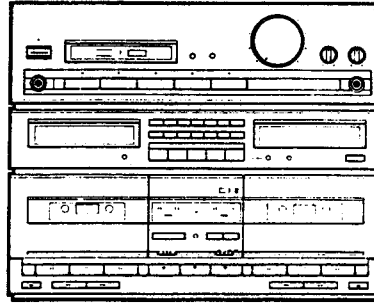


# Service Manual

**PIONEER®**  
The future of sound and vision.



**ORDER NO.  
ARP1916**

## STEREO DOUBLE CASSETTE DECK AMPLIFIER **DC-Z83**

### DC-Z83 HAS FOLLOWING VERSIONS:

Type	Power requirement	Export destination
HB	AC220V, 240V (switchable)*	United Kingdom
HE	AC220V, 240V (switchable)*	European continent
HEWZ	AC220V, 240V (switchable)*	West Germany
YPW	AC240V only	Australia
SD	AC110V, 120V-127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and General market

\*: Change the Jumper wires of assembly boards.

- This manual is applicable to the DC-Z83/HB and HE types.
- As to the HE type, refer to page 68.
- As to the other types, refer to applicable service manuals.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.
- As to the system composition, refer to the S-222 service manual (ARP1936).

## CONTENTS

1. EXPLODED VIEWS, PACKING AND PARTS LIST .....	2	5. FOR HE TYPE .....	68
2. SCHEMATIC DIAGRAMS AND P.C. BOARD CONNECTION DIAGRAMS .....	12	6. PANEL FACILITIES .....	69
3. P.C.B's PARTS LIST .....	47	7. SPECIFICATIONS .....	73
4. ADJUSTMENTS .....	53		
4. RÉGLAGE .....	58		
4. AJUSTE .....	63		

**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan  
**PIONEER ELECTRONICS SERVICE INC.** P.O. Box 1760, Long Beach, California 90801 U.S.A.  
**PIONEER ELECTRONICS OF CANADA, INC.** 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada  
**PIONEER ELECTRONIC [EUROPE] N.V.** Keetberglaan 1, 2740 Beveren, Belgium  
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911  
 © PIONEER ELECTRONIC CORPORATION 1990

YV JAN. 1990 Printed in japan.

# 1. EXPLODED VIEWS, PACKING AND PARTS LIST

## 1.1 PARTS LIST OF EXTERIOR AND PACKING

### NOTES:

- Parts without part number cannot be supplied.
- 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.

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Knob (VOLUME)	AAB1135		46	"AAA" dry cell	
	2	Rotary knob	AAB1136		47	Front pad (L.R)	AHA1314
	3	Button (REC)	AAD1668		48	Rear pad (L.R)	AHA1315
	4	Button (POWER)	AAD1674		49	Packing case	AHD1796
	5	Button (COPY)	AAD1676		50	Battery cover	AZN1846
	6	Button	AAD1682		51	Sheet	
	7	Button (FUNCTION)	AAD1711		52	Terminal screw	
	8	Button (GEQ)	AAD1712		53	Front panel	AMB1636
	9	Button (EQUALIZER)	AAD1713		54	P.C.B mold	
	10	Button (EJECT)	AAD1716		55	Eject arm (L)	AMR2031
	11	Button (PLAY)	AAD1718		56	Eject arm (R)	AMR2032
	12	Slide knob	AAE1128		57	Chassis	
	13	Indicator lens (POWER)	AAK1800		58	Rear panel	
	14	Indicator lens	AAK1801		59	Bonnet case	ANE1218
	15	Decorative plate (AMP U)	AAK1804		60	Plate	
	16	Decorative plate (DOOR R)	AAK1873		61	Plate B	
	17	Decorative plate (AMP D)	AAK1877		62	Plate	
	18	Decorative plate (GEQ L)	AAK1878		63	Plate	
	19	Decorative plate (GEQ R)	AAK1879		64	Plate A	
	20	Decorative plate (DECK)	AAK1880		65	Plate	
	21	Decorative plate (DOOR L)	AAK1882		66	Heat sink	
	22	...			67	Shield plate	
	23	Cassette door (L)	AAN1177		68	Operating instructions	ARB1222
	24	Cassette door (R)	AAN1181		69	...	
	25	Counter	AAW1009		70	...	
	26	...	...		71	SPEANA assembly	AWG1025
	27	...	...		72	FUNCTION assembly	AWK1174
	28	...	...		73	AF assembly	AWZ2632
	29	Lavel	AAX1301		74	MAIN VR assembly	
	30	Screw	ABA1084		75	HEAD PHONE assembly	
	31	Screw (STEEL)	ABA1095		76	TRANS CONNECT assembly	
	32	Washer (PAPER)			77	BALANCE assembly	
	33	Spring 1	ABH1062		78	GEQ assembly	AWG1028
	34	Spring 2	ABH1063		79	MIC assembly	
	35	Keep plate	ABK1011		80	DECK-1 SW assembly	
	36	Earth lead			81	DECK-2 SW assembly	
	37	Earth lead			82	DECK CENTER assembly	
$\Delta$	38	AC power cord	ADG1052		83	DECK CTRL assembly	AWZ2641
	39	Counter belt	AEB1110		84	AMP,GEQ CTRL assembly	AWZ2642
	40	Nylon binder			85	POWER SUPPLY assembly	AWZ2241
	41	Leg assembly	AEC-847		86	CONNECT assembly	
$\Delta$	42	Strain relief	AEC-882		87	Mechanism unit 1	AWY1052
	43	Spacer (PCB)			88	Mechanism unit 2	AWY1054
	44	Nylon rivet			89	Damper assembly	AXA1008
	45	Clamper			90	Remote control unit (CU-DC020)	AXD1132

A

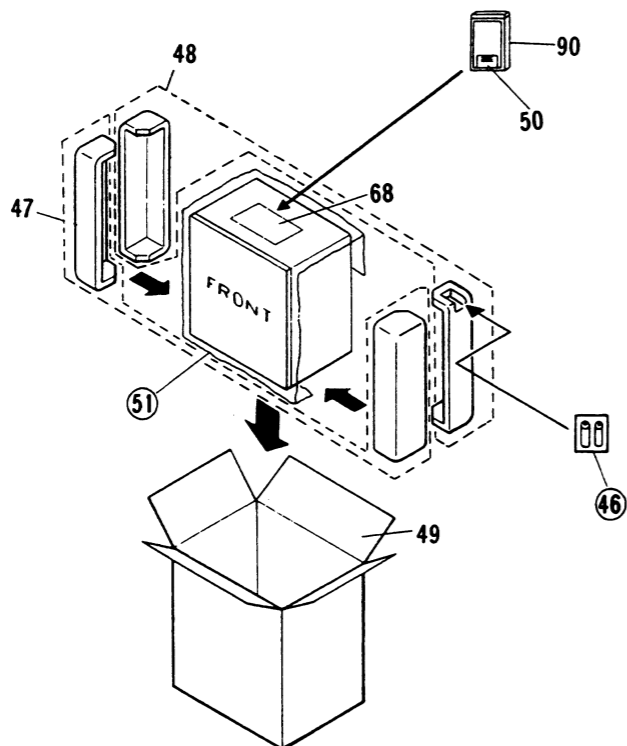
Mark	No.	Description	Parts No.
	91	Screw	BBZ30P060FMC
	92	Screw	BBZ30P080FCU
	93	Screw	BBZ30P080FZK
	94	Screw	BBZ30P180FMC
	95	Screw	BPZ26P080FMC
	96	Nut	NK90FUC
	97	Screw	VPZ30P080FZK
⚠	98	Fuse (T2A/250V, FU2001)	AEK-511
⚠	99	Fuse (T1.6A/250V, FU2003)	AEK-510
⚠	100	Fuse (T1.25A/250V, FU2004)	AEK-509
⚠	101	Fuse (T1.25A/250V, FU2005)	AEK-509
⚠	102	Power transformer (T2001)	ATS1252
	103	Screw	VPZ30P080FMC

B



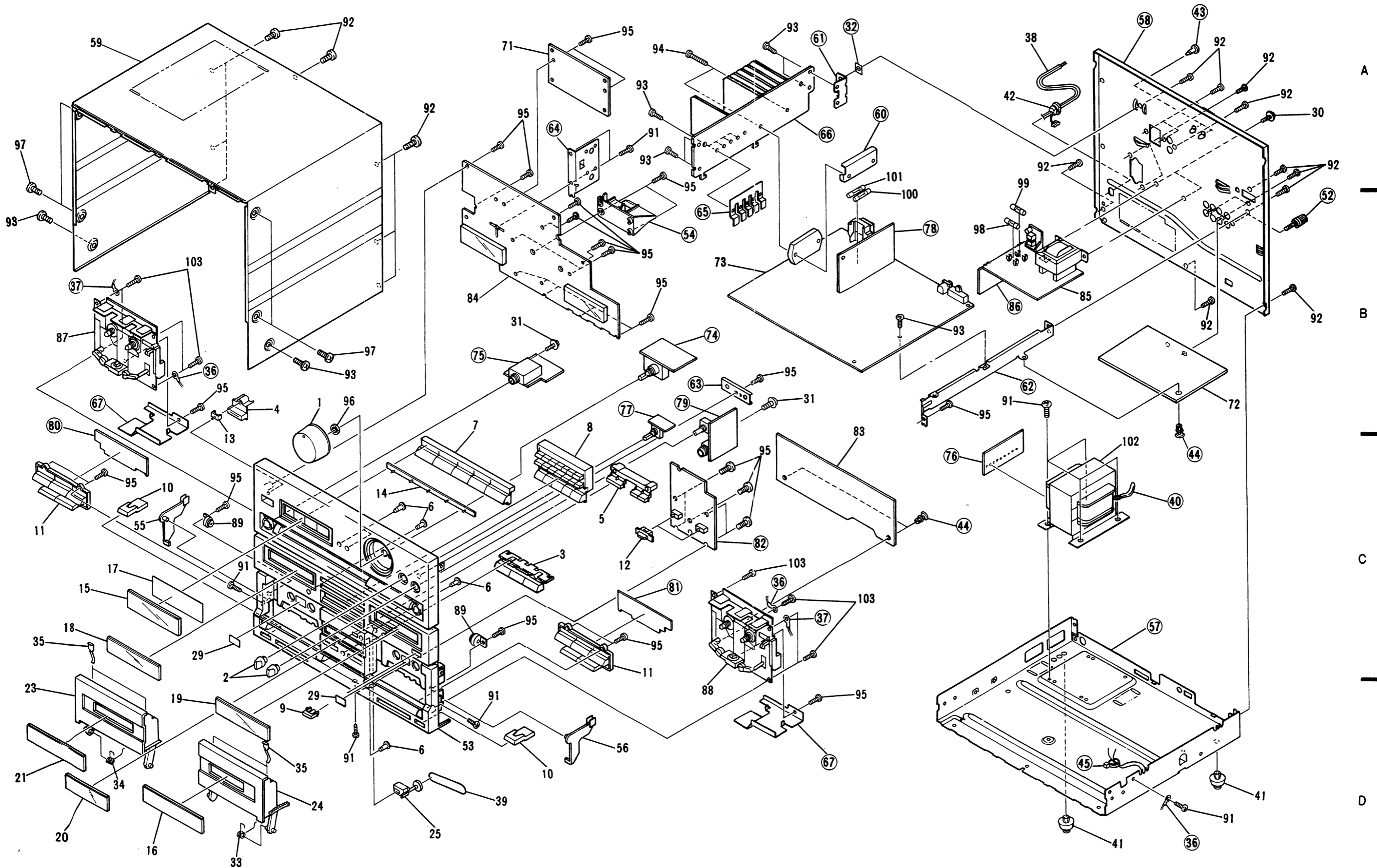
### 1.2 PACKING

C



D

1.3 EXTERIOR



A

B

C

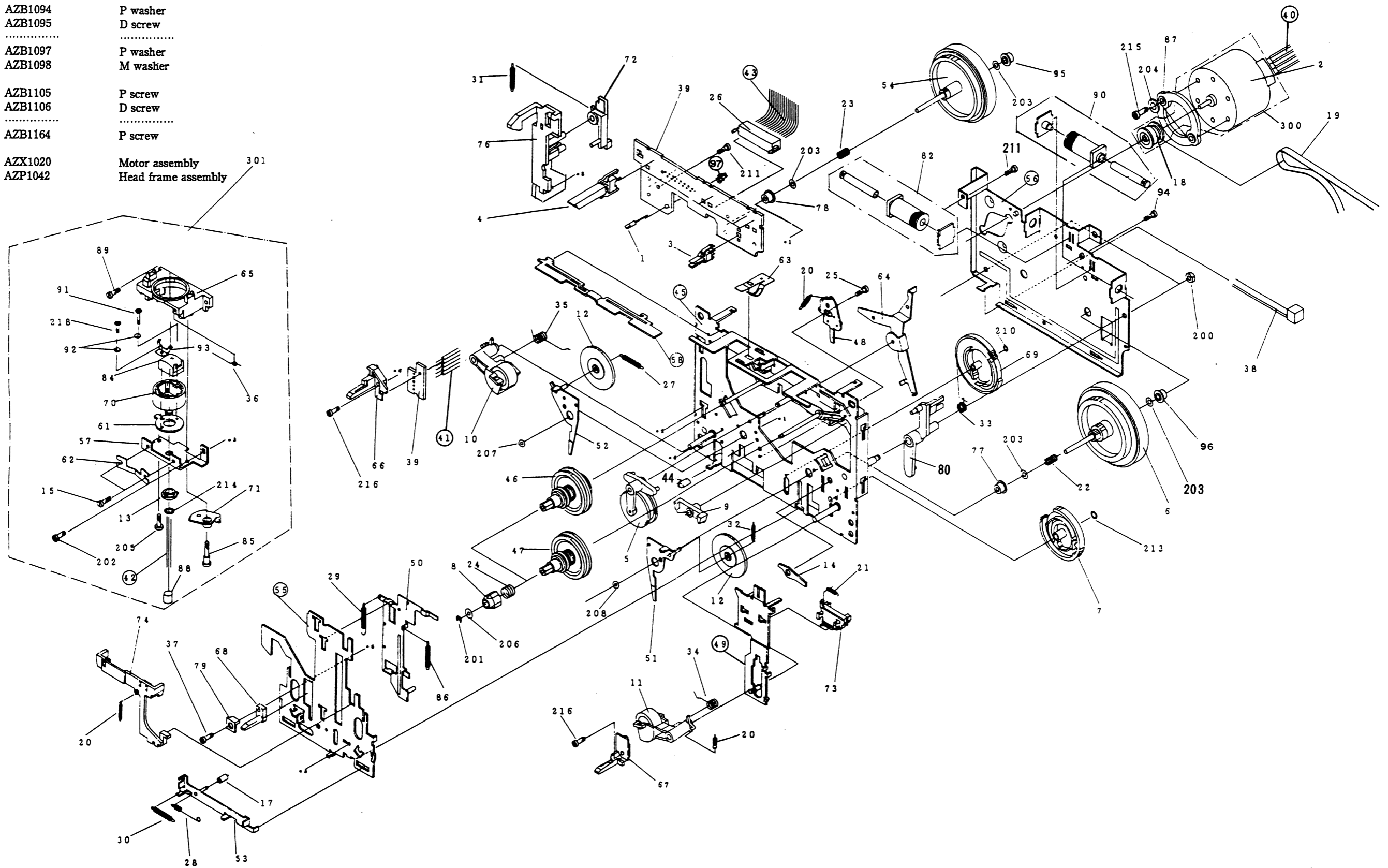
D



## 1.4 MECHA UNIT 1 (AWY1052)

Mark	No.	Parts No.	Description	Mark	No.	Parts No.	Description
	1	AZE1018	Hall IC	51	AZN1976	Gear arm R assembly	
	2	AZX1019	Motor	52	AZN1977	Gear arm L assembly	
	3	AZS1054	Leaf SW (MODE)	53	AZN1326	Head lever calking assembly	
	4	AZS1034	Leaf SW (CrO2)	54	AZN1327	FW assembly	
	5	AZN1286	Drive arm assembly	55		Head P.C.board	
	6	AZN1287	FW assembly A	56		Plate (FLY WHEEL)	
	7	AZN1288	Cam gear	57	AZN1328	Azimuth plate	
	8	AZN1289	Reel	58		SW arm	
	9	AZN1971	FR arm	59	.....	.....	
	10	AZN1972	Pinch arm L assembly	60	.....	.....	
	11	AZN1973	Pinch arm R assembly	61	AZN1330	Head arm	
	12	AZN1293	Gear	62	AZN1331	Azimuth spring	
	13	AZN1294	H Gear	63	AZN1332	Cassette stopper	
	14	AZN1793	CUE arm	64	AZN1978	Trigger arm	
	15	AZB1079	Screw	65	AZN1334	Head frame	
	16	.....	.....	66	AZN1335	Cassette guide L	
	17	AZN1984	Collar C	67	AZN1336	Cassette guide R	
	18	AZN1297	Motor pully	68	AZN1337	Cassette guide	
	19	AZN1298	Belt	69	AZN1338	Cam gear	
	20	AZN1299	Spring	70	AZN1994	Head holder	
	21	AZN1300	FR lever spring	71	AZN1340	Head gear	
	22	AZN1301	FWF spring	72	AZN1980	Eject arm 2	
	23	AZN1302	FWR spring	73	AZN1342	Select lever	
	24	AZN1303	Spring	74	AZN1343	Brake	
	25	AZB1297	Screw	75	.....	.....	
	26	AZN1305	Cable holder	76	AZN1981	Ratch lever L	
	27	AZN1306	Spring	77	AZN1346	Metal	
	28	AZN1307	Spring	78	AZN1347	Metal	
	29	AZN1308	Spring	79	AZN1348	Cushion	
	30	AZN1309	Spring	80	AZN1349	Trigger arm	
	31	AZN1310	Spring	81	.....	.....	
	32	AZN1311	Spring	82	AZS1085	Solenoid	
	33	AZN1312	Spring	83	.....	.....	
	34	AZN1313	Spring	84	AZP1022	P Head	
	35	AZN1314	Spring	85	AZB1099	Screw	
	36	AZN1315	Spring	86	AZN1352	Spring	
	37	AZB1081	Screw	87	AZN1304	Spacer	
	38	AZN1316	Nylon band	88	AZN1470	Tube	
	39	AZN1995	P.C.board	89	AZB1100	Screw	
	40		Jumper wire	90	AZS1087	Solenoid	
	41		Wire assembly	91	AZB1101	Screw	
	42		Lead wire	92	AZB1102	Spring washer	
	43		Lead wire	93	AZN1471	Head spring	
	44	AZN1468	Tube	94	AZB1298	Screw	
	45		Mecha P.C.board calking assembly	95	AZN1833	Capstan holder	
	46	AZN1319	R reel assembly	96	AZN1834	Capstan holder	
	47	AZN1320	F reel assembly	97		Holder	
	48	AZN1321	Reverse arm calking assembly	200	AZB1084	Nut	
	49		FR lever assembly	201	AZB1085	E ring	
	50	AZN1975	PLAY lever calking assembly	202	AZB1086	D screw	
				203	AZB1121	P washer	
				204	AZB1087	N washer	

Mark	No.	Parts No.	Description
	205	AZB1089	U screw
	206	AZB1090	P washer
	207	AZB1091	Oil cut
	208	AZB1092	Oil cut
	209	.....	.....
A	210	AZB1094	P washer
	211	AZB1095	D screw
	212	.....	.....
	213	AZB1097	P washer
	214	AZB1098	M washer
	215	AZB1105	P screw
	216	AZB1106	D screw
	217	.....	.....
	218	AZB1164	P screw
	300	AZX1020	Motor assembly
	301	AZP1042	Head frame assembly

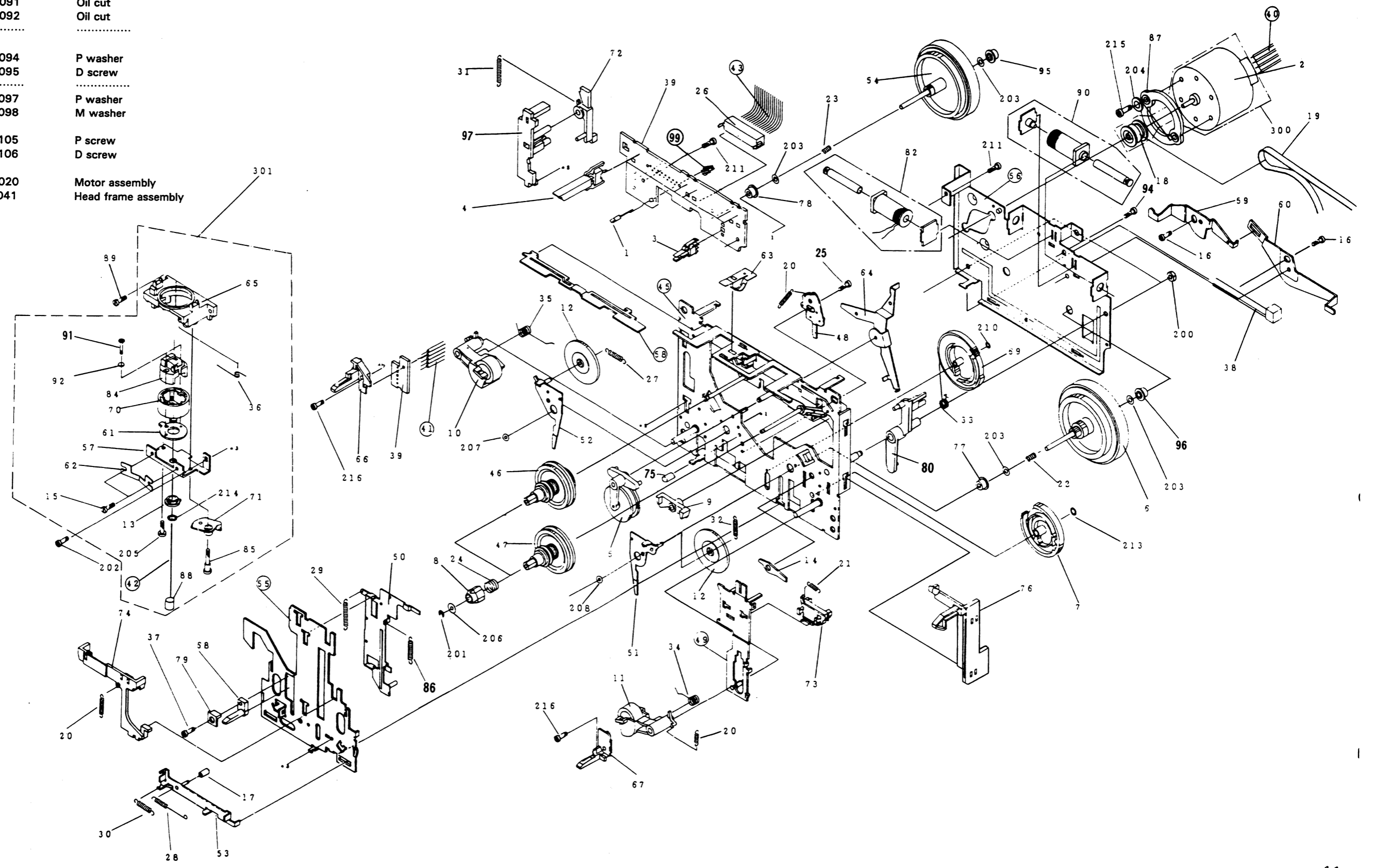


## 1.5 MECHA UNIT 2 (AWY1054)

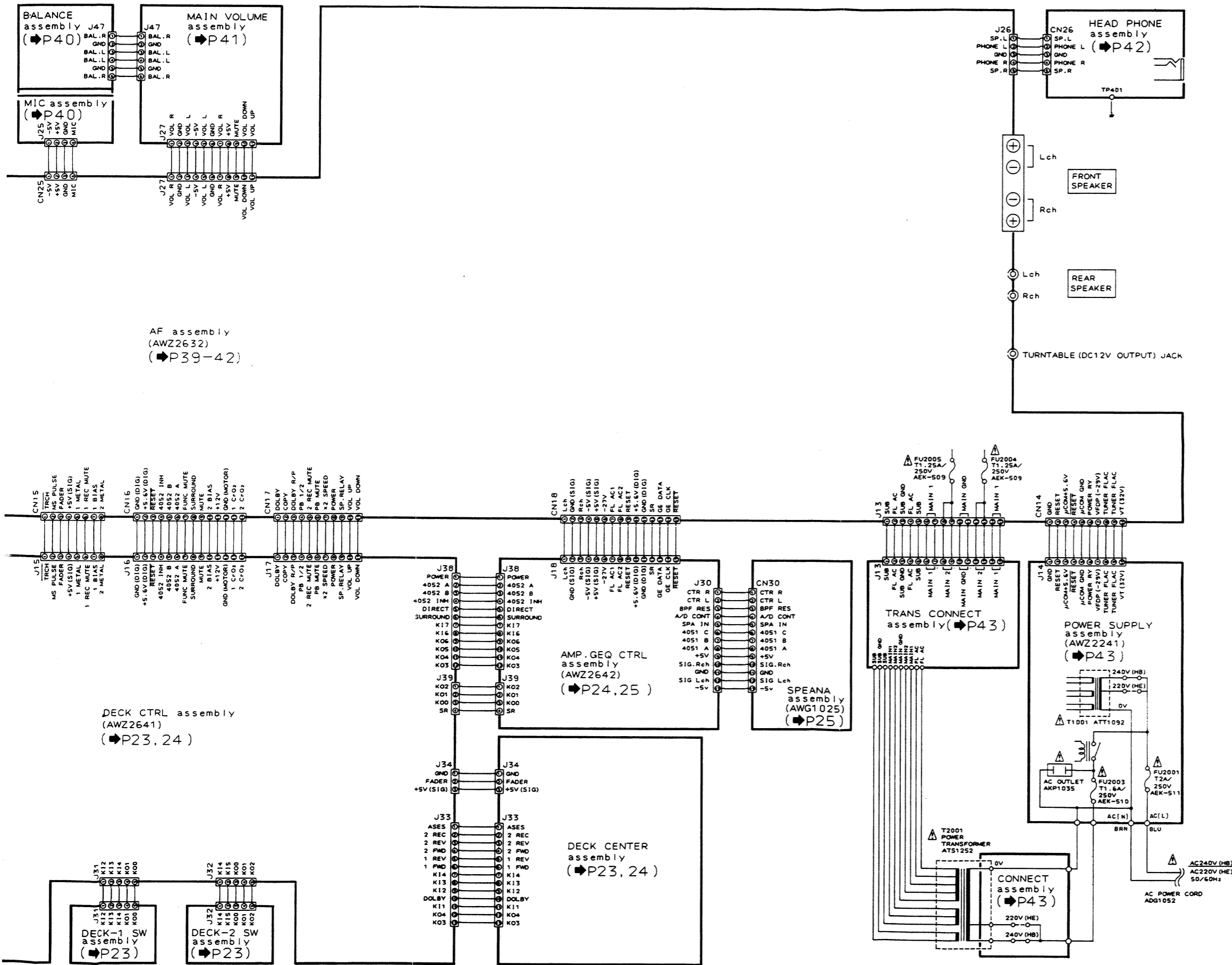
### Partslist of Mecha unit 2

Mark	No.	Parts No.	Description	Mark	No.	Parts No.	Description
	1	AZE1018	Hall IC		51	AZN1976	Gear arm R assembly
	2	AZX1019	Motor		52	AZN1977	Gear arm L assembly
	3	AZS1054	Leaf SW (MODE)		53	AZN1326	Head lever calking assembly
	4	AZS1034	Leaf SW (ARF, HALF, METAL, CrO2, ARR)		54	AZN1327	FW assembly
	5	AZN1286	Drive arm assembly		55		Head P.C.board
	6	AZN1287	FW assembly A		56		Plate (FLY WHEEL)
	7	AZN1288	Cam gear		57	AZN1328	Azimuth plate
	8	AZN1289	Reel		58		SW arm
	9	AZN1971	FR arm		59	AZN1988	Eject arm L
	10	AZN1972	Pinch roller L assembly		60	AZN1989	Eject arm R
	11	AZN1973	Pinch roller R assembly		61	AZN1330	Head arm
	12	AZN1293	Gear		62	AZN1331	Azimuth spring
	13	AZN1294	H Gear		63	AZN1332	Cassette stopper
	14	AZN1793	CUE arm		64	AZN1978	Trigger arm
	15	AZB1079	Screw		65	AZN1334	Head frame
	16	AZB1080	Screw		66	AZN1335	Cassette guide L
	17	AZN1984	Collar		67	AZN1336	Cassette guide R
	18	AZN1297	Motor pully		68	AZN1337	Cassette guide
	19	AZN1298	Belt		69	AZN1338	Cam gear
	20	AZN1299	Spring		70	AZN1979	Head holder
	21	AZN1300	FR lever spring		71	AZN1340	Head gear
	22	AZN1301	FWF spring		72	AZN1980	Eject arm 2
	23	AZN1302	FWR spring		73	AZN1342	Select lever
	24	AZN1303	Spring		74	AZN1343	Brake
	25	AZB1080	Screw		75	AZN1468	Tube
	26	AZN1305	Cable holder		76	AZN1985	Ratch lever R
	27	AZN1306	Spring		77	AZN1346	Metal
	28	AZN1307	Spring		78	AZN1347	Metal
	29	AZN1308	Spring		79	AZN1348	Cushion
	30	AZN1309	Spring		80	AZN1349	Trigger arm
	31	AZN1310	Spring		81	.....	.....
	32	AZN1311	Spring		82	AZS1085	Solenoid
	33	AZN1312	Spring		83	.....	.....
	34	AZN1313	Spring		84	AZP1014	R/P/E Head
	35	AZN1314	Spring		85	AZB1099	Screw
	36	AZN1315	Spring		86	AZN1352	Spring
	37	AZB1081	Screw		87	AZN1304	Spacer
	38	AZN1316	Nylon band		88	AZN1470	Tube
	39	AZN1983	P.C.board		89	AZB1100	Screw
	40		Jumper wire		90	AZS1087	Solenoid
	41		Head lead		91	AZB1101	Screw
	42		Lead wire		92	AZB1102	Spring washer
	43		Wire		93		...
	44	.....	.....		94	AZB1298	Screw
	45		Mecha P.C.board calking assembly		95	AZN1833	Capstan holder
	46	AZN1319	R reel assembly		96	AZN1834	Capstan holder
	47	AZN1320	F reel assembly		97	AZN1344	Eject lever L
	48	AZN1321	Reverse arm calking assembly		98	.....	.....
	49		FR lever assembly		99		Holder
	50	AZN1975	PLAY lever calking assembly				

Mark	No.	Parts No.	Description
	200	AZB1084	Nut
	201	AZB1085	E ring
	202	AZB1086	D screw
	203	AZB1121	P washer
	204	AZB1087	N washer
A	205	AZB1089	U screw
	206	AZB1090	P washer
	207	AZB1091	Oil cut
	208	AZB1092	Oil cut
	209	.....	.....
	210	AZB1094	P washer
	211	AZB1095	D screw
	212	.....	.....
	213	AZB1097	P washer
	214	AZB1098	M washer
	215	AZB1105	P screw
	216	AZB1106	D screw
	300	AZX1020	Motor assembly
	301	AZP1041	Head frame assembly







1. RESISTORS:  
 Indicated in  $\Omega$ ,  $\frac{1}{4}W$ ,  $\frac{1}{2}W$ ,  $\pm 5\%$  tolerance unless otherwise noted k : k $\Omega$ ,  
 M : M $\Omega$ , (F) :  $\pm 1\%$ , (G) :  $\pm 2\%$ , (K) :  $\pm 10\%$  (M) :  $\pm 20\%$  tolerance

2. CAPACITORS:  
 Indicated in capacity ( $\mu F$ )/voltage (V) unless otherwise noted p : pF  
 Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:  
 [Symbol] : Signal voltage at ( 45W + 45W 8 $\Omega$ )output (1kHz)  
 [Symbol] : DC voltage (V) at no input signal  
 Value in ( ) is DC voltage at rated power.  
 [Symbol] mA : DC current at no input signal

4. OTHERS:  
 [Symbol] : Signal route.  
 [Symbol] : Adjusting point.  
 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.  
 \* 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	DECK-1 SW assembly
S707 PHONO	S811 1FWD
S709 TUNER	S812 1REV
S715 DAT	S813 1FF
S718 CD	S814 1REV
S719 SURROUND	S815 1STOP
S720 POWER	DECK-2 SW assembly
S721 CD DIRECT	S821 2FWD
S722 TAPE	S822 2REV
S771 60Hz +	S823 2FF
S772 150Hz +	S824 2REV
S773 400Hz +	S825 2STOP
S774 1kHz +	DECK CENTER assembly
S775 2.4kHz +	S848 DOLBY OFF-ON
S776 6kHz +	S849 REVERSE MODE
S777 15kHz +	S853 COPY
S778 60Hz -	S857 FADER
S779 150Hz -	S862 HI-SPEED COPY
S780 400Hz -	S871 DECK-2 MUTE
S781 1kHz -	S872 A.S.E.S
S782 2.4kHz -	S874 DECK-2 REC
S783 6kHz -	S875 DECK-2PAUSE
S784 15kHz -	
S785 A	
S786 B	
S787 C	
S788 D	
S789 E	
S790 PRESET/MEMORY	
S791 EQUALIZER ON/OFF	
S792 FLAT/REVERSE	
S793 MEMORY	

The underline indicates the switch position

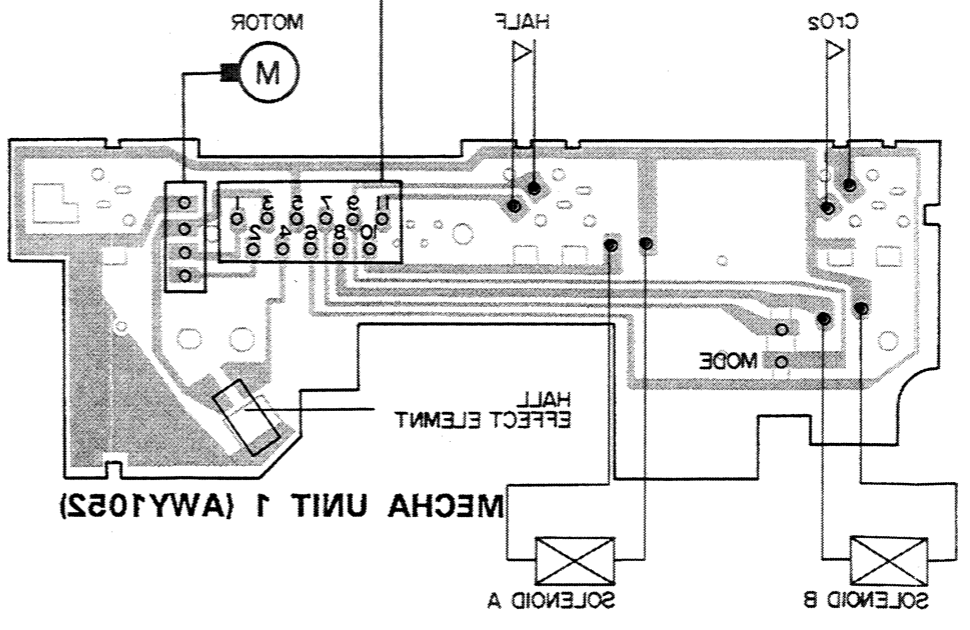
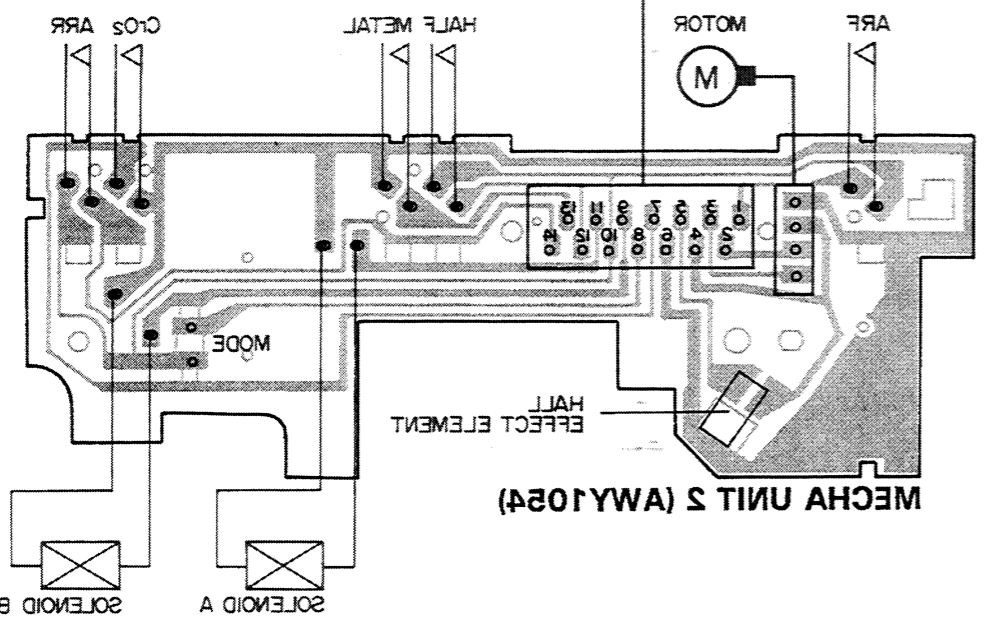
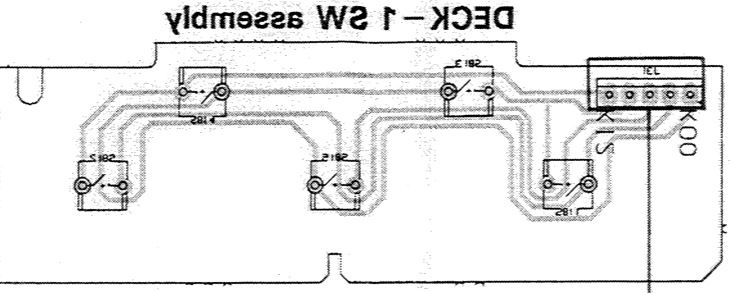
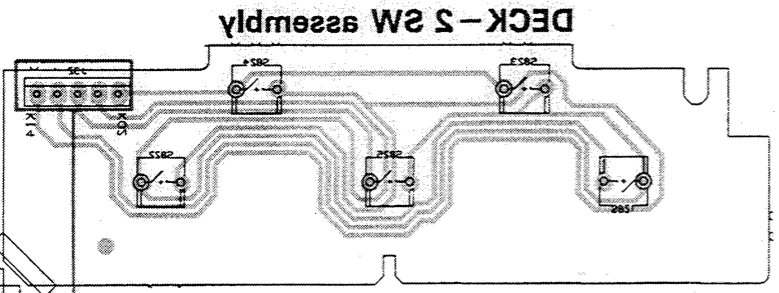
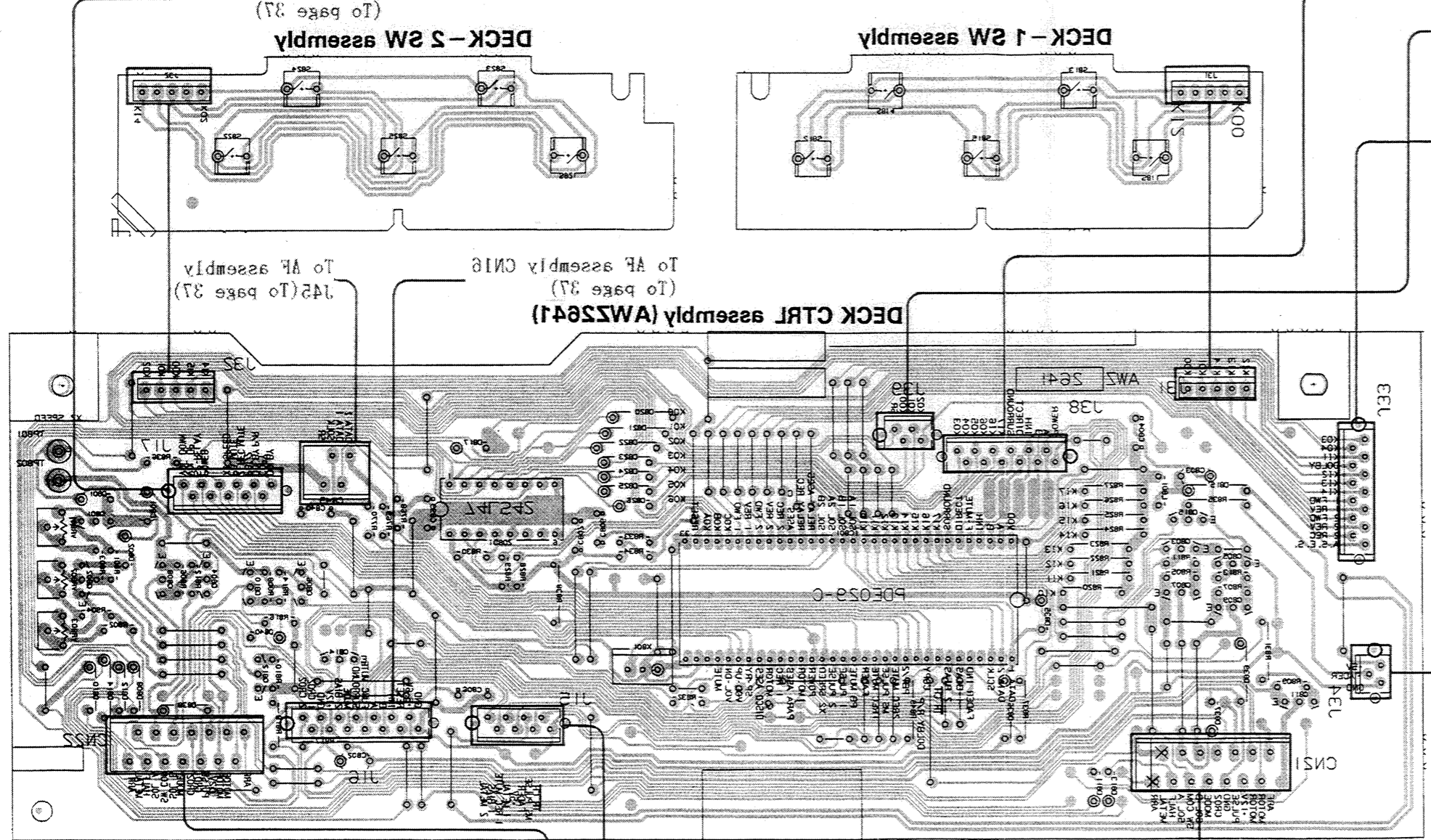
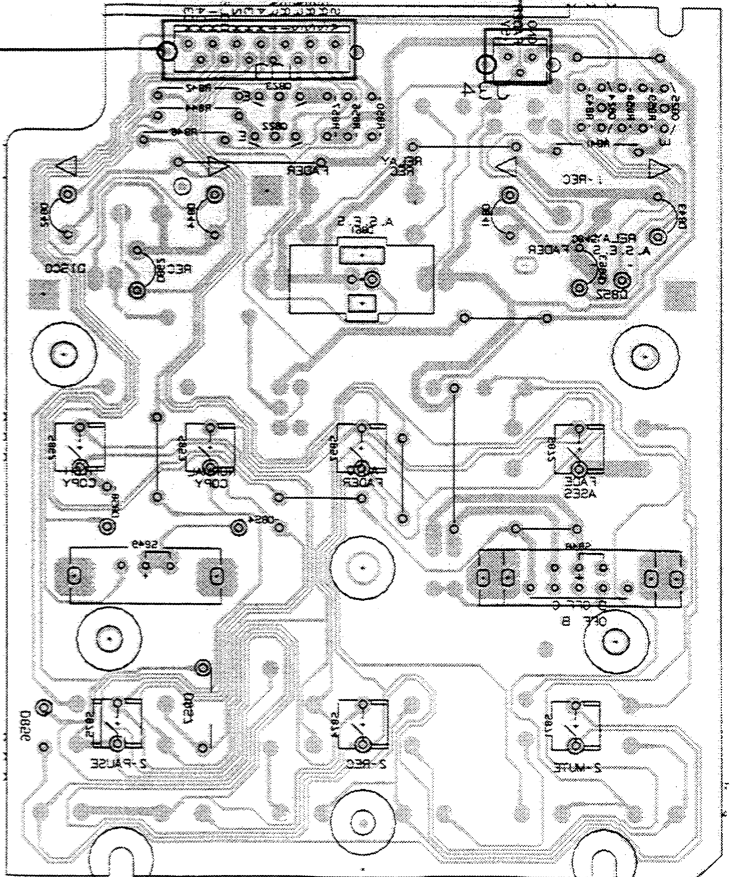
A

B

C

D





IC801 To AF assembly CN15 (To page 37)  
 0814 0815 0806 0810 0804 0808 0801 0805  
 VR801-VR803

0811 0809 0803  
 0802 0815 0803

To AF assembly CN17 (To page 37)

To AF assembly (To page 37)

To AF assembly CN16 (To page 37)

A

B

C

D

15

11

10

9

8

7

15

11

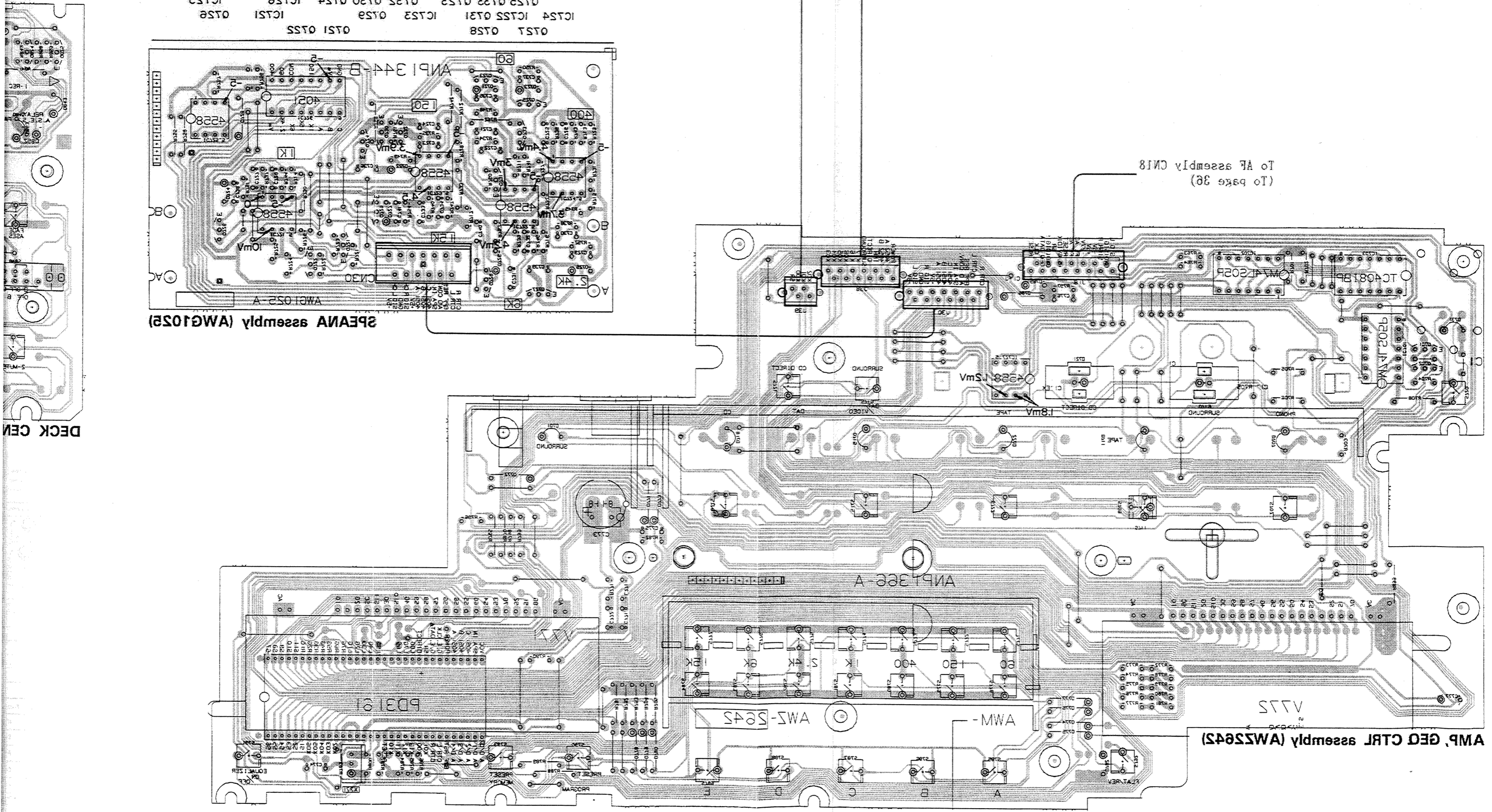
10

9

8

7

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



DECK CEN



2.2 AMP, GEQ CTRL (AWZ2642), DECK-1 SW, DECK-2 SW, DECK CTRL (AWZ2641), DECK CENTER, SPEANA assembly (AWG1025) MECHA UNIT 1 (AWY1052) and MECHA UNIT 2 (AWY1054)

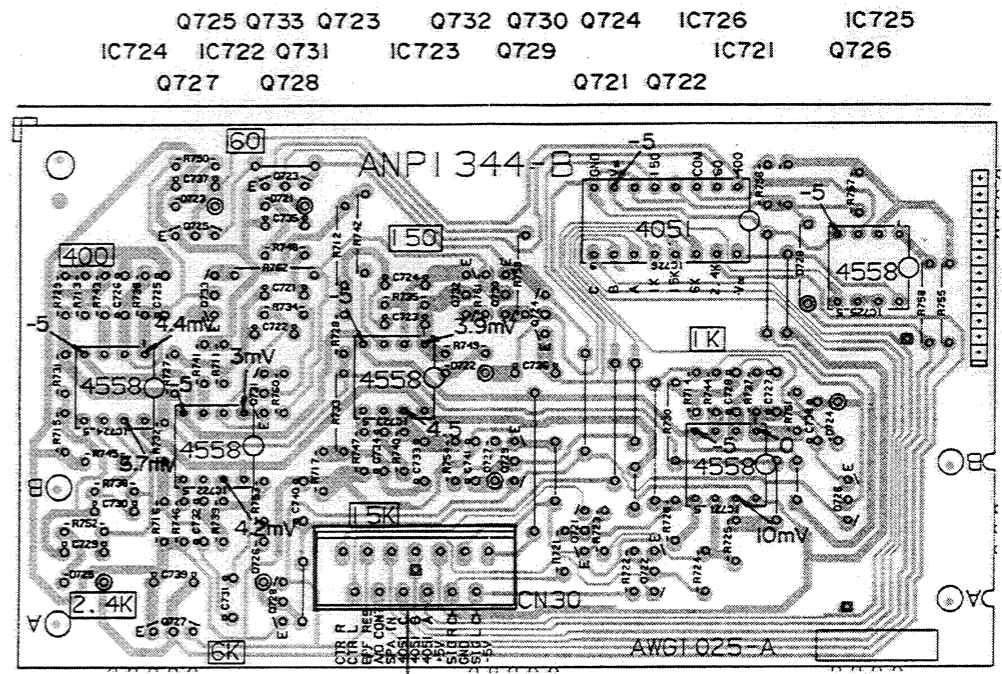
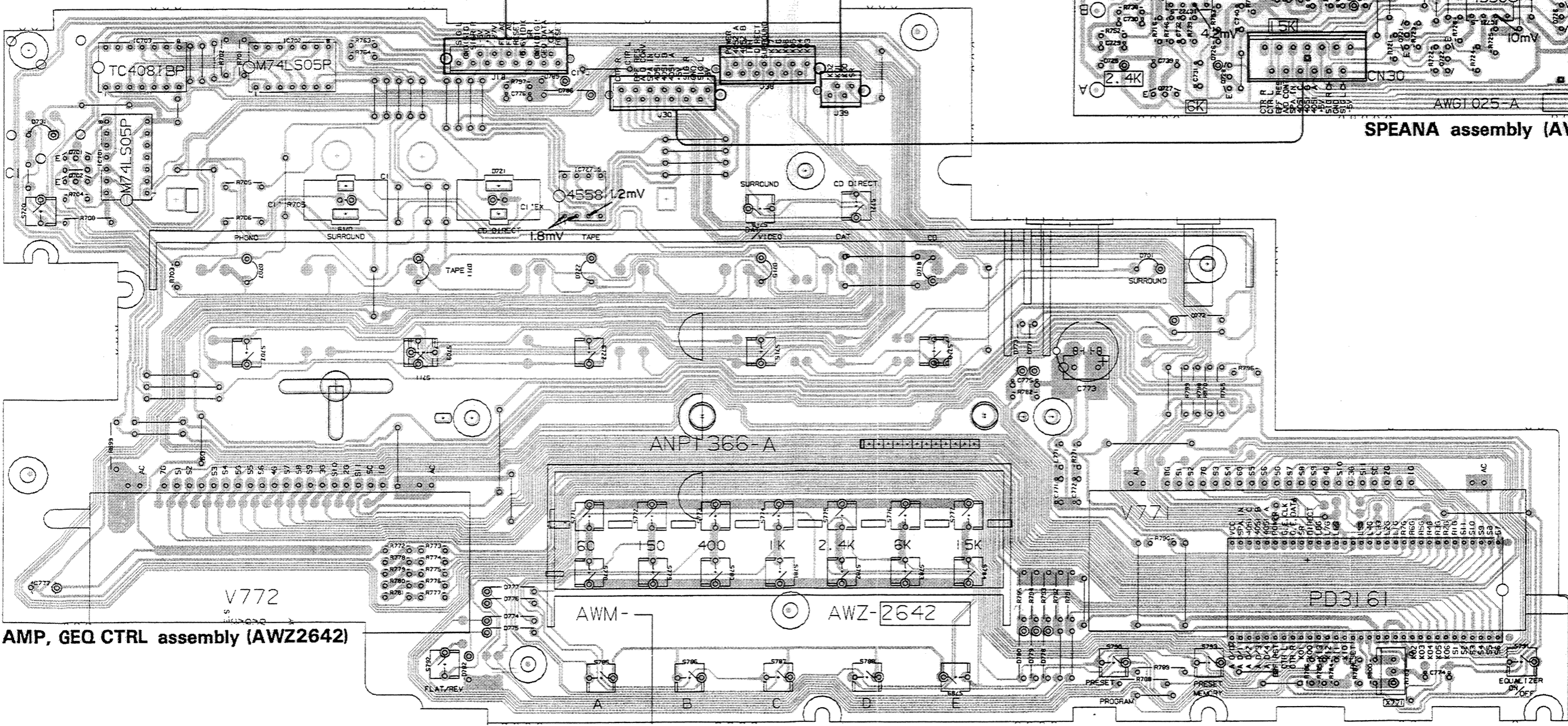
A

To AF assembly CN18  
(To page 36)

B

C

D



SPEANA assembly (AWG1025)



DECK CTRL

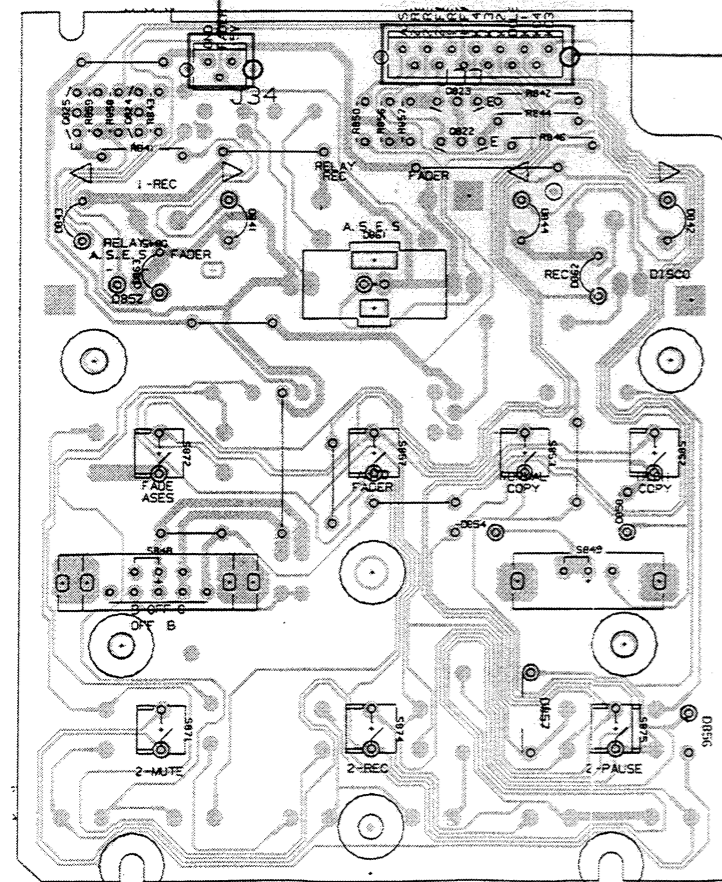
- NOTE
1. This P.C.B. connection diagram is viewed from the top.
  2. The parts which have been mounted on the board are indicated by the corresponding wiring symbols listed below.

P.C.B. pattern diagram indication	Corresponding part
	C504
	Q215
	D203
	R237
	C513
	C518

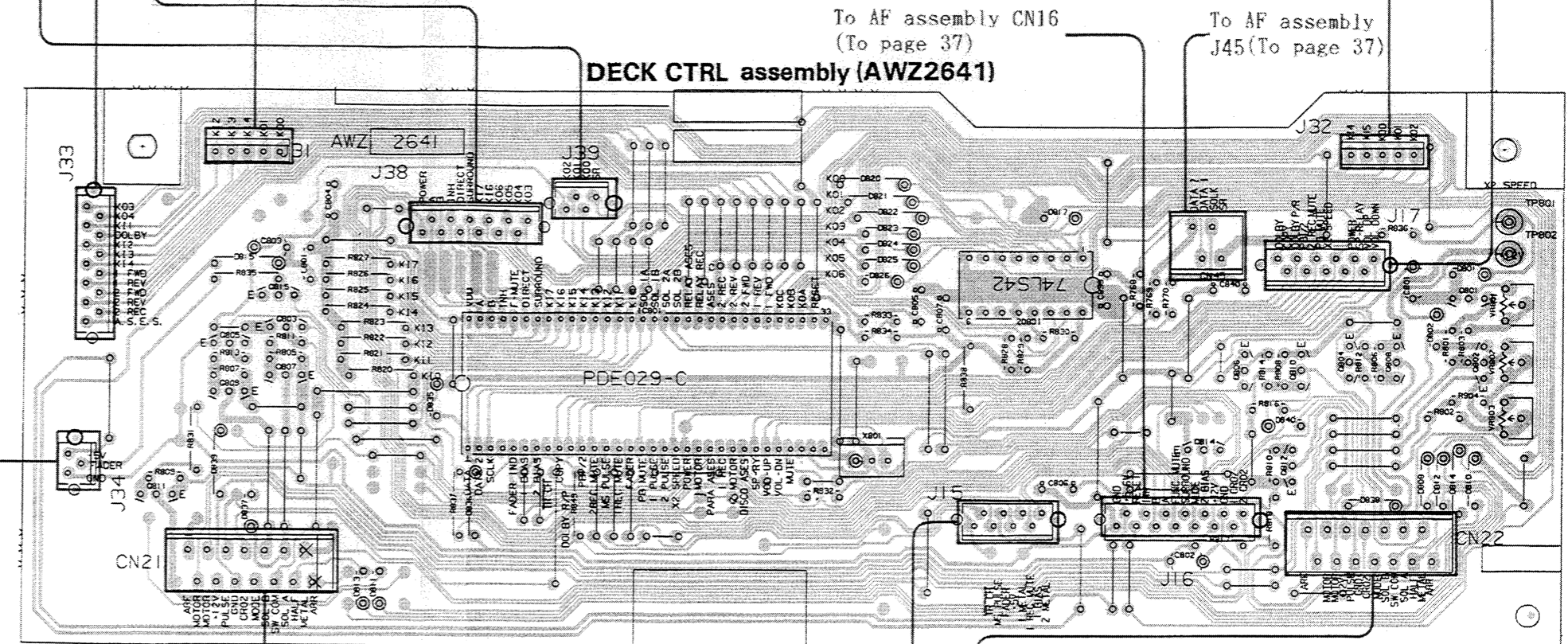
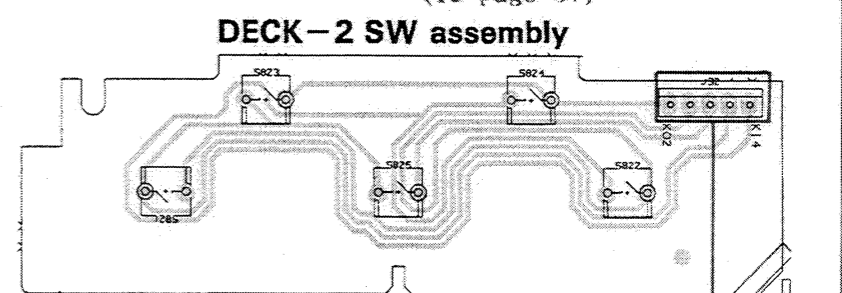
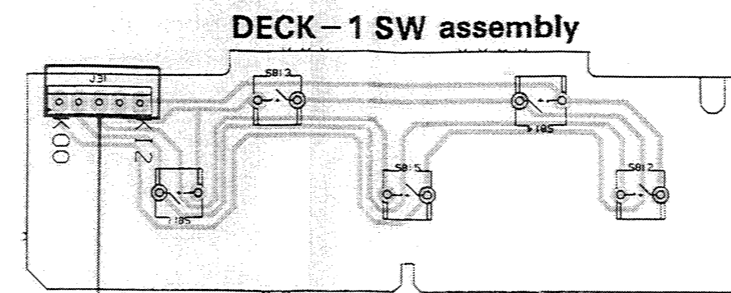
Others

P.C.B. pattern diagram indication	Part
IC	IC
S	S
RV	RV
L	L
F	F
VR	Variable Semi-conductor

3. The capacitor terminal marked with @ (double circle) is to be connected to ground.
4. The diode terminal marked with @ (double circle) is to be connected to ground.
5. The transistor terminal to which E is affixed is to be connected to ground.



DECK CENTER assembly



NOTE

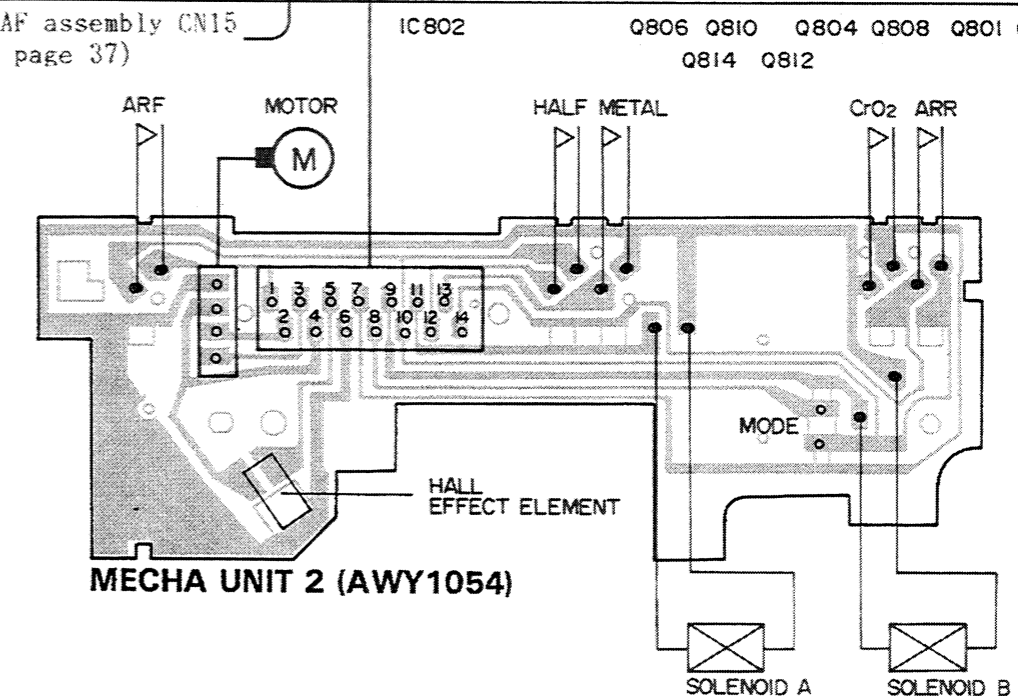
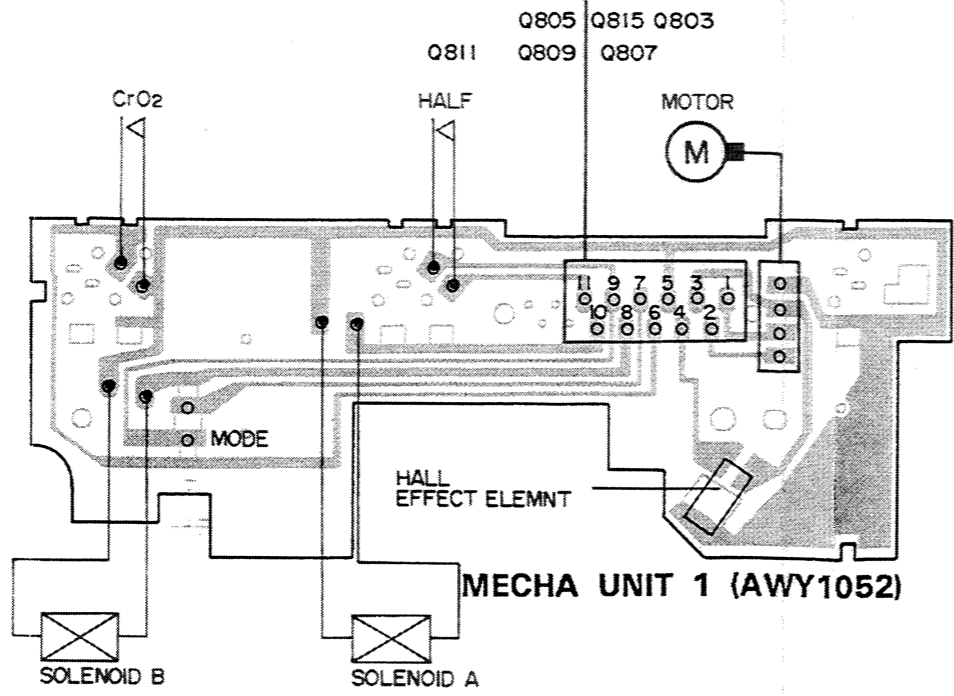
1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

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

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

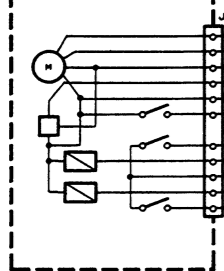
3. The capacitor terminal marked with ⊕ (double circles) shows negative terminal.
4. The diode terminal marked with ⊙ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.



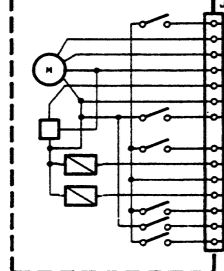


DECK CTRL assembly (AWZ2641)

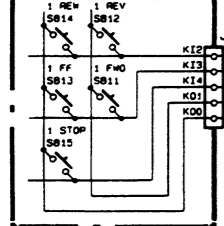
MECHA UNIT(1)



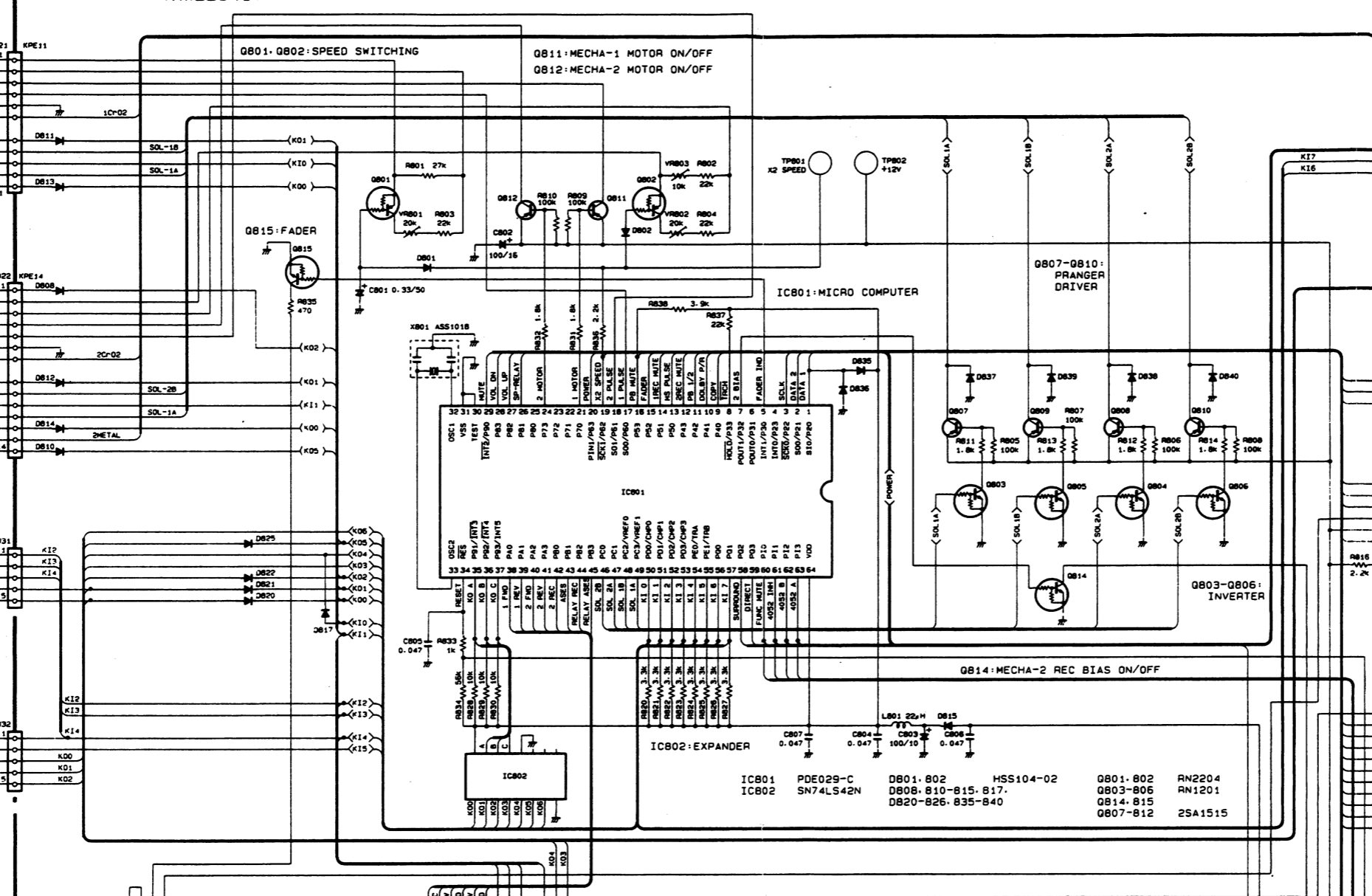
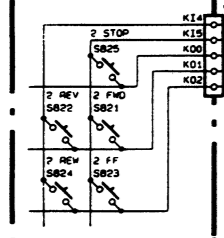
MECHA UNIT(2)



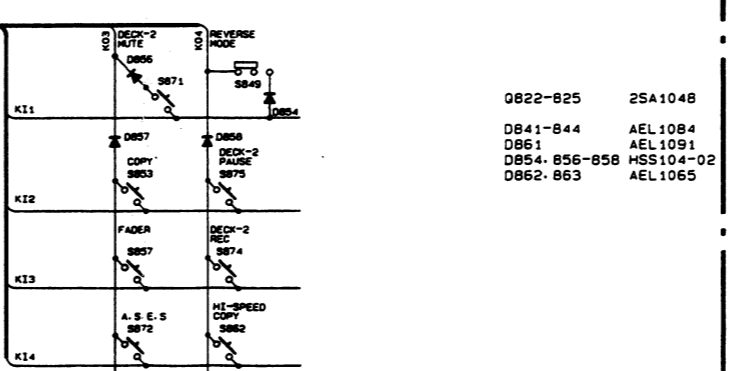
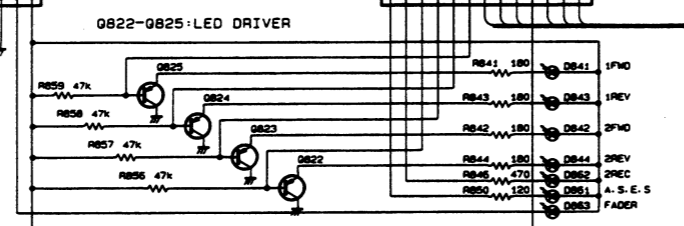
DECK 1 SW assembly



DECK-2 SW assembly

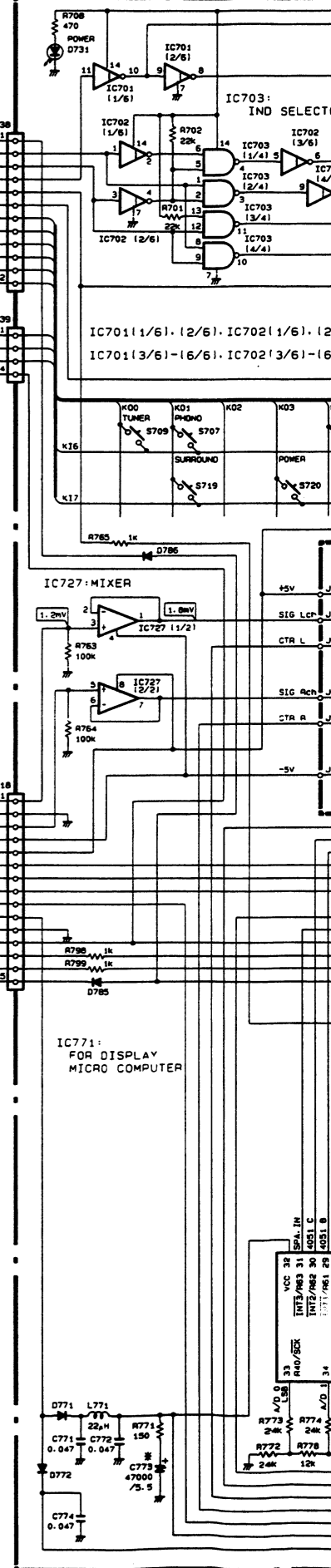


DECK CENTER assembly



0822-825	2SA1048
0841-844	AEL1084
0861	AEL1091
0854-856-858	HSS104-02
0862-863	AEL1065

AMP. GEQ CTRL assembly (AWZ2641)



A

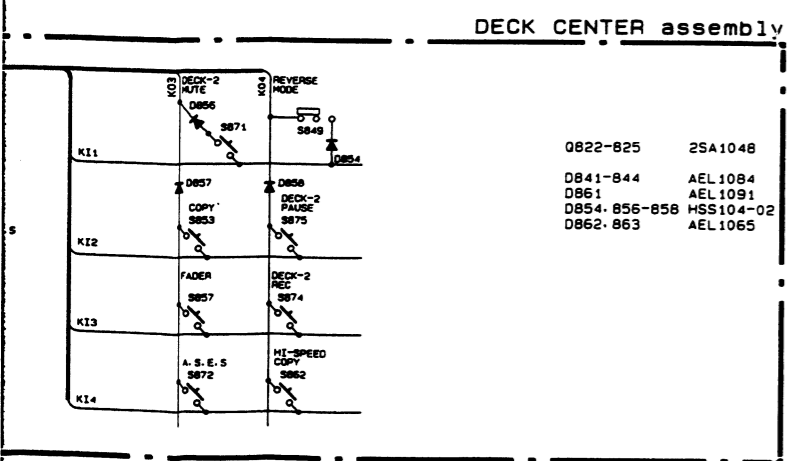
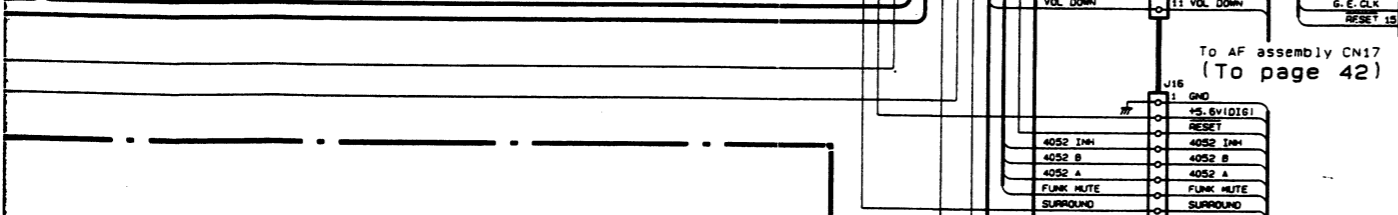
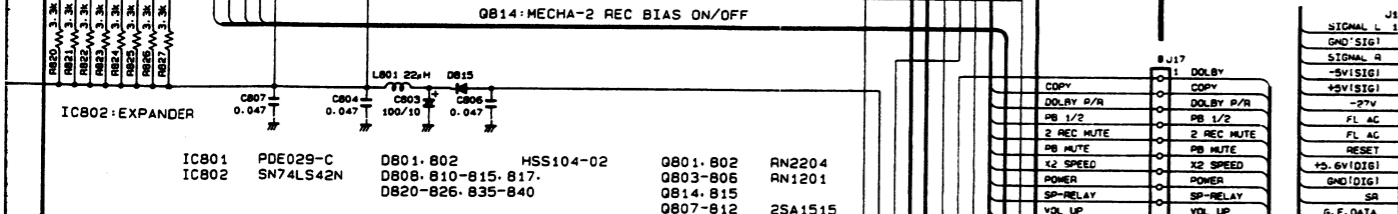
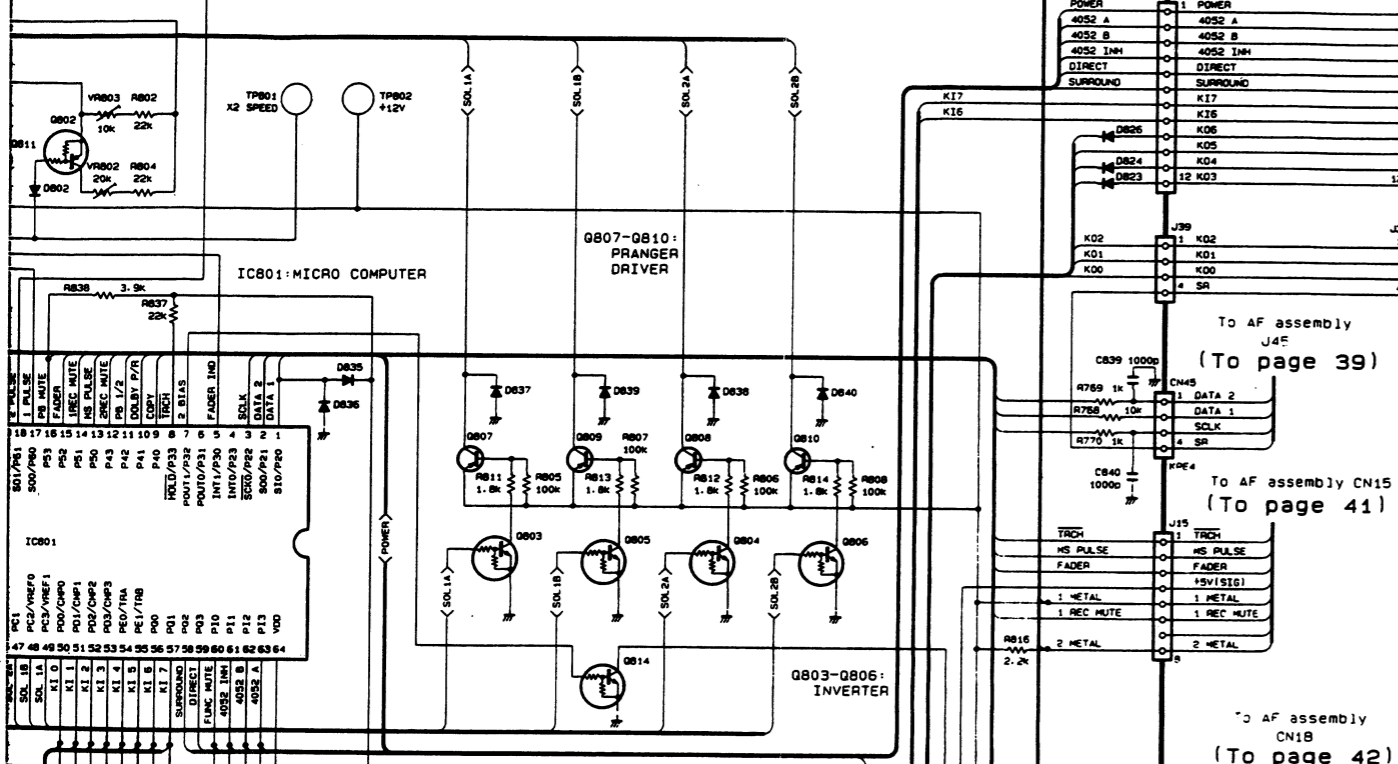
B

C

D

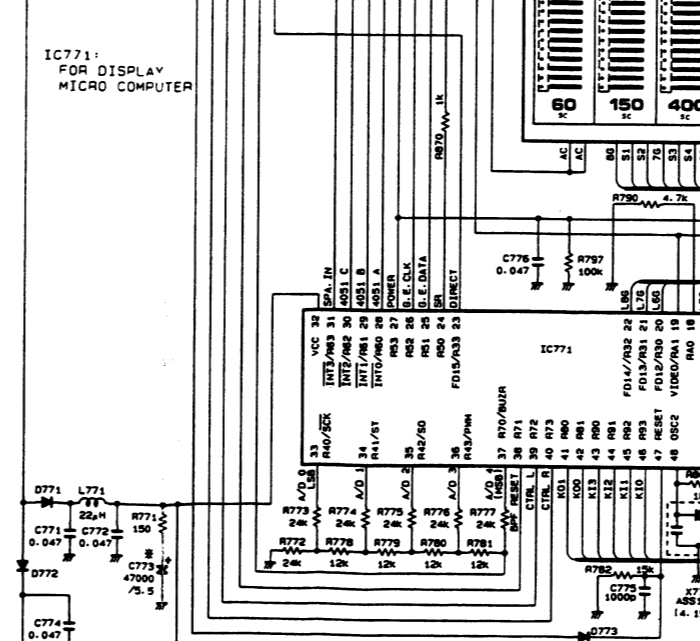
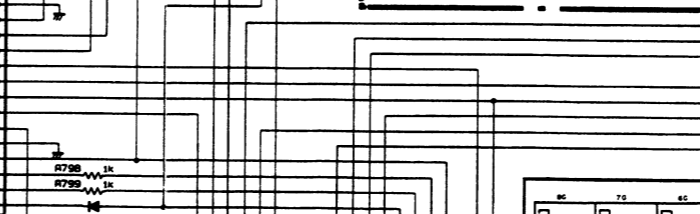
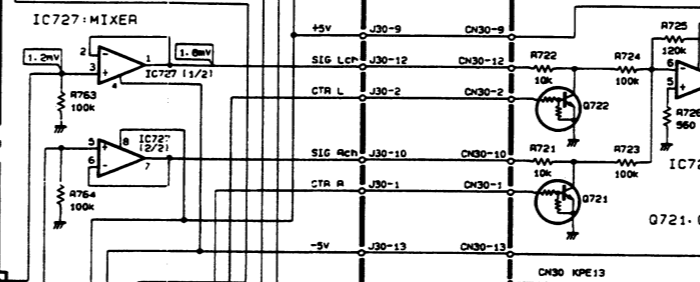
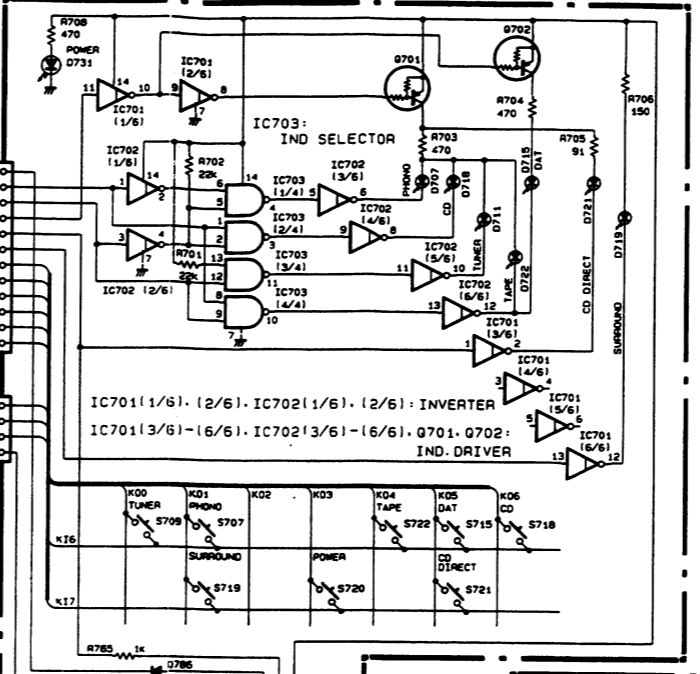
3 4 5 6 7 8 9

-1 MOTOR ON/OFF  
-2 MOTOR ON/OFF

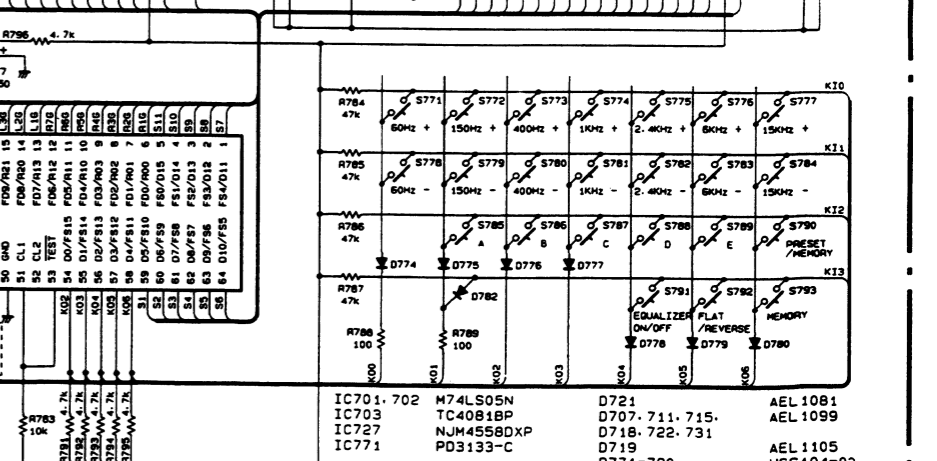
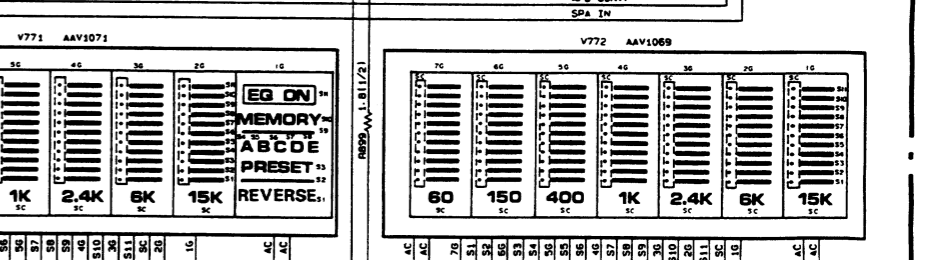
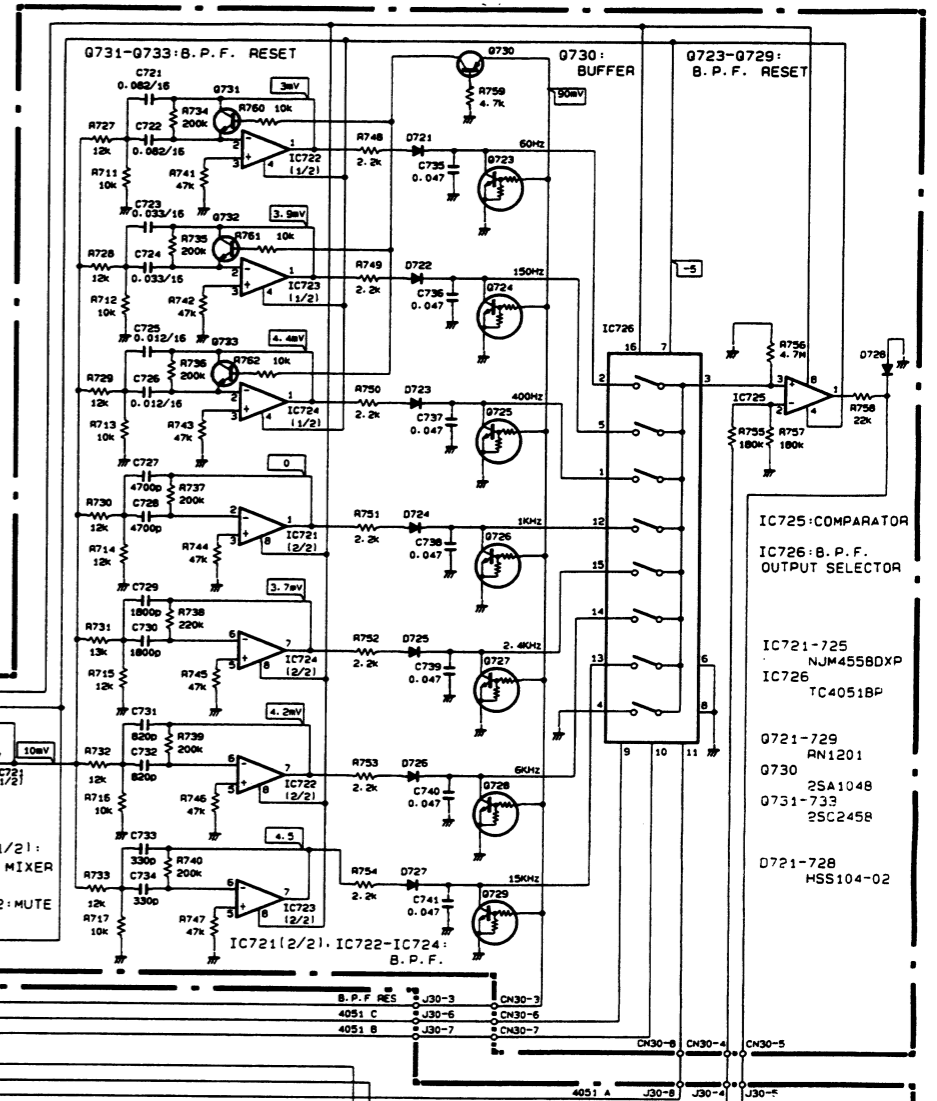


Q822-825	2SA1048
D841-844	AEL1084
D861	AEL1091
D854-856-858	HSS104-02
D862-863	AEL1065

AMP. GEG CTFL assembly (AWZ2642)



SPEANA assembly (AWG1025)



IC701, 702	M74LS05N	D721	M74LS05N	AEL1081
IC703	TC4081BP	D707, 711, 715,	D707, 711, 715,	AEL1099
IC727	NJM4558DXP	D718, 722, 731	D718, 722, 731	
IC771	PD3133-C	D719	D719	AEL1105
Q701-702	RN2201	D771-780,	D771-780,	HSS104-02
		D782, 785, 786	D782, 785, 786	

3 4 5 6 7 8 9 25

2.3 FUNCTION (AWK1174) and GEQ assembly (AWG1028)

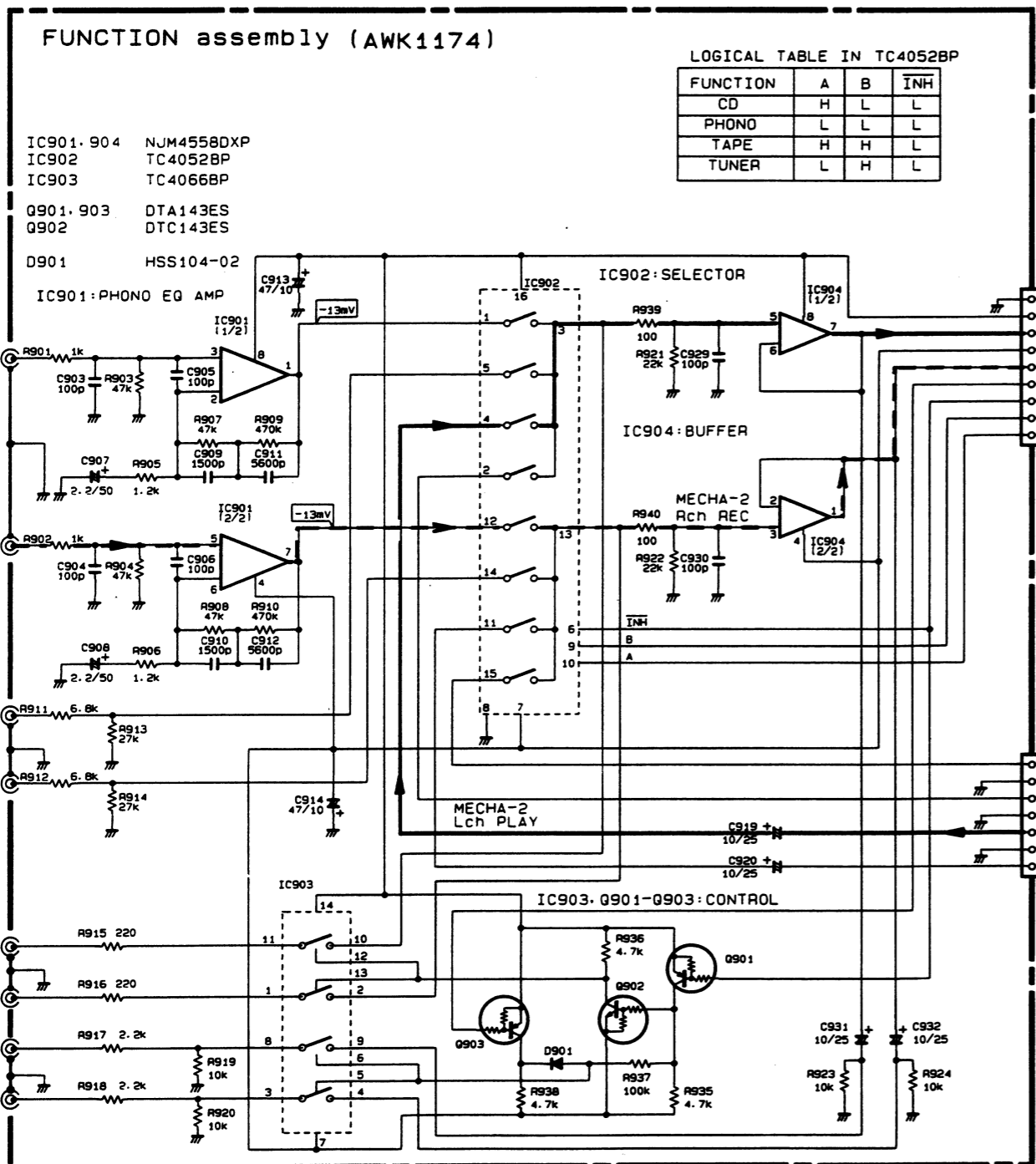
A

————— MECHA-2 Lch PLAY  
 - - - - - MECHA-2 Rch REC

B

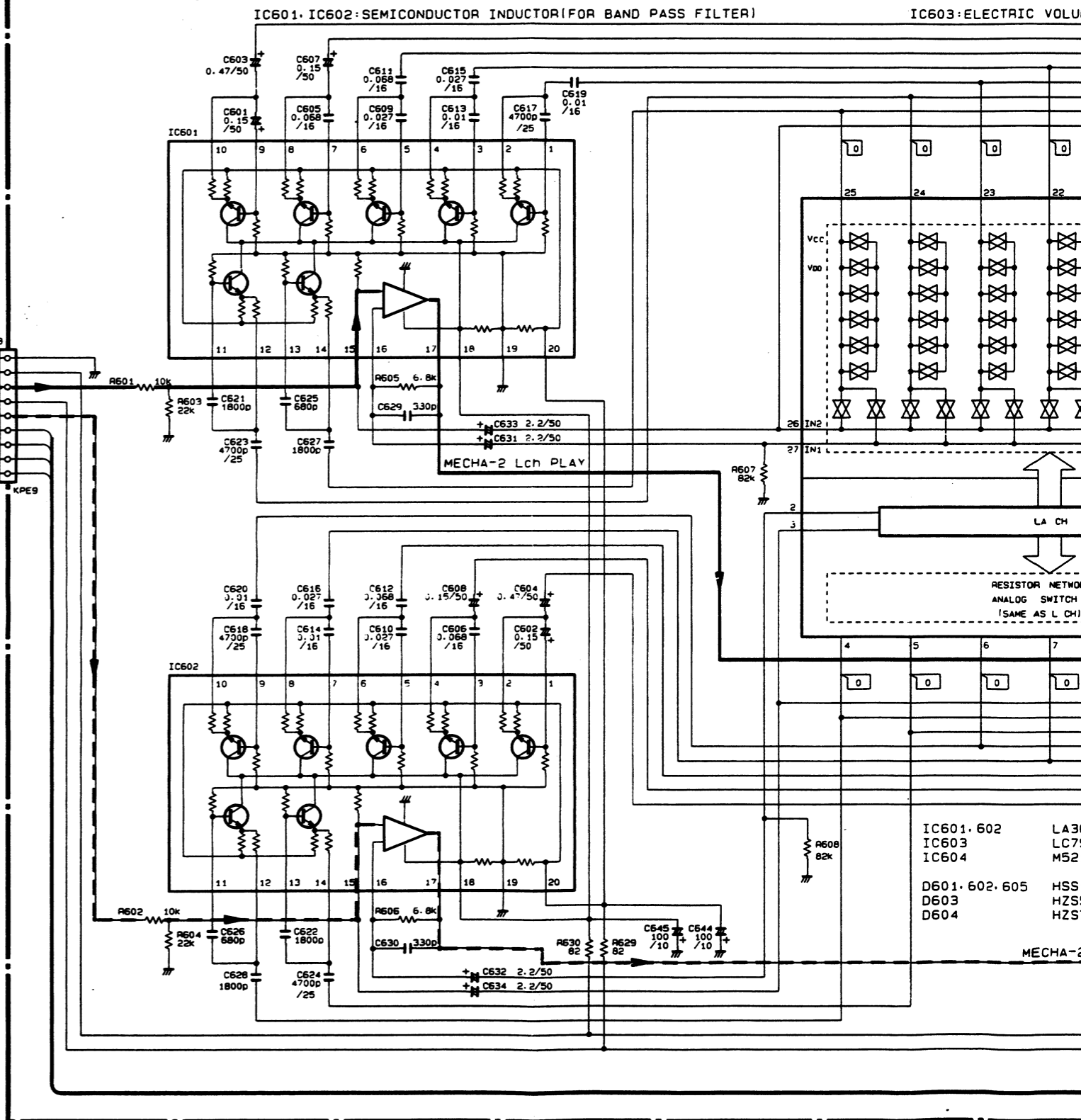
C

D



GEQ assembly (AWG1028)\*

\*:The GEQ assembly is the sub P.C-board which is part of the AF assembly



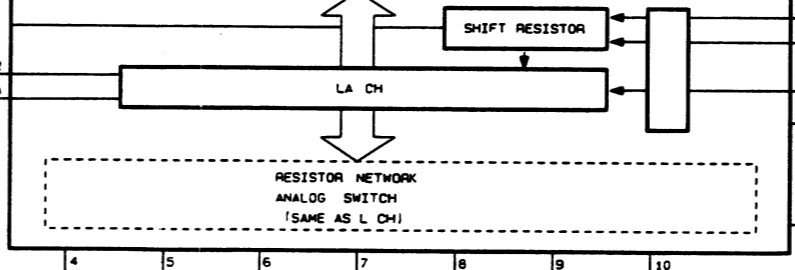
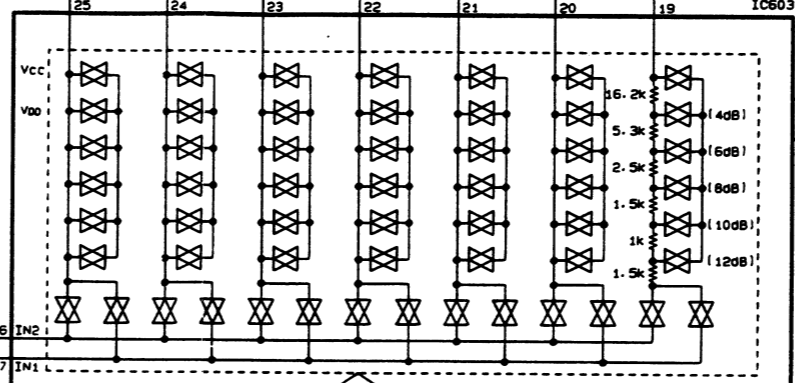
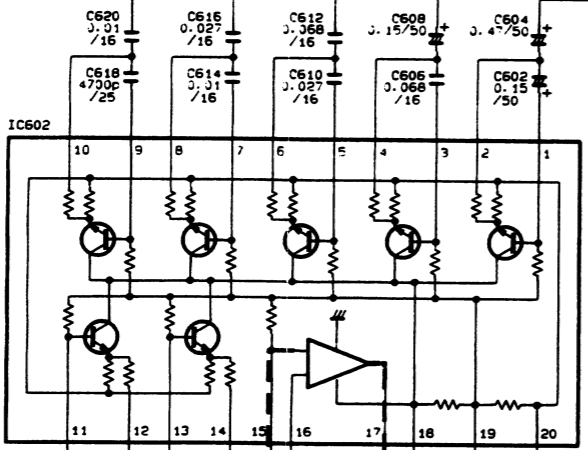
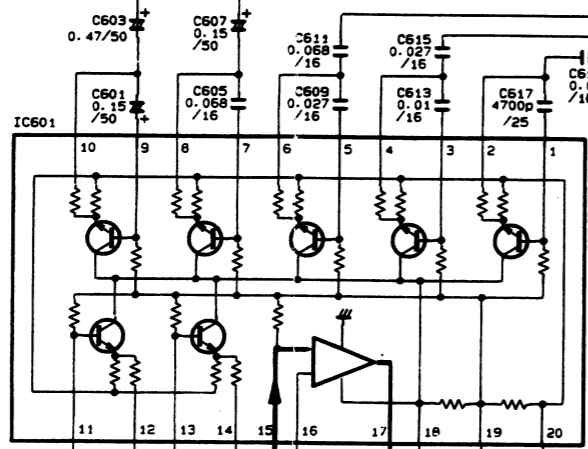
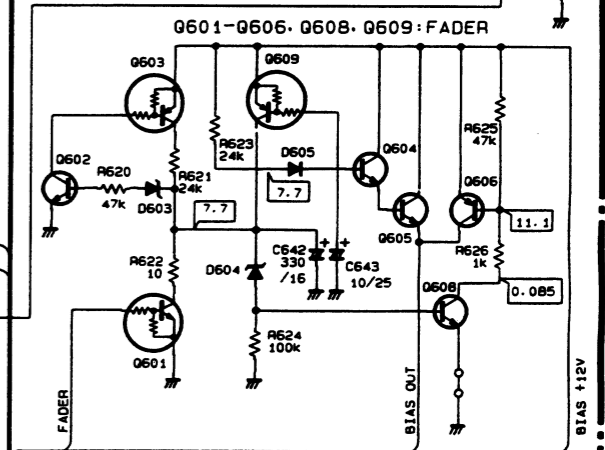
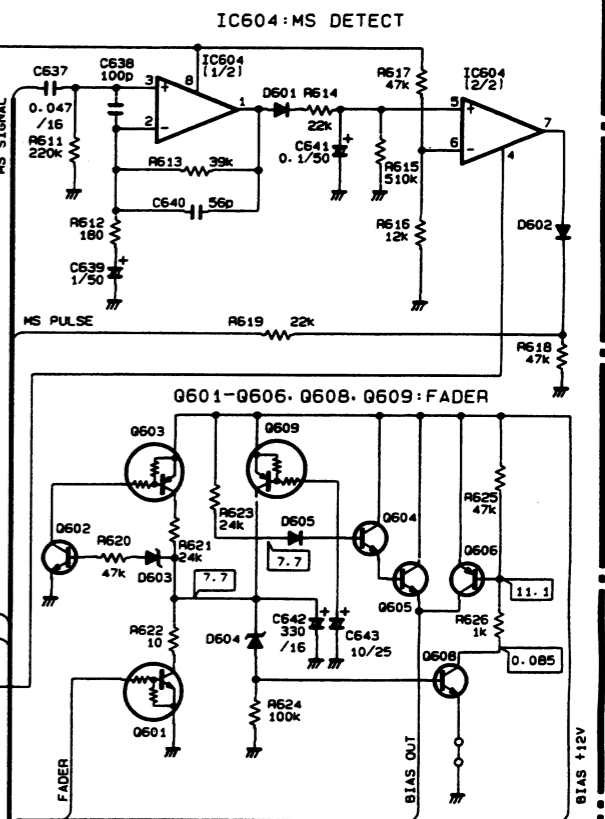
### GEQ assembly (AWG1028)\*

\*:The GEQ assembly is the sub P.C-board which is part of the AF assembly.

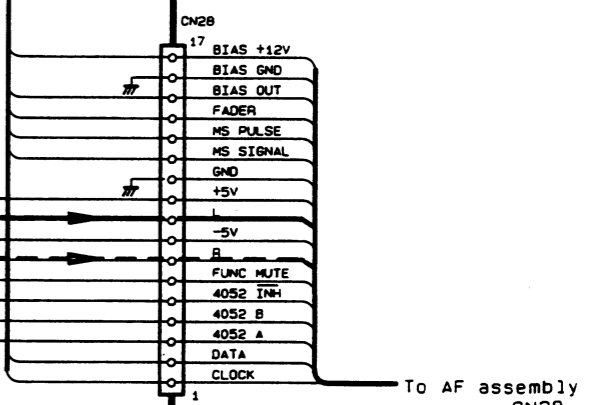
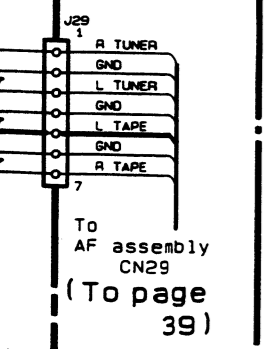
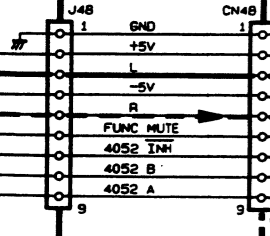
IC601, IC602: SEMICONDUCTOR INDUCTOR (FOR BAND PASS FILTER)

IC603: ELECTRIC VOLUME (FOR GRAPHIC EQ)

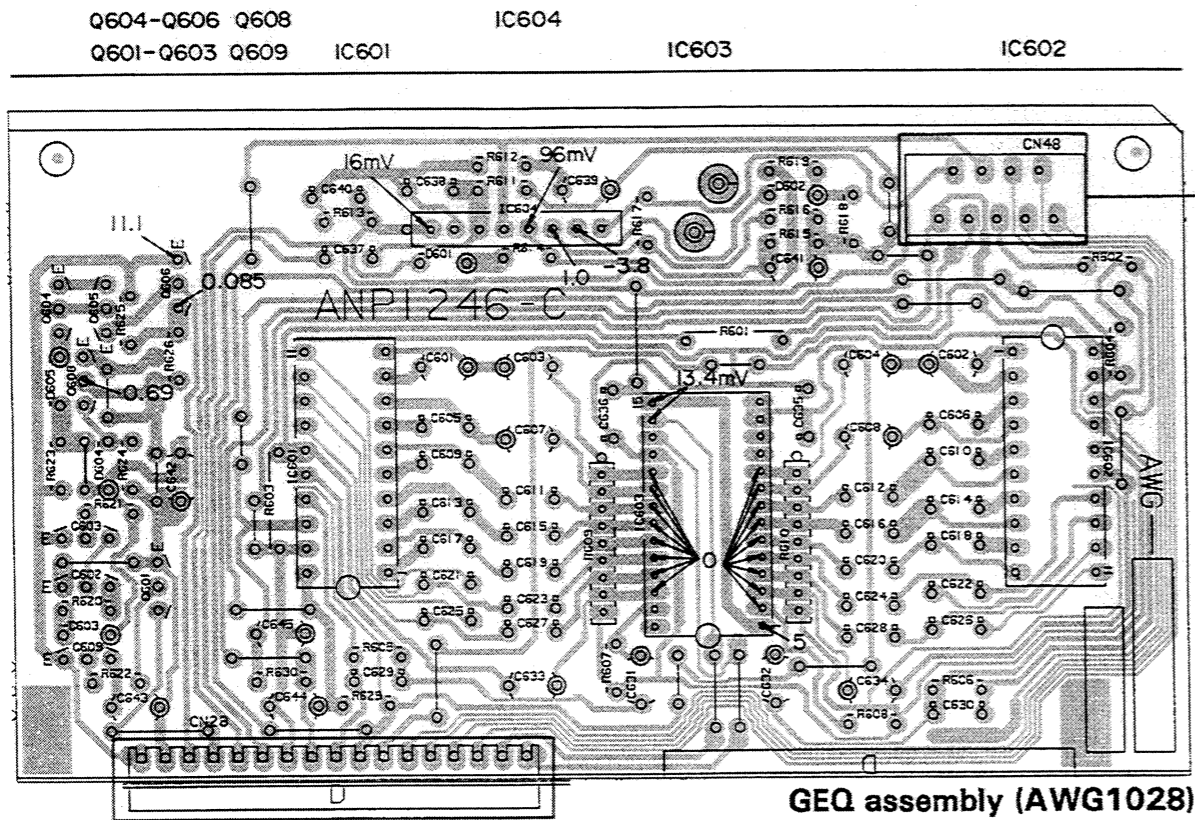
IC604: MS DETECT



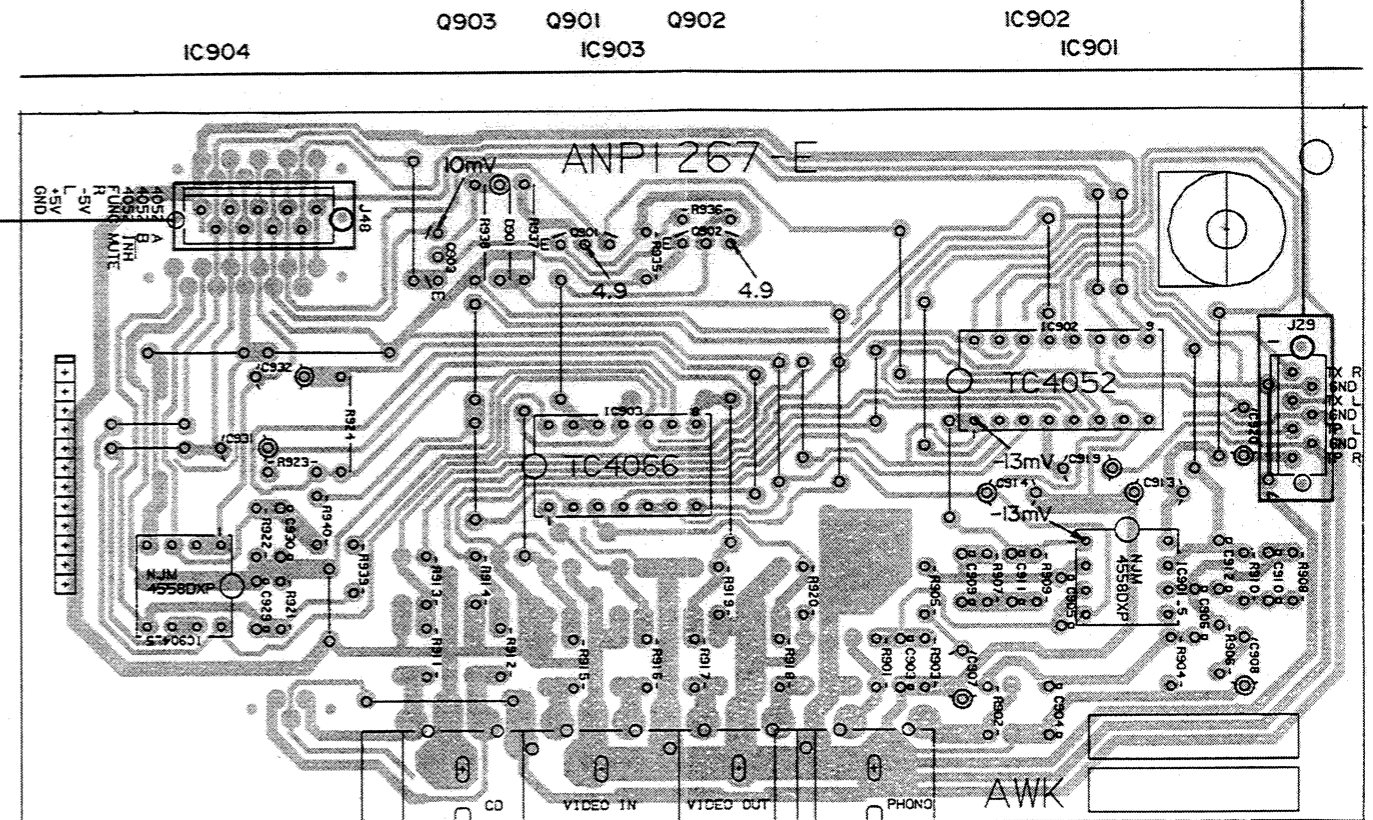
IC601, 602	LA3607	Q601	RN1201
IC603	LC7522	Q602, 608	2SC2458
IC604	M5218L	Q603	RN2204
D601, 602, 605	HSS104-02	Q604, 605	2SC2603
D603	HZS5ALL	Q606	2SA1115
D604	HZS7B2L	Q609	RN2203







To AF assembly CN28  
(To page 37)



FUNCTION assembly (AWK1174)

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.

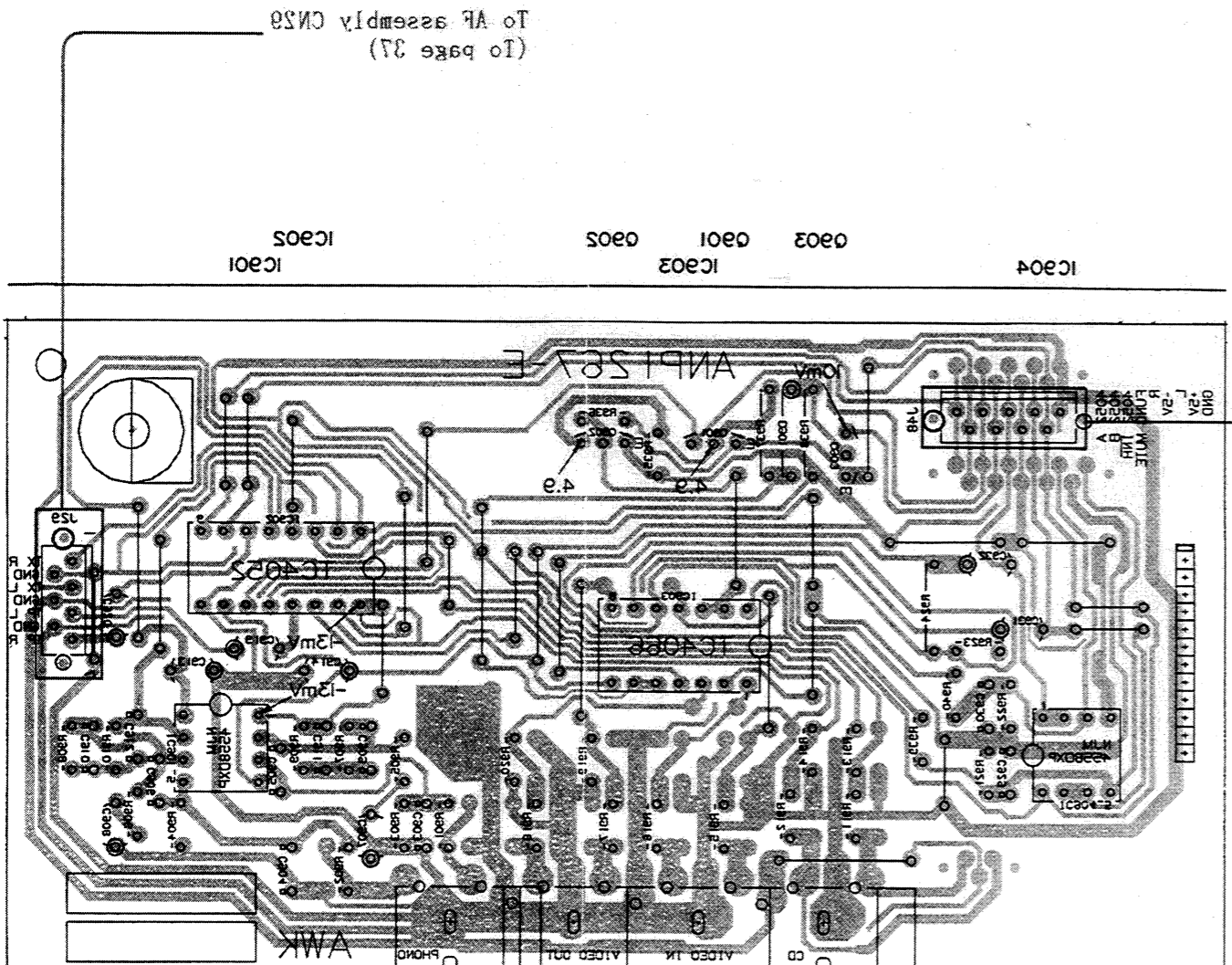
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

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

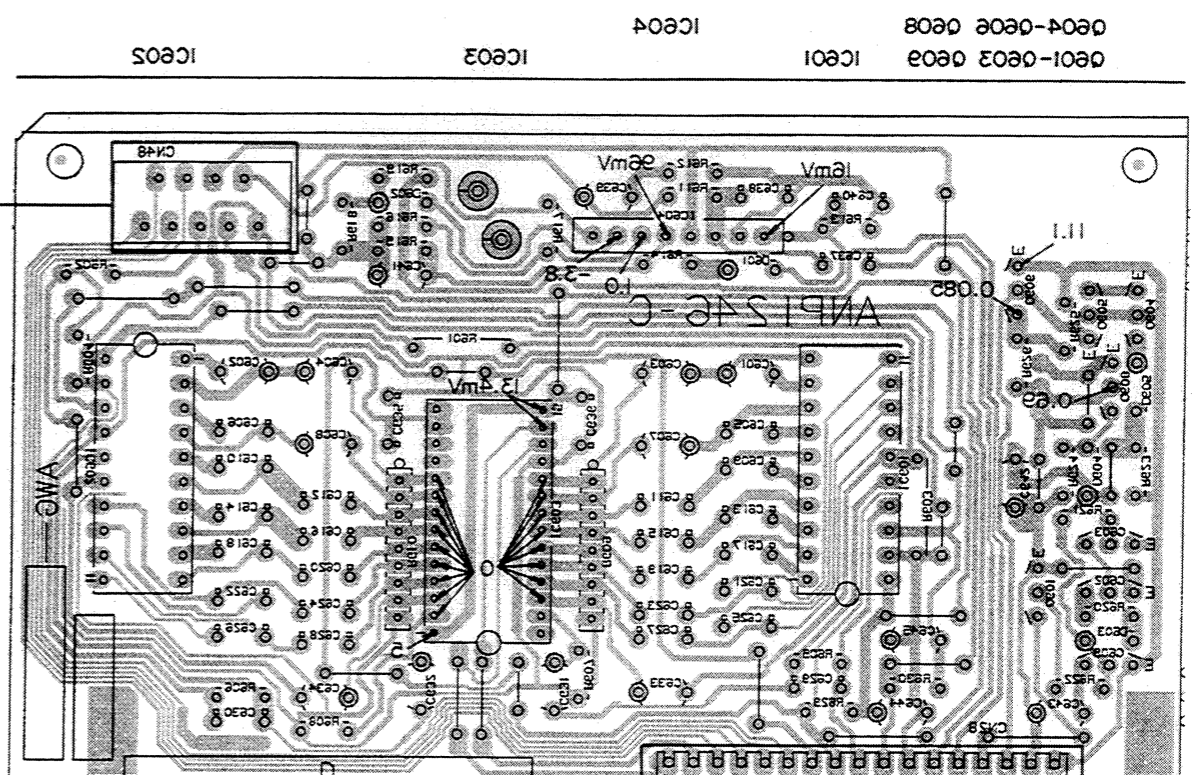
3. The capacitor terminal marked with ⊙ (double circles) shows negative terminal.
4. The diode terminal marked with ⊙ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

FUNCTION assembly (WK117A)



To AF assembly CNS9  
(To page 37)

GEQ assembly (WG1058)

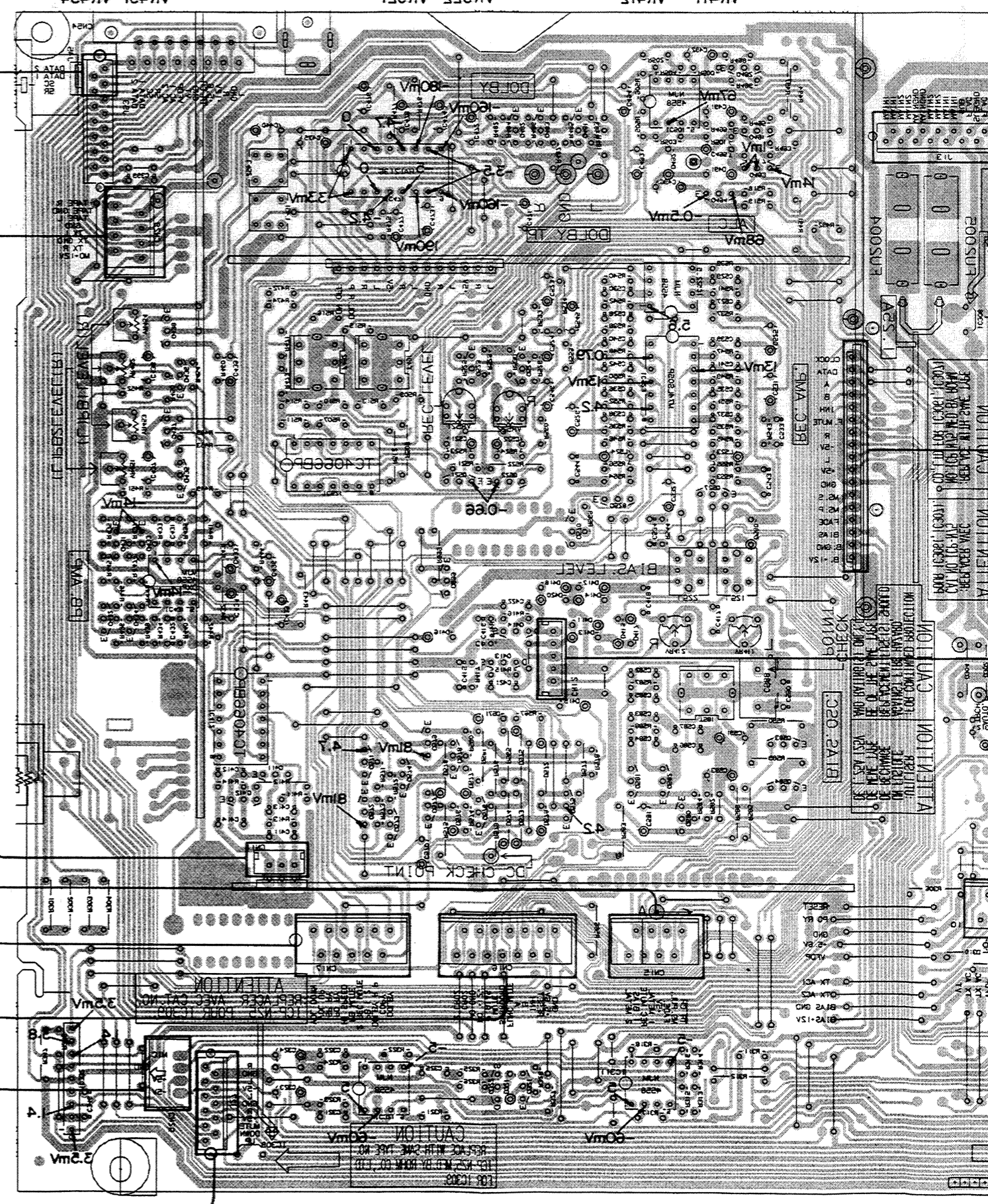


To AF assembly CNS8  
(To page 37)

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



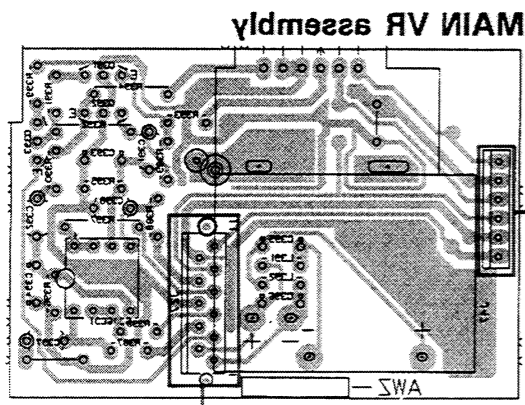
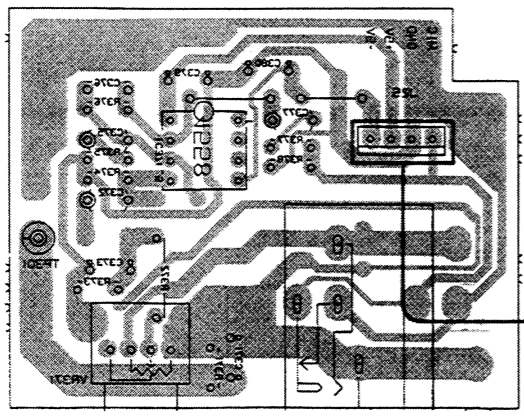
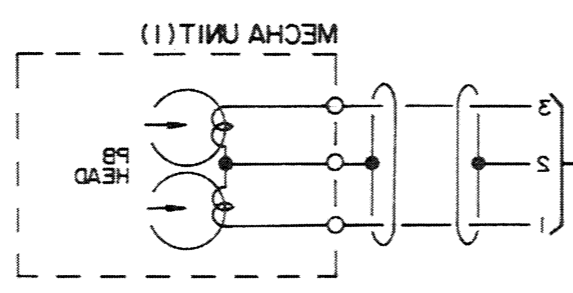
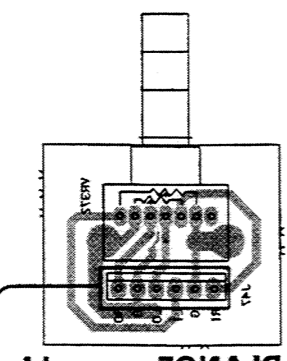
IC308  
 0280-0284 0275 0414 0413 0276-0279 0271-0274 0411 0415 IC415  
 0251 IC252 IC253 0258 0270 0251-0254 0888 IC251  
 0491-0494 IC201 0481-0483 IC471  
 0432-0438  
 IC311 0351 0355 IC351  
 0351 0355 IC308  
 IC335  
 VR411 VR415  
 VR355 VR351  
 VR451-VR454



(To page 22)  
 To DECK CTRL assembly CM42

(To page 30)  
 To FUNCTION assembly 128

(To page 22)  
 To DECK CTRL assembly 116  
 (To page 22)  
 To DECK CTRL assembly 117  
 (To page 22)  
 To DECK CTRL assembly 118



A

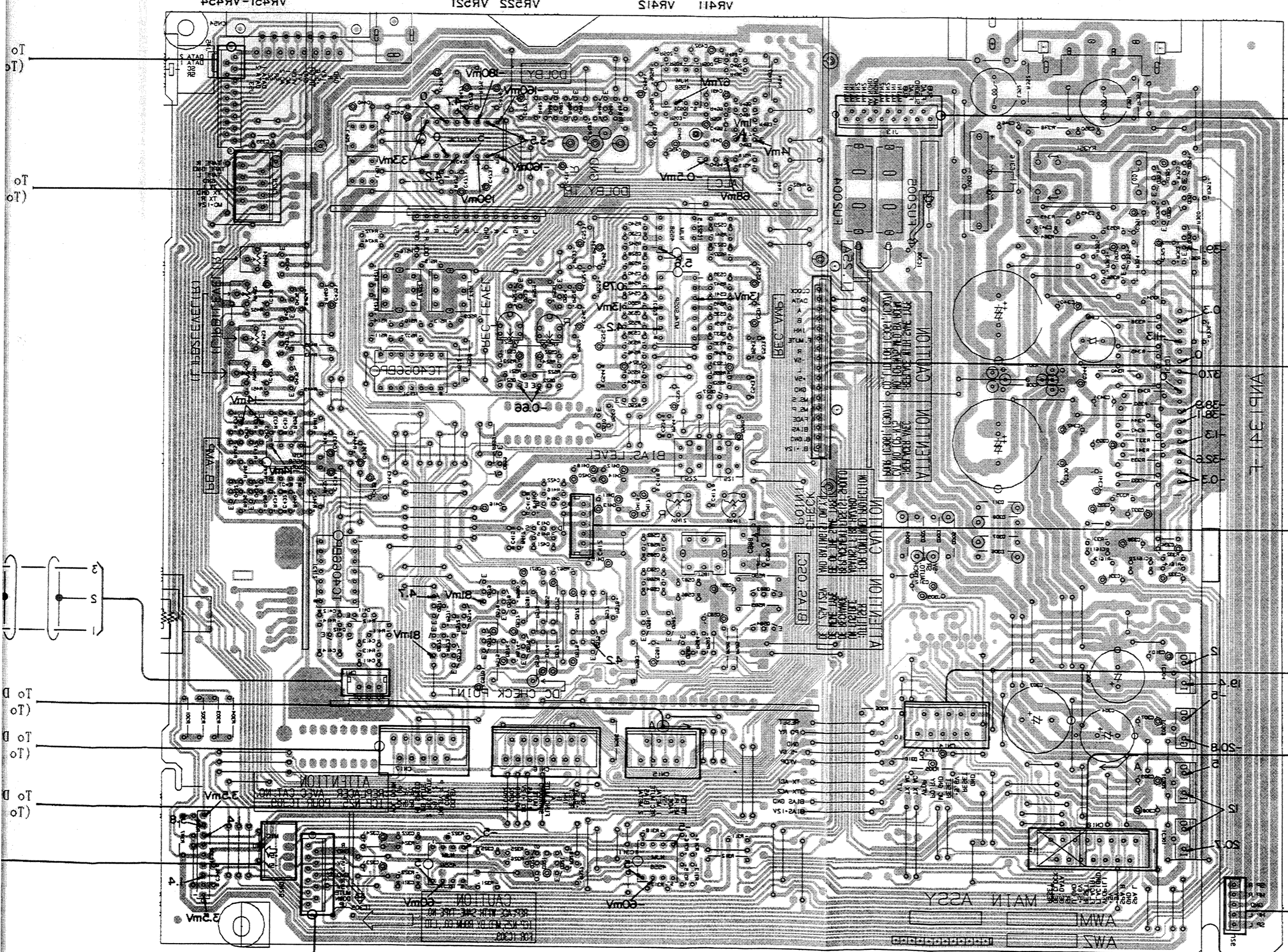
B

C

D

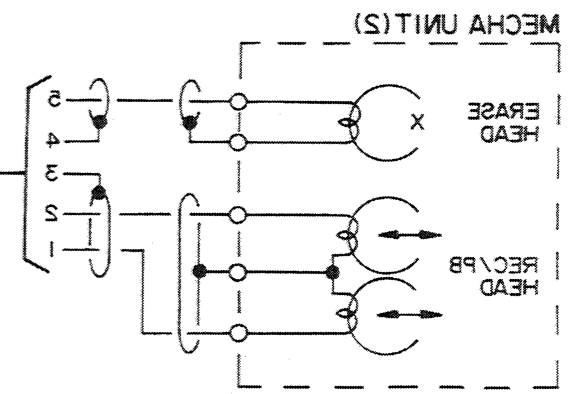
8  
 7  
 6  
 5  
 4  
 3  
 2  
 1  
 19



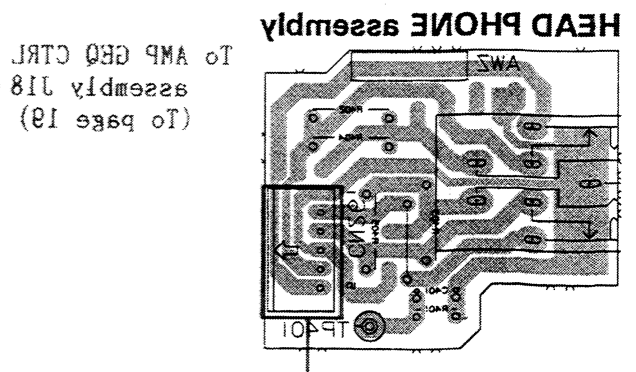


To TRANS CONNECT assembly 113  
(To page 42)

To GEO assembly CN28  
(To page 28)



To POWER SUPPLY assembly 114  
(To page 44)



To AMP GEO CTRL  
assembly 118  
(To page 18)

IC301-IC304 0321-0326 IC321  
IC308  
0280-0284 0275 0414 0413 0276-0279 0274 0411 0415 IC415  
0251 IC255 IC253 0258 0210 0251-0254 0889 IC251  
0491-0494 IC201 0481-0483 IC411  
e 0432-0438



2.4 AF (AWZ2632), MIC, BLANCE,  
MAIN VR and HEAD PHONE assembly

1 2 3 4 5 6

Q351-Q356 IC331 IC301-IC304

IC306

Q491-Q494 IC501 Q481-Q483 IC471 Q435-Q438

Q527 IC522 IC523 Q528 Q570 Q521-Q524 Q899 IC521 IC431 Q431-Q434

Q580-Q584 Q575 Q414 Q413 Q576-Q579 Q571-Q574 Q411 Q412 IC412

IC311 Q321 Q322 IC321 IC309 IC332

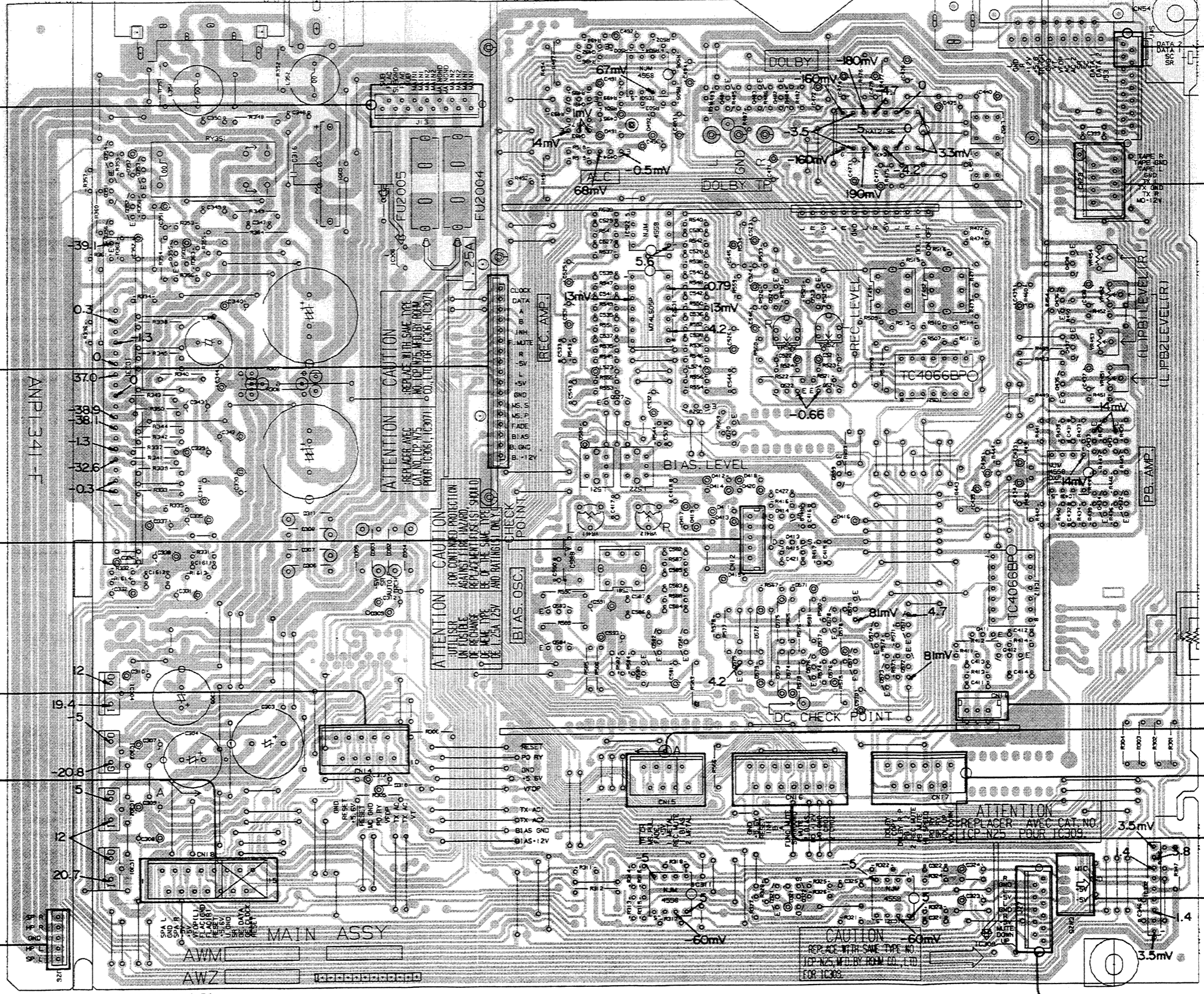
VR411 VR412 VR522 VR521 VR451-VR454

A To TRANS CONNECT assembly J13  
(To page 45)

B To GEQ assembly CN28  
(To page 29)

C MECHA UNIT(2)  
ERASE HEAD  
REC/PB HEAD  
To POWER SUPPLY assembly J14  
(To page 44)

D HEAD PHONE assembly  
To AMP GEQ CTRL assembly J18  
(To page 19)



AF assembly (AWZ2632)



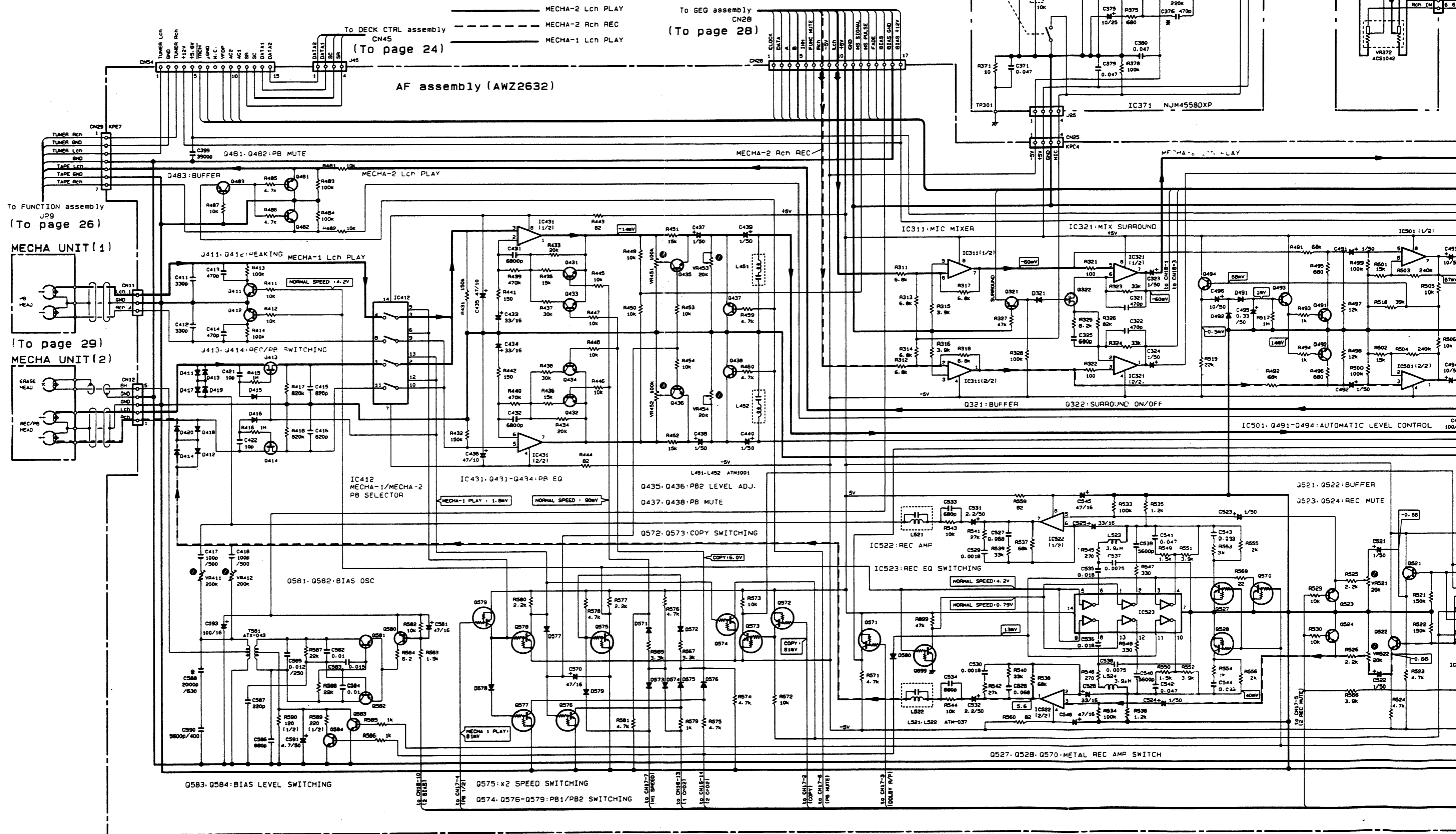


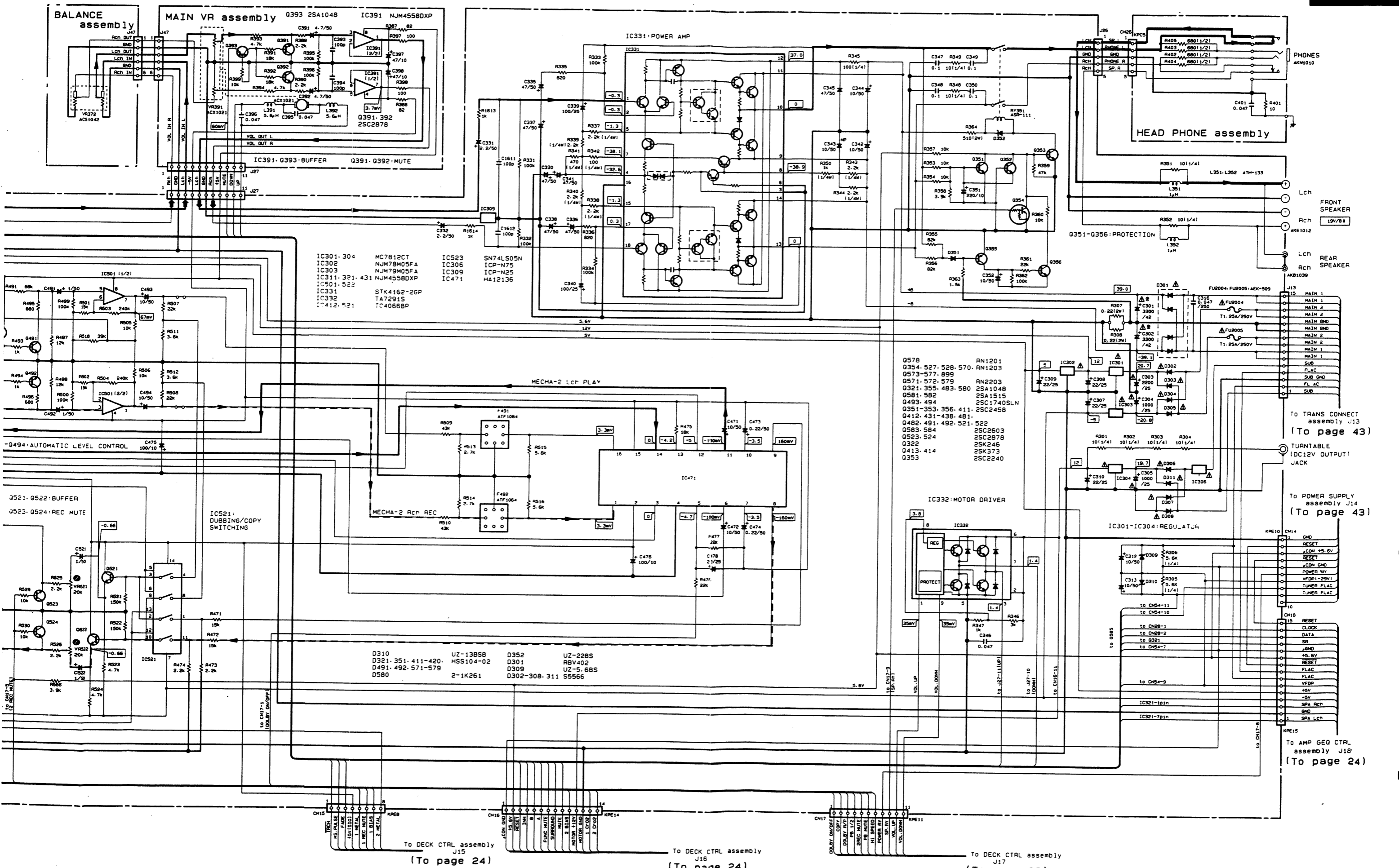
A

B

C

D





PHONES  
AM1010

HEAD PHONE assembly  
L351: L352 ATH-133  
R351: 101/1/4  
R352: 101/1/4  
L351: 1µH

Lch FRONT SPEAKER  
Rch 19V/8  
AKE1012  
Lch REAR SPEAKER  
Rch AK81039

- IC301: 304 MC7812CT  
IC302 NJM79M05FA  
IC303 NJM79M05FA  
IC311: 3P1: 431 NJM4558DP  
IC501: 522  
IC331 IC332 STK4162-26P  
IC332 TA7291S  
IC412: 521 IC4066BP
- IC523 SN74LS05N  
IC305 ICP-N75  
IC309 ICP-N25  
IC471 MA12136

- Q578 AN1201  
Q354: 527-528-570 AN1203  
Q573-577-899 AN2203  
Q321-355-483-580 2SA1048  
Q581-582 2SA1515  
Q493-494 2SC1740SLN  
Q351-353-356-411 2SC2458  
Q412-431-438-481  
Q482-491-492-521-522  
Q583-584 2SC2603  
Q523-524 2SC2878  
Q322 2SK246  
Q413-414 2SK373  
Q353 2SC2240

TO TRANS CONNECT assembly J13  
(To page 43)

TURNABLE IC12V OUTPUT JACK  
TO POWER SUPPLY assembly J14  
(To page 43)

TO AMP GEO CTRL assembly J18  
(To page 24)

To DECK CTRL assembly J15  
(To page 24)

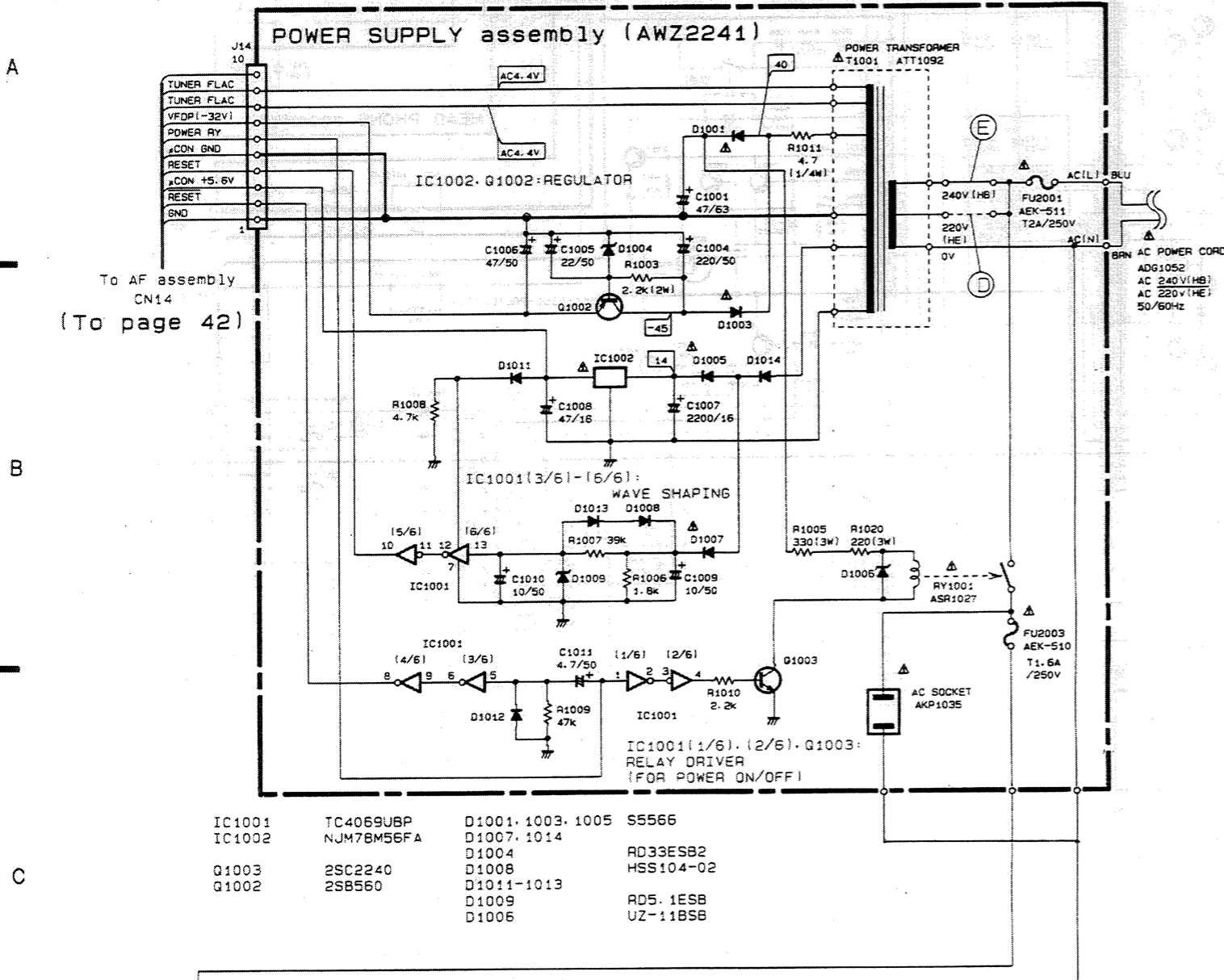
To DECK CTRL assembly J16  
(To page 24)

To DECK CTRL assembly J17  
(To page 26)

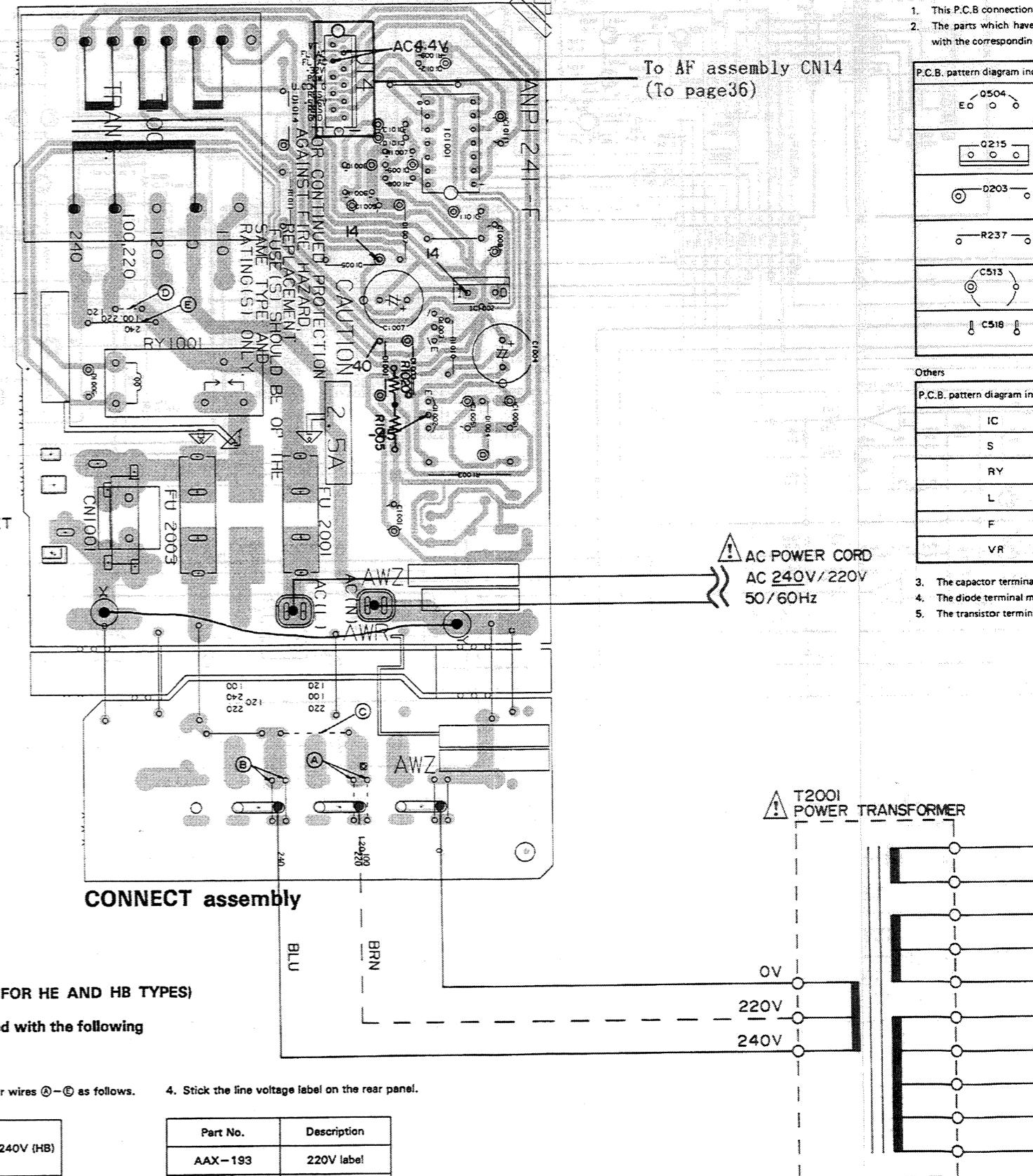


2.5 POWER SUPPLY (AWZ2241), CONNECT and TRANS CONNECT assembly

POWER SUPPLY assembly (AWZ2241)



IC1001	TC4069UBP	D1001, 1003, 1005	S5566
IC1002	NJM78M56FA	D1007, 1014	RD33ESB2
Q1003	2SC2240	D1004	HSS104-02
Q1002	2SB560	D1008	RD5.1ESB
		D1011-1013	UZ-11BSB
		D1009	
		D1006	



NOTE

- This P.C.B connection di...
- The parts which have b... with the corresponding v...

P.C.B. pattern diagram indic...

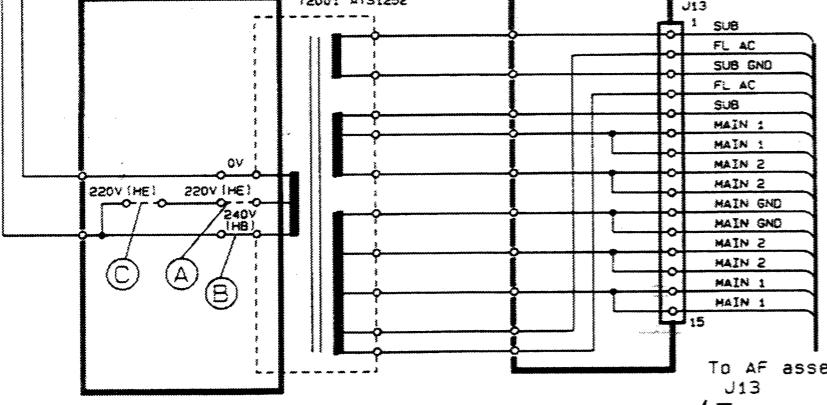
Others

P.C.B. pattern diagram indic...

IC
S
RY
L
F
VR

- The capacitor terminal m...
- The diode terminal mar...
- The transistor terminal

CONNECT assembly TRANS CONNECT assembly



Line Voltage Selection (FOR HE AND HB TYPES)

Line voltage can be changed with the following steps.

- Disconnect the AC power cord.
- Remove the top cover.
- Change the position of the jumper wires (A)-(C) as follows.
- Stick the line voltage label on the rear panel.

Jumper wires	220V (HE)	240V (HB)
(A)	○	×
(B)	×	○
(C)	○	×
(D)	○	×
(E)	×	○

○: Be needed  
×: Be needless

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

To AF assembly J13 (To page 36)

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

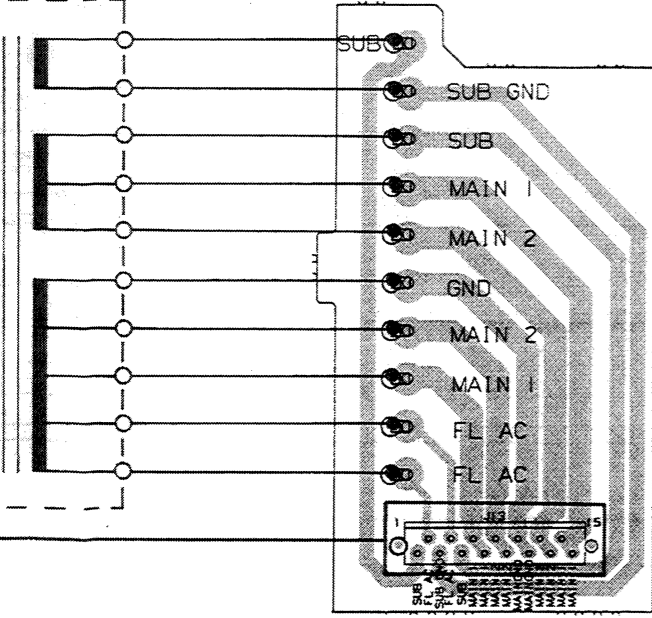
- 3. The capacitor terminal marked with ⊖ (double circles) shows negative terminal.
- 4. The diode terminal marked with ⊖ (double circles) shows cathode side.
- 5. The transistor terminal to which E is affixed shows the emitter.

NOTE:

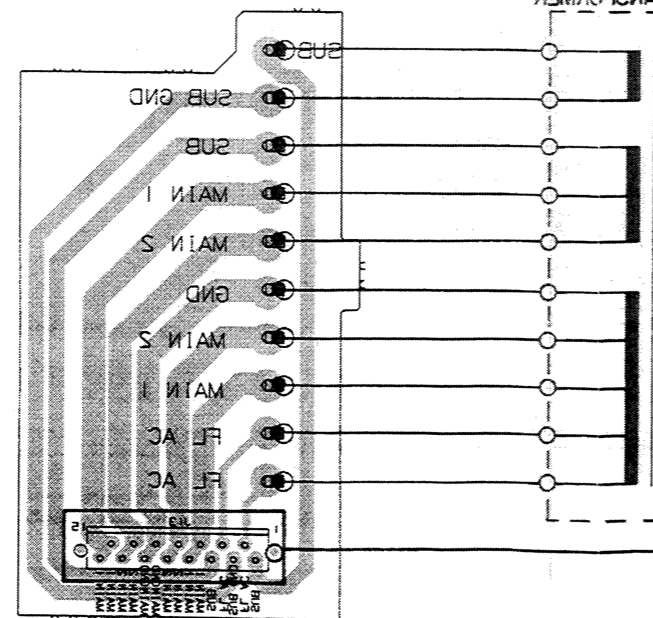
This picture shows the foil side of the printed circuit.

VER CORD  
V/ 220V  
Hz

2001  
OWER TRANSFORMER

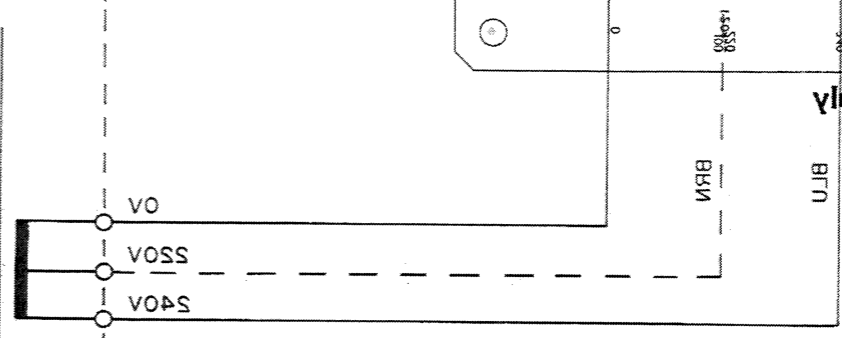


TRANS CONNECT assembly



TRANS CONNECT assembly

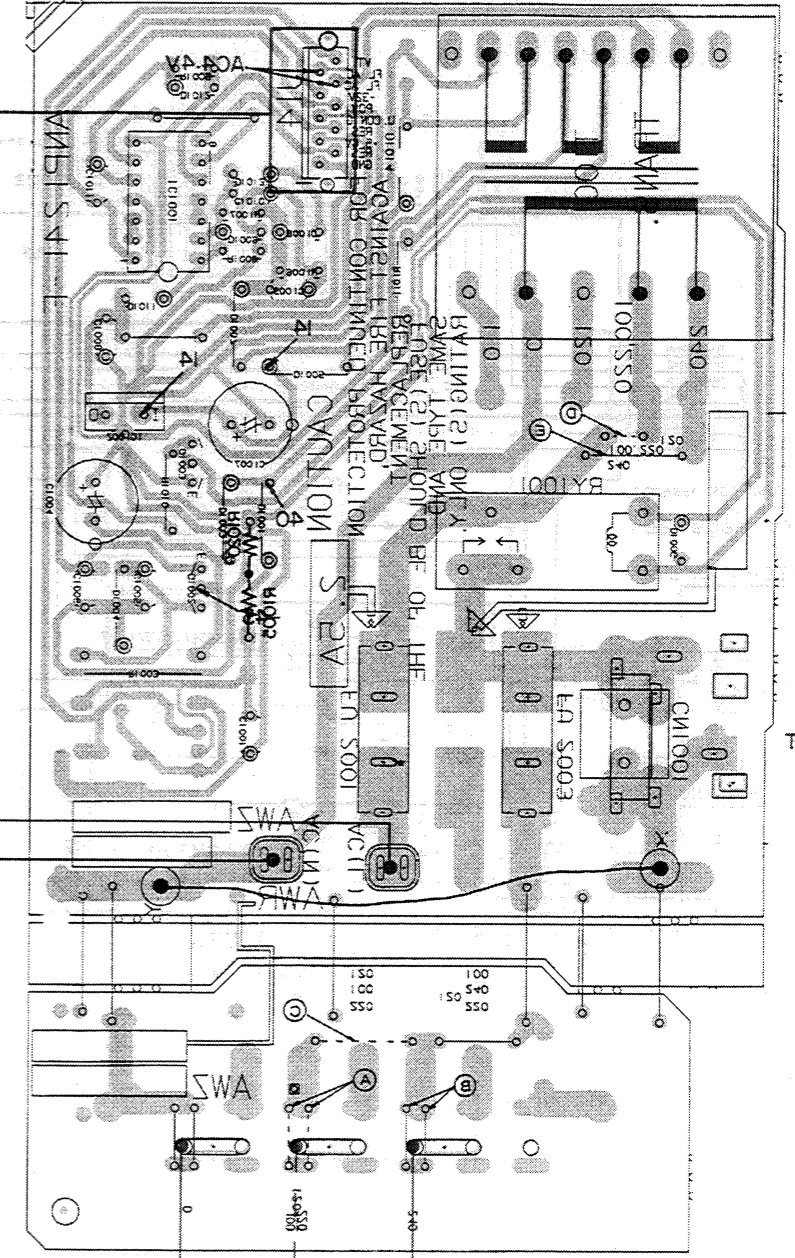
2001  
OWER TRANSFORMER



CONNECT assembly

AC POWER CORD  
50/60Hz  
AC 240V/220V

POWER SUPPLY assembly (AW2241)



AC OUTLET



### 3. P.C.B's 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  $\Delta$  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.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

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

560Ω	56 × 10 <sup>1</sup>	561.....	RD1/4PS	Ⓜ	Ⓜ	Ⓜ	J
47kΩ	47 × 10 <sup>3</sup>	473.....	RD1/4PS	Ⓜ	Ⓜ	Ⓜ	J
0.5Ω	0R5.....		RN2H	Ⓜ	Ⓜ	Ⓜ	K
1Ω	010.....		RS1P	Ⓜ	Ⓜ	Ⓜ	K

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

5.62kΩ	562 × 10 <sup>1</sup>	5621.....	RN1/4SR	Ⓜ	Ⓜ	Ⓜ	F
--------	-----------------------	-----------	---------	---	---	---	---

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
<b>SPEANA ASSEMBLY (AWG1025)</b>					
<b>SEMICONDUCTORS</b>					
IC721-725	OP-AMP IC	NJM4558DXP	Q601	TRANSISTOR	RN1201
IC726	LOGIC IC	TC4051BP	Q602	TRANSISTOR	2SC2458
Q721-729	TRANSISTOR	RN1201	Q603	TRANSISTOR	RN2204
Q730	TRANSISTOR	2SA1048	Q604,605	TRANSISTOR	2SC2603
Q731-733	TRANSISTOR	2SC2458	Q606	TRANSISTOR	2SA1115
D721-728	DIODE	HSS104-02	Q608	TRANSISTOR	2SC2458
<b>CAPACITORS</b>					
C721,722	CERAMIC CAPACITOR	CKDYX823M16	Q609	TRANSISTOR	RN2203
C723,724	CERAMIC CAPACITOR	CKCYX333M16	D601,602	DIODE	HSS104-02
C725,726	CERAMIC CAPACITOR	CKCYX123M16	D603	ZENER DIODE	HZS5ALL
C727,728	CERAMIC CAPACITOR	CKCYB472K50	D604	ZENER DIODE	HZS7B2L
C729,730	CERAMIC CAPACITOR	CKCYB182K50	D605	DIODE	HSS104-02
C731,732	CERAMIC CAPACITOR	CKCYB821K50	<b>CAPACITORS</b>		
C733,734	CERAMIC CAPACITOR	CKCYB331K50	C601,602	ELECTR.CAPACITOR	CEASR15M50
C735-741	CERAMIC CAPACITOR	CKDYF473Z50	C603,604	ELECTR.CAPACITOR	CEASR47M50
<b>RESISTORS</b>					
All resistors		RD1/8PM□□□J	C605,606	CERAMIC CAPACITOR	CKDYX683M16
<b>OTHERS</b>					
CN30	JUMPER CONNECTOR	KPE13	C607,608	ELECTR.CAPACITOR	CEASR15M50
		13-P	C609,610	CERAMIC CAPACITOR	CKDYX273M16
<b>GEQ ASSEMBLY (AWG1028)</b>					
This GEQ ASSEMBLY (AWG1028) is a part of					
<b>AF ASSEMBLY (AWZ2632)</b>					
<b>SEMICONDUCTORS</b>					
IC601,602	GEQ IC	LA3607	C611,612	CERAMIC CAPACITOR	CKDYX683M16
IC603	GEQ EVR IC	LC7522	C613,614	CERAMIC CAPACITOR	CGMYX103M16
IC604	OP-AMP IC	M5218L	C615,616	CERAMIC CAPACITOR	CKDYX273M16
<b>RESISTORS</b>					
All resistors					
<b>CAPACITORS</b>					
All capacitors					
<b>OTHERS</b>					
All other parts					

Mark	No.	Description	Parts No.
	C641	ELECTR.CAPACITOR	CEAS0R1M50
	C642	ELECTR.CAPACITOR	CEAS331M16
	C643	ELECTR.CAPACITOR	CEAS100M25
	C644,645	ELECTR.CAPACITOR	CEAS101M10

**RESISTORS**

R609,610	RESISTOR ARRAY (1MΩ)	RA8T105J
	Other resistors	RD1/8PM□□□□

**OTHERS**

CN48	JUMPER CONNECTOR 9-P	KPE9
------	-------------------------	------

**FUNCTION ASSEMBLY (AWK1174)**

**SEMICONDUCTORS**

IC901	OP-AMP IC	NJM4558DXP
IC902	LOGIC IC	TC4052BP
IC903	LOGIC IC	TC4066BP
IC904	OP-AMP IC	NJM4558DXP
Q901,903	TRANSISTOR	DTA143ES
Q902		DTC143ES

D901	DIODE	HSS104-02
------	-------	-----------

**CAPACITORS**

C903-906	CERAMIC CAPACITOR	CCCSL101J50
C907,908	ELECTR.CAPACITOR	CEAS2R2M50
C909,910	CERAMIC CAPACITOR	CKCYB152K50
C911,912	CERAMIC CAPACITOR	CKCYB562K50
C913,914	ELECTR.CAPACITOR	CEAS470M10

C919,920	ELECTR.CAPACITOR	CEAS100M25
C929,930	CERAMIC CAPACITOR	CCCSL101J50
C931,932	ELECTR.CAPACITOR	CEAS100M25

**RESISTORS**

	All resistors	RD1/8PM□□□□
--	---------------	-------------

**OTHERS**

	PHONO JACK 4-P	AKB1009
	PHONO JACK 4-P	AKB1085

**AF ASSEMBLY (AWZ2632)**

**SEMICONDUCTORS**

IC301	REGULATOR IC	MC7812CT
IC302	REGULATOR IC	NJM78M05FA
IC303	REGULATOR IC	NJM79M05FA
IC304	REGULATOR IC	MC7812CT
IC306	IC PROTECTOR	ICP-N75
IC309	IC PROTECTOR	ICP-N25
IC311	OP-AMP IC	NJM4558DXP
IC321	OP-AMP IC	NJM4558DXP

Mark	No.	Description	Parts No.
	IC331	AUDIO IC	STK4162-2GP
	IC332	MECHANISM DRIVER IC	TA7291S

IC412	LOGIC IC	TC4066BP
IC431	OP-AMP IC	NJM4588DXP
IC471	DOLBY-B IC	HA12136
IC501	OP-AMP IC	NJM4558DXP
IC521	LOGIC IC	TC4066BP

IC522	OP-AMP IC	NJM4558DXP
IC523	LOGIC IC	SN74LS05N

Q321	TRANSISTOR	2SA1048
Q322	N-FET	2SK246
Q351-353	TRANSISTOR	2SC2458

Q354	TRANSISTOR	RN1203
Q355	TRANSISTOR	2SA1048
Q356	TRANSISTOR	2SC2458
Q411,412	TRANSISTOR	2SC2458
Q413,414	N-FET	2SK373

Q431-438	TRANSISTOR	2SC2458
Q481,482	TRANSISTOR	2SC2458
Q483	TRANSISTOR	2SA1048
Q491,492	TRANSISTOR	2SC2458
Q493,494	TRANSISTOR	2SC1740SLN

Q521,522	TRANSISTOR	2SC2458
Q523,524	TRANSISTOR	2SC2878
Q527,528	TRANSISTOR	RN1203
Q570	TRANSISTOR	RN1203
Q571,572	TRANSISTOR	RN2203

Q573-577	TRANSISTOR	RN1203
Q578	TRANSISTOR	RN1201
Q579	TRANSISTOR	RN2203
Q580	TRANSISTOR	2SA1048
Q581,582	TRANSISTOR	2SA1515

Q583,584	TRANSISTOR	2SC2603
Q899		RN1203

D301	DIODE	RBV402
D302-308	DIODE	S5566
D309	ZENER DIODE	UZ-5.6BS
D310	ZENER DIODE	UZ-13BSB

D311	DIODE	S5566
------	-------	-------

D321	DIODE	HSS104-02
D351	DIODE	HSS104-02
D352	ZENER DIODE	UZ-22BS
D411-420	DIODE	HSS104-02

D491,492	DIODE	HSS104-02
D571-579	DIODE	HSS104-02
D580	DIODE	2-1K261

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
<b>RELAY</b>			C437,438	ELECTR.CAPACITOR	CEAS010M50
RY351	RELAY	ASR-111	C439,440	ELECTR.CAPACITOR	CEAS010M50
<b>COILS &amp; TRANSFORMER</b>			C471,472	ELECTR.CAPACITOR	CEAS100M50
L351,352	COIL	ATH-133	C473,474	ELECTR.CAPACITOR	CEASR22M50
L451,452	COIL	ATM1001	C475,476	ELECTR.CAPACITOR	CEAS101M10
L521,522	COIL	ATM-037	C478	ELECTR.CAPACITOR	CEAS220M25
L523,524	INDUCTOR	LTA392J	C491,492	ELECTR.CAPACITOR	CEAS010M50
T581	OSC TRANSFORMER	ATX-043	C493,494	ELECTR.CAPACITOR	CEAS100M50
<b>FILTERS</b>			C495	ELECTR.CAPACITOR	CEASR33M50
F491,F492	DOLBY FILTER	ATF1064	C496	ELECTR.CAPACITOR	CEAS100M50
<b>CAPACITORS</b>			C521-524	ELECTR.CAPACITOR	CEAS010M50
C1611,1612	CERAMIC CAPACITOR	CCCSL101J50	C525,526	ELECTR.CAPACITOR	CEAS330M16
C301,302	ELECTR.CAPACITOR (3300 $\mu$ F/42V)	ACH1017	C527,528	AUDIO FILM CAPACITOR	CFTXA683J50
C303	ELECTR.CAPACITOR	CEAS222M25	C529,530	CERAMIC CAPACITOR	CKCYB182K50
C304,305	ELECTR.CAPACITOR	CEAS102M25	C531,532	ELECTR.CAPACITOR	CEAS2R2M50
C307-310	ELECTR.CAPACITOR	CEAS220M25	C533,534	CERAMIC CAPACITOR	CKMYB681K50
C312,313	ELECTR.CAPACITOR	CEAS100M50	C535,536	MYLOR FILM CAPACITOR	CQMA183J50
C316	MYLOR FILM CAPACITOR	CQMA473K250	C537,538	MYLOR FILM CAPACITOR	CQMA752J50
C321,322	PL STYRENE CAPACITOR	CQSA471J50	C539,540	CERAMIC CAPACITOR	CKCYB562K50
C323,324	ELECTR.CAPACITOR	CEAS010M50	C541,542	MYLOR FILM CAPACITOR	CQMA473J50
C325	CERAMIC CAPACITOR	CKMYB681K50	C543,544	MYLOR FILM CAPACITOR	CQMA333J50
C330	ELECTR.CAPACITOR	CEAS470M50	C545,546	ELECTR.CAPACITOR	CEAS470M16
C331	ELECTR.CAPACITOR	CEAS2R2M50	C570	ELECTR.CAPACITOR	CEAS470M16
C332	ELECTR.CAPACITOR	CEHAQ2R2M50	C581	ELECTR.CAPACITOR	CEAS470M16
C335	ELECTR.CAPACITOR	CEAS470M50	C582	CERAMIC CAPACITOR	CKCYB103K50
C336	ELECTR.CAPACITOR	CEHAQ470M50	C583	MYLOR FILM CAPACITOR	CQMA153K50
C337,338	ELECTR.CAPACITOR	CEAS470M50	C584	CERAMIC CAPACITOR	CKCYB103K50
C339,340	ELECTR.CAPACITOR	CEAS101M25	C585	MYLOR FILM CAPACITOR	CQMA123K250
C341	ELECTR.CAPACITOR	CEAS470M50	C586	CERAMIC CAPACITOR	CKMYB681K50
C342	ELECTR.CAPACITOR	CEAS100M50	C587	CERAMIC CAPACITOR	CKMYB221K50
C343	ELECTR.CAPACITOR	CEANP100M50	C588	CQPA(2000P/630V)	ACE1020
C344	ELECTR.CAPACITOR	CEAS100M50	C590	MYLOR FILM CAPACITOR	CQMA562K400
C345	ELECTR.CAPACITOR	CEANP470M50	C591	ELECTR.CAPACITOR	CEAS4R7M50
C346	CERAMIC CAPACITOR	CKDYF473Z50	C593	ELECTR.CAPACITOR	CEAS101M16
C347-350	MYLOR FILM CAPACITOR	CQMA104K50	<b>RESISTORS</b>		
C351	ELECTR.CAPACITOR	CEAS221M10	VR411,412	VR (200k $\Omega$ )	VRTM6V204
C352	ELECTR.CAPACITOR	CEAS100M50	VR451,452	VR (100k $\Omega$ )	VRTM6H104
C399	CERAMIC CAPACITOR	CKDYB392K50	VR453,454	VR (20k $\Omega$ )	VRTM6H203
C411,412	CERAMIC CAPACITOR	CKMYB331K50	VR521,522	VR (22k $\Omega$ )	ACP1026
C413,414	CERAMIC CAPACITOR	CKMYB471K50	R301-304	CARBON FILM RESISTOR	RD1/4PM100J
C415,416	CERAMIC CAPACITOR	CKMYB821K50	R305,306	CARBON FILM RESISTOR	RD1/4PM562J
C417,418	CERAMIC CAPACITOR	CCCSL101K500	R307,308	METAL OXIDE RESISTOR	RS2LMFR22J
C421,422	CERAMIC CAPACITOR	CCMSL100D50	R337-340	CARBON FILM RESISTOR	RD1/4PM222J
C431,432	MYLOR FILM CAPACITOR	CQMA682J50			
C433,434	ELECTR.CAPACITOR	CEAS330M16			
C435,436	ELECTR.CAPACITOR	CEAS470M10			

Mark	No.	Description	Parts No.
R341		FUSLIBLE RESISTOR	RFA1/4PL471J
R342		CARBON FILM RESISTOR	RD1/4PMFL101J
R343,344		CARBON FILM RESISTOR	RD1/4PM222J
R345		CARBON FILM RESISTOR	RD1/4PMFL101J
R348,349		CARBON FILM RESISTOR	RD1/4PMF100J
R350		CARBON FILM RESISTOR	RD1/4PMFL102J
R351,352		CARBON FILM RESISTOR	RD1/4PMFL100J
R364		METAL OXIDE RESISTOR	RS2LMF511J
R589,590		CARBON FILM RESISTOR	RD1/2PM□□□J
		Other resistors	RD1/8PM□□□J

**OTHERS**

CN14		JUMPER CONNECTOR 10-P	KPE10
CN15		JUMPER CONNECTOR 8-P	KPE8
CN16		JUMPER CONNECTOR 14-P	KPE14
CN17		JUMPER CONNECTOR 11-P	KPE11
CN18		JUMPER CONNECTOR 15-P	KPE15
CN25		JUMPER CONNECTOR 4-P	KPC4
CN29		JUMPER CONNECTOR 7-P	KPE7
		PIN JACK 2-P (SPEAKER)	AKB1039
		TERMINAL 4-P (SPEAKER)	AKE1012
		JACK (PL DC+12V) Socket 15-P (To TUNER)	AKN-203 AKP1038
		GEQ ASSEMBLY (As to the parts list, refer to page47)	AWG1028

**MAIN VR ASSEMBLY**

**SEMICONDUCTORS**

IC391		OP-AMP IC	NJM4558DXP
Q391,392		TRANSISTOR	2SC2878
Q393		TRANSISTOR	2SA1048

**COILS**

L391,392		AXIAL INDUCTOR (5.6μH)	LAU5R6K
----------	--	------------------------	---------

Mark	No.	Description	Parts No.
<b>CAPACITORS</b>			
	C391,392	ELECTR.CAPACITOR	CEAS4R7M50
	C393,394	CERAMIC CAPACITOR	CCMSL101J50
	C395,396	CERAMIC CAPACITOR	CKCYF473Z50
	C397,398	ELECTR.CAPACITOR	CEAS470M10

**RESISTORS**

VR391		VR (100k)	ACX1021
		Other resistors	RD1/8PM□□□J

**HEAD PHONE ASSEMBLY**

**CAPACITOR**

C401		CERAMIC CAPACITOR	CKCYF473Z50
------	--	-------------------	-------------

**RESISTORS**

R401		CARBON FILM RESISTOR	RD1/8PM100J
R402-405		CARBON FILM RESISTOR	RD1/2PMF681J

**OTHERS**

CN26		JUMPER CONNECTOR 5-P	KPC5
		JACK (HEADPHONE)	AKN1010

**TRANSE CONNECT ASSEMBLY**

No Parte are supplied with the TRANS CONNECT assembly

**BALANCE ASSEMBLY**

**RESISTOR**

VR372		VR(10k)	ACS1042
-------	--	---------	---------

**MIC ASSEMBLY**

**SEMICONDUCTOR**

IC371		OP-AMP IC	NJM4558DXP
-------	--	-----------	------------

**CAPACITORS**

C371		CERAMIC CAPACITOR	CKCYF473Z50
C372		ELECTR.CAPACITOR	CEAS010M50
C373		CERAMIC CAPACITOR	CKMYB631K50
C375		ELECTR.CAPACITOR	CEAS100M25
C376		CERAMIC CAPACITOR (470p)	ACG1019
C377		ELECTR.CAPACITOR	CEAS100M25
C379,380		CERAMIC CAPACITOR	CKCYF473Z50

**RESISTORS**

VR371		VR (10K-X1)	ACS1043
		Other resistors	RD1/8PM□□□J

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
<b>OTHERS</b>			<b>COIL</b>		
	JACK (MIC)	AKN1017	L801	AXIAL INDUCTOR (22 $\mu$ H)	LAU220K
<b>DECK-1 SW ASSEMBLY</b>			<b>CAPACITORS</b>		
<b>SWITCHES</b>			C801	ELECTR.CAPACITOR	CEASR33M50
S811-815	SWITCH	ASG1034	C802	ELECTR.CAPACITOR	CEAS101M16
			C803	ELECTR.CAPACITOR	CEAS101M10
			C804-807	CERAMIC CAPACITOR	CKDYF473Z50
			C839,840	CERAMIC CAPACITOR	CKDYB102K50
<b>DECK-2 SW ASSEMBLY</b>			<b>RESISTORS</b>		
<b>SWITCHES</b>			VR801,802	VR	VRTM6H203
S821-825	SWITCH	ASG1034	VR803	VR	VRTM6H103
				Other resistors	RD1/8□□□J
<b>DECK CENTER ASSEMBLY</b>			<b>OTHERS</b>		
<b>SEMICONDUCTORS</b>			X801	(4.19MHz)	ASS1018
Q822-825	TRANSISTOR	2SA1048	CN21	JUMPER CONNECTOR 11-P	KPE11
D841-844	LED	AEL1084	CN22	JUMPER CONNECTOR 14-P	KPE14
D854	DIODE	HSS104-02	CN45	JUMPER CONNECTOR 4-P	KPE4
D856-858	DIODE	HSS104-02			
D861	LED	AEL1091			
D862,863	LED(RED)	AEL1065			
<b>SWITCHES</b>			<b>AMP, GEQ CTRL ASSEMBLY (AWZ2642)</b>		
S848,849	SWITCH	ASH1014	<b>SEMICONDUCTORS</b>		
S853	SWITCH	ASG1034	IC771		PD3161
S857	SWITCH	ASG1034	IC701,702		SN74LS05N
S862	SWITCH	ASG1034	IC703	LOGIC IC	TC4081BP
S871,872	SWITCH	ASG1034	IC727	OP-AMP IC	NJM4558DXP
S874,875	SWITCH	ASG1034	Q701,702	TRANSISTOR	RN2201
<b>RESISTORS</b>			D707	LED(RED)	AEL1099
	All resistors	RD1/8PM□□□J	D711	LED(RED)	AEL1099
			D715	LED(RED)	AEL1099
			D718	LED(RED)	AEL1099
			D719	LED	AEL1105
			D721	LED	AEL1081
<b>DECK CTRL ASSEMBLY(AWZ2641)</b>			D722	LED(RED)	AEL1099
<b>SEMICONDUCTORS</b>			D731	LED(RED)	AEL1099
IC801	DECK AMP	PDE029-C	D771-780	DIODE	HSS104-02
IC802	LOGIC IC	SN74LS42N	D782	DIODE	HSS104-02
Q801,802	TRANSISTOR	RN2204	D785,786	DIODE	HSS104-02
Q803-806	TRANSISTOR	RN1201			
Q807-812	TRANSISTOR	2SA1515	<b>SWITCHES</b>		
Q814,815	TRANSISTOR	RN1201	S707	SWITCH	ASG1034
D801,802	DIODE	HSS104-02	S709	SWITCH	ASG1034
D808	DIODE	HSS104-02	S715	SWITCH	ASG1034
D810-815	DIODE	HSS104-02	S718-722	SWITCH	ASG1034
D817	DIODE	HSS104-02	S771-793	SWITCH	ASG1034
D820-826	DIODE	HSS104-02	<b>COIL</b>		
D835-840	DIODE	HSS104-02	L771	AXIAL INDUCTOR (22 $\mu$ H)	LAU220K

Mark No.	Description	Parts No.
<b>CAPACITORS</b>		
C771,772	CERAMIC CAPACITOR	CKDYF473Z50
C773	(47000 $\mu$ / 5.5 V)	ACH1135
C774	CERAMIC CAPACITOR	CKDYF473Z50
C775	CERAMIC CAPACITOR	CKCYB102K50
C776	CERAMIC CAPACITOR	CKDYF473Z50
C777	ELECTR.CAPACITOR	CEAS100M50
<b>RESISTORS</b>		
R899	CARBON FILM RESISTOR	RD1/2PM1R8J
	Other resistors	RD1/8PM□□□J
<b>OTHERS</b>		
V771	FL TUBE	AAV1071
V772	FL TUBE	AAV1069
X771	(4.19MHz)	ASS1018

Mark No.	Description	Parts No.
<b>RESISTORS</b>		
R1003	METAL OXIDE RESISTOR	RS2LMF222J
R1005	METAL OXIDE RESISTOR	RS3PMF331J
R1020		RS3PMF221J
R1011	CARBON FILM RESISTOR	RD1/4PMFLAR7J
	Other resistors	RD1/8PM□□□J
<b>OTHERS</b>		
△	AC SOCKET 1-P (OUTLET)	AKP1035

**CONNECT ASSEMBLY**

No parts are supplied with the CONNECT assembly.

**POWER SUPPLY ASSEMBLY (AWZ2241)**

**SEMICONDUCTORS**

IC1001	LOGIC IC	TC4069UBP
IC1002	REGULATOR	NJM78M56FA
Q1002	TRANSISTOR	2SB560
Q1003	TRANSISTOR	2SC2240
D1001	DIODE	S5566
D1003	DIODE	S5566
D1004	ZENER DIODE	RD33ESB2
D1005	DIODE	S5566
D1006	ZENER DIODE	UZ-11BSB
D1007	DIODE	S5566
D1008	DIODE	HSS104-02
D1009	ZENER DIODE	RD5.1ESB
D1011-1013	DIODE	HSS104-02
D1014	DIODE	S5566

**RELAY**

△	RY1001	RELAY	ASR1027
---	--------	-------	---------

**TRANSFORMER**

T1001	POWER TRANSFORMER	ATT1092
-------	-------------------	---------

**CAPACITORS**

C1001	ELECTR.CAPACITOR	CEAS470M63
C1004	ELECTR.CAPACITOR	CEAS221M50
C1005	ELECTR.CAPACITOR	CEHAQ220M50
C1006	ELECTR.CAPACITOR	CEAS470M50
C1007	ELECTR.CAPACITOR	CEAS222M16
C1008	ELECTR.CAPACITOR	CEAS470M16
C1009,1010	ELECTR.CAPACITOR	CEAS100M50
C1011	ELECTR.CAPACITOR	CEAS4R7M50

### 4. ADJUSTMENTS

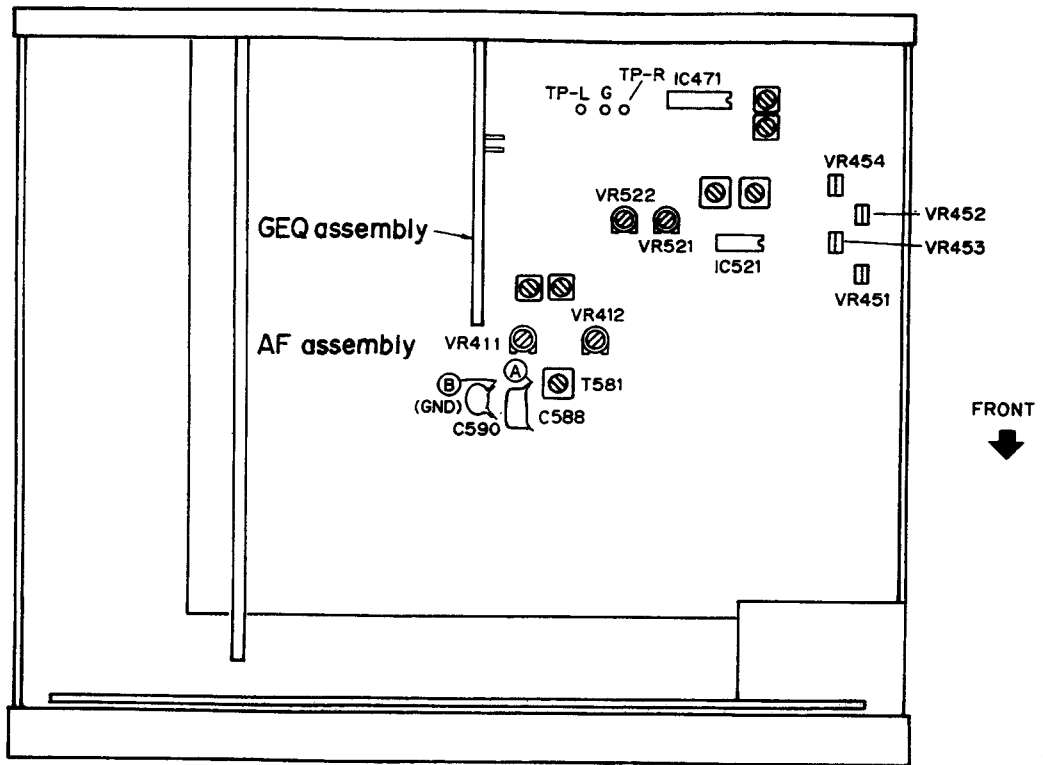


Fig 4.1. Adjustment location

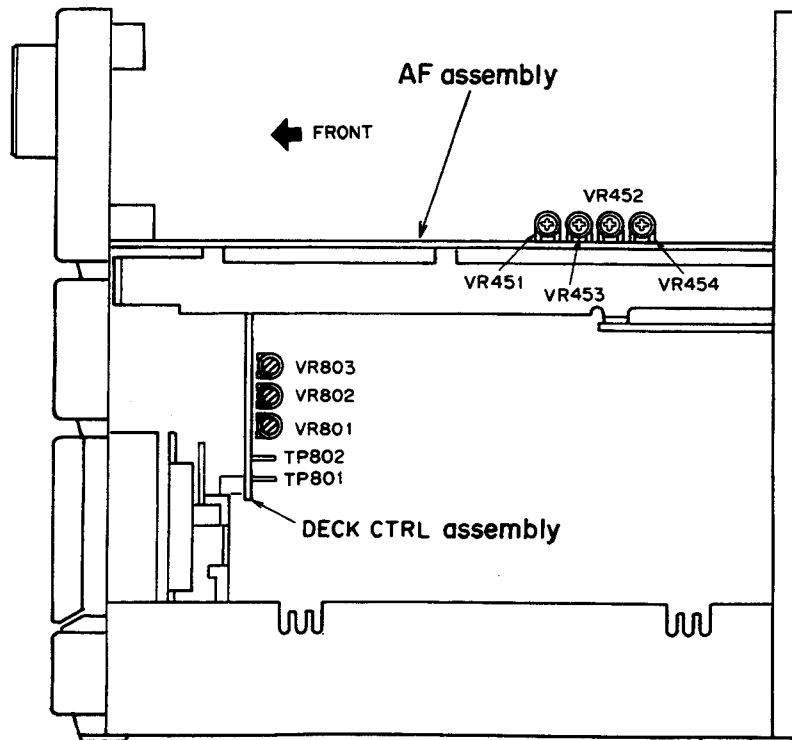


Fig 4.2. Adjustment location

- Adjustment and measurement are usually made in the AF assembly, unless specified otherwise.
- Set the graphic equalizer to OFF, the BALANCE control knob to Center and the MIC LEVEL control knob 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 DECK CTRL assembly. 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 Assembly 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 Assembly 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 Assembly 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.

1. Adjustment of tape speed has been completed.
2. Clean and demagnetize the head using a head eraser.
3. When measured, the level should be 0 dBV = 1 Vrms.
4. Use side A of the specified tape for adjustment. STD-331B: For adjustment of playback system. STD-630: NORMAL blank tape
5. Prepare the following measuring devices: AC millivoltmeter, Low-frequency oscillator, Attenuator, Oscilloscope
6. Adjust both L and R channels, unless specified otherwise.
7. Set the DOLBY NR switches to OFF, unless specified otherwise.
8. Warm up the unit for several minutes before adjustment. Especially before adjusting the frequency characteristics of recording and playback, warm up for 3 to 5 minutes in REC/PLAY mode.
9. Make sure to follow the proper order of the adjustment procedure. Any change in the order may cause an imperfect result.

**List of Adjustment**

**Deck I**

1. Head azimuth adjustment
2. Playback level adjustment

**Deck II**

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

**Checking of Deck II**

1. Make sure the ALC is operating properly.



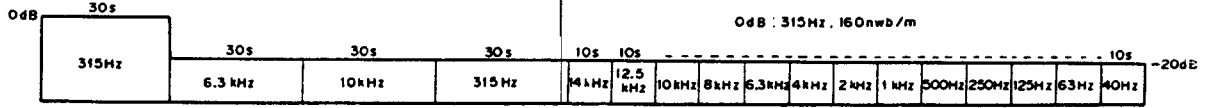


Fig. 4.3 Test tape STD-331B

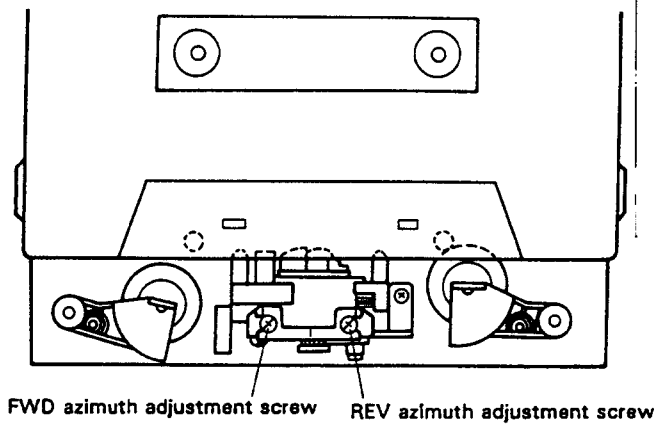


Fig. 4.4 Head azimuth adjustment

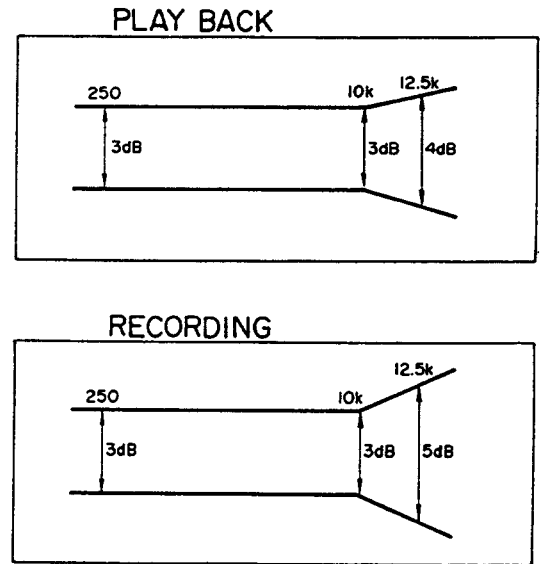


Fig. 4.5 Frequency characteristics

• **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**

Pro-cedure	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. 4-4)	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. 4-4)	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. Bias oscillation frequency adjustment

Procedure	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.	T581	Area between ① and ② (AF Assembly) shown in Fig. 4-1.	The oscillation frequency is 105 kHz $\pm$ 1 kHz.	

## 4. Recording Level Adjustment

Procedure	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.	

### 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 under-adjusting the bias.

Procedure	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)	-27.7 dBV	
2	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 $0 \pm 0.5$ dB in relation to 315 Hz.	

### • Checking Procedure for Deck II

#### 1. Action of ALC

Procedure	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	

## 4 RÉGLAGE

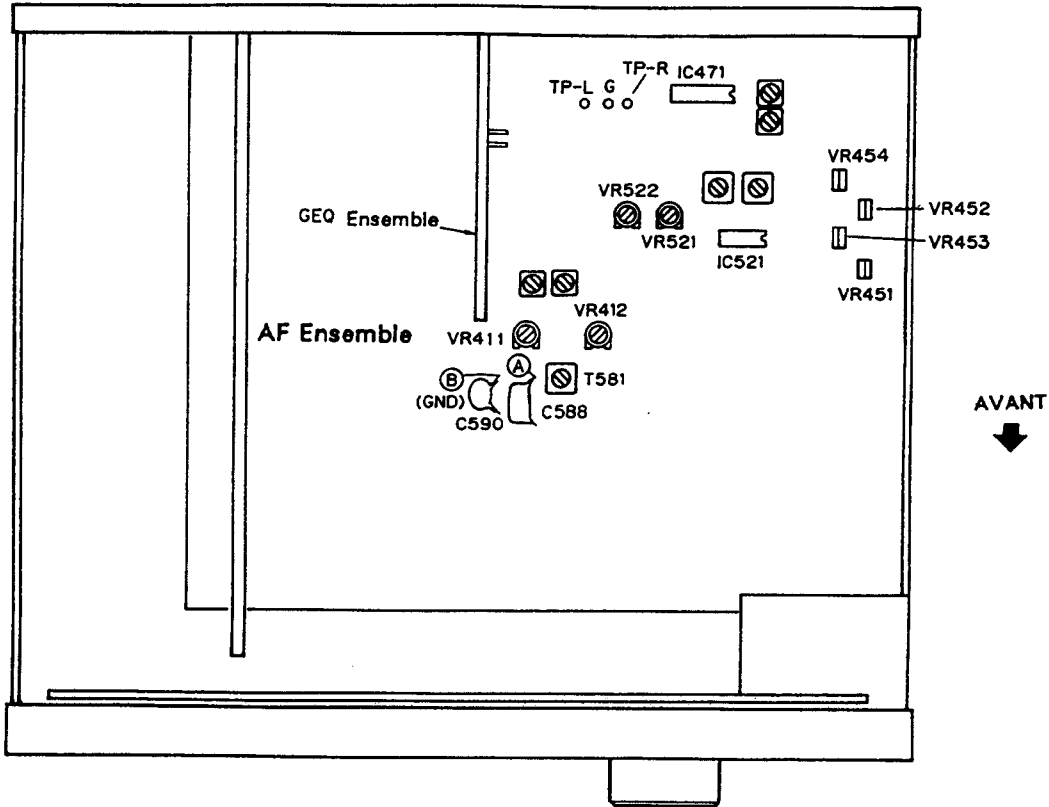


Fig 4.1 Points de réglage

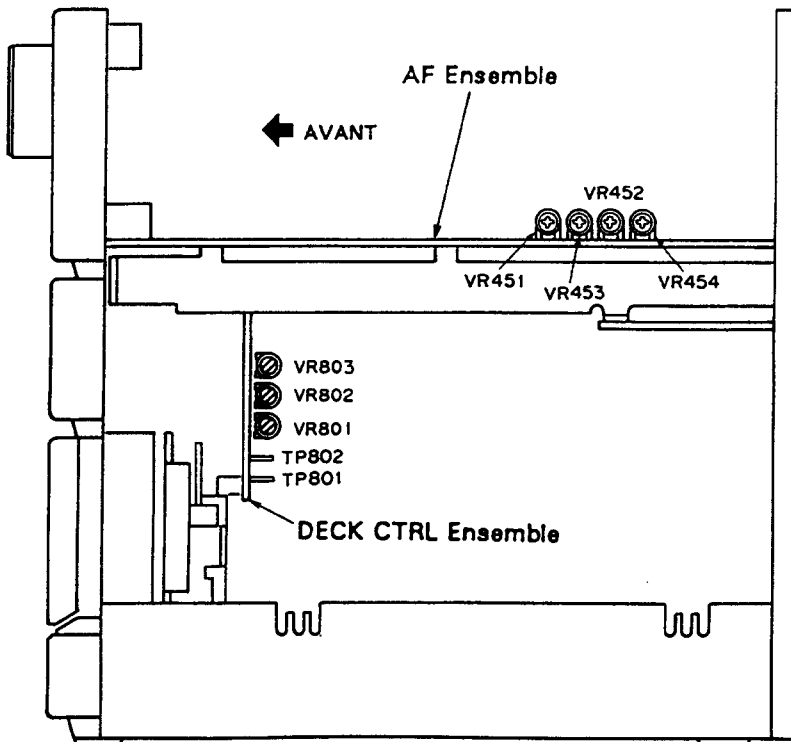


Fig 4.2 Points de réglage

- Les réglages et les mesures sont généralement faits dans l'ensemble AF, à moins de spécification contraire.
- Régler l'égaliseur graphique sur OFF, la commande d'équilibre (BALANCE) en position centrale et le volume de la commande de niveau microphone (MIC LEVEL) sur MIN.
- La fonction doit toujours être réglée sur "TAPE" à moins de spécification contraire.

### Réglages mécaniques

- Bande d'étalonnage: STD-301 (3 kHz, 30 mn.)
- Réglage du mode de vitesse double: Court-circuiter TP801 et TP802 de l'ensemble de DECK CTRL. Pour libérer le mode, ouvrir le court-circuit.

1. Réglage de la vitesse de bande							
No.	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage		Emplacement du point de mesure	Valeur relevée	Observations
1	PLAY	Reproduire la bande STD-301 par 3 kHz.	Platine I	ENSEMBLE COMM. PLATINE VR801	TP-L (can. G)	Appuyer sur le contacteur PLAY et régler la fréquence sur 3010 Hz $\pm$ 10 Hz. Vérifier que le pleurage et scintillement est dans la limite de 0,2%.	
2	PLAY (Mode de vitesse double)			—		Appuyer sur le contacteur PLAY dans le mode de vitesse double et vérifier que la fréquence est 6000 Hz $\pm$ 1000 Hz. Noter le chiffre.	Libérer le mode de vitesse double après le réglage.
3	PLAY (Mode de vitesse double)		Platine II	ENSEMBLE COMM. PLATINE VR803	TP-R (can. D)	Appuyer sur le contacteur PLAY dans le mode de vitesse double et régler la fréquence pour qu'elle soit dans la limite de $\pm$ 30 Hz du chiffre noté dans l'étape No. 2.	Libérer le mode de vitesse double après le réglage.
4	PLAY			ENSEMBLE COMM. PLATINE VR802		Appuyer sur le contacteur PLAY et régler la fréquence sur 3010 Hz $\pm$ 10 Hz. Vérifier que le pleurage et scintillement est dans la limite de 0,2%.	

### Réglages électriques

■ Vérifier les points suivants et effectuer les opérations suivantes avant procéder aux réglages électriques.

1. Le réglage de la vitesse de bande a été complété.
2. Nettoyer et démagnétiser la tête avec un démagnétiseur de tête.
3. Lors de la mesure, le niveau doit être de 0 dBV = 1 Vepp.
4. Utiliser la face A de la bande spécifiée pour le réglage. STD-331B: Pour le réglage du système de lecture. STD-630: Bande vierge NORMAL
5. Préparer les instruments de mesure suivants: Millivoltmètre CA, oscillateur à basse fréquence, éatténuateur et oscilloscope.
6. Régler les deux canaux L (gauche) et R (droit), sauf spécification contraire.
7. Régler les commutateurs DOLBY NR sur la position OFF, sauf spécification contraire.
8. Laisser chauffer l'appareil pendant plusieurs minutes avant le réglage. En particulier avant d'effectuer le réglage de la réponse en fréquence d'enregistrement et de lecture, laisser chauffer l'appareil pendant 3 à 5 minutes dans le mode d'enregistrement/lecture (REC/PLAY).

9. Toujours suivre l'ordre spécifié de la méthode de réglage. Tout changement de l'ordre peut provoquer des résultats imparfaits.

#### Liste des réglages

##### Platine I

1. Azimut de la tête
2. Niveau de lecture

##### Platine II

1. Azimut de la tête
2. Niveau de lecture
3. Réglage de fréquence d'oscillation de polarisation
4. Niveau d'enregistrement
5. Réponse en fréquence d'enregistrement / lecture

#### Vérification des Platine II

1. Vérifier que le ALC fonctionne correctement.

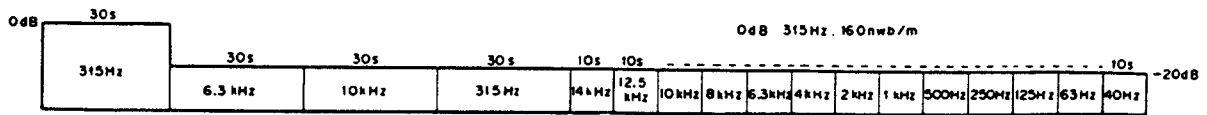


Fig. 4.3 Bande d'étalonnage STD-331B

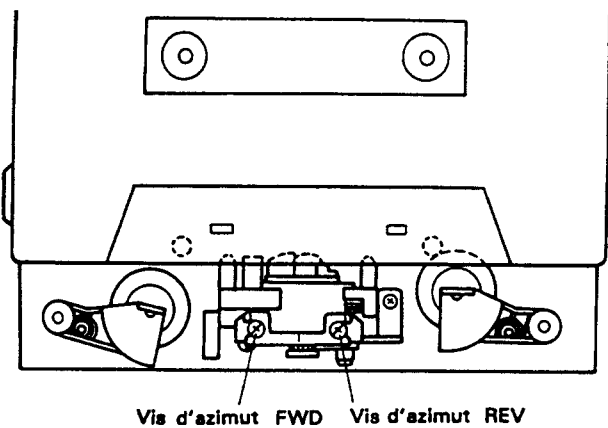


Fig. 4.4 Réglage d'azimut de la tête

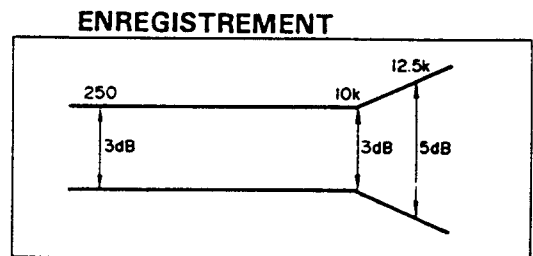
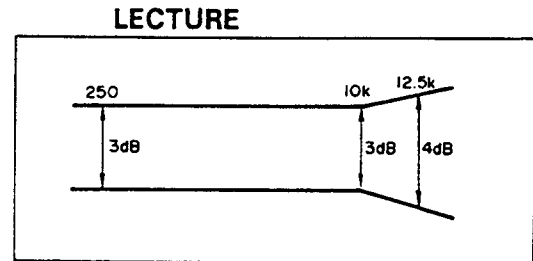


Fig. 4.5 Réponse en fréquence

**• Réglage de la Platine I**

- La Platine I est équipée d'un mécanisme de sélection automatique de bande.
- Remarque: Ne pas commuter entre le sens avant (FWD) et le sens arrière (REV) pendant que le tournevis est inséré.

**1. Réglage d'azimut de la tête**

Opération	Sélecteur de bande	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur mesurée	Observations
1	NORM	PLAY	Reproduire la bande d'étalonnage STD-331B (10 kHz, -20 dB).	Vis de réglage d'azimut de tête (Fig. 4-4)	TP-L (can. G) TP-R (can. D)	Niveau maximum du signal de lecture	Une fois le réglage terminé, bloquer la vis avec un frein de vis.

**2. Réglage du niveau de lecture**

- Toujours effectuer un réglage minutieux, car la valeur réglée sera le niveau Dolby pour la lecture.

Opération	Sélecteur de bande	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur mesurée	Observations
1	NORM	PLAY	Reproduire la bande d'étalonnage STD-331B (315 kHz, 0 dB)	VR453 (can. G) VR454 (can. D)	TP-L (can. G) TP-R (can. D)	-6,7 dBV	

### • Réglage de la Platine II

- La Platine II est équipée d'un mécanisme de sélection automatique de bande.
- Remarque: Ne pas commuter entre le sens avant (FWD) et le sens arrière (REV) pendant que le tournevis est inséré.

#### 1. Réglage d'azimut de la tête

Opération	Sélecteur de bande	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur mesurée	Observations
1	NORM	PLAY	Reproduire la bande d'étalonnage STD-331B (10 kHz, -20 dB).	Vis de réglage d'azimut de tête (Fig. 4-4)	TP-L (can. G) TP-R (can. D)	Niveau maximum du signal de lecture	Une fois le réglage terminé, bloquer la vis avec un frein de vis.

#### 2. Réglage du niveau de lecture

- Toujours effectuer un réglage minutieux, car la valeur réglée sera le niveau Dolby pour la lecture.

Opération	Sélecteur de bande	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur mesurée	Observations
1	NORM	PLAY	Reproduire la bande d'étalonnage STD-331B (315 kHz, 0 dB)	VR451 (can. G) VR452 (can. D)	TP-L (can. G) TP-R (can. D)	-6,7 dBV	

#### 3. Réglage de fréquence d'oscillation de polarisation

Opération	Sélecteur de bande	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur mesurée	Observations
1	NORM	REC	Charger la bande d'étalonnage STD-630 et régler dans le mode d'enregistrement.	T581	Partie entre ④ et ⑤ (ensemble d'enregistrement (AF)) indiquée sur la Fig. 4-1.	La fréquence d'oscillation est de 105 kHz $\pm$ 1 kHz.	

#### 4. Réglage du niveau d'enregistrement

Opération	Sélecteur de bande	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur mesurée	Observations
1	NORM	REC	Appliquer un signal de 315 Hz à la borne d'entrée CD et régler la fonction sur "CD".	Niveau du signal d'entrée	TP-L (can. G) TP-R (can. D)	-7,7 dBV	
2	NORM	REC / PLAY	Enregistrer et reproduire la bande d'étalonnage STD-630 (315 Hz).	VR521 (can. G) VR522 (can. D)	TP-L (can. G) TP-R (can. D)	Répéter l'enregistrement et la correction de sorte que le niveau de lecture de 315 Hz soit de -6,7 dBV.	

### 5. Réglage de la réponse en fréquence d'enregistrement/lecture

- Cette opération réglant la polarisation d'enregistrement, faire attention de ne pas augmenter la distorsion par un réglage insuffisant de la polarisation.

Opération	Sélecteur de bande	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur mesurée	Observations
1	NORM	REC	Appliquer un signal de 315 Hz à la borne d'entrée CD et régler la fonction sur "CD".	Niveau du signal d'entrée	TP-L (can. G) TP-R (can. D)	-27,7 dBV	
2	NORM	REC / PLAY	Enregistrer et reproduire la bande d'étalonnage STD-630 (315 Hz et 10 kHz).	VR411 (can. G) VR412 (can. D)	TP-L (can. G) TP-R (can. D)	Répéter la correction de sorte que le niveau de lecture de 10 kHz soit de $0 \pm 0,5$ dB en relation avec 315 Hz.	

### • Vérification de la Platine II

#### 1. Action du ALC

Opération	Sélecteur de bande	Mode	Signal appliqué / bande d'étalonnage	Emplacement du réglage	Emplacement du point de mesure	Valeur mesurée	Observations
1	NORM	REC	Appliquer un signal de 315 Hz à la borne d'entrée CD et régler la fonction sur "CD".	Niveau du signal d'entrée	TP-L (can. G) TP-R (can. D)	-7,7 dBV	
2				+10 dB par rapport au niveau d'entrée de l'étape 1.		-2,7 dBV $\pm 2,5$ dB	



### 4. AJUSTE

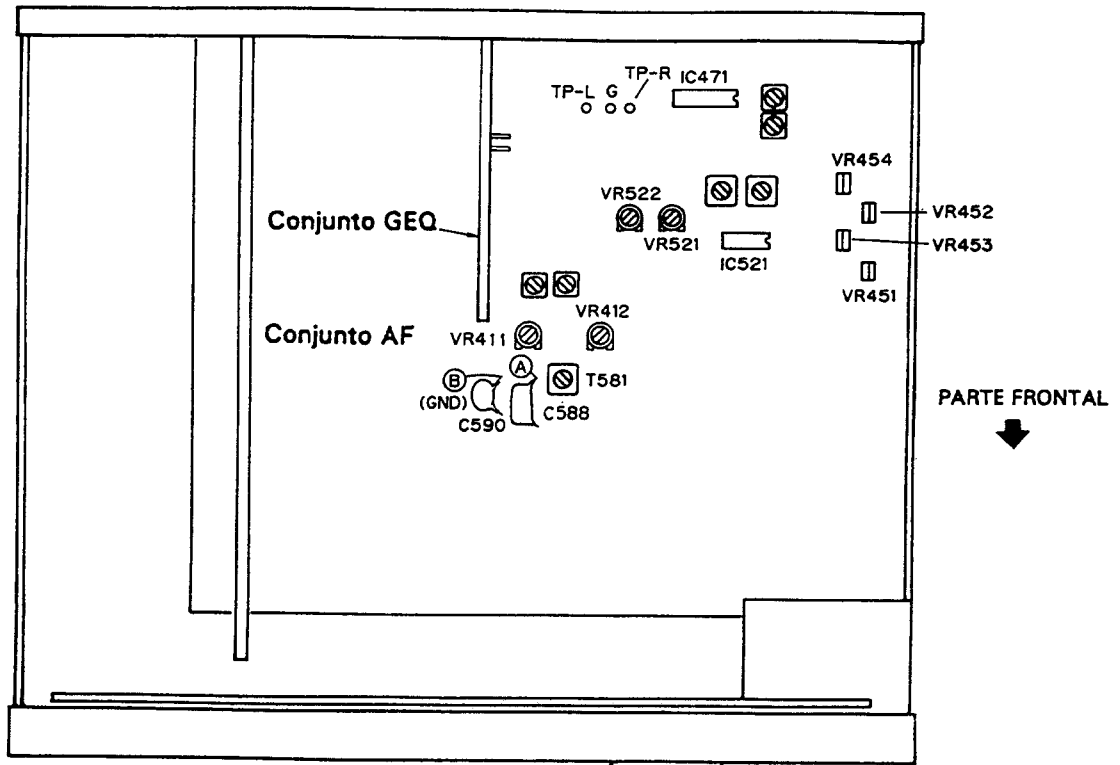


Fig 4.1 Punto de ajuste

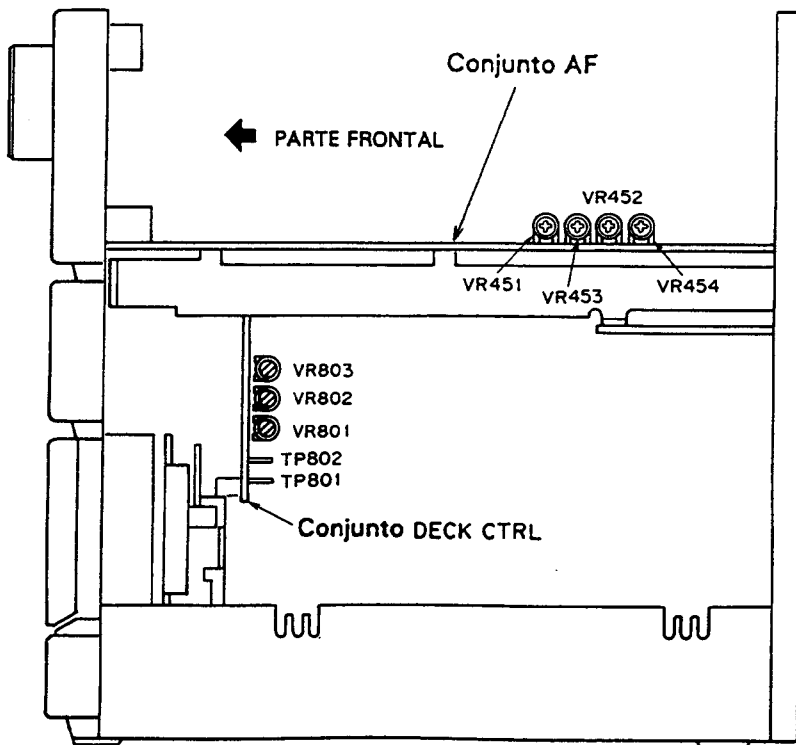


Fig 4.2 Punto de ajuste

- El ajuste y la medición se realizarán normalmente en el conjunto AF, a menos que se especifique otra cosa.
- Desactive (OFF) el ecualizador gráfico, ponga el control BALANCE en el centro, y ajuste el Control MIC LEVEL al mínimo (MIN).
- La función deberá estar ajustada siempre a "TAPE", a menos que se especifique otra cosa.

**Ajuste del sistema mecánico**

- Cinta de prueba: STD-301 (3 kHz, 30 min)
- Ajuste del modo de velocidad doble: Cortocircuite TP801 y TP802 del conjunto de DECK CTRL. Para desactivar el modo, abra el cortocircuito.

1. Ajuste de la velocidad de la cinta							
Nº	Modo	Señal de entrada/ cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Observaciones
1	PLAY	Reproducción de la cinta STDy301 a 3 kHz	Sección I	VR801 del conjunto DECK CTRL	TP-L (canal izquierdo)	Presione PLAY SW y ajuste la frecuencia a 3010 Hz $\pm$ 10 Hz. Cerciórese de que la fluctuación y el efecto de trémolo estén dentro de los límites del 0,2%.	
2	PLAY (Modo de velocidad doble)			—		Presione PLAY SW en el modo de velocidad doble y compruebe si la frecuencia es 6000 Hz $\pm$ 1000 Hz. Anote el valor.	Después del ajuste, desactive el modo de velocidad doble.
3	PLAY (Modo de velocidad doble)		Sección II	VR803 del conjunto DECK CTRL	TP-R (canal derecho)	Presione PLAY SW en el modo de velocidad doble y ajuste la frecuencia de forma que quede a $\pm$ 30 Hz del valor anotado en el paso N°2.	Después del ajuste, desactive el modo de velocidad doble.
4	PLAY			VR802 del conjunto DECK CTRL		Presione PLAY SW y ajuste la frecuencia a 3010 Hz $\pm$ 10 Hz. Cerciórese de que la fluctuación y el efecto de trémolo estén dentro de los límites del 0,2%.	

**Ajuste del sistema eléctrico**

■ Antes de ajustar el sistema eléctrico, compruebe y realice lo siguiente.

1. El ajuste de la velocidad de la cinta ha finalizado.
2. Limpie y desmagnetice la cabeza empleando un desmagnetizador de cabezas.
3. Cuando se mida, el nivel de nivel debe ser de 0 dBV = 1V rms.
4. Emplee el lado A de la cinta especificada para realizar el ajuste.  
STD-331B: Para ajuste del sistema de reproducción.  
STD-630: Cinta en blanco NORMAL
5. Prepare los dispositivos de medición siguientes: Milivoltímetro de CA, oscilador de baja frecuencia, atenuador, y osciloscopio
6. Ajuste ambos canales, izquierdo y derecho, a menos que se especifique otra cosa.
7. Ponga los interruptores DOLBY NR en OFF, a menos que se especifique otra cosa.
8. Antes del ajuste, deje que la unidad se caliente durante varios minutos.  
Especialmente antes de ajustar las características de frecuencia de grabación y reproducción, deje que se caliente durante 3 a 5 minutos en el modo REC/PLAY.

9. Cerciórese de seguir el orden apropiado del procedimiento de ajuste. Cualquier cambio en el orden podría causar un resultado imperfecto.

**Lista de ajuste**

**Sección I**

1. Azimut de la cabeza
2. Nivel de reproducción

**Sección II**

1. Azimut de la cabeza
2. Nivel de reproducción
3. Ajuste de la frecuencia de oscilación de polarización
4. Nivel de grabación
5. Características de frecuencia de grabación/reproducción

**Comprobación de la sección II**

1. Cerciórese de que ALC esté funcionando adecuadamente.

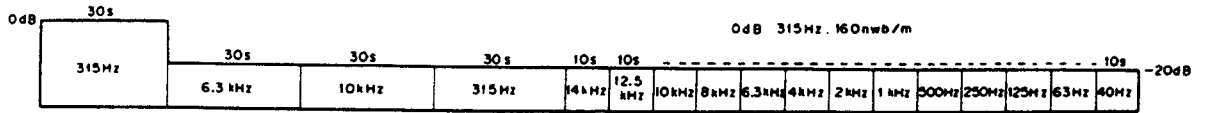
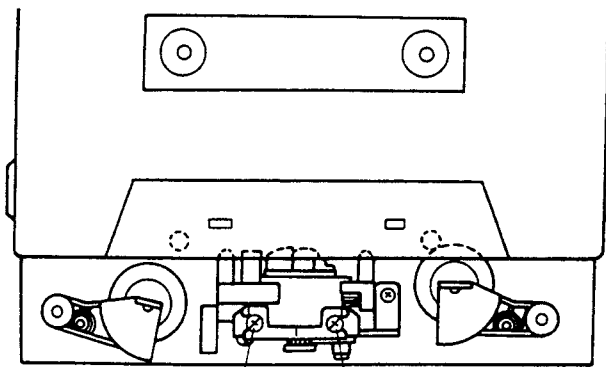


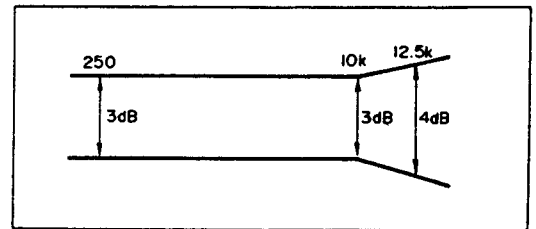
Fig. 4.3 Cinta de prueba STD-331B



Tornillo de ajuste azimut de FWD Tornillo de ajuste azimut de REV

Fig. 4.4 Ajuste del azimut de la cabeza

REPRODUCCIÓN



CRABACIÓN

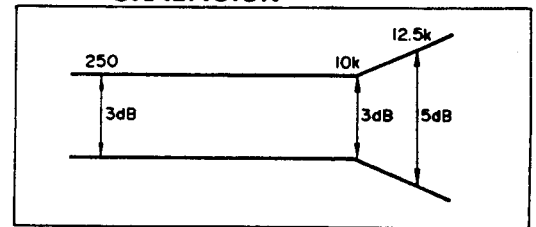


Fig. 4.5 Características de frecuencia

• Ajuste de la sección I

- La sección I dispone de un mecanismo selector automático de cinta.
- Nota: No cambie a FWD ni a REV mientras el destornillador esté insertado.

1. Ajuste azimutal de la cabeza

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Ponga la cinta de prueba STD-331B en reproducción (10 kHz, -20 dB).	Tornillo de ajuste azimutal de la cabeza (Fig. 4-4)	TP-L (canal izquierdo) TP-R (canal derecho)	Nivel máximo de la señal de reproducción	Bloquee el tornillo con bloqueador de tornillos después de haber terminado el ajuste.

2. Ajuste del nivel de reproducción

- Tenga mucho cuidado durante el ajuste, ya que el valor ajustado será el nivel Dolby fijado para reproducción.

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Ponga la cinta de prueba STD-331B en reproducción (315 Hz, 0 dB).	VR453 (canal izquierdo) VR454 (canal derecho)	TP-L (canal izquierdo) TP-R (canal derecho)	-6,7 dBV	

• **Ajuste de la sección II**

- La sección II dispone de un mecanismo selector automático de cinta.
- Nota: No cambie a FWD ni a REV mientras el destornillador esté insertado.

**1. Ajuste azimutal de la cabeza**

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Ponga la cinta de prueba STD-331B en reproducción (10 kHz, -20 dB).	Tornillo de ajuste azimutal de la cabeza (Fig. 4-4)	TP-L (canal izquierdo) TP-R (canal derecho)	Nivel máximo de la señal de reproducción	Bloguee el tornillo con bloqueador de tornillos después de haber terminado el ajuste.

**2. Ajuste del nivel de reproducción**

- Tenga mucho cuidado durante el ajuste, ya que el valor ajustado será el nivel Dolby fijado para reproducción.

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Ponga la cinta de prueba STD-331B en reproducción (315 Hz, 0 dB).	VR451 (canal izquierdo) VR452 (canal derecho)	TP-L (canal izquierdo) TP-R (canal derecho)	-6,7 dBV	

**3. Ajuste de la frecuencia de oscilación de polarización**

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	REC	Cargue la cinta de prueba STD-630 y establezca el modo de grabación.	T581	Área entre ④ y ⑤ (conjunto de AF) mostrada en la Fig. 4-1.	La frecuencia de oscilación es de 105 kHz $\pm$ 1 kHz.	

**4. Ajuste del nivel de grabación**

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	REC	Aplique una señal de 315 Hz al terminal de entrada CD y ajuste la función a "CD".	Nivel de la señal de entrada	TP-L (canal izquierdo) TP-R (canal derecho)	-7,7 dBV	
2	NORM	REC / PLAY	Grabe y reproduzca la cinta de prueba STD-630 (315 Hz).	VR521 (canal izquierdo) VR522 (canal derecho)	TP-L (canal izquierdo) TP-R (canal derecho)	Grabe y reproduzca la cinta de prueba de forma que el nivel de reproducción de 315 Hz sea de -6,7 dBV.	

### 5. Ajuste de las características de frecuencia de grabación/reproducción

- Como este procedimiento es para el ajuste de la polarización de grabación, tenga cuidado de no aumentar el valor de distorsión mediante el subajuste de la polarización.

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	REC	Aplique una señal de 315 Hz al terminal de entrada CD y ajuste la función a "CD".	Nivel de la señal de entrada	TP-L (canal izquierdo) TP-R (canal derecho)	-27,7 dBV	
2	NORM	REC/PLAY	Grabe y reproduzca la cinta de prueba STD-630 (315 Hz y 10 kHz).	VR411 (canal izquierdo) VR412 (canal derecho)	TP-L (canal izquierdo) TP-R (canal derecho)	Repita la corrección de forma que el nivel de reproducción de 10 kHz sea de $0 \pm 0,5$ dB en relación con 315 Hz.	

### • Procedimiento de comprobación para sección II


#### 1. Acción del ALC

Procedimiento	Selector de cinta	Modo	Señal de entrada / cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Observaciones
1	NORM	REC	Aplique una señal de 315 Hz al terminal de entrada CD y ajuste la función a "CD".	Nivel de la señal de entrada	TP-L (canal izquierdo) TP-R (canal derecho)	-7,7 dBV	
2				+10 dB contra el nivel de entrada del paso 1.		-2,7 dBV $\pm 2,5$ dB	








## 5. FOR HE TYPE

### CONTRAST OF MISCELLANEOUS PARTS

**NOTES:**


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

The DC-Z83/HE type is the same as the DC-Z83/HB type with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HB type	HE type	
	POWER SUPPLY assembly	AWZ2241	AWZ2239	
	CONNECT assembly	Non supply	Non supply	
	FU2001 Fuse (T2A/250V)	AEK-511	.....	
	FU2001 Fuse (T1.25A/250V)	.....	AEK-018	
	FU2004 Fuse (T1.25A/250V)	AEK-509	.....	
	FU2004 Fuse (T2A/250V)	.....	AEK-017	
	FU2003 Fuse (T1.6A/250V)	AEK-510	AEK-405	
	FU2005 Fuse (T1.25A/250V)	AEK-509	AEK-018	
	AC Power cord	ADG1052	ADG1049	
	Operating instructions (English)	ARB1222	.....	
	Operating instructions (Dutch, Swedish, Spanish, Portuguese)	.....	ARC1181	
	Operating instructions (English, German, French, Italian)	.....	ARE1145	

### POWER SUPPLY assembly (AWZ2239)

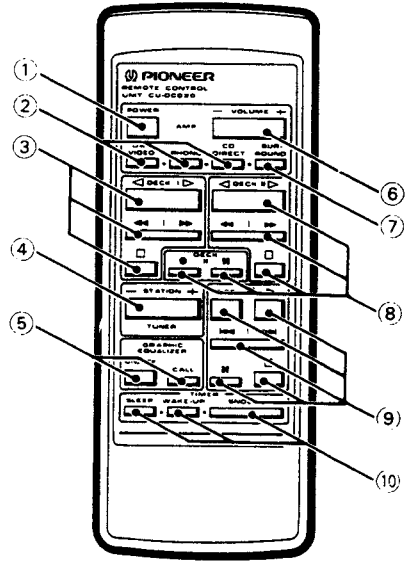
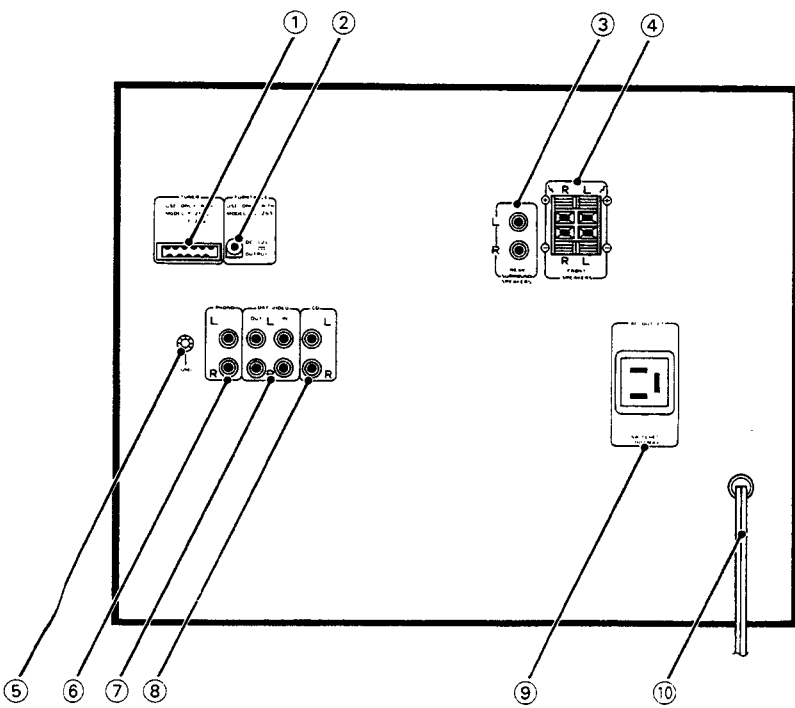
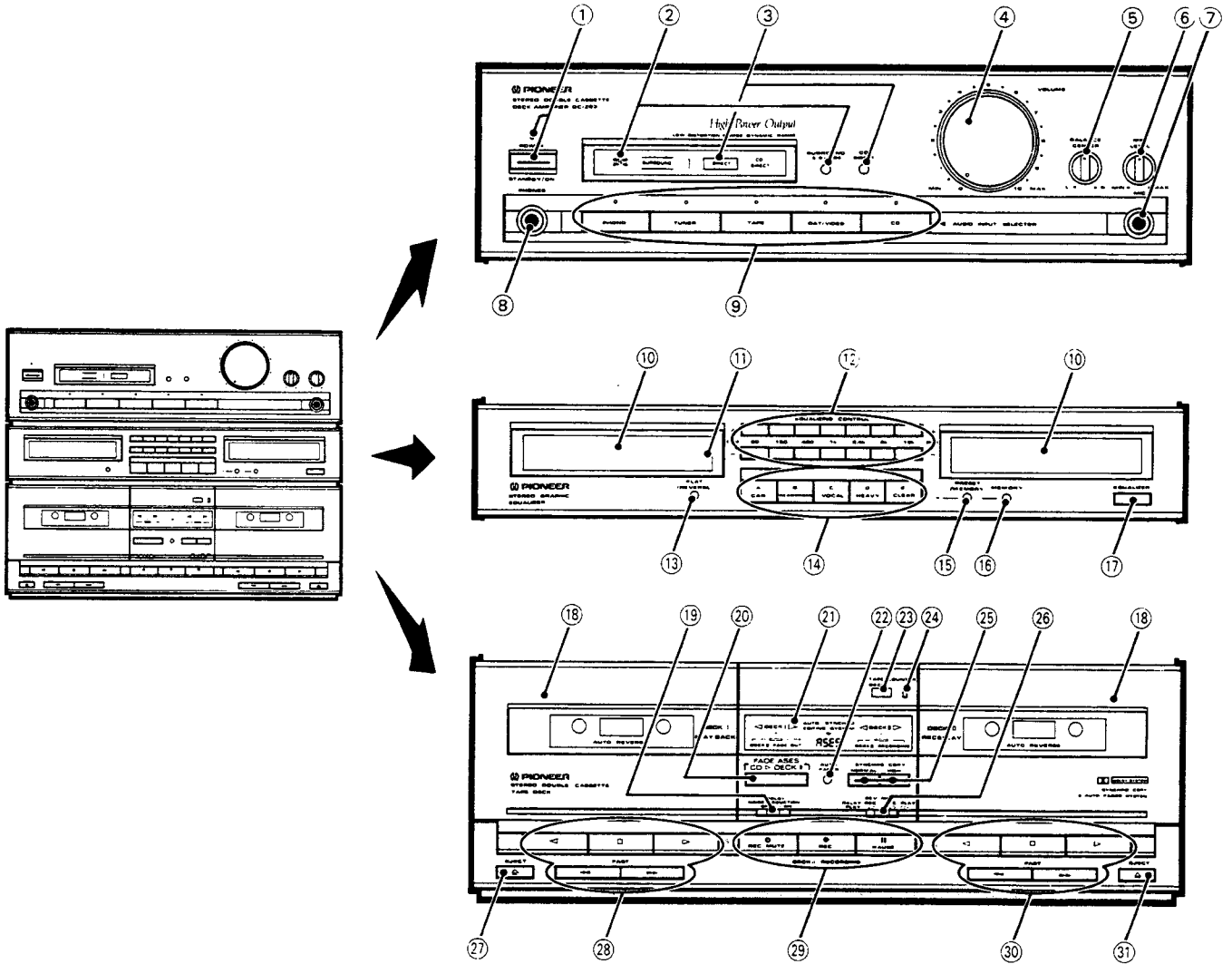
The POWER SUPPLY assembly (AWZ2239) is the same as the POWER SUPPLY assembly (AWZ2241) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ2241	AWZ2239	
	AC socket (OUTLET)	AKP1035	AKP1034	

### CONNECT assembly

The difference in parts between the CONNECT assemblies HB type and HE type is only the jumper wire.

# 6. PANES FACILITIES



**REAR PANEL FACILITIES****① TUNER jacks**

Connect the tuner cord here.

**② TURNTABLE (DC 12 V OUTPUT) jack**

This jack supplies power to the turntable (PL-Z93).

**③ SURROUND SPEAKERS jacks**

Connect the Surround speaker systems.

**NOTE:**

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

**⑤ Ground terminal (GND)**

Connect this to the ground terminal on the turntable (except for PL-Z93).

**⑥ PHONO input jacks**

Connect the output cord of 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 output jacks of a CD player.

**⑨ AC OUTLET (SWITCHED 100 W MAX)**

Power supplied through this outlet 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**

- 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.

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

This is the switch for electric power.

**ON:** When set to the ON position, power is supplied and the unit becomes operational.  
The POWER indicator lights.

**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.

When the POWER indicator is off, the unit is in STANDBY. (The tuner display shows only the time.)

**② SURROUND & STEREO WIDE switch/indicator**

By turning this switch ON, you can enjoy surround reproduction when rear speakers are used.

By turning this switch ON, you can enjoy STEREO WIDE reproduction with greater left-right spread when rear speakers are not used.

The indicator lights when the switch is on.

**NOTE:**

- In the case of monaural source, SURROUND & STEREO WIDE effects cannot be obtained.
- SURROUND & STEREO WIDE functions do not operate if CD DIRECT is on.

**③ CD DIRECT switch/indicator**

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

**④ VOLUME control****⑤ BALANCE control**

Used for changing the balance between left and right channels. Usually set this control to the centre position.

**⑥ MIC LEVEL control**

Used for adjusting the volume of microphone.

**⑦ MIC (Microphone) jack**

This is a standard jack for connecting a microphone.

**⑧ PHONES (Headphones) jack**

For stereo headphones.

**NOTE:**

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

**⑨ Input selector switches/indicators****[PHONO]**

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

**[TUNER]**

Press to listen to radio broadcast.

**[TAPE]**

Press to listen to cassette tape.

**[DAT/VIDEO]**

Press to listen to digital audio tape.

**[CD]**

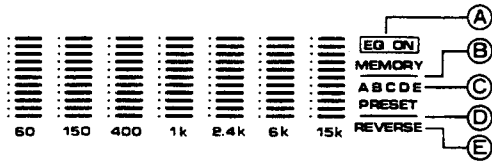
Press to listen to a CD player connected to the CD jacks.

**■ Graphic Equalizer section****⑩ Graphic equalizer/Spectrum analyzer display**

Usually this is the spectrum analyzer display. And becomes a graphic equalizer display during operation of the EQUALIZING CONTROL switches.



11 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 under "MEMORY" is lit, it indicates that the equalization curves you input in the memory recall switches can be recalled.

C A - E indicators

Indicates which equalization curve is currently recalled.

- A: Curve stored in A/CAR. (Preset CAR or Memory A)
- B: Curve stored in B/HEADPHONE. (Preset HEADPHONE or Memory B)
- C: Curve stored in C/VOCAL. (Preset VOCAL or Memory C)
- D: Curve stored in D/HEAVY. (Preset HEAVY or Memory D)
- E: Curve stored in E/CLEAR. (Preset CLEAR or Memory E)

D PRESET indicator

When the line under "PRESET" is lit, it indicates that the equalization factory curves preset in the memory recall switches can be recalled.

E REVERSE indicator

Lights when FLAT/REVERSE switch is used to invert the equalization curve.

12 EQUALIZING CONTROL switches

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

13 FLAT/REVERSE switch

Press once to reset the equalizer to flat response (no equalization). Press again to reverse a previous curve (boosted frequencies will be attenuated, and vice versa).

14 Memory recall switches

Used for recalling equalization curves.

15 PRESET/MEMORY switch

Determines whether the equalizer curves recalled by the Memory recall switches are your memorized curves or factory preset curves.

16 MEMORY switch

Used for storing equalization curves you input in the memory recall switches.

17 EQUALIZER switch

Turns the equalizer on and off. The EQ ON indicator lights when this switch is on. The equalizer can not be used to adjust the sound when CD DIRECT is on.

■ Cassette Tape Deck Section

18 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 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 with Dolby B 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.

20 AUTO SYNCHRO EDITING SYSTEM switch

Used for automatically recording a CD on cassette tape. The sound will fade out at the end of the tape.

21 Operation indicators

- DECK II FADE OUT: Lights when AUTO FADE OUT mode is on.
- ASES: Lights when the ASES (Auto Synchro Editing System) is operating.
- DECK II 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 AUTO FADER switch

Used for gradually fading out a recorded tape in Deck II. (The sound will be completely cut off after approximately 10 seconds and the tape will stop.)

23 Tape counter (DECK II)

24 Counter reset switch

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

25 SYNCHRO COPY switches

Used for tape copying.

- NORMAL: 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 NORMAL time.)

26 REV (REVERSE) MODE switch

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

**27 Deck I EJECT switch**

**28 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.

**29 DECK II RECORDING switches**

- MUTE (○)** ..... Used for creating a blank space between songs. The unrecorded space is created for as long as this switch is kept depressed.
- REC (●)** ..... To set to recording standby mode. Recording begins when you press the PLAY switch (◁ or ▷).
- PAUSE (□□)** ..... Temporarily stops tape travel. Cancels pause mode when pressed again or press the PLAY switch.

**30 Deck II Operation switches: Same as Deck I operation switches 28**

**31 Deck II EJECT switch**

**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: Same as the Deck I operation switches 28**

**4 TUNER STATION key**

- 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 operation keys.**

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

**6 VOLUME + (UP)/- (DOWN) key**

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

**7 SURROUND key**

Turns SURROUND & STEREO WIDE on and off.

**8 Deck II operation keys: Same as Deck I operation switches 28 plus Deck II recording switch 29 (except for MUTE).**

**9 CD operation keys**

Perform the connections so that the CD player is operated by the remote control unit.

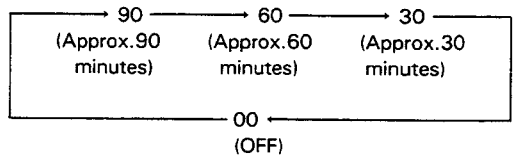
- ▷ ..... Play
- DISC** ..... DISC selection
- ..... Stop
- ..... Pause
- ◀◀, ▶▶ ..... Track search

**NOTE:**

Note that the DISC selector key on the remote control unit may not operate, 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 input selector automatically switches to the music source being operated when you press the CD playback (▷), cassette tape deck playback (◁, ▷), or tuner station controls.

**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.

Performance of the remote control unit is adversely affected in the presence of strong fluorescent light. Keep such lights away, specially from the sensor window.

## 7. SPECIFICATIONS

Cassette tape deck amplifier: DC-Z83

### Amplifier Section

Continuously Average Power Output is 35 Watts\* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz, with no more than 0.4 % total harmonic distortion.

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

Music power .....	75 W + 75 W (1 kHz, T.H.D. 1 %, 8 Ω)
Music power (DIN) .....	75 W + 75 W (1 kHz, T.H.D. 1 %, 8 Ω)
Peak music power .....	450 W (1 kHz, T.H.D. 10 %, 6 Ω)
Continuous Power Output (DIN) .....	45 W + 45 W (1 kHz, T.H.D. 1 %, 8 Ω)
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 2
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 <sub>2</sub> tape .....	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 .....	336 W
Dimensions .....	360 (W) x 287 (H) x 329 (D) mm 14-3/16 (W) x 11-5/16 (H) x 12-15/16 (D) in
Weight (without package) .....	9 kg (19 lb 14 oz)

### Accessories

EP Adaptor .....	1
------------------	---

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

\*\* Measured By Audio Spectrum Analyzer.