

ADDITIONAL



PIONEER  
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# Service Manual

ORDER NO.  
ARP1383

STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

# DC-888Z HE, SD

- For servicing these types, please refer to the DC-X88Z service manual (ARP1303) with the exception of this additional service manual.
- This additional service manual is applicable to the HE and SD types.

## 1. CONTRAST OF MISCELLANEOUS PARTS

### 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  $\frac{1}{2}$  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.
- For your parts Stock Control, the fast moving items are indicated with the marks **••** and **•**.
- **••** GENERALLY MOVES FASTER THAN **•**
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

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

560 $\Omega$	$56 \times 10^1$	561.....	RD1 4PS $\frac{1}{2}$ J
47k $\Omega$	$47 \times 10^3$	473.....	RD1 4PS $\frac{1}{2}$ J
0.5 $\Omega$	0R5.....		RN2H $\frac{1}{2}$ K
1 $\Omega$	010.....		RS1P $\frac{1}{2}$ K

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

5.62k $\Omega$	$562 \times 10^1$	5621.....	RN1 4SR $\frac{1}{2}$ F
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# DC-888Z/HE,SD

The DC-888Z/HE, SD types are the same as the DC-X88Z/HB type with the exception of the following sections.

Mark	Symbol & Description	Parts No.			Remarks
		DC-X88Z HB type	DC-888Z		
			HE type	SD type	
⚠ *	T1 Main assembly Power transformer (220V/240V) (110V/120V-127V/220V/240V)	AWZ1312	AWZ1312	AWZ1313	
		ATS1060	ATS1060	.....	
		.....	.....	ATS1063 (ATS1061)	
⚠ **	S1 AC Socket (AC OUTLET) Line voltage selector (110V/120V-127V/220V/240V)	AKP-509	AKP-508	AKP-507	
		.....	.....	AKX-507	
⚠ **	FU1, 2 Fuse (T1.25A) FU1, 2 Fuse (1.25A)	AEK-509	AEK-018	.....	
		.....	.....	AEK-120	
⚠ **	FU3, 4 Fuse (T1.6A) FU3, 4 Fuse (2A)	AEK-510	AEK-405	.....	
		.....	.....	AEK-122	
⚠ **	FU5, 6 Fuse (T2.5A) FU5, 6 Fuse (4A)	AEK-512	AEK-403	.....	
		.....	.....	AEK-125	
⚠	AC Power cord	ADG-051	ADG-041	ADG1016	
	Knob (SURROUND)	.....	.....	AAAD1114	
	Door panel (DECK I)	AAK1179	AAK1229	AAK1229	
	Door panel (DECK II)	AAK1178	AAK1228	AAK1228	
	Screw	ABA1003	.....	.....	
	Logic assembly*	Non supply	.....	.....	
	Amplifier panel	AAK1182	AAK1230	AAK1302	
	Front panel assmebly	AMB1143	AMB1175	AMB1175	
	Bonnet	ANE1002	ANE1029	ANE1029	
	Screw	.....	CBZ30P080FZK	CBZ30P080FZK	
	Side pad L	AHA1062	AHA1049	AHA1049	
	Side pad R	AHA1063	AHA1050	AHA1050	
	Packing case	AHD1168	AHD1202	AHD1202	
	Player stand L	AMR1060	.....	.....	
	Player stand R	AMR1061	.....	.....	
	Operating instructions (English)	ARB1048	.....	ARB1072	
	(English/German/Italian/French)	.....	ARE1041	.....	
	(Spanish)	.....	.....	ARC1054	

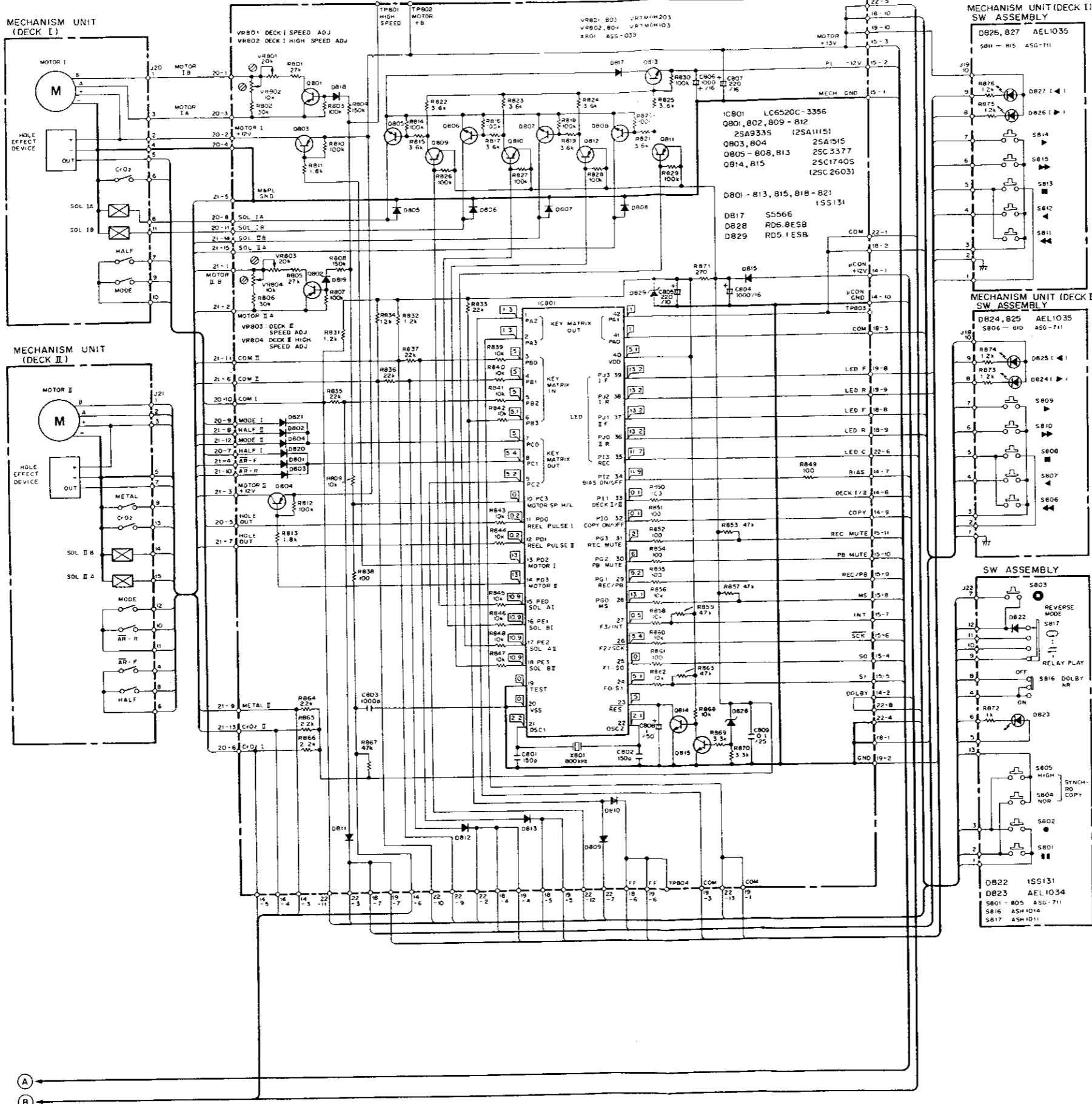
\* Logic assembly for DC-X88Z/HB would be eliminated in future.  
In that case, IC801 on the control assembly is to be modified from LC6520C-3311 to LC6520C-3356.

**MAIN ASSEMBLY (AWZ1313)**

The main assembly (AWZ1313) is the same as the main assembly (AWZ1312) with the exception of the following sections.

Mark	Symbol & Description	Parts No.			Remarks
		AWZ1312 HB type	AWZ1312 HE type	AWZ1313 SD type	
**	IC461 (OP-AMP IC)	.....	.....	M5218P	
	R461-R464	.....	.....	RD1/8PM104J	
	R465, R466	.....	.....	RD1/8PM683J	
	R467, R468	.....	.....	RD1/8PM473J	
	R469, R470	.....	.....	RD1/8PM823J	
	R471-R474	.....	.....	RD1/8PM333J	
	R475, R476	.....	.....	RD1/8PM104J	
	C461, C462	.....	.....	CEAS010M50	
	C463, C464	.....	.....	CKCYB681K50	
	C465, C466	.....	.....	CKCYB332K50	
	C467, C468	.....	.....	CCCSL121J50	
	C469, C470	.....	.....	CEAS2R2M50	
	Terminal (2P)	.....	.....	AKB-093	
⚠ **	S461 Push switch (STEREO WIDE)	.....	.....	ASG-424	

CONTROL ASSEMBLY AW21323



A

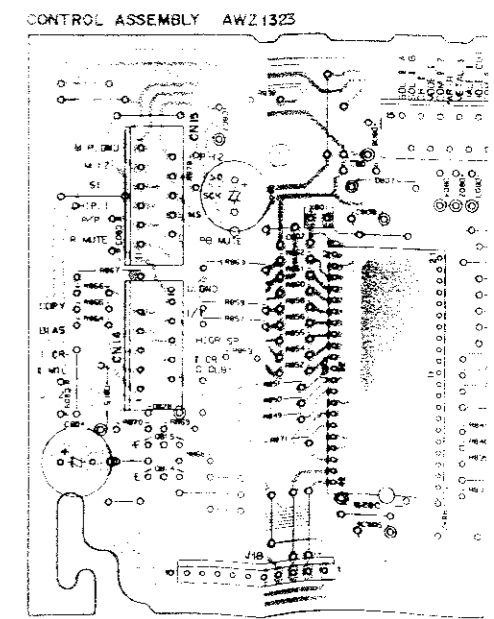
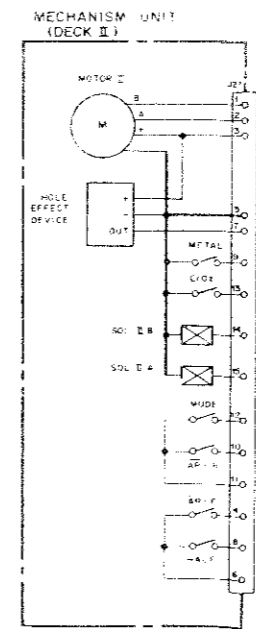
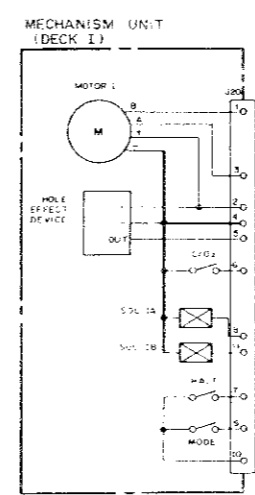
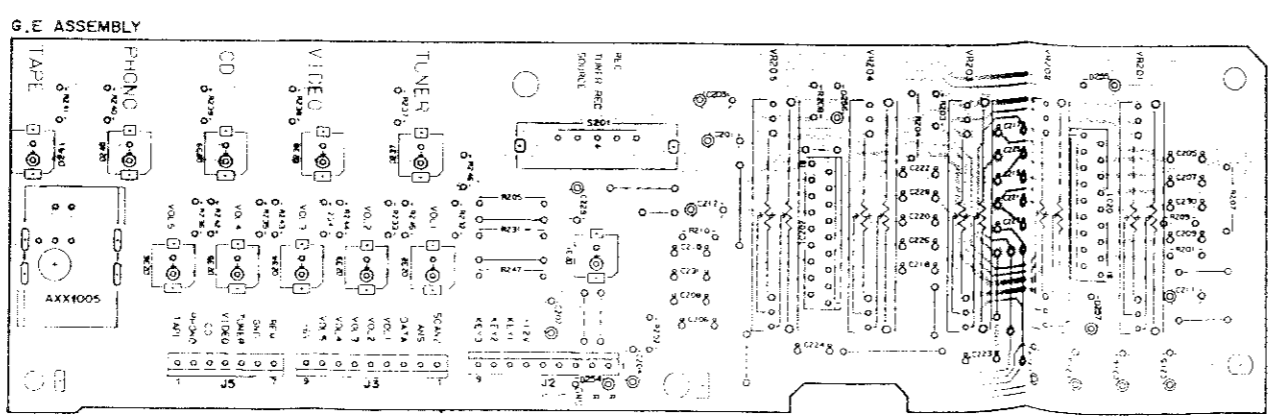
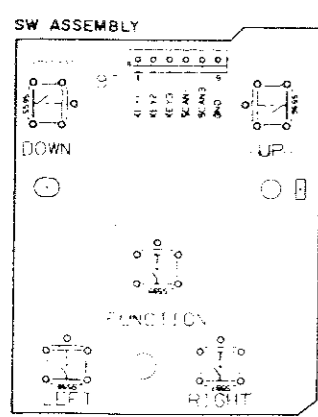
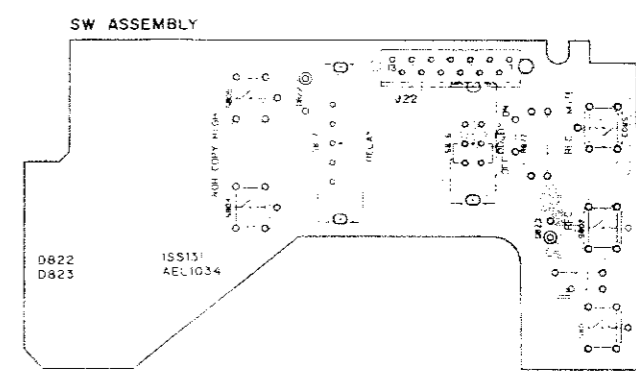
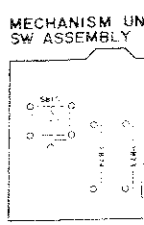
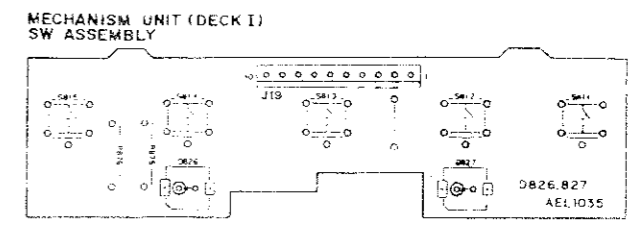
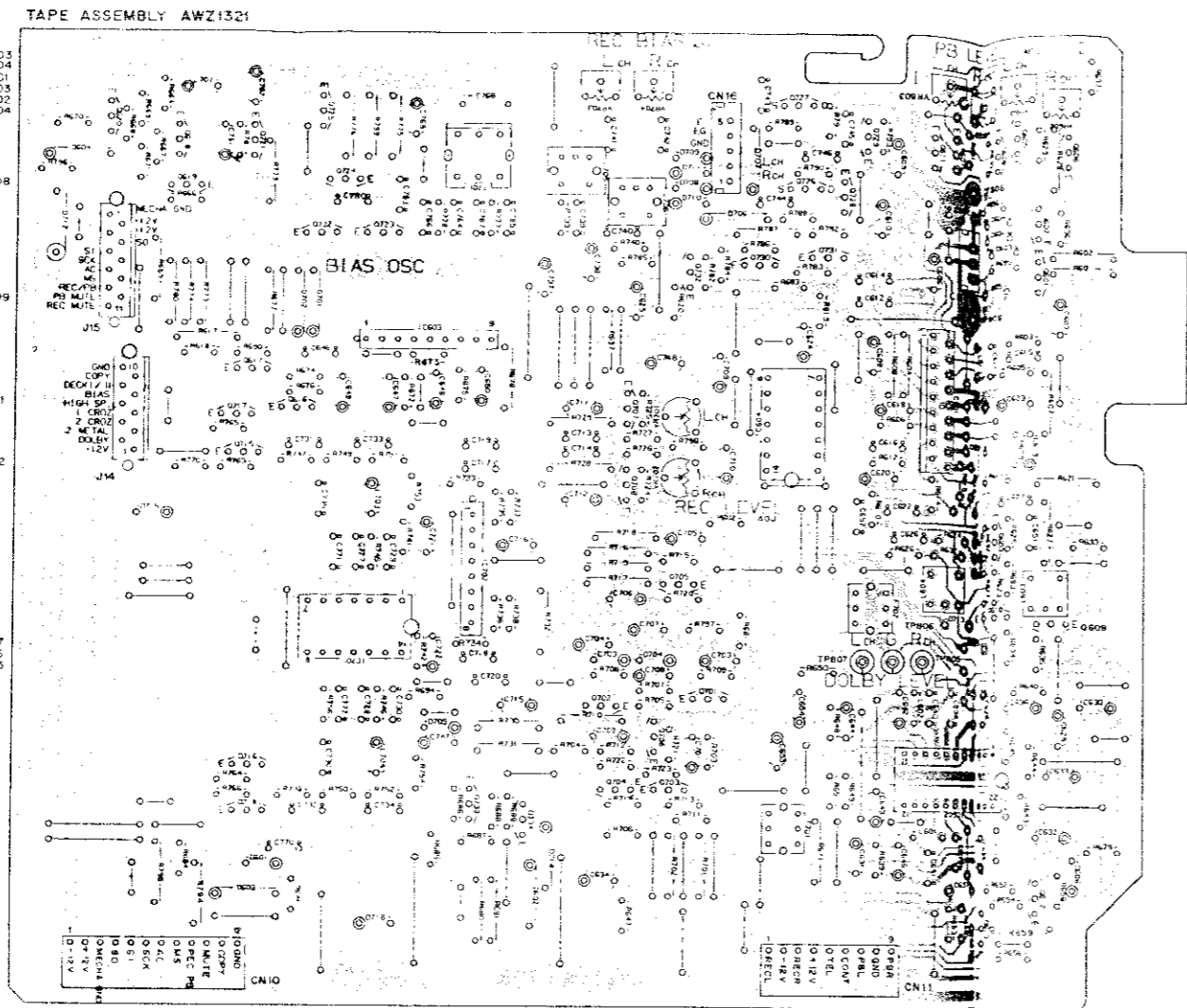
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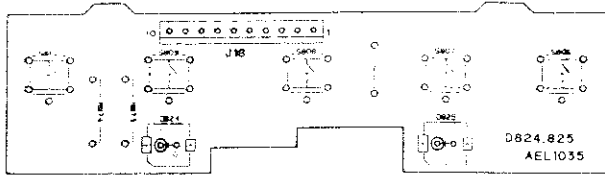
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MECHANISM UNIT (DECK II)  
SW ASSEMBLY



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 writing symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q204		Transistor
Q210		Radio-type transistor
D203		Diode
R237		Resistor
C515		Capacitor (Polarity)
C516		Capacitor (Non-polarity)

Other

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

A



B

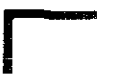
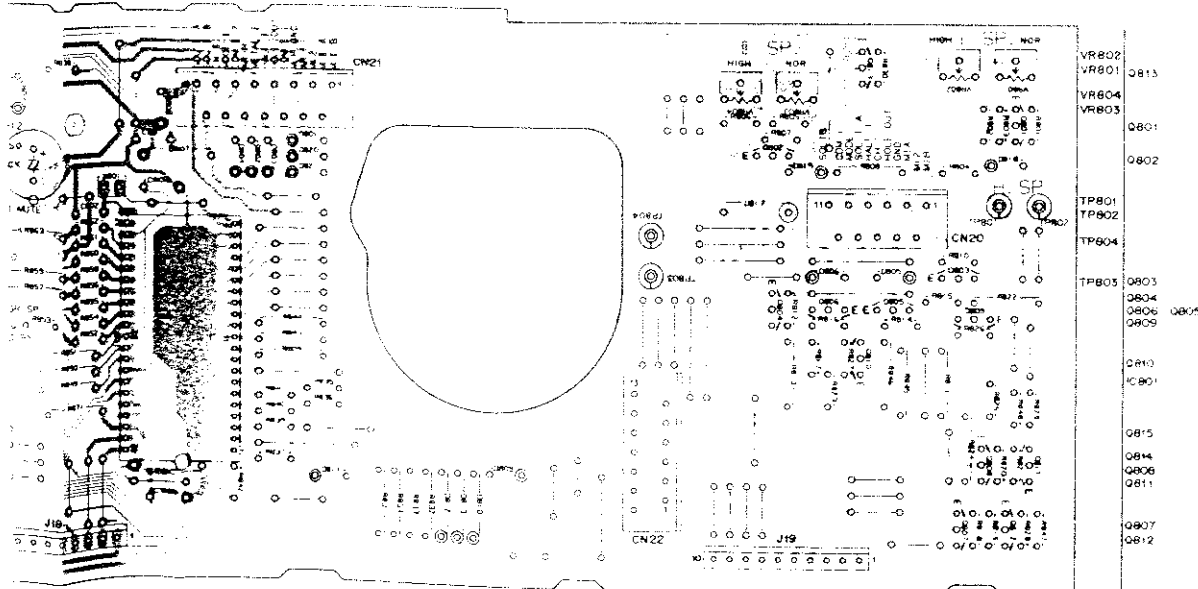


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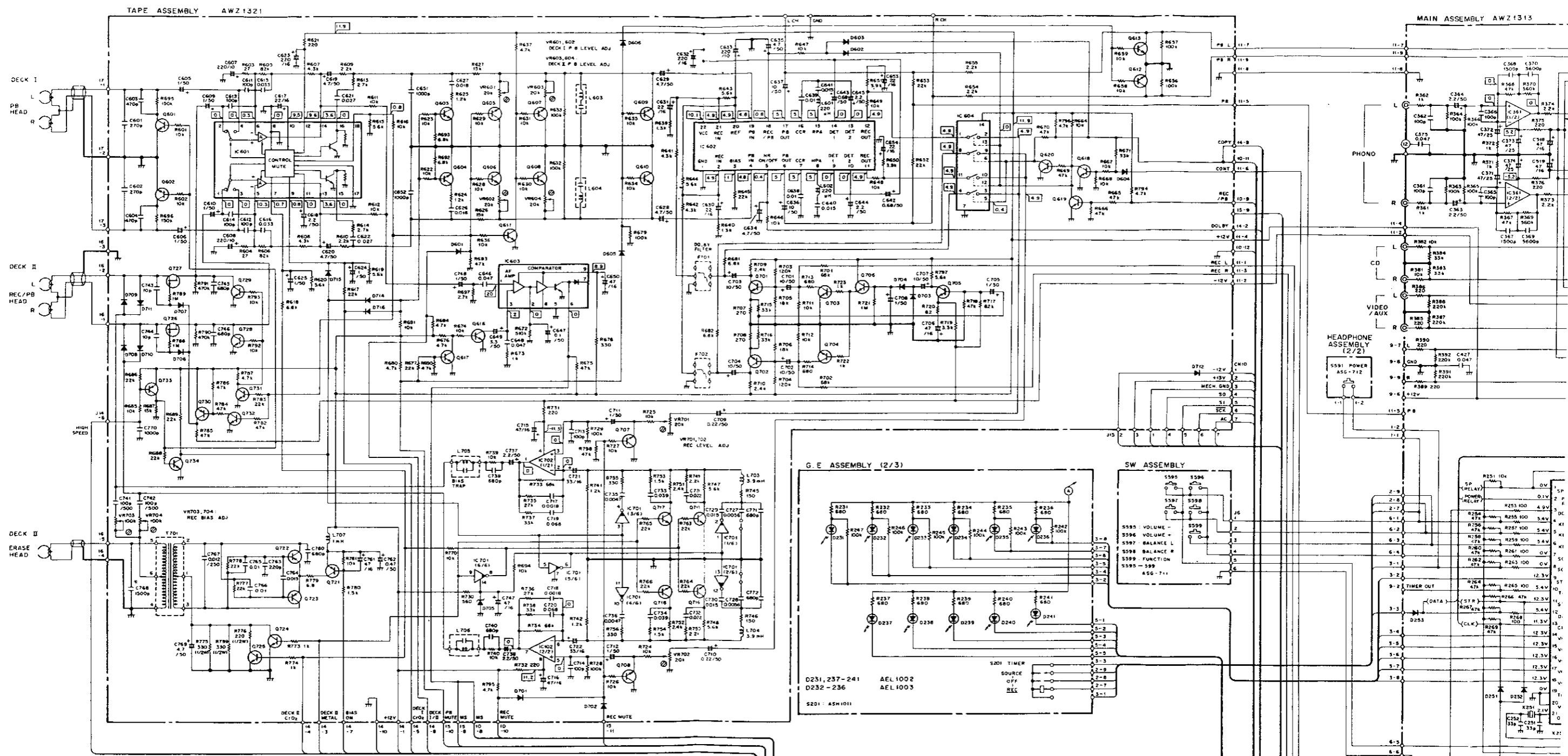
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AWZ1323



# 3. SCHEMATIC DIAGRAM

•FOR SD TYPE



**TAPE ASS'Y**

IC601	BA3416BL	D601-606, 701-704, 708-711.
IC602	HA1206NT	D713-716
IC603	BA335PT	D705
IC604	TC4066BP	D706, 707
IC701	M74LS05P	D712
IC702	M5218LF	
Q601-613, 616-620, 701-706,		L601, 602
Q715-718, 728, 729, 731,		L603, 604
Q732, 734		L703, 704
		L705, 706
Q707, 708	25C2603	L707
Q721, 730, 733	25C2678	L708
	25A9335	L709
	25A1115	L710
Q722, 723	25A1515	L711
Q724, 725	25C2603	L712
Q726, 727	25K373	L713

- RESISTORS:** Indicated in Ω, kΩ, MΩ, W, W, 5% tolerance unless otherwise noted; k, M, M, (F), (G), (K), (M), (P), 20% tolerance.
- CAPACITORS:** Indicated in capacity (C)/voltage (V) unless otherwise noted; p, μF. Indication without voltage is 50V except electrolytic capacitor.
- VOLTAGE CURRENT:** Signal voltage at (35 W ± 35 W, 8 Ω) output (1 kHz); DC voltage (V) at no input signal; Value in ( ) is DC voltage at rated power.

**4. OTHERS:** Signal source; Adapt point. The mark and on some component parts indicates the importance of the polarity factor of the part. Therefore, when replacing, be sure to use the correct polarity designation. Marked components and resistors have part numbers. This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

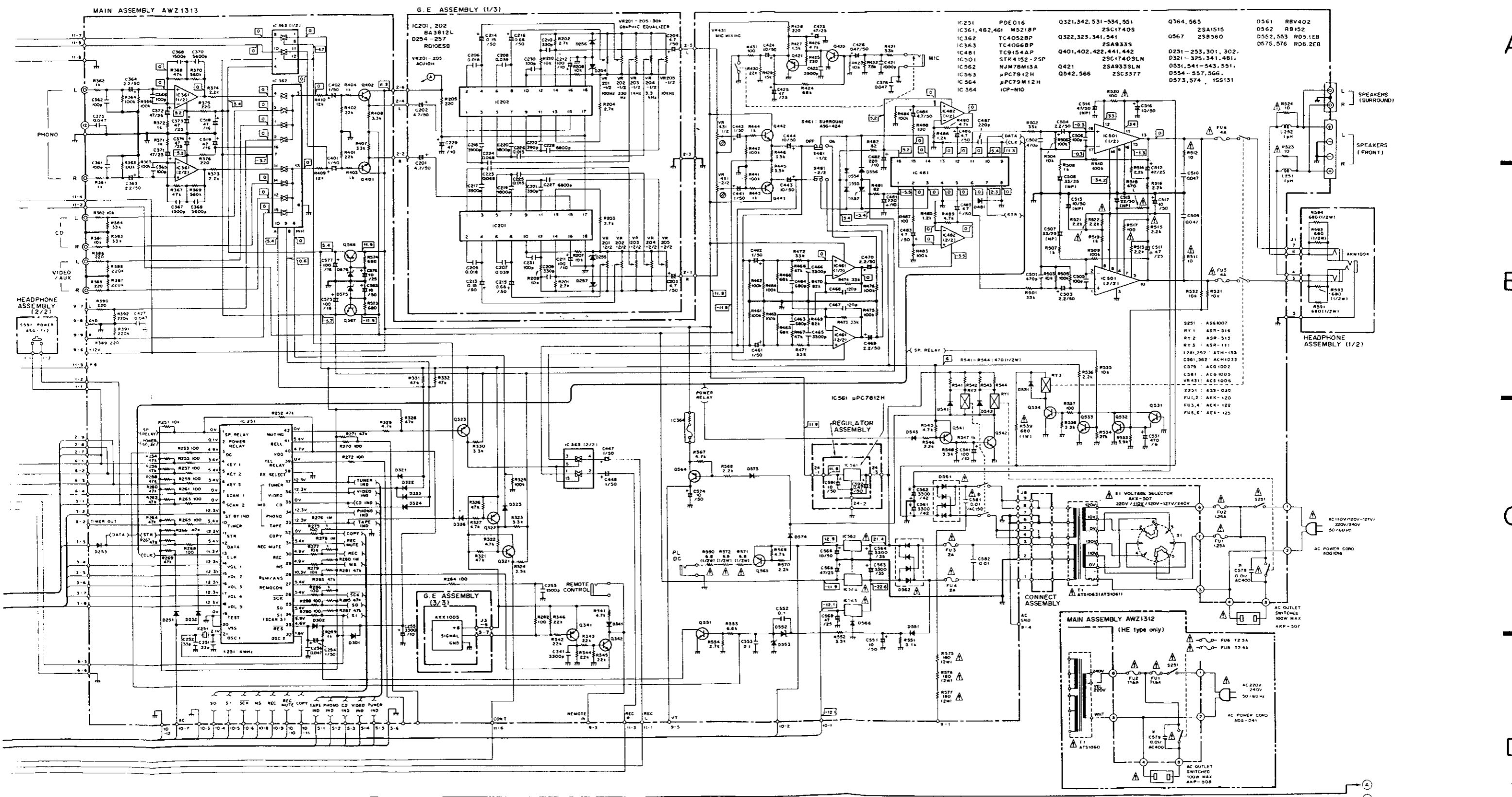
- SWITCHES:** THE UNDERLINED INDICATES THE SWITCH POSITION
- G.E. ASSEMBLY (2/3)**
- S201: TIMER STAND-BY MODE
  - S202: SOURCE - TIMER REC - REC
- HEADPHONE ASSEMBLY**
- S551: POWER ON - OFF
- SW ASSEMBLY**
- S595: VOLUME -
  - S596: VOLUME +
  - S597: BALANCE L
  - S598: BALANCE R
  - S599: FUNCTION
  - S599-599: ASS-711
- MECHANISM UNIT (I) SW ASSEMBLY**
- S811: (FAST)
  - S812: (PLAY)
  - S813: (STOP)
  - S814: (PLAY)
  - S815: (FAST)
- MECHANISM UNIT (II) SW ASSEMBLY**
- S806: (FAST)
  - S807: (PLAY)
  - S808: (STOP)
  - S809: (PLAY)
  - S810: (FAST)

- SW ASSEMBLY**
- S801: (PAUSE)
  - S802: (REC)
  - S803: (MUTING)
  - S804: (NORMAL - SYNCHRO)
  - S805: (HIGH COPY)
  - S816: (DOLBY NR)
  - S817: (REVERSE MODE)
- --- RELAY PLAT

S251: POWER  
S461: SURROUND



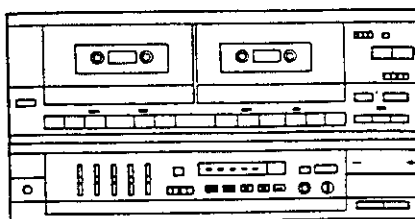
NOTE: The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.



SERV. 34050



# Service Manual



ORDER NO.  
ARP 1303-A

STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

# DC-X88Z

MODEL DC-X88Z COMES IN FIVE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Power requirement	Export destination
HB	AC 220V, 240V (switchable)	United kingdom
HE	AC 220V, 240V (switchable)	European continent
HEZ	AC 220V, 240V (switchable)	West Germany
YP	AC 240V only	Australia
SD	AC 110V, 120-127V, 220V, 240V (switchable)	General market

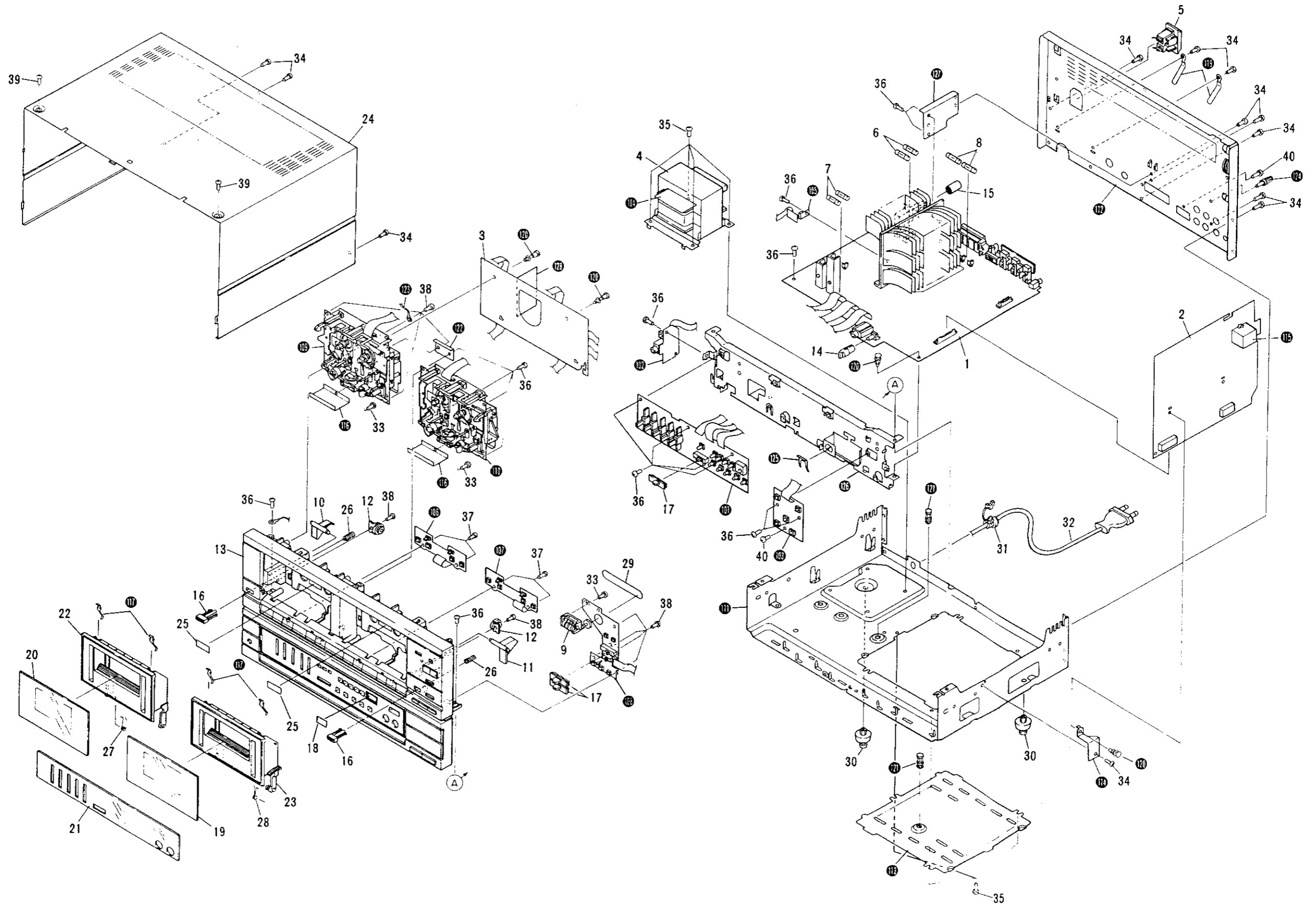
- This service manual is applicable to the HB type.
- As to the other types, please refer to additional service manual.
- Ce manual d'instruction se réfère au mode de réglage, en français.
- Este manual de servicio trata del método ajuste escrito en español.

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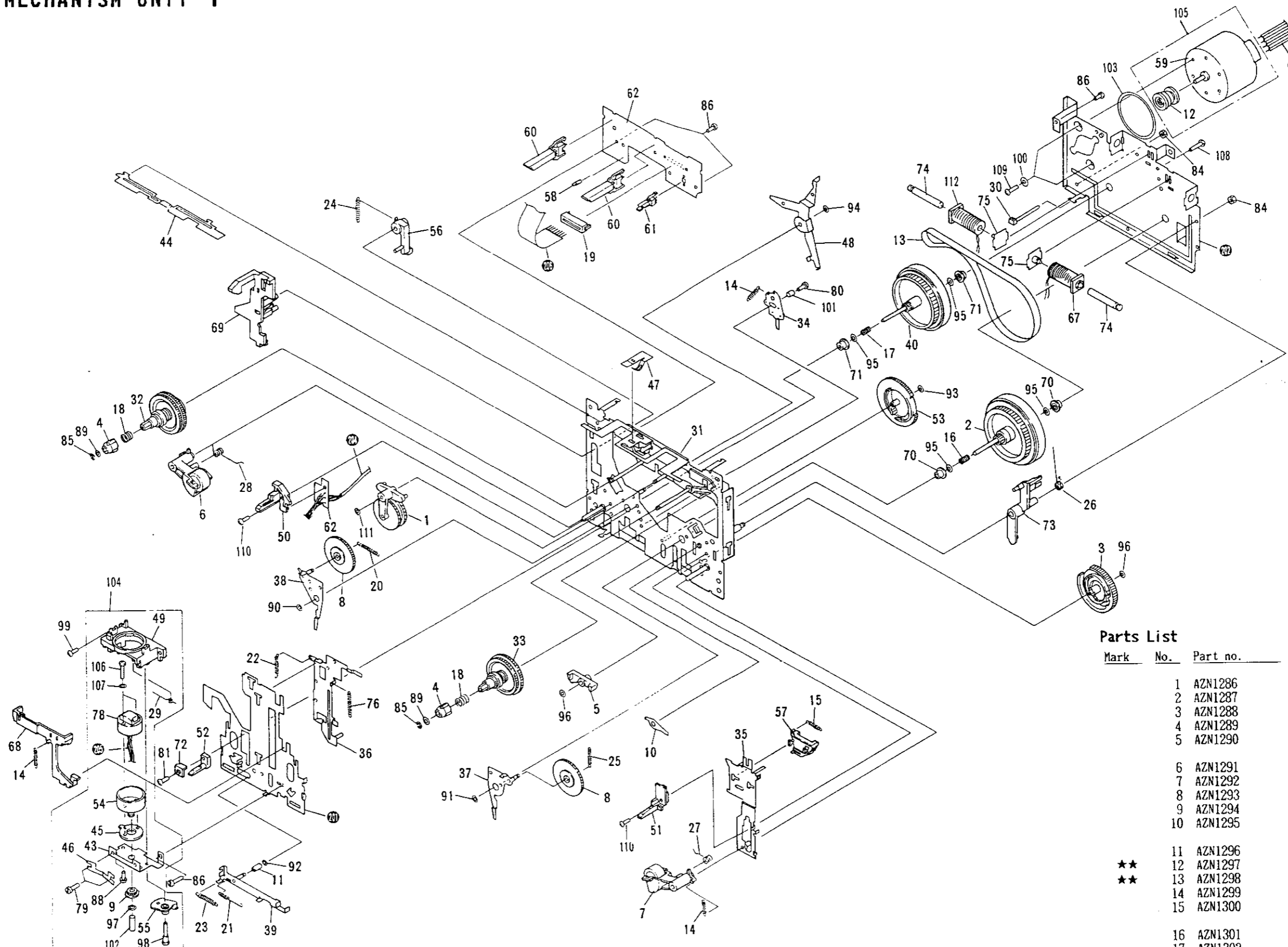
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3. EXPLODED VIEWS AND PARTS LIST  
3.1 EXTERIOR



DC-X88Z

3.2 MECHANISM UNIT I



Parts List			
Mark	No.	Part no.	Description
	1	AZN1286	Drive arm assembly
	2	AZN1287	FW assembly A
	3	AZN1288	Cam gear
	4	AZN1289	Reel stopper
	5	AZN1290	FR arm
	6	AZN1291	P arm L assembly
	7	AZN1292	P arm R assembly
	8	AZN1293	Gear A
	9	AZN1294	H gear
	10	AZN1295	CUE arm
	11	AZN1296	Collar C
★★	12	AZN1297	Motor pulley
★★	13	AZN1298	Belt
	14	AZN1299	Spring
	15	AZN1300	FR lever spring
	16	AZN1301	FWF spring
	17	AZN1302	FWR spring
	18	AZN1303	Spring
	19	AZN1305	Cable holder
	20	AZN1306	Spring

A

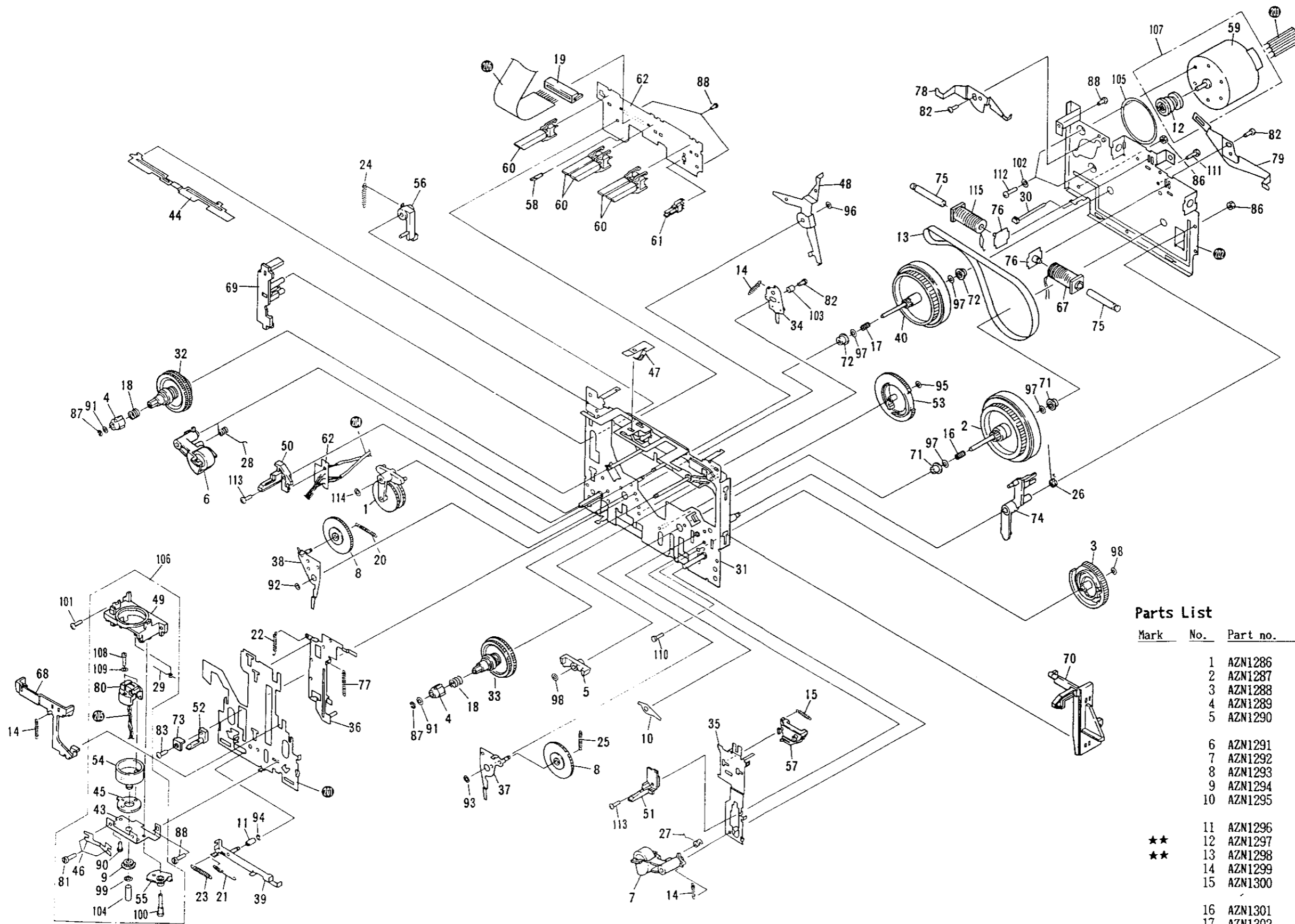
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C

D

Mark	No.	Part no.	Description	Mark	No.	Part no.	Description
	21	AZN1307	Spring		71	AZN1347	Metal
	22	AZN1308	Spring		72	AZN1348	Cushion
	23	AZN1309	Spring		73	AZN1349	Trigger arm
	24	AZN1310	Spring	★	74	AZN1350	Solenoid
	25	AZN1311	Spring		75	AZN1351	Solenoid plate assembly
	26	AZN1312	Spring		76	AZN1352	Spring
	27	AZN1313	Spring		77		.....
	28	AZN1314	Spring		78	AZP1015	PLAY head
	29	AZN1315	Spring		79	AZB1079	Stopper A
	30	AZN1316	Nylon band		80	AZB1080	Screw
	31	AZN1318	Chassis assembly		81	AZB1081	Screw
	32	AZN1319	R reel assembly		82		.....
	33	AZN1320	F reel assembly		83		.....
	34	AZN1321	Reverse arm assembly		84	AZB1084	Nut
	35	AZN1322	FR lever assembly		85	AZB1085	E ring
	36	AZN1323	PLAY lever assembly		86	AZB1086	Screw
	37	AZN1324	Gear arm R assembly		87		.....
	38	AZN1325	Gear arm L assembly		88	AZB1089	Screw
	39	AZN1326	Head lever assembly		89	AZB1090	Washer
	40	AZN1327	FW assembly		90	AZB1091	Oil stop washer
	41		.....		91	AZB1092	Oil stop washer
	42		.....		92	AZB1093	Washer
	43	AZN1328	Azimuth plate		93	AZB1094	Washer
	44	AZN1329	Switch arm		94	AZB1095	Washer
	45	AZN1330	Head arm		95	AZB1096	Washer
	46	AZN1331	Azimuth spring		96	AZB1097	Washer
	47	AZN1332	Cassette holder		97	AZB1098	Washer
	48	AZN1333	PLAY trigger		98	AZB1099	Screw
	49	AZN1334	Head frame		99	AZB1100	Screw
	50	AZN1335	Cassette guide (L)		100	AZB1087	Washer
	51	AZN1336	Cassette guide (R)		101	AZB1088	Collar
	52	AZN1337	Cassette guide		102	AZN1317	Tube
	53	AZN1338	Cam gear		103	AZN1304	Spacer
	54	AZN1339	Head holder		104	AZP1017	Head frame assembly
	55	AZN1340	Head gear	★★	105	AZX1014	Motor assembly
	56	AZN1341	Eject arm		106	AZB1101	Screw
	57	AZN1342	Select lever		107	AZB1102	Spring washer
★★	58	AZE1018	Hole IC		108	AZB1104	Screw
★★	59	AZX1013	Motor		109	AZB1105	Screw
★★	60	AZS1033	Leaf switch		110	AZB1106	Screw
★★	61	AZS1034	Leaf switch		111	AZB1107	Washer
	62	AZN1354	P plate		112	AZS1036	Bobbin
	63		.....				
	64		.....		201		Head board
	65		.....		202		Fly wheel holder
					203		Jumper
	66		.....		204		Head lead
	67	AZS1035	Bobbin		205		Lead wire
	68	AZN1343	Brake		206		Lead wire
	69	AZN1353	Latch lever (L)				
	70	AZN1346	Metal				

3.3 MECHANISM UNIT II



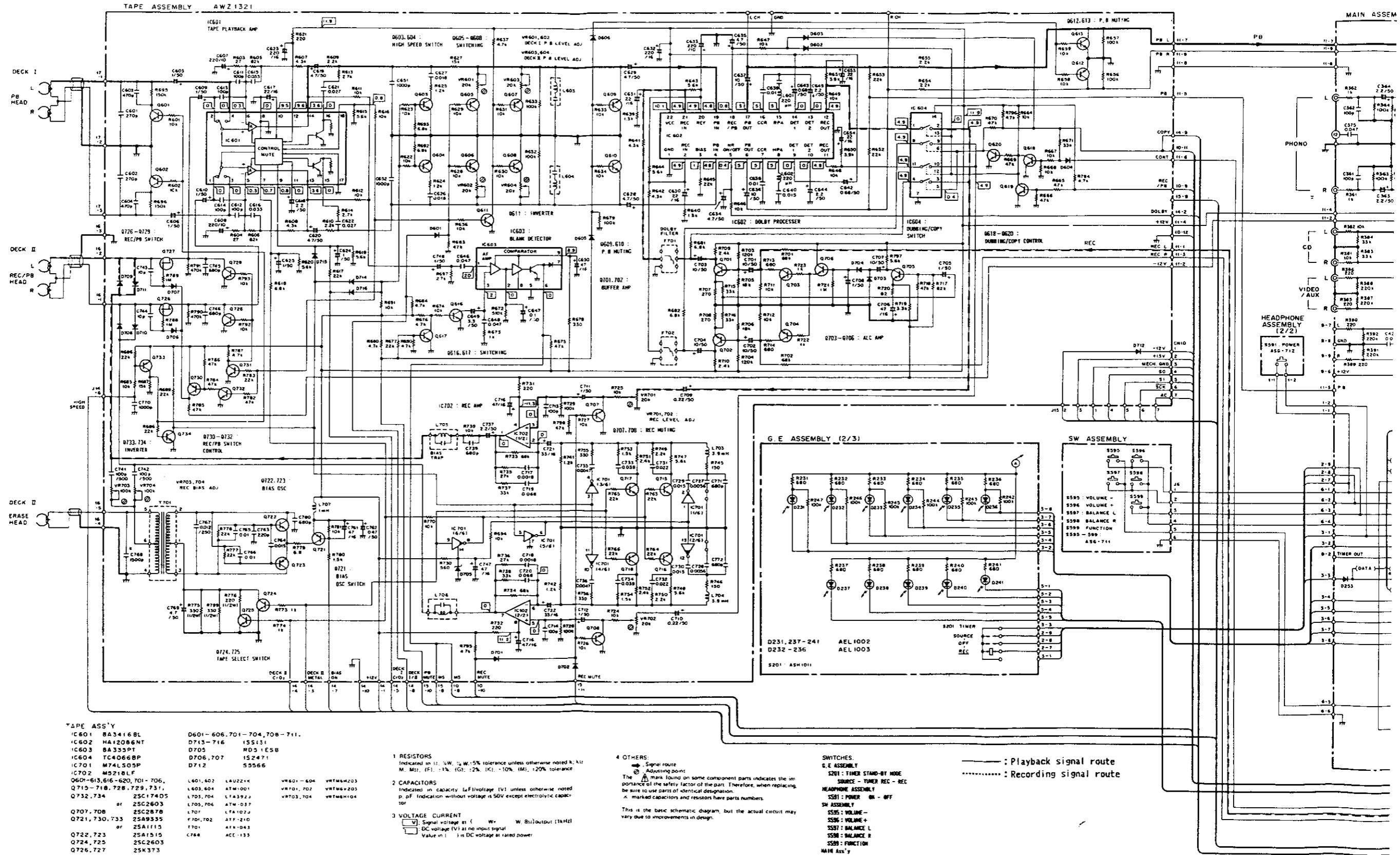
Parts List

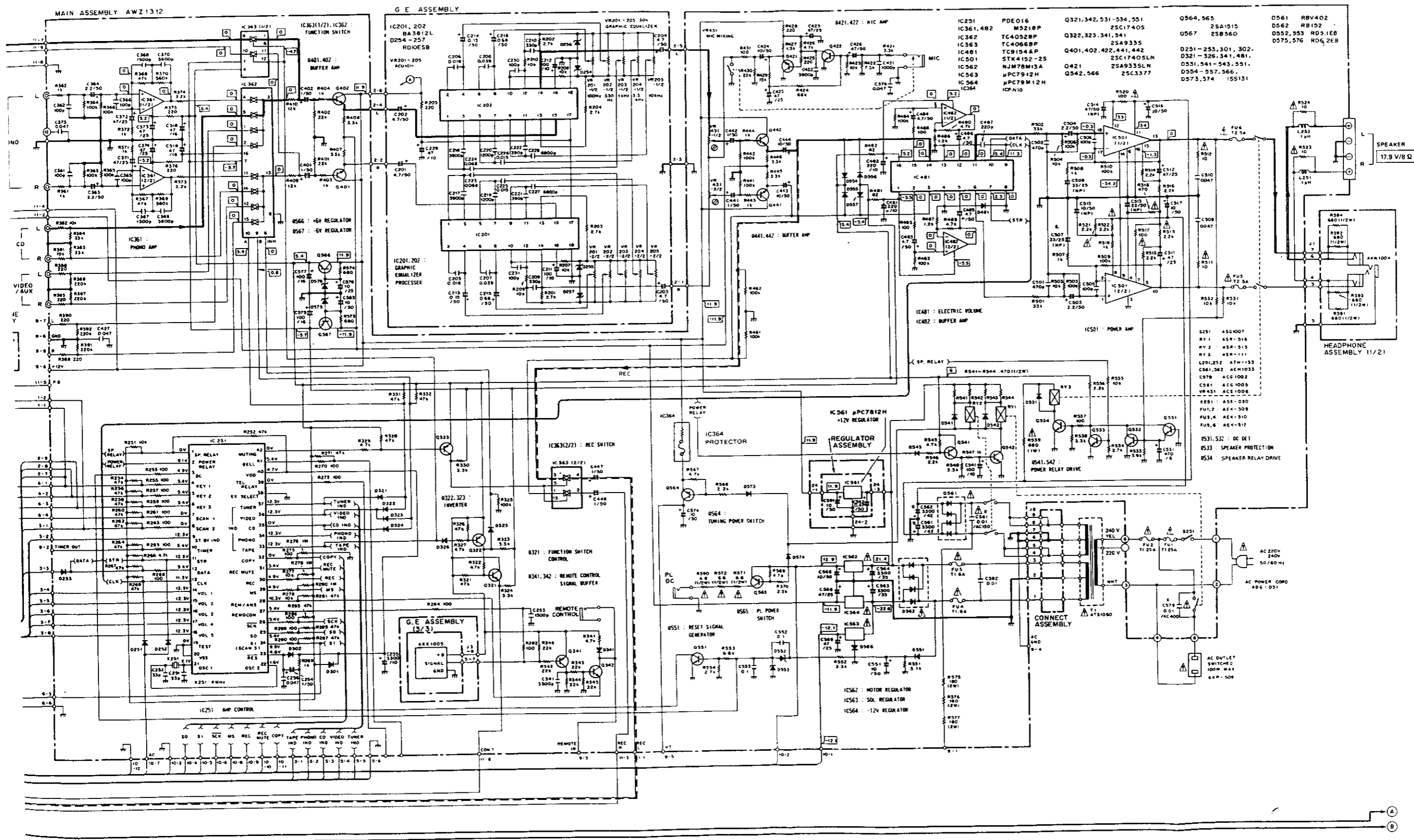
Mark	No.	Part no.	Description
	1	AZN1286	Drive arm assembly
	2	AZN1287	FW assembly A
	3	AZN1288	Cam gear
	4	AZN1289	Reel stopper
	5	AZN1290	FR arm
	6	AZN1291	P arm L assembly
	7	AZN1292	P arm R assembly
	8	AZN1293	Gear A
	9	AZN1294	H gear A
	10	AZN1295	CUE arm
	11	AZN1296	Collar C
★★	12	AZN1297	Motor pulley
★★	13	AZN1298	Belt
	14	AZN1299	Spring
	15	AZN1300	FR lever spring
	16	AZN1301	FWF spring
	17	AZN1302	FWR spring
	18	AZN1303	Spring
	19	AZN1305	Cable holder
	20	AZN1306	Spring



Mark	No.	Part no.	Description	Mark	No.	Part no.	Description
	21	AZN1307	Spring		71	AZN1346	Metal
	22	AZN1308	Spring		72	AZN1347	Metal
	23	AZN1309	Spring		73	AZN1348	Cushion
	24	AZN1310	Spring		74	AZN1349	Trigger arm
	25	AZN1311	Spring	★	75	AZN1350	Solenoid
	26	AZN1312	Spring		76	AZN1351	Solenoid plate assembly
	27	AZN1313	Spring		77	AZN1352	Spring
	28	AZN1314	Spring		78	AZN1356	Arm eject (L)
	29	AZN1315	Spring		79	AZN1357	Arm eject (R)
	30	AZN1316	Nylon band		80	AZP1014	REC/PLAY/ERASE head
	31	AZN1318	Chassis assembly		81	AZB1079	Stopper A
	32	AZN1319	R reel assembly		82	AZB1080	Screw
	33	AZN1320	F reel assembly		83	AZB1081	Screw
	34	AZN1321	Reverse arm assembly		84		. . . . .
	35	AZN1322	FR lever assembly		85		. . . . .
	36	AZN1323	PLAY lever assembly		86	AZB1084	Nut
	37	AZN1324	Gear arm R assembly		87	AZB1085	E ring
	38	AZN1325	Gear arm L assembly		88	AZB1086	Screw
	39	AZN1326	Head lever assembly		89		. . . . .
	40	AZN1327	FW assembly		90	AZB1089	Screw
	41		. . . . .		91	AZB1090	M nut
	42		. . . . .		92	AZB1091	Washer
	43	AZN1328	Azimuth plate		93	AZB1092	Oil stop washer
	44	AZN1329	Switch arm		94	AZB1093	Oil stop washer
	45	AZN1330	Head arm		95	AZB1094	Washer
	46	AZN1331	Azimuth spring		96	AZB1095	Washer
	47	AZN1332	Cassette holder		97	AZB1096	Washer
	48	AZN1333	PLAY trigger		98	AZB1097	Washer
	49	AZN1334	Head frame		99	AZB1098	Washer
	50	AZN1335	Cassette guide (L)		100	AZB1099	Screw
	51	AZN1336	Cassette guide (R)		101	AZB1100	Screw
	52	AZN1337	Cassette guide		102	AZB1087	Washer
	53	AZN1338	Cam gear		103	AZB1088	Collar
	54	AZN1339	Head holder		104	AZN1317	Tube
	55	AZN1340	Head gear		105	AZN1304	Spacer
	56	AZN1341	Eject arm		106	AZP1016	Head frame assembly
	57	AZN1342	Select lever	★★	107	AZX1014	Motor assembly
★★	58	AZE1018	Hole IC		108	AZB1101	Screw
★★	59	AZX1013	Motor		109	AZB1102	Spring washer
★★	60	AZS1033	Leaf switch		110	AZB1103	Screw
★★	61	AZS1034	Leaf switch		111	AZB1104	Screw
	62	AZN1355	P plate		112	AZB1105	Screw
	63		. . . . .		113	AZB1106	Screw
	64		. . . . .		114	AZB1107	Washer
	65		. . . . .		115	AZS1036	Bobbin
	66		. . . . .		201		Head board
	67	AZS1035	Bobbin		202		Fly wheel holder
	68	AZN1343	Brake		203		Jumper
	69	AZN1344	Eject lever (L)		204		Head lead
	70	AZN1345	Eject lever (R)		205		Lead wire
					206		Lead wire

# 4. SCHEMATIC DIAGRAM





A

B

C

D

1

2

3

4

5

A

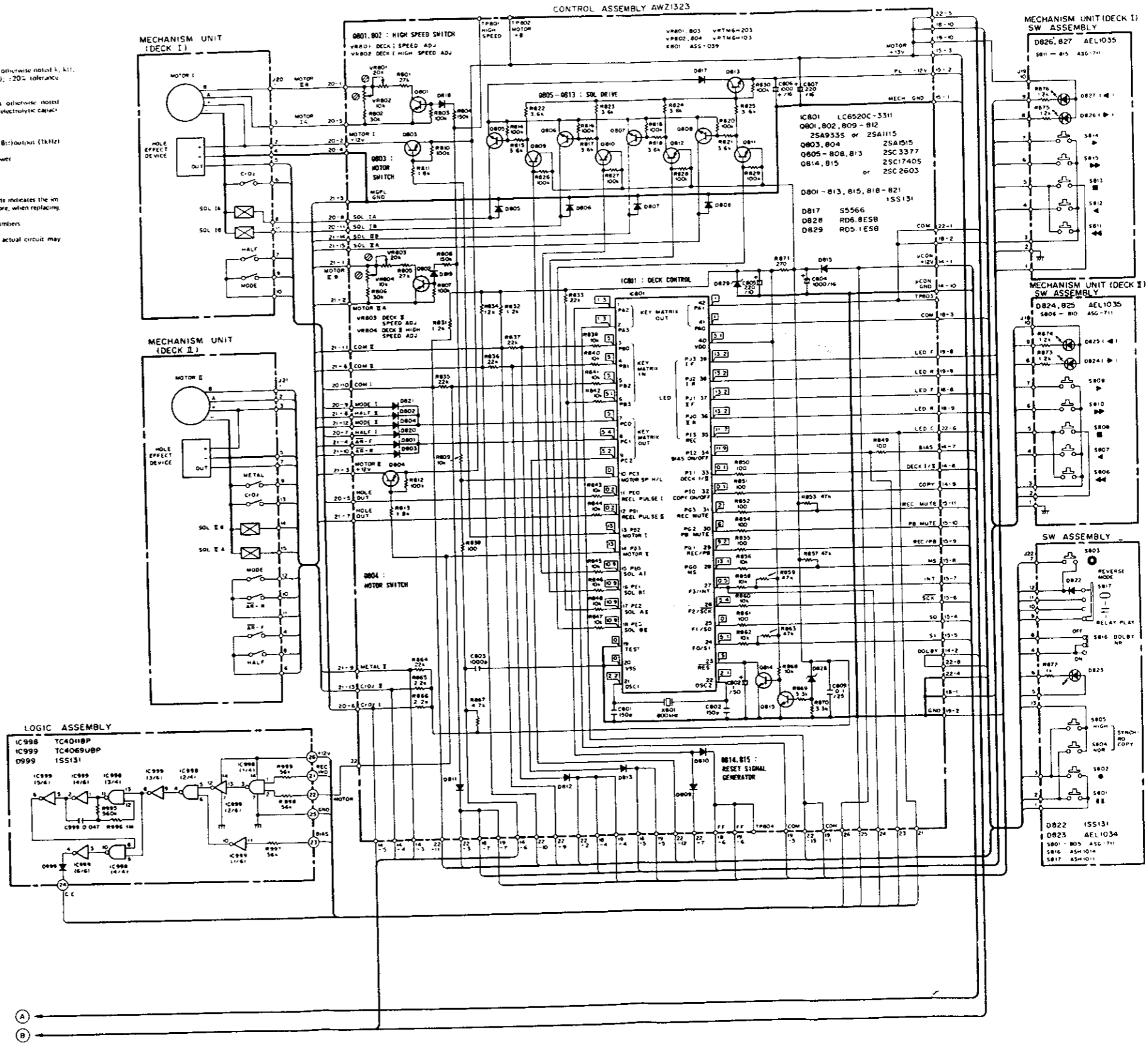
B

C

D

1. RESISTORS  
Indicated in Ω, K, M, W, 5% tolerance unless otherwise noted k, K, M, MS, (F), (G), (J), (K), (L), (M), (N), (P), (R), (S), (T), (V), (W), (X), (Y), (Z), 10% tolerance.
2. CAPACITORS  
Indicated in capacitance (μF) unless otherwise noted. Indicated in voltage (V) unless otherwise noted. Indicated in voltage (V) at no input signal. Indicated in voltage (V) is DC voltage at rated power.
3. VOLTAGE CURRENT  
Signal voltage at (40 W, 40 W, B) output (1 kHz).  
DC voltage (V) at no input signal.  
Value in ( ) is DC voltage at rated power.
4. OTHERS  
Signal route.  
Adjusting point.  
The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing be sure to use parts of identical designation.  
marked capacitors and resistors have part numbers.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

- SWITCHES
- MECHANISM UNIT (I) SW ASSEMBLY  
SB11: (FAST)  
SB12: (PLAY)  
SB13: (STOP)  
SB14: (PLAY)  
SB15: (FAST)
- MECHANISM UNIT (II) SW ASSEMBLY  
SB06: (FAST)  
SB07: (PLAY)  
SB08: (STOP)  
SB09: (PLAY)  
SB10: (FAST)
- SW ASSEMBLY  
SB01: (PAUSE)  
SB02: (REC)  
SB03: (MUSIC)  
SB04: NORMAL - SYNCHRO  
SB05: HIGH - COPY  
SB16: DOLBY NR  
SB17: REVERSE MODE  
○ - RELAY PLAY



1

2

3

4

5

5. P. C. BOARDS CONNECTION DIAGRAM

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
	Switch
	Relay
	Coil
	Filter
	Variable resistor or Semi-fixed resistor

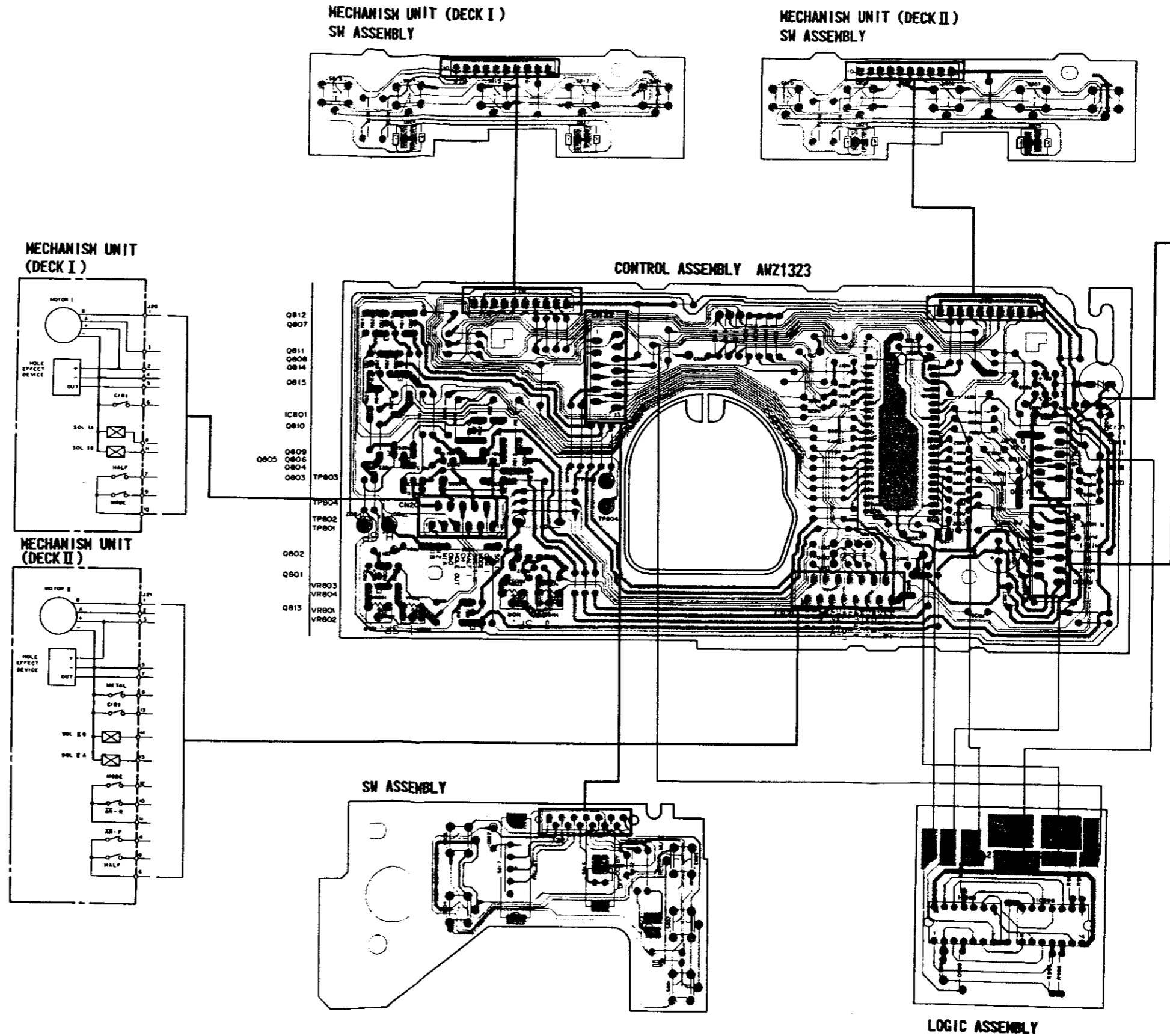
3. The capacitor terminal marked with ⊖ (double circles) shows negative terminal.
4. The diode terminal marked with ⊕ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

A  
B  
C  
D

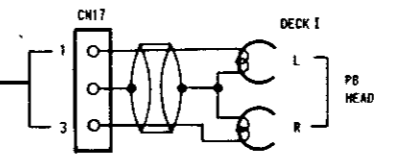
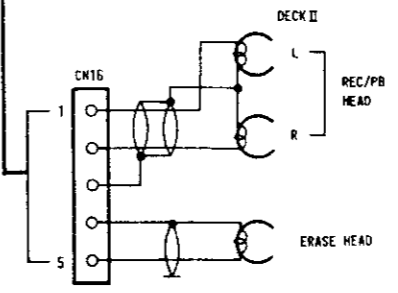
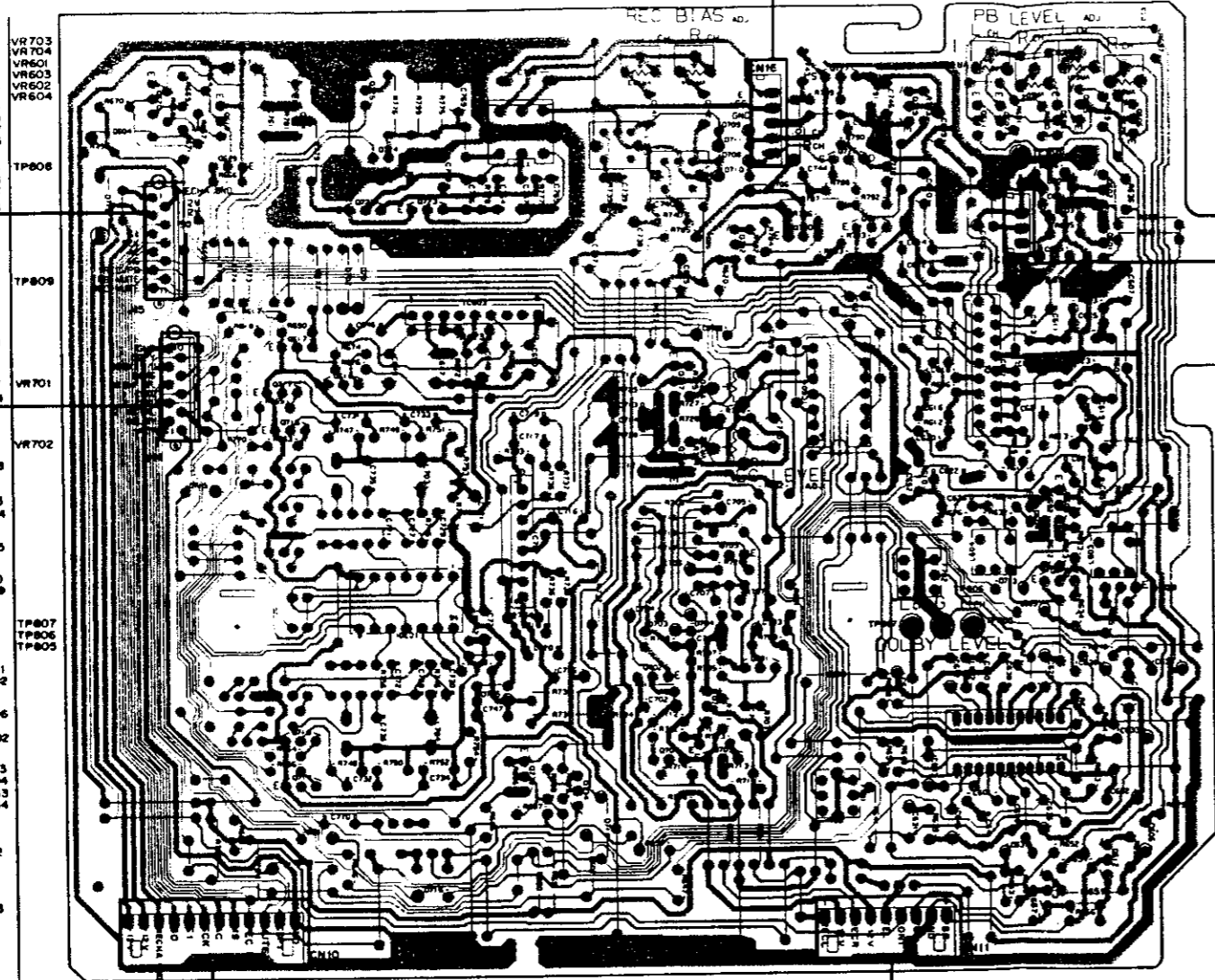
A  
B  
C  
D

1 | 2 | 3 | 4 | 5 | 6

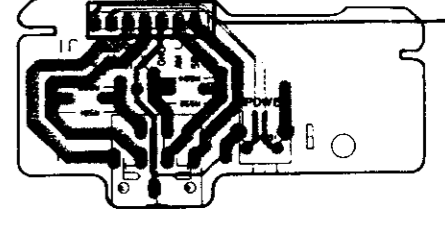
1 | 2 | 3 | 4 | 5 | 6



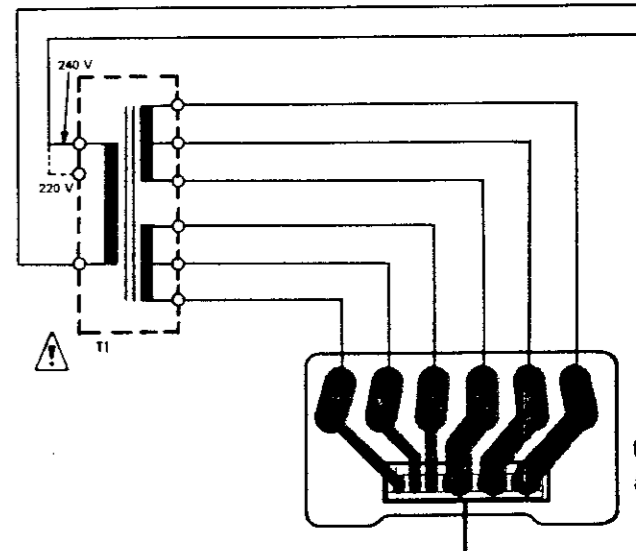
TAPE ASSEMBLY ANZ1321



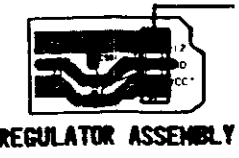
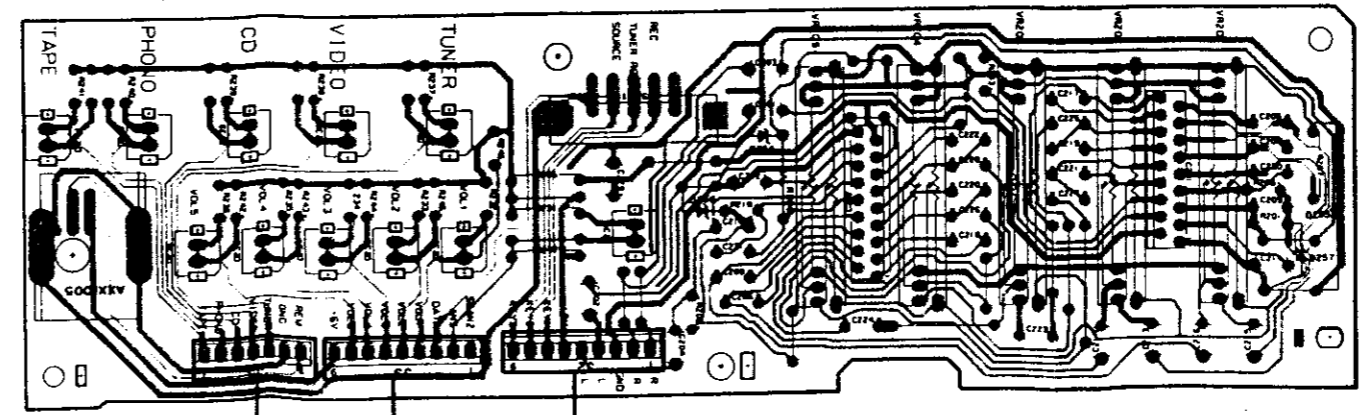
HEADPHONE ASSEMBLY



AC POWER CORD  
AC220V  
240V  
50/60Hz



G. E. ASSEMBLY



A

B

B

C

C

D

D

1

2

3

4

5

6

1

2

3

4

5

6



7

8

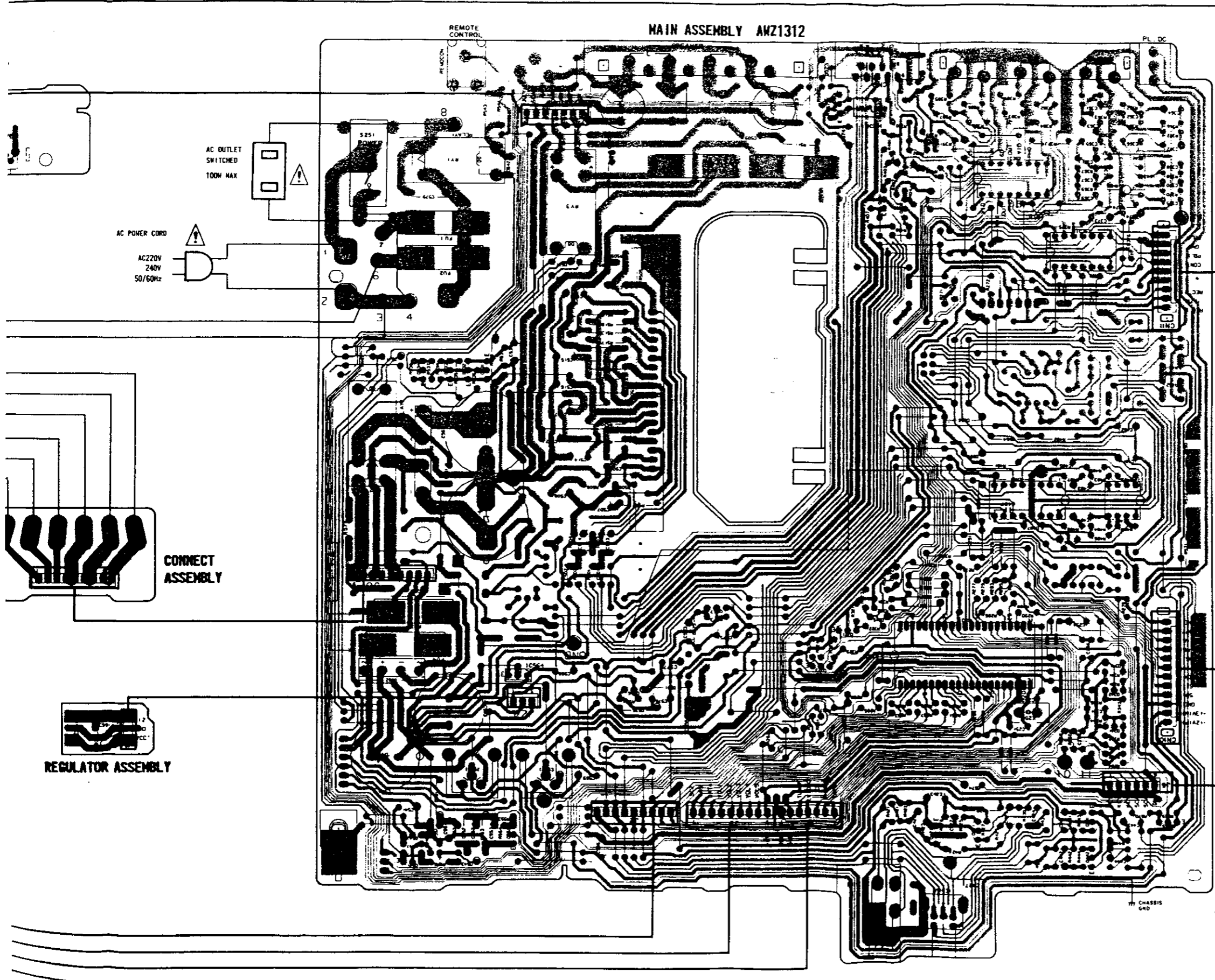
9

10

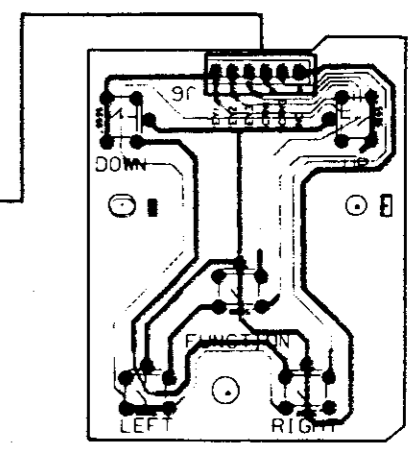
11

12

MAIN ASSEMBLY AWZ1312



- Q564
- IC361 IC362
- Q401 Q402
- IC363
- IC501
- Q554 Q553
- Q532 Q531
- IC482 IC481
- Q322
- Q567
- Q321
- IC251
- IC564 Q323
- Q566 Q342
- Q341
- IC562 IC563
- Q565
- Q551 Q441
- Q542 Q422 Q421
- Q442
- Q541



A

B

C

D

# 6. ELECTRICAL PARTS LIST

**NOTES:**

- 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  $\square$   $\square$   $\square$  J  
 47kΩ 47 × 10<sup>3</sup> 473.....RD1/4PS  $\square$   $\square$   $\square$  J  
 0.5Ω 0R5.....RN2H  $\square$   $\square$   $\square$  K  
 1Ω 010.....RS1P  $\square$   $\square$   $\square$  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  $\square$   $\square$   $\square$  F
- 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.
- For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.  
 ★ ★ **GENERALLY MOVES FASTER THAN ★**  
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

**Miscellaneous Parts**

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
	MAIN assembly	AWZ1312	★★	IC363	TC4066BP
	G.E assembly	Non supply	★★	IC481	TC9154AP
	Headphone assembly	Non supply	$\Delta$ ★★	IC564	μ PC79M12H
	SW assembly	Non supply	$\Delta$ ★★	IC563	μ PC7912H
	REGULATOR assembly	Non supply	★★	Q564, Q565	2SA1515
	CONNECT assembly	Non supply	★★	Q322, Q323, Q341, Q541	2SA933S
	TAPE assembly	AWZ1321	★★	Q421	2SA933SLN
	CONTROL assembly	AWZ1323	★★	Q567	2SB560
	Mechanism unit (I)	Non supply	★★	Q321, Q342, Q531 - Q534, Q551	2SC1740S
	SW assembly		★★	Q401, Q402, Q422, Q441, Q442	2SC1740SLN
	Mechanism unit (II)	Non supply	★★	Q542, Q566	2SC3377
	SW assembly		$\Delta$ ★	D561	RBV402
	SW assembly	Non supply	★	D552, D553	RD5.1EB
	LOGIC assembly	Non supply	★	D575, D576	RD6.2EB
			$\Delta$ ★	D562	RB152
$\Delta$ ★	T1 Power transformer	ATS1060	★	D251 - D253, D301, D302,	1SS131
$\Delta$	AC Socket (AC OUTLET)	AKP-509		D321 - D325, D341, D481, D531,	
$\Delta$ ★★	FU1, FU2 Fuse (T1.25A)	AEK-509		D541 - D543, D551, D554 - D557,	
$\Delta$ ★★	FU3, FU4 Fuse (T1.6A)	AEK-510		D566, D573, D574	
$\Delta$ ★★	FU5, FU6 Fuse (T2.5A)	AEK-512			
$\Delta$	AC power cord	ADG-051			
$\Delta$	Strain relief	AEC-882			

**MAIN Assembly (AWZ1312)**

**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
★★	IC361, IC482	M5218P
$\Delta$ ★★	IC562	NJM78M13A
★★	IC251	PDE016
$\Delta$ ★★	IC501	STK4152-2SP
★★	IC362	TC4052BP
★★	IC364	ICP-N10

**SWITCH AND RELAYS**

Mark	Symbol & Description	Part No.
$\Delta$ ★★	S251 Push switch	ASG1007
★★	RY3 Relay	ASR-111
★★	RY2 Relay	ASR-515
★★	RY1 Relay	ASR-516

**COILS**

Mark	Symbol & Description	Part No.
	L251, L252 AF Choke coil (1 μH)	ATH-133

## RESISTORS

NOTE:When ordering resistors,convert the resistance value into code form,and then rewrite the part no.as before.

Mark	Symbol & Description	Part No.
★	VR703,VR704 Semi-fixed (100k)	VRTMGH104
★	VR601-VR604 Semi-fixed (20k)	VRTMGH203
★	VR701,VR702 Semi-fixed (20k)	VRTMGV203
	R775,C776,C799	RD1/2PM□□□J
	R621,R731,R732	RD1/4PM221J
	Other resistors	RD1/8PM□□□J

## OTHERS

Mark	Symbol & Description	Part No.
	9P socket	AKP-046

## CONTROL Assembly (AWZ1323) SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	1C801	LC6520C-3311
★★	Q803,Q804	2SA1515
★★	Q801,Q802,Q809-Q812	2SA933S (2SA1115)
★★	Q814,Q815	2SC1740S (2SC2603)
★★	Q805-Q808,Q813	2SC3377
★	D829	RD5.1ESB
★	D828	RD6.8ESB
★	D817	S5566
★	D801-D813,D815,D818-D821	1SS131

## CAPACITORS

Mark	Symbol & Description	Part No.
	C801,C802	CCCSL151J50
	C808	CEAS010M50
	C804,C806	CEAS102M16
	C805	CEAS221M10
	C807	CEAS221M16
	C803	CKCYF102Z50
	C809	CKCYX104M25

## RESISTORS

NOTE:When ordering resistors,convert the resistance value into code form,and then rewrite the part no.as before.

Mark	Symbol & Description	Part No.
★	VR802,VR804 Semi-fixed (10k)	VRTMGH103
★	VR801,VR803 Semi-fixed (20k)	VRTMGH203
	R871	RD1/4PM271J
	Other resistors	RD1/8PM□□□J

## OTHERS

Mark	Symbol & Description	Part No.
★	X801 Ceramic oscillator (800kHz)	ASS-039

## Mechanism unit (I) SW Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D826,D827	AEL1035

## SWITCHES

Mark	Symbol & Description	Part No.
★★	S811-S815 Tact switch	ASG-711

## RESISTORS

Mark	Symbol & Description	Part No.
	R875,R876	RD1/4PM122J

## Mechanism unit (II) SW Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D824,D825	AEL1035

## SWITCHES

Mark	Symbol & Description	Part No.
★★	S806-S810 Tact switch	ASG-711

## RESISTORS

Mark	Symbol & Description	Part No.
	R873,R874	RD1/4PM122J

## SW Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D823	AEL1034
★	D822	1SS131

## SWITCHES

Mark	Symbol & Description	Part No.
★★	S801-S805 Tact switch	ASG-711
★★	S817 Slide switch	ASH1011
★★	S816 Slide switch	ASH1014

## RESISTORS

Mark	Symbol & Description	Part No.
	R872	RD1/4PM102J

## LOGIC Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC998	TC4011BP
★★	IC999	TC4069UBP
★	D999	1SS131

## CAPACITORS

Mark	Symbol & Description	Part No.
	C999	CKDYF473Z50

## RESISTORS

NOTE:When ordering resistors,convert the resistance value into code form,and then rewrite the part no.as before.

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

## 7. ADJUSTMENTS

### Tape speed adjustment

1. Connect the frequency counter to the TP1 terminal (Dolby TP: R-ch) on the complex assembly.
2. Turn the tape switch on.
3. Mount the test tape STD-301 onto deck I.
4. Put the deck I into play mode and short-circuit between terminals TP801 and TP802 on the tape assembly. (STD-301 is play backed in double speed.)
5. Adjust with VR802 so that the playback signal frequency of deck I becomes  $6020\text{Hz} \pm 10\text{Hz}$ .
6. Release the short-circuit between terminals TP801 and TP802.
7. Put the deck I into play mode and adjust with VR801 so that the playback signal frequency becomes  $3010\text{Hz} \pm 5\text{Hz}$ .  
Note: Be sure not to turn VR802 while performing the normal speed adjustment.
8. At this point, be sure to confirm that the wow and flutter are within 0.25% both in the normal speeds.
9. Mount the test tape STD-301 onto deck II.
10. Put the deck II into play mode and short-circuit between terminals TP801 and TP802 on the tape assembly. (STD-301 is play backed in double speed.)
11. Adjust with VR804 so that the playback signal frequency of deck II becomes  $6020\text{Hz} \pm 10\text{Hz}$ .
12. Release the short-circuit between terminals TP801 and TP802.
13. Put the deck II into play mode and adjust with VR803 so that the play back signal frequency of deck II becomes  $3010\text{Hz} \pm 5\text{Hz}$ .  
(Note: Be sure not to turn VR804 while performing the normal speed adjustment.)
14. At this point, be sure to confirm that the wow and flutter are within 0.25% in the normal speeds.

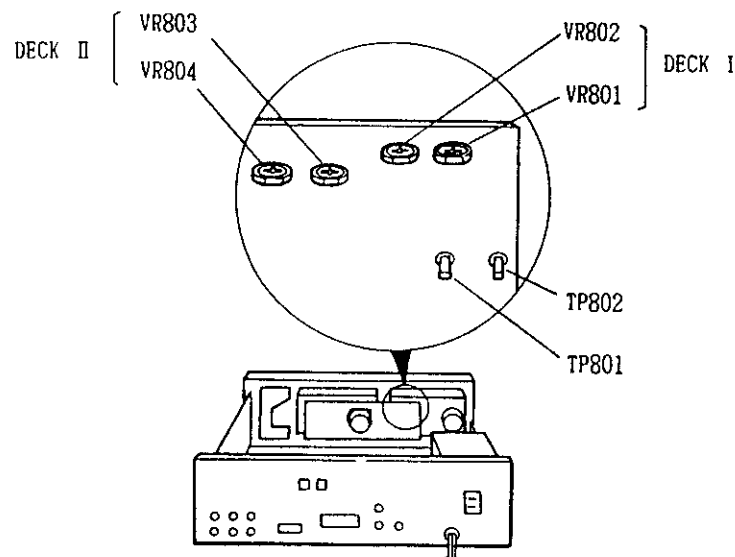


Fig. 7-1 Adjustment Point

### Headphone Assembly SWITCH

Mark	Symbol & Description	Part No.
★★	S591 Tact switch (POWER)	ASG-712

### RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/2PM681J

### OTHERS

Mark	Symbol & Description	Part No.
	Mini jack (PHONES)	AKN1004

### SW Assembly SWITCHES

Mark	Symbol & Description	Part No.
★★	S595-S599 Tact switch	ASG-711

### REGULATOR Assembly SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	IC561	μPC7812H

### CAPACITOR

Mark	Symbol & Description	Part No.
	C591	CEAS100M50

### CONNECT Assembly

The electrical parts of this assembly are not supplied.

### TAPE Assembly (AWZ1321) SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC603	BA335PT
★★	IC601	BA3416BL
★★	IC602	HA12086NT
★★	IC702	M5218LF
★★	IC701	M74LS05P
★★	IC604	TC4066BP
★★	Q722, Q723	2SA1515
★★	Q721, Q730, Q733	2SA933S (2SA1115)
★★	Q601-Q613, Q616-Q620, Q701-Q706, Q715-Q718, Q728, Q729, Q731, Q732, Q734	2SC1740S (2SC2603)
★★	Q724, Q725	2SC2603
★★	Q707, Q708	2SC2878
★★	Q726, Q727	2SK373
★	D705	RD5.1ESB
★	D712	S5566
★	D601-D606, D701-D704, D708-D711, D713-D716	1SS131
★	D706, D707	1S2471

### TRANSFORMER, COILS AND FILTERS

Mark	Symbol & Description	Part No.
	L705, L706	Trap coil
	L603, L604	Trap coil
	L601, L602	Axial inductor
	L707	Inductor
	L703, L704	Inductor
	F701, F702	Dolby filter
	T701	

ATM-037  
ATM1001  
LAU221K  
LTA102J  
LTA392J

ATF-210  
ATX-043

### CAPACITORS

Mark	Symbol & Description	Part No.
	C768 (1500p)	ACE-133
	C743, C744	CCCSL100D50
	C611-C614, C713, C714	CCCSL101J50
	C741, C742	CCCSL101K500
	C763	CCCSL221J50
	C601, C602	CCCSL271J50
	C762	CEASR47M50
	C642, C643	CEASR68M50
	C647	CEASOR1M50
	C605, C606, C609, C610, C624, C625, C705, C708, C711, C712, C748	CEASO10M50
	C636, C637, C701-C704, C707 C709, C710	CEAS100M50 CEASR22M50
	C618, C644, C645, C737, C738 C617, C630, C631, C653, C654 C607, C608, C633	CEAS2R2M50 CEAS220M16 CEAS221M10
	C623, C632	CEAS221M16
	C649	CEAS3R3M50
	C721, C722	CEAS330M16
	C619, C620, C628, C629, C634, C635, C769	CEAS4R7M50
	C650, C706, C715, C716, C747, C761	CEAS470M16
	C651, C652, C770	CKCYB102K50
	C603, C604	CKCYB471K50
	C739, C740, C745, C746, C780	CKCYB681K50
	C646	CKCYF473Z50
	C638, C639, C765, C766	CQMA103J50
	C767	CQMA123K250
	C640, C641, C729, C730, C764 C717, C718	CQMA153J50 CQMA182J50
	C626, C627	CQMA183J50
	C731, C732	CQMA223J50
	C621, C622	CQMA273J50
	C615, C616	CQMA333J50
	C735, C736	CQMA472J50
	C733, C734	CQMA393J50
	C648	CQMA473K50
	C727, C728	CQMA562J50
	C771, C772	CQMA681J50
	C719, C720	CQMA683J50

# DC-X88Z

## CAPACITORS

Mark	Symbol & Description	Part No.
△	C579 (0.01 μF/AC400V)	ACG1002
△	C581 (0.01 μF/AC150V)	ACG1005
	C561, C562 (3300 μF/42V)	ACH1033
	C251, C252	CCCSL330J50
	C361, C362, C365, C366	CCDSL101J50
	C487	CCDSL221J50
	C515	CEANP100M50
	C513	CEANP220M50
	C507, C508	CEANP330M25
	C514	CEANP470M50
	C426	CEASR47M50
	C254, C401, C402, C441, C442, C447, C448	CEASO10M50
	C424, C443, C444, C516, C517, C551, C566, C574, C576, C583	CEAS100M50
	C541	CEAS101M10
	C575, C577	CEAS101M16
	C363, C364, C503, C504	CEAS2R2M50
	C481, C482	CEAS221M10
	C255	CEAS332M10
	C563, C564	CEAS332M35
	C483 - C486	CEAS4R7M50
	C371 - C374, C423, C425, C511, C512, C568, C569	CEAS470M25
	C531	CEAS471M6
	C518, C519	CEYA470M16
	C421	CKCYB102K50
	C253, C367, C368	CKCYB152K50
	C341	CKCYB332K50
	C422	CKCYB392K50
	C369, C370	CKCYB562K50
	C582	CKDYF103Z50
	C256, C375, C427	CKCYF473Z50
	C552, C553	CKCYX104M25
	C376	CKDYF473Z50
	C501, C502	CQMA471K50
	C509, C510	CQMA473K50
	C505, C506	CSA101J50

## RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR431 Variable resistor (30kΩ)	ACS1006
△	R571, R572, R590	RD1/2PMFL6R8J
	R541 - R544	RD1/2PM471J
△	R511, R512, R517, R518, R521 - R524	RD1/4PMFL□□□J
	R375, R376, R428, R481, R482, R513 - R516, R519	RD1/4PM□□□□J
△	R520	RFA1/4PL101J
△	R539	RS1LMF681J
△	R575 - R577	RS2LMF181J
	Other resistors	RD1/8PM□□□□J

## OTHERS

Mark	Symbol & Description	Part No.
	6P Terminal	AKB-095
	4P Terminal (SPEAKER)	AKE-109
	Mini jack	AKN-034
	Mini jack	AKN-207
	Phone jack (MIC)	AKN1003
★	X251 Ceramic oscillator	ASS-030

## G. E. Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC201, IC202	BA3812L
★	D231, D237 - D241	AEL1002
★	D232 - D236	AEL1003
★	D254 - D257	RD10ESB

## SWITCH

Mark	Symbol & Description	Part No.
★★	S201 Slide switch (TIMER)	ASH1011

## CAPACITORS

Mark	Symbol & Description	Part No.
	C230, C231	CCDSL101J50
	C213, C214	CEJAR15M50
	C215, C216	CEJAR68M50
	C211, C212	CEJA101M10
	C201 - C204	CEJA4R7M50
	C229	CEJA470M16
	C209, C210	CKCYB331K50
	C221, C222	CKCYB391K50
	C225, C226	CQMA153J50
	C219, C220	CQMA182J50
	C205, C206	CQMA183J50
	C217, C218	CQMA392J50
	C207, C208	CQMA393J50
	C227, C228	CQMA682J50
	C223, C224	CQMA683J50

## RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR201 - VR205 Variable resistor (30kΩ)	ACU1011
	R205	RD1/4PM221J
	Other resistors	RD1/8PM□□□□J

## OTHERS

Mark	Symbol & Description	Part No.
	Remote control sensor	AXX1005



### Electrical system adjustment

Prior to the electrical system adjustment, be sure to confirm the following items.

1. The mechanical adjustment should be completed.
2. Perform cleaning of the head and the demagnetization of head with the head eraser.
3. The level during measurement is determined at  $0dBv = 1V$ .
4. The specified tape should be used for adjustment.

Since the test tape has A side and B side, use the A side with label.

STD-331B: For playback system adjustment

STD-608A: Normal blank tape

STD-620:  $CrO_2$  blank tape

STD-610: Metal blank tape

5. Prepare the following measuring instruments.  
AC millivoltmeter, low frequency oscillator, attenuator, and oscilloscope.
6. For the adjustment, perform both L and R channels unless otherwise specified.
7. Turn the Dolby NR switch to off unless otherwise specified.

8. Prior to the adjustment, be sure to perform aging of the set for several minutes. Especially prior to entering the adjustment of the recording and playback frequency characteristics, aging should be performed in REC/PLAY mode for 3 to 5 minutes.
9. The adjustment should be performed in accordance with the adjustment order. If the order is not kept, it may cause the failure of the complete adjustment which induces the inferior function of the unit.

#### Deck I

1. Head azimuth adjustment
2. Playback level adjustment

#### Deck II

1. Head azimuth adjustment
2. Playback level adjustment
3. Adjustment of recording and playback frequency characteristics
4. Adjustment of recording level

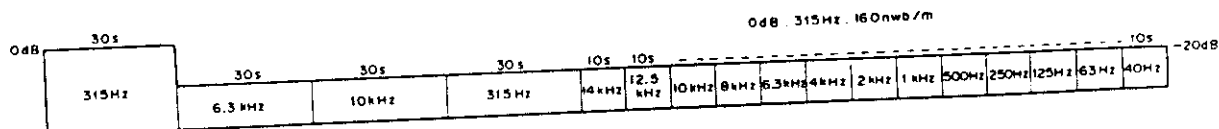


Fig. 7-2 Test tape STD-331B

**Adjustment of Deck I**

\* This deck is provided with an auto-tape-selector mechanism.

**1. Head azimuth adjustment**

\* (Note) Do not select FWD and REV with the screwdriver being kept inserted.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	PLAY	Play back 10kHz/-20dB on test tape STD-331B	Head azimuth adjusting screw (Fig. 7-4)	TP Lch TP Rch	Maximum playback signal level	After completion, lock the screw

**2. Playback level adjustment**

\* Perform this adjustment precisely since this adjustment is Dolby level setting during playback.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	PLAY	Play back 315Hz/0dB on test tape STD-331B	VR603 (L) VR604 (R)	TP Lch TP Rch	-13.5dBv	

**Adjustment of Deck II**

\* This deck is provided with an auto-tape-selector mechanism.

**1. Head azimuth adjustment**

\* (Note) Do not select FWD and REV with the screwdriver being kept inserted.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	PLAY	Play back 315Hz/0dB on test tape STD-331B	Head azimuth adjusting screw (Fig. 7-4)	TP Lch TP Rch	Maximum playback signal level	After completion, lock the screw.

**2. Playback level adjustment**

\* Perform this adjustment precisely since this adjustment is Dolby level setting during playback.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	PLAY	Play back 315Hz/0dB on test tape STD-331B	VR601 (L) VR602 (R)	TP Lch TP Rch	-13.5 dBv	

**3. Adjustment of recording and playback frequency characteristics**

\* This adjustment is performed in order to adjust the recording bias. Therefore, caution should be exercised not to worsen the distortion ratio due to under bias.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	REC	STD-608A and put into REC mode.	Bias oscillator frequency T701	Between (A) and (B) in Fig. 7-3	Confirm that the oscillation frequency 105 kHz $\pm$ 1 kHz.	When it is not within the standard, put it into the standard by adjusting T701.
2	NORM	REC	Apply the signal of 315Hz to the CD terminal and turn the CD switch on.	Input signal level	TP Lch TP Rch	-33.5 dBv	
3	NORM	REC/PLAY	Record and play back 315Hz and 10kHz on test tape STD-608	VR703 (L) VR704 (R)	TP Lch TP Rch	Repeat recording and playback, and compensate so that the playback level of 10kHz against 315Hz becomes $0 \pm 0.5$ dB.	

\* Select the test tape, tape selector, and Dolby NR switch and satisfy the frequency characteristic zone as shown in Figs. 7-5 and 7-8.

**4. Recording level adjustment**

\* Set the graphic equalizer and balance volume to the center and the mike mixing volume to the source side.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	REC	Apply the signal of 315Hz to the CD terminal and turn the CD switch on.	Input signal level	TP Lch TP Rch	-13.5dBv	
2	NORM	REC/PLAY	Record and play back 315Hz to the test tape STD-608A.	VR701 (L) VR702 (R)	TP Lch TP Rch	Repeat recording and playback, and compensate so that the playback level of 315Hz becomes -13.5 dBv	
3	CrO <sub>2</sub>	REC/PLAY	Record and play back 315Hz to the test tape STD-620.		TP Lch TP Rch	Confirm that the playback level of 315Hz becomes -13.5dBv ( $\pm 2.0$ dB)	
4	METAL	REC/PLAY	Record and play back 315Hz to the test tape STD-610.		TP Lch TP Rch	Confirm that the playback level of 315 Hz becomes -13.5dBv ( $\pm 2.0$ dB)	

Note: If it is not set in REC/PLAY mode, there will be no signal to the TP terminal.

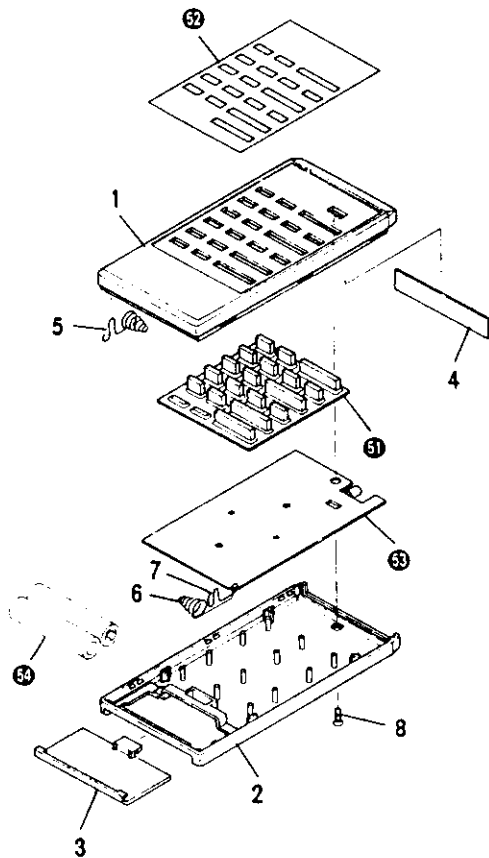
(In REC PAUSE mode, there is no signal to TP.)

# 9. REMOTE CONTROL

## 9.1 EXPLODED VIEW AND PARTS LIST

**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.
- For your parts Stock Control, the fast moving items are indicated with the marks  $\star\star$  and  $\star$ .  
 $\star\star$  **GENERALLY MOVES FASTER THAN  $\star$**   
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

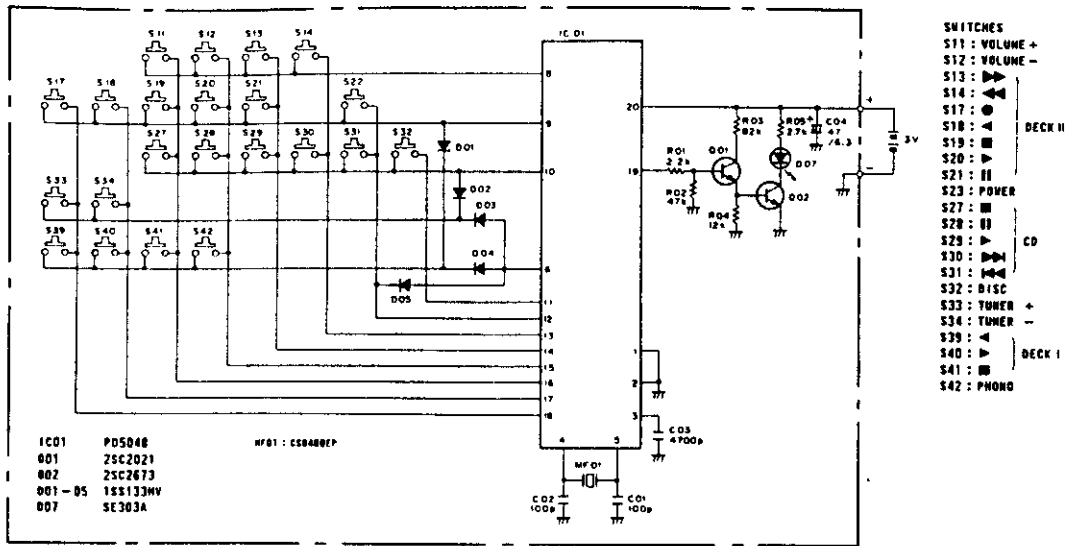


**Parts List**

Mark	No.	Part no.	Description
	1	AZA1053	Case (A)
	2	AZA1054	Case (B)
	3	AZA1055	Case (C)
	4	AZA1056	Filter
	5	AZK1042	Terminal (A)
	6	AZK1043	Terminal (B)
	7	AZK1044	Terminal (C)
	8	AZB1057	Screw
	51		Rubber switch
	52		Name plate
	53		P.C. Board
	54		Battery

# 9.2 SCHEMATIC DIAGRAM AND P.C. BOARD PATTERN

## SCHEMATIC DIAGRAM



1. RESISTORS  
Indicated in Ω,  $\frac{1}{4}W$ ,  $\frac{1}{2}W$ ,  $\pm 5\%$  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

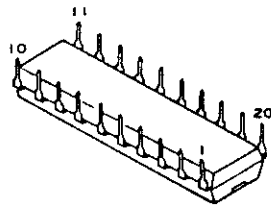
3. VOLTAGE CURRENT.  
□ DC voltage (V) at no input signal  
Value in ( ) is DC voltage at rated power.

4. OTHERS:  
→ Signal route.  
⊙ 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.

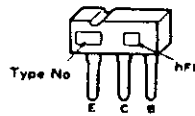
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

### External Appearance of Transistors and IC

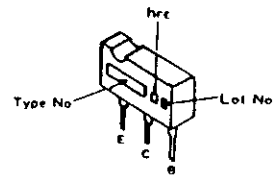
PD5048



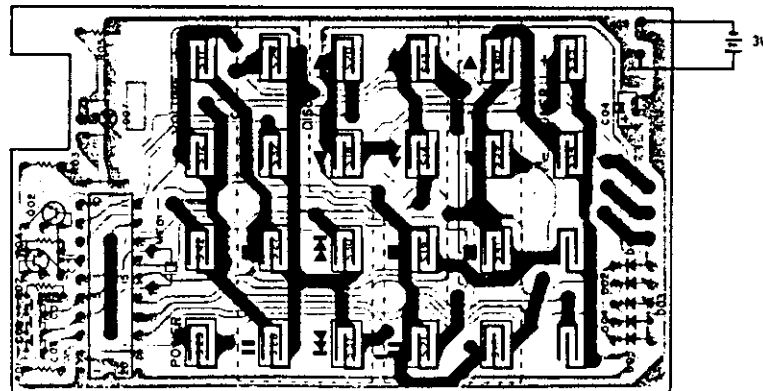
2SC2021



2SC2673



### P. C. BOARD PATTERN



### 9 3 ELECTRICAL PARTS LIST

△ ES:

- 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
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- 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.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ **GENERALLY MOVES FASTER THAN ★**
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

#### Parts List

##### SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC01	PD5048
★★	Q01	2SC2021
★★	Q02	2SC2673
★	D01-D05	1SS133HV
★	D07	SE303A

##### FILTER

Mark	Symbol & Description	Part No.
	MF01	CSB480EP

##### CAPACITORS

Mark	Symbol & Description	Part No.
	C01, C02	CCCSL101J50
	C03	CKCYB472K50
	C04	CEAS470M6R3

##### RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R01-R05	RD1/8PM □ □ □ J