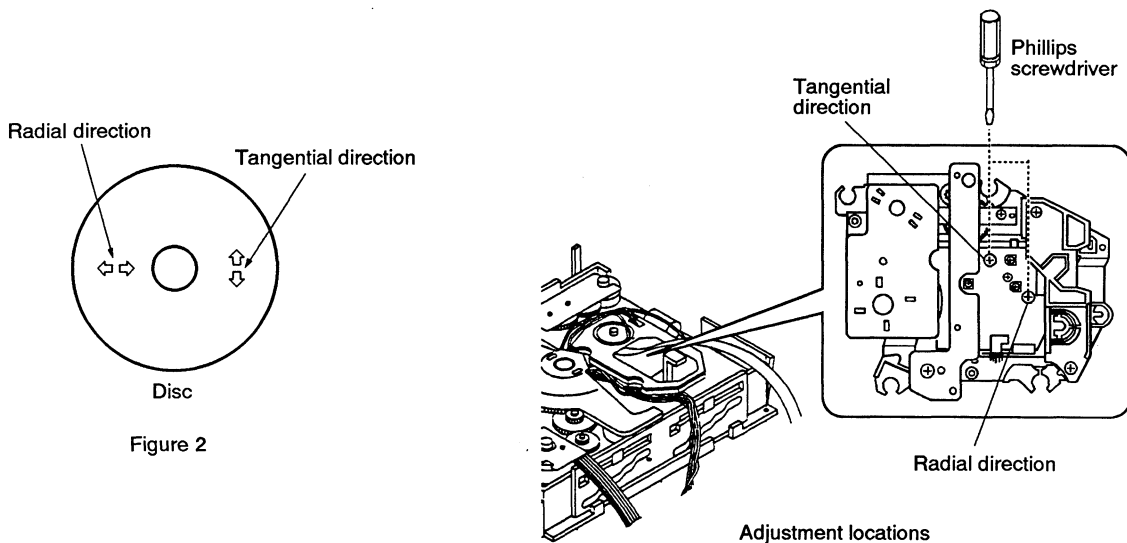
**3. Pickup Radial/Tangential Tilt Adjustment**

● 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.



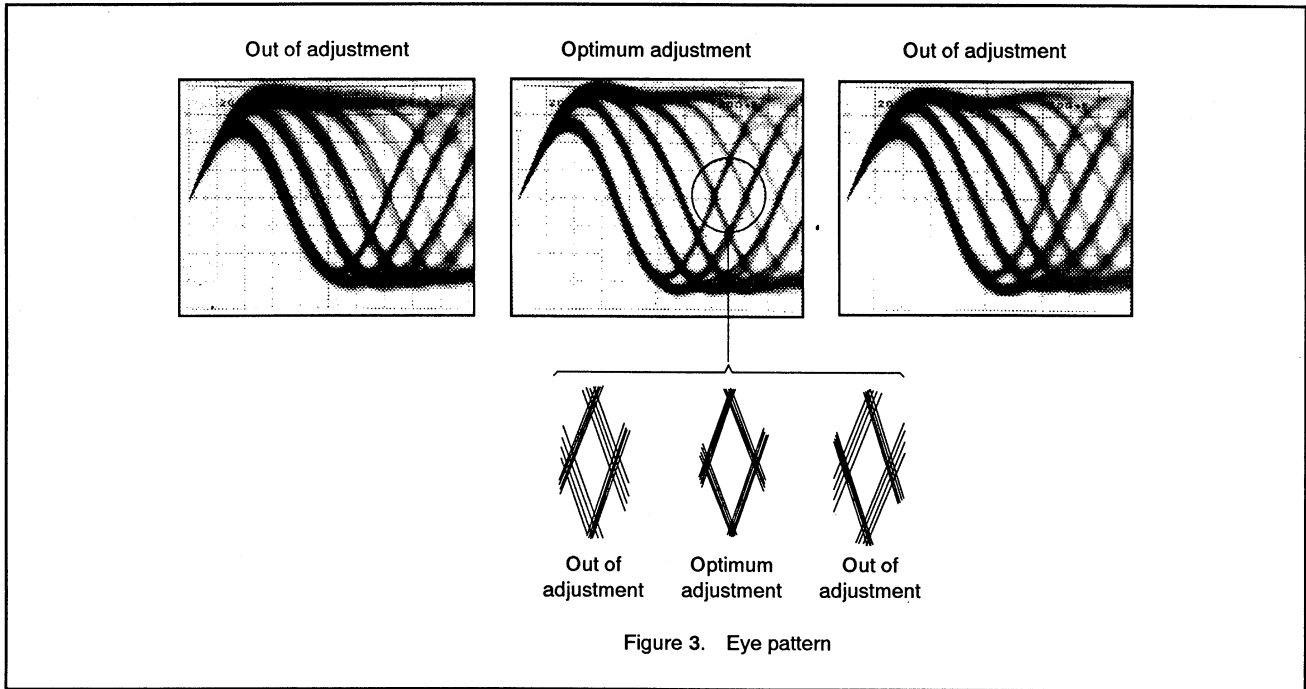


Figure 3. Eye pattern

**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
<b>[Procedure]</b>			
<p>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.</p> <p>2. Verify the RF signal amplitude is 1.2 V<sub>p-p</sub> ± 0.2 V.</p>			



## 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.	● Player state	Test mode, play
	[Settings] CH1                      CH2 50 mV/division    20 mV/division X-Y mode	● Adjustment location	VR151 (TRK. GAN)
		● Disc	YEDS-7

### [Procedure]

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the MANUAL / TRACK SEARCH FWD  $\blacktriangleright\blacktriangleright\blacktriangleright$  ·  $\blacktriangleright\blacktriangleright$  or REV  $\blacktriangleleft\blacktriangleleft\blacktriangleleft$  ·  $\blacktriangleleft\blacktriangleleft$  key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY/PAUSE  $\blacktriangleright$  /  $\parallel$  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.

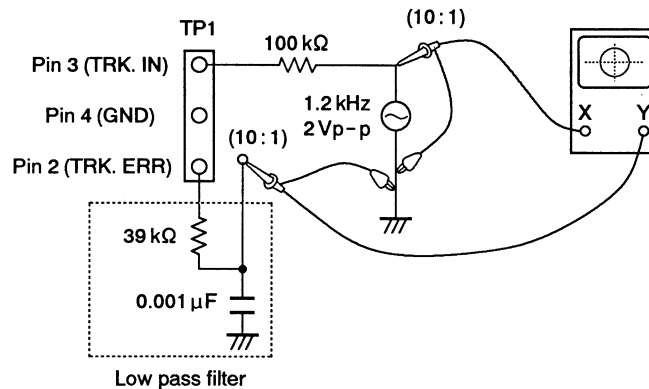
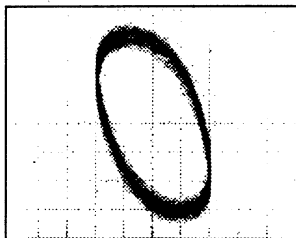
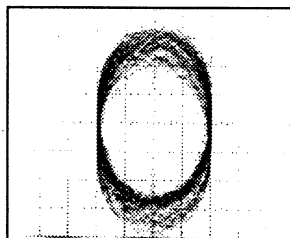


Figure 5

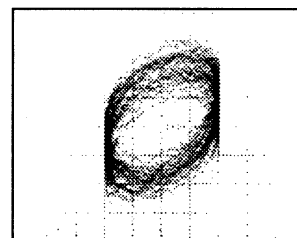
### Tracking Gain Adjustment



Higher gain



Optimum gain



Lower gain

## 6.2.2 Single CD Unit (For XD-J210)

### ● 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 k $\Omega$ )
5. Standard tools

● **Test Point and Adjustment Variable Resistor Positions**

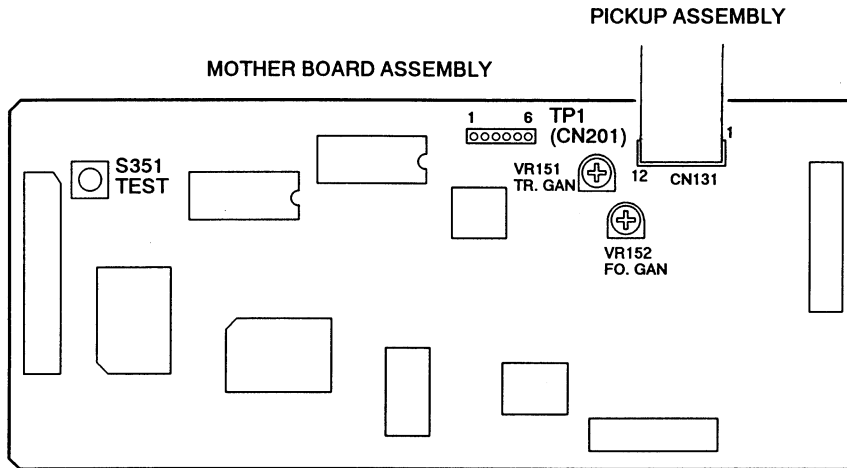


Figure 1. Adjustment Locations

● **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	<p>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.</p> <p>With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo.</p> <p>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.</p>
▶/	PLAY/PAUSE	Spindle servo ON	<p>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.</p> <p>Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed.</p> <p>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.</p>
▶/	PLAY/PAUSE	Tracking servo close/open	<p>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.</p> <p>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.</p> <p>This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.</p>

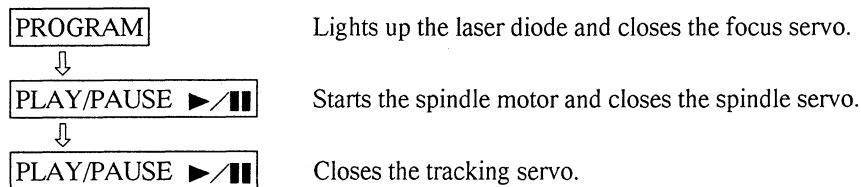
Code	Key Name	Function in Test Mode	Explanation
◀◀ ▶▶	MANUAL/ TRACK SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since 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.



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

## 1. Focus Offset Verification

<b>● Objective</b>	Verify the DC offset for the focus error amp.		
<b>● Symptom when out of adjustment</b>	The model does not focus in and the RF signal is dirty.		
<b>● Measurement instrument connections</b>	Connect the oscilloscope to TP1, Pin 6 (FCS. ERR)	<b>● Player state</b>	Test mode, stopped (just the Power switch on)
	[Settings] 5 mV/division 10 ms/division DC mode	<b>● Adjustment location</b>	None
		<b>● Disc</b>	None needed
<b>[Procedure]</b>			
Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is $0 \pm 50$ 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

<b>● Objective</b>	To verify that there is no variation in the sensitivity of the tracking photo diode.		
<b>● Symptom when out of adjustment</b>	Play does not start or track search is impossible.		
<b>● Measurement instrument connections</b>	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter.	<b>● Player state</b>	Test mode, focus and spindle servos closed and tracking servo open
	[Settings] 50 mV/division 5 ms/division DC mode	<b>● Adjustment location</b>	None
		<b>● Disc</b>	YEDS-7
<b>[Procedure]</b>			
<ol style="list-style-type: none"> <li>1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL / TRACK SEARCH FWD <b>▶▶</b> • <b>▶▶</b> or REV <b>◀◀</b> • <b>◀◀</b> key.</li> <li>2. Press the PGM (PROGRAM) key, then the PLAY/PAUSE <b>▶</b> / <b>  </b> key in that order to close the focus servo then the spindle servo.</li> <li>3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.</li> <li>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.</li> </ol>			
<p>When <math>A \geq B</math>, <math>\frac{A-B}{C} \times \frac{1}{2} \leq 0.1</math></p> <p>When <math>A &lt; B</math>, <math>\frac{B-A}{C} \times \frac{1}{2} \leq 0.1</math></p>	<div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p><math>A \neq B</math></p> <p>When there is a DC component</p> </div> <div style="text-align: center;"> <p><math>A = B</math></p> <p>When there is no DC component</p> </div> </div>		

**2. Tracking Error Balance Verification**

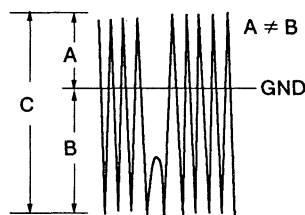
● Objective	To verify that there is no variation in the sensitivity of the tracking photo diode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a 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]**

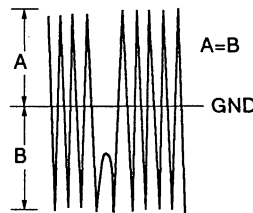
1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL/TRACK SEARCH FWD **▶▶ • ▶▶** or **◀◀ • ◀◀** key.
2. Press the PROGRAM key, then the PLAY/PAUSE **▶/||** key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope 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.

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

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



When there is a DC component



When there is no DC component

## 3. Pickup Radial/Tangential Tilt Adjustment

<ul style="list-style-type: none"> <li>● Objective</li> </ul>	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.		
<ul style="list-style-type: none"> <li>● Symptom when out of adjustment</li> </ul>	Sound broken; some discs can be played but not others.		
<ul style="list-style-type: none"> <li>● Measurement instrument connections</li> </ul>	Connect the oscilloscope to TP1, Pin 1 (RF).  [Settings] 20 mV/division 200 ns/division AC mode	<ul style="list-style-type: none"> <li>● Player state</li> <li>● Adjustment location</li> <li>● Disc</li> </ul>	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]

- Press the MANUAL / TRACKSEARCH 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.
- 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.
- 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.
- 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.
- When the adjustment is completed, lock the radial and tangential adjustment screw.

**Note:** Radial and tangential mean the directions relati

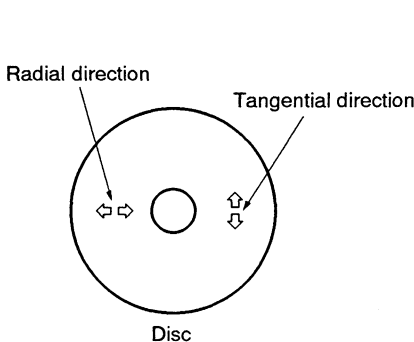
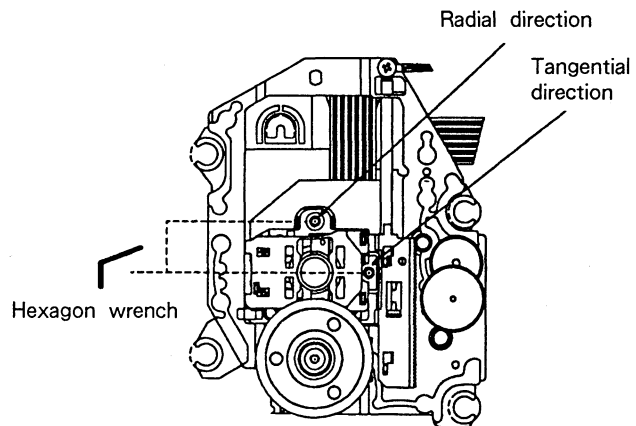
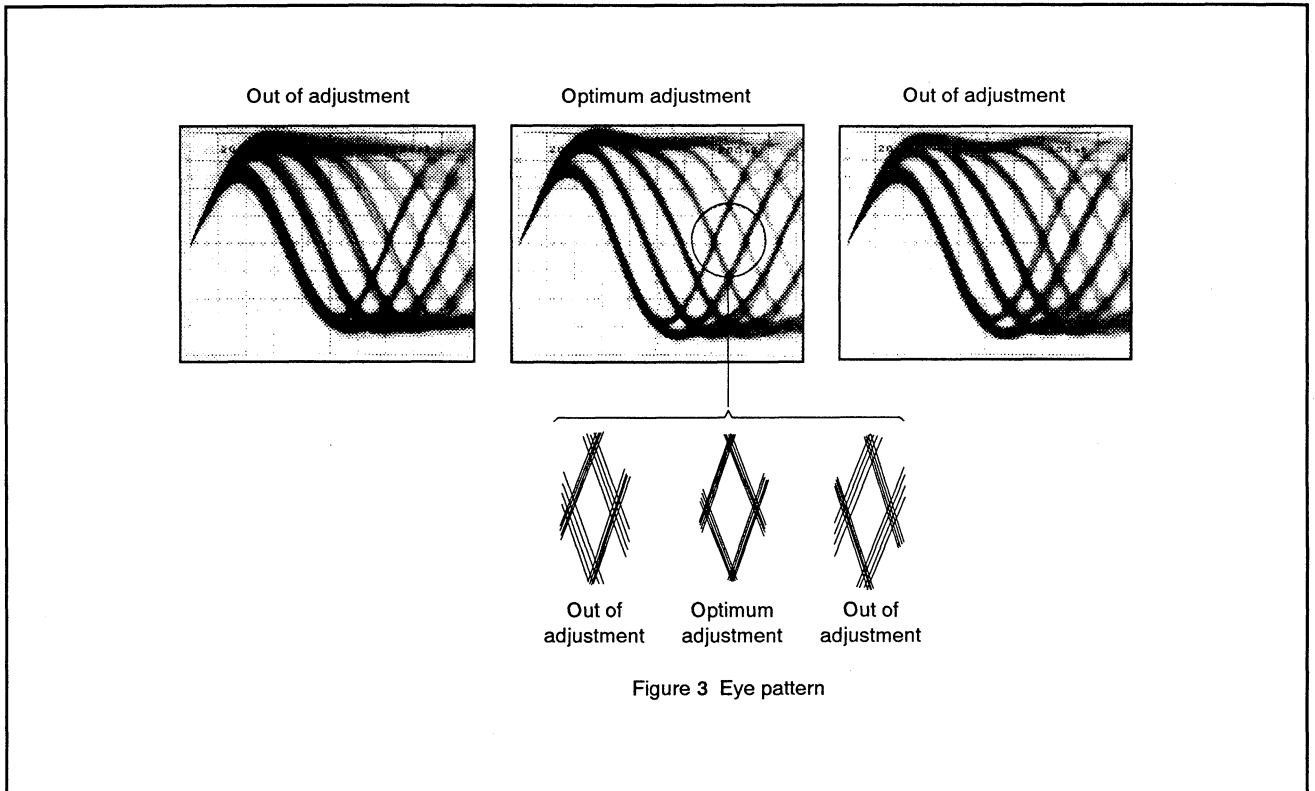


Figure 2





#### 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
<b>[Procedure]</b>			
<ol style="list-style-type: none"> <li>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.</li> <li>2. Verify the RF signal amplitude is 1.2 Vp-p ± 0.2 V.</li> </ol>			

## 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  $\blacktriangleright \blacktriangleright \cdot \blacktriangleright \blacktriangleright$  or  $\blacktriangleleft \blacktriangleleft \cdot \blacktriangleleft \blacktriangleleft$  key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key, the PLAY/PAUSE  $\blacktriangleright / \parallel$  key, then the PLAY/PAUSE  $\blacktriangleright / \parallel$  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.

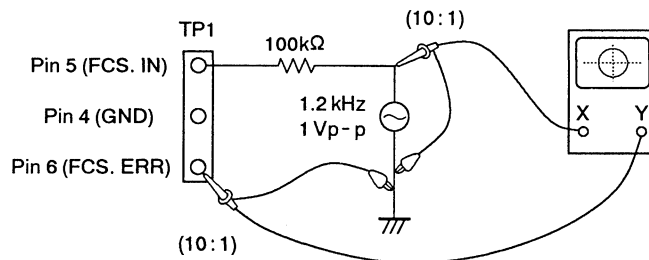
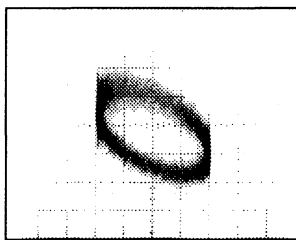
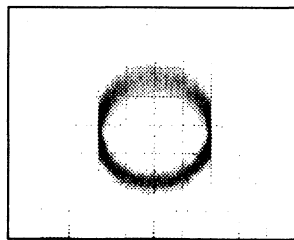


Figure 4

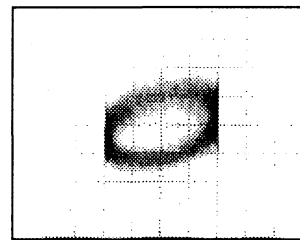
### Focus Gain Adjustment



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.	● Player state	Test mode, play
	[Settings] CH1                      CH2 50 mV/division    20 mV/division X-Y mode	● Adjustment location	VR151 (TRK. GAN)
		● Disc	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.

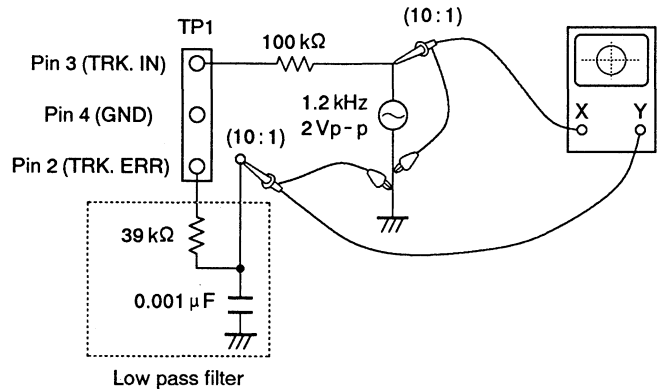
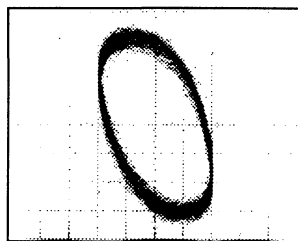
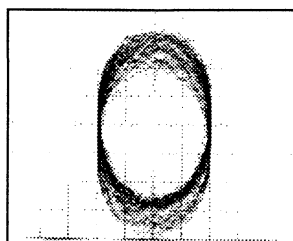


Figure 5

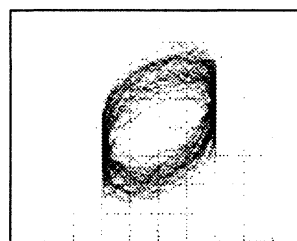
**Tracking Gain Adjustment**



Higher gain



Optimum gain



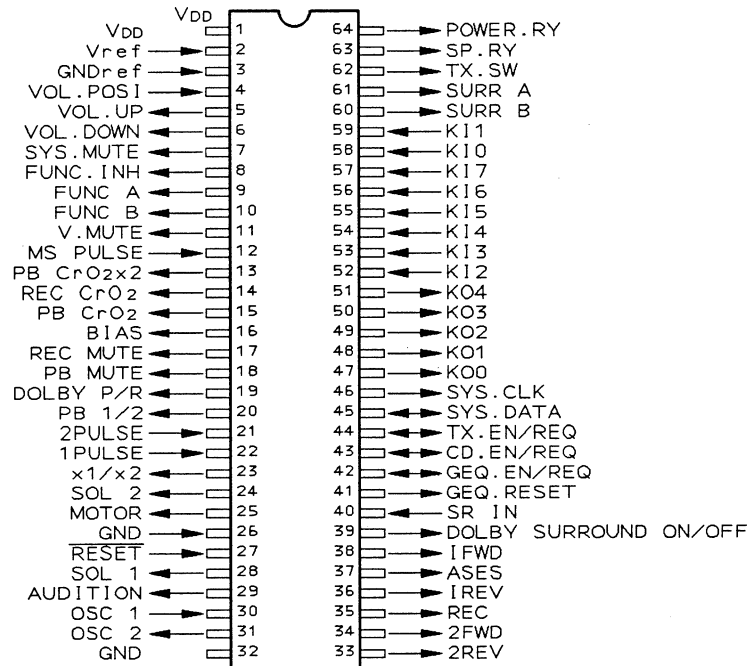
Lower gain

## 7. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

### 5.1 PD5214A (IC1901 : AF Assembly)

- System Control Micro-computer
- Pin Assignment (Top View)



#### Pin Function

Pin No.	Pin Name	I/O	Function Name	Description																														
1	VCC	—	VDD	Connected to +5V power supply.																														
2	VREF	—	VREF	Connected to +5V power supply. Reference voltage of A/D, D/A.																														
3	AVSS	—	GND REF	Connected GND. Reference voltage of A/D, D/A.																														
4	P67/AN7	I	VOL. POSI	A/D input port for MAIN VOLUME positioning detection.																														
5	P66/AN6	O	VOL. UP	Output control for MAIN VOLUME UP.																														
6	P65/AN5	O	VOL. DOWN	Output control for MAIN VOLUME DOWN.																														
7	P64/AN4	O	SYS. MUTE	SYSTEM MUTE (MAIN and REAR) ON/OFF																														
8	P63/AN3	O	FUNC INH	TC4052 and CXA1558 control terminal <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th></th> <th>FUNC A</th> <th>FUNC B</th> <th>FUNC INH</th> <th>V. MUTE</th> </tr> </thead> <tbody> <tr><td>CD/LD (CLD)</td><td>H</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>VTR</td><td>L</td><td>H</td><td>L</td><td>H</td></tr> <tr><td>BS</td><td>H</td><td>H</td><td>L</td><td>L</td></tr> <tr><td>TUNER</td><td>L</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>TAPE</td><td>L</td><td>L</td><td>H</td><td>L</td></tr> </tbody> </table>		FUNC A	FUNC B	FUNC INH	V. MUTE	CD/LD (CLD)	H	L	L	L	VTR	L	H	L	H	BS	H	H	L	L	TUNER	L	L	L	L	TAPE	L	L	H	L
	FUNC A	FUNC B	FUNC INH		V. MUTE																													
CD/LD (CLD)	H	L	L		L																													
VTR	L	H	L		H																													
BS	H	H	L		L																													
TUNER	L	L	L	L																														
TAPE	L	L	H	L																														
9	P62/AN2	O	FUNC A																															
10	P61/AN1	O	FUNC B																															
11	P60/AN0	O	V. MUTE																															

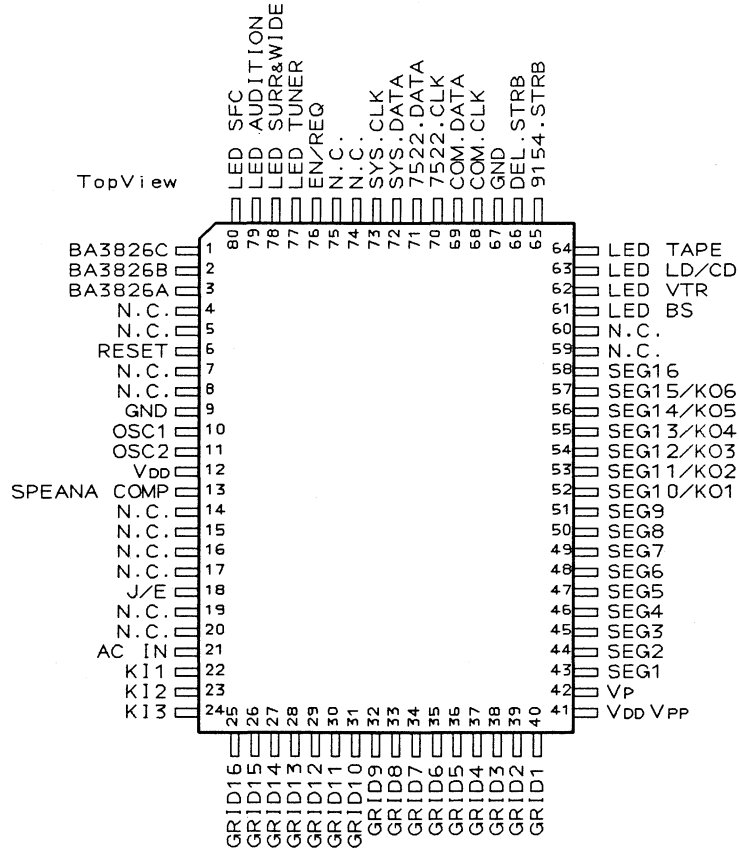
Pin No.	Pin Name	I/O	Function Name	Description
12	P57/INT4	I	MS PULSE	Comparator input for music search.
13	P56/INT3	O	PB CrO2 × 2	Switching CrO2 and PB EQ when HI – SPEED COPY.
14	P55/CNTR1	O	REC CrO2	Switching REC Amp CrO2. ON/ $\overline{\text{OFF}}$
15	P54/CNTR0	O	PB CrO2	Switching PB Amp CrO2. ON/ $\overline{\text{OFF}}$
16	P53/ $\overline{\text{SRDY}}_2$	O	BIAS	BIAS oscillation ON/ $\overline{\text{OFF}}$
17	P52/SCLK2	O	REC MUTE	REC MUTE ON/ $\overline{\text{OFF}}$
18	P51/SOUT2	O	PB MUTE	PB MUTE ON/ $\overline{\text{OFF}}$
19	P50/SIN2	O	DOLBY P/R	DOLBY IC PB/ $\overline{\text{REC}}$
20	P47/ $\overline{\text{SRDY}}_1$	O	PB 1/2	Switching PB 1 Mecha/2 mecha
21	P46/SCLK1	I	2 PULSE	2 mecha REEL PULSE input
22	P45/TxD	I	1 PULSE	1 mecha REEL PULSE input
23	P44/RxD	O	× 1/× 2	Switching SPEED × 1/× 2
24	P43/INT2	O	SOL2	2 mecha SOL H : ON
25	P42/INT1	O	MOTOR	MOTOR ON/ $\overline{\text{OFF}}$
26	CNVss	–	GND	GND
27	$\overline{\text{RESET}}$	I	$\overline{\text{RESET}}$	Reset input : Reset by the input of more than 4 clocks.
28	P41/INT0	O	SOL1	1 mecha SOL H : ON
29	P40	O	AUDITION	AUDITION circuit ON/ $\overline{\text{OFF}}$
30	XIN	I	OSC1	Clock
31	XOUT	O	OSC2	
32	Vss	–	GND	GND
33	P27/DB7	O	2REV	LED control ON/ $\overline{\text{OFF}}$
34	P26/DB6	O	2FWD	
35	P25/DB5	O	REC	
36	P24/DB4	O	1REV	
37	P23/DB3	O	ASES	
38	P22/DB2	O	1FWD	
39	P21/DB1	O	DOLBY SURROUND	DOLBY SURROUND $\overline{\text{ON}}/\text{OFF}$
40	P20/DB0	I	SR IN	Remote control signal input terminal.
41	P17/AD15	O	GEQ. RESET	Reset output of PDC009A.

# XD-J215M, XD-J210

Pin No.	Pin Name	I/O	Function Name	Description																																																						
42	P16/AD14	I/O	GEQ. EN/REQ	System bus																																																						
43	P15/AD13	I/O	CD. EN/REQ																																																							
44	P14/AD12	I/O	TX. EN/REQ																																																							
45	P13/AD11	I/O	SYS. DATA																																																							
46	P12/AD10	O	SYS. CLK																																																							
47	P11/AD9	O	KO0	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>KO0</th> <th>KO1</th> <th>KO2</th> <th>KO3</th> <th>KO4</th> </tr> </thead> <tbody> <tr> <td>KI0</td> <td>1 CrO2</td> <td>1 HARF</td> <td>1 MODE</td> <td>—</td> <td>—</td> </tr> <tr> <td>KI1</td> <td>2 CrO2</td> <td>2 HARF</td> <td>2 MODE</td> <td>2 ARR</td> <td>2 ARF</td> </tr> <tr> <td>KI2</td> <td>REC PAUSE</td> <td>ASES</td> <td>REC MUTE</td> <td>×2 COPY</td> <td>×1 COPY</td> </tr> <tr> <td>KI3</td> <td>2 PLAY</td> <td>2 REV</td> <td>2 STOP</td> <td>1 F.F</td> <td>1 REW</td> </tr> <tr> <td>KI4</td> <td>2 F.F</td> <td>2 REW</td> <td>1 STOP</td> <td>1 PLAY</td> <td>1 REV</td> </tr> <tr> <td>KI5</td> <td>POWER</td> <td>AI. MEMO</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>KI6</td> <td>FUNCTION CYCLIC</td> <td>AI. BGM (START/SET)</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>KI7</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> </tbody> </table>		KO0	KO1	KO2	KO3	KO4	KI0	1 CrO2	1 HARF	1 MODE	—	—	KI1	2 CrO2	2 HARF	2 MODE	2 ARR	2 ARF	KI2	REC PAUSE	ASES	REC MUTE	×2 COPY	×1 COPY	KI3	2 PLAY	2 REV	2 STOP	1 F.F	1 REW	KI4	2 F.F	2 REW	1 STOP	1 PLAY	1 REV	KI5	POWER	AI. MEMO	—	—	—	KI6	FUNCTION CYCLIC	AI. BGM (START/SET)	—	—	—	KI7	—	—	—	—	—
	KO0	KO1	KO2		KO3	KO4																																																				
KI0	1 CrO2	1 HARF	1 MODE		—	—																																																				
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KI5	POWER	AI. MEMO	—		—	—																																																				
KI6	FUNCTION CYCLIC	AI. BGM (START/SET)	—		—	—																																																				
KI7	—	—	—		—	—																																																				
48	P10/AD8	O	KO1																																																							
49	P07/AD7	O	KO2																																																							
50	P06/AD6	O	KO3																																																							
51	P05/AD5	O	KO4																																																							
52	P04/AD4	I	KI2																																																							
53	P03/AD3	I	KI3																																																							
54	P02/AD2	I	KI4																																																							
55	P01/AD1	I	KI5																																																							
56	P00/AD0	I	KI6																																																							
57	P37/ $\overline{RD}$	I	KI7																																																							
58	P36/ $\overline{WR}$	I	KI0																																																							
59	P35/SYNC	I	KI1																																																							
60	P34/0	O	SURR A	Control terminal for MC14052. <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>WIDE</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>L</td> <td>L</td> </tr> <tr> <td>1</td> <td>H</td> <td>H</td> </tr> <tr> <td>2</td> <td>L</td> <td>H</td> </tr> <tr> <td>3</td> <td>H</td> <td>H</td> </tr> </tbody> </table>	WIDE	A	B	OFF	L	L	1	H	H	2	L	H	3	H	H																																							
WIDE	A	B																																																								
OFF	L	L																																																								
1	H	H																																																								
2	L	H																																																								
3	H	H																																																								
61	P33 / RESETOUT	O	SURR B																																																							
62	P32/ $\overline{ONW}$	O	TX. SW	Power supply for TUNER. ON/ $\overline{OFF}$																																																						
63	P31/DA2	O	SP. RY	Protection relay $\overline{ON/OFF}$																																																						
64	P30/DA1	O	POWER RY	Relay for main transformer ON/ $\overline{OFF}$																																																						

**5.2 PDC009A (IC3901 : DISPLAY Ass'y)**

- System Control Micro-computer (GEO μ-COM)
- Pin Assignment (Top View)



● Pin Function

Pin No.	Pin Name	I/O	Function Name	Description
1	P35	O	BA3826 C	Control BA3826 A, B, C are all reset by "H".
2	P36	O	BA3826 B	
3	P37	O	BA3826 A	
4	PWM1	O		OPEN
5	TEST1	O		
6	RES	I	RESET	Reset terminal
7	XT1	I		Connected to VDD.
8	XT2	O		OPEN
9	VSS		VSS	GND
10	CF1	I	OSC1	Input terminal for ceramic resonator.

# XD-J215M, XD-J210

Pin No.	Pin Name	I/O	Function Name	Description
11	CF2	O	OSC2	Output terminal for ceramic resonator.
12	VDD		VDD	Power supply (+) terminal
13	P80/AN0	I	SPEANA COMP IN	Changes the BA3826 SOUSE output to SPEANA.
14	P81/AN1			Not used
15	P82/AN2			
16	P83/AN3			
17	P84/AN4			
18	P85/AN5	I	J/EX	PULL DOWN : Export. FL displays MOVIE.
19	P86/AN6			Not used
20	P87/AN7			
21	P70/INT0	I	AC IN	AC detection terminal
22	P71/INT1	I	KI1	Key scan input 3IN × 6OUT
23	P72/INT2/TOIN	I	KI2	
24	P73/INT3/TOIN	I	KI3	
25   40	SO/T0   SI5/T15	O   O	GRID 16   GRID 1	Output terminal for FL GRID.
41	VDDVPP		VDDVPP	Power supply (-) terminal for FL.
42	VP		VP	Power supply (-) terminal for pull-down resistor for FL.
43   51	S16   S24	O   O	S1   S9	Output terminal for FL segment.
52   57	S25   S30	O   O	SI0/KO1   SI5/KO6	output terminal for FL segment and Key scan output.
58	S31	O	SI6	Not used
59	PO0	O	SURROUND	
60	PO1	O	SUPER BASS	
61	PO2	O	LED BS	LED control
62	PO3	O	LED VTR	
63	PO4	O	LED LD/CD	
64	PO5	O	LED TAPE	
65	P06	O	9154 STB	STROB output for TC9154.
66	P07	O	DEL STB	Not used

Pin No.	Pin Name	I/O	Function Name	Description
67	VSS		VSS	Connected to GND.
68	P10/S00	O	COM. CLK	CLOCK output for TC9154.
69	P11/SIO/SB0	O	COM. DATA	DATA output for TC9154.
70	P12/SCKO	O	7522. CLK	CLOCK output for LC7522.
71	P13/SO1	O	7522. DATA	DATA output for LC7522.
72	P14/SI1/SB1	I/O	SYS. DATA	System bus for DECK AMP micro-computer.
73	P15/SCK	I	SYS. CLK	
74	P16/BUZ			Not used
75	P17/PWM0			
76	P30	I/O	GEQ EN/REQ	System bus for DECK AMP micro-computer.
77	P31	O	LED TUNER	LED control ON/OFF
78	P32	O	LED SURR & WIDE	
79	P33	O	LED AUDITION	
80	P34	O	LED SFC	

	KI1	KI2	KI3
KO1	SFC THEATER	GEQ LEVEL UP	GEQ FREQ UP
KO2	SFC DISCO/B	GEQ FREQ DOWN	GEQ LEVEL DOWN
KO3	SFC HALL/C	GEQ MODE	DOLBY SURROUND ON/OFF
KO4	SFC MEMORY	PRESET /PROGRAM	REAR LEVEL UP
KO5	SFC CLEAR	GEQ ON/OFF	REAR LEVEL DOWN
KO6	—	AUDITION ON/OFF	SURROUND & WIDE

## 8. FOR XD – J215M/HB, HEWZIW, XD – J210/HB AND HEWZIW TYPES

### NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  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.

### 8.1 FOR XD – J215M/HB AND HEWZIW

#### Contrast of Miscellaneous Parts

XD – J215M/HB, HEWZIW and HE have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		HE type	HB type	HEWZIW type	
NSP	AF assembly	AWZ4648	AWZ4648	AWZ4649	
	VOLUME assembly	AWZ4655	AWZ4655	AWZ4656 <i>AWZ4655 (SC-A47089)</i>	
	HEADPHONE assembly	AWZ4666	AWZ4666	AWZ4667	
	SURROUND assembly	AWM1445	AWM1445	AWM1449	
	TRANS CONNECT assembly	AWZ4672	AWZ4672	AWZ4673	
	SUB TRANS assembly	AWZ4678	AWZ4681	AWZ4679	
$\Delta$	AC Power cord	ADG1127	ADG1118	ADG1127	
$\Delta$	Strain relief	.....	AEC – 882	.....	
NSP	Rear panel	ANC2008	ANC2009	ANC2008	
	Screw (GND)	.....	.....	ABA1047	
	Name plate	AAL2014	AAL2013	AAL2015	
	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

AWZ4656 and AWZ 4655 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4655	AWZ4656	
	C1513, C1514	.....	CCPUSL330J50	
	C1557	.....	CCSQCH101J50	
	R1559	.....	RD1/8PM102J	



**AF Assembly**

AWZ4649 and AWZ 4648 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4648	AWZ4649	
	L1201, L1202, L1301 L1302	ATH-133 .....	ATH-059 ATH-059	
	C1219, C1220 C1221, C1222, C1311, C1312 C1223, C1224 C1317	..... ..... ..... .....	CKDYF473Z50 CKCYB103K50 CCPUSL470J50 CKCYF473Z50	
	C2101, C2102, C2307, C2308, C3303, C3304, C3501, C3502 C2201-C2206, C2301, C2302 C2208-2210 C2303, C2304 C2305, C2306	..... ..... ..... ..... ..... CCSQCH101J50	CCSQCH101J50 CCSQCH391J50 CKCYB391K50 CKSQYB222K50 .....	
	C2319, C2320, C2503, C2504 C2321, C2322	..... .....	CKSQYB472K50 CKSQYB102K50	
	R1215, R1216, R1311 R1217, R1218 R1313 R2301, R2302	RD1/4PMFL100J ..... ..... RS1/10S221J	RD1/4PMFL101J RD1/4PM100J RD1/8PM100J RS1/10S102J	
	2P Pin jack	AKB1146	AKB1100	

**TRANS CONNECT Assembly**

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

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

**SUB TRANS Assembly**

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

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

# XD-J215M, XD-J210

## HEADPHONE Assembly

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

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

## SURROUND Assembly

AWM1449 and AWM1445 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWM1445	AWM1449	
	C3431, C3432	.....	CKPUYB101K50	

## 8.2 FOR XD-J210/HB AND HEWZIW

### Contrast of Miscellaneous Parts

XD-J210/HB, HEWZIW and HE have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		HE type	HB type	HEWZIW type	
NSP	AF assembly	AWZ4648	AWZ4648	AWZ4649	
	VOLUME assembly	AWZ4655	AWZ4655	AWZ4656	
	HEADPHONE assembly	AWZ4666	AWZ4666	AWZ4667	
	SURROUND assembly	AWM1445	AWM1445	AWM1449	
	TRANS CONNECT assembly	AWZ4672	AWZ4672	AWZ4673	
	SUB TRANS assembly	AWZ4678	AWZ4681	AWZ4679	
△	AC Power cord	ADG1127	ADG1118	ADG1127	
△	Strain relief	.....	AEC-882	.....	
NSP	Rear panel	ANC2008	ANC2009	ANC2008	
	Screw (GND)	.....	.....	ABA1047	
	Name plate	AAL2011	AAL2010	AAL2012	
	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-J210/HB and HEWZIW are the same as those of XD-J215M/HB and HEWZI.  
Refer to "8.1 XD-J215M/HB AND HEWZIW".



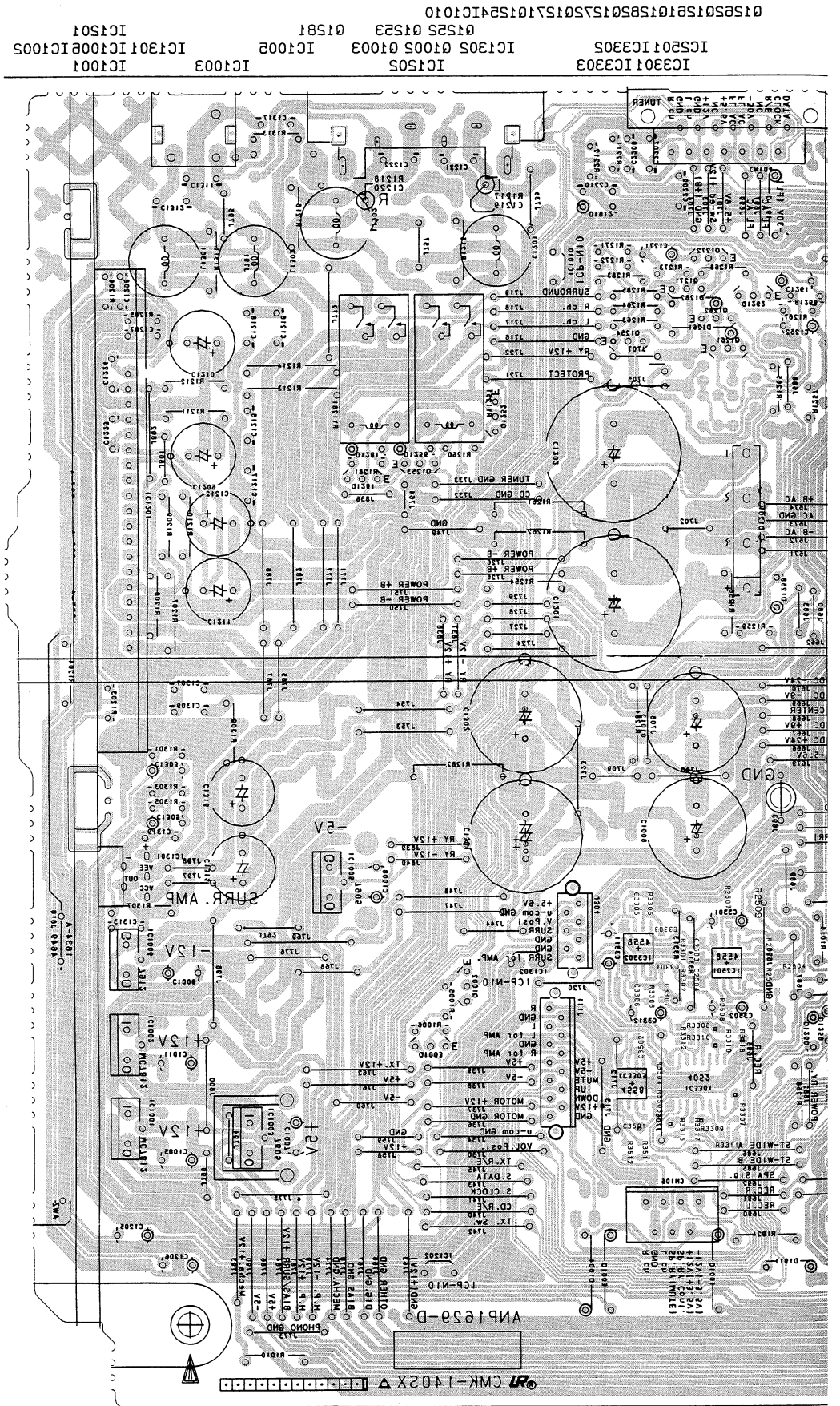
This PCB connection diagram is viewed from the foil side.

A

B

C

D



e

P

4

e

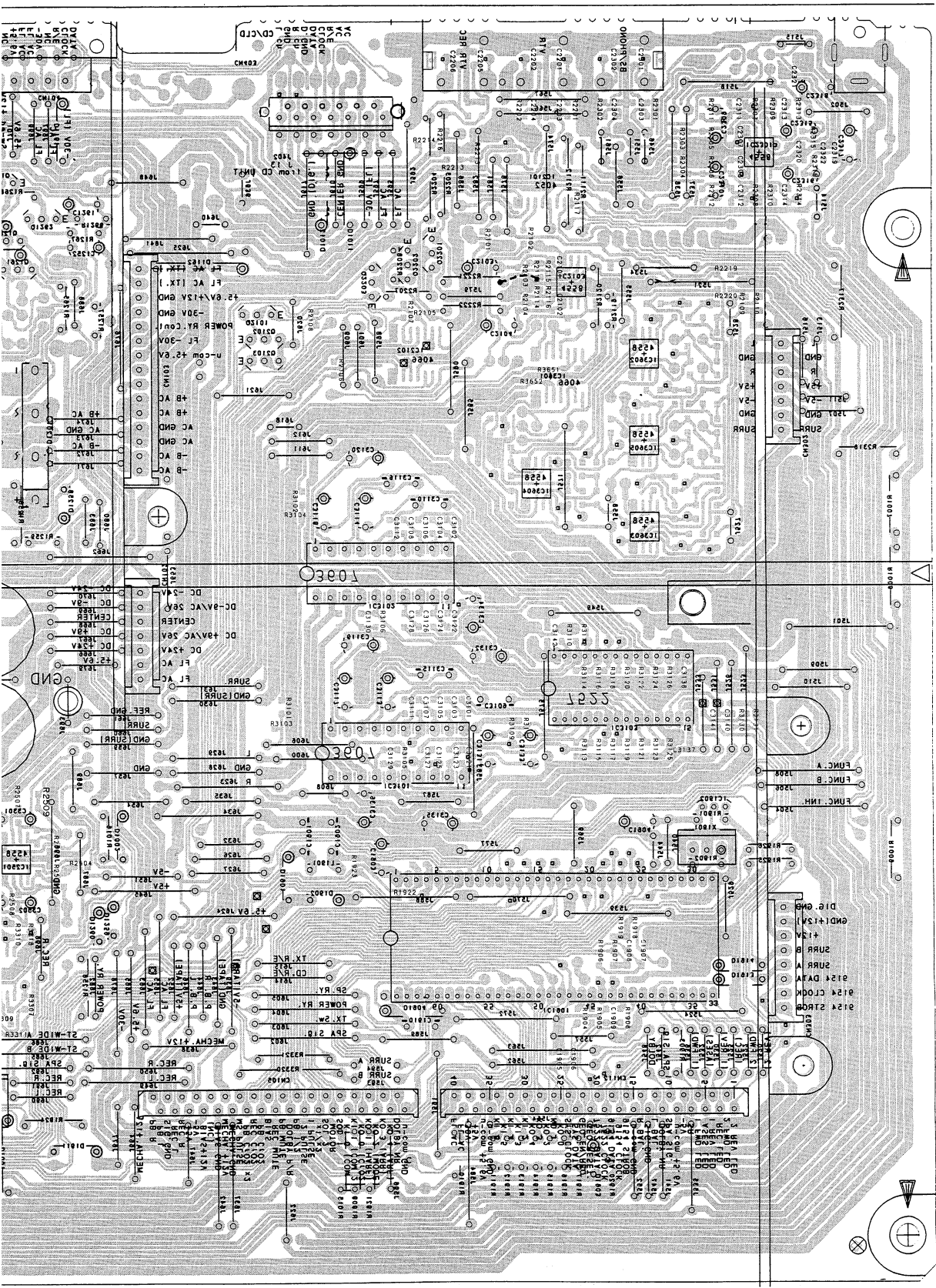
P

4

8.3 SCHEMATIC DIAGRAMS AND PCB PATTERNS  
(For XD-1515M\HEW3W and XD-1510\HEW3W)

8.3.1 AF Assembly

- IC1805 IC3103IC1801
- IC3801-IC3805 IC5103 IC5101
- IC3101
- IC5105 IC3105 05101-05103
- 05501-05503
- 015851



AF assembly  
(AW2464)

A

B

C

D

8.3 SCHEMATIC DIAGRAMS AND PCB PATTERNS  
(For XD-J215M/HEWZIW and XD-J210/HEWZIW)

8.3.1 AF Assembly

A

B

C

D

AF assembly  
(AWZ4649)

IC2301

IC2103 IC2101

Q2201-Q2203

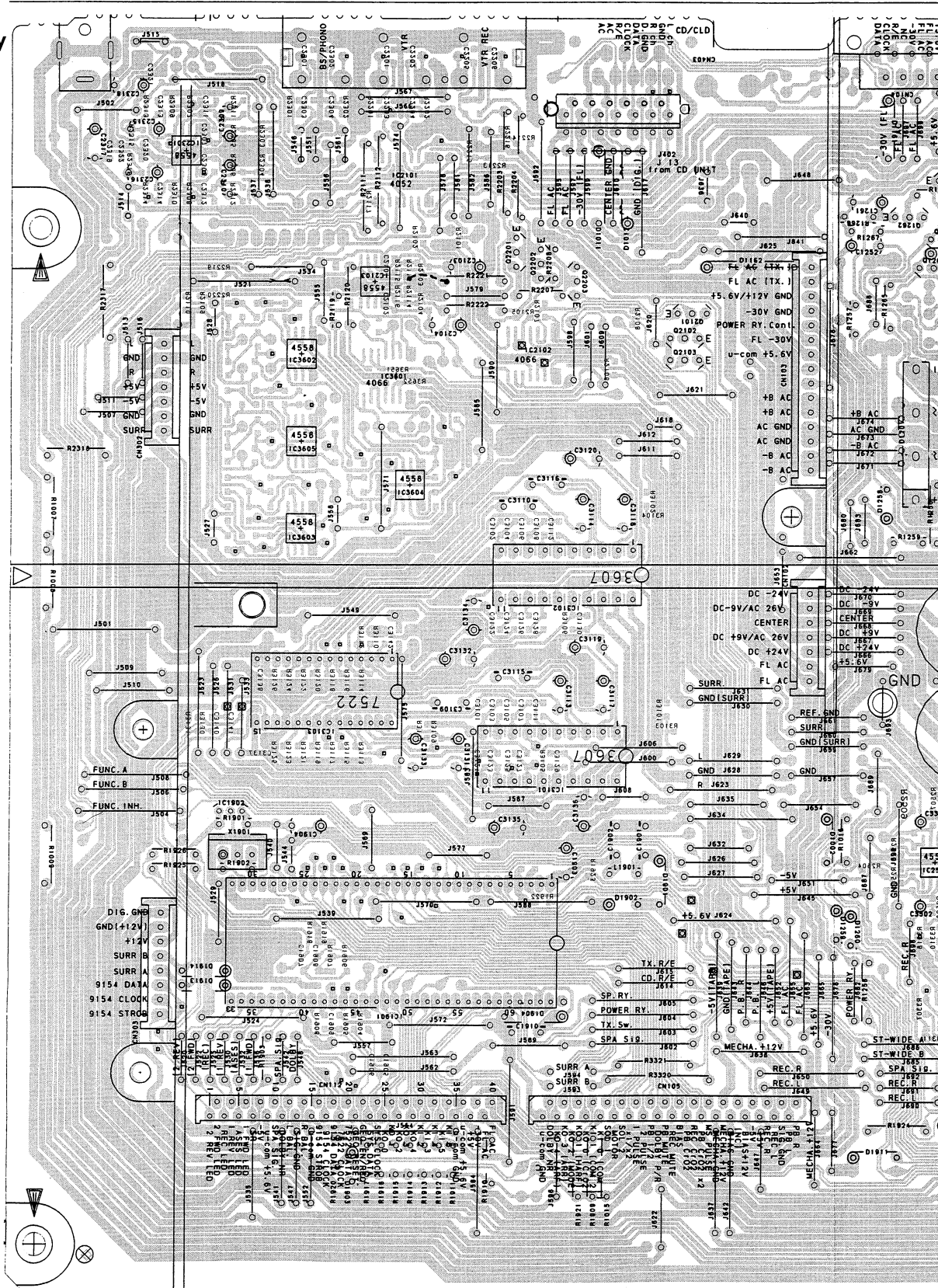
Q125

IC3601-IC3605

IC2102 IC3102 Q2101-Q2103

IC1902 IC3103 IC1901

IC3101



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

Q1262Q1261Q1282Q1272Q1271Q1254IC1010

Q1252 Q1253 Q1281

IC1201

IC2501 IC3302

IC1302 Q1002 Q1003

IC1005

IC1301 IC1006 IC1002

IC3301 IC3303

IC1202

IC1003

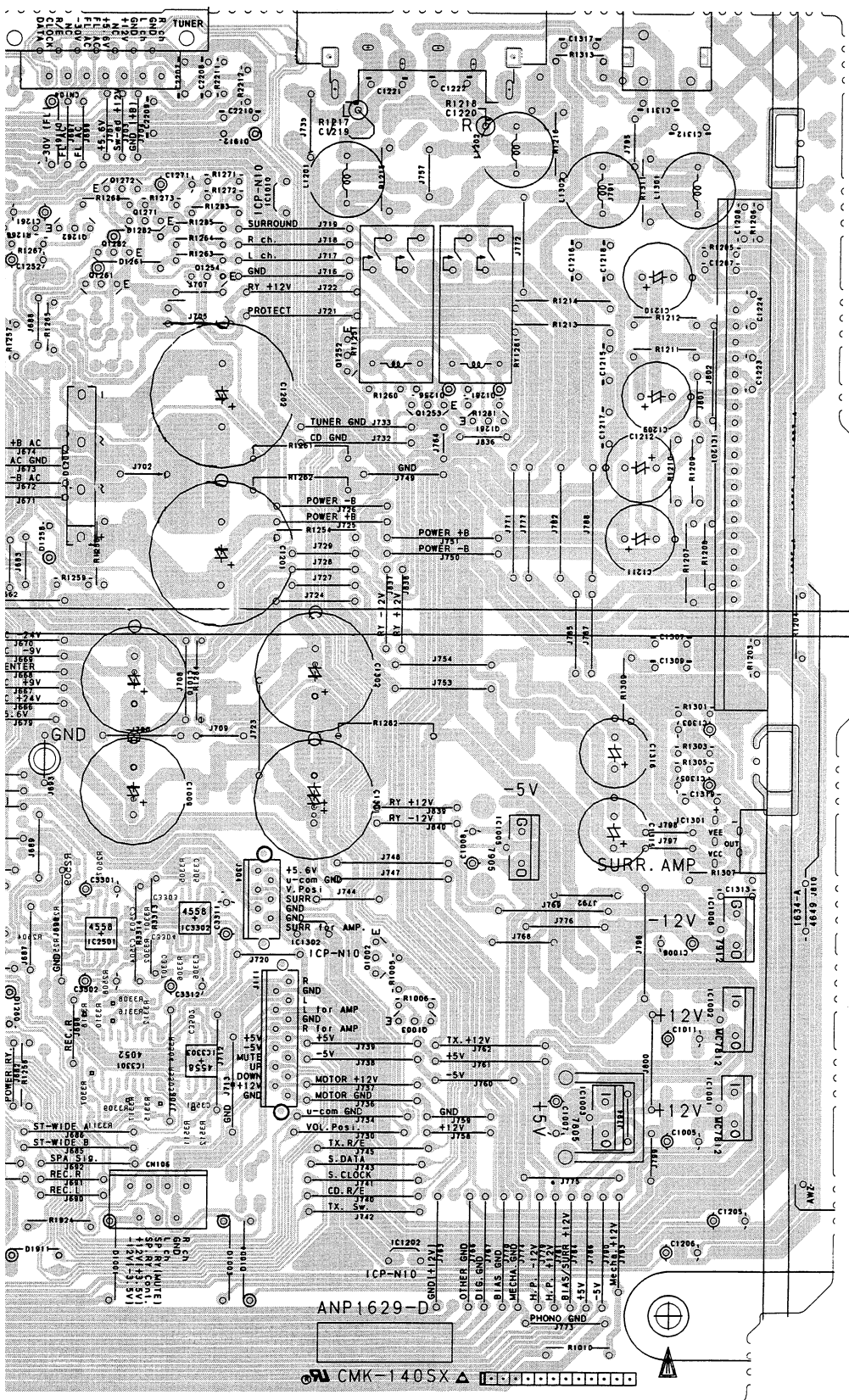
IC1001

A

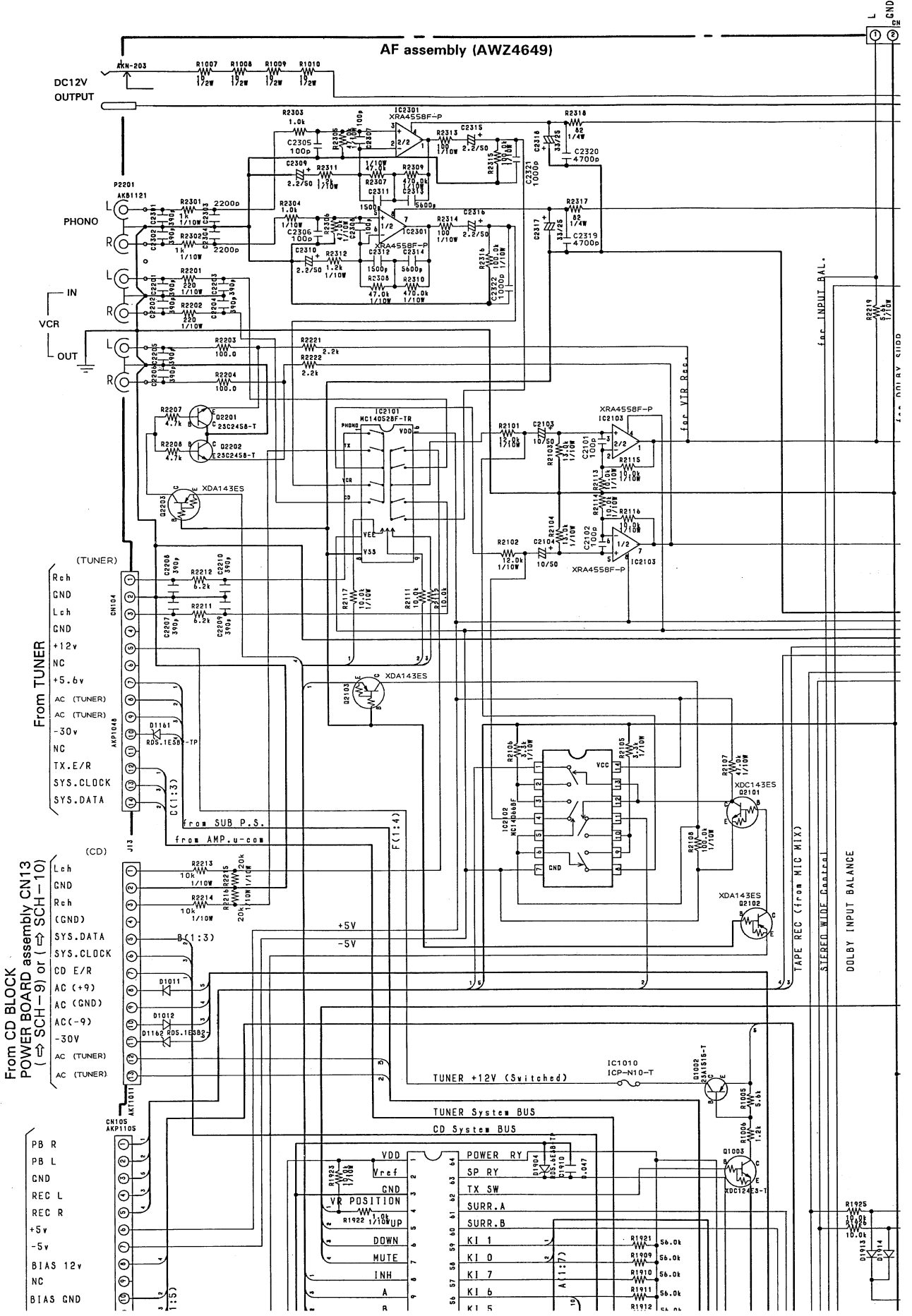
B

C

D



To SURROL  
CN302 (





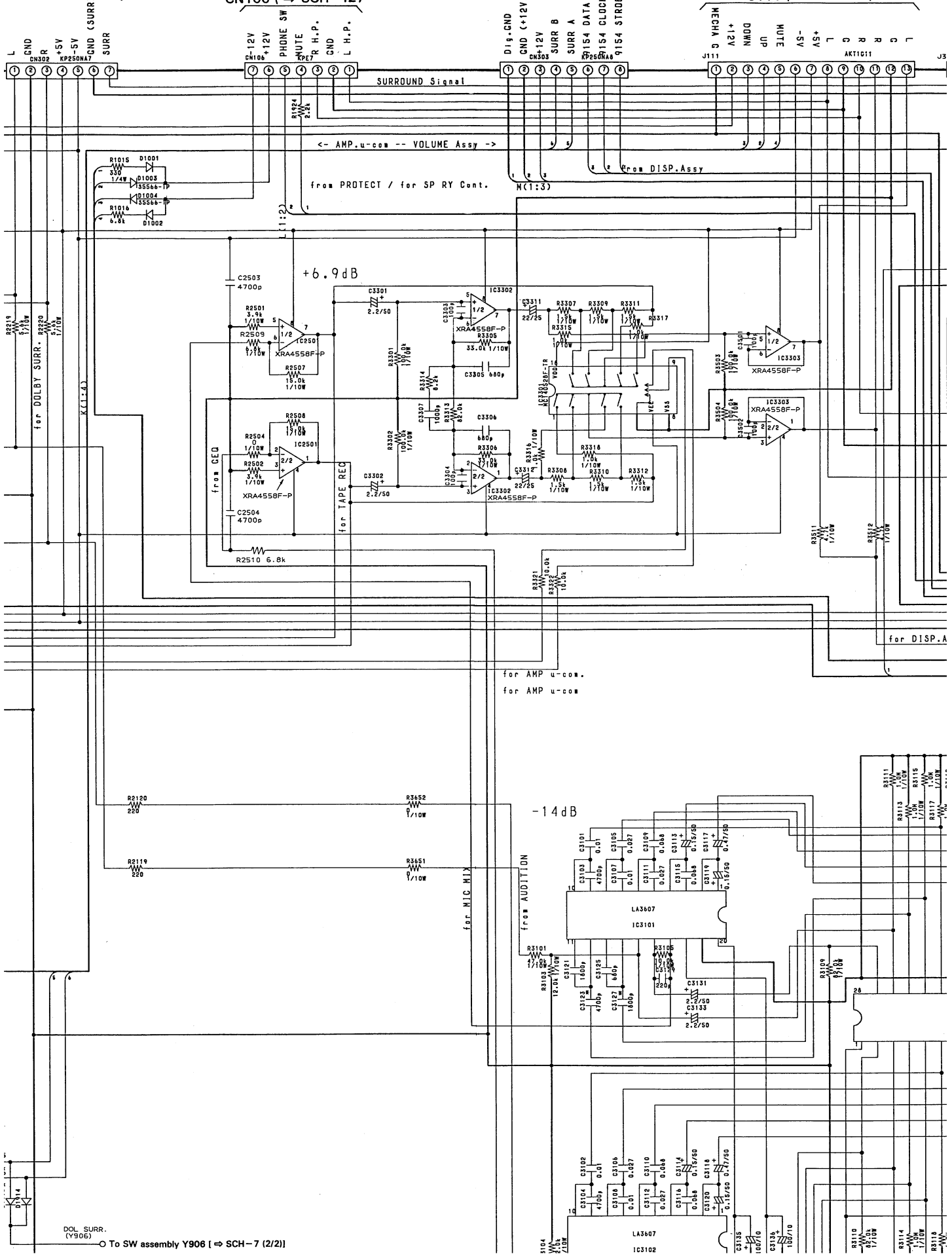
RRROUND assembly  
302 (⇨ SCH-12)

To HEADPHONE assembly  
CN106 (⇨ SCH-12)

To SURROUND assembly  
CN303 (⇨ SCH-12)

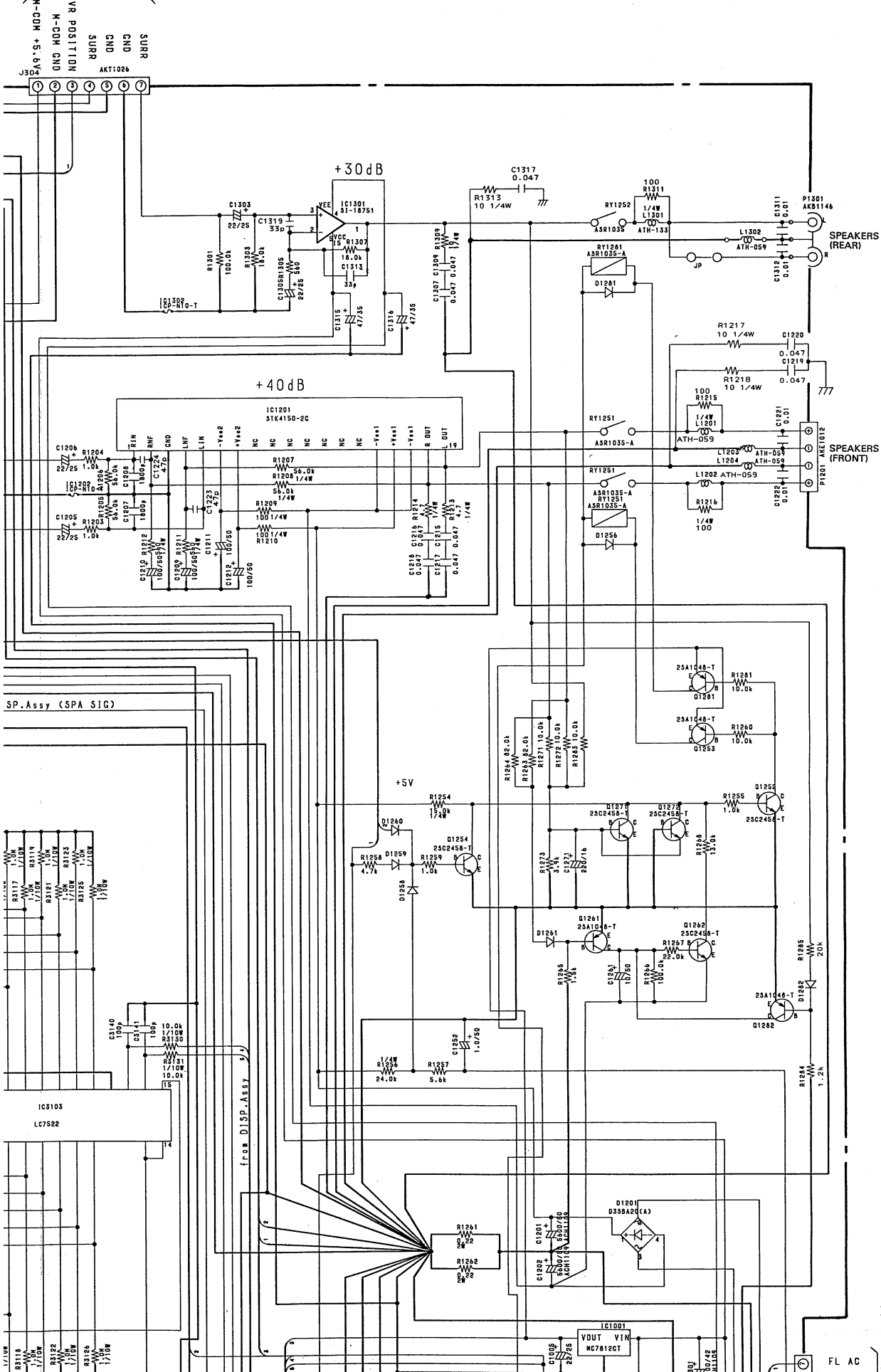
To VOLUME assembly  
J111 (⇨ SCH-12)

To VOL



DOL SURR. (Y906)  
To SW assembly Y906 (⇨ SCH-7 (2/2))

VOLUME assembly J304 (⇒ SCH-12)



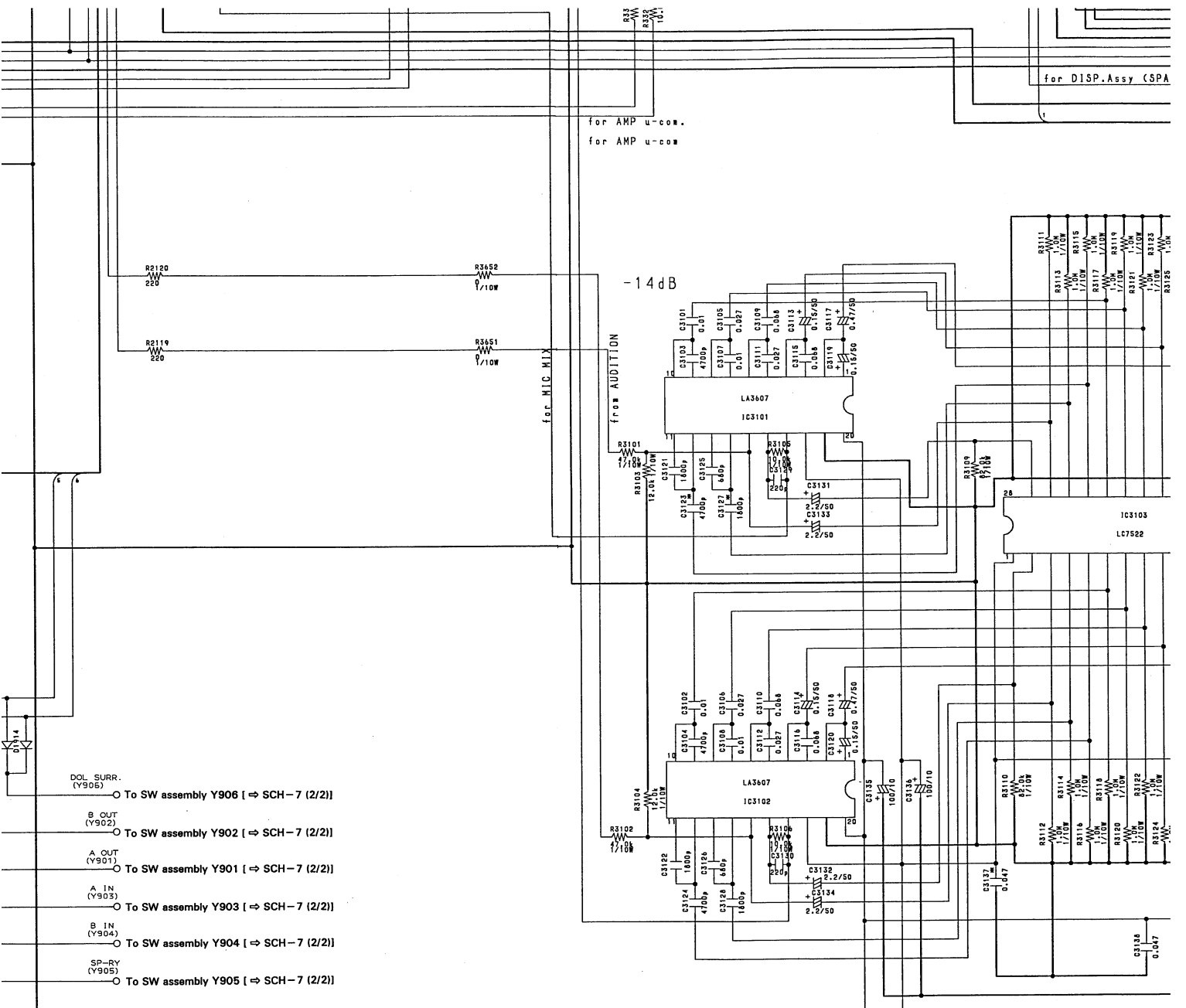
A  
B  
C  
D

S assembly  
> SCH-13)



for DISP.Assy (SPA

for AMP u-com.  
for AMP u-com



- DOL SURR. (Y905) ○ To SW assembly Y906 [⇒ SCH-7 (2/2)]
- B OUT (Y902) ○ To SW assembly Y902 [⇒ SCH-7 (2/2)]
- A OUT (Y901) ○ To SW assembly Y901 [⇒ SCH-7 (2/2)]
- A IN (Y903) ○ To SW assembly Y903 [⇒ SCH-7 (2/2)]
- B IN (Y904) ○ To SW assembly Y904 [⇒ SCH-7 (2/2)]
- SP-RY (Y905) ○ To SW assembly Y905 [⇒ SCH-7 (2/2)]

+5V (Signal)

-5V (Signal)

<- TAPE Assy & TUNER -- P.S. ->

<- DISP.Assy & CD -- P.S. ->

SP RY Cont.

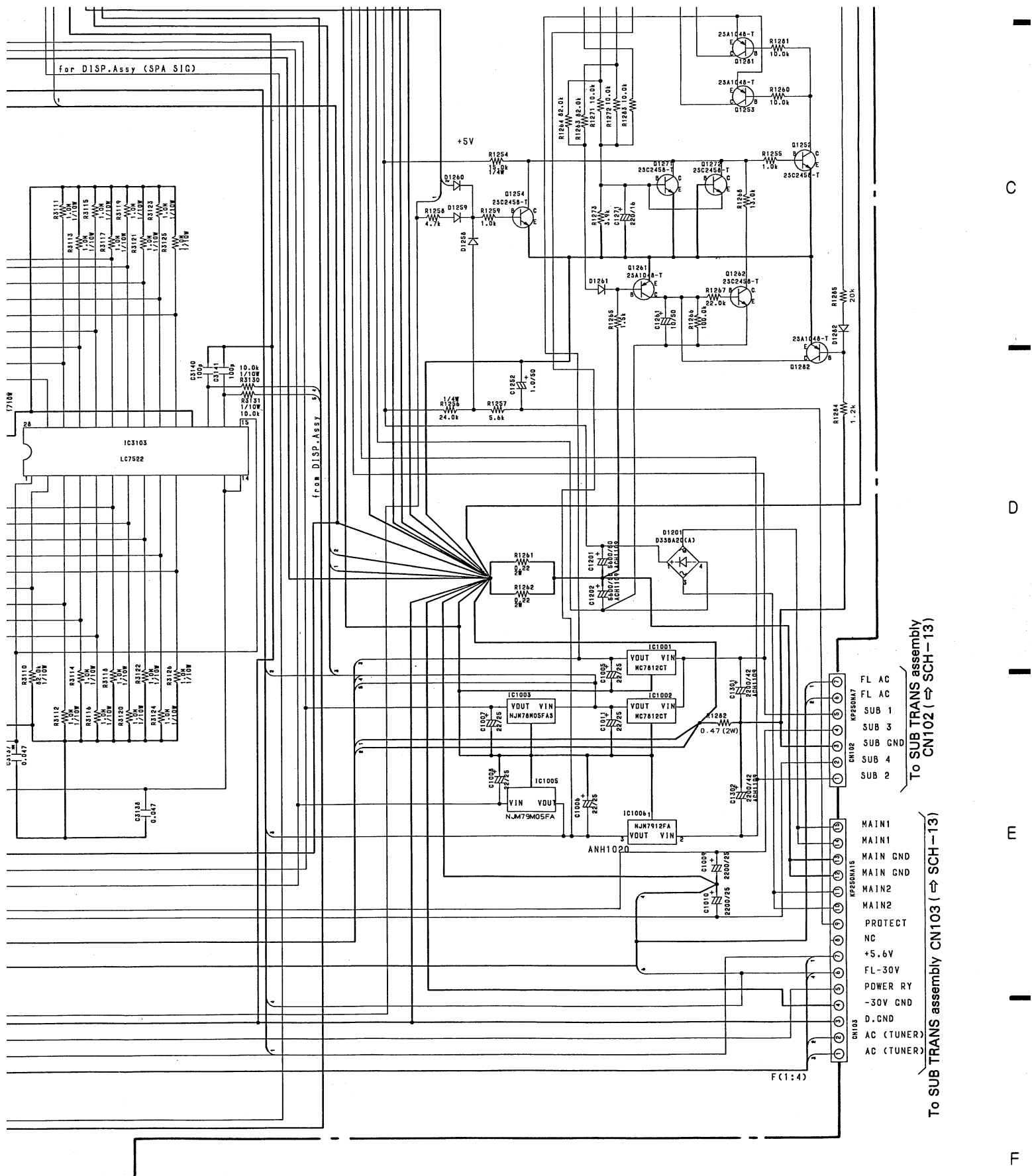
u-com GND

POWER RY Cont.

u-com.+5.6V

<- TUNER & DISP.Assy -- SUB P.S.-->

<- DISP.Assy -- SURR.Assy & CEO ->



**SCH-11**

AF assembly

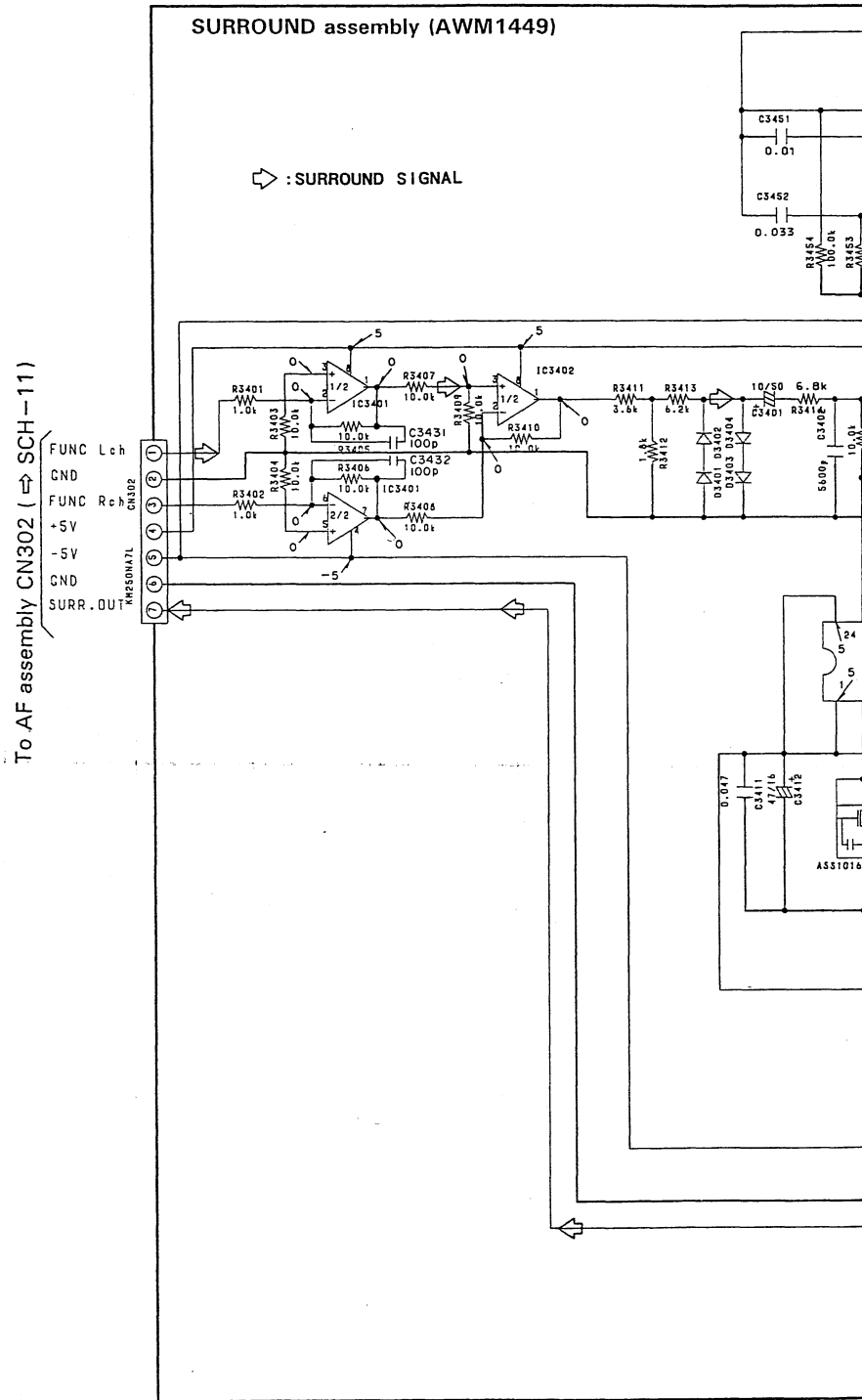
8.3.2 SURROUND Assembly, HEADPHONE Assembly and VOLUME Assembly

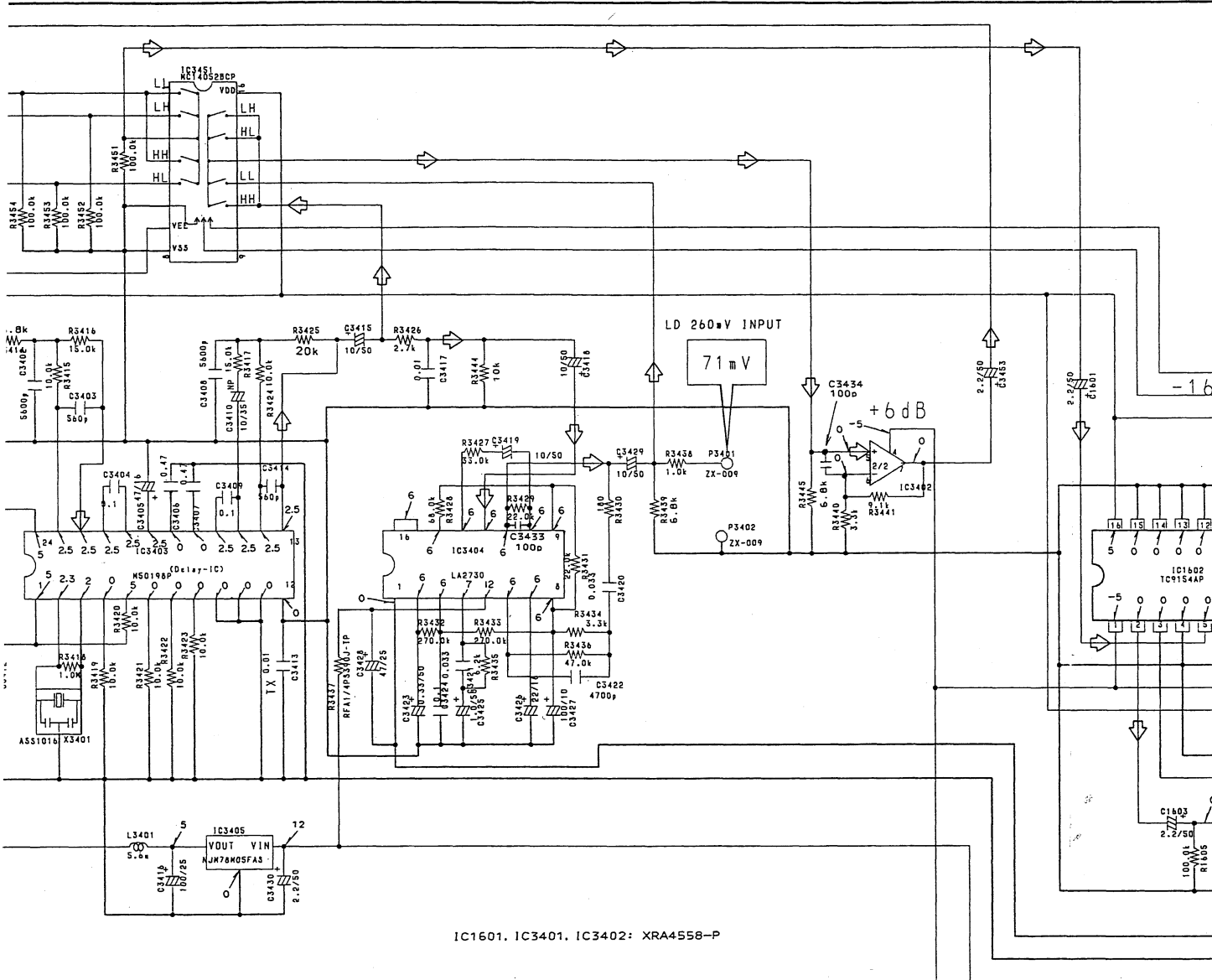
A

B

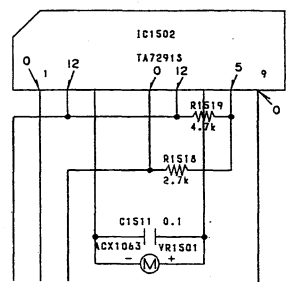
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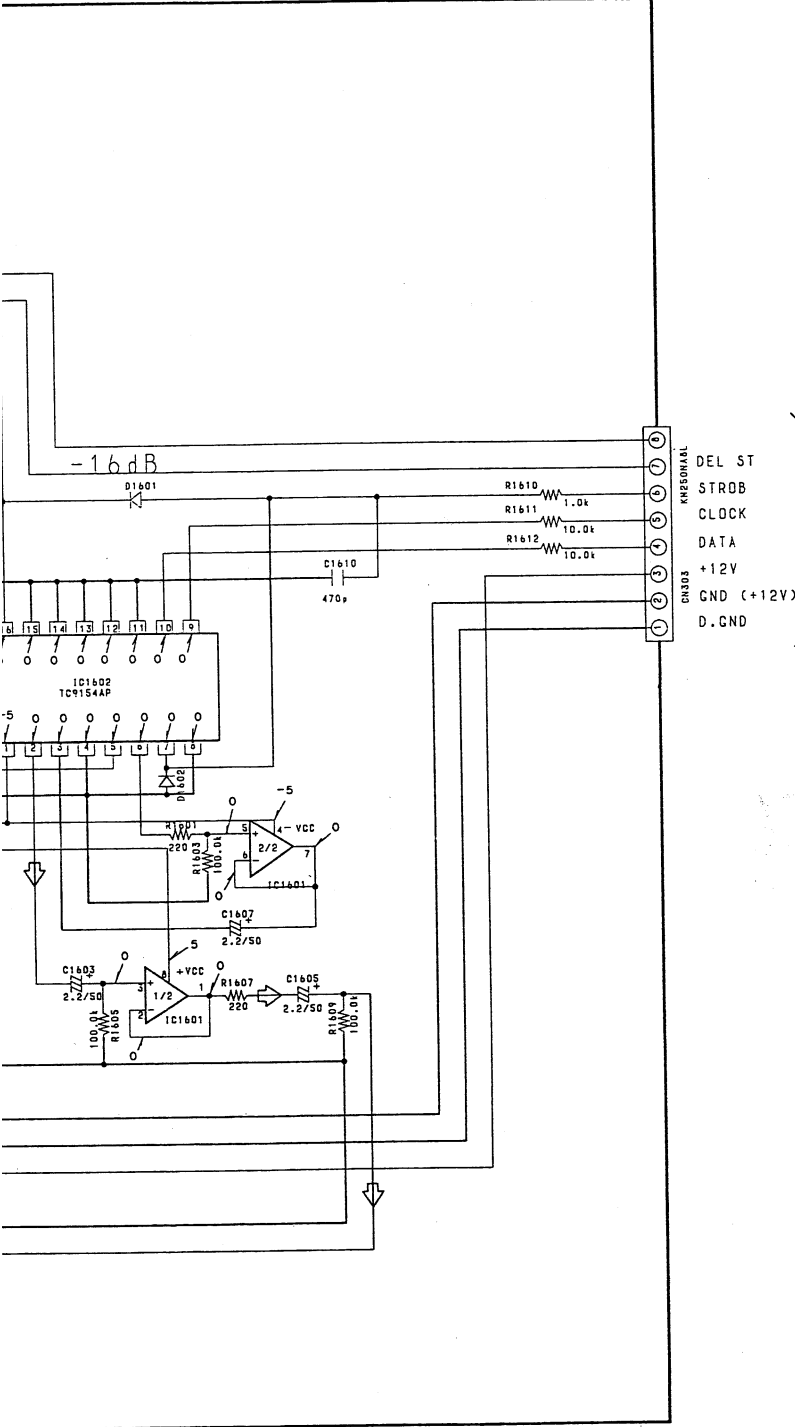
D





VOLUME assembly (AWZ4656)



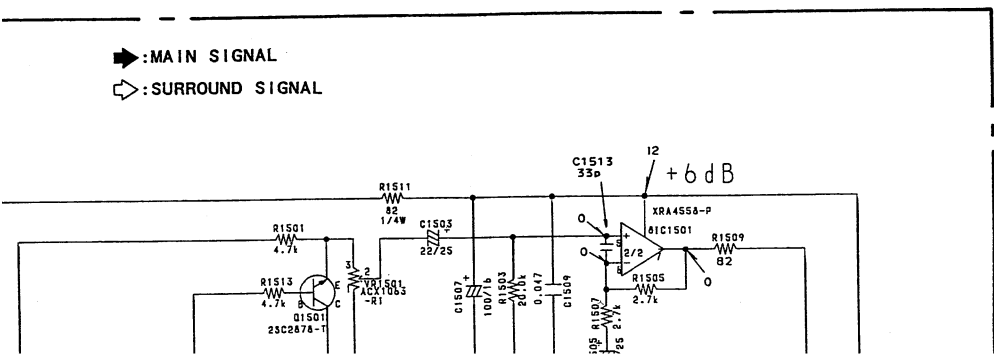


To AF assembly CN303 (⇒ SCH-11)

B

C

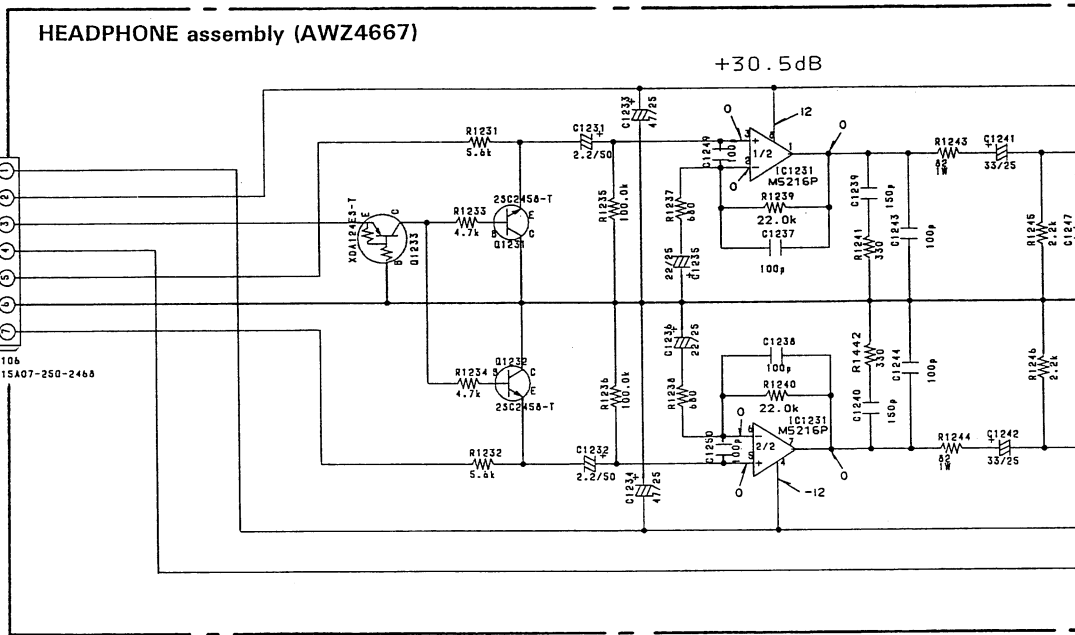
D



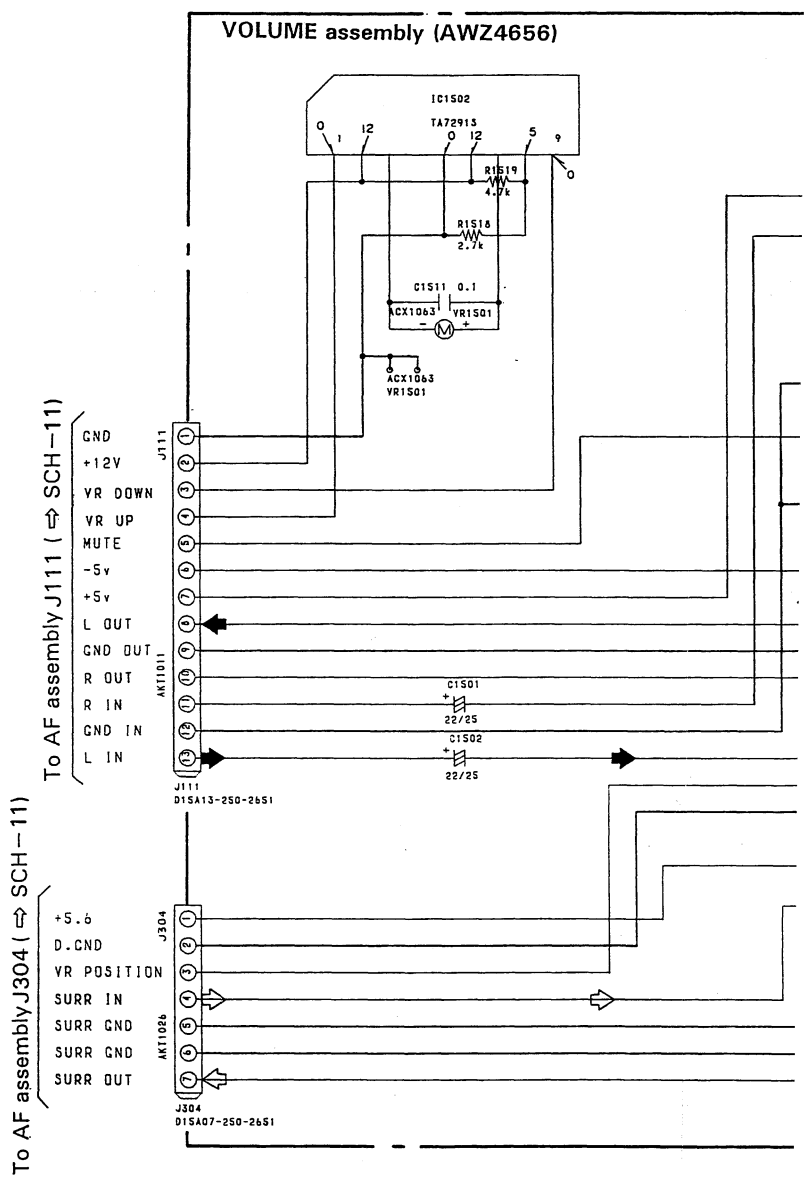
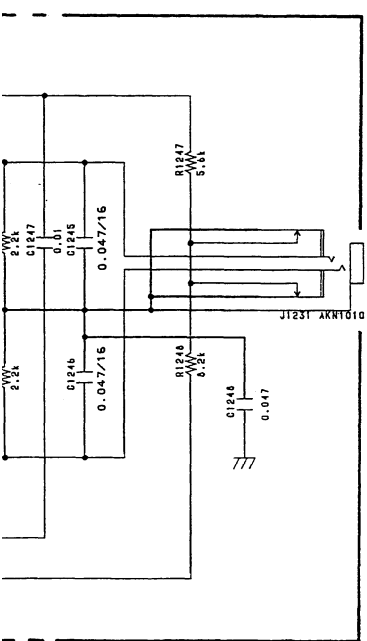
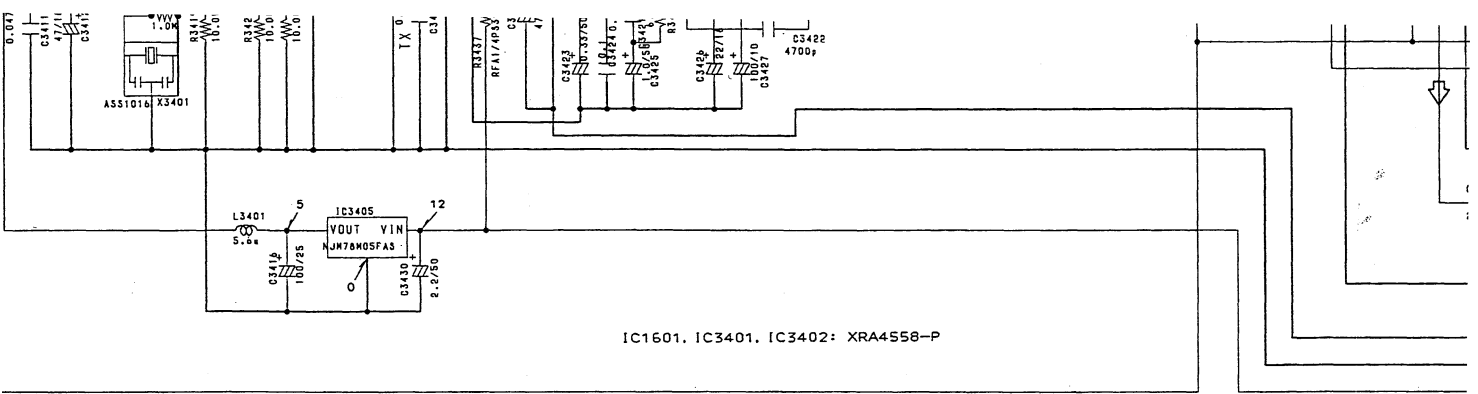


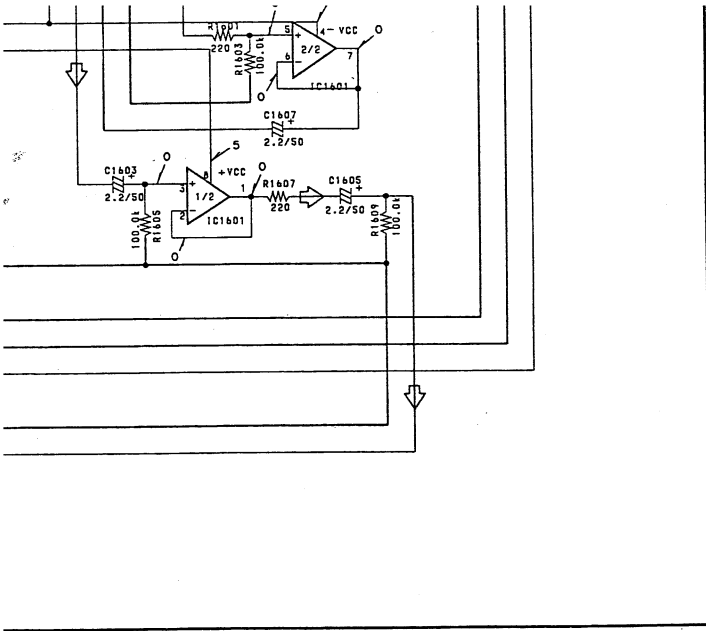
C  
D  
E  
F

To AF assembly CN106 (⇒ SCH-11)

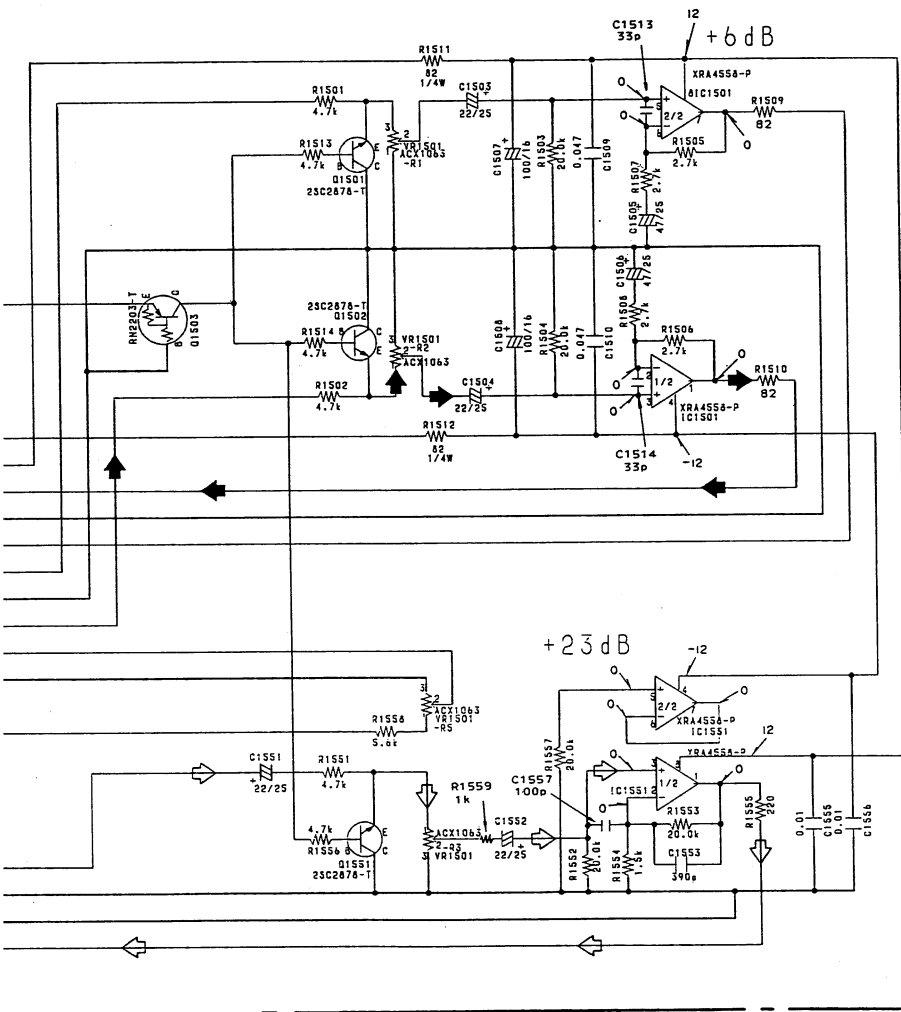


**SCH-12** SURROUND assembly  
 HEADPHONE assembly  
 VOLUME assembly



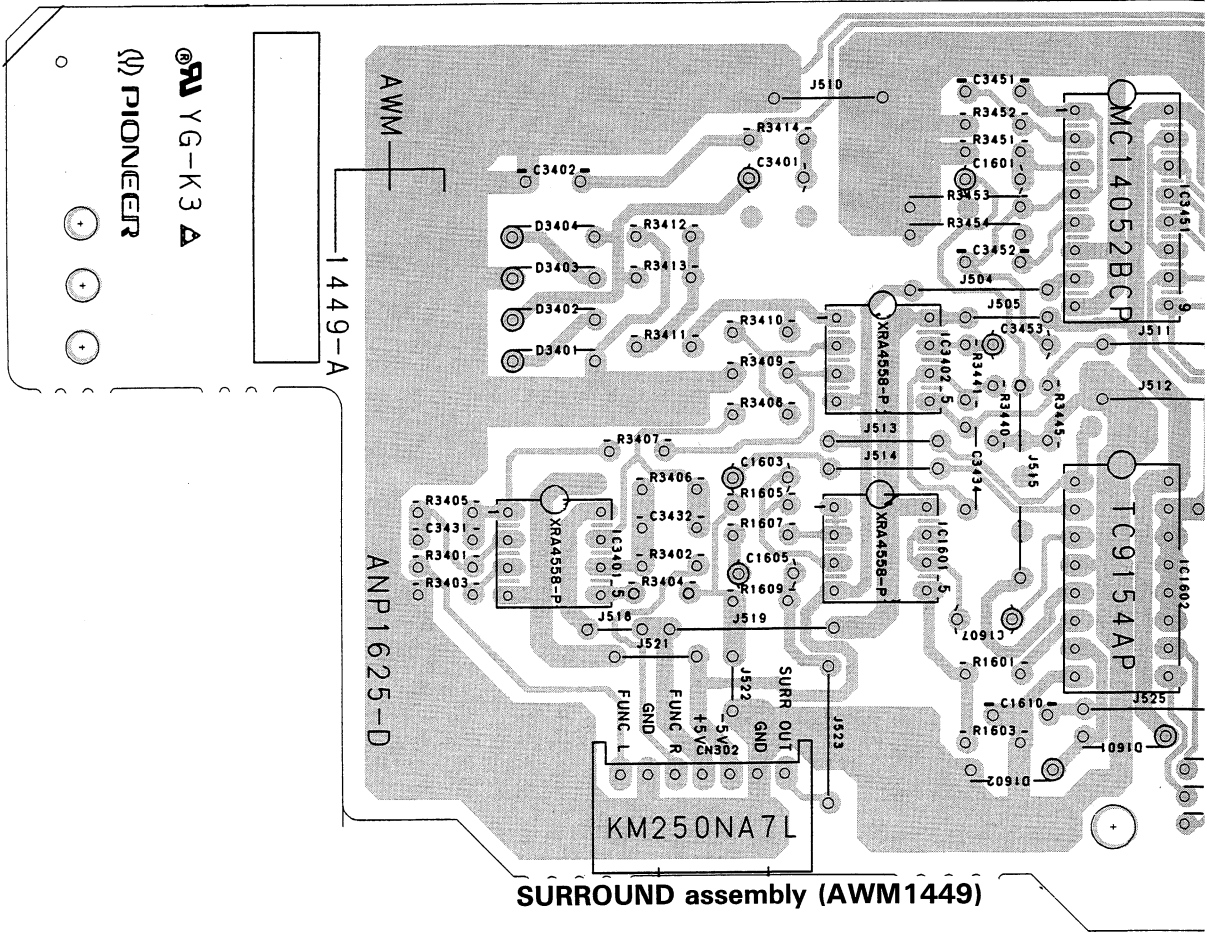


➔: MAIN SIGNAL  
 ◁: SURROUND SIGNAL

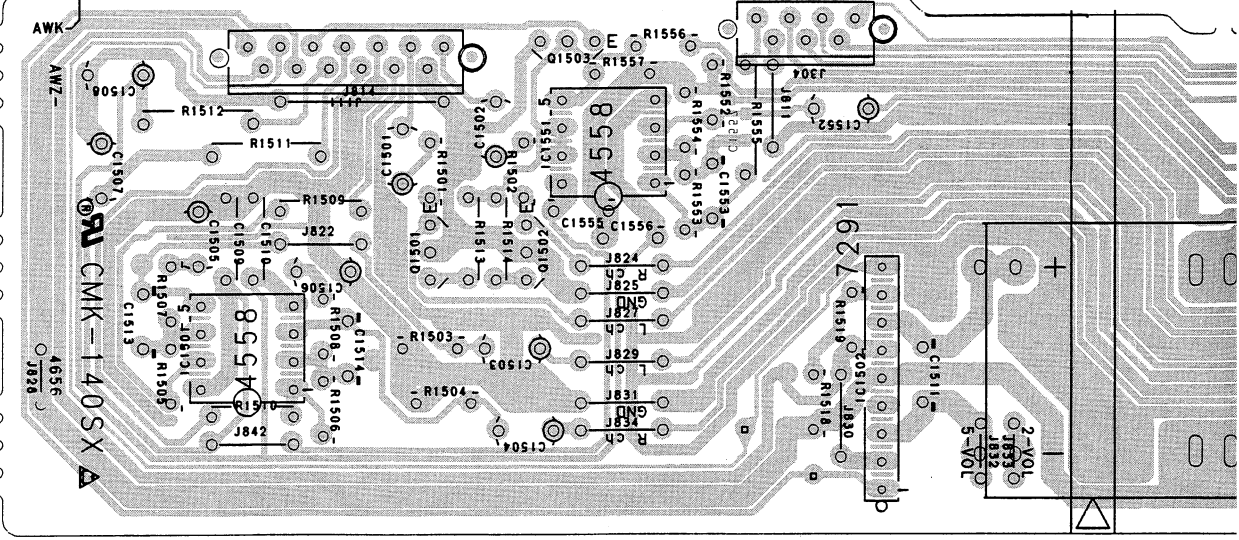


SURROUND assembly  
 HEADPHONE assembly  
 VOLUME assembly

**SCH-12**



**VOLUME assembly (AWZ4656)**



This PCB connection diagram is viewed from th

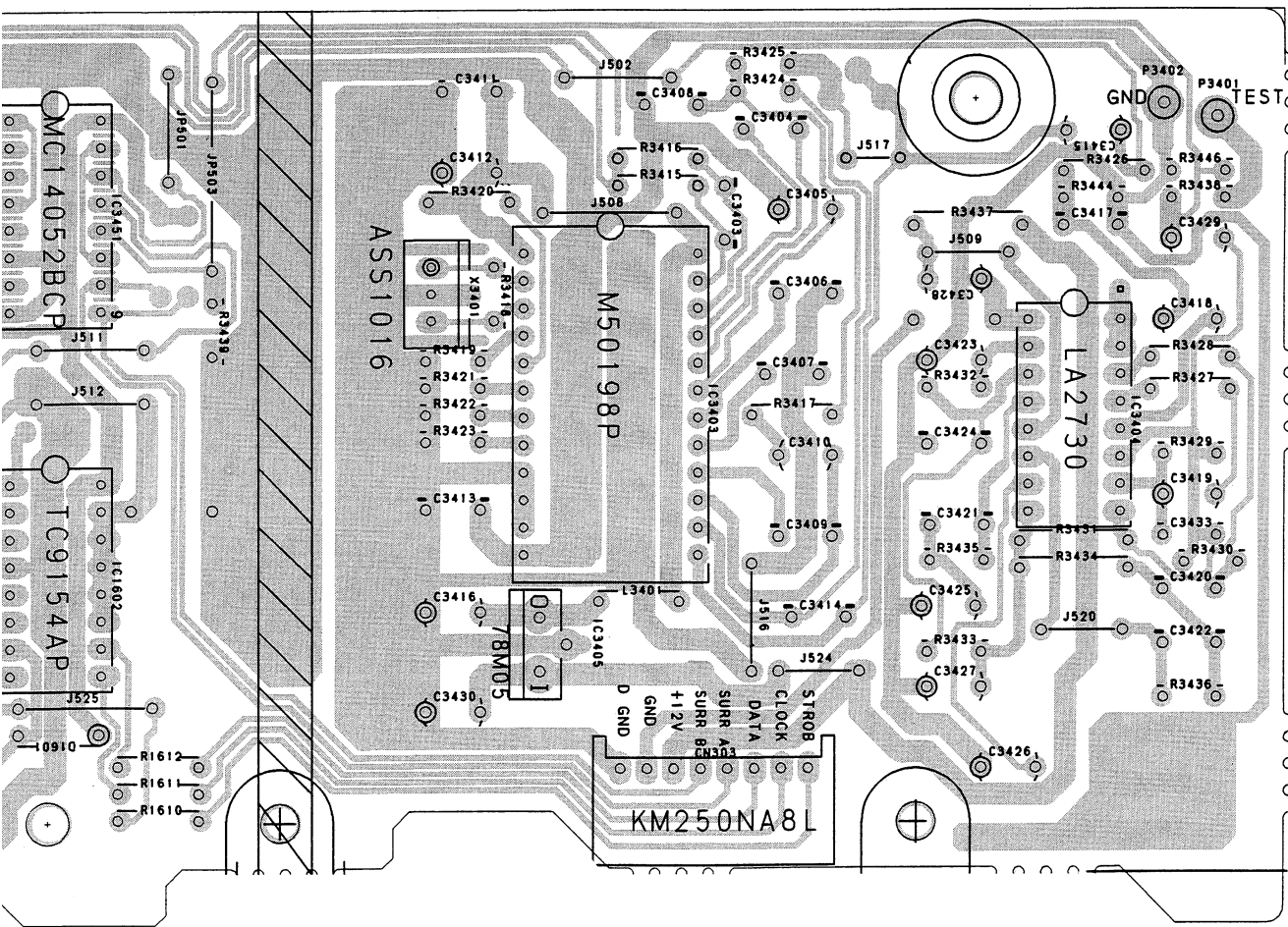
# XD-J215M, XD-J210

IC3451  
IC1602

IC3405

IC3403

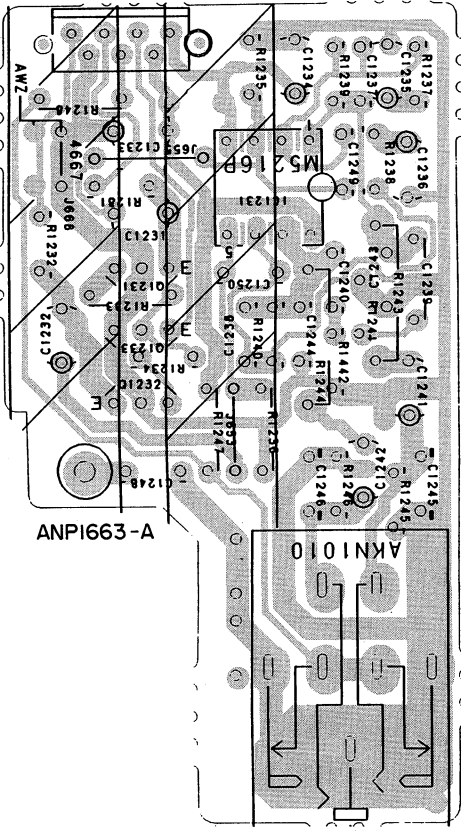
IC3404



A

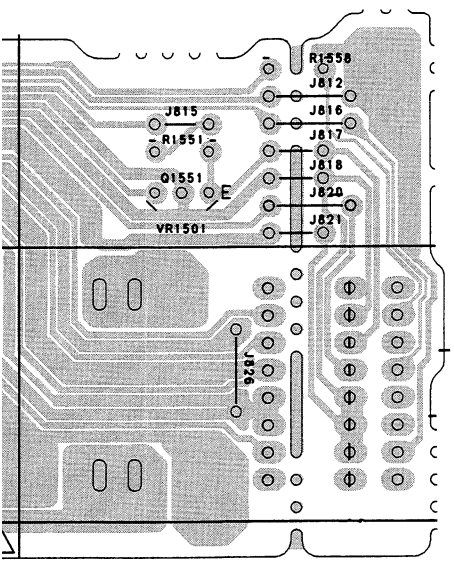
B

## HEADPHONE assembly (AWZ4667)



C

D



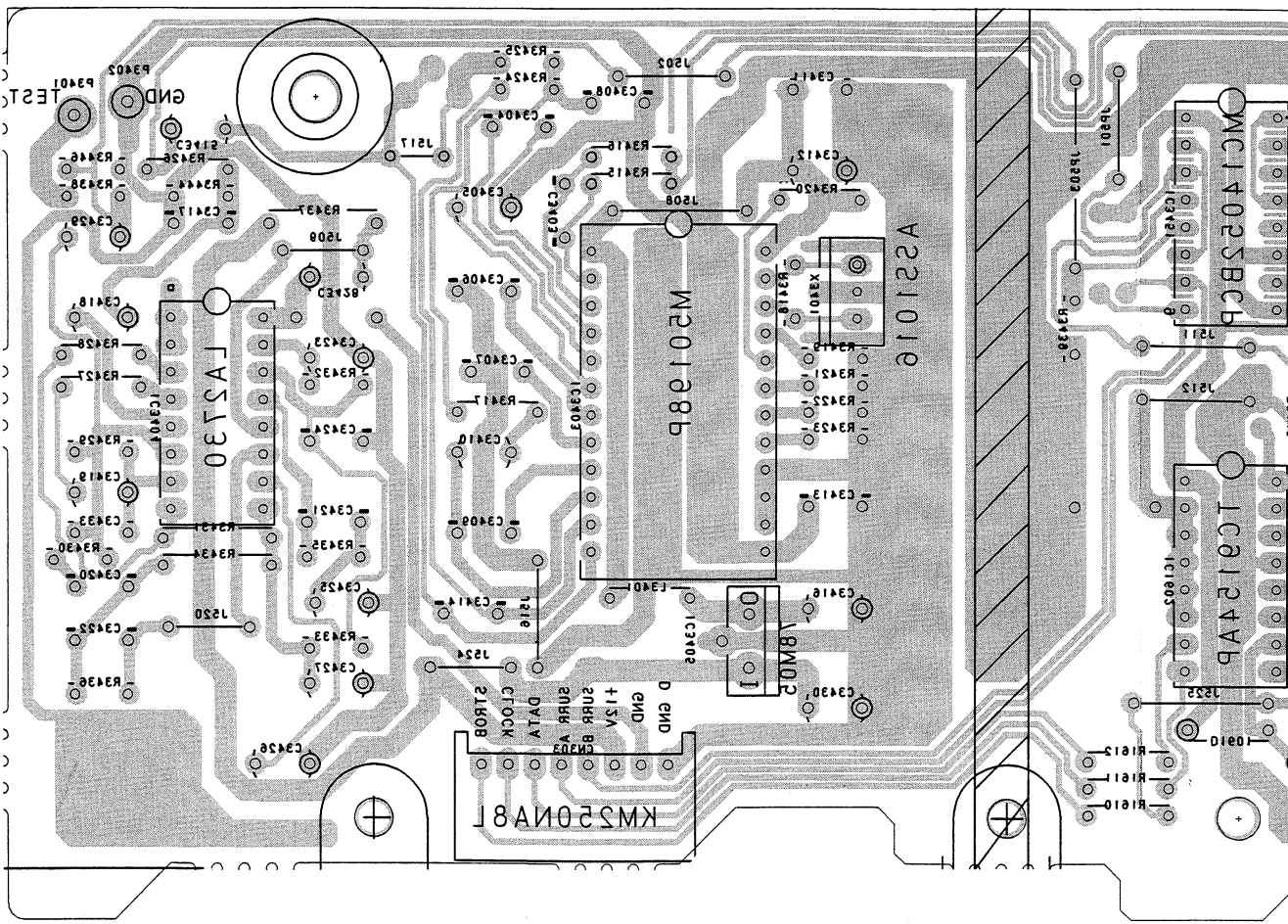
ward from the parts mounted side.

IC3404

IC3403

IC3402

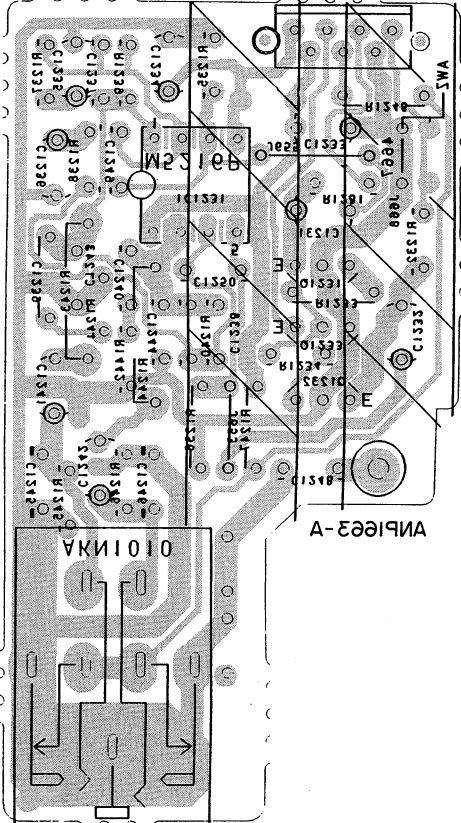
IC1805  
IC3421



A

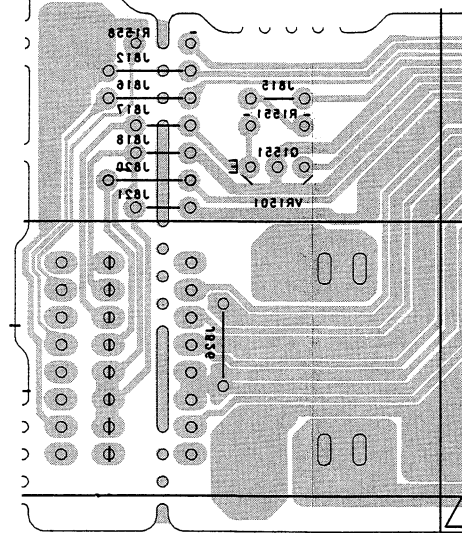
B

HEADPHONE assembly (AW24661)



C

D



This PCB connection

e

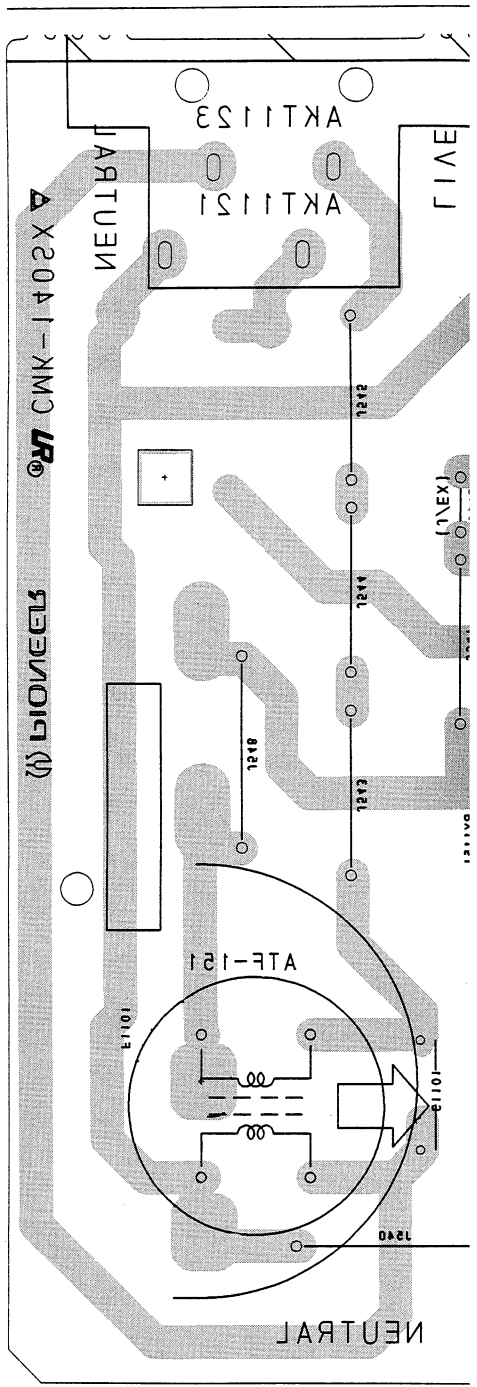
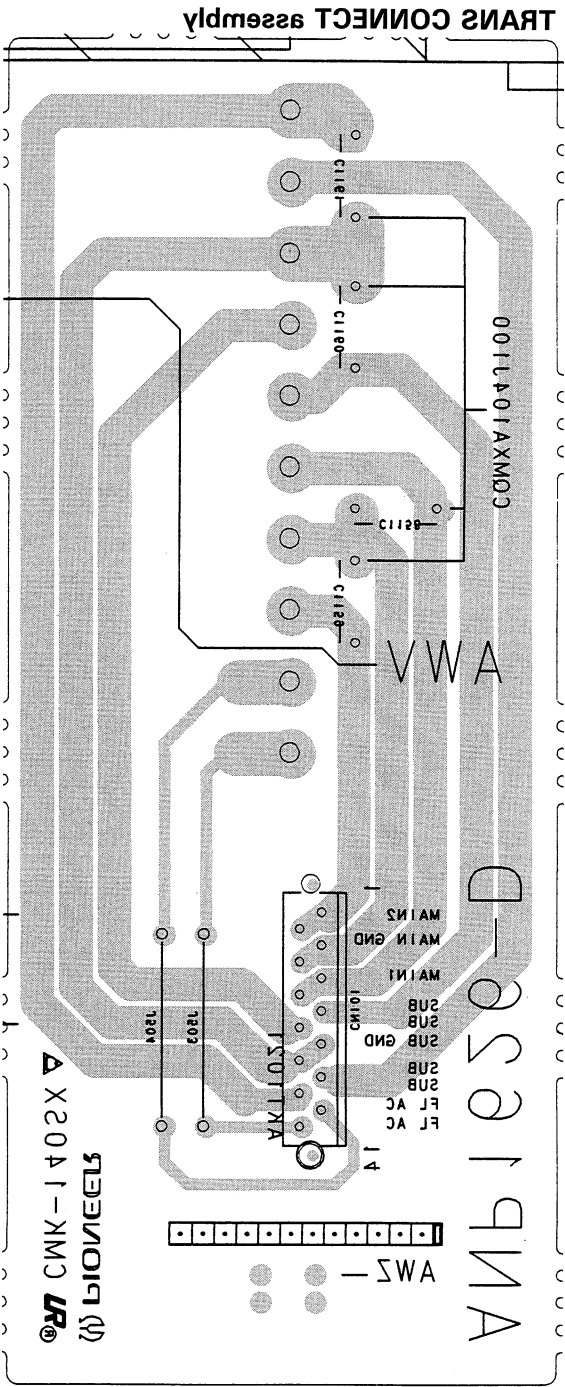
f

4

f

4





This PCB connection diagram is viwe





8.3.3 SUB TRANS Assembly and TRANS CONNECT Assembly

This PCB connection diagram i

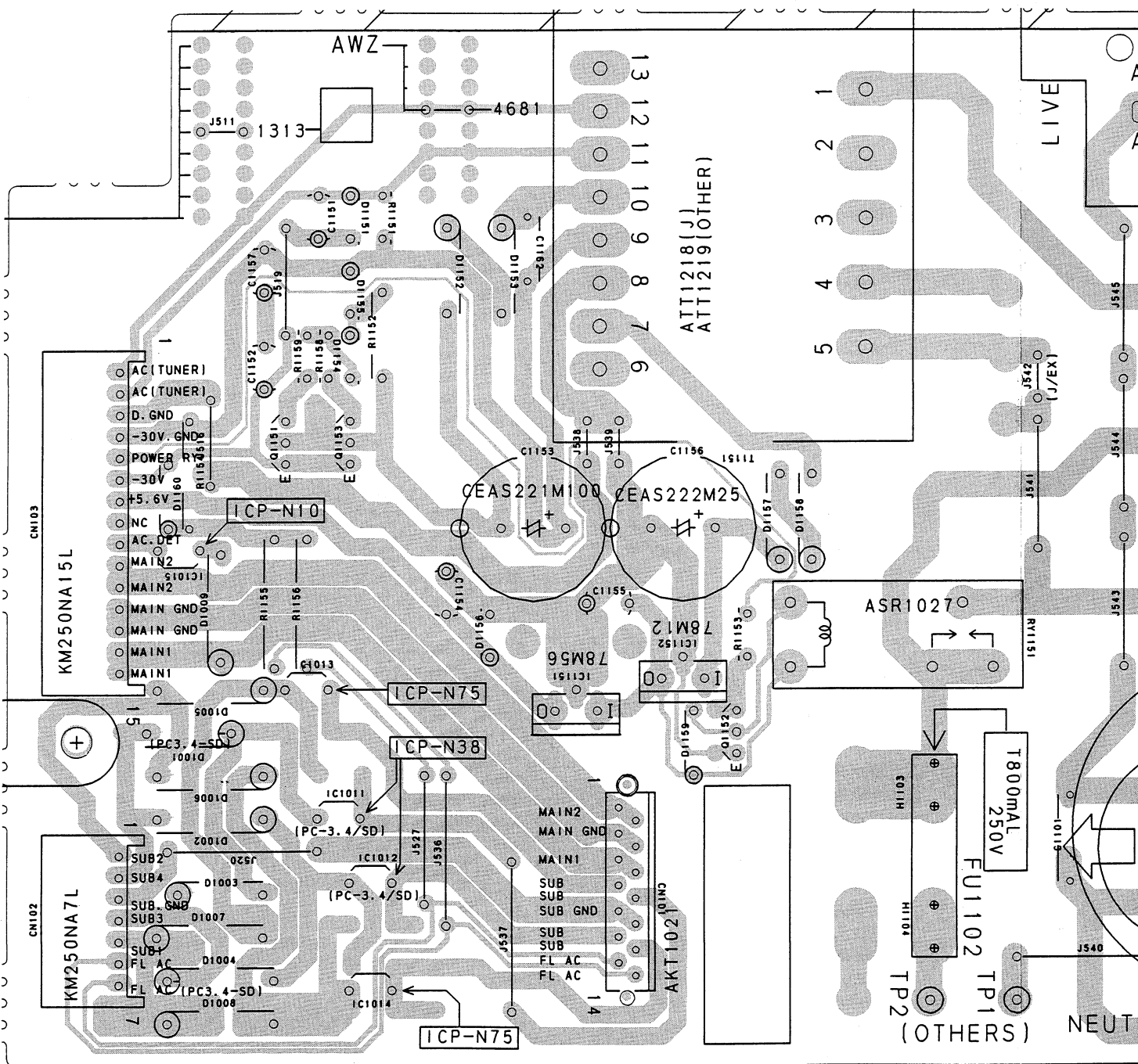
IC1015 Q1151 Q1153  
IC1013 IC1011 IC1012 IC1014 IC1151 IC1152 Q1152

A

B

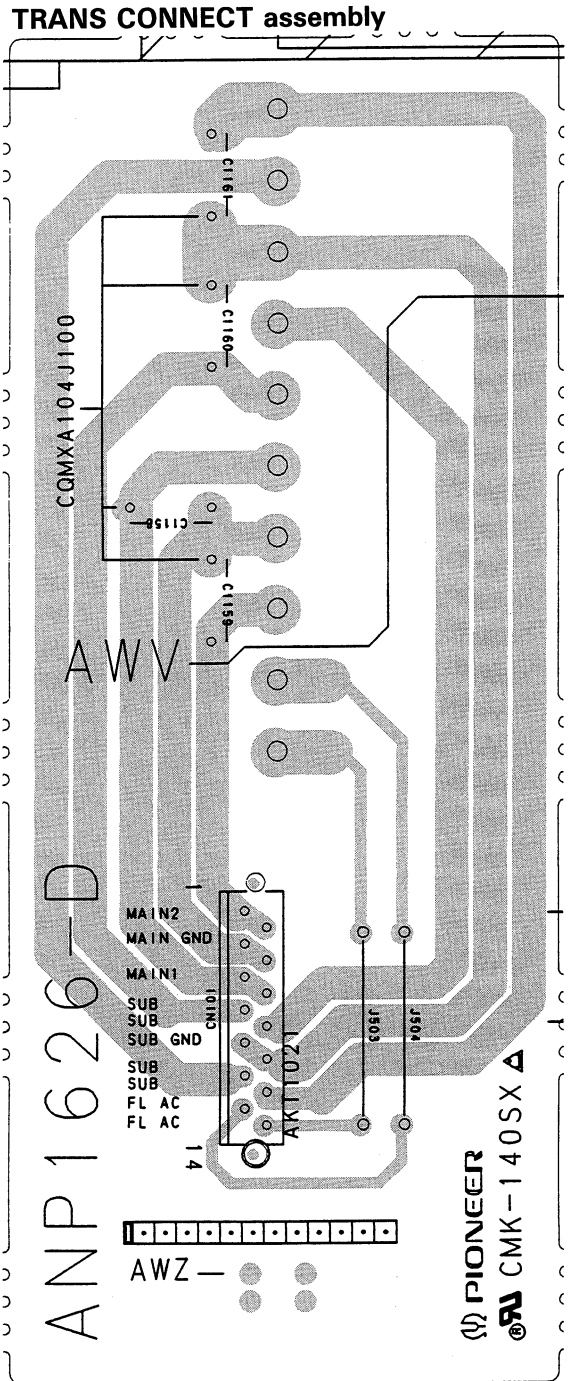
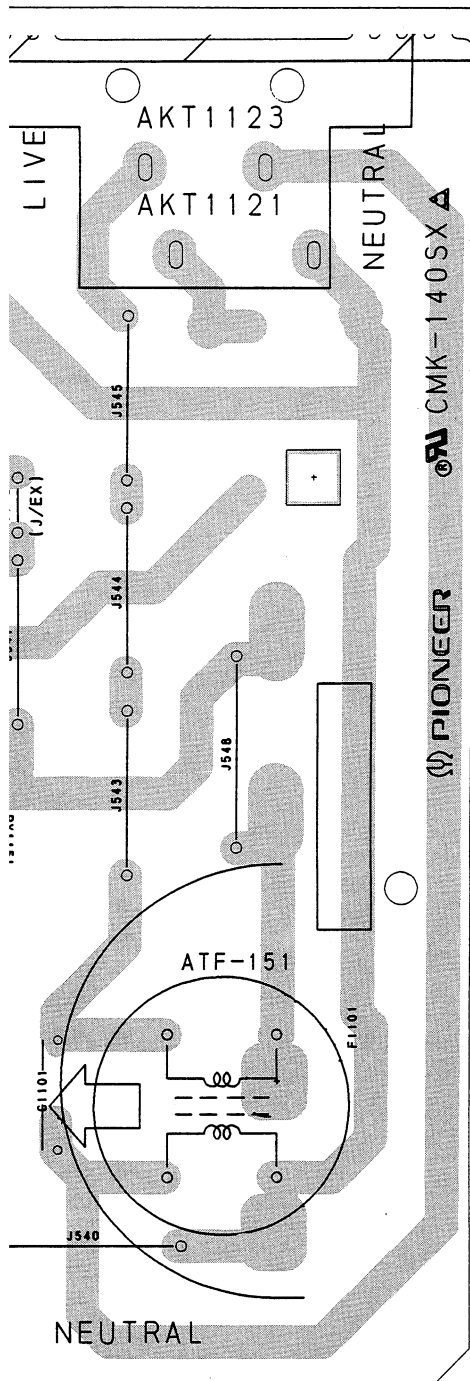
C

D



SUB TRANS assembly (AWZ4679)

in diagram is viewed from the parts mounted side.



A

B

C

D

1

2

3

A

B

C

D

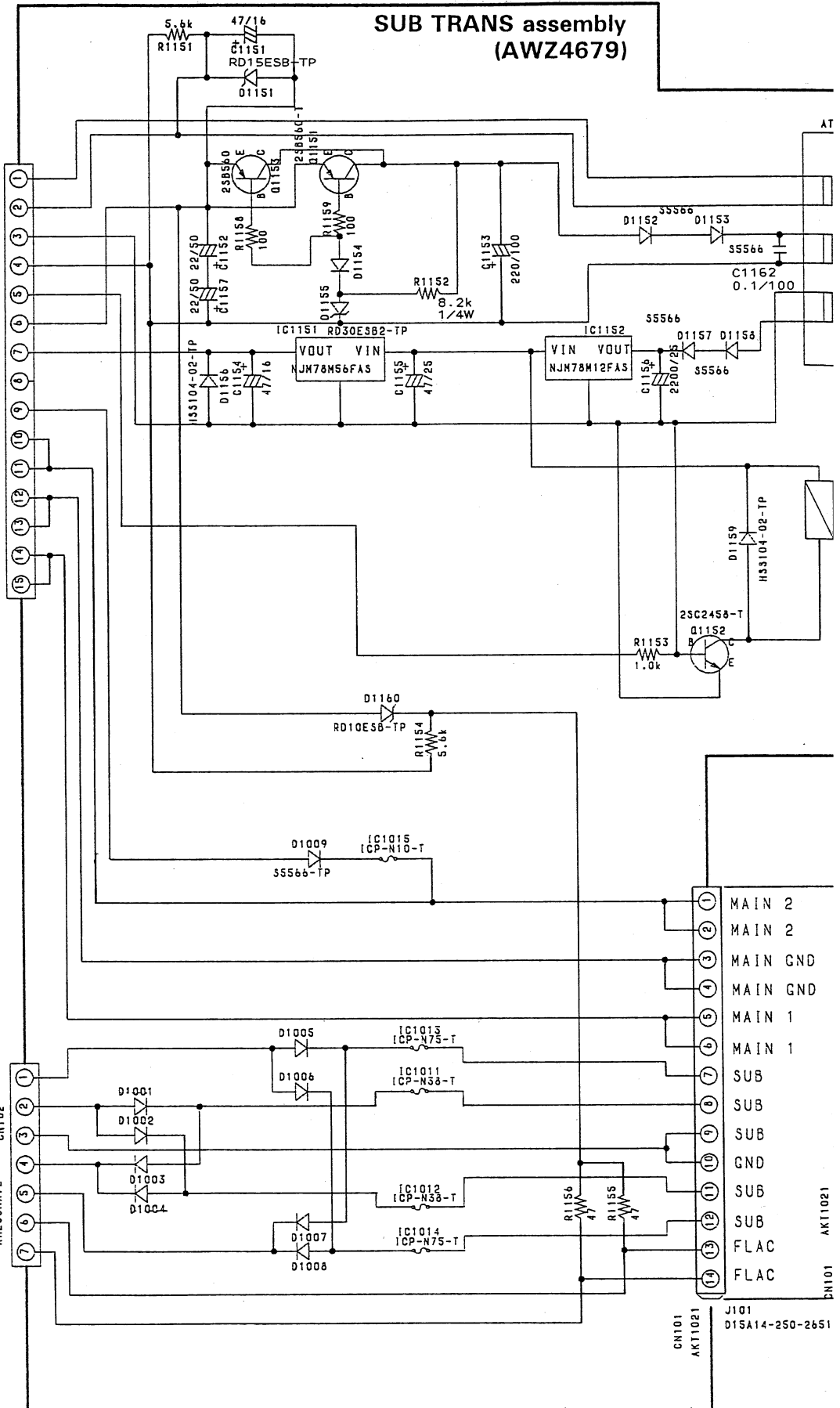
To AF assembly CN103 (⇨ SCH-11)

- ① AC (TUNER)
- ② AC (TUNER)
- ③ D.GND
- ④ -30V.GND
- ⑤ POWER RY
- ⑥ -30V
- ⑦ +5.6V
- ⑧ NC
- ⑨ AC DET
- ⑩ MAIN 2
- ⑪ MAIN 2
- ⑫ MAIN GND
- ⑬ MAIN GND
- ⑭ MAIN 1
- ⑮ MAIN 1

To AF assembly CN102 (⇨ SCH-11)

- ① SUB 2
- ② SUB 4
- ③ SUB.GND
- ④ SUB 3
- ⑤ SUB 1
- ⑥ FLAC
- ⑦ FLAC

### SUB TRANS assembly (AWZ4679)



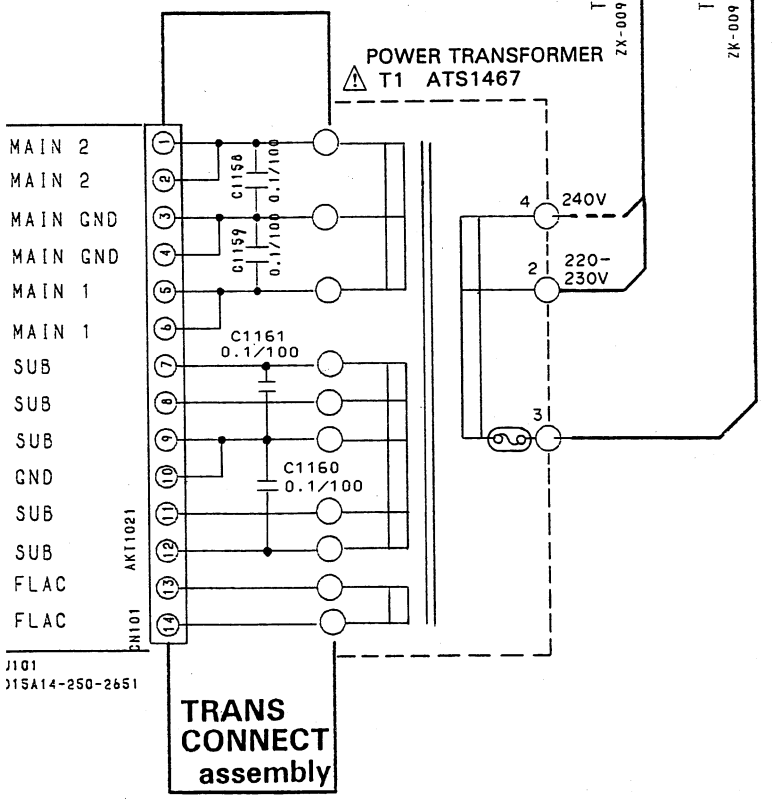
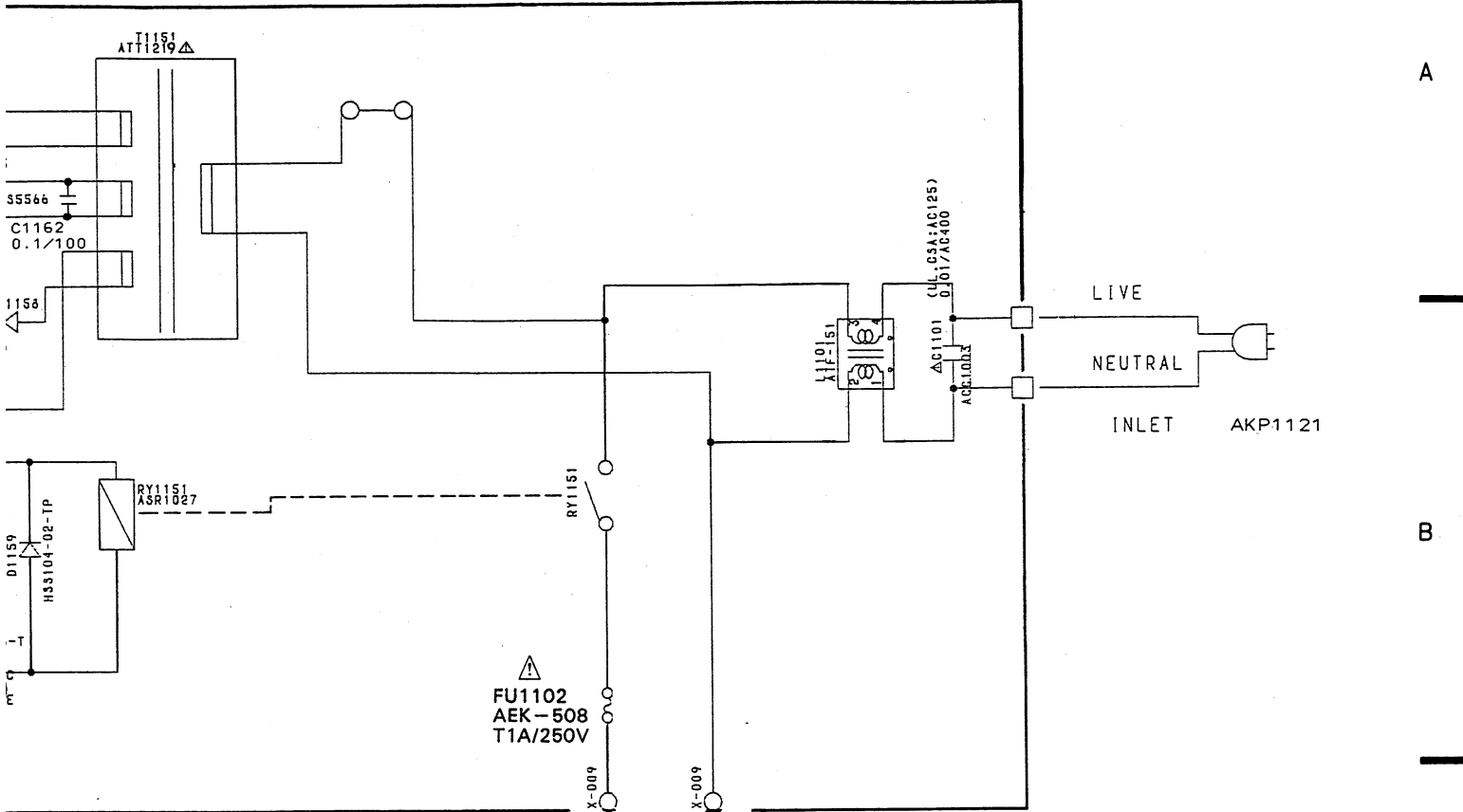
# SCH-13

SUB TRANS assembly  
TRANS CONNECT assembly

1

2

3



**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

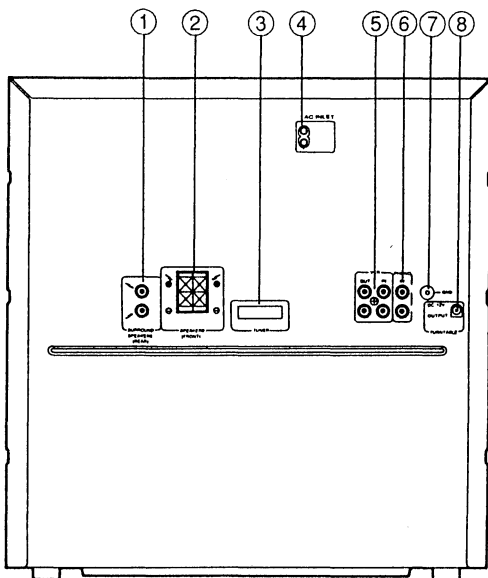
**SCH-13**

SUB TRANS assembly  
TRANS CONNECT assembly

## 9. PANEL FACILITIES

### REAR PANEL FACILITIES

XD-J215M/XD-J210



### Multi-CD cassette deck amplifier: XD-J215M/XD-J210

#### ① SURROUND SPEAKERS jacks

Connect the surround speaker systems.

#### **NOTE:**

Connect a speaker system having a nominal impedance of 16  $\Omega$  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  $\Omega$  to 16  $\Omega$ .

#### 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)

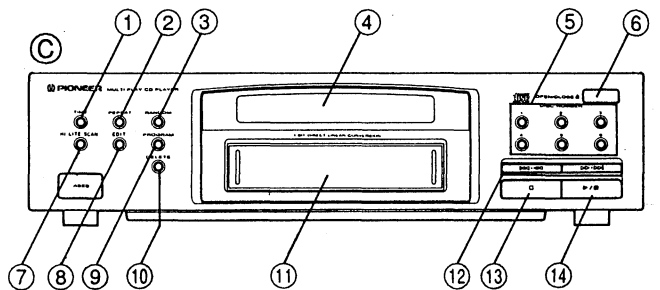
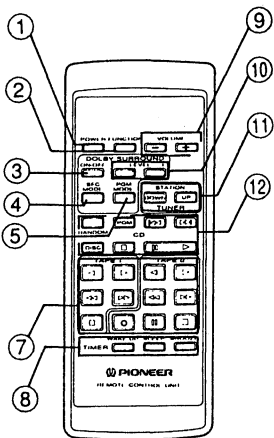
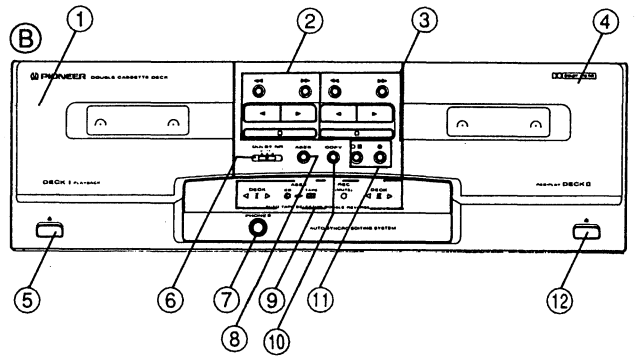
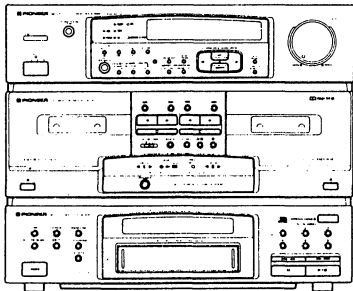
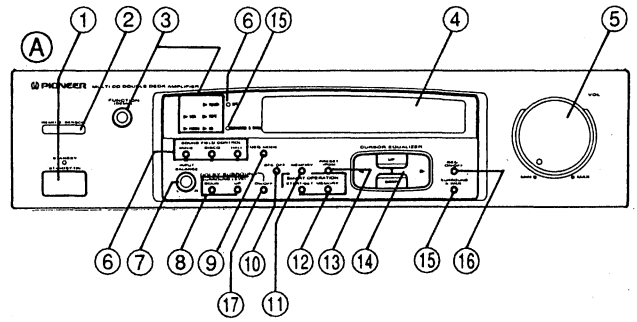
Connect this to the ground terminal on the turntable (except for PL-J210)

#### 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-J215M]



**Multi-CD cassette deck amplifier: XD-J215M**

- 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<sub>2</sub>) tape.

**(A) : 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.

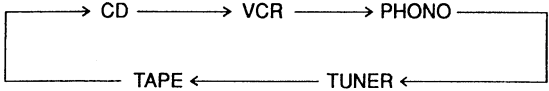
**STANDBY** : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The unit is in STANDBY when only the STANDBY indicator above the POWER switch is lit.

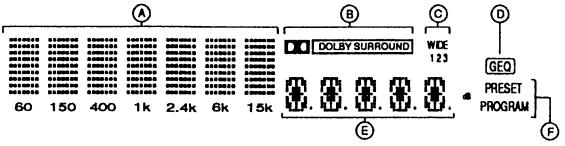
**② REMOTE SENSOR window**

**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**



- (A) Visual display of spectrum analyzer and graphic equalizer.
  - (B) Lights when the DOLBY SURROUND ON/OFF button is turned on.
  - (C) Lights when the SURROUND & WIDE button is pressed. Each time it is pressed, the indicators switches as follows.
- WIDE1
→ WIDE2
→ WIDE3

← off
- (D) This lights when the GEQ ON/OFF button is on.
  - (E) Display the mode names for SOUND FIELD CONTROL and GEQ MODE and the level of the surround speakers during use of the DOLBY SURROUND mode. Also displays the volume level when the SURROUND & WIDE function is ON.
  - (F) This indicates the memory (PRESET or PROGRAM) that can be recalled with the PRESET/PGM 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.

**⑦ INPUT BALANCE control**

This knob is for adjusting the balance of the DOLBY SURROUND input signal. To adjust, first select ON with the DOLBY SURROUND ON/OFF button. Then apply a monaural sound signal and rotate the knob until the SURROUND sound from the surround speakers becomes minimum.

Making adjustments at this time is easier if you disconnect the front speakers.

**NOTE:**  
Perform these adjustments to assure correct surround sound reproduction.

**⑧ SURROUND/Wide LEVEL button**

**[DOWN, UP] :**  
Adjust the volume of the surround speaker when DOLBY SURROUND or SURROUND & WIDE button is ON.

UP : Increase in the volume to 16 dB.

DOWN : Decreases in the volume to -50 dB.

**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 CURSOR EQUALIZER buttons

Use to adjust graphic equalizer settings.

[◀, ▶] : Use these to change the frequency range to be adjusted.

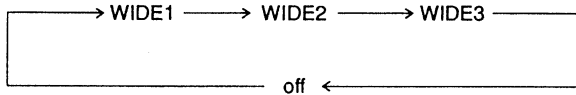
[UP, DOWN] : Use these to adjust the degree of equalization.

## 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.

## ⑰ DOLBY SURROUND ON/OFF buttons

Used to switch the DOLBY SURROUND ON/OFF.

## ⑱ : [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.

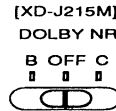
### ③ Deck II operations buttons

Same as Deck I operation buttons ②.

### ④ Deck II cassette door

### ⑤ Deck I EJECT button (▲)

### ⑥ DOLBY\*NR switch



Set this switch to B-type or C-type before recording with the built-in Dolby NR Systems and for playback of tapes which have been recorded using the Dolby NR systems.

- It is recommended that tapes recorded with-Dolby B-type NR or Dolby C-type NR be so marked on the label. This will help prevent incorrect setting of the noise reduction switch during playback.

\*

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.

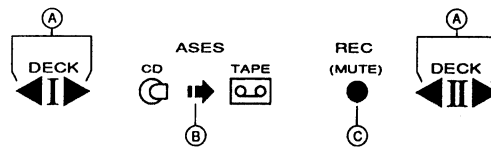
### ⑧ ASES button

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



A Direction (◀, ▶): Indicates direction of tape travel during recording or playback.

B ASES: Lights when in the ASES mode.

C 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.
- **(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.

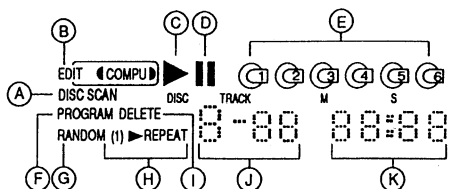
#### ② REPEAT button

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 respectively.

#### ③ RANDOM

Press to begin random playback.

#### ④ Display section



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

- K M:SS :SS** : Displays the minutes and seconds of the elapsed time, total playback 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

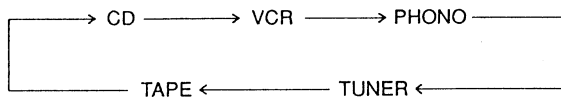
### ① POWER button

### 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 switches as follows:



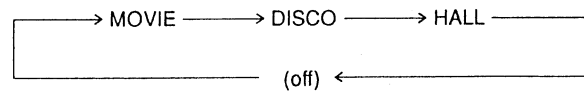
The desired indicator lights.

### ③ DOLBY SURROUND ON/OFF button

Used to switch the DOLBY SURROUND ON/OFF.

### ④ SFC MODE button

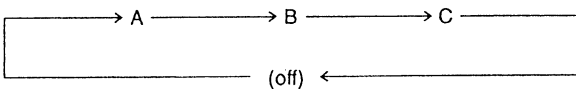
Use to select one of the preset sound fields. Each time the button is pressed, one of the preset sound fields will be selected, in the following order:



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.

### ⑦ Deck operation buttons.

#### [TAPE I]

- ◀, ▶ : Begins playback
- ◀◀, ▶▶ : Fast Forward or rewind
- : Stop

#### [TAPE II]

- ◀, ▶ : Begins playback
- ◀◀, ▶▶ : Fast forward or rewind
- : Stop
- : 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 : Temporarily stops tape travel. Cancels pause mode when pressed again or press the play button (◀ or ▶).

### 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. This is shown in the tuner display section.

### ⑨ VOLUME + (UP)/- (DOWN) buttons

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

### ⑩ DOLBY SURROUND/Wide rear LEVEL +/- buttons

Adjust the volume level of the surround speaker when DOLBY SURROUND or SURROUND & WIDE is on.

- + ... Increases in the volume to 16 dB.
- ... Decreases in the volume to -50 dB.

### ⑪ TUNER STATION - (DOWN), + (UP) buttons

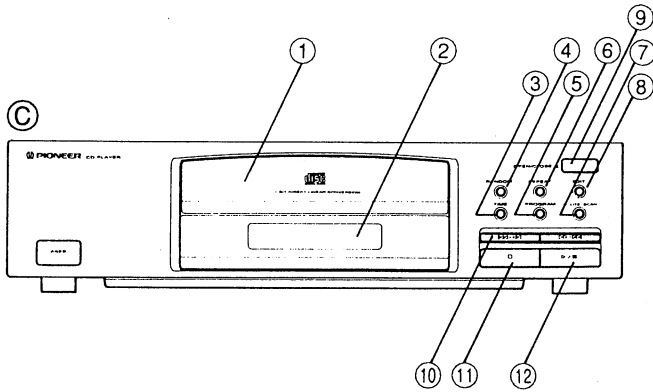
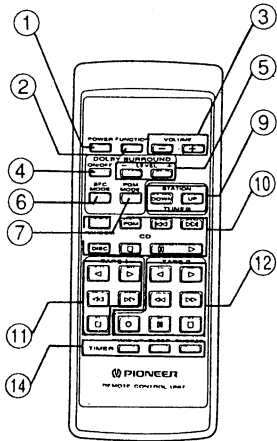
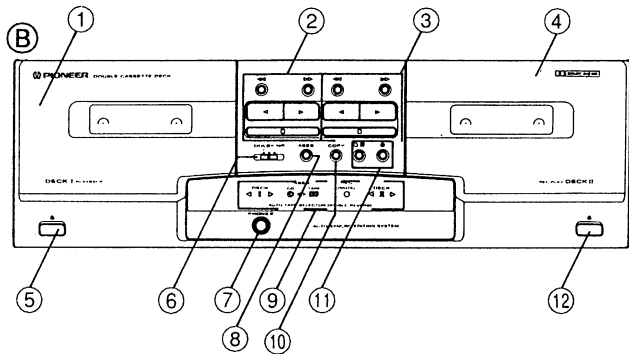
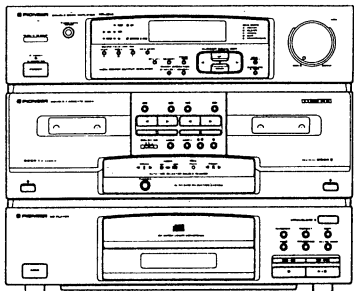
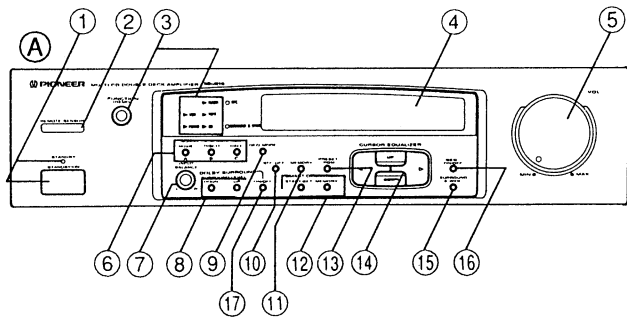
Used for locating stations.

- (DOWN) : Stations change in order in the downward direction.
- + (UP) : Stations change in order in the upward direction.

### ⑫ CD operation buttons

- RANDOM : Does a RANDOM playback.
- PGM : Select programmed CD playback.
- ▶ : 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-J210



## CD cassette deck amplifier: XD-J210

- 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<sub>2</sub>) 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.

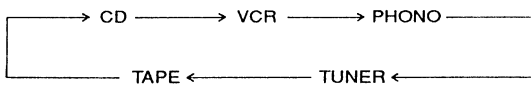
**STANDBY** : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The unit is in STANDBY when only the STANDBY indicator above the POWER switch is lit.

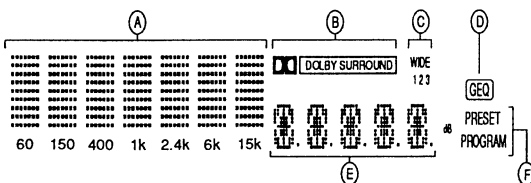
#### ② REMOTE SENSOR window

#### 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.



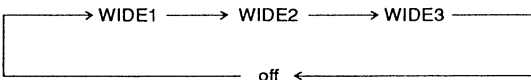
#### ④ Display section



Ⓐ Visual display of spectrum analyzer and graphic equalizer.

Ⓑ Lights when the DOLBY SURROUND ON/OFF button is turned ON.

Ⓒ Lights when the SURROUND & WIDE button is pressed. Each time it is pressed, it indicates switches as follows.



Ⓓ This lights when the GEQ ON/OFF button is ON.

Ⓔ Displays the mode names for SOUND FIELD CONTROL, GEQ MODE and the level of the surround speakers during use of the DOLBY SURROUND mode. Also displays the volume level when the SURROUND & WIDE function is ON.

Ⓕ This indicates the memory (PRESET or PROGRAM) that can be recalled with the PRESET/PGM 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.

#### ⑦ INPUT BALANCE control

This knob is for adjusting the balance of the DOLBY SURROUND input signal. To adjust, first select ON with the DOLBY SURROUND ON/OFF button. Then apply a monaural sound signal and rotate the knob until the SURROUND sound from the surround speakers becomes minimum.

Making adjustments at this time is easier if you disconnect the front speakers.

#### NOTE:

Perform these adjustments to assure correct surround sound reproduction.

#### ⑧ SURROUND/wide rear LEVEL buttons

##### [DOWN/UP]

Adjust the volume level of the surround speaker when DOLBY SURROUND or SURROUND & WIDE is on.

UP : Increase in the volume to 16 dB.

DOWN : Decreases in the volume to -50 dB.

#### 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 CURSOR EQUALIZER buttons

Use to adjust graphic equalizer settings.

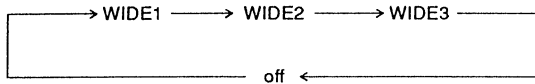
[◀, ▶] : Use these to change the frequency range to be adjusted.

[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.

### ⑰ DOLBY SURROUND ON/OFF buttons

Used to switch the DOLBY SURROUND ON/OFF.

### ⑱ GEQ MODE printed indications

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

## ⑧ : 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.

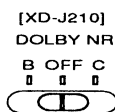
### ③ Deck II operations buttons

Same as Deck I operation buttons ②.

### ④ Deck II cassette door

### ⑤ Deck I EJECT button (▲)

### ⑥ DOLBY\* NR switch



Set this switch to B-type or C-type before recording with the built-in Dolby NR Systems and for playback of tapes which have been recorded using the Dolby NR systems.

- It is recommended that tapes recorded with Dolby B-type NR or Dolby C-type NR be so marked on the label. This will help prevent incorrect setting of the noise reduction switch during playback.

\*

- *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.

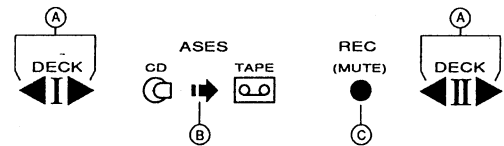
### ⑧ ASES button

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



#### A Direction (◀, ▶):

Indicates direction of tape travel during recording or playback. Flashes slowly in Pause mode. Flashes rapidly during Music Search (MS).

#### B ASES:

Lights when in the ASES mode.

#### C 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)

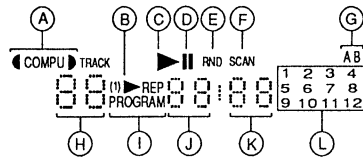
: Used for creating a blank space between songs. Pressing this button once creates an unrecorded 4-second space. Continuing to press the button creates an unrecorded space as long as the time the button is pressed.

### ⑫ Deck II EJECT button (▲)

## ③ : CD player section

### ① Disc tray

### ② Display section



- A : Display when Compu PGM editing is set or used.
- B (1) **REP** : Lights during repeat playback of single track or all tracks.
- C : Lights during playback.
- D : Lights during temporarily interrupted playback.
- E **RND** : Lights during random playback.
- F **SCAN** : Lights during HI-LITE scan playback.
- G **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.
- H **TRACK (figure)** : Displays the current track number (during normal playback and programmed playback) or the track being programmed (during programmed operation).
- I **PROGRAM** : Lights after programming (after program has been memorized).
- J **Minutes (figure)** : Displays the minutes of the elapsed time, total playback time, and remaining time.
- K **Seconds (figure)** : Displays the seconds of the elapsed time, total playback time, and remaining time.
- L **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 (, )

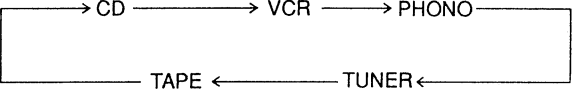
Press to begin playback. When playing back, press to temporarily interrupt playback. When pressed again, the pause mode is canceled and playback resumes.

**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.

**④ DOLBY SURROUND ON/OFF button**

Used to switch the DOLBY SURROUND ON/OFF.

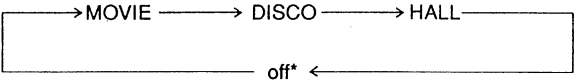
**⑤ DOLBY SURROUND/wide rear LEVEL (+/-) buttons**

Adjust the volume level of the surround speaker when DOLBY SURROUND or SURROUND & WIDE is on.

- +: Increases in the volume to 16 dB.
- : Decreases in the volume to -50 dB.

**⑥ SFC MODE button**

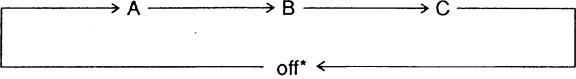
Use to select one of the preset sound fields. Each time the button is pressed, one of the preset sound fields will be selected, in the following order:



\* 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.

**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
- RANDOM : Does a RANDOM playback ,
- PGM : Select programmed CD playback .

**⑪ TAPE I operation buttons**

Same as Deck I operation buttons on the cassette deck amplifier.

**⑫ TAPE II operation buttons**

Same as Deck I operation buttons and Deck II control buttons on the CD cassette deck amplifier (except MUTE, REC PAUSE).

●(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 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. This is shown in the tuner display section. (XD-J210 only)
- SNOOZE: Turns off power if pressed after timer playback begins. Timer playback begins again approx. 5 minutes later.



## 10. SPECIFICATIONS

### Multi CD double deck amplifier: XD-J215M

#### Amplifier Section

##### [XD-J215M]

Music power (DIN) ..... 65W+65W (1kHz T.H.D.1% 8Ω)  
 Continuous Power Output (DIN) .. 38W+38W (1kHz, T.H.D. 1% 8Ω)  
 Surround Output music power (DIN) ..... 10W (1kHz 1%, 16Ω)

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/CrO<sub>2</sub>) 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)

Dolby C-type NR ON (XD-J215M only)

..... More than 19 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-J210

#### Amplifier Section

##### [XD-J210]

Music Power (DIN) ..... 65W+65W (1 kHz T.H.D. 1%, 8Ω)

Continuous Power Output ..... 38W+38W

(1 kHz T.H.D. 1%, 8Ω)

Surround Output Music Power (DIN) ..... 10W (1kHz, 1%, 16Ω)

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/CrO<sub>2</sub>) 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)

Dolby C-type NR ON (XD-J210 only) .. More than 19 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-J210 ..... 9.5kg

- Specifications and design subject to possible modification without notice due to improvement.

\* Measured By Audio Spectrum Analyzer.

