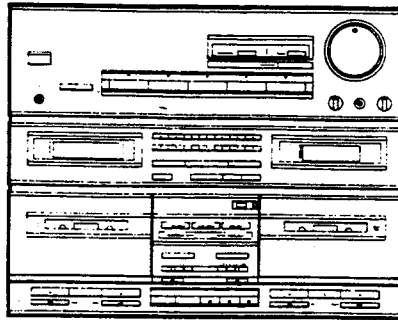


Service Manual

PIONEER
The future of sound and vision.



**ORDER NO.
ARP1688**

STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

DC-Z82

MODEL DC-Z82 HAS SIX VERSIONS:

Type	Power requirement	Export destination
HB	AC220V,240V (switchcable)*	United Kingdom
HE	AC220V,240V (switchcable)*	European continent
HEZ	AC220V,240V (switchcable)*	West Germany
SD	AC110V,120V-127V,220V,240V (switchcable)	Kingdom of Saudi Arabia and general market
YP	AC240V only	Australia
KU	AC120V only	U.S.A.

*Change the jumper wires of assembly boards.

- This manual is applicable to the DC-Z82/HB and HE types.
- For HE type, refer to pages 81-82.
- For the other types, refer to additional service manuals.
- Ce manuel pour le service comprend les explications en français de réglage.
- Este manual de servicio trata del método ajuste escrito en español.

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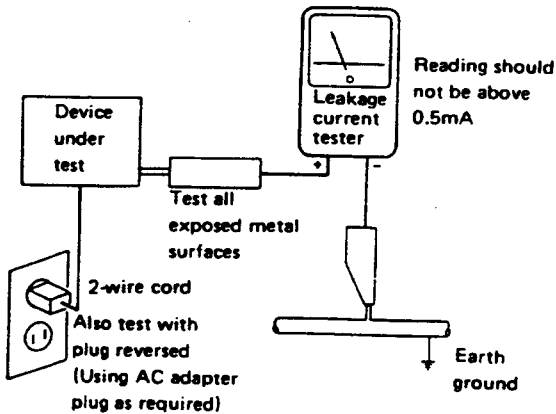
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

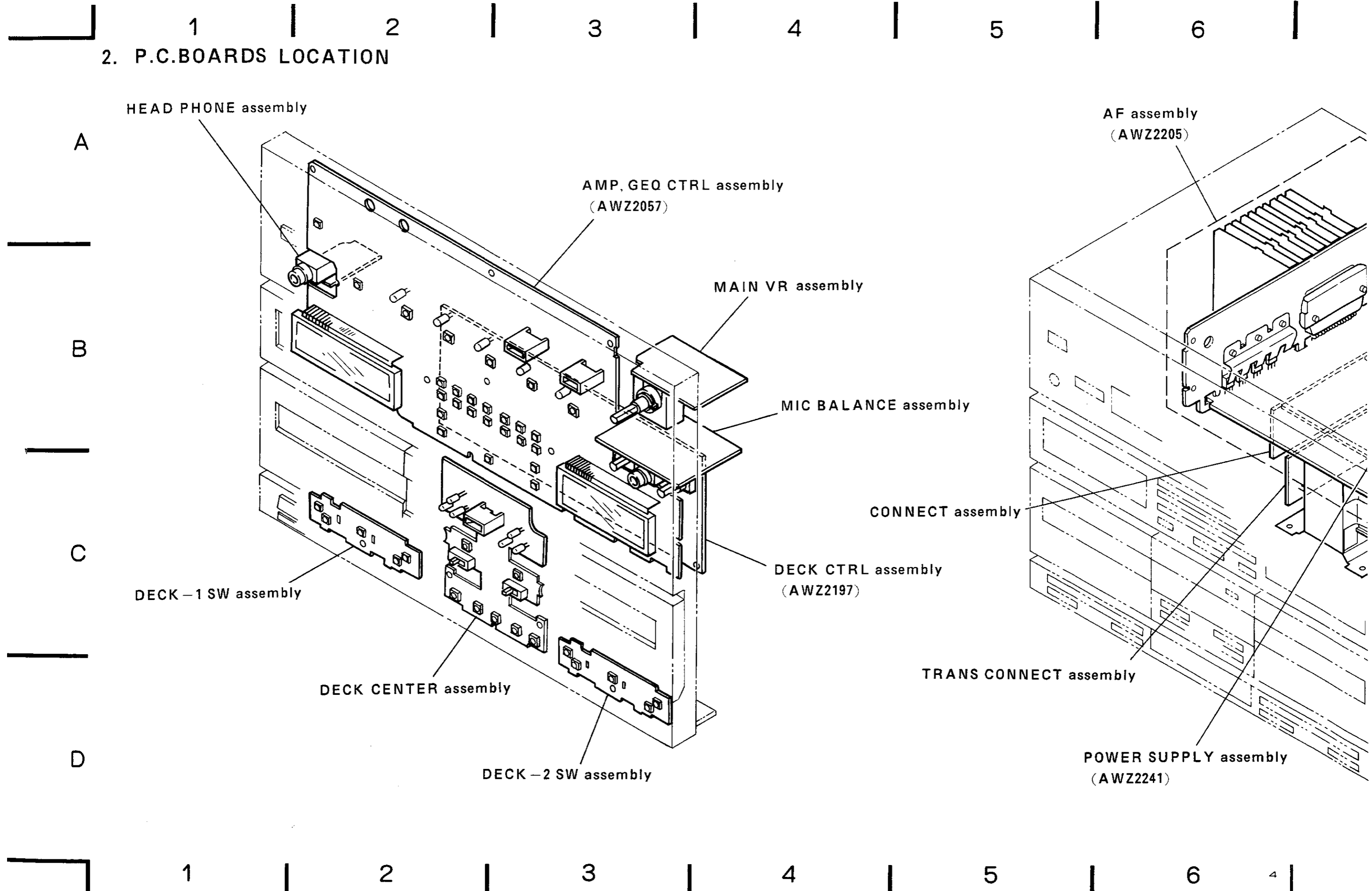
Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. P.C.BOARDS LOCATION



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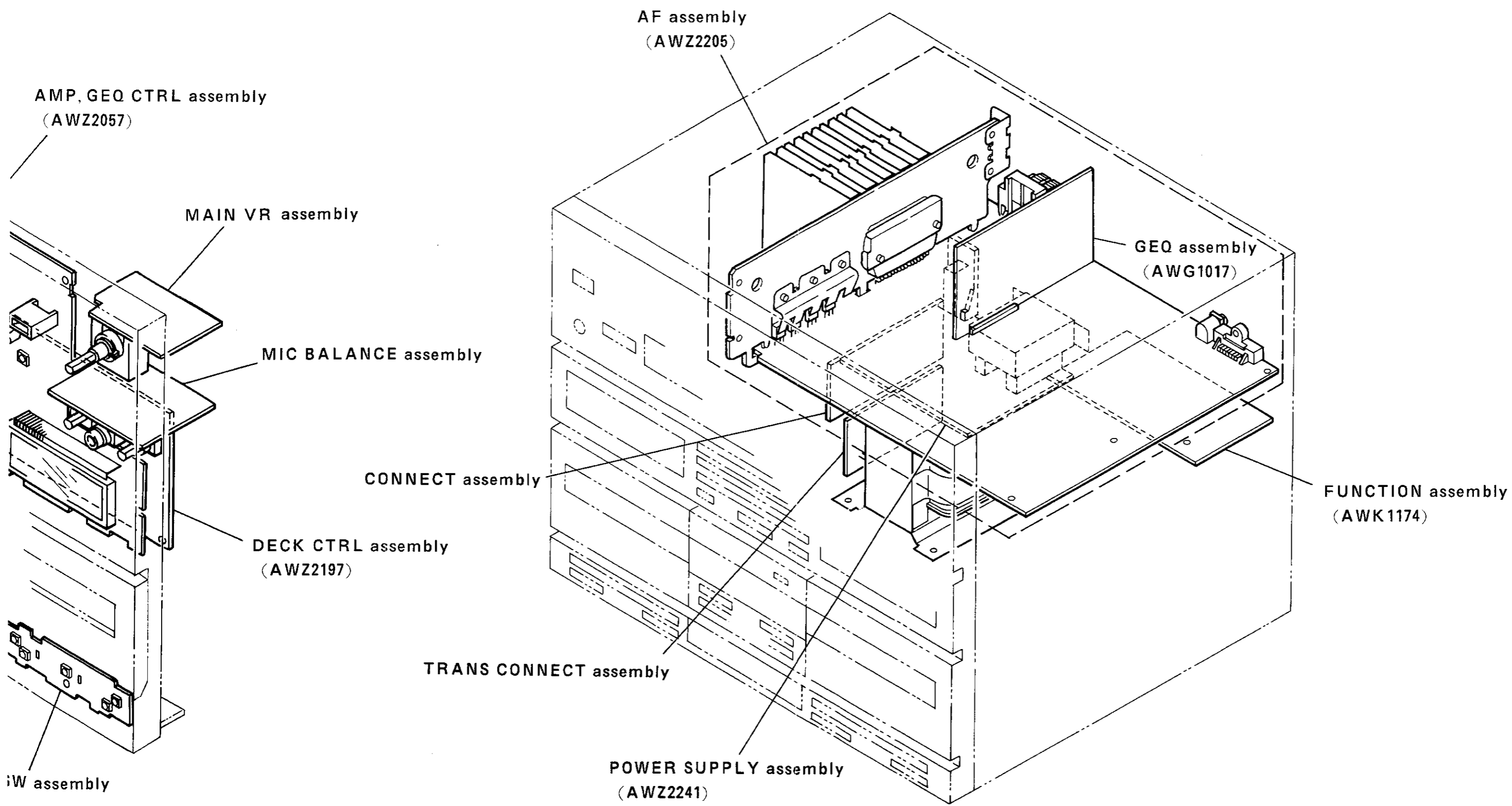
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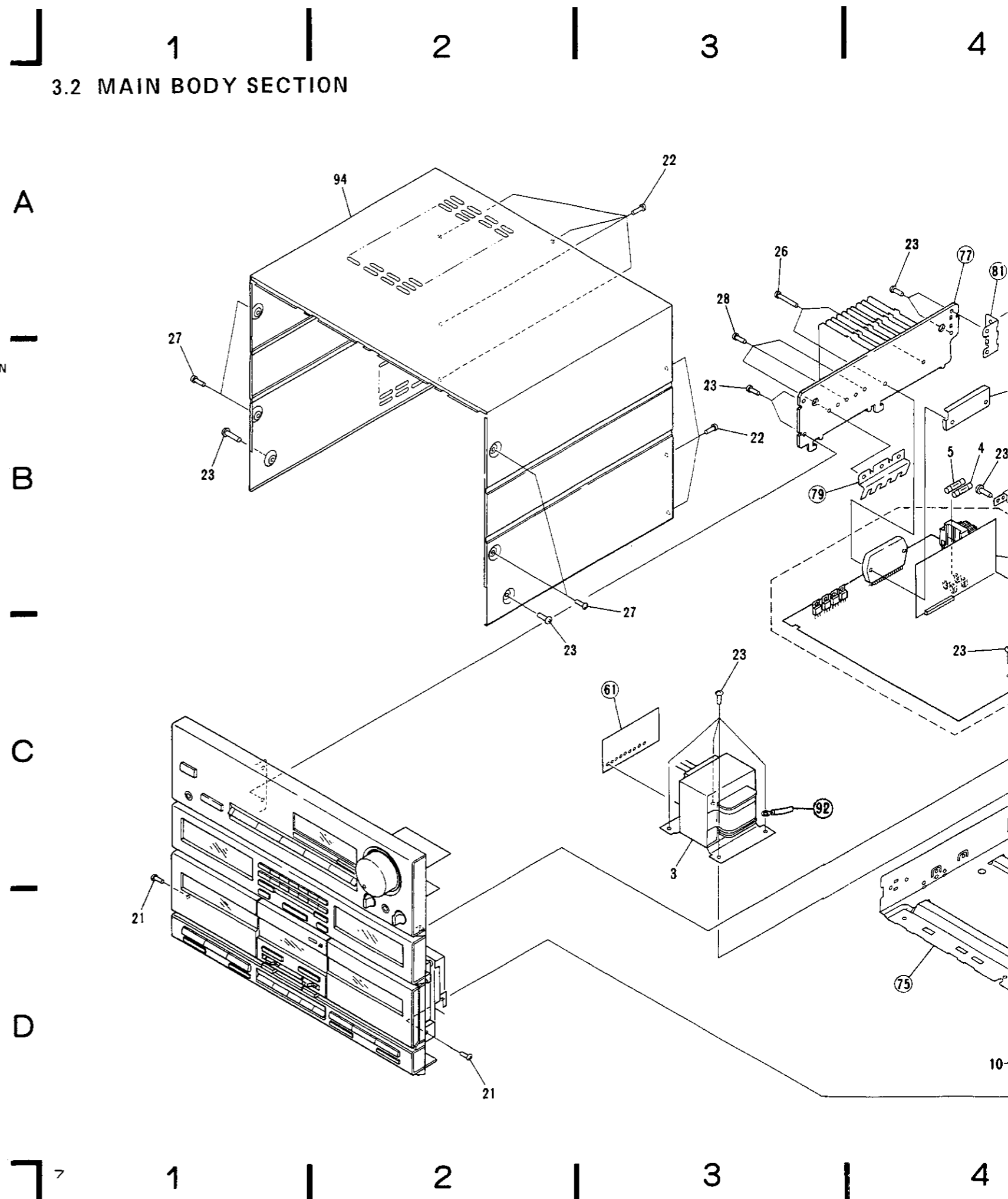
3. EXPLODED VIEWS, PAKING AND PARTS LIST

3.1 PARTS LIST OF MAIN BODY SECTION, FRONT PANEL SECTION AND PACKING

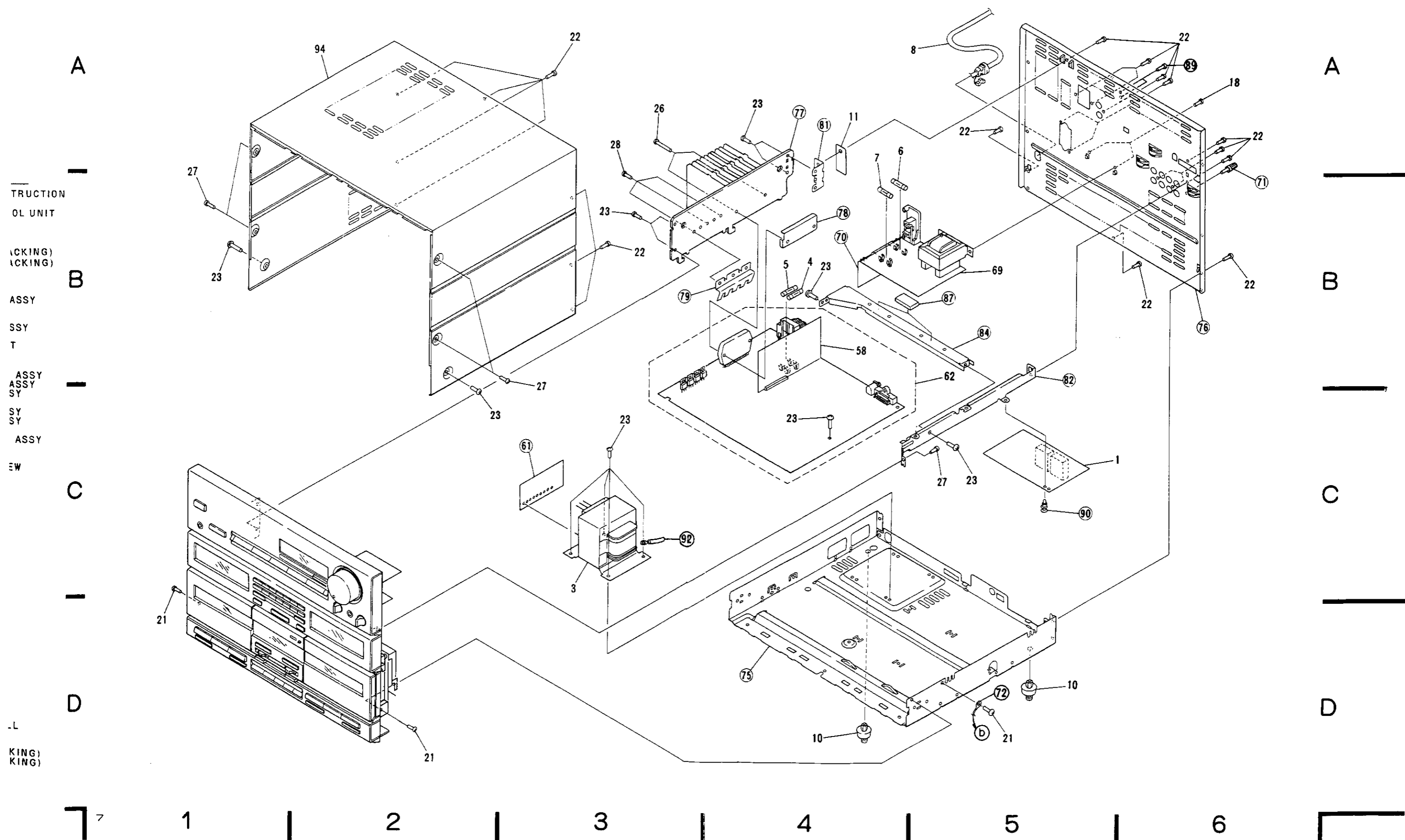
- NOTES:
- Parts without part number cannot be supplied.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	AWK1174	FUNCTION ASSY	51	ARB1155	OPERATING INSTRUCTION (FOR PACKING)	
	2			52	AXD1087	REMOTE CONTROL UNIT (FOR PACKING)	
Δ	3	ATS1181	POWER TRANSFORMER FU2004 (T1. 25A)	53	ARM1003	CAUTION CARD (FOR PACKING)	
Δ	4	AEK-509	FU2005 (T1. 25A)	54	AHA1234	PAD(L) (FOR PACKING)	
Δ	5	AEK-509		55	AHA1235	PAD(R) (FOR PACKING)	
Δ	6	AEK-510	FU2003 (T1. 6A)	56	AHD1583	PAKING CASE	
Δ	7	AEK-511	FU2001 (T2A)	57		MIC BALANCE ASSY	
	8	ADG-063	AC POWER CORD	58	AWG1017	GEQ ASSY	
	9	AAW1007	COUNTER	59		MAIN VR ASSY	
	10	AEC-847	LEG ASS'Y	60		HEAD PHONE ASSY	
	11	ABF1013	WASHER (PAPER)	61		TRANS CONNECT ASSY	
	12	ABH1050	SPRING1 (L)	62	AWZ2205	AF ASSY	
	13	ABH1051	SPRING2 (R)	63	AWZ2057	AMP. GEQ CTRL ASSY	
	14	AEB1085	COUNTER BELT	64		DECK CENTER ASSY	
	15	AMR1656	EJECT LEVER-1 (L)	65	AWZ2197	DECK CTRL ASSY	
	16	AMR1657	EJECT LEVER-2 (R)	66		DECK-1 SW ASSY	
	17	AXA1005	DAMPER ASSEMBLY	67		DECK-2 SW ASSY	
	18	ABA1084	SCREW	68			
	19	ABA1085	SCREW	69	AWZ2241	POWER SUPPLY ASSY	
	20	BBZ26P080FMC	SCREW	70		CONNECT ASSY	
	21	BBZ30P060FMC	SCREW	71		TERMINAL SCREW	
	22	BBZ30P080FCU	SCREW	72		EARTH LEAD	
	23	BBZ30P080FZK	SCREW	73		MECHA UNIT 1	
	24	BPZ26P080FMC	SCREW	74		MECHA UNIT 2	
	25	NK90FUC	NUT	75		CHASSIS	
	26	VBZ30P160FMC	SCREW	76		REAR PANEL	
	27	VPZ30P080FZK	SCREW	77		HEAT SINK	
	28	VTZ30P100FZK	SCREW	78		PLATE	
	29	AMB1438	FRONT PANEL ASSEMBLY	79		PLATE	
	30	AAK1629	INDICATOR LENS	80		PLATE A	
	31	AAK1631	DECORATIVE PLATE(DECK)	81		PLATE B	
	32	AAK1636	DECORATIVE PLATE(D)	82		PLATE	
	33	AAK1637	DECORATIVE PLATE(U)	83		PLATE	
	34	AAK1638	DECORATIVE PLATE(GEQ L)	84		PLATE	
	35	AAK1639	DECORATIVE PLATE(GEQ R)	85		SHIELD PLATE	
	36	AAK1662	DECORATIVE PLATE(DOOR L)	86		KEEP PLATE	
	37	AAK1664	DECORATIVE PLATE(DOOR R)	87		CUSHION	
	38	AA1116	CASSETTE DOOR (R)	88			
	39	AA1117	CASSETTE DOOR (L)	89		PCB SPACER	
	40	A4B1089	KNOB(VOLUME)	90		NYLON REVET	
	41	AAB1090	KNOB	91		SPACER	
	42	AAD1520	BUTTON(POWER)	92		BINDER	
	43	AAD1522	BUTTON(DIRECT)	93			
	44	AAD1523	BUTTON(FUNCTION)	94	ANE1181	BONNET	
	45	AAD1525	BUTTON(PLAY)	95		"AAA" DRY CELL (FOR PACKING)	
	46	AAD1526	BUTTON(ASES)	96		SHEET(FOR PACKING)	
	47	AAD1528	BUTTON(EJECT)	97		SHEET(FOR PACKING)	
	48	AAD1529	BUTTON(REC)	98			
	49	AAD1540	BUTTON(GEQ)				
	50	AAE1103	SLIDE KNOB				

3.2 MAIN BODY SECTION



3.2 MAIN BODY SECTION



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3.3 FRONT PANEL SECTION

3.4 F

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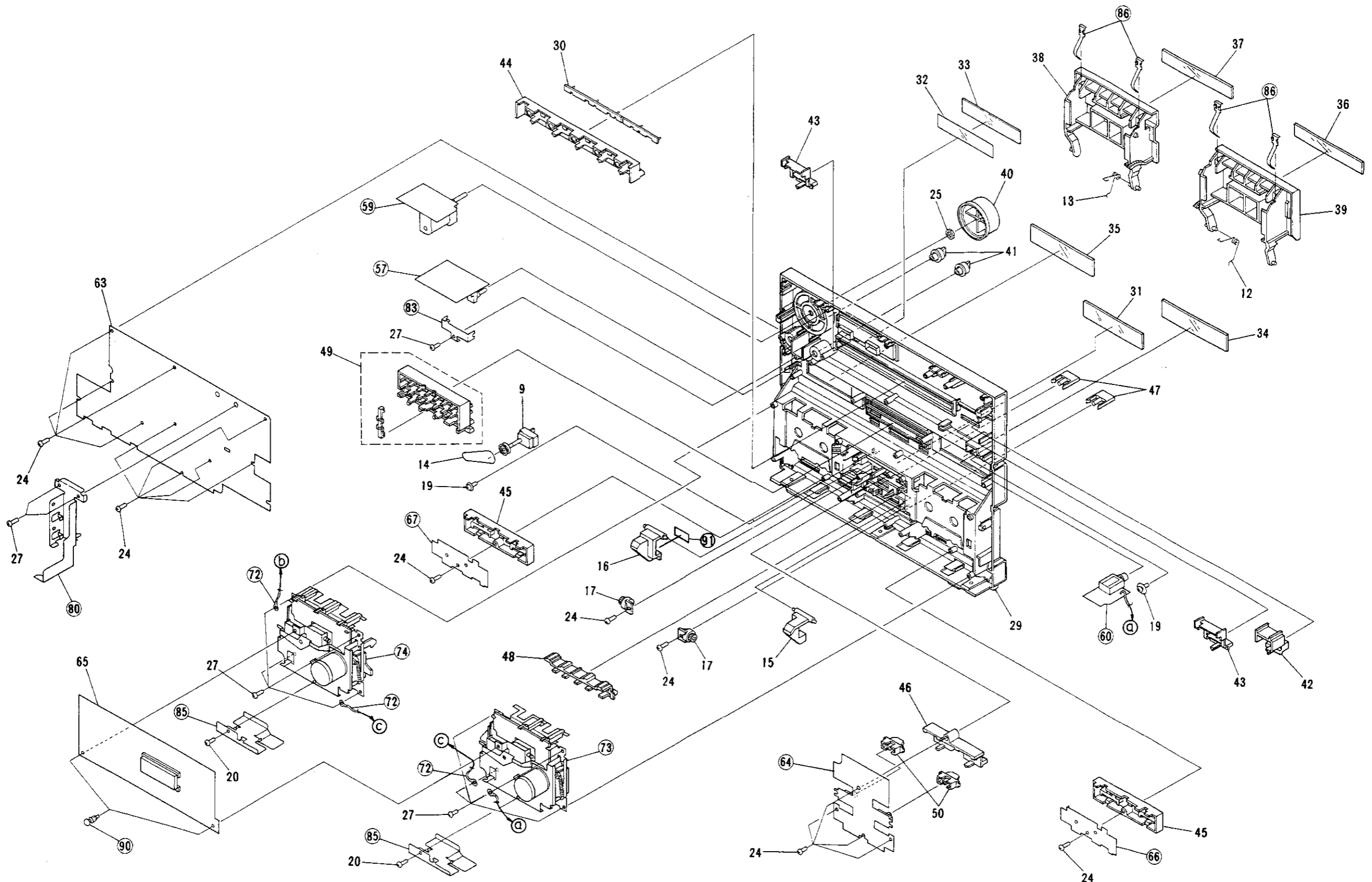
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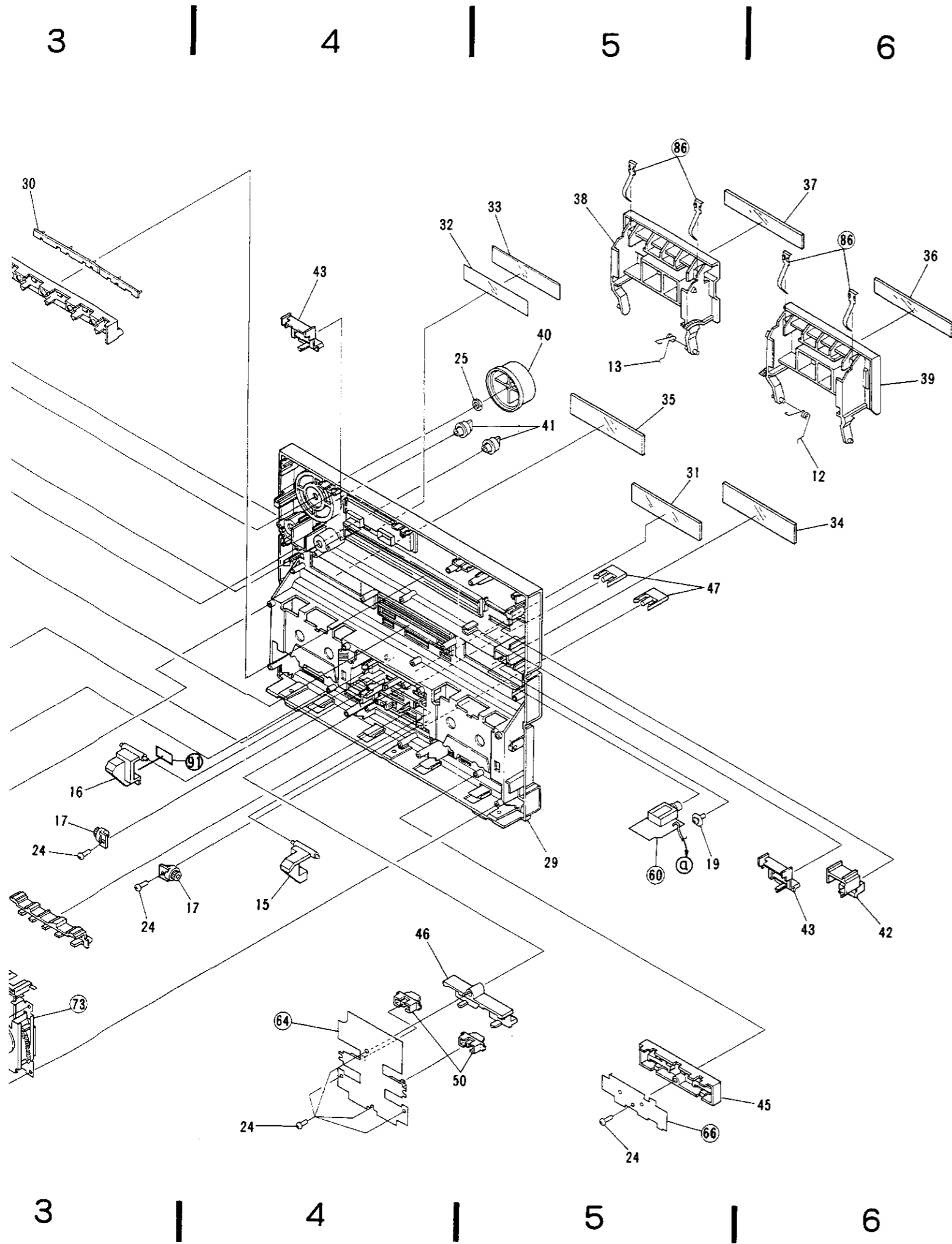
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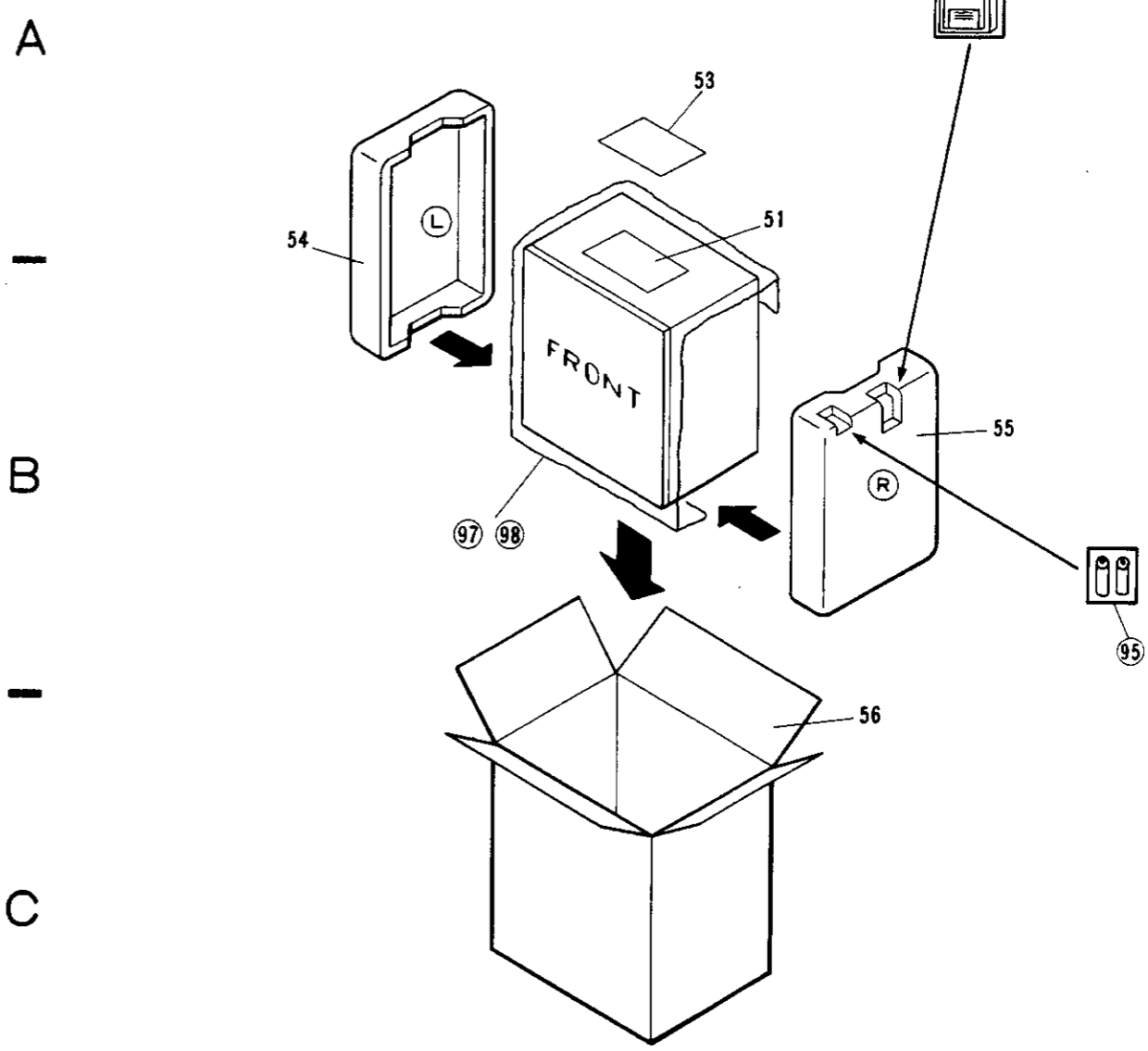
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3.4 PACKING

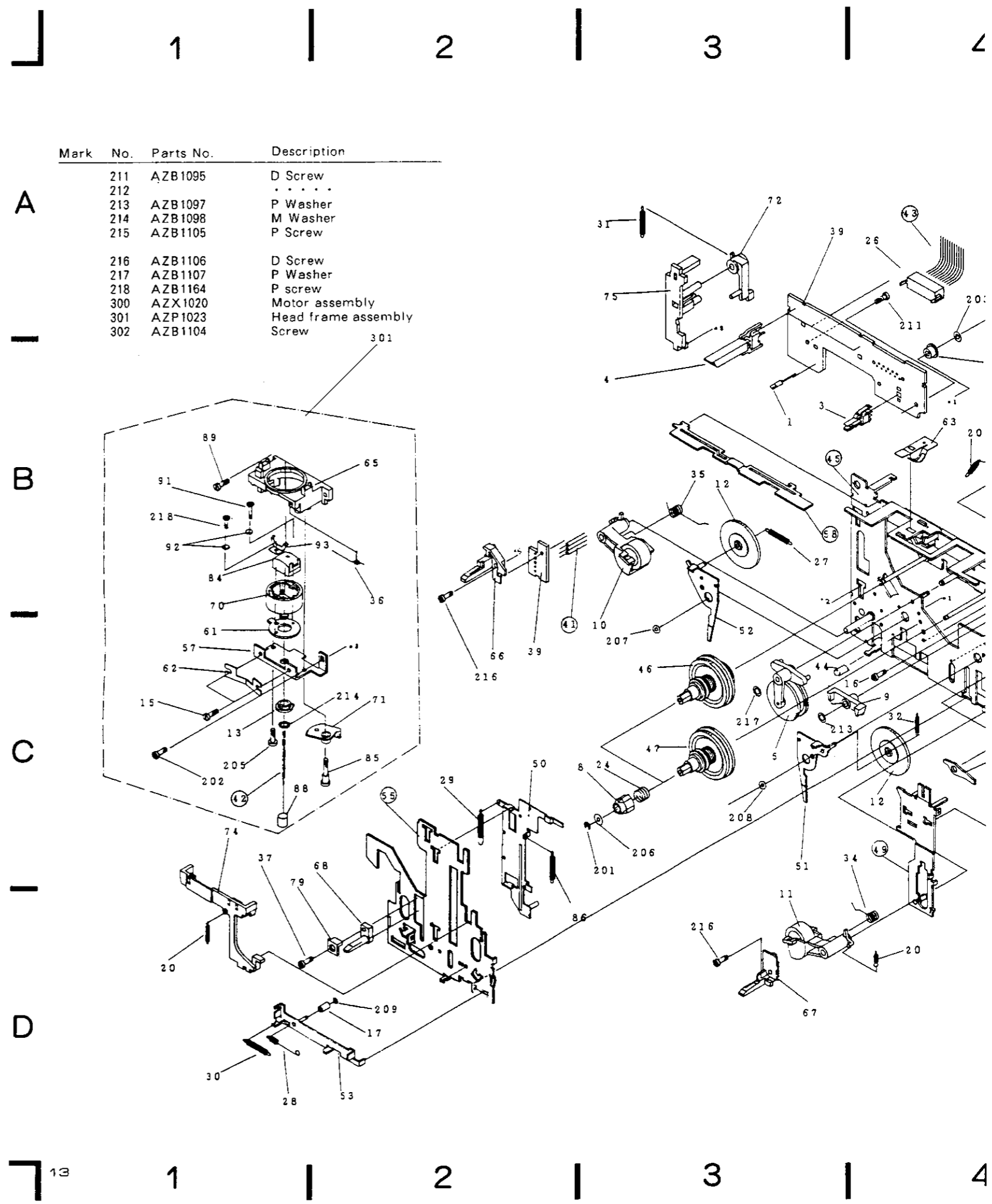


Parts list of Remote control Unit (AXD1087)

Mark	No.	Parts No.	Description
		AZN1846	Battery cover

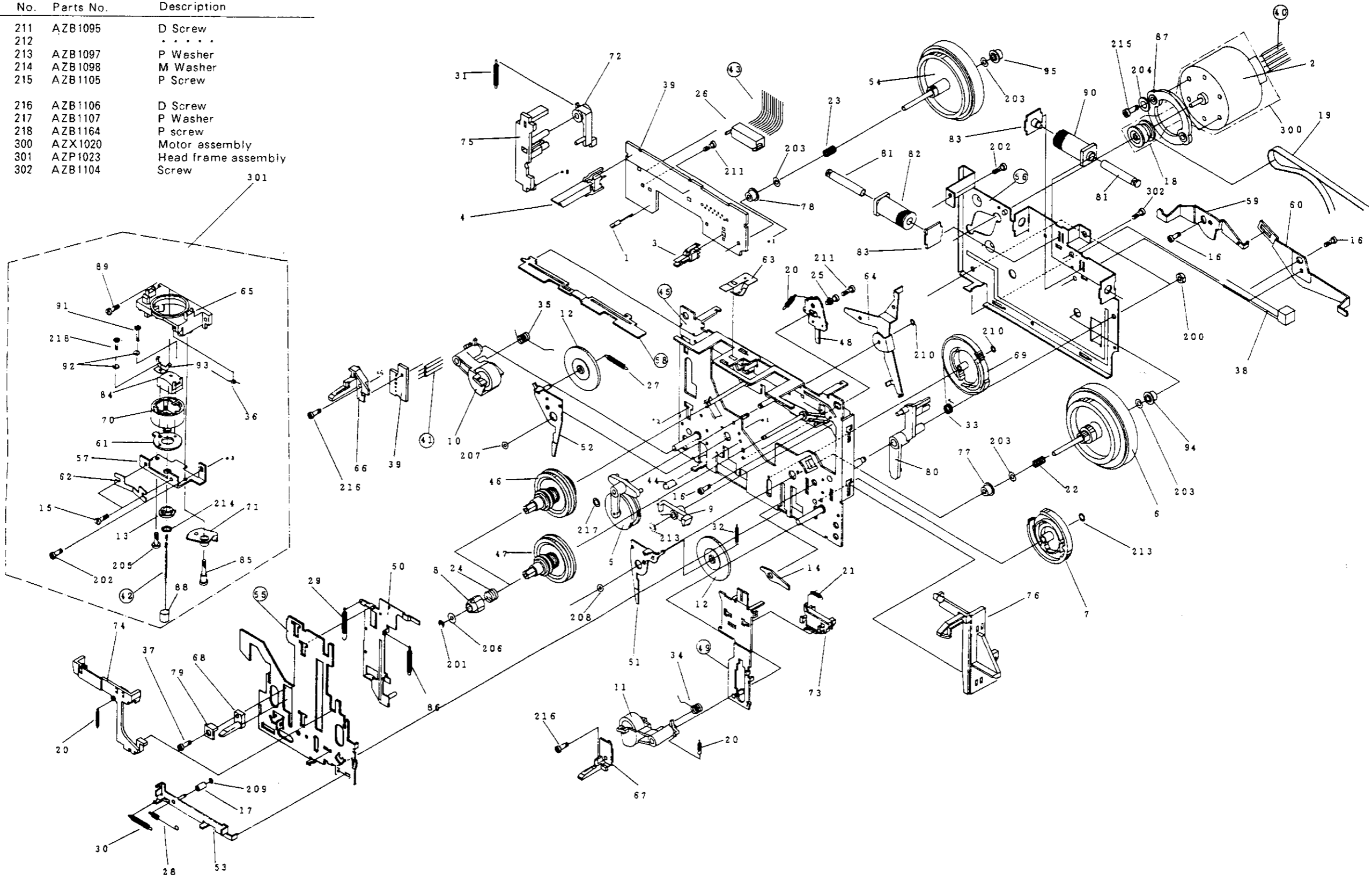
3.5 MECHA UNIT 1

Mark	No.	Parts No.	Description	Mark	No.	Parts No.	Description
	1	AZE1018	Hall IC		53	AZN1326	Head lever
	2	AZX1019	Motor		54	AZN1327	calking assembly
	3	AZS1054	Leaf SW(MODE)		55		FW assembly
	4	AZS1034	Leaf SW (HALF, CrO2)		56		Head P.C.Board
	5	AZN1286	Drive arm assembly		57	AZN1328	Plate(F.YWHEEL)
	6	AZN1287	FW assembly A		58		Azimuth plate
	7	AZN1288	Cam gear		59	AZN1356	SW arm
	8	AZN1289	Reel		60	AZN1357	Eject arm L
	9	AZN1290	FR arm		61	AZN1330	Eject arm R
	10	AZN1797	P arm L assembly		62	AZN1331	Head arm
	11	AZN1798	P arm R assembly		63	AZN1332	P Azimuth spring
	12	AZN1293	Gear		64	AZN1333	Cassette stopper
	13	AZN1294	H Gear		65	AZN1334	Play trigger
	14	AZN1793	CUE arm		66	AZN1335	calking assembly
	15	AZB1079	Screw		67	AZN1335	Head frame
	16	AZB1080	Screw		68	AZN1336	Cassette guide L
	17	AZN1296	Collar C		69	AZN1337	Cassette guide R
	18	AZN1297	Motor pully		70	AZN1338	Cassette guide
	19	AZN1298	Belt		71	AZN1339	Cam gear
	20	AZN1299	Spring		72	AZN1469	Head holder
	21	AZN1300	FR lever spring		73	AZN1340	Head gear
	22	AZN1301	FWF spring		74	AZN1341	Eject arm
	23	AZN1302	FWR spring		75	AZN1342	Select lever
	24	AZN1303	Spring		76	AZN1343	Brake
	25	AZB1088	Collar		77	AZN1344	Eject lever L
	26	AZN1467	Cable holder		78	AZN1345	Ratch lever R
	27	AZN1306	Spring		79	AZN1346	Metal
	28	AZN1307	Spring		80	AZN1347	Metal
	29	AZN1308	Spring		81	AZN1348	Cushion
	30	AZN1309	Spring		82	AZN1349	Trigger arm
	31	AZN1310	Spring		83	AZN1350	Plunger
	32	AZN1311	Spring		84	AZN1351	Bobbin
	33	AZN1312	Spring		85	AZS1035	Solenoid plate
	34	AZN1313	Spring		86	AZN1352	calking assembly
	35	AZN1314	Spring		87	AZP1022	P Head
	36	AZN1315	Spring		88	AZB1099	Screw
	37	AZB1081	Screw		89	AZN1352	Spring
	38	AZN1316	Nylon band		90	AZN1304	Spacer
	39	AZN1835	P.C.Board		91	AZN1470	Tube
	40		Jumper wire		92	AZB1100	Screw
	41		Head lead		93	AZS1036	Bobbin
	42		Lead wire		94	AZB1101	Screw
	43		Lead wire		95	AZB1102	Spring washer
	44	AZN1468	Tube		200	AZN1471	Head spring
	45		Mecha P.C.Board calking assembly		201	AZN1833	Capstan holder
	46	AZN1319	R Reel assembly		202	AZN1834	Capstan holder
	47	AZN1320	F Reel assembly		203	AZB1084	Nut
	48	AZN1321	Reverse arm calking assembly		204	AZB1085	E ring
	49		FR lever calking assembly		205	AZB1086	D Screw
	50	AZN1795	PLAY lever calking assembly		206	AZB1121	P Washer
	51	AZN1324	Gear arm R calking assembly		207	AZB1087	N Washer
	52	AZN1325	Gear arm L calking assembly		208	AZB1089	U Screw
					209	AZB1090	P Washer
					210	AZB1091	Oil cut
					211	AZB1092	Oil cut
					212	AZB1093	P Washer
					213	AZB1094	P Washer



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Mark	No.	Parts No.	Description
	211	AZB1095	D Screw
	212	
	213	AZB1097	P Washer
	214	AZB1098	M Washer
	215	AZB1105	P Screw
	216	AZB1106	D Screw
	217	AZB1107	P Washer
	218	AZB1164	P screw
	300	AZX1020	Motor assembly
	301	AZP1023	Head frame assembly
	302	AZB1104	Screw



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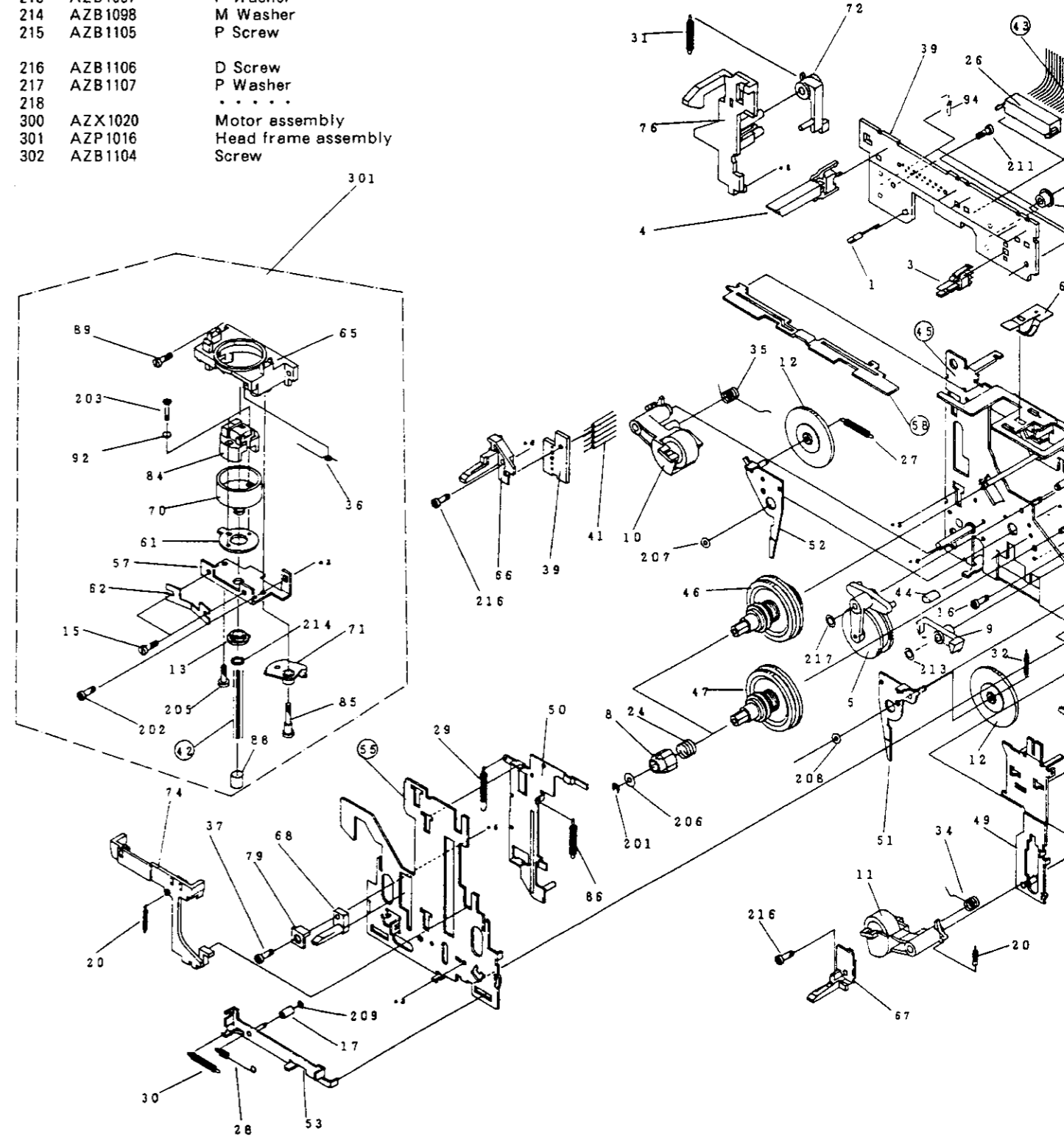
3.6 MECHA UNIT 2

Mark	No.	Parts No.	Description
	1	AZE1018	Half IC
	2	AZX1019	Motor
	3	AZS1054	Leaf SW(MODE)
	4	AZS1034	Leaf SW (ARF, HALF, METAL . CrO2, ARR)
	5	AZN1286	Drive arm assembly
	6	AZN1287	FW assembly A
	7	AZN1288	Cam gear
	8	AZN1289	Reel
	9	AZN1290	FR arm
	10	AZN1797	P arm L assembly
	11	AZN1798	P arm R assembly
	12	AZN1293	Gear
	13	AZN1294	H Gear
	14	AZN1793	CUE arm
	15	AZB1079	Screw
	16	AZB1080	Screw
	17	AZB1296	Collar C
	18	AZN1297	Motor pully
	19	AZN1298	Belt
	20	AZN1299	Spring
	21	AZN1300	FR lever spring
	22	AZN1301	FWF spring
	23	AZN1302	FWR spring
	24	AZN1303	Spring
	25	AZB1088	Collar
	26	AZN1305	Cable holder
	27	AZN1306	Spring
	28	AZN1307	Spring
	29	AZN1308	Spring
	30	AZN1309	Spring
	31	AZN1310	Spring
	32	AZN1311	Spring
	33	AZN1312	Spring
	34	AZN1313	Spring
	35	AZN1314	Spring
	36	AZN1315	Spring
	37	AZB1081	Screw
	38	AZN1316	Nylon band
	39	AZN1836	P.C.Board
	40		Jumper wire
	41		Head lead
	42		Lead wire
	43		Lead wire
	44	AZN1468	Tube
	45		Mecha P.C.Board calking assembly
	46	AZN1319	R Reel assembly
	47	AZN1320	F Reel assembly
	48	AZN1321	Reverse arm calking assembly
	49		FR lever calking assembly
	50	AZN1795	PLAY lever calking assembly
	51	AZN1324	Gear arm R calking assembly
	52	AZN1325	Gear arm L calking assembly

Mark	No.	Parts No.	Description
	53	AZN1326	Head lever calking assembly
	54	AZN1327	FW assembly
	55		Head P.C.Board
	56		Plate(FLYWHEEL)
	57	AZN1328	Azimuth plate
	58		SW arm
	59		.....
	60		.....
	61	AZN1330	Head arm
	62	AZN1331	Azimuth spring
	63	AZN1332	Cassette stopper
	64	AZN1333	Play trigger calking assembly
	65	AZN1334	Head frame
	66	AZN1335	Cassette guide L
	67	AZN1336	Cassette guide R
	68	AZN1337	Cassette guide
	69	AZN1338	Cam gear
	70	AZN1469	Head holder
	71	AZN1340	Head gear
	72	AZN1341	Eject arm
	73	AZN1342	Select lever
	74	AZN1343	Brake
	75		.....
	76	AZN1353	Ratch lever R
	77	AZN1346	Metal
	78	AZN1347	Metal
	79	AZN1348	Cushion
	80	AZN1349	Trigger arm
	81	AZN1350	Plunger
	82	AZS1035	Bobbin
	83	AZN1351	Solenoid plate calking assembly
	84	AZP1014	R/P/E Head
	85	AZB1099	Screw
	86	AZN1352	Spring
	87	AZN1304	Spacer
	88	AZN1470	Tube
	89	AZB1100	Screw
	90	AZS1036	Bobbin
	91	AZB1101	Screw
	92	AZB1102	Spring washer
	93		.....
	94	AZN1833	Capstan holder
	95	AZN1834	Capstan holder
	200	AZB1084	Nut
	201	AZB1085	E ring
	202	AZB1086	D Screw
	203	AZB1121	P Washer
	204	AZB1087	N Washer
	205	AZB1089	U Screw
	206	AZB1090	P Washer
	207	AZB1091	Oil cut
	208	AZB1092	Oil cut
	209	AZB1093	P Washer
	210	AZB1094	P Washer

Mark	No.	Parts No.	Description
	211	AZB1095	D Screw
	212		.....
	213	AZB1097	P Washer
	214	AZB1098	M Washer
	215	AZB1105	P Screw
	216	AZB1106	D Screw
	217	AZB1107	P Washer
	218		.....
	300	AZX1020	Motor assembly
	301	AZP1016	Head frame assembly
	302	AZB1104	Screw

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Description	Mark	No.	Perts No.	Description
Lever		211	AZB1095	D Screw
Eng assembly		212	
Assembly		213	AZB1097	P Washer
P.C.Board		214	AZB1098	M Washer
(FLYWHEEL)		215	AZB1105	P Screw
Push plate		216	AZB1106	D Screw
Arm		217	AZB1107	P Washer
.....		218		.....
Arm		300	AZX1020	Motor assembly
Push spring		301	AZP1016	Head frame assembly
Stopper		302	AZB1104	Screw
Trigger				
Eng assembly				
Frame				

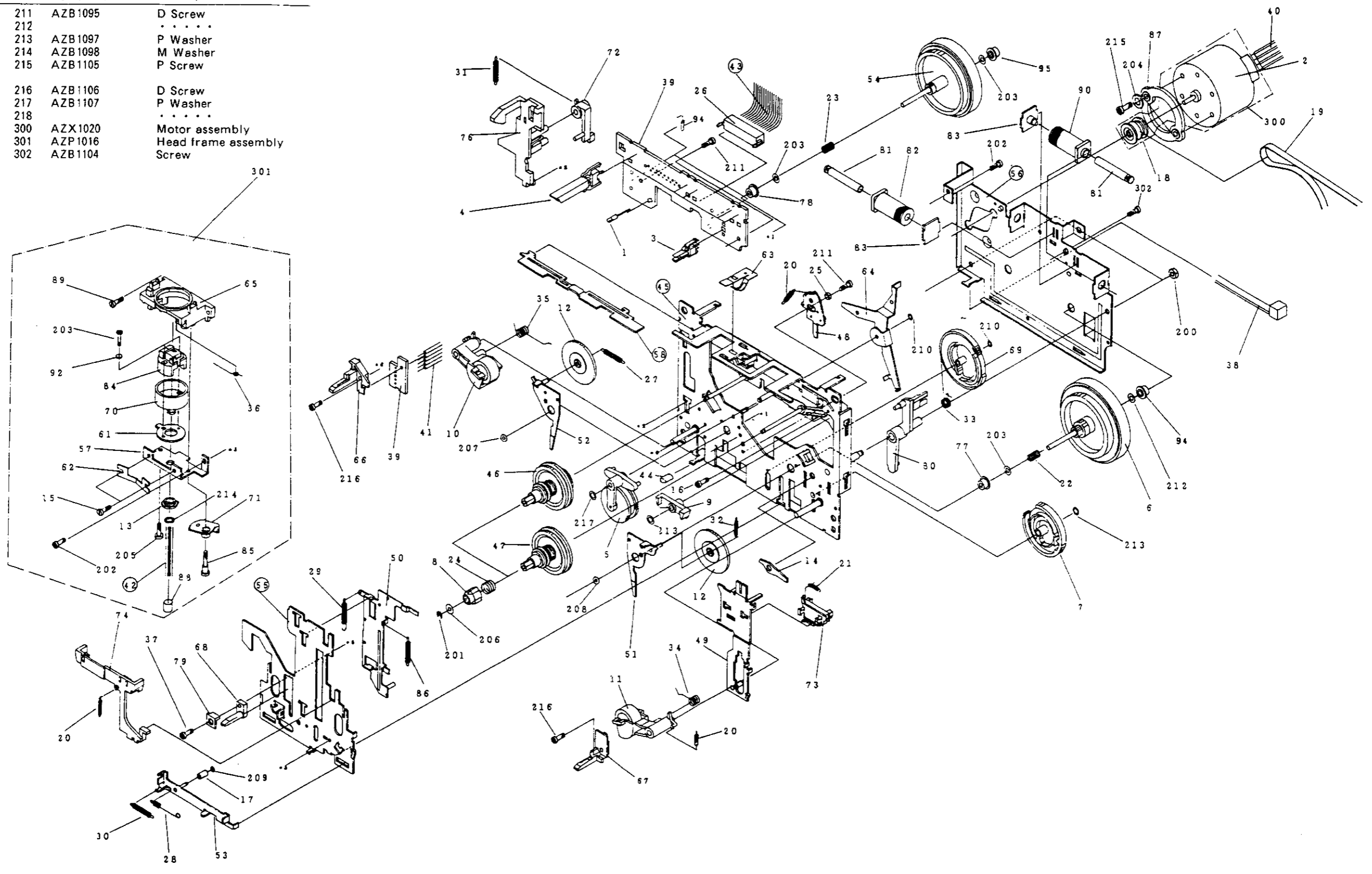
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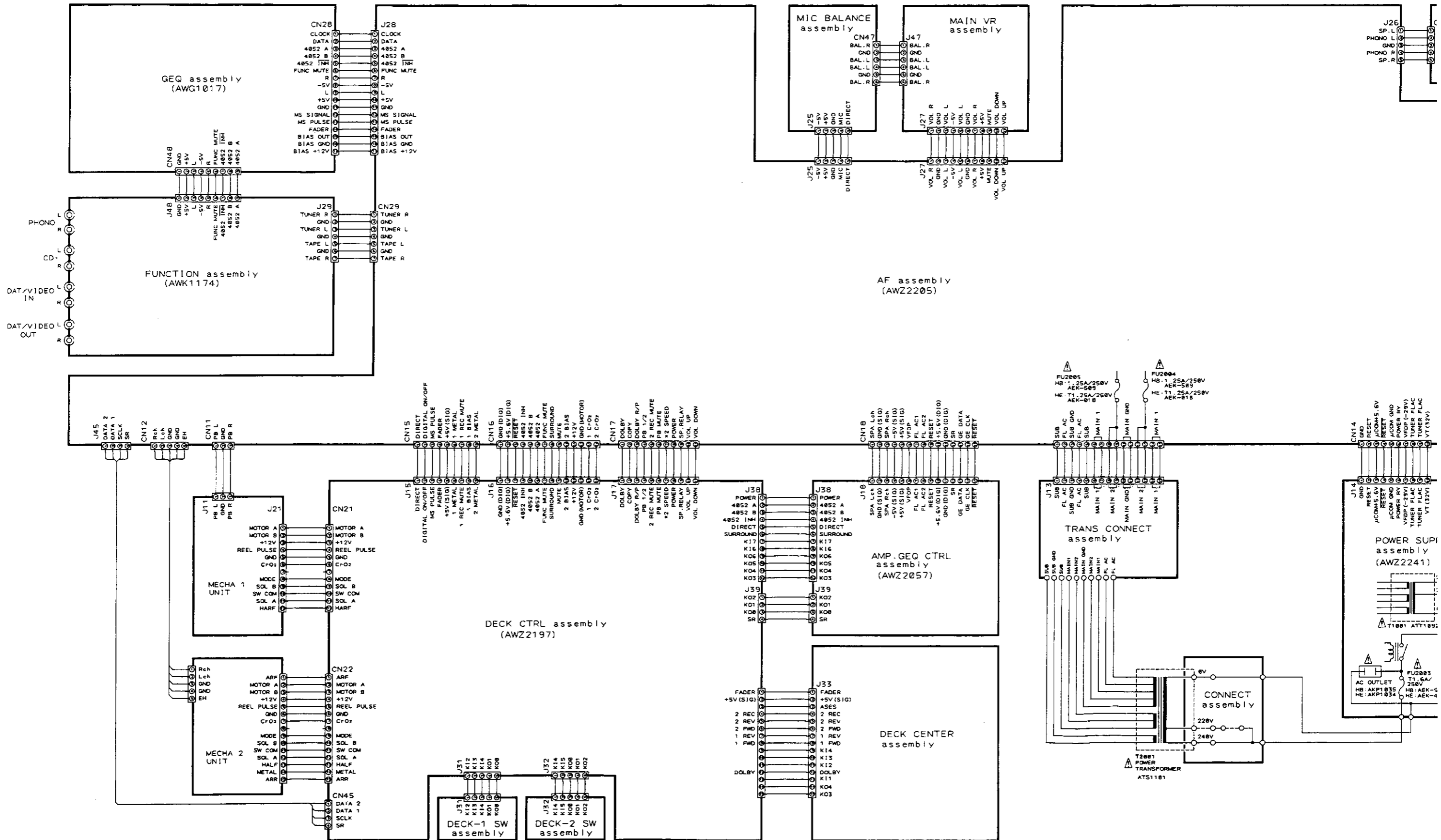
4. SCHEMATIC DIAGRAM AND P.C.BOARD CONNECTION DIAGRAM 4.1 OVER ALL SCHEMATIC DIAGRAM

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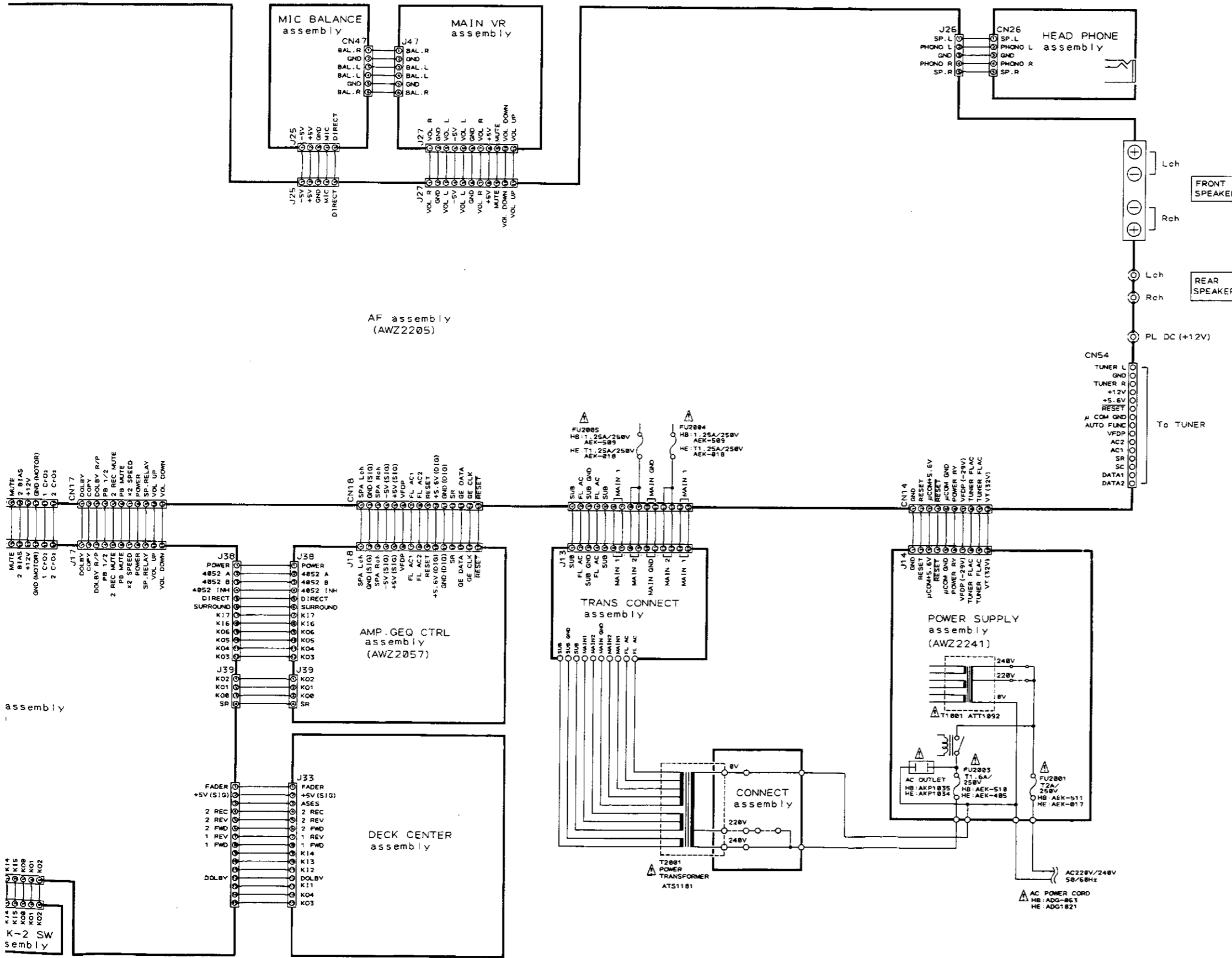
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WIRE CONNECTION DIAGRAM



1. RESISTORS:
Indicated in Ω , $\frac{1}{2}W$, $\frac{1}{4}W$, $\pm 5\%$ tolerance unless otherwise noted k: k Ω , M: M Ω , (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$ (M): $\pm 20\%$ tolerance
 2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p: pF
Indication without voltage is 50V except electrolytic capacitor.
 3. VOLTAGE, CURRENT:
 - : Signal voltage at (40 W + 40 W 8 Ω) output (1kHz)
 - : DC voltage (V) at no input signal
 - Value in () is DC voltage at rated power.
 - : mA: DC current at no input signal
 4. OTHERS:
 - : Signal route.
 - : Adjusting point.
 - The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - * marked capacitors and resistors have parts numbers.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

- SWITCHES:
- AMP, GEQ CTRL assembly (AWZ2057)
S701, S703, S705, S707, S709,
S711, S715, S717, S771-S785,
S789-S791, S793 Tact switch
 - DECK-1 SW assembly
S811-S815 Tact switch
 - DECK-2 SW assembly
S821-S825 Tact switch
 - DECK CENTER assembly
S848 DOLBY OFF-ON
S849 REVERSE MODE
 - S841-S847 Tact switch
- The underline indicates the switch position

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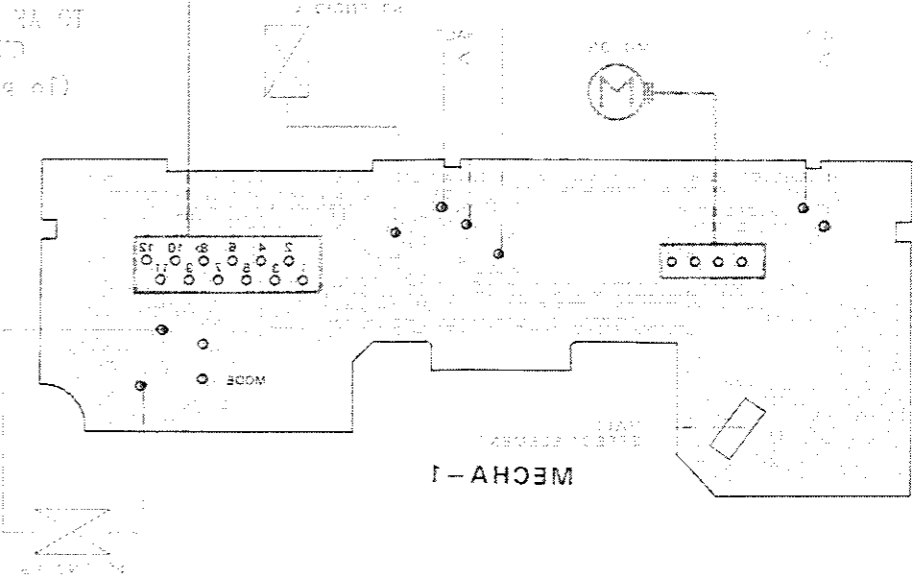
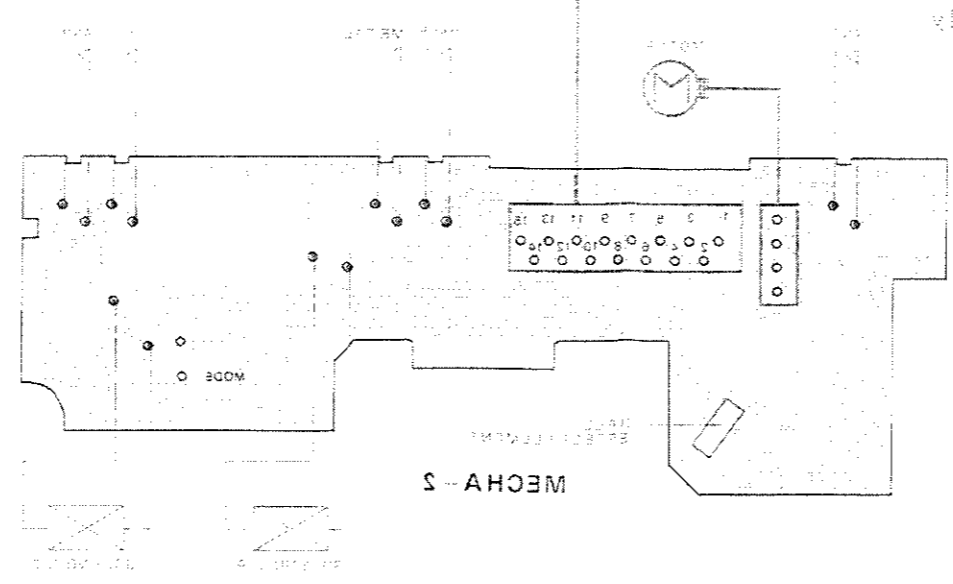
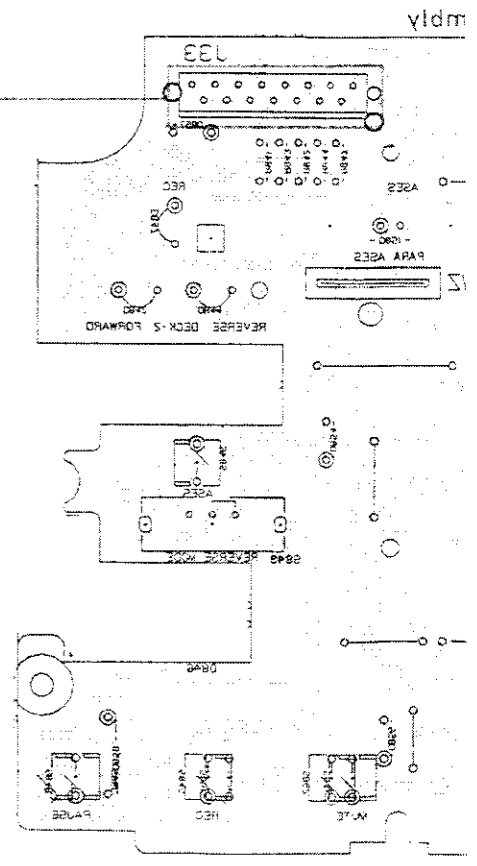
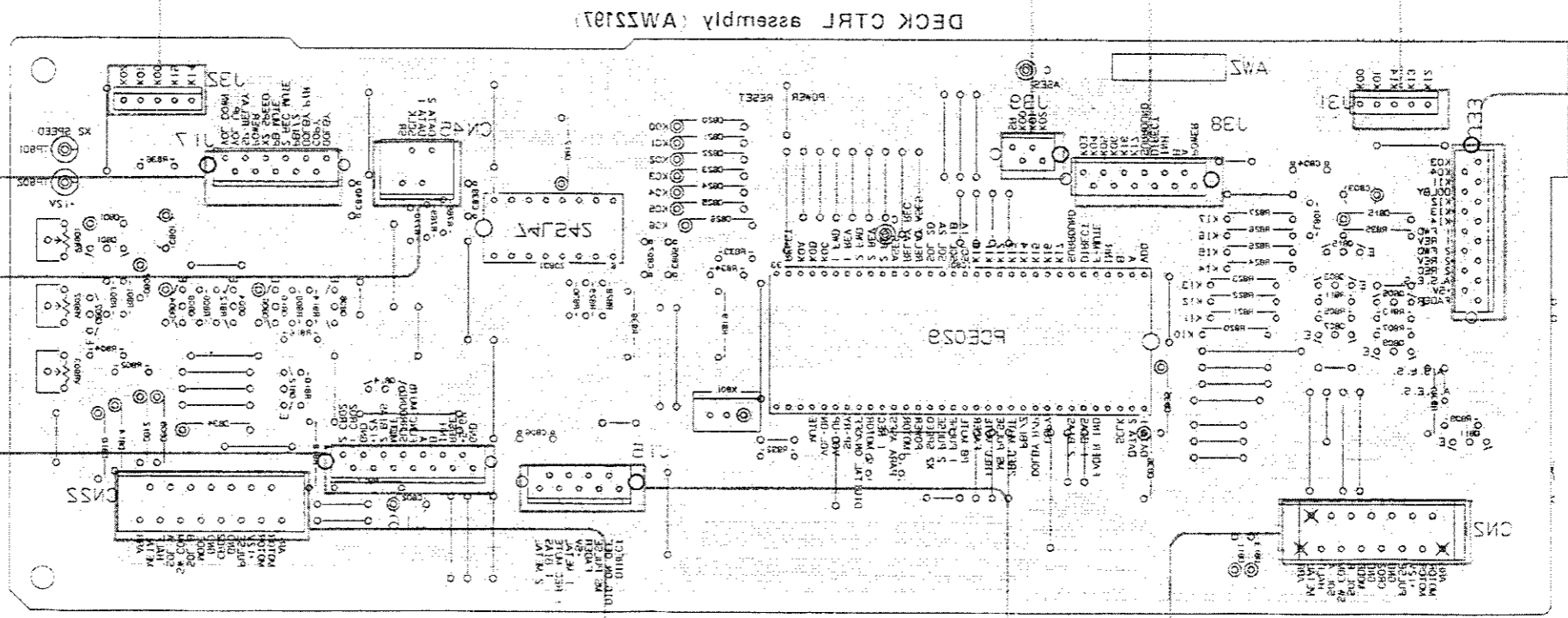
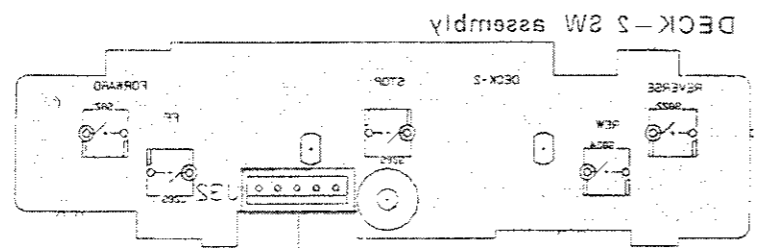
C

D

7 8 9 10 11 15

A B C D

7 8 9 10 11 15



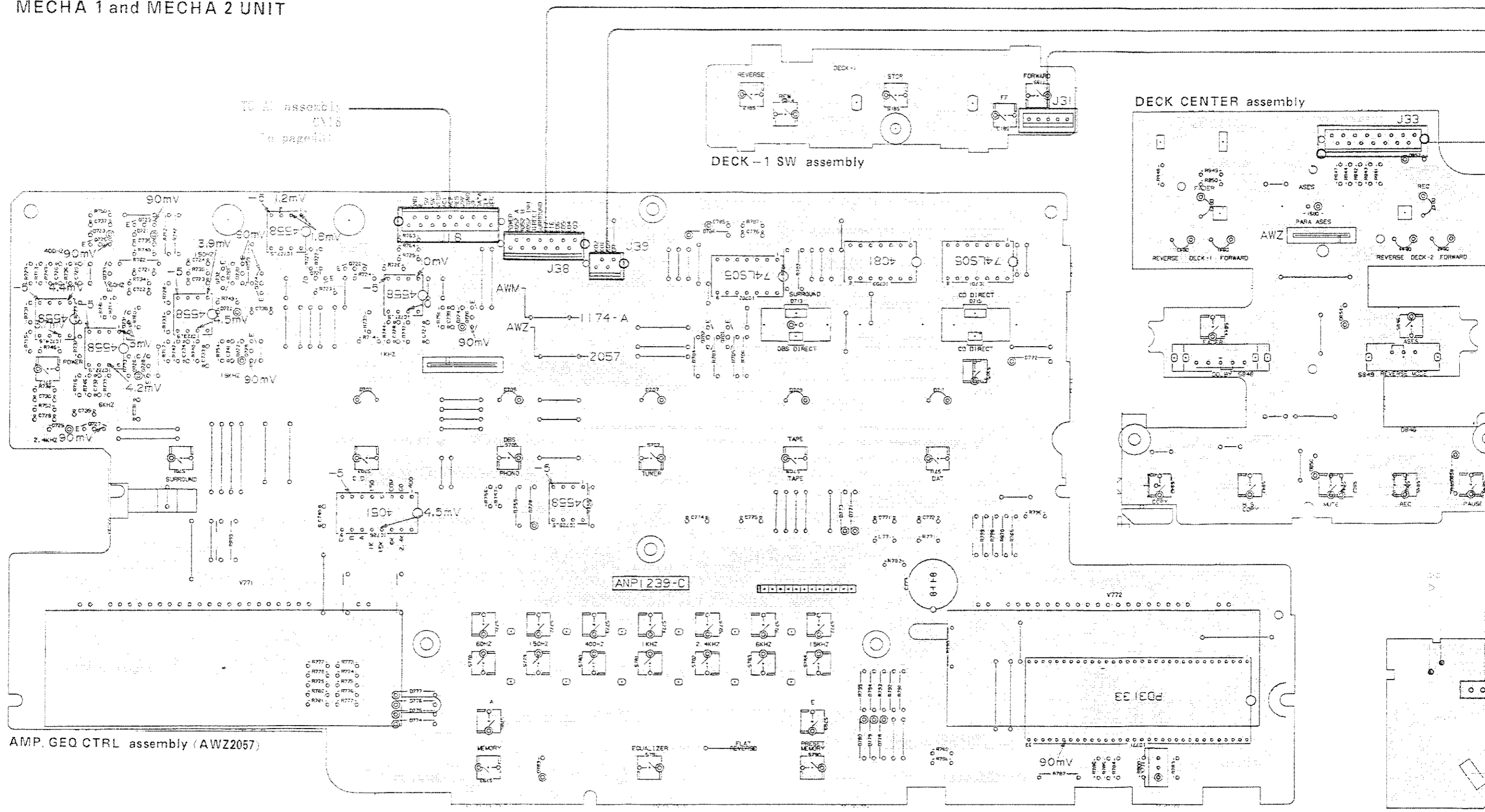
4.2 AMP, GEO CTRL (AWZ2057), DECK - 1SW, DECK - 2SW, DECK CTRL (AWZ2197) DECK CENTER assembly, MECHA 1 and MECHA 2 UNIT

A

B

C

D



7

8

9

10

11

12

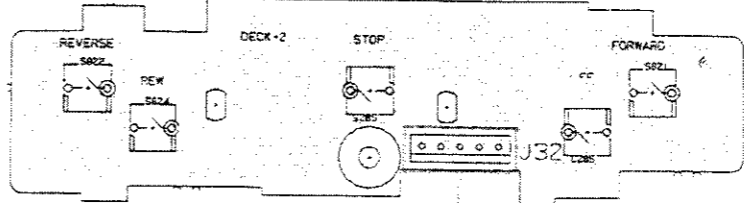
A

B

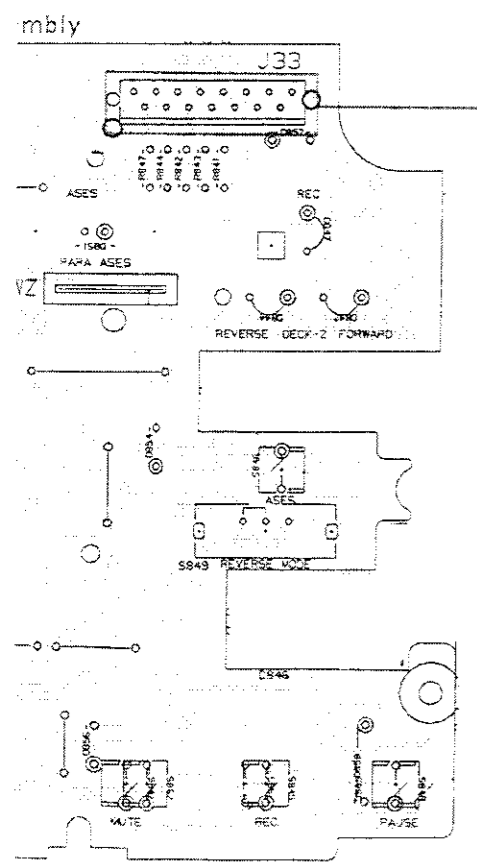
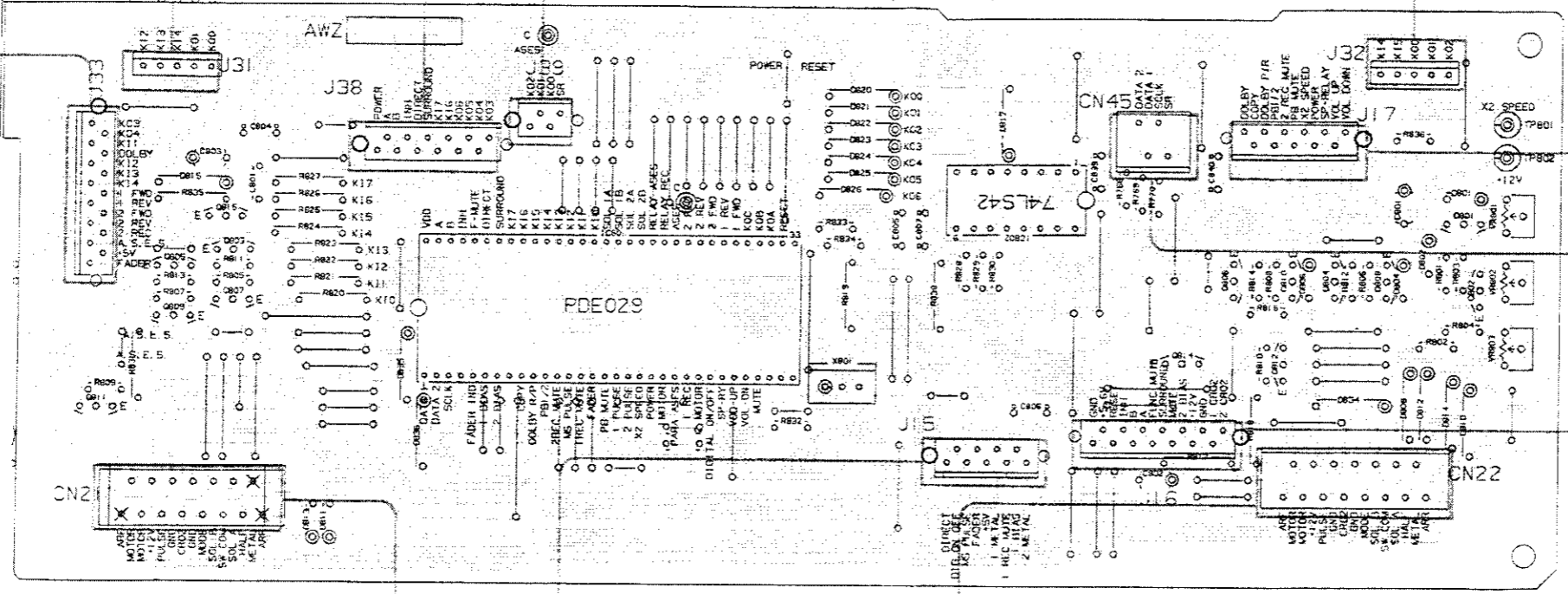
C

D

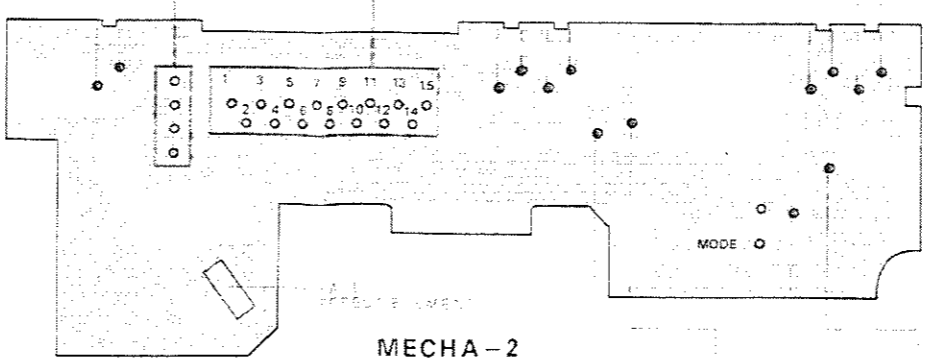
DECK-2 SW assembly



DECK CTRL assembly (AWZ2197)



MECHA-1



MECHA-2

DECK SW assembly
AWZ
(To page 11)

DECK CTRL assembly
AWZ
(To page 11)

MECHA-1 assembly
AWZ
(To page 11)

MECHA-2 assembly
AWZ
(To page 11)

NOTE

1. This P.C.B. connect on 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 (Polarity)
		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
	IC
	Switch
	Relay
	Coil
	Filter
	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.

7

8

9

10

11

12

1

2

3

4

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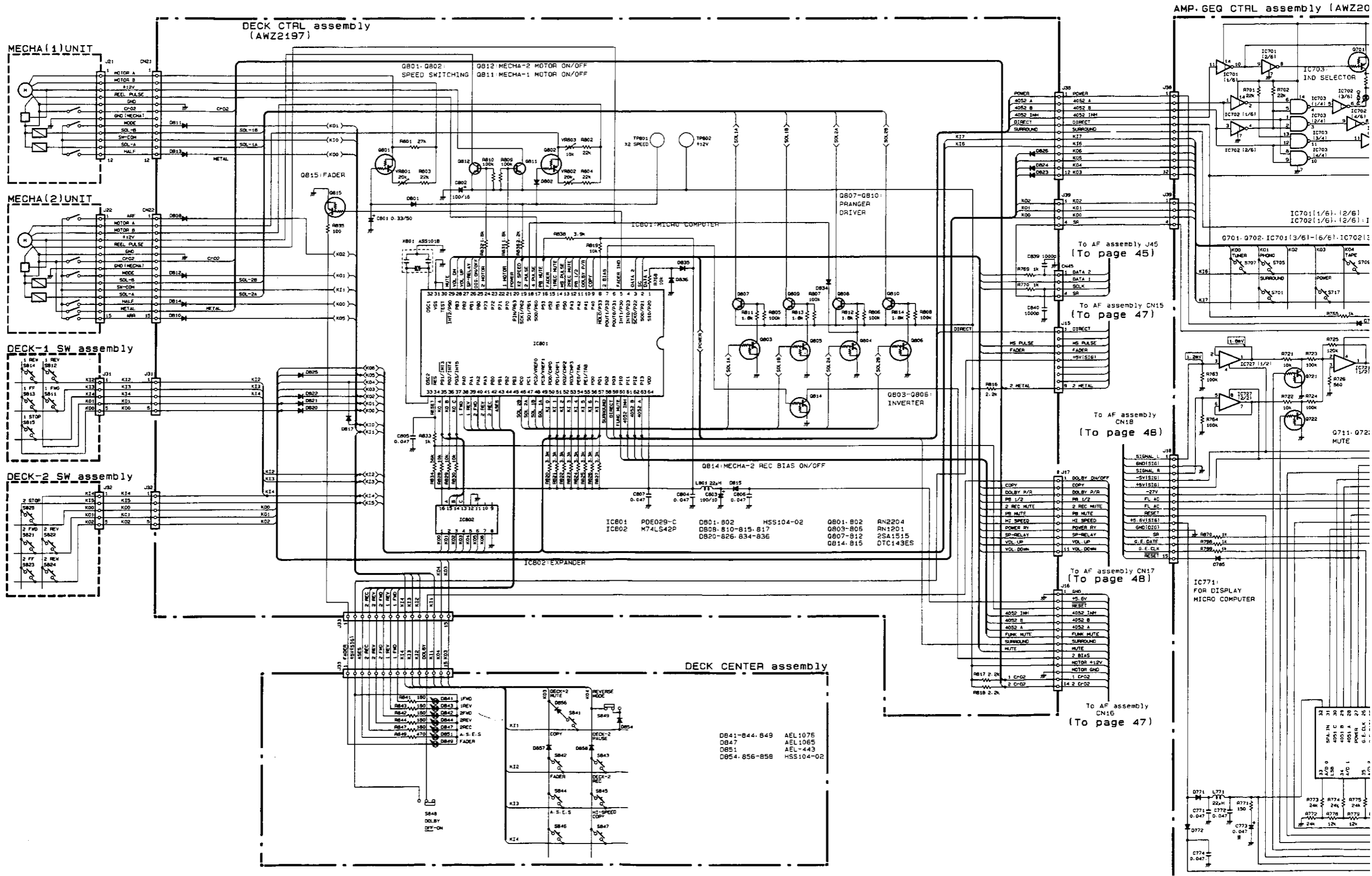
6

A

B

C

D



1

2

3

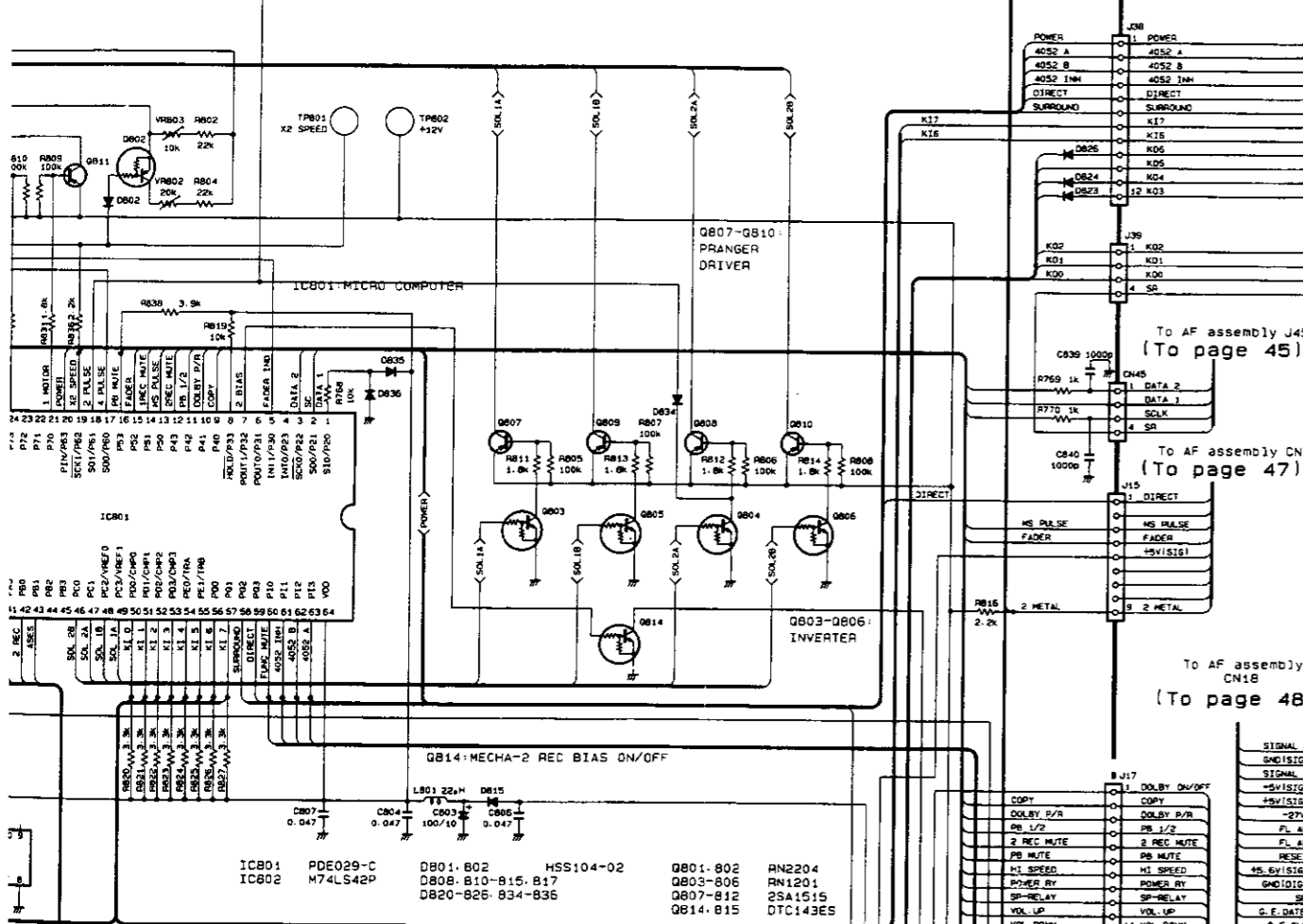
4

5

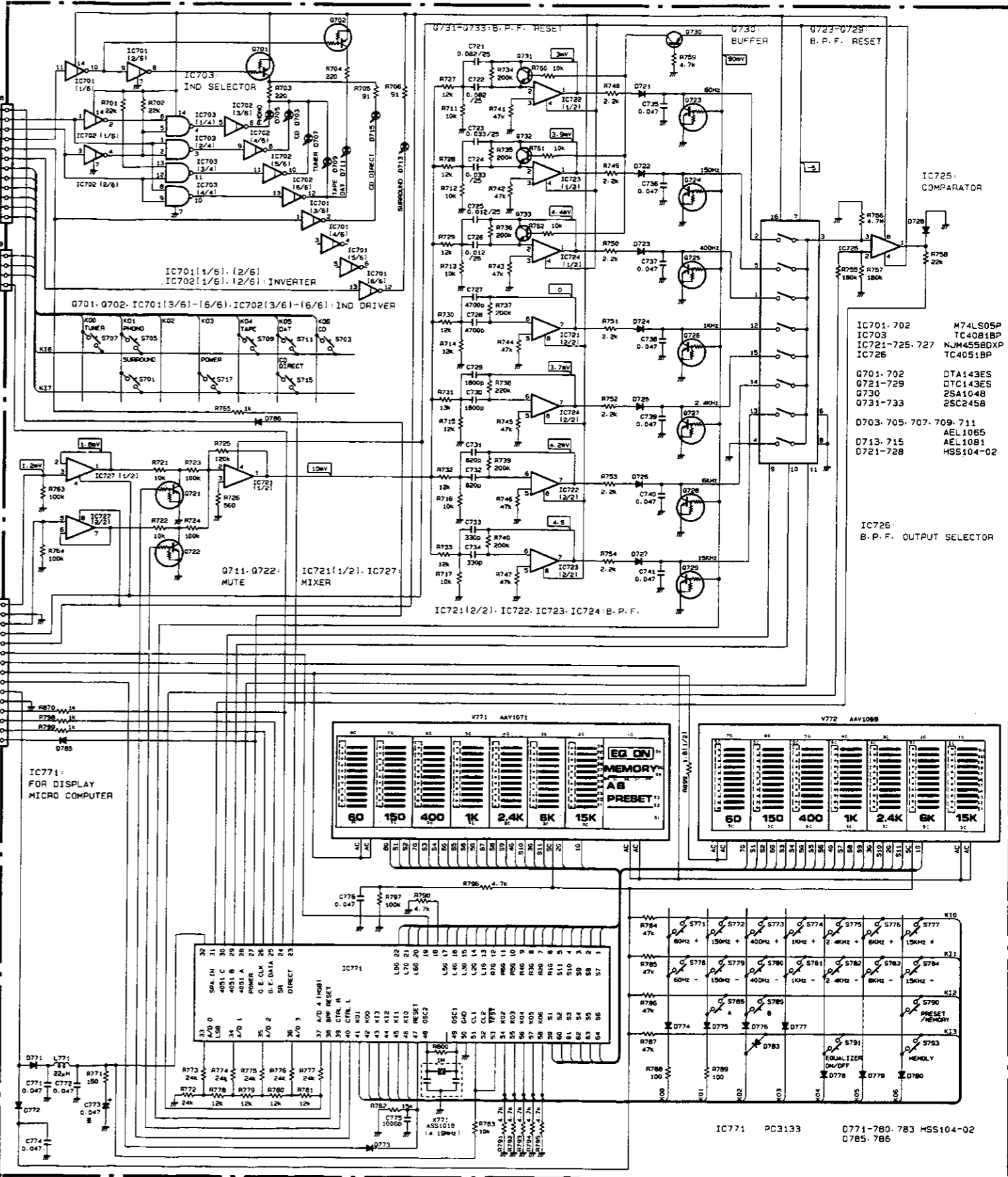
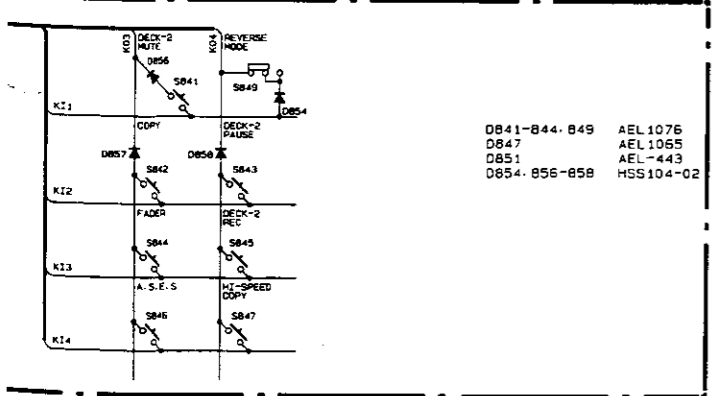
6

AMP. GEQ CTRL assembly (AWZ2057)

12:MECHA-2 MOTOR ON/OFF
11:MECHA-1 MOTOR ON/OFF



DECK CENTER assembly



A

B

C

D

4.3 FUNCTION (AWK1174) and GEQ assembly (AWG1017)

————— MECHA-2
Lch PLAY

----- MECHA-2
Rch REC

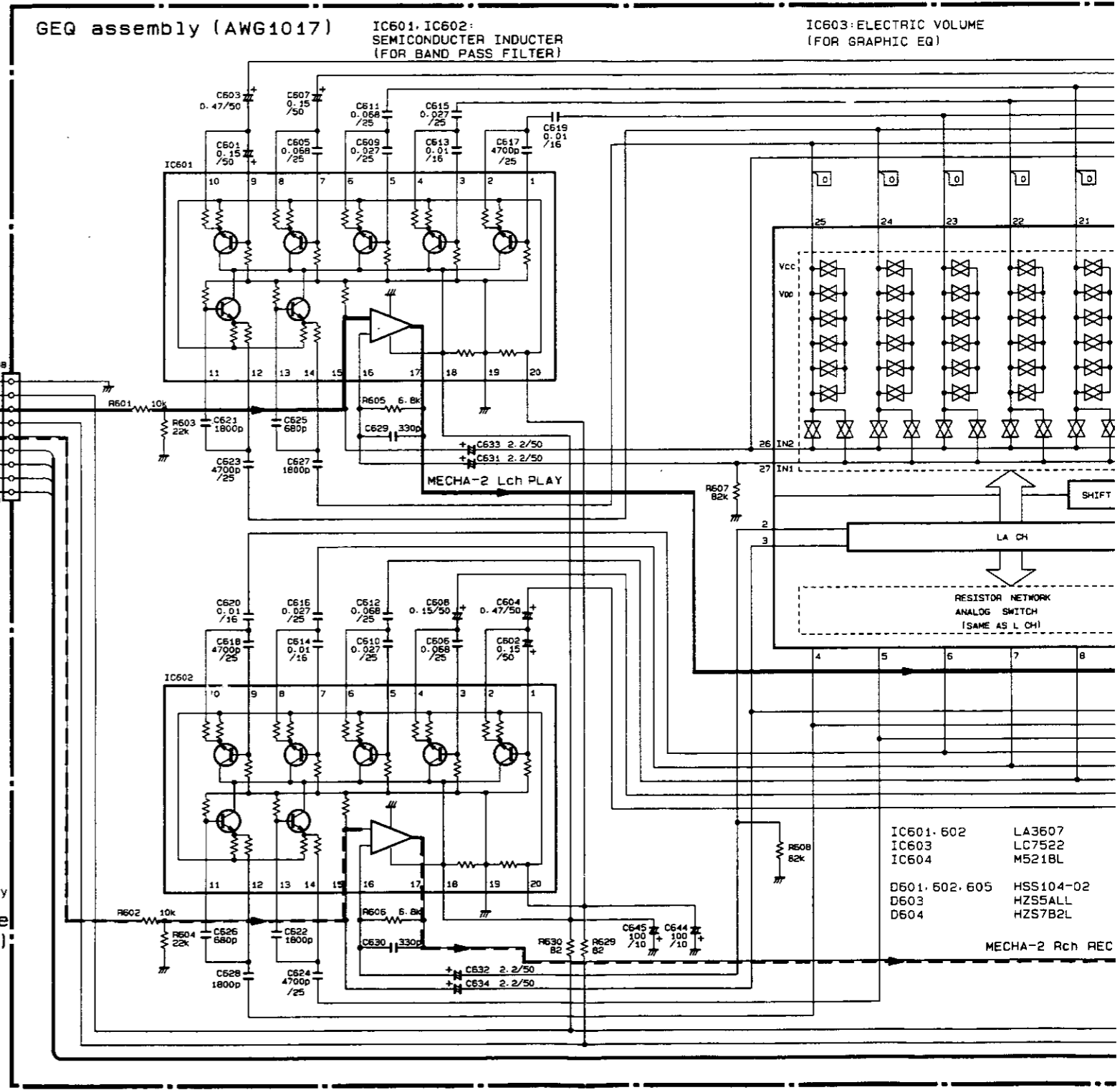
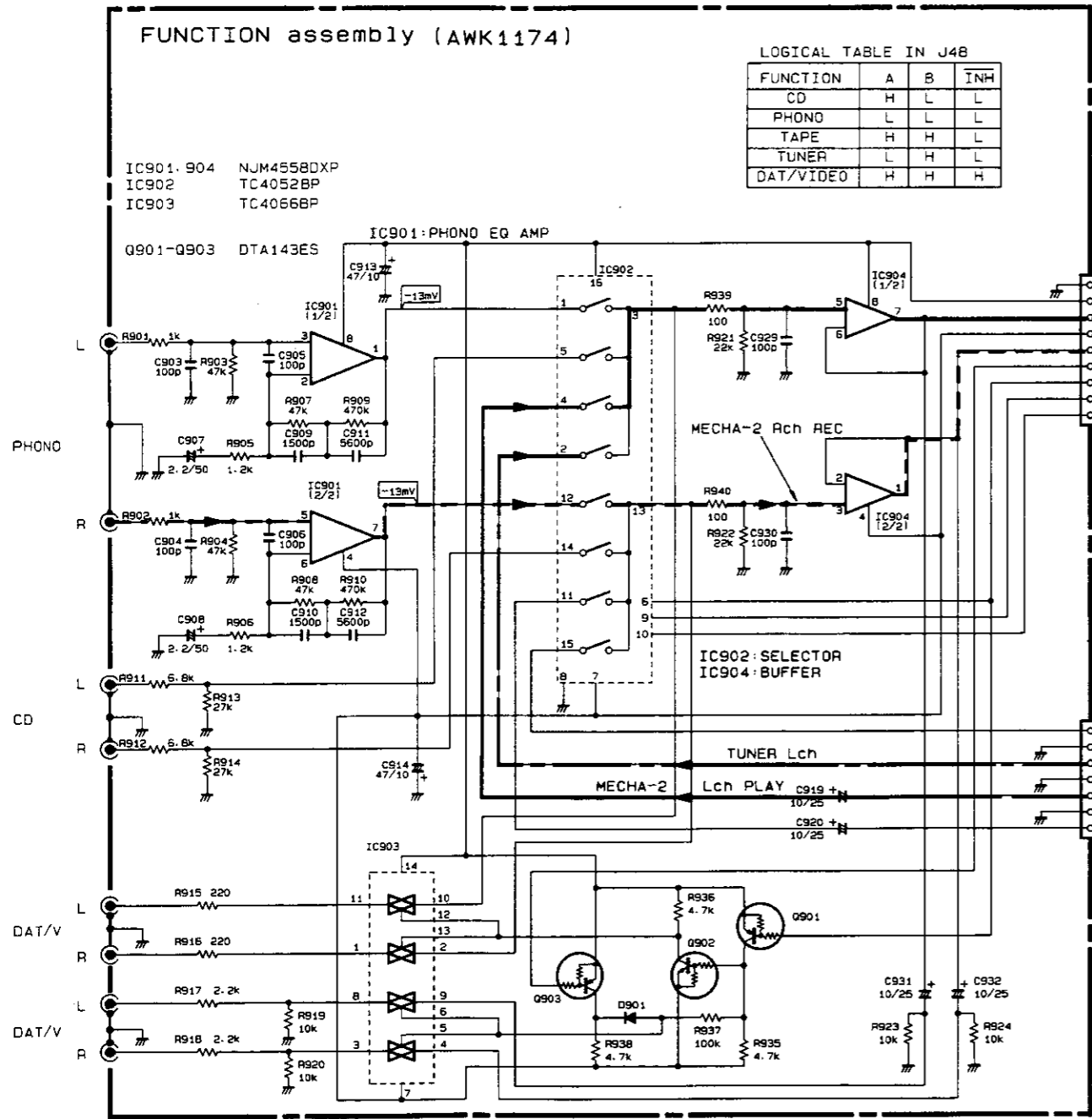
----- TUNE Lch

A

B

C

D



4

5

6

7

8

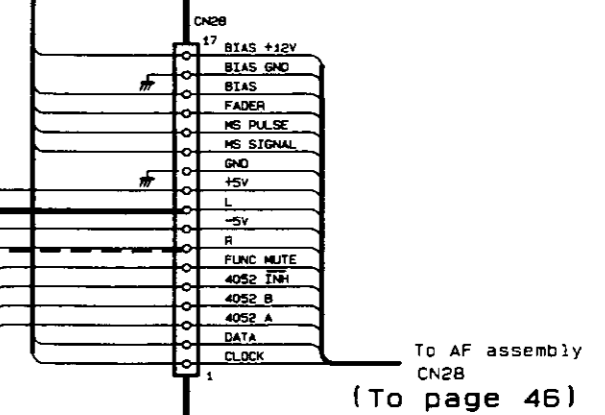
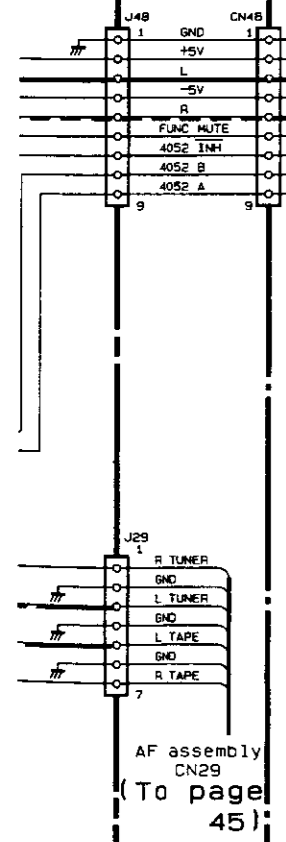
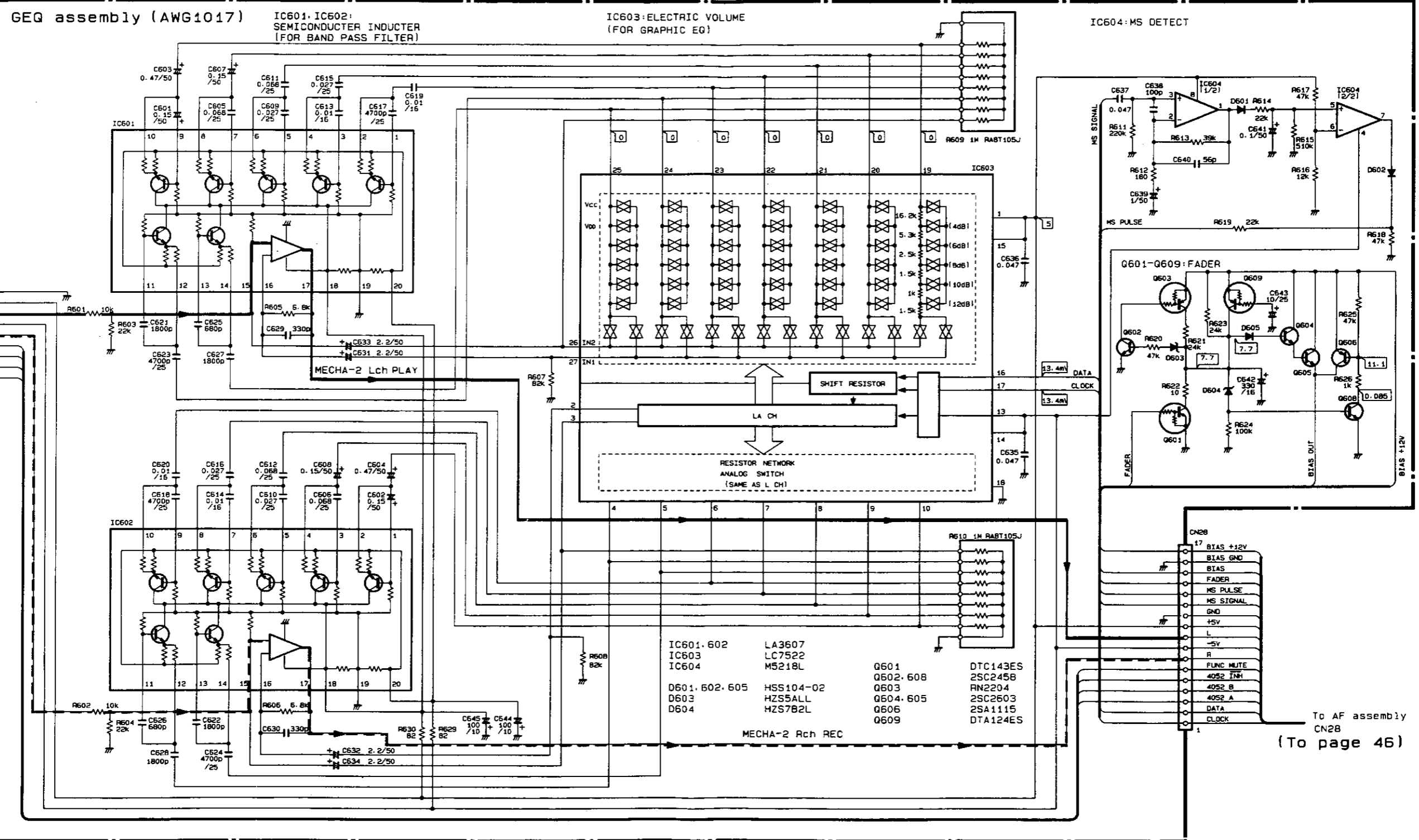
9

A

B

C

D



4

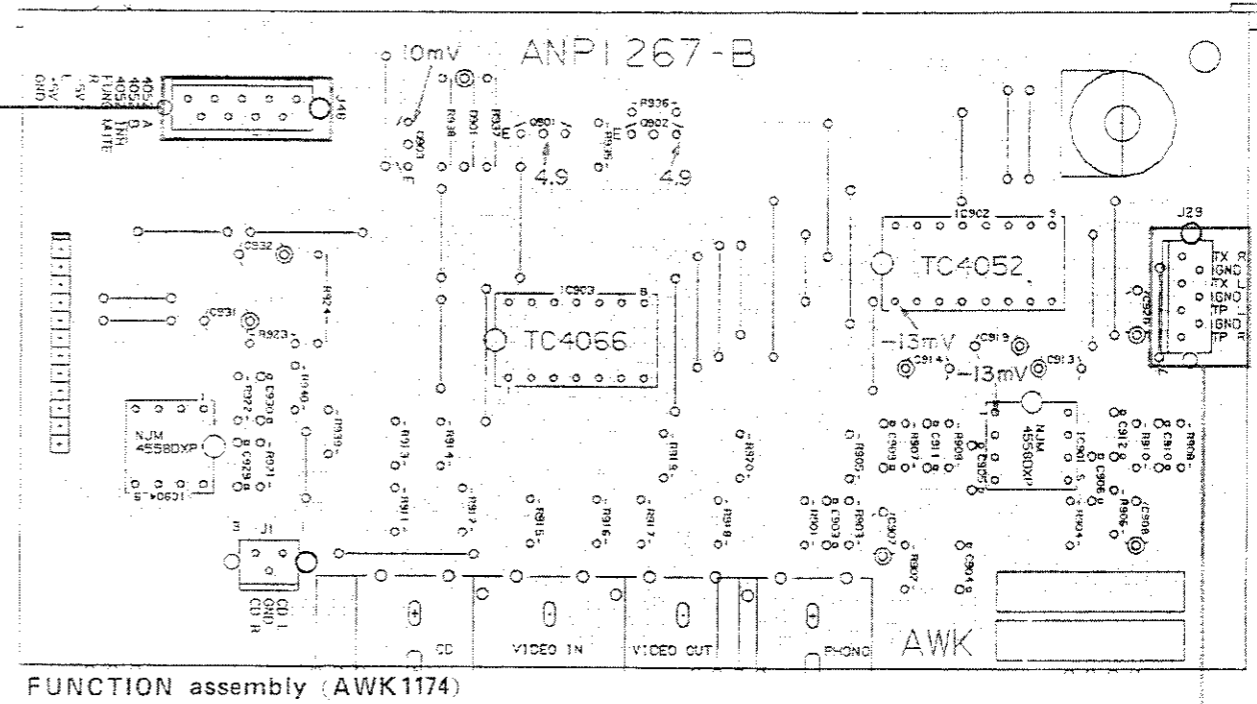
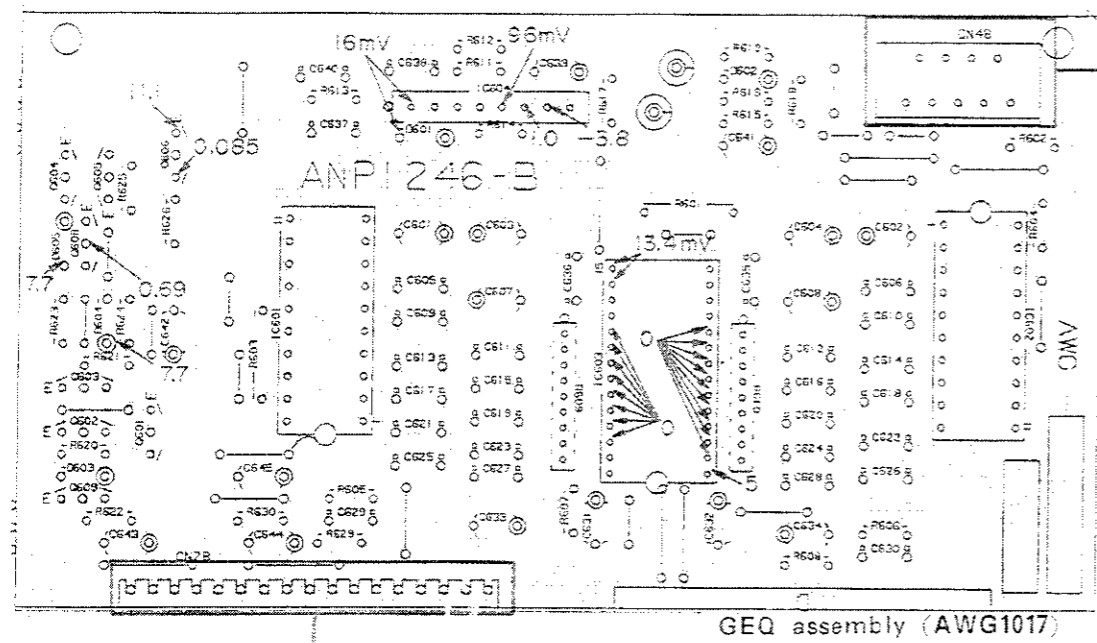
5

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9



TO AF assembly
CN28
(To page 43)

TO AF assembly
CN29
(To page 43)

NOTE

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

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
Q203		Diode
R237		Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

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

- The capacitor terminal marked with ⊕ (double circles) shows negative terminal.
- The diode terminal marked with ⊕ (double circles) shows cathode side.
- The transistor terminal to which E is affixed shows the emitter.

NOTE:
This picture shows the foil side of the
printed circuit.

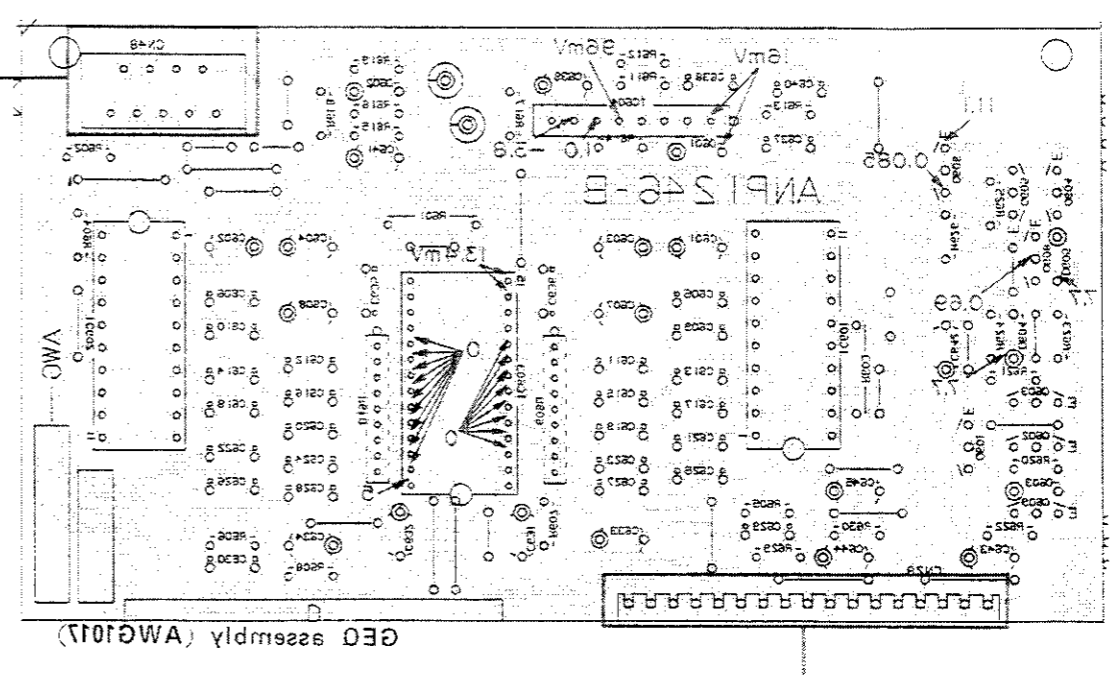
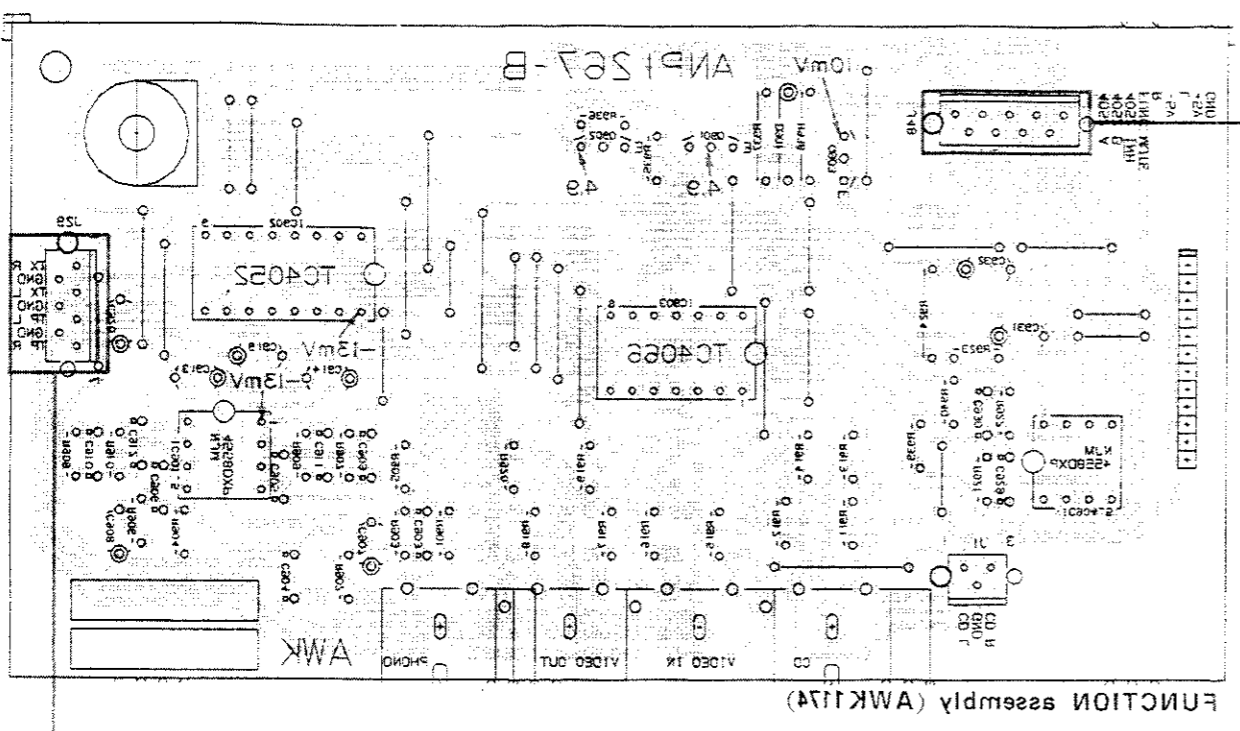
A

B

C

D

(To page 3)
CWS
TO AF assembly



(To page 3)
CWS
TO AF assembly

A

B

C

D

4.4 AF (AWZ2205) MIC BALANCE, MAIN VR, HEAD PHONE assembly

Q351-Q356	IC303 IC304 IC301 IC302	IC307 IC306 IC308	0491-0494 IC501 IC522 IC523 0585 0527 0528 0570	0481-0483 0521-0524 0413 0414	IC471 IC521 0571-0579 IC321	0435-0438 IC431 0431-0434 IC412	IC332 VR451 - VR454 VR391
			IC311	Q321 Q322	IC321		
				VR411 VR412	VR522 VR521		

A

TO TRANS CONNECT assembly
J12
(To page 31)

B

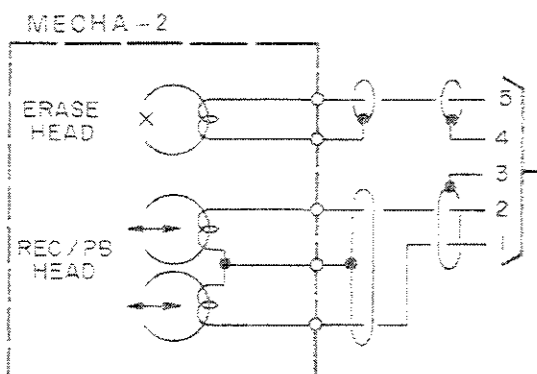
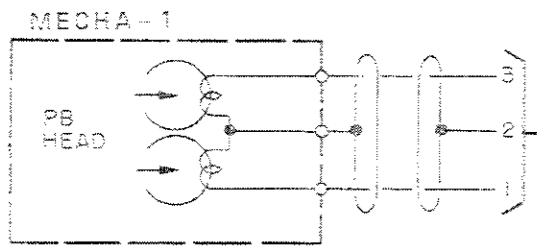
TO GEO assembly
CN28
(To page 35)

C

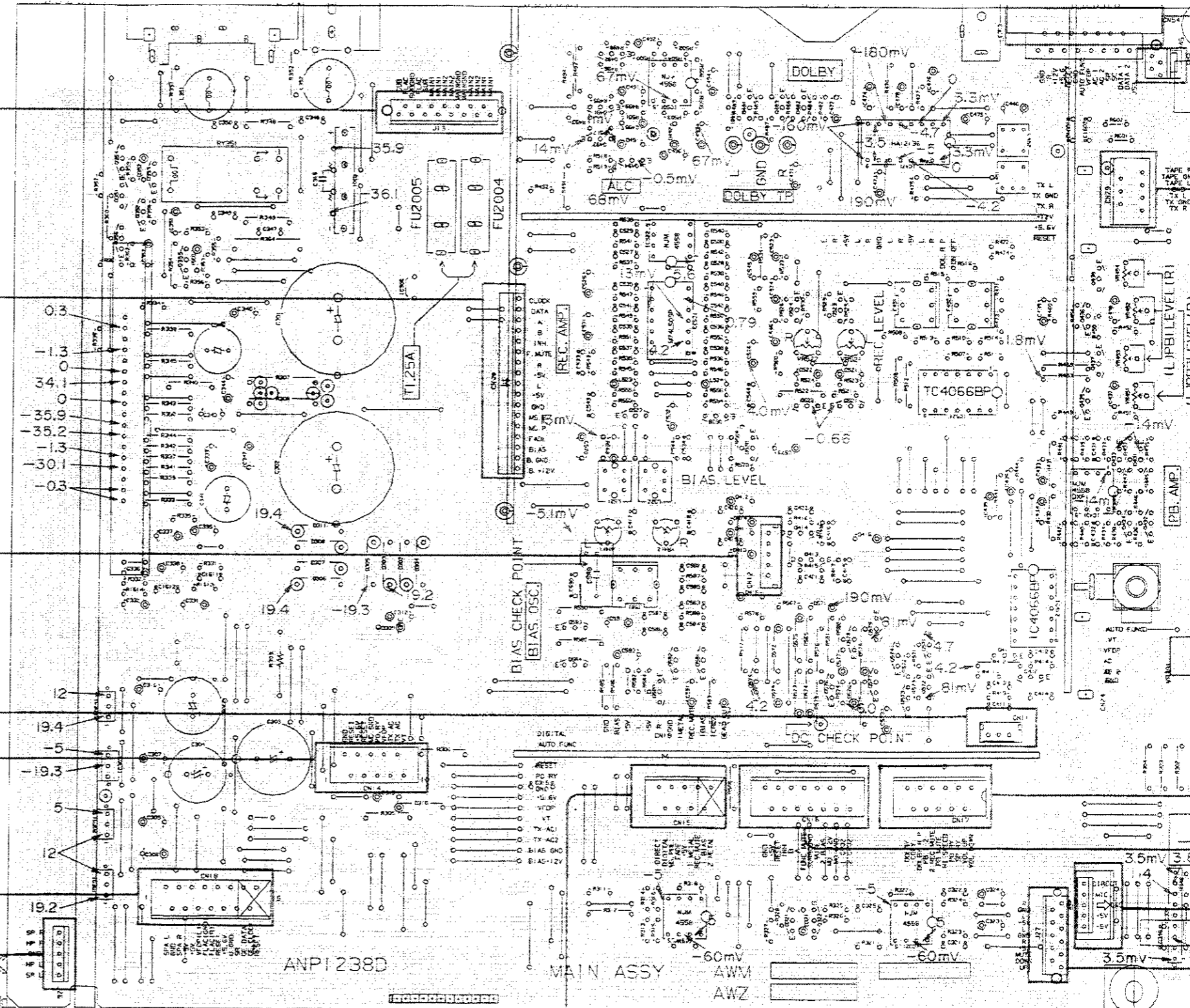
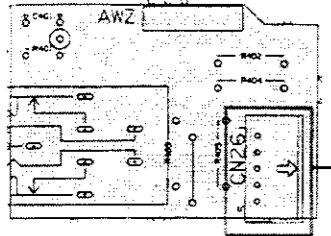
TO POWER SUPPLY assembly
J14
(To page 50)

D

TO AMP. GEO CTRL assembly
J18
(To page 25)



HEAD PHONE assembly



TO DECK CTRL assembly
J15
(To page 27)

4

5

6

7

8

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Q351-Q356

IC307 IC306

Q491-Q494 IC501

Q481-Q483 Q521-Q524 IC471 IC521

Q435-Q438 IC431 Q431-Q434

IC303 IC304 IC301 IC302

IC308

Q585 Q527 Q528 Q570 Q413 Q414

Q580-Q584 IC311

Q321 Q322 Q371-Q379 IC321

Q411 Q412 IC412

C332

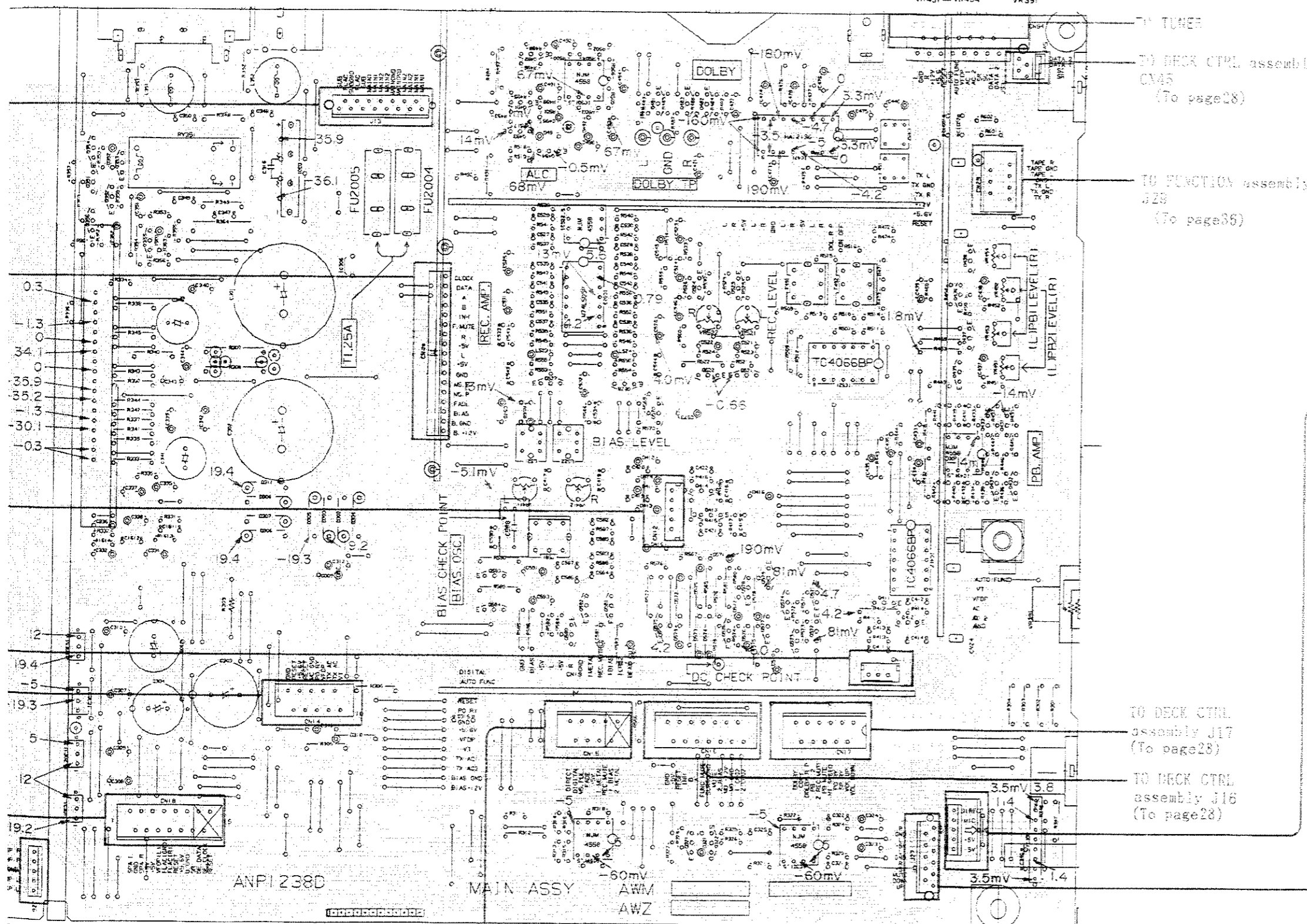
VR411

VR412

VR522 VR521

VR451-VR454

VR391



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 (Polarity)
		Capacitor (Non-polarity)

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.

A

B

C

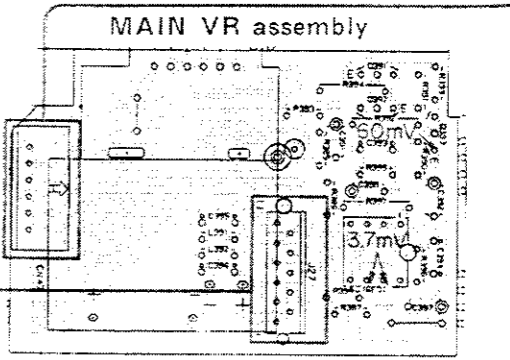
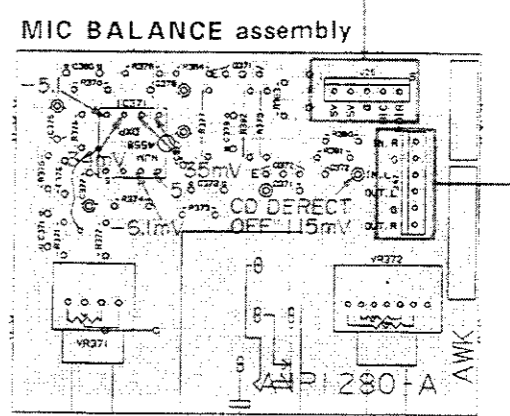
D

TV TUNER
 TV DECK CTRL assembly
 CN45
 (To page 28)

TO FUNCTION assembly
 J28
 (To page 35)

TO DECK CTRL
 assembly J17
 (To page 28)

TO DECK CTRL
 assembly J16
 (To page 28)



assembly (AWZ2205)

TO DECK CTRL assembly
 J15
 (To page 27)

4

5

6

7

8

9

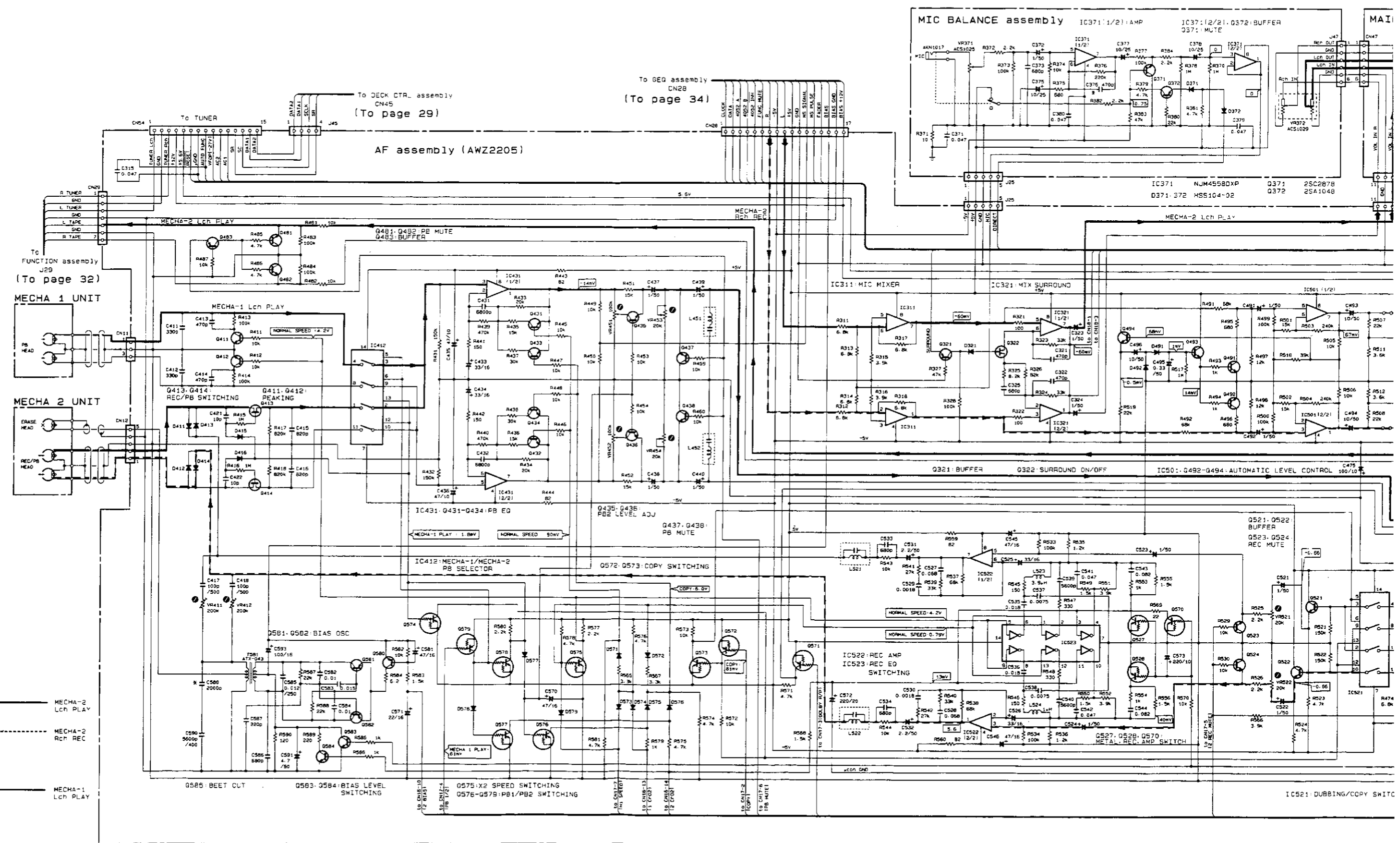
1 | 2 | 3 | 4 | 5 | 6

A

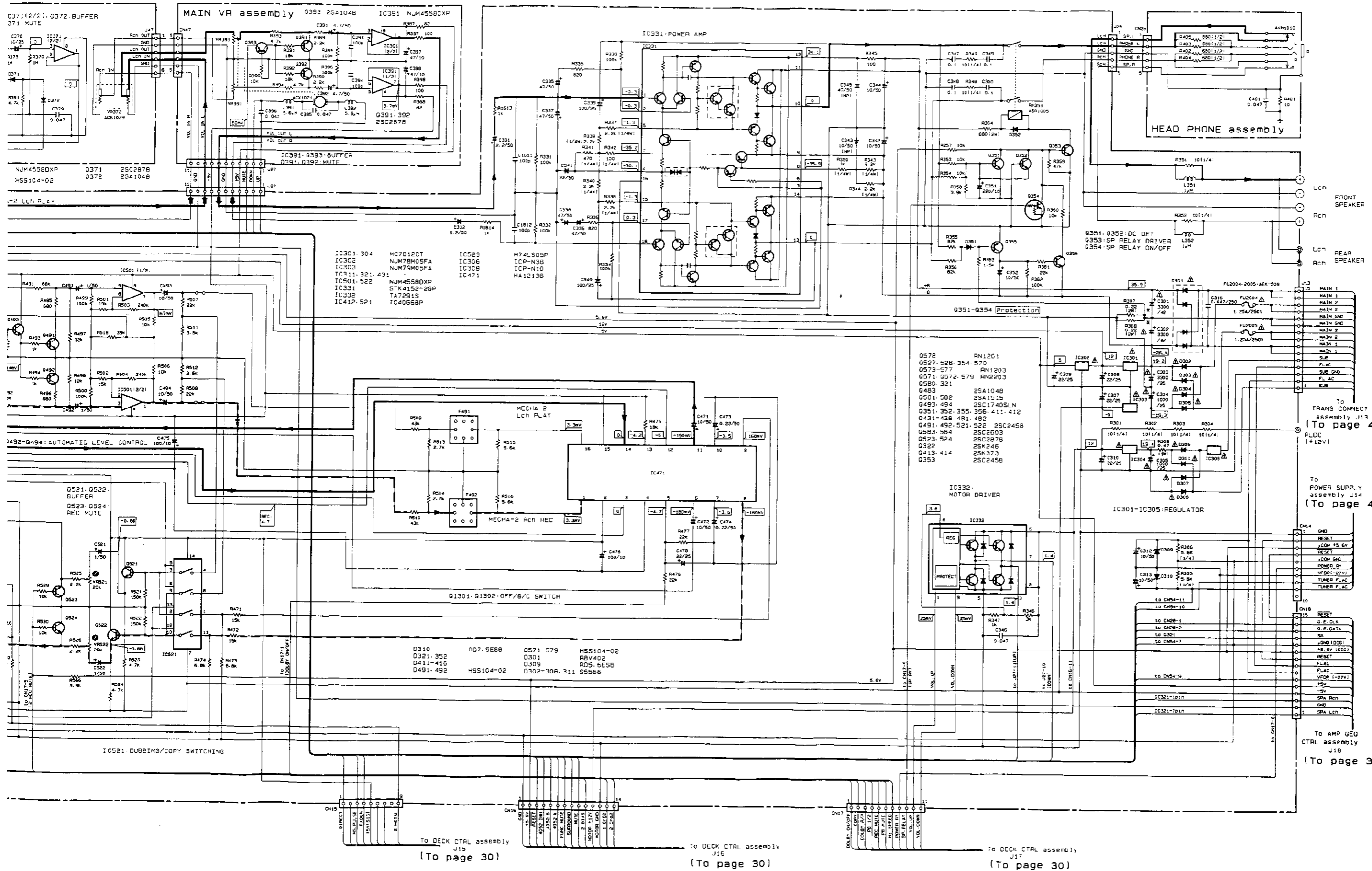
B

C

D



1 | 2 | 3 | 4 | 5 | 6



4.5 POWER SUPPLY (AWZ2241), CONNECT and TRANS CONNECT assembly

NOTE
 1. This P.C.B. connection diagram is by
 2. The parts which have been shown
 with the corresponding wiring symbol

P.C.B. pattern diagram indication:

	C504
	C215
	C203
	R237
	C513
	C518

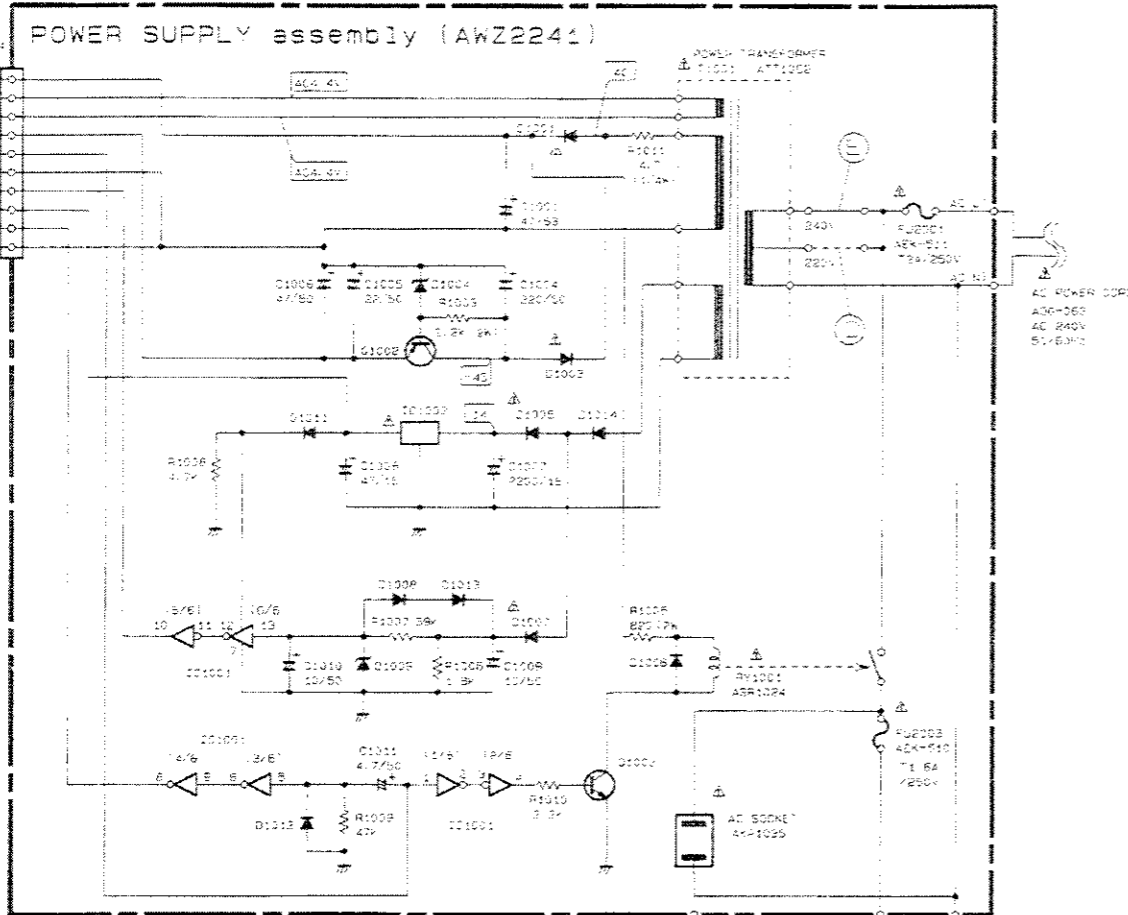
Others

P.C.B. pattern diagram indication:

	IC
	S
	RY
	L
	F
	VR

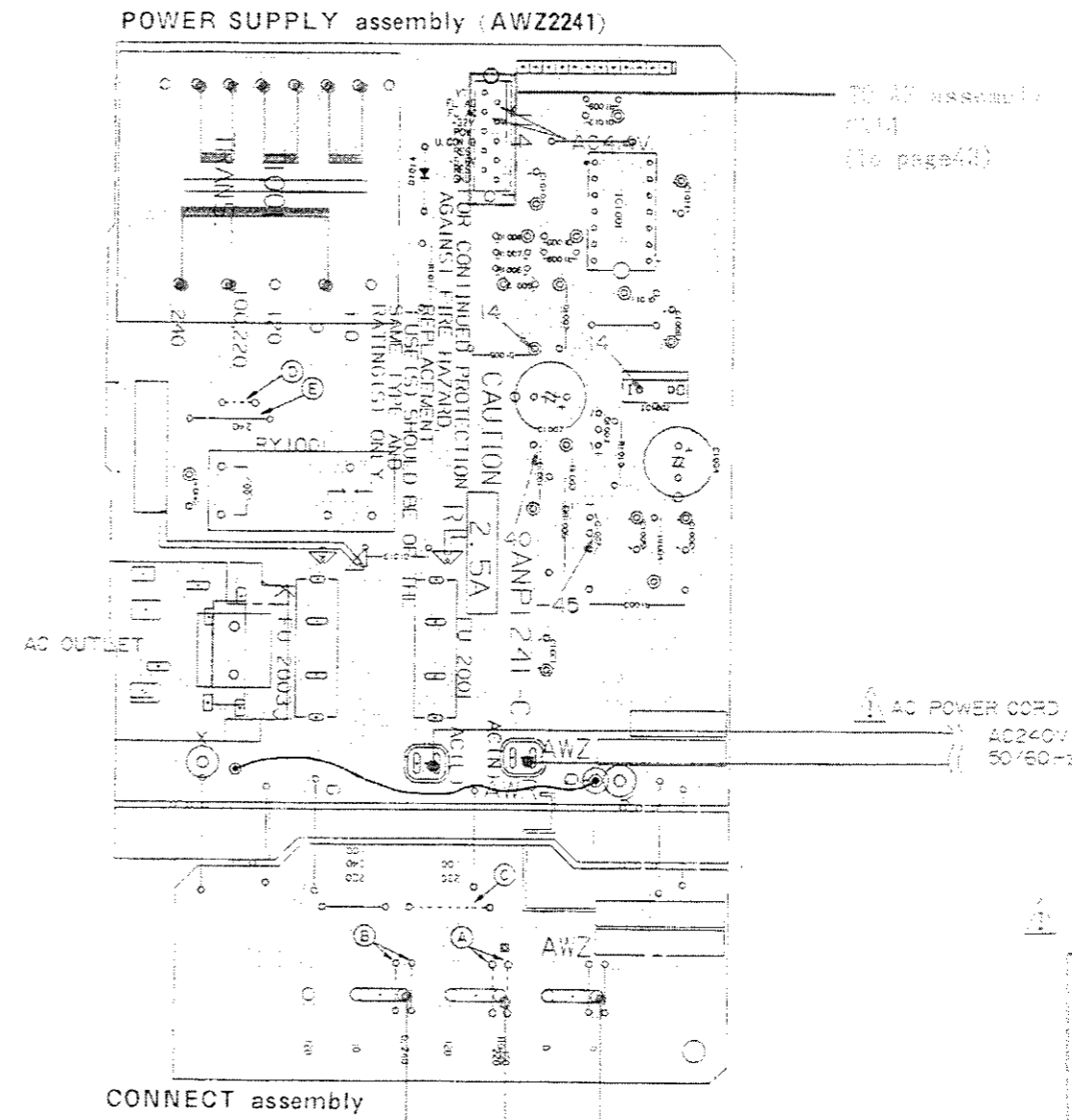
3. The capacitor terminal marked with ⊕
 4. The diode terminal marked with ⊕
 5. The transistor terminal to which E

A



TO AF assembly
 CN14
 (To page 48)

B



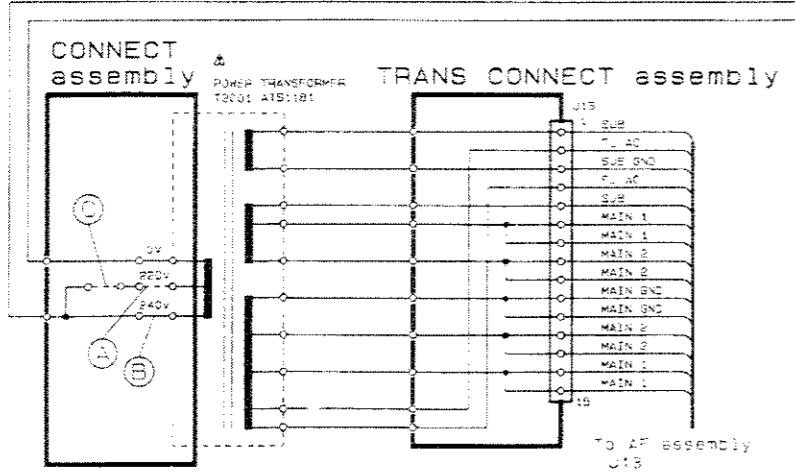
TO AF assembly
 CN14
 (To page 48)

AC POWER CORD
 AC 240V
 50/60 Hz

C

IC1001	TC4069USP	C1001-1003, 1005, 1007
IC1002	NUM78M56FA	D1014
		D1004
C1003	2502240	D1005-1008, 1011-1013
C1008	250556C	HSS104-C2
		D1009
		D1009

D



To AF assembly
 J15
 (To page 48)

Line Voltage Selection (FOR HB AND HE TYPES)

- Line voltage can be changed with the following steps.
1. Disconnect the AC power cord.
 2. Remove the top cover.
 3. Change the position of the jumper wires (A)-(E) as follows.

Jumper wire	220V	240V
(A)	○	×
(B)	×	○
(C)	○	×
(D)	○	×
(E)	×	○

○: Be needed
 ×: Be needless

4. Stick the line voltage label on the rear panel.

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

To AF assembly
 J15
 (To page 48)

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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 (Polarity)
		Capacitor (Non-polarity)

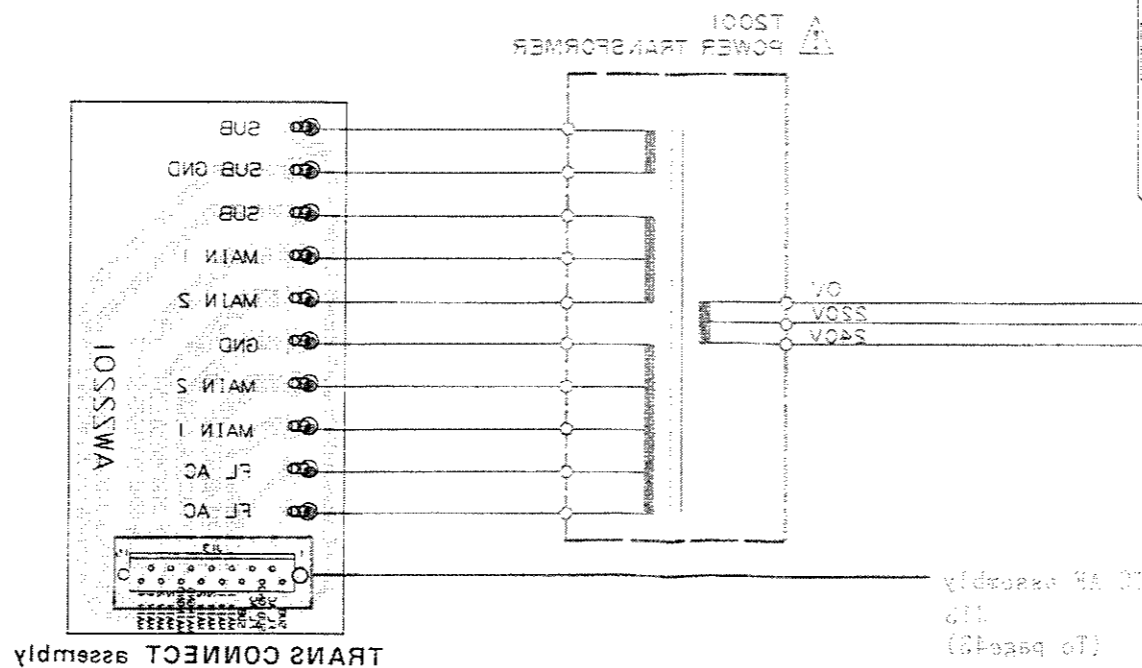
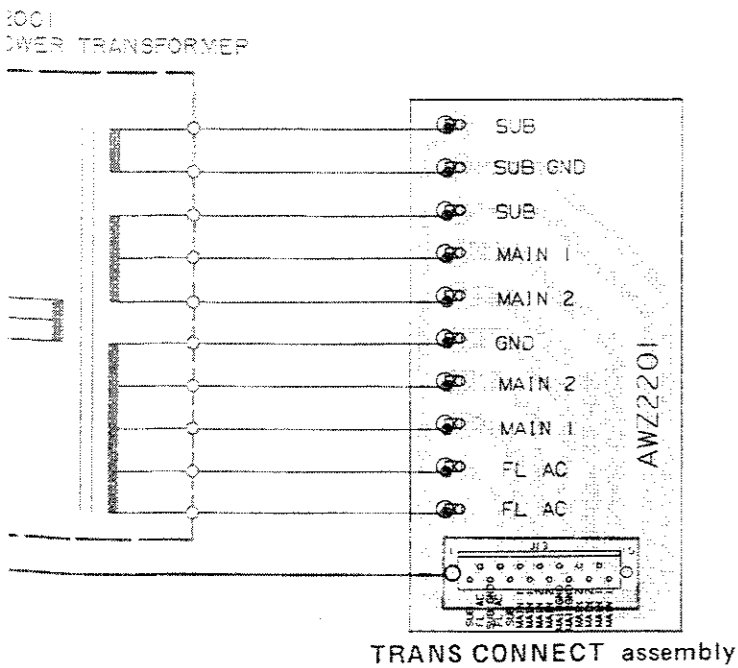
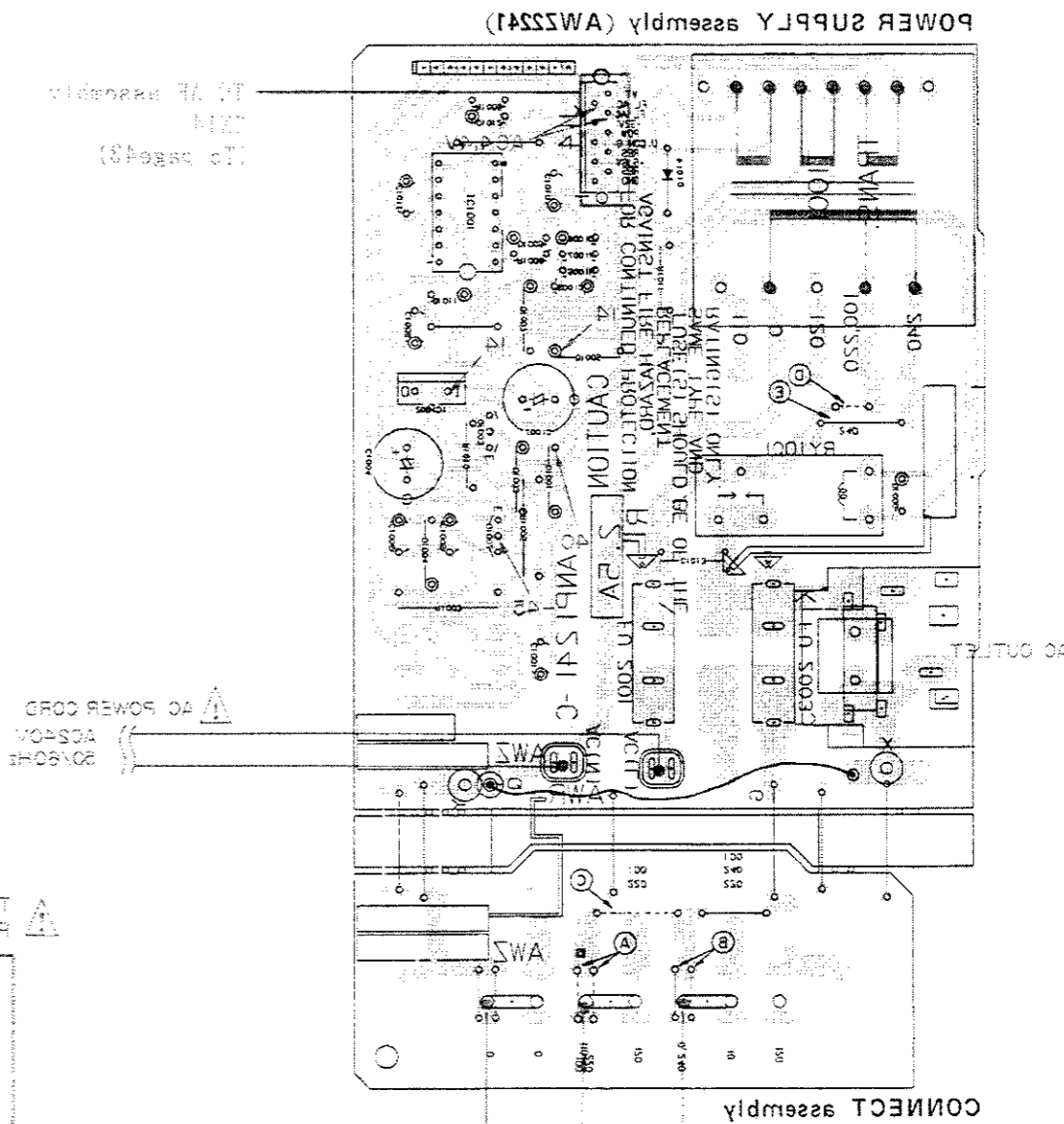
Others

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.

NOTE:

This picture shows the foil side of the printed circuit.



A

B

C

D

7

8

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5. ELECTRICAL PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "©" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ 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.
- 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 Ω	56 $\times 10^1$	561.....	RD1/4PS	\square	\square	\square	J
47k Ω	47 $\times 10^3$	473.....	RD1/4PS	\square	\square	\square	J
0.5 Ω	0R5.....		RN2H	\square	\square	\square	K
1 Ω	010.....		RS1P	\square	\square	\square	K

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

5.62k Ω	562 $\times 10^1$	5621.....	RN1/4SR	\square	\square	\square	F
----------------	-------------------	-----------	---------	-----------	-----------	-----------	---

Miscellaneous Parts

P.C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	FUNCTION assembly	AWK1174
	MIC BALANCE assembly	
	AF assembly	AWZ2205
	MAIN VR assembly	
	HEAD PHONE assembly	
	TRANS CONNECT assembly	
	AMP,GEQ CTRL assembly	AWZ2057
	DECK - 1 SW assembly	
	DECK - 2 SW assembly	
	DECK CTRL assembly	AWZ2197
	GEQ assembly	AWG1017

Note: This assembly (AWZ1017) is a part of AF assembly (AWZ2205).

	DECK CENTER assembly	
	POWER SUPPLY assembly	AWZ2241
	CONNECT assembly	

OTHERS

Mark	Symbol & Description	Part No.
Δ	T2001 Power Transformer (AC220V/240V)	ATS1181
Δ	FU2004,FU2005 Fuse (1.25A/250V)	AEK-509
Δ	FU2003 Fuse (T1.6A/250V)	AEK-510
Δ	FU2001 Fuse (T2A/250V)	AEK-511
Δ	AC Power cord	ADG-063
	Hall IC	AZE1018
	Leaf SW	AZS1054
	Leaf SW	AZS1034
	P.C.BOARD	AZN1835
	Bobbin	AZS1035
	Bobbin	AZS1036
	Motor assembly	AZX1020
	Head frame assembly	AZP1023
	Head frame assembly	AZP1016

FUNCTION assembly(AWK1174)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC901,IC904	NJM4558DXP
	IC902	TC4052BP
	IC903	TC4066BP
	Q901,Q903	DTA143ES
	Q902	DTC143ES
	D901	HSS104-02

CAPACITORS

Mark	Symbol & Description	Part No.
	C903-C906,C929,C930	CCCSL101J50
	C907,C908	CEAS2R2M50
	C909,C910	CKCYB152K50
	C911,C912	CKCYB562K50
	C913,C914	CEAS470M10
	C919,C920,C931,C932	CEAS100M25

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (CD,VIDEO IN)	AKB1009
	Terminal 4P (PHONO,VIDEO OUT)	AKB1085

**MIC BALANCE assembly
SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC371	NJM4558DXP
	Q372 Q371	2SA1048 2SC2878
	D371,D372	HSS104-02

CAPACITORS

Mark	Symbol & Description	Part No.
	C376	ACG1019
	C372	CEAS010M50
	C375,C377,C378	CEAS100M25
	C371,C379,C380	CKCYF473Z50
	C373	CKMYB681K50

RESISTORS

Mark	Symbol & Description	Part No.
	VR371 (10k)	ACS1025
	VR372 (10k x 2)	ACS1029
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Mic jack	AKN1017

**AF assembly(AWZ2205)
SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC471	HA12136
	IC306	ICP-N38
	IC301,IC304	MC7812CT
	IC523	M74LS05P
	IC311,IC321,IC431,IC501,IC522	NJM4558DXP
	IC302	NJM78M05FA
	IC303	NJM79M05FA
	IC331	STK4152-2GP
	IC332	TA7291S
	IC412,IC521	TC4066BP
	Q578	RN1201
	Q354, Q527, Q528, Q570, Q573-Q577	RN1203
	Q571, Q572, Q579	RN2203
	Q321, Q355, Q483, Q580	2SA1048
	Q581, Q582	2SA1515
	Q493, Q494	2SC1740SLN
	Q353	2SC2458
	Q351, Q352, Q356, Q411, Q412, Q431-438, Q481, Q482, Q491, Q492, Q521, Q522	2SC2458

Mark	Symbol & Description	Part No.
	Q583, Q584	2SC2603
	Q523, Q524	2SC2878
	Q322	2SK246
	Q413, Q414	2SK373
	D321, D351, D352, D411-D416, D491, D492, D571-579	HSS104-02
	D301	RBV402
	D309 Zener Diode	RD5.6ESB
	D310 Zener Diode	RD7.5ESB
	D302-D308, 311	S5566

COILS & TRANSFORMER

Mark	Symbol & Description	Part No.
	F491, F492 (DOLBY Filter)	ATF1064
	L351, L352 (1μH)	ATH-133
	L521, L522	ATM-037
	L451, L452	ATM1001
	T581	ATX-043
	L523, L524 Inductor (3.9mH)	LTA392J

RELAY

Mark	Symbol & Description	Part No.
	RY351	ASR1005

CAPACITORS

Mark	Symbol & Description	Part No.
	C588 (2000p/630)	ACE1020
	C301, C302 (3300p/42)	ACH-249
	C1611, C1612	CCCSL101J50
	C417, C418	CCCSL101K500
	C421, C422	CCMSL100D50
	C343	CEANP100M50
	C341	CEANP220M50
	C345	CEANP470M50
	C473, C474	CEASR22M50
	C495	CEASR33M50
	C323, C324, C437-C440, C491 C492, C521-C524	CEAS010M50
	C312, C313, C342, C344, C352 C471, C472, C493, C494, C496 C475, C476	CEAS100M50
	C593	CEAS101M10
	C339, C340	CEAS101M16
	C304, C305	CEAS101M25
	C331, C531, C532	CEAS102M25
	C571	CEAS2R2M50
	C307-C310, C478	CEAS220M16
	C351, C572, C573	CEAS220M25
	C303	CEAS222M25
	C433, C434, C525, C526	CEAS330M16
	C591	CEAS4R7M50

GEO assembly(AWZ1017)

Note: This assembly (AWZ1017) is a part of AF assembly (AWZ2205).

Mark	Symbol & Description	Part No.
	C435,C436	CEAS470M10
	C545,C546,C570,C581	CEAS470M16
	C335,C337,C338	CEAS470M50
	C332	CEHAQ2R2M50
	C336	CEHAQ470M50
	C527,C528	CFTXA683J50
	C315,C346	CKDYF473Z50
	C587	CKMYB221K50
	C411,C412	CKMYB331K50
	C413,C414	CKMYB471K50
	C325,C533,C534,C586	CKMYB681K50
	C415,C416	CKMYB821K50
	C582,C584	CQMA103K50
	C347-C350	CQMA104K50
	C585	CQMA123K250
	C583	CQMA153K50
	C529,C530	CQMA182J50
	C535,C536	CQMA183J50
	C541,C542	CQMA473J50
	C316	CQMA473K250
	C539,C540	CQMA562J50
	C590	CQMA562K400
	C431,C432	CQMA682J50
	C537,C538	CQMA752J50
	C543,C544	CQMA823J50
	C321,C322	CQSA471J50

RESISTORS

Mark	Symbol & Description	Part No.
	VR451,VR452 (100k)	VRTM6H104
	VR453,454 (20k)	VRTM6H203
	VR521,VR522 (20k)	VRTM6V203
	VR411,VR412 (200k)	VRTM6V204
	R589,590	RD1/2PM□□□J
	R342,R345,R350-R352	RD1/4PMFL□□□J
	R348,R349	RD1/4PMF100J
	R301-R306,R337-R340,R343	RD1/4PM□□□
	R344	
	R341	RFA1/4PL471J
	R307,R308	RS2LMFR22J
	R364	RS2LMF681J
	R309	RS1PMFR47J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 2P (REAR SPEAKER)	AKB1039
	Speaker terminal 4P	AKE1012
	DC Jack	AKN-203
	GEO assembly	AWG1017

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC601,IC602	LA3607
	IC603	LC7522
	IC604	M5218L
	Q609	DTA124ES
	Q601	DTC143ES
	Q603	RN2204
	Q606	2SA1115
	Q602,Q608	2SC2458
	Q604,Q605	2SC2603
	D601,D602,D605	HSS104-02
	D603	HZS5ALL
	D604	HZS7B2L

CAPACITORS

Mark	Symbol & Description	Part No.
	C638	CCCSL101J50
	C640	CCCSL560J50
	C601,C602,C607,C608	CEASR15M50
	C603,C604	CEASR47M50
	C641	CEASOR1M50
	C639	CEASO10M50
	C643	CEAS100M25
	C644,C645	CEAS101M10
	C631-C634	CEAS2R2M50
	C642	CEAS331M16
	C621,C622,C627,C628	CGMYB182M50
	C613,C614,C619,C620	CGMYX103M16
	C617,C618,C623,C624	CGMYX472M25
	C629,C630	CKCYB331K50
	C635-C637	CKCYF473Z50
	C609,C610,C615,C616	CKCYX273M25
	C605,C606,C611,C612	CKCYX683M25
	C625,C626	CKMYB681K50

RESISTORS

Mark	Symbol & Description	Part No.
	R609,R610	RA8T105J
	Other resistors	PM1/8PM□□□J

**MAIN VR assembly
SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC391	NJM4558DXP
	Q393	2SA1048
	Q391, Q392	2SC2878

COILS

Mark	Symbol & Description	Part No.
	L391, L392 Axial Inductor(5.6μH)	LAU5R6K

CAPACITORS

Mark	Symbol & Description	Part No.
	C393, C394	CCMSL101J50
	C391, C392	CEAS4R7M50
	C397, C398	CEAS470M10
	C395, C396	CKCYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	VR391 (100k × 2)	ACX1021
	Other resistors	RD1/8PM□□□J

**HEAD PHONE assembly
CAPACITORS**

Mark	Symbol & Description	Part No.
	C401	CKCYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	R402 - R405	RD1/2PMF681J
	R401	RD1/8PM100J

OTHERS

Mark	Symbol & Description	Part No.
	Head phone Jack	AKN1010

TRANS CONNECT assembly

No parts are supplied with the TRANS CONNECT assembly.

**AMP, GEO CTRL assembly(AWZ2057)
SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC701, IC702	M74LS05P
	IC721 - IC725, IC727	NJM4558DXP
	IC771	PD3133
	IC726	TC4051BP
	IC703	TC4081BP

	Q701, Q702	DTA143ES
	Q721 - Q729	DTC143ES
	Q730	2SA1048
	Q731 - Q733	2SC2458

	D703, D705, D707, D709, D711 LED	AEL1065
	D713, D715	AEL1081
	D721 - D728, D771 - D780, D783, D785, D786	HSS104-02

COILS

Mark	Symbol & Description	Part No.
	X771 Ceramic vibrator	ASS1018
	L771 Axial inductor (22μH)	LAU220K

SWITCHES

Mark	Symbol & Description	Part No.
	S701, S703, S705, S707, S709, S711, S715, S717, S771 - S785, S789 - S791, S793 Tact switch (SURROUND, CD, PHONO, TUNER, TAPE, DAT, CD DIRECT, POWER, 60Hz+, 150Hz+, 400Hz+, 1kHz+, 2.4kHz+, 6kHz+, 15kHz+, 60Hz-, 150Hz-, 400Hz-, 1kHz-, 2.4kHz-, 6kHz-, 15kHz-, A, B, PRESET/MEMORY, EQUALIZER ON/OFF, MEMORY)	ASG1029

CAPACITORS

Mark	Symbol & Description	Part No.
	C773 (0.047 μ/5.5)	ACH1070
	C775	CKCYB102K50
	C729, C730	CKCYB182K50
	C733, C734	CKCYB331K50
	C727, C728	CKCYB472K50
	C731, C732	CKCYB821K50
	C725, C726	CKCYX123M25
	C723, C724	CKCYX333M25
	C735 - C741, C771, C772, C774, C776	CKDYF473Z50
	C721, C722	CKDYX823M25

RESISTORS

Mark	Symbol & Description	Part No.
	R899	RD1/2PM1R8J
	All resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	V772 Fluorescent indicator tube	AAV1069
	V771 Fluorescent indicator tube	AAV1071

DECK - 1 SW assembly**SWITCHES**

Mark	Symbol & Description	Part No.
	S811 - S815 Tact switch (1FWD, 1REV, 1FF, 1REW, 1STOP)	ASG1029

DECK - 2 SW assembly**SWITCHES**

Mark	Symbol & Description	Part No.
	S821 - S825 Tact switch (2FWD, 2REV, 2FF, 2REW, 2STOP)	ASG1029

DECK CTRL assembly (AWZ2197)**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC802	M74LS42P
	IC801	PDE029-C
	Q814,815	DTC143ES
	Q803-806	RN1201
	Q801,802	RN2204
	Q807-812	2SA1515
	D801,D802,D808,D810-D815, D817,D820-D826,D834-D836	HSS104-02

COILS

Mark	Symbol & Description	Part No.
	X801 Ceramic Vibrator	ASS1018
	L801 Axial Inductor (22 μ H)	LAU220K

CAPACITORS

Mark	Symbol & Description	Part No.
	C801	CEASR33M50
	C803	CEAS101M10
	C802	CEAS101M16
	C839,C840	CKDYB102K50
	C804-C807	CKDYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	VR803 (10k)	VRTM6H103
	VR801,VR802 (20k)	VRTM6H203
	Other resistors	RD1/8PM□□□J

DECK CENTER assembly**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	D847	AEL1065
	D851	AEL-443
	D841-D844,D849	AEL1076
	D854,D856-D858	HSS104-02

SWITCHES

Mark	Symbol & Description	Part No.
	S841 - S847 Tact switch	ASG1029
	S848,S849 Slide switch (DOLBY, REVERSE MODE)	ASH1014

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

POWER SUPPLY assembly (AWZ2241)**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC1002	NJM78M56FA
	IC1001	TC4069UBP
	Q1002	2SB560
	Q1003	2SC2240
	D1006,D1008,D1011-D1013	HSS104-02
	D1004 Zener Diode	RD33ESB2
	D1009 Zener Diode	RD5.1ESB
	D1001,D1003,D1005,D1007, D1014	S5566

TRANSFORMER

Mark	Symbol & Description	Part No.
⚠	T1001 Power transformer	ATT1092

RELAY

Mark	Symbol & Description	Part No.
⚠	RY1001 Relay	ASR1024

CAPACITORS

Mark	Symbol & Description	Part No.
	C1009,C1010	CEAS100M50
	C1005	CEHAQ220M50
	C1004	CEAS221M50
	C1007	CEAS222M16
	C1011	CEAS4R7M50
	C1008	CEAS470M16
	C1006	CEAS470M50
	C1001	CEAS470M63

RESISTORS

Mark	Symbol & Description	Part No.
	R1011	RD1/4PMFL4R7J
	R1003	RS2LMF222J
	R1005	RS2LMF821J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
△	1P AC SOCKET (OUTLET)	AKP1035

CONNECT assembly

No parts are supplied with the connection assembly.

6. ADJUSTMENTS

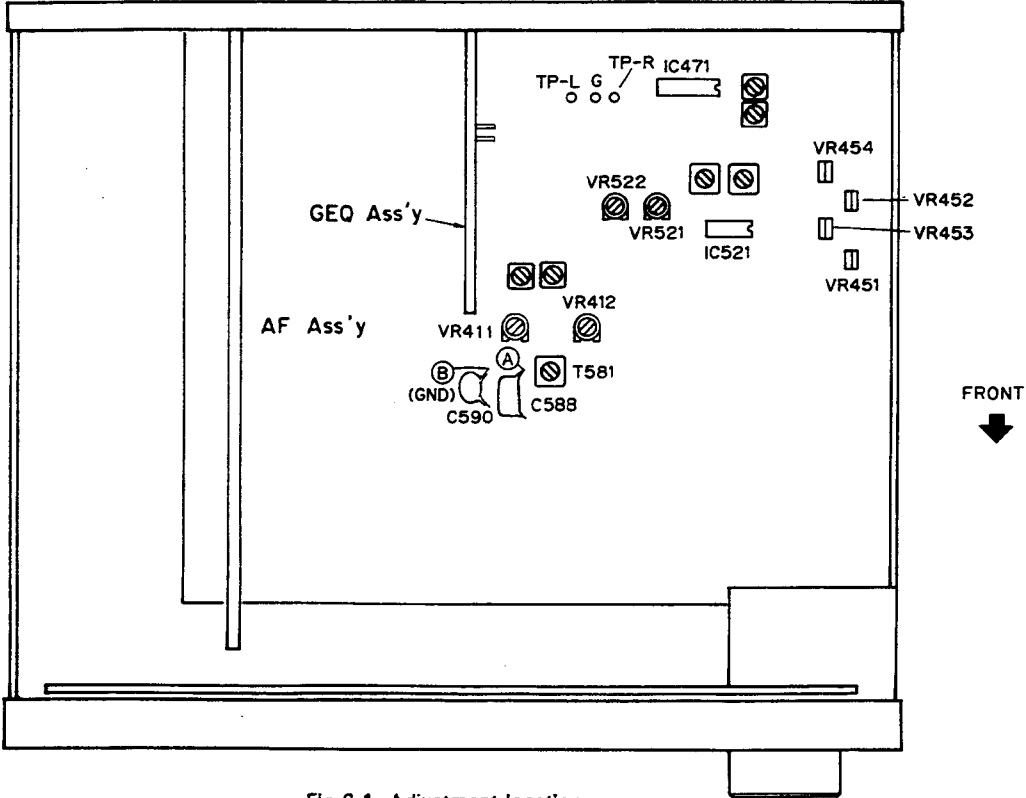


Fig 6.1. Adjustment location

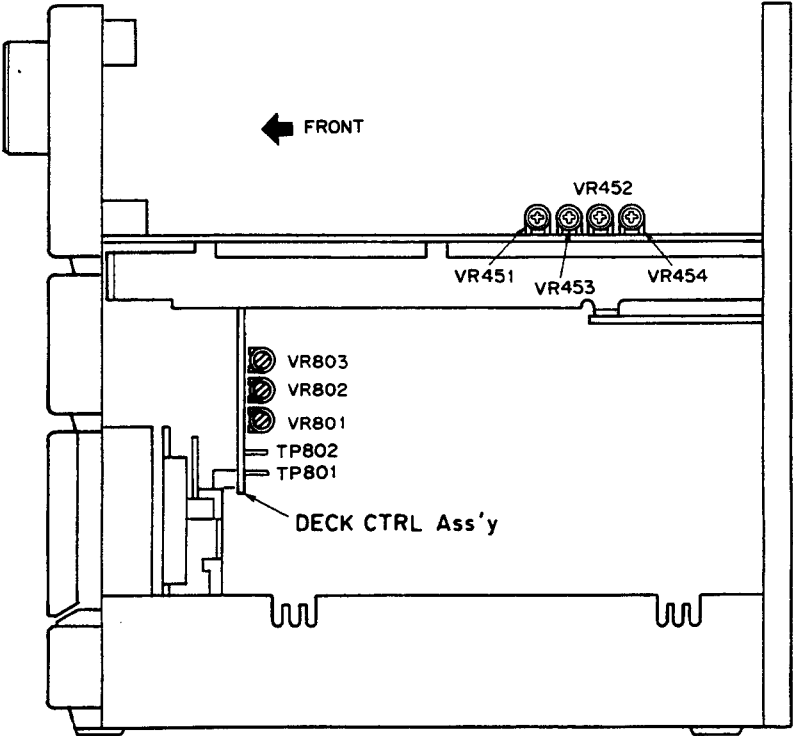


Fig 6.2. Adjustment location

- Adjustment and measurement are usually made in the AF Ass'y, unless specified otherwise.
- Set the graphic equalizer to OFF, the balance control to Center and the microphone mixing volume to MIN.
- The function should always be set to "TAPE" unless otherwise specified.

Adjustment of Mechanical System

- Test tape: STD-301 (3 kHz, 30 min.)
- Setting of double speed mode: Short-circuit TP801 and TP802 of the Control Ass'y. To release the mode, break the short circuit.

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 3 kHz.	Deck I	DECK CTRL Ass'y VR801	TP-L (Lch)	Press the PLAY SW and adjust the frequency to 3010 Hz \pm 10 Hz. Make sure that the wow and flutter is within 0.2 %.	
2	PLAY (Double speed mode)			—		Press the PLAY SW in double speed mode and confirm that the frequency is 6000 Hz \pm 1000 Hz. Note down the figure.	Release the double speed mode after adjustment.
3	PLAY (Double speed mode)		Deck II	DECK CTRL Ass'y VR803	TP-R (Rch)	Press the PLAY SW in double speed mode and adjust the frequency to be within \pm 30 Hz of the figure recorded at step No. 2.	Release the double speed mode after adjustment.
4	PLAY			DECK CTRL Ass'y VR802		Press the PLAY SW and adjust the frequency to 3010 Hz \pm 10 Hz. Make sure that the wow and flutter is within 0.2 %.	

Adjustment of Electric System

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

- Adjustment of tape speed has been completed.
- Clean and demagnetize the head using a head eraser.
- When measured, the level should be 0 dBV = 1 Vrms.
- Use side A of the specified tape for adjustment.
STD-331B: For adjustment of playback system.
STD-630: NORMAL blank tape
STD-620: CrO₂ blank tape
STD-610: METAL 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 imperfect result.

List of Adjustment

Deck I

- Head azimuth adjustment
- Playback level adjustment

Deck II

- Head azimuth adjustment
- Playback level adjustment
- Adjustment frequency characteristics of recording/playback
- Recording level adjustment

Checking of Decks II

- Make sure the ALC is operating properly.

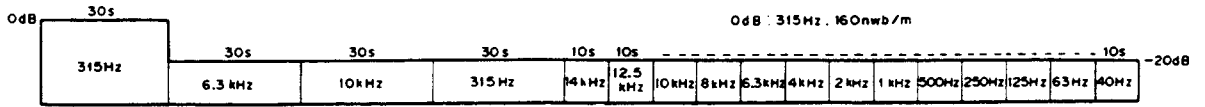


Fig. 6.3 Test tape STD-331B

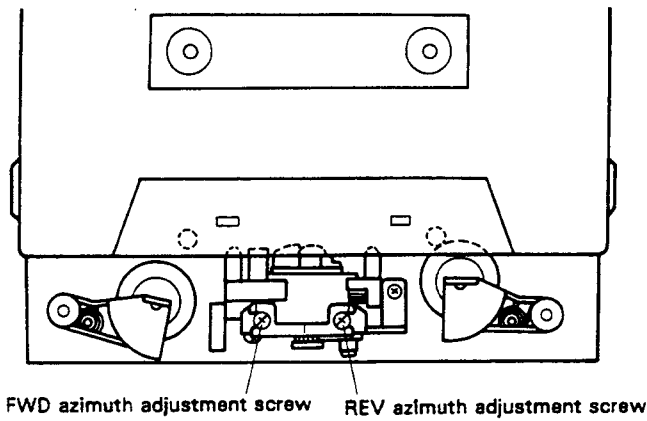


Fig. 6.4 Head azimuth adjustment

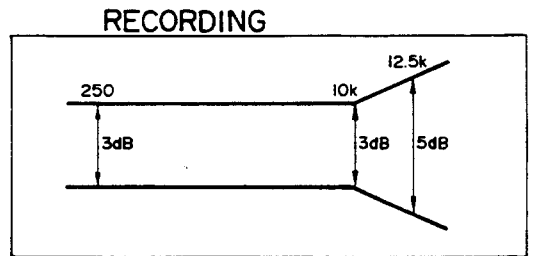
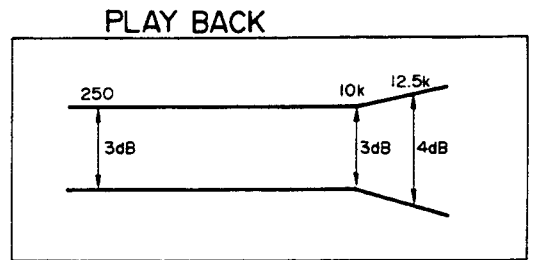


Fig. 6.5 Frequency characteristics

• 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 driver is inserted.

1. Head Azimuth Adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (10 kHz, -20 dB).	Head azimuth adjustment screw (Fig. 6-4)	TP-L (Lch) TP-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	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (315 Hz, 0 dB).	VR453 (Lch) VR454 (Rch)	TP-L (Lch) TP-R (Rch)	-6.7 dBV	

• 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 driver is inserted.

1. Head Azimuth Adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (10 kHz, -20 dB).	Head azimuth adjustment screw (Fig. 6-4)	TP-L (Lch) TP-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	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (315 Hz, 0 dB).	VR451 (Lch) VR452 (Rch)	TP-L (Lch) TP-R (Rch)	-6.7 dBV	

3. 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 under-adjusting the bias.

Pro- cedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Load the test tape STD-630 and set to record mode.	—	Area between ㉔ and ㉕ (AF Ass'y) shown in Fig. 6-1.	Confirm that the oscillation frequency is 105 kHz \pm 1 kHz.	If the adjustment value cannot be set within the specification, adjust the T581.
2	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	-27.7 dBV	
3	NORM	REC/ PLAY	Record and playback the test tape STD-630 (315 Hz and 10 kHz).	VR411 (Lch) VR412 (Rch)	TP-L (Lch) TP-R (Rch)	Repeat the correction so that the playback level of 10 kHz remains 0 ± 0.5 dB in relation to 315 Hz.	

4. Recording Level Adjustment

Pro- cedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	-7.7 dBV	
2	NORM	REC/ PLAY	Record and playback the test tape STD-630 (315 Hz).	VR521 (Lch) VR522 (Rch)	TP-L (Lch) TP-R (Rch)	Repeat the recording and correction so that the playback level of 315 Hz is -6.7 dBV.	

• Checking Procedure for Deck II

1. Action of ALC

Pro- cedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Checking value	Remarks
1	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	-7.7 dBV	
2				+10 dB against the input level of step 1.		-2.7 dBV \pm 2.5 dB	

7. IC INFORMATION

● Terminal function of PD3133

No.	Terminal name	I/O	Function		Active
1 } 5	S7 } S11	0	Segment 7 } Segment 11	Outputs segment control signals of the FL indicator.	H
6 } 12	G1 } G7	0	Grid 1 } Grid 7	Outputs grid control signals of the FL indicator (Rch).	H
13 } 17	G1 } G5	0	Grid 1 } Grid 7	Outputs grid control signals of the FL indicator (Lch).	H
18		1	Not used (pull-down with the resistor).		—
19		—	-27V power supply input for FL indicator control. If these -27V are not supplied when AC voltage of the filament is applied, the FL indicator will go off.		—
20 } 22	6G } 8G	0	Grid 6 } Grid 8	Outputs grid control signals of the FL indicator.	H
23	DIRECT	1	Direct detection When the DIRECT switch of the AMP is pressed and this terminal becomes "H" by Pin59 of the IC801(PDE029), turns the characteristics of the graphic EQ to flat.		H
24	SR	1	SR remote control signal input.		L
25	GE DATA	0	DATA	Outputs control signal of the IC603 (LC7522).	H/L
26	GE CLOCK	0	CLOCK		
27	POWER	1	Power supply detection. When the power is turned on and "H" is input to this terminal from Pin20 of the IC801(PDE029), it becomes operation mode. If "H" is not input (when "L"), it becomes backup mode.		H
28	A	0	A(Pin11)	Outputs control signal of the IC726 (TC4041BP).	H/L
29	B	0	B(Pin10)		
30	C	0	C(Pin9)		
31	SPA IN	1	Inputs the comparison result of the level comparator IC725 (NJM4558DXP). (decides whether Pin1 of the IC725 is "H" or "L"). (See Note1 on P.76).		H/L
32	VCC	—	+5V Power supply.		—

No.	Terminal name	I/O	Function		Active
33	A/D0(LSB)	0	LSB ┆ MSB	Outputs voltage for comparison of the comparator of the D/A converter (See Note1 on P.76).	H/L
34	A/D1				
35	A/D2				
36	A/D3				
37	A/D4(MSB)				
38	BPF RESET	0	RESET of band-pass filter output for Spectrum Analyzer. After measuring the level of the Lch, reset the output of each band-pass filter to level zero, then proceed to measure the level of the Rch.		H
39	CTRL Rch	0	Selects input of the band-pass filter for Spectral Analyzer (See Note1 on P.76).	Lch	L
40	CTRL Lch	0		Rch	L
41	K01	0	Outputs key scan signal.		L
42	K00				
43 ┆ 46	K13 ┆ K10	1	Inputs key scan signal.		L
47	RESET	1	Inputs RESET signal.		H
48	OSC2	0	4.19MHz ceramic oscillator connection terminal.		—
49	OSC1	1			—
50	GND	—	Grounding.		—
51	CL1	1	Pull-up to Vcc as it is not used.		—
52	CL2	0	Not used.		—
53	$\overline{\text{TEST}}$	1	Pull-up to Vcc.		—
54 ┆ 58	K02 ┆ K06	0	Outputs key scan signal.		L
59 ┆ 64	S1 ┆ S6	0	Outputs segment control signal of the FL indicator.		H

Note 1: Spectral Analyser Indication Unit

Spectral Analyser indication unit is as shown in Fig. 7-1.

The microcomputer IC771 (PD3133) and a comparator IC725 (NJM4558DXP) measure the Lch and Rch or respective band levels and control the level indication.

Thus, the channel level is measured one by one for every one band. When all bands of Lch and Rch are measured, the results will be displayed all at once.

The measurement is made by repeating B.P.F. output RESET, Lch 15 kHz to 60 Hz, B.P.F. output RESET, Rch 15 kHz to 60 Hz, level indication, B.P.F. output RESET, Lch

Respective band levels of the Spectral Analyser are measured as follows: outputs reference voltage (V_{Ref}) for five times; decides whether the output from the comparator is "H" or "L"; specifies the fifth output of the reference voltage as the measuring level and decides in which point of 11 steps the level is positioned; displays the level.

Thus, the difference of measuring times for low level measurement and high level measurement can be eliminated to allow level measurement of the respective band by unit time.

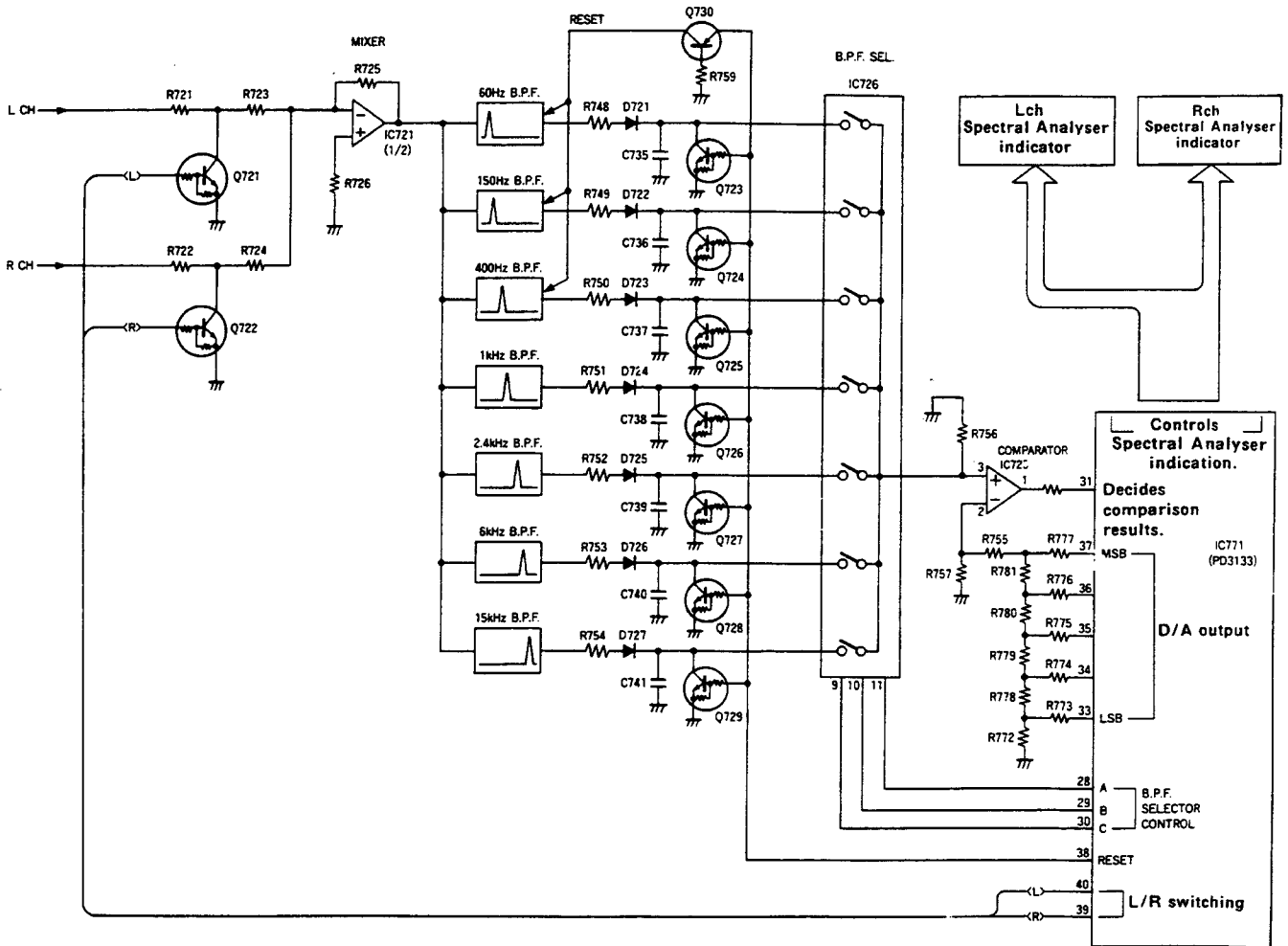


Fig.7-1 Block diagram of Spectral Analyser indication unit

Level measurement works, mentioned as below. 5 bit DATA "10000" (1/2 of maximum value, See Fig. 7-2.) puts out first from the D/A output of the Pins 33 to 37 of the IC771 (PD3133). The second DATA to be output is decided by "H" or "L" of the comparator output at this point. If the output is "H", the reference voltage (V_{Ref}) is lower. "11000", the intermediate value of "10000" (the first output) and the maximum value "11111", will be the second output. The third DATA to be output is decided by "H" or "L" of the comparator output at this point. If the output is "L", the reference voltage (V_{Ref}) is higher.

"10100", the intermediate value of "11000" (the second output) and "10000" (the first output), will be output third.

The fourth DATA to be output is decided by "H" and "L" of the comparator output at this point.

If the output is "L", the reference voltage (V_{Ref}) is still higher. "10010", the intermediate value of "10100" (the third output) and "10000" (the first output), will be output fourth.

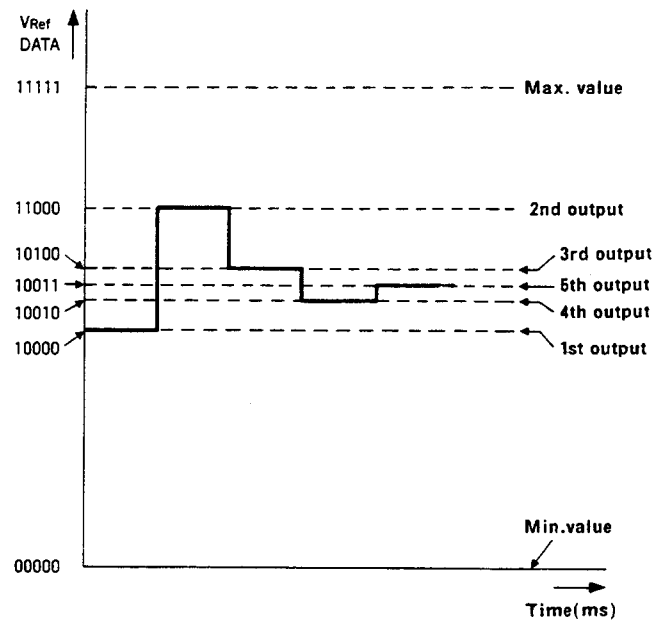


Fig.7-2 Level measurement action

The fifth DATA to be output is decided by "H" and "L" of the comparator output at this point. If the output is "H", the reference voltage (V_{Ref}) is still lower. "10011", the intermediate value of "10010" (the fourth output) and "10100" (the third output), will be output fifth. The fifth DATA value "10011" is specified as the the result of measurement. Finally, how many points of Spectral Analyser should be lit up is decided from this DATA "10011". All bands of Lch and Rch are displayed all at once after measurement.

● Terminal Function of PDE029-C (DECK control microcomputer)

Note: I: CMOS input, N: Nch open drain output,

O: CMOS output, UN: Nch open drain output with pull-up MOS transistor

No.	Terminal name	I/O	Function	Active																						
1	S1(DATA1)	N	Used for sending/receiving of DATA with microcomputer of TUNER.	H/L																						
2	S0(DATA2)	O		H/L																						
3	SC	O		H/L																						
4	SREQ	O	Not used.	—																						
5	FADER (LED)	O	Light up LED during FADER REC mode.	H																						
6	1 BIAS	O	Not used.	—																						
7	2 BIAS	O	Oscillates BIAS only during REC mechanism 2.	H																						
8		I	Not used.	—																						
9	COPY	UN	<p>According to the various statuses in the table below, the control of the IC471 (for DOLBY NR) and for the switching inputs of the REC AMP are depicted as follows.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>FUNCTION</th> <th>REC MODE</th> <th>COPY (Pin 9)</th> <th>DOLBY P/R (Pin 10)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">TAPE</td> <td>REC not operated.</td> <td>L</td> <td>L</td> </tr> <tr> <td>REC is operating.</td> <td>H</td> <td>L</td> </tr> <tr> <td rowspan="2">Except TAPE</td> <td>REC not operated.</td> <td>L</td> <td>L</td> </tr> <tr> <td>REC is operating.</td> <td>L</td> <td>H</td> </tr> <tr> <td colspan="2">COPY is operating (both normal speed and double speed).</td> <td>L</td> <td>L</td> </tr> </tbody> </table> <p>DOLBY NR IC: IC471, HA12136 REC AMP Input Selector: IC521, TC4066BP</p>	FUNCTION	REC MODE	COPY (Pin 9)	DOLBY P/R (Pin 10)	TAPE	REC not operated.	L	L	REC is operating.	H	L	Except TAPE	REC not operated.	L	L	REC is operating.	L	H	COPY is operating (both normal speed and double speed).		L	L	H/L
FUNCTION	REC MODE	COPY (Pin 9)		DOLBY P/R (Pin 10)																						
TAPE	REC not operated.	L	L																							
	REC is operating.	H	L																							
Except TAPE	REC not operated.	L	L																							
	REC is operating.	L	H																							
COPY is operating (both normal speed and double speed).		L	L																							
10	Dolby P/R	UN	H/L																							
11	PBT/2	UN	Control switching of playback mechanism (L: mechanism 1).	H/L																						
12	2. REC MUTE	UN	Sets to L only while mechanism 2 is in REC mode.	H																						
13	MS. PULSE	N	MS pulse detection (H: music is searched).	H/L																						
14	1. REC MUTE	UN	Not used.	—																						
15	FADER	UN	Turns Q601 ON to discharge the time constant deciding capacitor C642 when controlling rise time of the power supply of the BIAS oscillation circuit. If the FADER switch is turned on, the unit enters REC PAUSE mode. When the PLAY (FWD and REV) button is pressed, at this time, the terminal will be switched from "H" to "L". In FADER REC during ASES operation, the terminal will be "H" for 100ms when the unit starts up.	H																						
16	PB. MUTE	UN	Turns OFF only during DECK playback mode.	H																						
17	1. PULSE	N	Detects hall device pulse of mechanism 1.	H/L																						
18	2. PULSE	N	Detects hall device pulse of mechanism 2.	H/L																						
19	HI/NORM	N	Controls TAPE SPEED (H: double speed).	H/L																						
20	POW. RY	O	Becomes "H" when POWER is turned ON.	H																						
21	1. MOTOR	N	Controls the motor of mechanism 1. (L: MOTOR rotates).	L																						
22	P.ASES	N	Not used.	—																						

No:	Terminal name	I/O	Function	Active	
23	1. ●	N	Not used.	—	
24	2. MOTOR	N	Controls the motor of mechanism 2. (L : MOTOR rotates) .	L	
25	DIGI ON/OFF	O	Not used.	—	
26	SP.RY	O	Controls SP RELAY (RY351) Operates MUTE for 5seconds after POWER is turned ON. Turns SP RELAY OFF immediately after POWER is turned OFF.	L	
27	V-UP	O	Controls TA7291 and UP/DOWN of the MOTOR VOLUME.	V-UP (Pin 27)	H
28	V-DOWN	O		V-DOWN (Pin 28)	H
29	L-MUTE	O	Operates MUTE for 0.5seconds when FUNCTION is switched and SURROUND is ON/OFF and DIRECT is ON/OFF. When POWER is ON, the SP RELAY is turned ON, and it takes 0.3seconds until the output signal of VOLUME (VR391) functions for muting.	H	
30	TEST	—	Not used (GND).	—	
31	Vss	—	GND.	—	
32	OSC1	—	Connects 4.19MHz ceramic resonator.	—	
33	OSC2	—		—	
34	RES	—	RESET terminal.	L	
35	A	O	Transfer DATA of 3bit to the 74LS42P and uses as KEYSKAN OUT K00-K06.	L/H	
36	B	O		L/H	
37	C	O		L/H	
38	1. ► (LED)	N	Controls the FWD PLAY LED of mechanism 1.	L	
39	1. ◄ (LED)	N	Controls the REV PLAY LED of mechanism 1.	L	
40	2. ► (LED)	N	Controls the FWD PLAY LED of mechanism 2.	L	
41	2. ◄ (LED)	N	Controls the REV PLAY LED of mechanism 2.	L	
42	2. ● (LED)	N	Control the REC LED of mechanism 2.	L	
43	ASES(LED)	N	Controls the ASES.	L	
44	R.REC(LED)	N	Not used.	—	
45	R.ASES (LED)	N	Not used.	—	
46	SOL2B	O	Controls the solenoid for FF/REW of mechanism 2.	H	
47	SOL2A	O	Controls the solenoid for PLAY of mechanism 2.	H	
48	SOL1B	O	Controls the solenoid for FF/REW of mechanism 1.	H	
49	SOL1A	O	Controls the solenoid for PLAY of mechanism 1.	H	

No.	Terminal name	I/O	Function	Active
50 55	K10 K15	I	KEY matrix input.	H/L
56	K16	N		
57	K17			
58	SURROUND	UN	Controls SURROUND ON/OFF.	H
59	DIRECT	UN	Controls DIRECT ON/OFF.	H
60	F-MUTE	UN	Operates MUTE for 0.5seconds when FUNCTION is switched. When POWER is ON after SP RELAY(RY351) is activated (ON), MUTE is operated for 0.3seconds.	H
61	INH	UN	Switches FUNCTION.	H/L
62	B	UN		H/L
63	A	UN		H/L
64	VDD	-	+5V	-

8. FOR HE TYPE

8.1 CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- 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.

The DC-Z82/HE type is the same as the DC-Z82/HB type with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		DC-Z82/HB type	DC-Z82/HE type	
	POWER SUPPLY assembly	AWZ2241	AWZ2239	
	CONNECT assembly	Non supply	Non supply	
\triangle	FU2001 Fuse(T2A/250V)	AEK-511	AEK-017	
\triangle	FU2003 Fuse(T1. 6A/250V)	AEK-510	AEK-405	
\triangle	FU2004, FU2005 Fuse (T1. 25A/250V)	AEK-509	.....
\triangle	FU2004, FU2005 Fuse(T1. 25A/250V)	.....	AEK-018	
\triangle	AC Power cord	ADG-063	ADG1021	
\triangle	Caution card	ARM1003	.....
	Operating instruction(English)	ARB1155	.....
	Operating instruction(English, German, French, Italian, Dutch, Swedish, Spanish, Portuguese)	.....	ARE1109	
	Operating instruction(German)	.....	ARC1127	

8.2 POWER SUPPLY assembly(AWZ2239;HE TYPE)

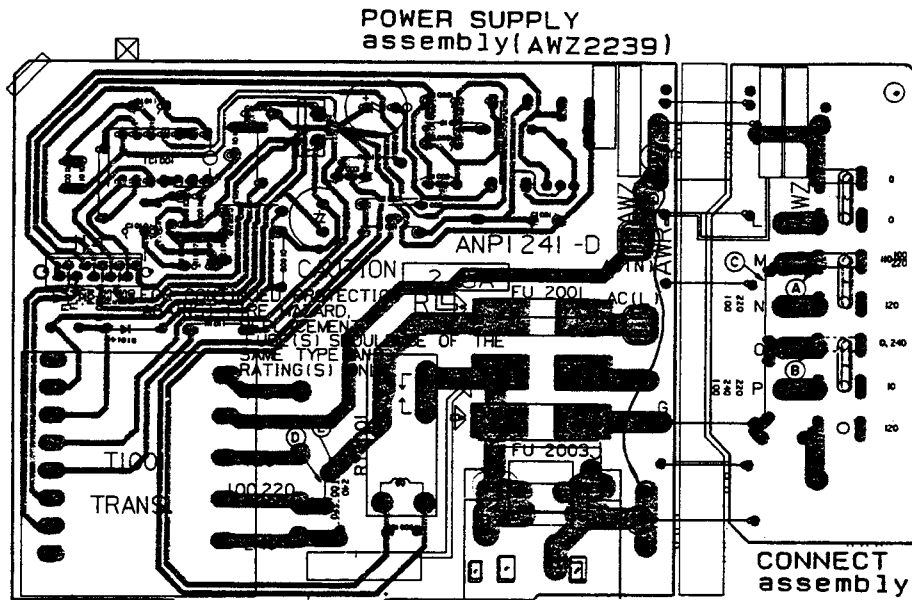
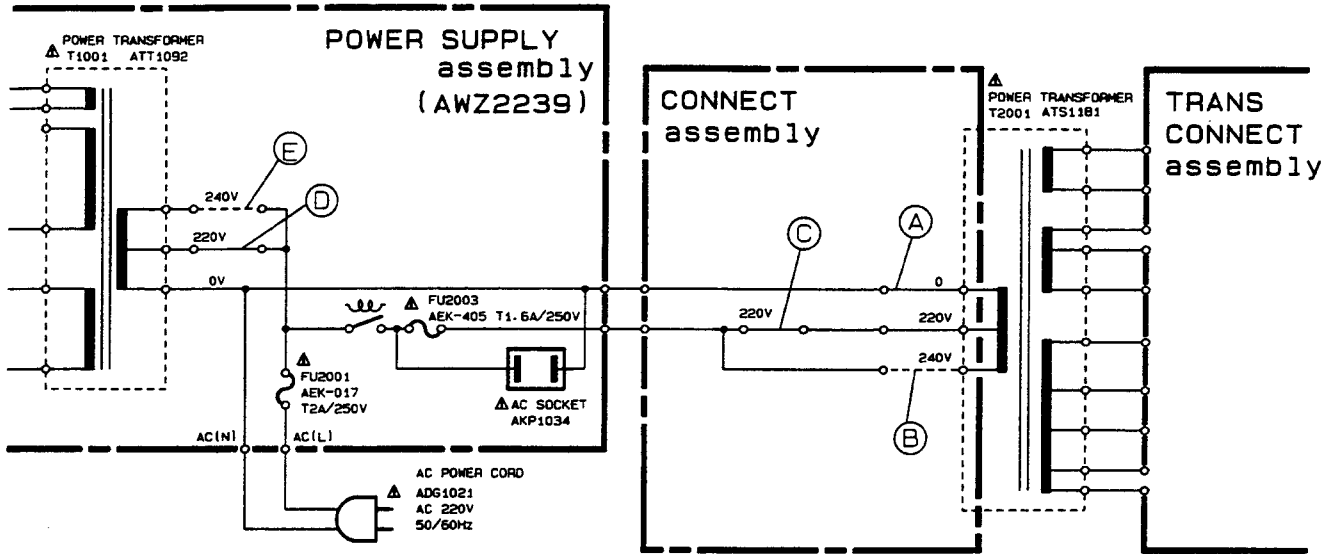
The POWER SUPPLY assembly(AWZ2239;HE TYPE) is the same as the POWER SUPPLY assembly(AWZ2241;HB TYPE) With the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ2241;HB type	AWZ2239;HE type	
\triangle	AC socket(OUTLET)	AKP1035	AKP1034	

8.3 CONNECT assembly(HE TYPE)

The difference in parts between the CONNECT assemblies HBtype and HETYPE is only the jumper wire.

8.4 SCHEMATIC AND P.C.BOARDS DIAGRAM



Line Voltage Selection(FOR HB AND HE TYPES)

Line voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the position of the jumper wires (A-E) as follows.

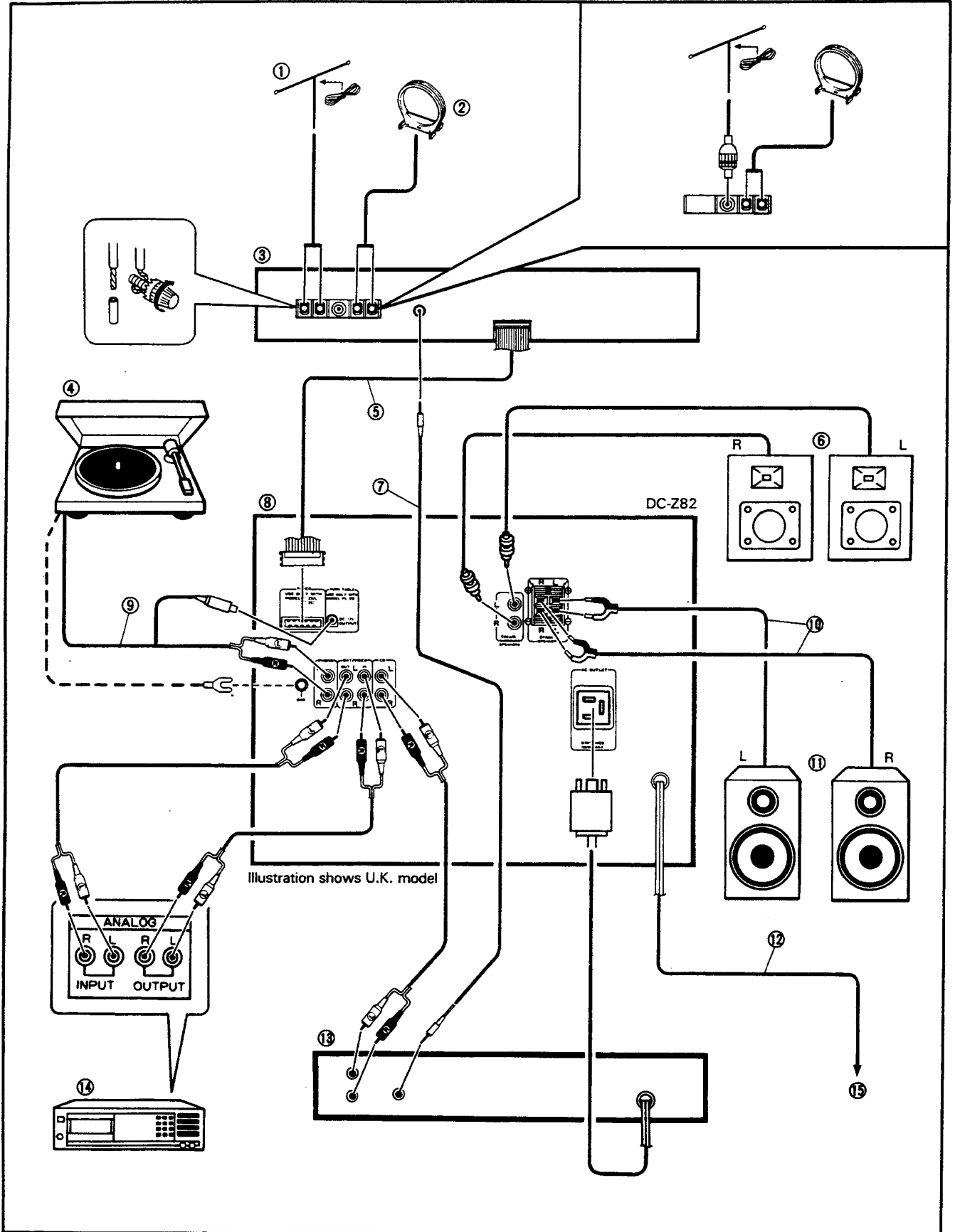
4. Stick the line voltage label on the rear panel.

Voltage	220V	240V
(A)	○	×
(B)	×	○
(C)	○	×
(D)	○	×
(E)	×	○

○:Be needed
 ×:Be needless

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

9. CONNECTIONS



Refer to page 83 for the connections diagram.

- ① Accessory FM antenna
- ② Accessory AM loop antenna
- ③ FM/AM tuner (F-Z92 or F-Z92L)
- ④ Turntable (Separately sold PL-Z82 or PL-Z92)
- ⑤ Tuner input/output cord
- ⑥ Surround speaker system
- ⑦ CD player control cord
- ⑧ Cassette tape deck amplifier
- ⑨ Turntable output cord
- ⑩ Speakers cord
- ⑪ Speaker system
- ⑫ Power cord
- ⑬ CD player (Separately sold PD-Z72T or PD-Z82M)
- ⑭ Digital audio tape deck (DAT) or video cassette recorder (VCR)
- ⑮ AC wall socket

Plug the power cord into the AC wall socket outlet only after all the connections have been completed.

If the FM antenna of the FM/AM tuner terminal is a PAL connector only, then refer to connection diagram B.

Proceed as follows with the set-up and connections:

1. Place the cassette tape deck amplifier on top of the CD player.
2. Connect the CD player OUPUT jacks to the cassette tape deck amplifier CD INPUT jacks with audio cords.
3. Place the tuner on top of the cassette tape deck amplifier.
4. Connect the tuner input/output cord ⑤ to the cassette tape deck amplifier.

TUNER CONNECTION

Insert the connector until it locks, thus ensuring that it is connected. When disconnecting the connector, pull it in the opposite direction while pressing the left and right claws.

If using this unit together with the optional PD-Z72T or PD-Z82M, connect the control cord ⑦.

5. Connect the FM antenna ① and the AM loop antenna ② to the tuner antenna terminals.
6. Place the turntable on top of the tuner.
7. Connect the turntable cords ⑨ to the cassette tape deck amplifier jacks.

If using this unit together with the optional PL-Z82 or PL-Z92, connect the turntable's audio cords and power supply cord respectively to the cassette tape deck amplifier's PHONO jacks and DC 12V OUTPUT jack.

If using a different turntable, connect the audio cord and earth cord.
8. Use the "DAT/VIDEO" jacks for connection to the audio input/output jacks of a DAT or VCR.

If connecting an LD player, connect the LD player audio output jacks to the "DAT/VIDEO" input jacks.

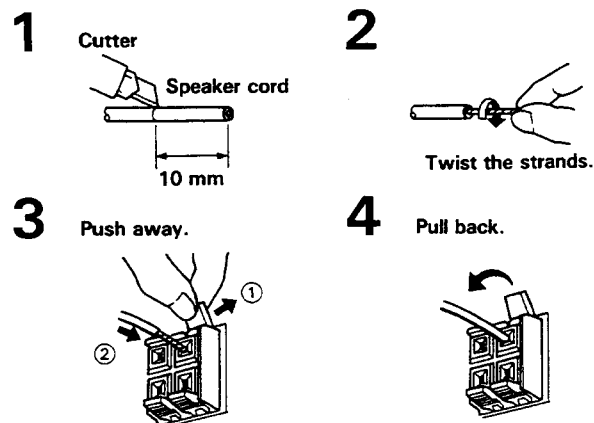
NOTE:

- Insert the plugs securely into the jacks. Improper connection can lead to sound distortion or malfunctioning.
- The white plug is for the left channel connection and the red plug for the right channel connection.

9. Connect the speaker cords ⑩ to the SPEAKERS terminals.

Connect the "+" terminals on the cassette tape deck amplifier to the "+" terminals on the speakers, the "-" terminals on the cassette tape deck amplifier to the "-" terminals on the speakers.

Connecting the speaker cords.



NOTE:

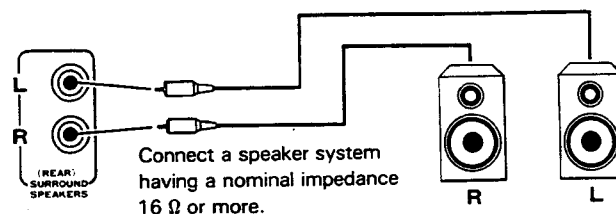
Do not allow the conductors of the cords to project beyond the terminals and to come into contact with other conductors. A breakdown or failure may occur when conductors touch one another.

Speaker impedance

Connect speaker systems with a nominal impedance ranging from 6 to 16 Ω.

Surround speaker connection

Connect the plugs properly.



10. Finally, connect the power cord ⑫ to the AC wall socket ⑮.

What is surround sound?

With ordinary stereo, sound normally comes only from speakers in front of the listener. In a concert hall or theater, though, sound reflected from the walls and ceiling reaches the listener from all directions. This is what accounts for the feeling of ambience or spaciousness of a live performance.

Surround sound works to reproduce these effects to produce fuller, more "live" sound.

STEREO WIDE

When the surround speakers are not connected, the stereo wide function will be activated. This function enhances the stereo effect. Note that it does not operate in the case of a monaural source, however.

Speaker System Placement Examples

The sound effects obtained in a surround system depend on speaker placement. Experiment with various arrangements to find the one most suited to your tastes.

Placing the speakers so that they are slightly higher than ear level contributes to sound quality.

[Case A]

Good sound dispersion; recommended for movies, etc.

[Case B]

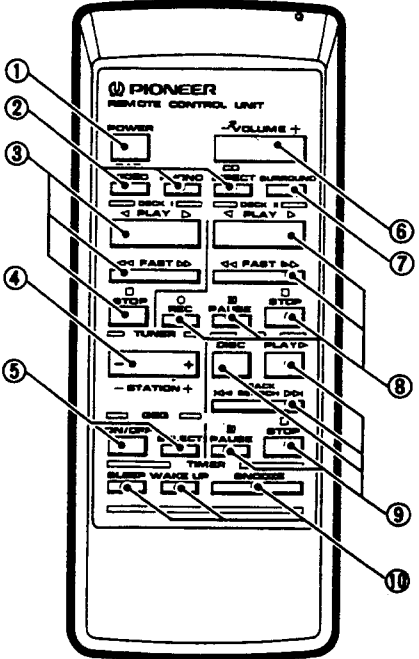
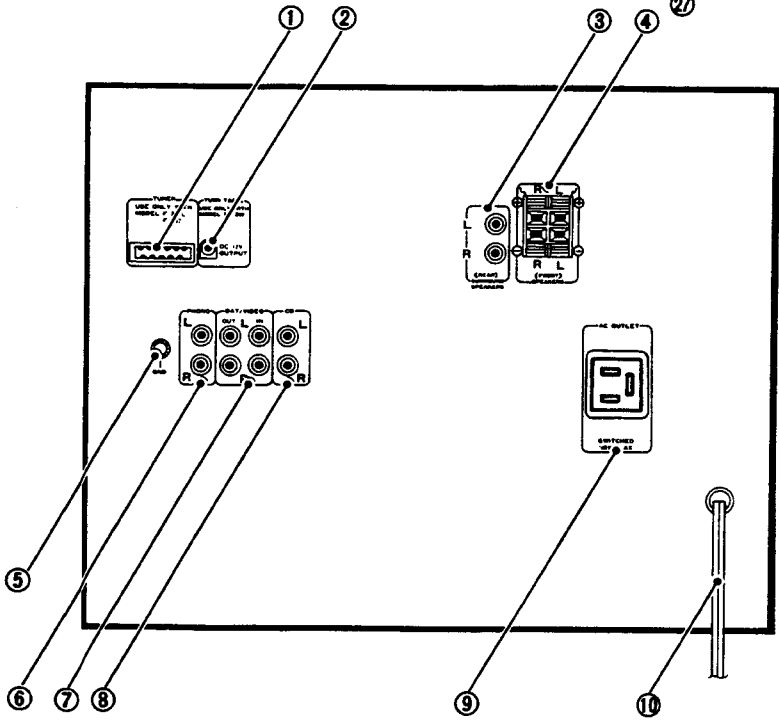
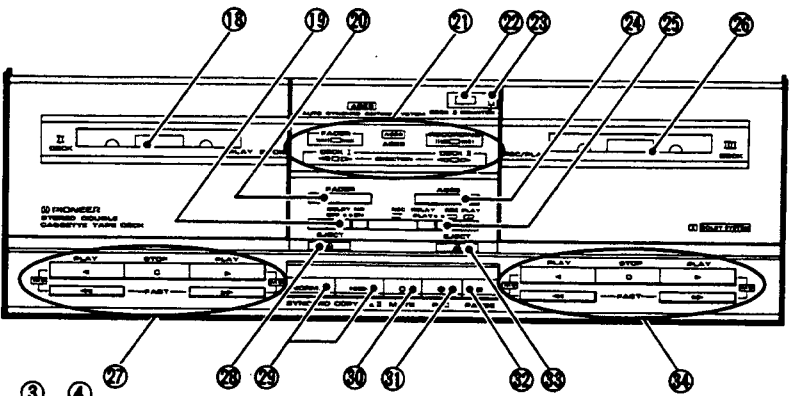
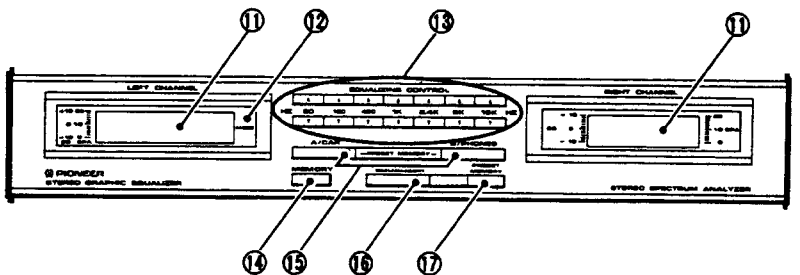
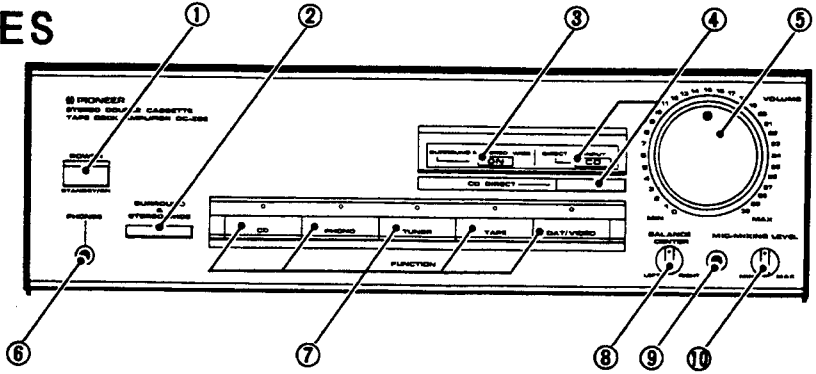
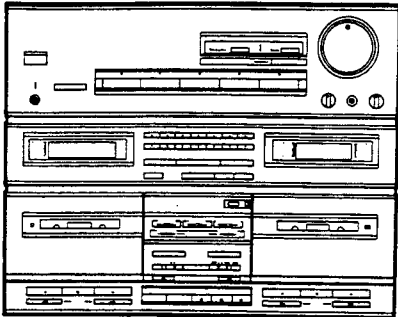
Sound appears to come from directly in front of listener. Good for listening to music recordings.

[Case C]

Offers most varied effects; good for watching sports programs or listening to live recordings.

10. PANEL FACILITIES

DC-Z82



REAR PANEL FACILITIES**Cassette tape deck amplifier: DC-Z82****① TUNER jacks**

Connect the F-Z92 (or F-Z92L) FM/AM tuner.

② TURNTABLE OUTPUT jack

This jack supplies power to the PL-Z82 or PL-Z92.

③ SURROUND SPEAKERS jacks

Connect the Surround speaker systems.

NOTE:

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

④ 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 6 Ω to 16 Ω .

⑤ Ground terminal (GND)

Connect this to the ground terminal on the turntable (except for PL-Z92 and PL-Z82).

⑥ PHONO input jacks

Connect the audio output cord on the turntable to these jacks.

⑦ DAT/VIDEO jacks

IN: Connect to audio output jacks of DAT, LD player or VCR, etc.

OUT: Connect to audio input jacks of DAT or VCR, etc.

⑧ CD input jacks

Connect to audio output jacks of CD player.

⑨ AC OUTLET (SWITCHED 100 W MAX)

Power supplied through these outlets is turned on and off by the cassette tape deck amplifier's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.

NOTE:

Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLET in order to avoid overheating or fire risk.

This can cause the cassette tape deck amplifier to malfunction.

⑩ Power cord

Connect this to the AC wall socket.

FRONT PANEL FACILITIES**Cassette tape deck amplifier: DC-Z82**

- This unit has an automatic tape selector function.
- 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.

Amplifier section**① POWER STANDBY/ON switch**

When this switch is set to the on position, power is supplied to the cassette tape deck amplifier's main circuit. The POWER unit's switch is geared to selecting the transformer's secondary so that even in STANDBY position, the unit's circuitry will work as long as the power cord is connected to a power outlet. Disconnect the power cord from the power outlet when you do not plan to use the unit for a long period of time. The unit is in STANDBY when the tuner section display indicates only the time.

② SURROUND & STEREO WIDE switch

When surround speaker systems are connected to the SURROUND SPEAKERS jacks at the rear: By turning this switch ON, you can enjoy surround reproduction.

When surround speaker systems are not connected: By turning this switch ON, you can enjoy STEREO WIDE reproduction with greater left-right spread.

NOTE:

- In the case of a monaural source, a SURROUND & STEREO WIDE effect cannot be obtained.
- SURROUND & STEREO WIDE function does not operate if CD DIRECT is on.

③ SURROUND & STEREO WIDE indicator

Lights when the SURROUND & STEREO WIDE switch is on.

④ CD DIRECT switch/indicator

Press this switch to listen to a CD without passing the signal through sound quality adjustment circuits.

⑤ VOLUME control**⑥ Headphone jack (PHONES)**

For stereo headphone plug.

⑦ FUNCTION switches/indicators

[CD] Press to listen to a CD player connected to the CD jacks.

[PHONO]

Press to play records on a turntable connected to the PHONO jacks.

[TUNER]

Press to listen to a radio broadcast.

[TAPE]

Press to listen to a cassette tape.

[DAT/VIDEO]

Press to listen to a stereo component connected to the DAT/VIDEO jacks.

⑧ BALANCE control

Usually set this control to the central position. If turned counterclockwise, the volume of the right channel will decrease.

If turned clockwise, the volume of the left channel will decrease.

⑨ Microphone (MIC) jack

This is a standard jack for connecting a microphone.

⑩ MIXING LEVEL control

Use to adjust volume of microphone and playback sound.

Graphic Equalizer section

11 Graphic equalizer/Spectrum analyzer display

Ordinarily this shows the spectrum analyzer display. It shows a graphic equalizer display during operation of the EQUALIZING CONTROL switches.

12 MODE display



A EQ ON indicator

Lights when the EQUALIZER switch is set to ON. When this indicator is lit, the graphic equalizer can be used to adjust sound quality.

B MEMORY indicator

When the line is lit under "MEMORY," it indicates that the equalization curves memorized in the A/CAR and B/PHONES switches can be recalled.

C A, B indicators

Indicates which equalization curve is currently recalled.

A: Curve stored in A/CAR. (Preset CAR or Memory A)

B: Curve stored in B/PHONES. (Preset PHONES or Memory B)

D PRESET indicator

When the line is lit under "PRESET," it indicates that the equalization curves preset in the A/CAR and B/PHONES switches can be recalled.

13 EQUALIZING CONTROL switches

These strengthen or weaken the indicated frequency band. Press the upper switch to emphasize; press the lower switch to attenuate.

14 MEMORY switch

Use to store equalization curves in the memory recall switches (A/CAR or B/PHONES).

15 Memory recall switches

Use to recall equalization curves.

16 EQUALIZER switch

Turns the equalizer on and off. The EQ ON indicator lights when this switch is on.

17 PRESET/MEMORY switch

Determines whether the equalizer curves recalled by the Memory recall switches will be your own programmed memorized curves or the factory preset curves.

Cassette tape deck Section


18 Deck I cassette door

19 DOLBY* NR switch

Set this switch to the ON position to activate the DOLBY NR system.

- Tapes recorded using Dolby noise reduction should always be played back with the noise reduction system on. Sound quality will be adversely affected if they are played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby NR system on.

- It is recommended that tapes recorded using Dolby B NR be so marked on the label. This will help to 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.

20 FADER switch

This switch is used to gradually fade out a recorded loaded tape in deck II. (The sound will be completely cut off after approximately 10 seconds and the tape will stop.)

21 Operation indicators

FADER: Lights when the FADER switch is on.

ASES: Lights when the ASES (Auto Synchro Editing System) is operating.

RECORDING: Lights when recording. Flashes when copying a tape.
Slow flashing — Normal copy
Rapid flashing — High speed copy

Direction (◀, ▶): Indicates direction of tape travel during recording or playback. Flashes slowly in pause mode. Flashes rapidly during Music Search (MS).

22 DECK II COUNTER




23 Counter reset switch

Press this switch to reset the Deck II tape counter display to 000.

24 ASES switch

Use to automatically record a CD on cassette tape. The sound will fade out at the end of the tape.

25 REVERSE MODE switch

Switch position		During playback	During recording
REC 	RELAY PLAY	Plays both tape sides. When one deck finishes playback, the other side begins playback of both tape sides (6 times maximum). If there is a tape in only one deck, then that deck continuously plays both sides of the tape (6 times maximum).	Records on one side (Deck II only).
REC 	PLAY 	Plays both sides continuously (6 times maximum).	Records on both sides (Deck II only).

26 Deck II Cassette door

27 Deck I Operation switches

- ▶ **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 (MS) starts if this is pressed during playback.
- ◀◀ **FAST** Rewind in forward mode, fast forward in reverse mode.
Music search (MS) starts if this is pressed during playback.

28 Deck I EJECT switch

29 SYNCHRO COPY switches

- Use for tape copying.
- NORM:** Copying from the Deck I tape to the Deck II tape at normal recording/playback speed.
- HIGH:** Copying at about twice normal tape speed. (Copies can be made in about half the NORM time.)

30 MUTE () switch (Deck II)

Use to create an unrecorded blank space between songs. The unrecorded space will be created for as long as this switch is kept depressed.

31 REC (●) switch (Deck II)

Set to recording standby mode. Recording will then begin when you press the PLAY switch (◀ or ▶).

32 PAUSE (||) switch (Deck II)

Temporarily stops tape travel. Cancels pause mode when pressed again.

33 Deck II EJECT switch

34 Deck II Operation switches

- ▶ **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 (MS) starts if this is pressed during playback.
- ◀◀ **FAST** Rewind in forward mode, fast forward in reverse mode.
Music search (MS) starts if this is pressed during playback.

Remote control unit

1 POWER key

2 Function keys

- DAT/VIDEO** Sets function to DAT/VIDEO.
- PHONO** Sets function to PHONO.
- CD DIRECT** Sets function to CD DIRECT.

3 DECK I operation keys

- ▶ Forward play
- ◀ Reverse play
- Stop
- ▶▶ Fast forward in forward mode, rewind in reverse mode.
Music search (MS) starts if this is pressed during playback.
- ◀◀ Rewind in forward mode, fast forward in reverse mode.
Music search (MS) starts if this is pressed during playback.

4 TUNER STATION keys

- Before operation, memorize broadcast stations in the STATION CALL switches.
- + Stations change in order in the upward direction
- Stations change in order in the downward direction.

5 Graphic equalizer (GEQ) operation keys

- ON/OFF:** Turns the equalizer on and off.
- SELECT:** Recalls the preset equalization curves (PRESET) and memorized equalization curves (MEMORY) in sequence.

6 VOLUME UP (+)/DOWN (-) keys

7 SURROUND key

Turns SURROUND & STEREO WIDE on and off.

8 DECK II operation keys

- ▶ Forward play
- ◀ Reverse play
- ▶▶ Fast forward in forward mode, rewind in reverse mode.
Music search (MS) starts if this is pressed during playback.
- ◀◀ Rewind in forward mode, fast forward in reverse mode.
Music search (MS) starts if this is pressed during playback.
- Stop
- || Pause
- REC (recording standby). Next, press the play key to begin recording.

9 CD operation keys

Make the connections so that the CD player can be operated by the remote control unit.

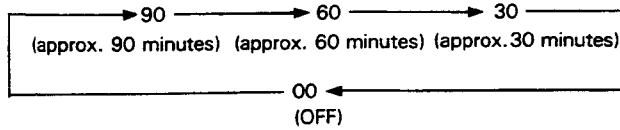
- ▶ Play
- DISC** DISC selection
- Stop
- || Pause
- ◀, ▶ Track search

NOTE:

Note that the DISC selector key on the accessory remote control unit may not function, depending on the CD player used.

10 Timer operation keys

SLEEP: Sets the sleep timer. Each time you press this key, the setting changes as shown here. The current setting is shown on the tuner display.
Power turns off when your set time has elapsed.



If you press the SLEEP key during SLEEP operation, the display will show the time remaining till power turns off.

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.

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

The amplifier section function automatically switches to the music source being operated when you press the CD playback (▶), cassette tape deck playback (◀, ▶), or tuner station controls. To operate with the remote control unit, use the keys with the same function indicating symbols (for example ▶) as those shown on the components.

NOTE:

It is not possible to operate the CD player with the remote control unless the remote control cord is connected

Range of remote control

When the remote control unit is pointed at the remote sensor window on the tuner and any of its keys is pressed, the tuner and other components can be operated by remote control.
Distance: Within a range of approx. 7 meters from the remote sensor window on the tuner.
Angle: Within approx. 30 degrees from the center of the remote sensor window on the tuner.
Remote control will not be possible if there is an obstacle between the remote control unit itself and the remote sensor window on the tuner.

11. SPECIFICATIONS

Cassette tape deck amplifier: DC-Z82

AMPLIFIER SECTION

Continuous Average Power Output is 35 Watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz, with no more than 0.3% total harmonic distortion.

**Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.*

Music power	65 W + 65 W (1 kHz, T.H.D. 1%, 8 ohms)
Music power (DIN)	65 W + 65 W (1 kHz, T.H.D. 1%, 8 ohms)
Peak music power	350 W (8 ohms)
Continuous Power Output (DIN)	40 W + 40 W (1 kHz, T.H.D. 1%, 8 ohms)
Graphic equalizer frequency band	60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz, ± 7 dB
Signal-to-noise ratio (IHF, short-circuited, A network)	
PHONO	72 dB
Signal-to-noise ratio (DIN, continuous Power/50 mW)	
PHONO	68 dB/60 dB
Total Harmonic Distortion (40 Hz to 20,000 Hz, 20 W, 8 ohms)*	No more than 0.2%

Tape Deck Section

Systems	4 track, 2-channel stereo
Heads	Recording/playback head x 1 Playback head x 1 Erasing head x 1
Motor	DC servo 2 speed motor x 1
Wow and Flutter	No more than 0.09% (WRMS)
Fast Winding Time	Approximately 95 seconds (C-60 tape)

Frequency Response (- 20 dB recording):

Normal tape	35 Hz to 14,000 Hz ± 6 dB
CrO ₂	35 Hz to 15,000 Hz ± 6 dB
Metal tape	35 Hz to 16,000 Hz ± 6 dB
Signal-to-noise ratio	
Dolby NR OFF	56 dB
Noise Reduction Effect	
Dolby B type NR ON	More than 10 dB (at 5 kHz)

Furnished Parts

Operating Instructions	1
Remote control unit	1
Dry cell batteries	2

Miscellaneous

Power requirements

U.K. and Australian models	a.c. 240 Volts -, 50/60 Hz
Other destination models	AC 110/120 - 127/220/240 V (switchable) 50/60 Hz
Power Consumption	288 W
Dimensions	360 (W) x 287 (H) x 334 (D) mm 14-3/16 (W) x 11-5/16 (H) x 13-2/16 (D) in
Weight (without package)	8.4 kg (18 lb 8 oz)

Accessories

EP Adaptor	1
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• Specifications and design subject to possible modification without notice due to improvement.

** Measured By Audio Spectrum Analyzer.