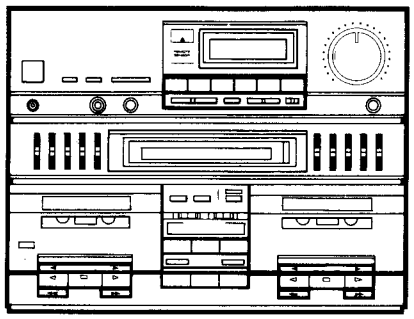
Service Manual

PIONEER®
The future of sound and vision.



ORDER NO.
ARP1484

STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

DC-Z91

DC−Z91 HAS FOUR VERSIONS :

TYPE	Power requirement	Export destination
HE	AC220V, 240V (switchable) *	European continent
HB	AC220V, 240V (switchable) *	United Kingdom
SD	AC110V, 120V−127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and general market
HEZ	AC220V, 240V (switchable) *	West Germany

*Change the position of the fuse on the power supply assembly.

- **This manual is applicable to the HE, HB, and SD types.**
- **For the HB and SD types, refer to pages 64−66.**
- **For the HEZ type, refer to the additional service manual (ARP1485).**
- **Ce manuel pour le service comprend les explications en français de réglage.**
- **Este manual de servicio trata del método ajuste escrito en español.**

CONTENTS

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1. SPECIFICATIONS

Cassette tape deck amplifier: DC-Z91

AMPLIFIER SECTION

Continuous Power Output
- 1 kHz (DIN) ..... 60W + 60W (T.H.D. 1% 8 ohms)
- 1 kHz (DIN music power) ..... 90W + 90W (T.H.D. 1% 8 ohms)

Graphic equalizer frequency band ..... 100 Hz, 330 Hz, 1 kHz, 3,3 kHz, 10 kHz, ± 7 dB

Hum and Noise (IHF, short-circuited, A network)
- PHONO ..... 72 dB

Hum and Noise (DIN continuous Power/50 mW)
- PHONO ..... 68 dB/60 dB

Total Harmonic Distortion
- (40 Hz to 20,000 Hz, 30W, 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
  - Cr O_2 ..... 35 Hz to 15,000 Hz ± 6 dB
  - Metal tape ..... 35 Hz to 16,000 Hz ± 6 dB

Signal-to-noise Ratio
- Dolby NR OFF ..... 56 dB

Noise Reduction Effect
- Dolby B type NR ON ..... More than 10 dB (at 5 kHz)

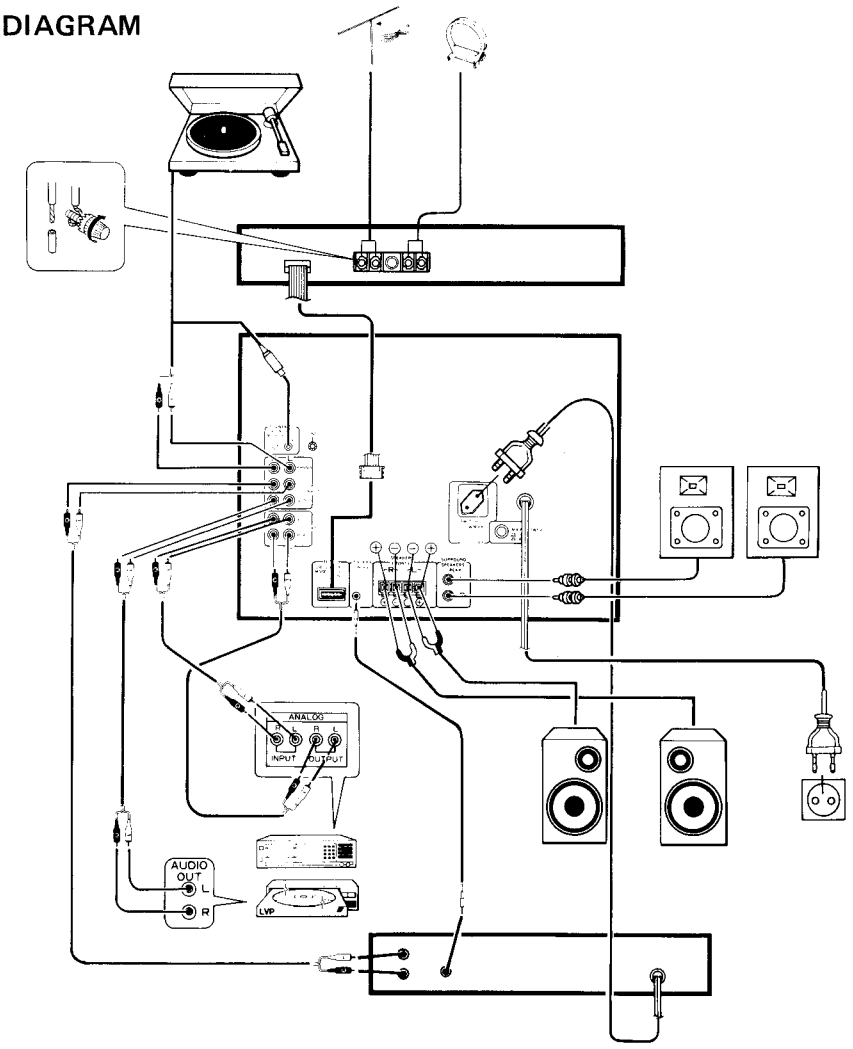
Furnished Parts

Operating Instructions 1
Remote control unit 1
Dry cell batteries 2

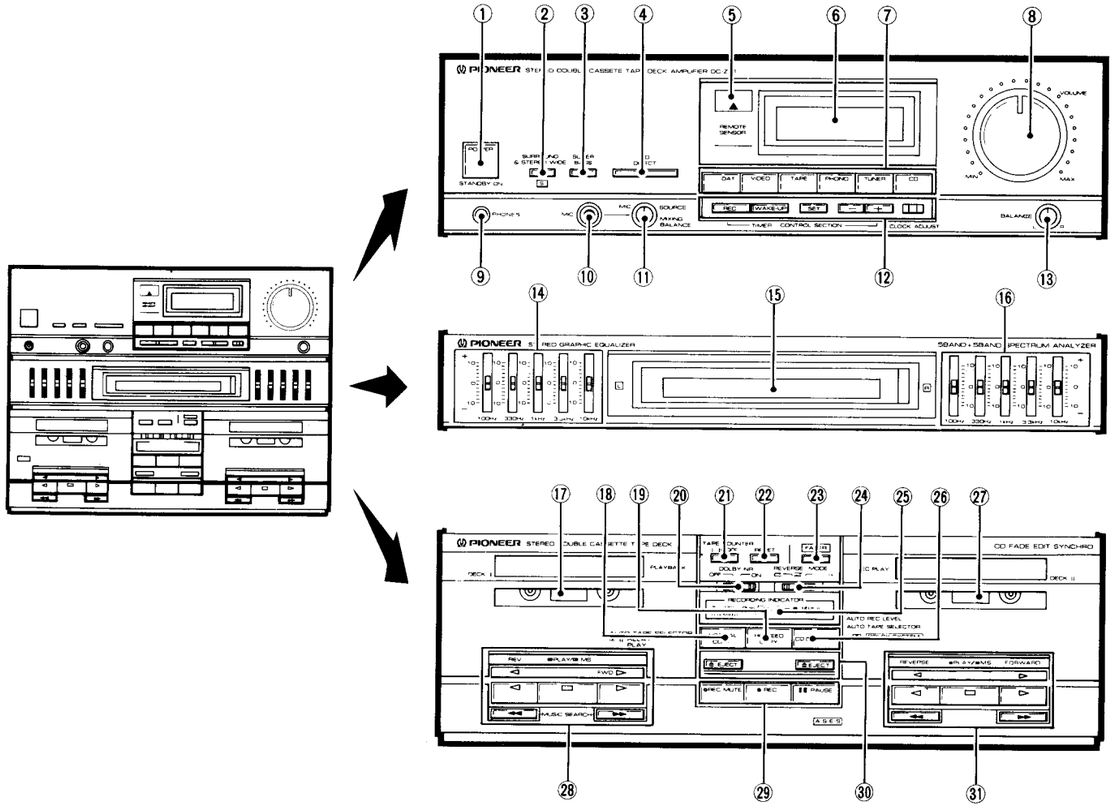
Miscellaneous

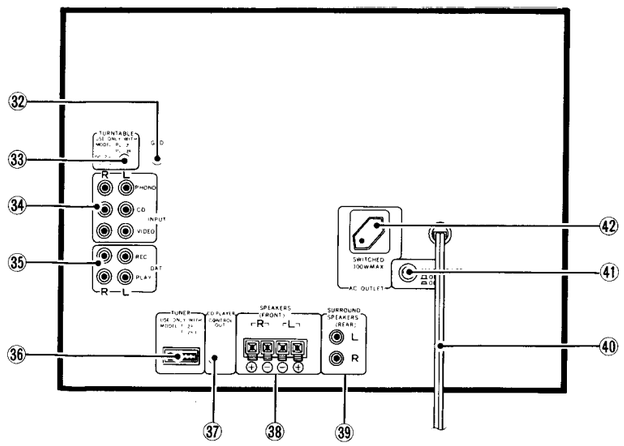
Power requirements ..... a.c. 220 Volts ~, 50/60 Hz
Power Consumption ..... 480 W
Dimensions ..... 360 (W) x 271 (H) x 332 (D) mm
Weight (without package) ..... 10 kg

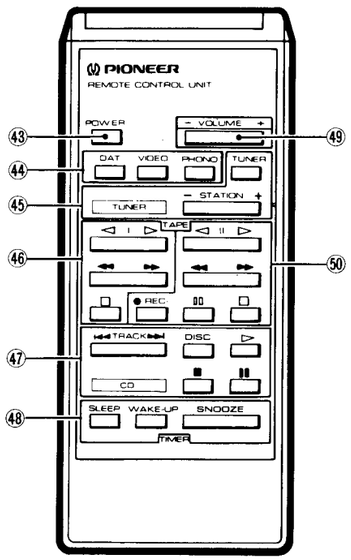
• CONNECTION DIAGRAM



2. PANEL FACILITIES







Cassette deck amplifier DC-Z91

- This unit is provided with an automatic tape selector function.
- Tapes can be played back on deck I; tapes can be played back and recorded on deck II.
- Sound can be recorded with the quality which has been adjusted by the graphic equalizer.

Amplifier section

① POWER STANDBY/ON switch
When this switch is pressed power is supplied to the unit. Press the switch again to turn power standby.

② SURROUND & STEREO WIDE switch/indicator
When surround speaker systems are connected to the SURROUND SPEAKERS jacks at the rear:
By turning this switch ON, you can enjoy surround reproduction.
When surround speaker systems are not connected: By turning this switch ON, you can enjoy STEREO WIDE reproduction with greater left-right spread.

NOTE:
In the case of a monaural source, a SURROUND/STEREO WIDE effect cannot be obtained.

③ SUPER BASS switch
Press this switch to further emphasize the low bass.

④ CD DIRECT switch
Press this switch to listen to the CD without passing the signals through the sound quality adjustment circuit.

⑤ REMOTE SENSOR window

⑥ OPERATING INDICATOR
This displays the various operating modes and the time.

⑦ FUNCTION switches
[DAT]
Press when listening to a Digital Audio Tape deck connected to the DAT jacks.
[VIDEO]
Press when listening to a stereo component connected to the VIDEO jacks.
[TAPE]
Press when listening to a cassette tape.
[PHONO]
Press when playing records on a turntable connected to the PHONO jacks.
[TUNER]
Press when listening to a radio broadcast.
[CD]
Press when listening to a CD player connected to the CD jacks.

⑧ VOLUME control

⑨ Headphone jack (PHONES)
For miniature stereo phone plug.

⑩ MIC jack
This is a standard jack for connecting the microphone.

⑪ MIXING control
This is used to adjust the proportion of the microphone volume and volume of the other sound source for mixing.

⑫ TIMER CONTROL FUNCTION switches
Use these switches for setting the times for timer playback and recording.
[REC]
Used for setting time for timer recording.
[WAKE UP]
Used for setting time for timer playback.
[SET]
Used for continuing on to next operation when setting the time or timer.
[–, +]
Used for decreasing (–) or increasing (+) the values when setting the time or timer.
[CLOCK ADJ]
Used for setting the current time.

⑬ BALANCE control
Usually set this control to the central position. If turned counterclockwise, the volume of the right channel will decrease.
If turned clockwise, the volume of the left channel will decrease.

Graphic Equalizer section

⑭, ⑯ Graphic equalizer controls (GRAPHIC EQUALIZER)
Fine adjustments in sound quality are possible using the 5 controls on the graphic equalizer. The controls on the left side are for the left channel, those on the right side for the right channel.

⑮ SPECTRUM ANALYZER

Cassette Tape Deck Section

⑰ Cassette door (Deck I)

⑱ NORMAL COPY switch

Permits you to listen to playback normally during dubbing (normal speed copying).

⑲ HI-SPEED COPY switch

High speed dubbing
(double-speed, half-time copying).

⑳ DOLBY NR switch

Set this switch to the ON position to activate the noise reduction system.

- Tapes recorded using Dolby noise reduction should always be played back with the noise reduction system on. Sound quality will be adversely affected if they are played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby NR system on.
- It is recommended that tapes recorded using Dolby B NR be so marked on the label. This will help to prevent incorrect setting of the noise reduction switch during playback.

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

㉑ COUNTER I/II/OFF switch

Press this switch to switch the tape counter display between deck I, deck II and off (time).

㉒ RESET switch

Press this switch to reset the tape counter display to 0000.

㉓ FADER switch

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

㉔ REVERSE MODE switch

Switch position	During playback	During recording
RELAY PLAY	Deck I ⇆ Deck II	—
⇉	Single-side playback	Single-sided recording
⇄/⇉ REC	Continuous playback *	Double-sided recording

* 6 round trips

㉕ REC INDICATOR

This lights when recording, and flashes when copying a tape.

- Slow flashing..... Normal copy
- Rapid flashing..... High speed copy

㉖ CD FADE EDIT switch

Use this for synchro-copying from a CD onto a tape. The sound will fade out at the end of the tape.

㉗ Cassette door (Deck II)

㉘ Deck I Operation switches/indicators

▷ **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.
◄◄ **FAST**..... Rewind in forward mode, fast forward in reverse mode.
◁ , ▷**indicators**.... These light during playback, and flash during the music search operation.

㉙ Deck II Operation switches

○ **REC MUTE**..... For creating the blanks between tape programs.
● **REC**..... Set to recording standby mode.
▮▮ **PAUSE**..... Temporarily stops tape travel. Cancels pause mode when pressed again or press the PLAY switch.

㉚ EJECT buttons

Push to open the cassette door.

㉛ Deck II Operation switches/indicators

▷ **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 run.
►► **FAST**..... Fast forward in forward mode, rewind in reverse mode.
◄◄ **FAST**..... Rewind in forward mode, fast forward in reverse mode.
◁, ▷**indicators**.... These light during playback, and flash during the music search operation.

Rear panel

㉜ Ground terminal (GND)

Connect this to the ground terminal on the turntable (except for PL-Z91 and PL-Z81).

㉝ TURNTABLE OUTPUT jack

This jack supplies power to the PL-Z81 or PL-Z91.

㉞ INPUT jacks

PHONO: Connect the output cord on the turntable to these jacks.
CD: Connect the output cord on the compact disc player to these jacks.
VIDEO: Connect the audio output cord of the LaserVision player (Video disc player) or hi-fi VCR to these jacks.

㉟ DAT jacks

Use these jacks to connect a digital audio tape deck (DAT) or other stereo component.
REC: Connect to the analog audio input terminals of the DAT.
PLAY: Connect to the analog audio output terminals of the DAT.

㊱ TUNER jacks

Connect the F-Z91 (L) FM/AM tuner.

㊲ CD PLAYER CONTROL OUT jack

Connect this jack to the CONTROL IN jack of a CD player with 5R mark.

- This jack enables the remote control unit provided with the deck amplifier to exercise central control over the CD player. It also enables synchronized recording of CDs (for the PD-Z71 and PD-Z81M only).

㊳ 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 ohms to 16 ohms.

㊴ SURROUND SPEAKERS terminals

Connect the Surround speaker systems

NOTE:
Connect a speaker system having a nominal impedance 16 ohms.

㊵ Power cord

Connect this to the AC wall socket.

㊶ MAIN POWER switch

[ON] ▬
While this unit is in a standby status and the power cord is connected to the wall socket, the circuit of the unit will operated continuously. When not using the unit for a long period, either switch the unit OFF, or remove the power cord from the power socket.
[OFF] ▙
When the switch is OFF, the power to the unit will be cut off.

㊷ AC OUTLET (SWITCHED)

Power supplied through these outlets is turned on and off by the 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 this equipment to malfunction.

Remote control unit

㊸ POWER key

㊹ Function keys

DAT..... Sets function to DAT.
VIDEO..... Sets function to VIDEO.
PHONO..... Sets function to PHONO.

㊺ Tuner operation keys

TUNER..... Sets function to TUNER.

STATION

- Preset the stations before operating.
  + ... Stations change in order in the upward direction
  − ... Stations change in order in the downward direction.

㊻ DECK I keys

▷..... Forward play key
◁..... Reverse play key
□..... Stop key
►►..... Fast key
◄◄..... Fast key

㊼ CD keys

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

▷..... Play key
DISC..... DISC selector key (only Multi-play CD player)
■..... STOP key
▮▮..... PAUSE key
⏮ , ⏭..... TRACK search key

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

㊽ Timer operation keys

SLEEP..... This key is used to set the sleep timer. The minutes change from 90 to 60 to 30 to 00 each time the key is pressed.
WAKE UP..... This key is used to set the timer. It can be used in the same way as the WAKE UP button on the deck amplifier.
SNOOZE..... When this key is pressed after timer playback begins, playback will be interrupted momentarily then start again after approximately 5 minutes.

㊾ VOLUME up/down key

㊿ DECK II keys

▷..... Forward play key
◁..... Reverse play key
►►..... Fast key
◄◄..... Fast key
□..... Stop key
▯▯..... Pause key
●..... REC key

3. EXPLODED VIEWS AND PARTS LIST

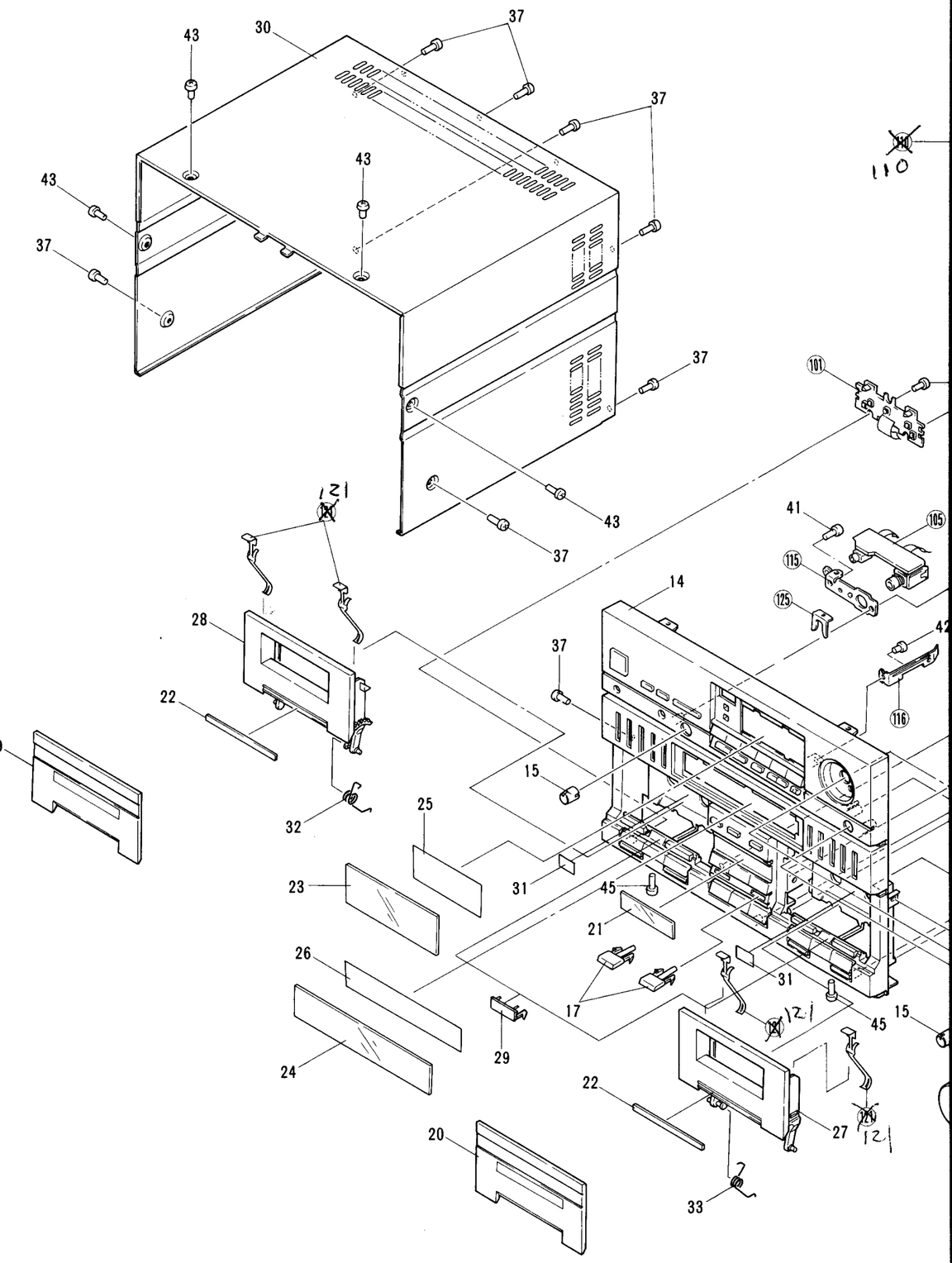
NOTES :
- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with 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.

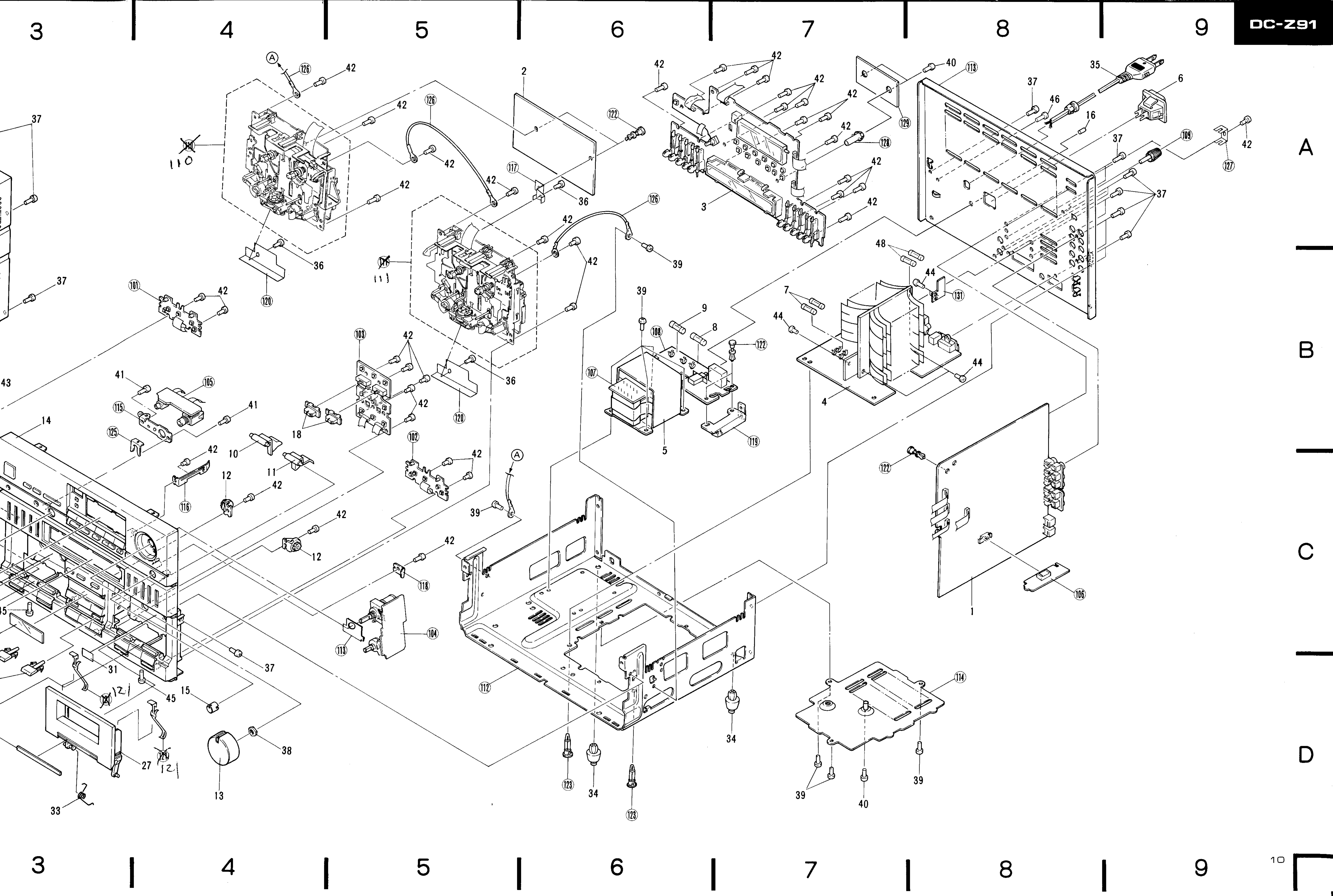
3.1 Parts List of Exterior

Mark	No.	Part No.	Description
	1	AWM1087	AF assembly
	2	AWZ1732	CONTROL assembly
	3	AWZ1742	DISPLAY assembly
⚠	4	AWZ1740	POWER assembly
⚠★	5	ATS1120	Power transformer (T1)
⚠	6	AKP1024	AC Socket (AC OUTLET)
⚠★★	7	AEK−405	FU4, FU5 Fuse (T1.6A/250V)
⚠★★	8	AEK−017	FU1 Fuse (T2A/250V)
⚠★★	9	AEK−405	FU2 Fuse (T1.6A/250V)
	10	AMR1295	Eject lever 1
	11	AMR1296	Eject lever 2
	12	AXA1005	Damper assembly
	13	AAB1053	Knob assembly (VOLUME)
	14	AMB1298	Front panel assembly
	15	AAB1050	Knob (BALANCE)
	16	AAD−015	Push knob
	17	AAD1306	Button (EJECT)
	18	AAE1080	Slide knob
	19	AAK1410	Cassette plate
	20	AAK1411	Cassette plate
	21	AAK1412	Deck panel
	22	AAK1413	Half pocket panel
	23	AAK1418	Amp. panel
	24	AAK1415	GE plate
	25	AAK1416	FL filter
	26	AAK1417	FL filter
	27	AAN1064	Half pocket
	28	AAN1063	Half pocket
	29	AEC1096	Hole cover
	30	AZN1452	Bonnet case
	31	AAX1054	Fluorescent sheet
	32	ABH1050	Spring 1
	33	ABH1051	Spring 2
	34	AEC−847	Leg assembly
⚠	35	ADG1021	AC power cord
	36	BBZ26P080FMC	Screw
	37	BBZ30P080FZK	Screw
	38	NK90FUC	Nut
	39	VBZ30P060FMC	Screw
	40	VBZ30P250FMC	Screw
	41	VPZ30P060FZK	Screw
	42	VPZ30P080FMC	Screw
	43	VPZ30P080FZK	Screw
	44	VBZ30P100FMC	Screw
	45	CBZ30P080FMC	Screw

Mark	No.	Part No.	Description
	46	BBZ26P120FMC	Screw
	47		.....
⚠★★	48	AEK−042	FU6, FU7 Fuse (T3.15A/250V)
	101		SW−1 assembly
	102		SW−2 assembly
	103		SW−3 assembly
	104		VOLUME assembly
	105		MIC, H.P assembly
	106		SUPER BASS assembly
⚠	107		CONNECT assembly
⚠	108		POWER SUPPLY assembly
	109		Terminal (GND)
	110	AWY1023	Mechanism unit 1
	111	AWY1024	Mechanism unit 2
	112		Chassis
	113		Rear panel
	114		Bottom plate
	115		Holder A
	116		Holder B
	117		Holder C
	118		Holder D
	119		PCB holder
	120		Shield plate
	121	ABK1003	Keep plate
	122		Gromet
	123		PCB holder
	124		.....
	125		Mounting plate
	126		Ground lead
	127		Holder E
	128		PCB spacer
	129		MUTE assembly
	130		.....
	131		Heat sink holder
	132		.....
	133		Shield plate

Exterior

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Mechanism unit (DECK 1)

3.2 Parts List

Mark	No.	Part
★★	1	AZE101
★★	2	AZX101
★★	3	AZS105
★★	4	AZS103
	5	AZN128
	6	AZN128
	7	AZN128
	8	AZN128
	9	AZN129
	10	~~AZN129~~
ST-A4400	11	~~AZN129~~
	12	AZN129
	13	AZN129
	14	~~AZN129~~
	15	AZB107
	16	AZB108
	17	AZN129
★★	18	AZN129
★★	19	AZN129
	20	AZN129
	21	AZN130
	22	AZN130
	23	AZN130
	24	AZN130
	25	AZB108
	26	AZN146
	27	AZN130
	28	AZN130
	29	AZN130
	30	AZN130
	31	~~AZN147~~
	32	AZN131
	33	AZN131
	34	AZN131
	35	~~AZN131~~
	36	AZN131
	37	AZB108
	38	AZN131
	39	AZN147
	40	
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	42	
	43	
	44	AZN146
	45	
	46	AZN131
	47	AZN132
	48	AZN132
	49	
	50	AZN132
	51	AZN132
	52	AZN132
	53	AZN132
	54	AZN132
	55	

3.2 Parts List of Mechanism Unit I , II

Mark	No.	Part No.	Description
★★	1	AZE1018	Hall IC
★★	2	AZX1019	Motor
★★	3	AZS1054	Leaf switch (MODE)
★★	4	AZS1034	Leaf switch (CrO_2)
	5	AZN1286	Driving arm assembly
	6	AZN1287	FW assembly A
	7	AZN1288	Cam gear
	8	AZN1289	Reel claw
	9	AZN1290	FR arm
	10	~~AZN1291~~ AZN1777	Play arm assembly L
	11	~~AZN1292~~ AZN1778	Play arm assembly R
	12	AZN1293	Gear
	13	AZN1294	H gear
	14	~~AZN1295~~ AZN1773	CUE arm
	15	AZB1079	Screw
	16	AZB1080	Screw
	17	AZN1296	Collar C
★★	18	AZN1297	Motor pully
★★	19	AZN1298	Belt
	20	AZN1299	Spring
	21	AZN1300	FR lever spring
	22	AZN1301	FWF spring
	23	AZN1302	FWR spring
	24	AZN1303	Spring
	25	AZB1088	Collar
	26	AZN1467	Cable holder
	27	AZN1306	Spring
	28	AZN1307	Spring
	29	AZN1308	Spring
	30	AZN1309	Spring
	31	~~AZN1474~~ AZN1310	Spring
	32	AZN1311	Spring
	33	AZN1312	Spring
	34	AZN1313	Spring
	35	~~AZN1314~~ AZN1785	Spring
	36	AZN1315	Spring
	37	AZB1081	Screw
	38	AZN1316	Nylon band
	39	AZN1472	P plate
	40		Jnmper wires
	41		Head lead wires
	42		Lead wire
	43		Lead wire
	44	AZN1468	Tube
	45		Chasiss
	46	AZN1319	REV reel assembly
	47	AZN1320	FWD reel assembly
	48	AZN1321	REV arm assembly
	49		FR lever assembly
	50	AZN1323	Play lever assembly
	51	AZN1324	Gear arm assembly R
	52	AZN1325	Gear arm assembly L
	53	AZN1326	Head lever assembly
	54	AZN1327	FW assembly
	55		Head chasiss
	56		Fly wheel plate
	57	AZN1328	Azimuth plate
	58		Switch arm
	59	AZN1356	Eject arm L
	60	AZN1357	Eject arm R
	61	AZN1330	Head arm
	62	AZN1331	P azimuth spring
	63	AZN1332	Cassette stopper
	64	AZN1333	Play trigger assembly
	65	AZN1334	Head base
	66	AZN1335	Cassette guide L
	67	AZN1336	Cassette guide R
	68	AZN1337	Cassette guide
	69	AZN1338	Cam gear
	70	AZN1469	Head holder
	71	AZN1340	Head gear
	72	AZN1341	Eject arm
	73	AZN1342	Select lever
	74	AZN1343	Brake
	75	AZN1344	Eject lever L
	76	AZN1345	Latch lever R (Unit I only)
		AZN1353	Latch lever L (Unit II only)
	77	AZN1346	Collar
	78	AZN1347	Collar
	79	AZN1348	Cushion
	80	AZN1349	Trigger arm
	81	AZN1350	Plunger
	82	AZS1035	Bobbin
	83	AZN1351	Solenoid plate assembly
★★	84	AZP1022	PLAY head (Unit I only)
		AZP1014	REC/PLAY/ERASE head (Unit II only)
	85	AZB1099	Screw
	86	AZN1352	Spring
	87	AZN1304	Spacer
	88	AZN1470	Tube
	89	AZB1100	Screw
	90	AZS1036	Bobbin
	91	AZB1101	Screw
	92	AZB1102	Spring washer
	93	AZN1471	Head spring (Unit I only)
★	94	1S2473	Diode (Unit II only)
	95	AZB1104	Screw
	200	AZB1084	Hex nut
	201	AZB1085	E-ring
	202	AZB1086	Screw
	203	AZB1121	Washer
	204	AZB1087	Washer
	205	AZB1089	Screw
	206	AZB1090	Washer
	207	AZB1091	Oil cut
	208	AZB1092	Oil cut
	209	AZB1093	Washer
	210	AZB1094	Washer
	211	AZB1095	Screw
	212		.....
	213	AZB1097	Washer
	214	AZB1098	Washer
	215	AZB1105	Screw
	216	AZB1106	Screw
	217	AZB1107	Washer
	218	AZB1164	Screw
★★	300	AZX1020	Motor assembly
★★	301	AZP1023	Head base assembly (Unit I only)
		AZP1016	Head base assembly (Unit II only)

ADDITIONAL

Service Manual

PIONEER®
The future of sound and vision.

ORDER NO.
ARP1485

STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

DC-Z91 HEZ

- **Refer to the service manual ARP1484, DC-Z91.**
- **This manual is applicable to the HEZ type.**

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the impotance 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.

The DC-Z91/HEZ type is the same as the DC-Z91/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		DC-Z91/ HE type	DC-Z91/ HEZ type	
	AF assembly	AWM1087	AWM1116	
	POWER assembly	AWZ1740	AWZ1922	
	MIC, H.P assembly	Non supply	Non supply	
⚠	AC power cord	ADG1021	ADG1010	
	Operating instructions (Spanish-auxiliary)	ARC1073	ARC1082	
	Operating instructions (English, German, French, Italian)	ARE1068	.....	
	Screw	.....	ABA-115	For heat sink holder

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

AF ASSEMBLY (AWM1116)

The AF assembly (AWM1116) is the same as the AF assembly (AWM1087) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWM1087 HE type	AWM1116 HEZ type	
	C201–C216	.....	CKMYB391K50	
	C217, C218	.....	CKMYB102K50	
	R221, R222	RD 1/8 PM102J	RD 1/8 PM222J	

POWER ASSEMBLY (AWZ1922)

The power assembly (AWZ1922) is the same as the power assembly (AWZ1740) with the exception of the following sections.

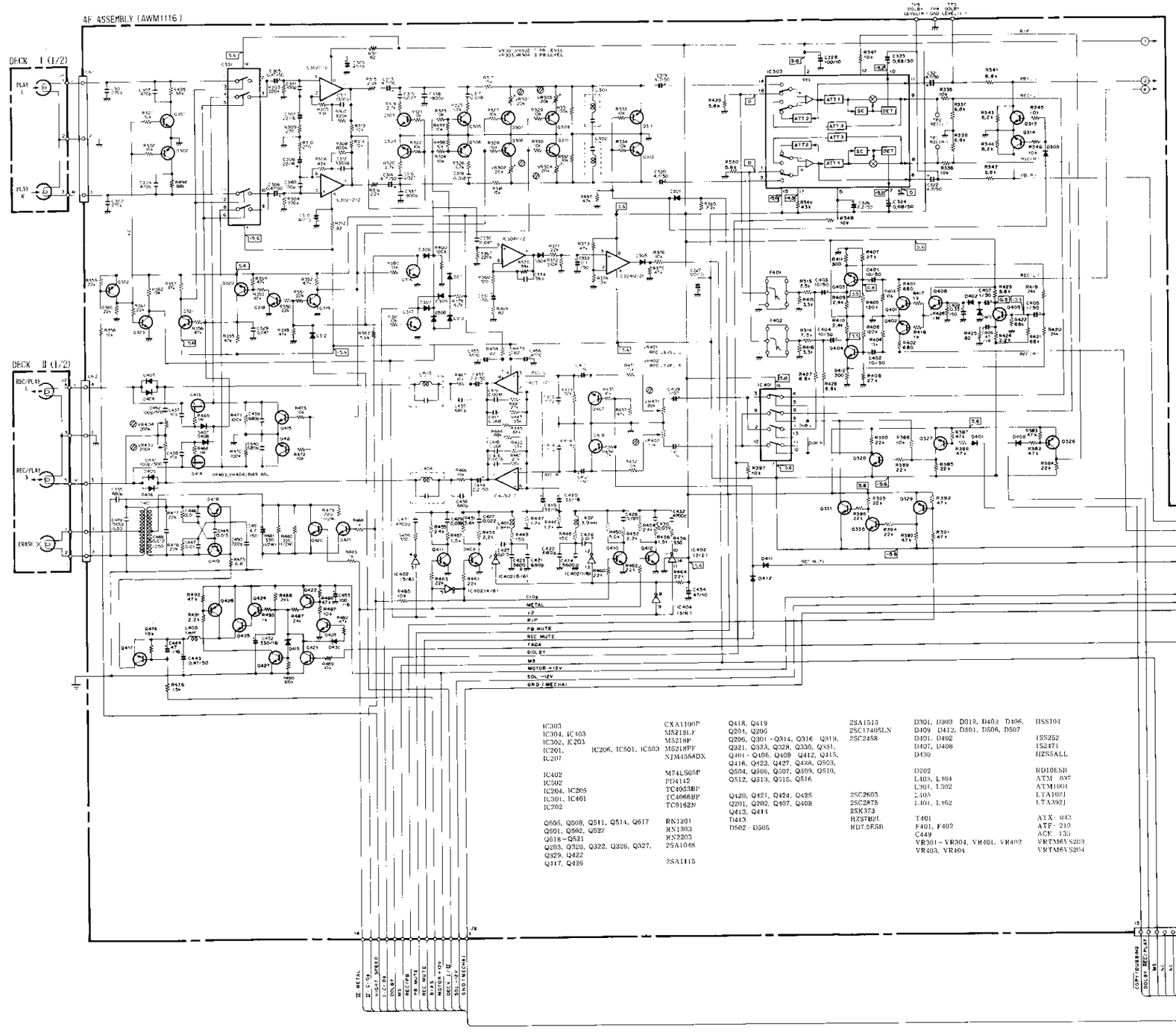
Mark	Symbol & Description	Part No.		Remarks
		AWZ1740 HE type	AWZ1922 HEZ type	
	C126, C131, C132	.....	CKDYX473M25	
	C127–C130	.....	CKMYB391K50	
	C169, C194	.....	CKDYF473Z50	
	C192, C193, C197–C199	.....	CKDYB103K50	
	C196 (0.01 μF/150V)	.....	ACG1005	
	C180	CKCYF103Z50	CKDYF473Z50	
	L101, L102 AF choke coil (1 μH)	ATH–133	.....	
	L101–L104 AF choke coil (5.6 μH)	.....	ATH–059	
	R127, R128	RD1/4PMFL100J	RD1/4PMFL101J	
	R181, R182	.....	RD1/4PMF101J	

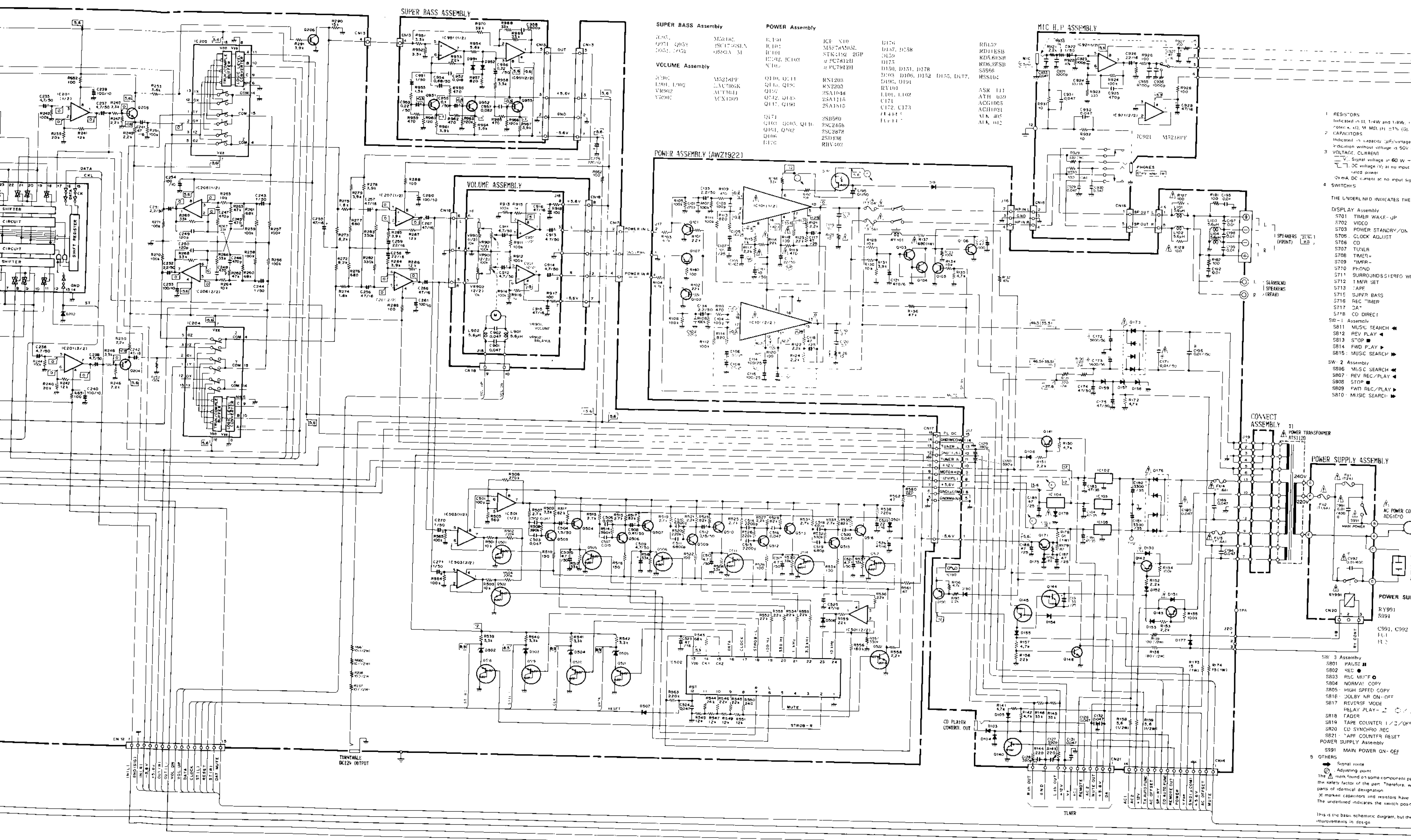
MIC, H.P ASSEMBLY

The MIC, H.P assembly (for HEZ type) is the same as the MIC, H.P assembly (for HE type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE type	HEZ type	
	C921	CKDYB681K50	CKDYB102K50	
	C929, C930	CKMYB102K50	CKDYF473Z50	
	C933	.....	CKDYF473Z50	
	C935	.....	CKDYB472K50	
	C936	.....	CKDYB102K50	
	R933	.....	RD 1/8 PM102J	

2. SCHEMATIC DIAGRAM





SUPER BASS Assembly

IC951	M5218L
Q951 - Q953	2SC1740SLN
D951, D952	0S90A M

VOLUME Assembly

IC901	M5218PF
L901, L902	LAU5R6K
VR902	ACT1041
VR901	ACX1360

POWER Assembly

IC101	ICP N10
IC102	M5278M05L
IC101	STK4192 2GP
IC102, IC103	μPC7812H
IC104	μPC7912H
Q110, Q111	RN1203
Q115, Q190	RN2203
Q107	2SA1048
Q142, Q143	2SA1215
Q117, Q198	2SA1515
Q171	2SB560
Q103 Q105, Q116	2SC2456
Q101, Q102	2SC2878
Q106	2SD438
D176	RBV402

D176	RD15?
D157, D158	RD11ESB
D159	RD5.6ESB
D175	RD6.2ESB
D150, D151, D178	S5566
D103 D106, D152 D155, D177, D190, D191	HSS104
RY101	ASR 113
L101, L102	ATH 039
C171	ACG1005
C172, C173	ACH1031
FU4 FU5	AEK 405
FU6 FU7	AEK 012

1 RESISTORS
Indicated in Ω, 1/4W and 1/8W, ±5% tolerance unless otherwise noted k: kΩ, M: MΩ, (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% tolerance

2 CAPACITORS
Indicated in capacity (μF)/voltage (V) unless otherwise noted p: pF
Indication without voltage is 50V except electrolytic capacitor

3 VOLTAGE, CURRENT
V : Signal voltage at 60 W + 60 W 8Ω output (1 kHz)
DC voltage (V) at no input signal Value in ( ) is DC voltage at rated power
mA: DC current at no input signal

4 SWITCHES

THE UNDERLINED INDICATES THE SWITCH POSITION

DISPLAY Assembly
S701 TIMER WAKE-UP
S702 VIDEO
S703 POWER STANDBY/ON
S705 CLOCK ADJUST
S706 CD
S707 TUNER
S708 TIMER+
S709 TIMER−
S710 PHONO
S711 SURROUND & STEREO WIDE
S712 TIMER SET
S713 TAPE
S715 SUPER BASS
S716 REC TIMER
S717 DAT
S718 CD DIRECT

SW-1 Assembly
S811 MUSIC SEARCH ◀◀
S812 REV PLAY ◀
S813 STOP ■
S814 FWD PLAY ▶
S815 MUSIC SEARCH ▶▶

SW-2 Assembly
S806 MUSIC SEARCH ◀◀
S807 REV REC/PLAY ◀
S808 STOP ■
S809 FWD REC/PLAY ▶
S810 MUSIC SEARCH ▶▶

POWER SUPPLY Assembly

RY991	ASR1012
S991	ASG1006 (ASG1007)
C991, C992	ACG1002
FU1	AEK 017
FU2	AEK 405

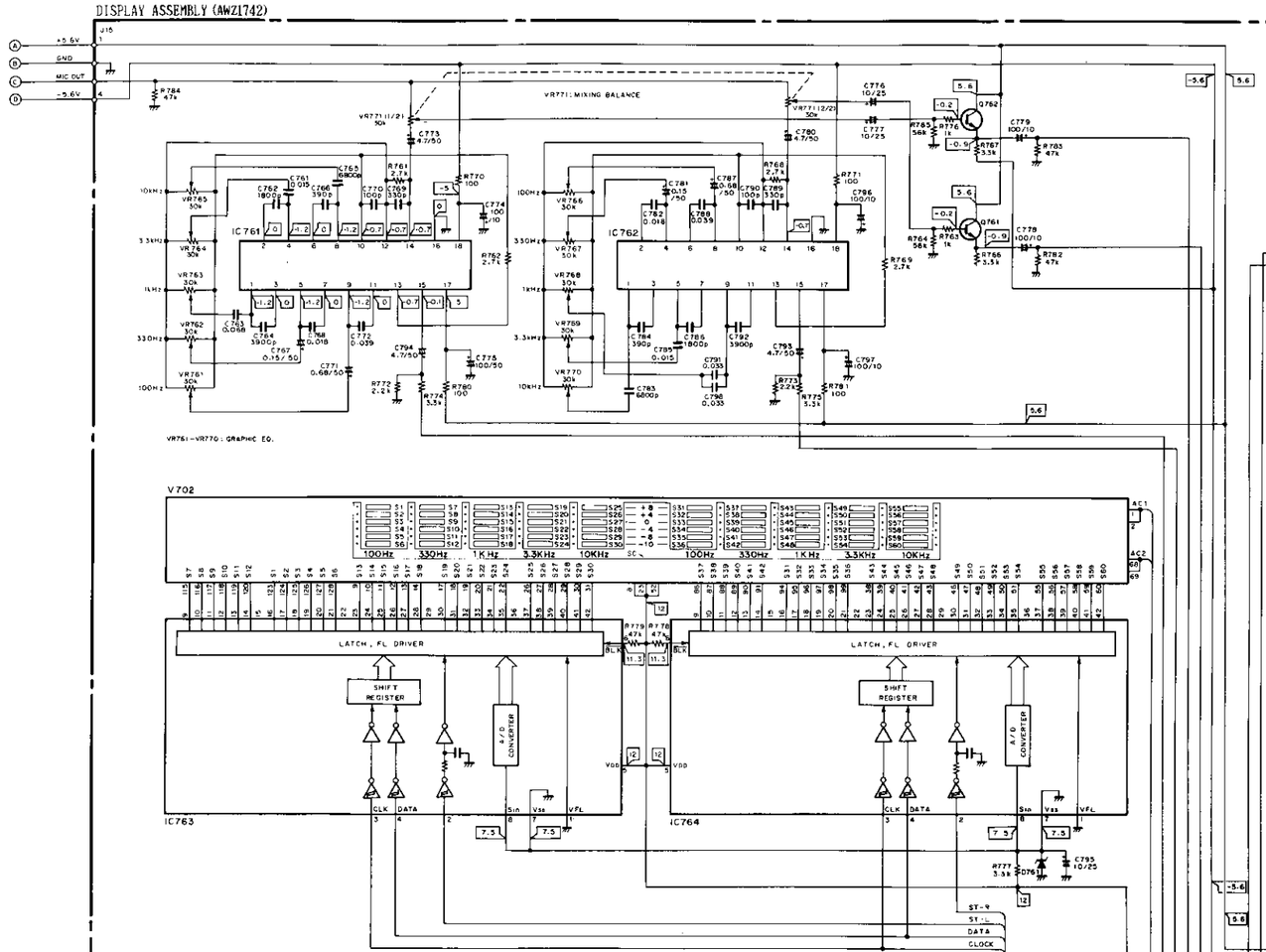
SW-3 Assembly
S801 PAUSE ▮▮
S802 REC ●
S803 REC MUTE ○
S804 NORMAL COPY
S805 HIGH SPEED COPY
S816 DOLBY NR ON-OFF
S817 REVERSE MODE
RELAY PLAY– ⇄ ⟳ / ↔ REC
S818 FADER
S819 TAPE COUNTER I/II/OFF
S820 CD SYNCHRO REC
S821 TAPE COUNTER RESET

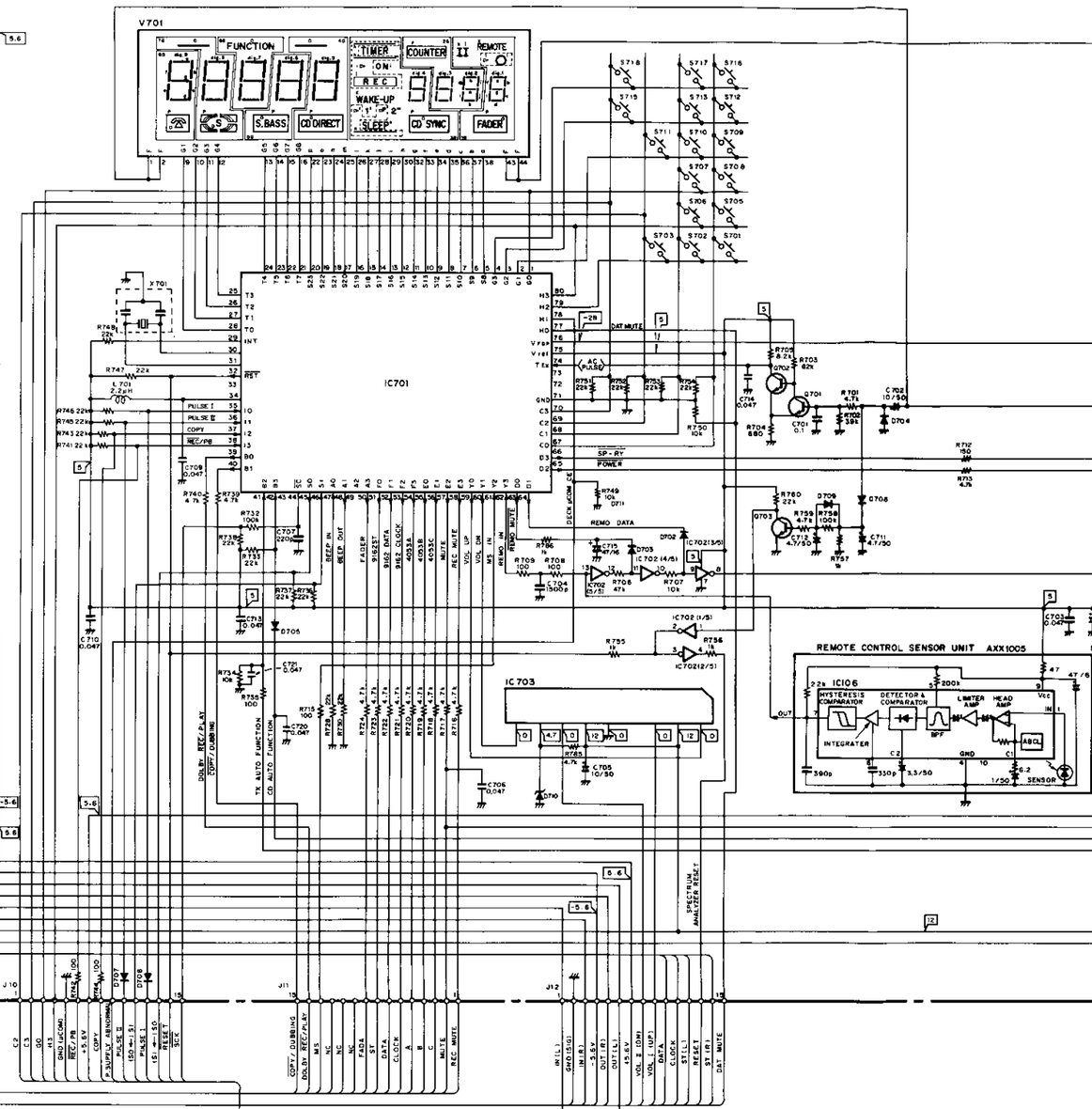
POWER SUPPLY Assembly
S991 MAIN POWER ON-OFF

5 OTHERS
➡ Signal route
⊘ Adjusting point
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.
The underlined indicates the switch position.

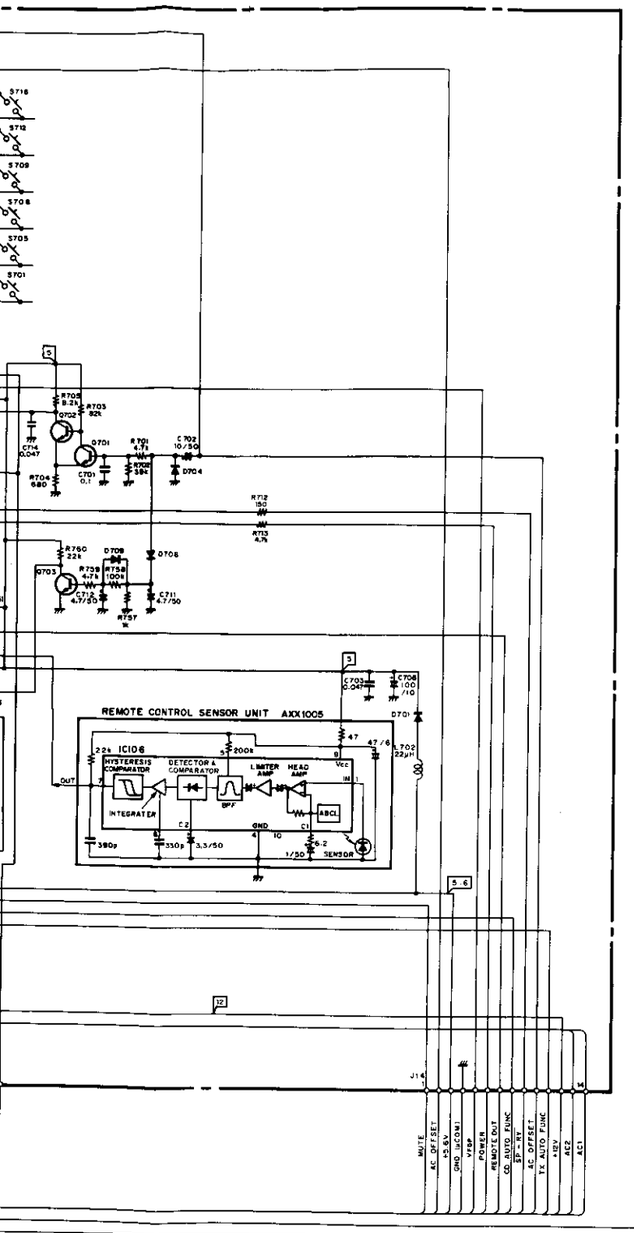
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

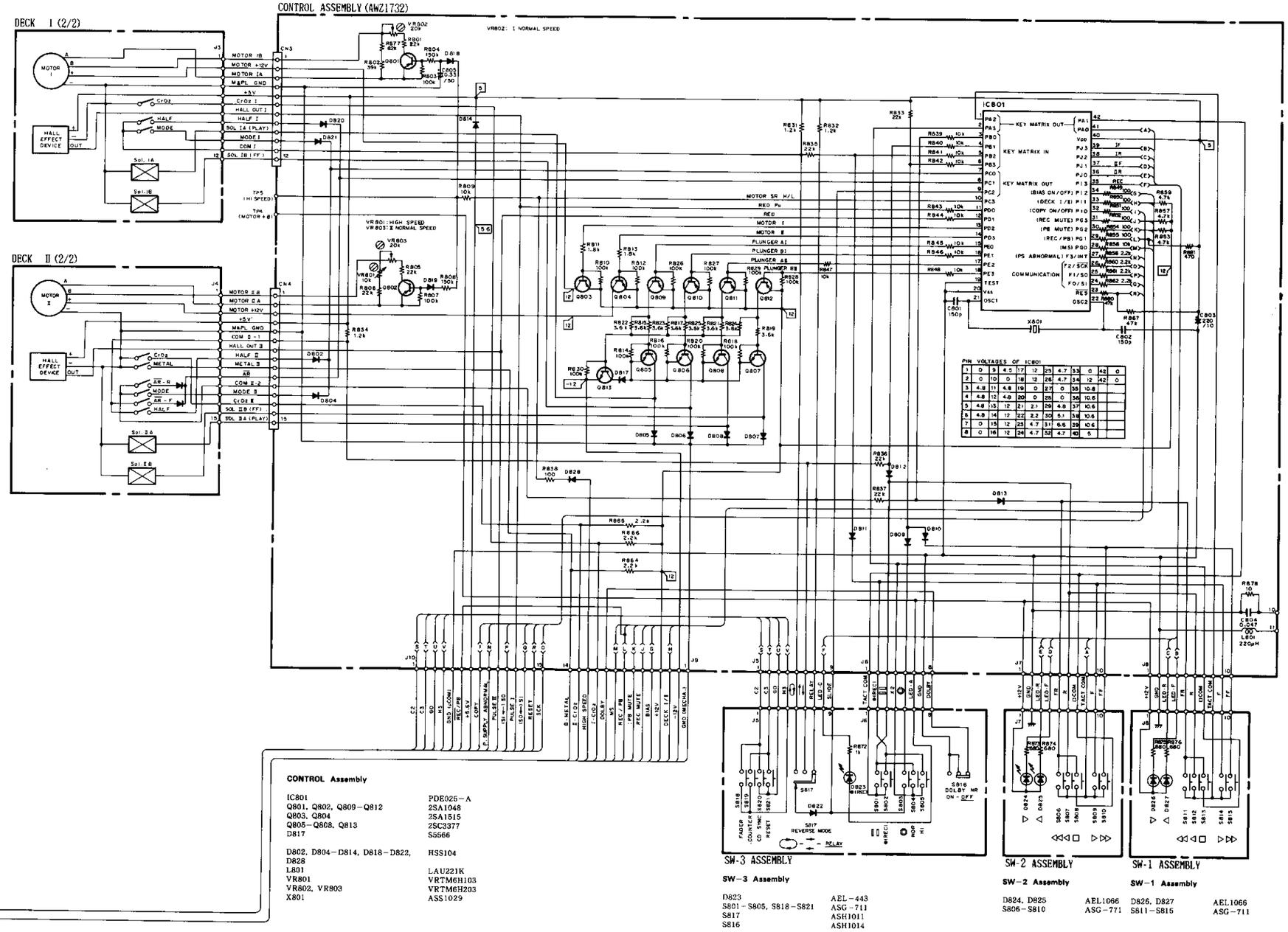
DISPLAY ASSEMBLY (AWZ1742)





IC761, IC762	BA3812L	Q704	2SA1115	D761	RD7.5ESB3	VR771	ACS1017
IC763, IC764	LC7570	Q761, Q762	2SC1740SLN	D701–D709	HSS104	VR761–VR770	ACU1021
IC701	PDG015 C	Q701–Q703	2SC2458	S701–S703,	ASG-711	V702	AAV1048
IC703	TA7291S	Q705	DTA143ES	S705–S713,		V701	AAV1049
IC702	TC4069UBP	D710	RD4.7ESB	S715–S718		X701	ASS1028
				L701	LAU2R2M	Remote control sensor unit	AXX1005
				L702	LAU220K		





CONTROL Assembly

IC801	PDE025-A
Q801, Q802, Q809-Q812	2SA1048
Q803, Q804	2SA1515
Q805-Q808, Q813	2SC3377
D817	S5566
D802, D804-D814, D818-D822, D828	HSS104
L801	LAU221K
VR801	VRTM6H103
VR802, VR803	VRTM6H203
X801	ASS1029

SW-3 Assembly

D823	AEL-443
S801-S805, S818-S821	ASG-711
S817	ASH1011
S816	ASH1014

SW-2 Assembly

D824, D825	AEL1066
S806-S810	ASG-771

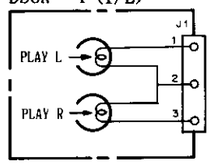
SW-1 Assembly

D826, D827	AEL1066
S811-S815	ASG-711

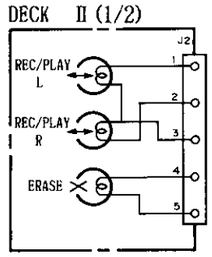
3. P.C. BOARD PTTERNS

View from component side (1/2)

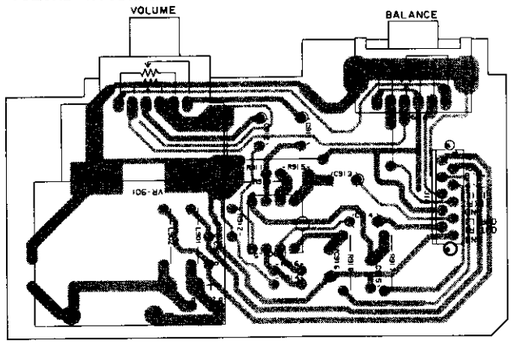
DECK I (1/2)



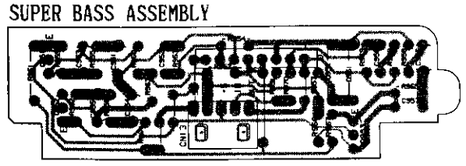
DECK II (1/2)



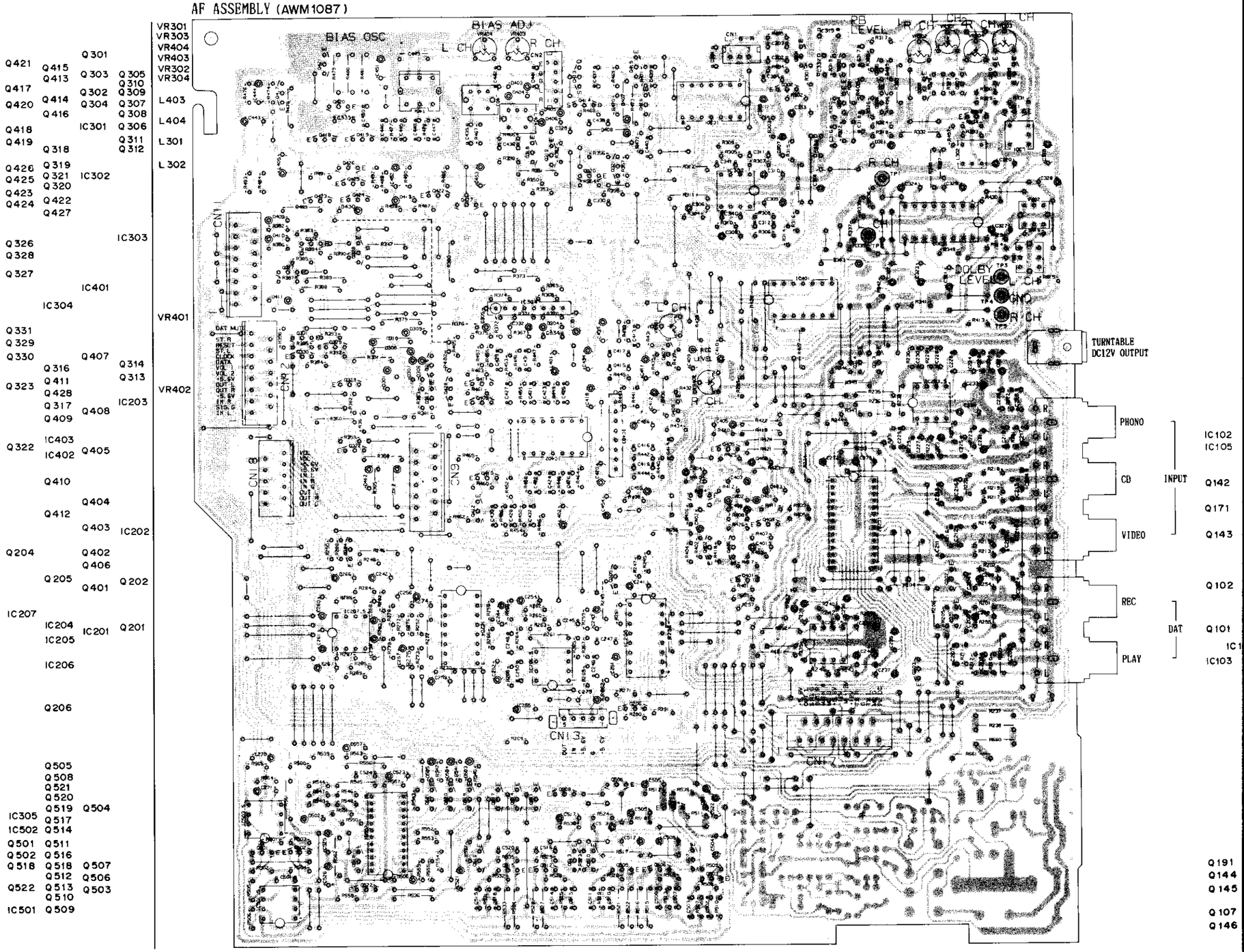
VOLUME ASSEMBLY



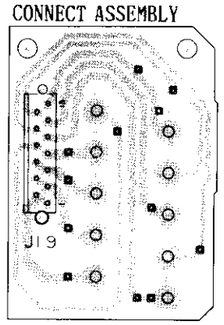
SUPER BASS ASSEMBLY



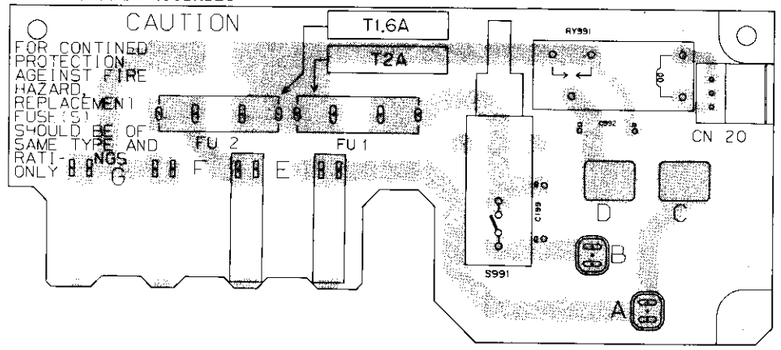
AF ASSEMBLY (AWM1087)



CONNECT ASSEMBLY

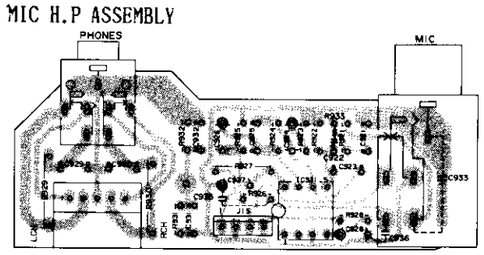


POWER SUPPLY ASSEMBLY



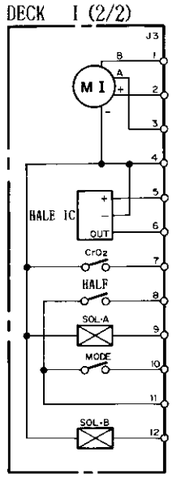
POWER ASSEMBLY (AWZ1740)

MIC H.P ASSEMBLY

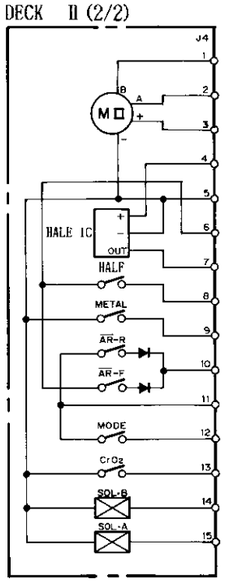


View from component side (2/2)

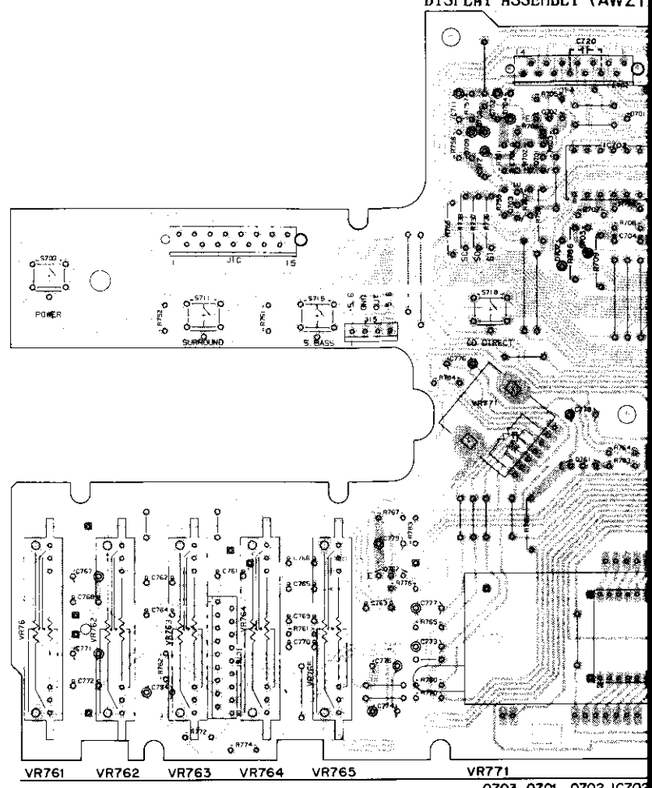
DECK I (2/2)



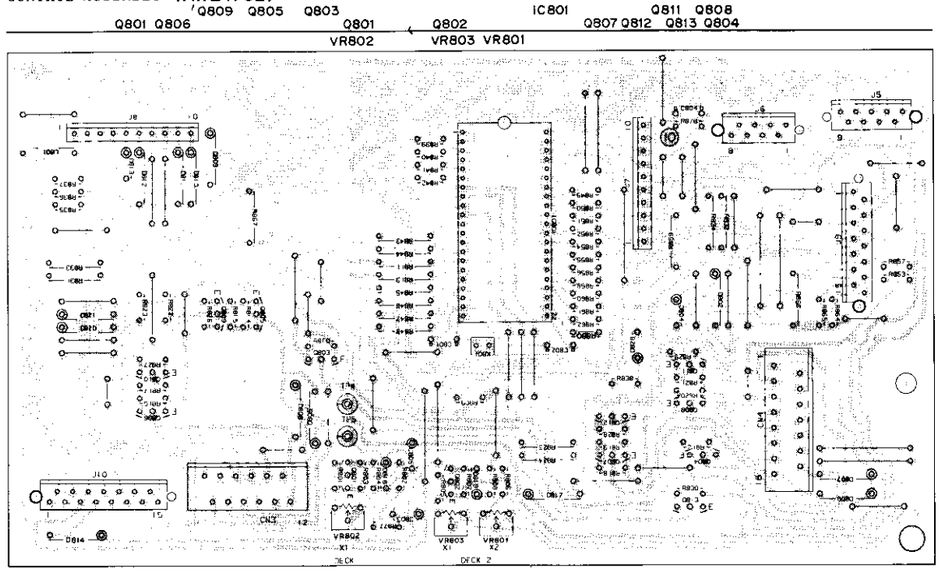
DECK II (2/2)



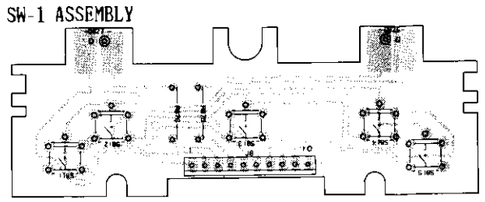
DISPLAY ASSEMBLY (AWZ1



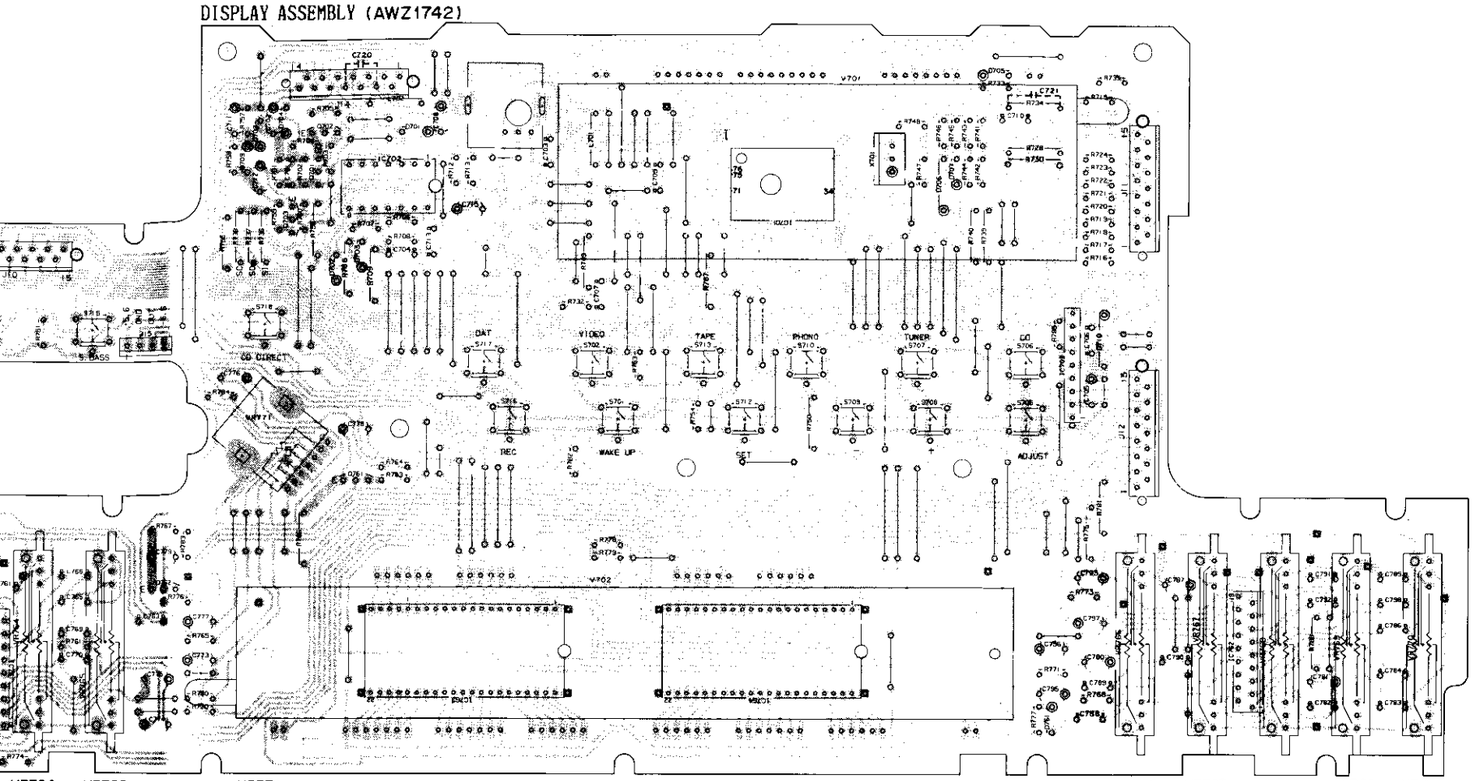
CONTROL ASSEMBLY (AWZ1732)



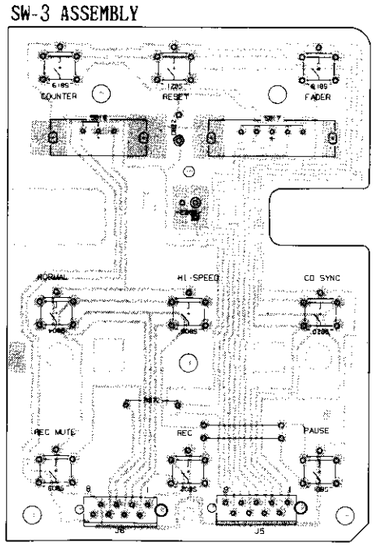
SW-1 ASSEMBLY



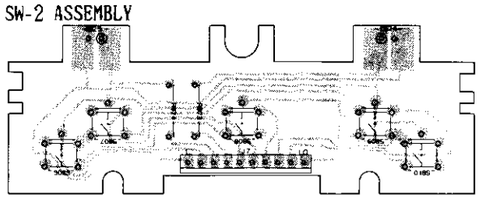
DISPLAY ASSEMBLY (AWZ1742)



SW-3 ASSEMBLY



SW-2 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.

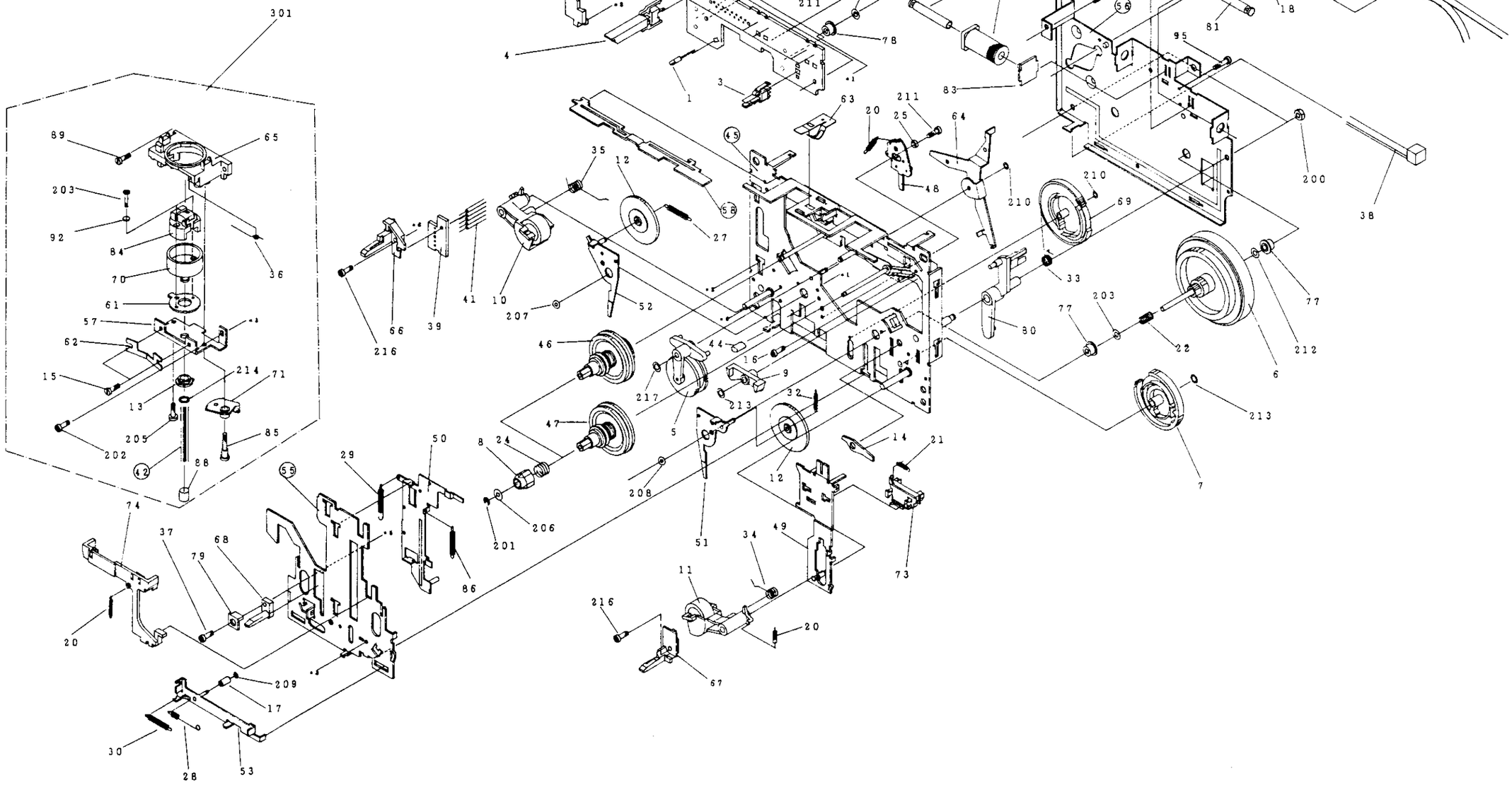
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

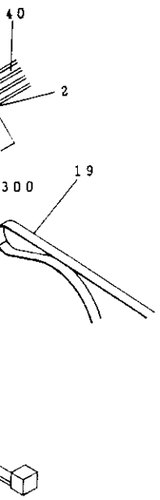
Others

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

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.

Mechanism unit (DECK II)

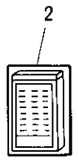


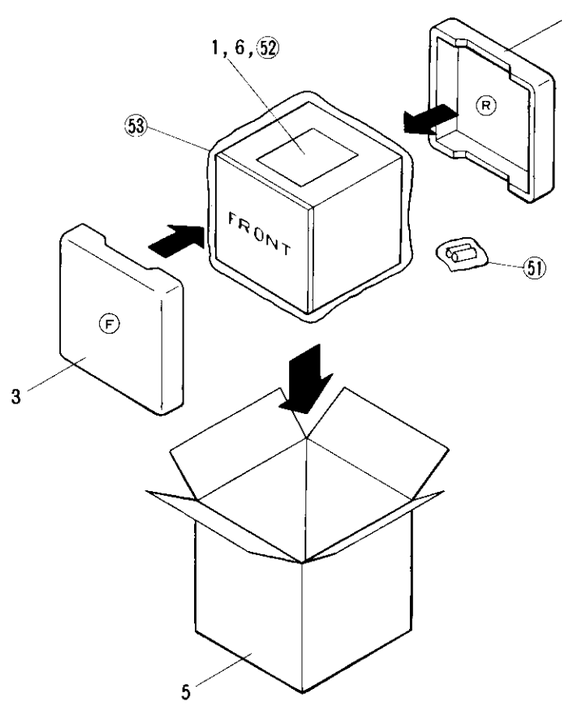


4. PACKING

Parts List

Mark	No.	Part No.	Description
A	1	ARE1068	Operating instructions (English, German, French, Italian)
	2	AXD1042	Remote control unit
	3	AHA1126	Front pad
	4	AHA1127	Rear pad
	5	AHD1349	Packing case
—	6	ARC1073	Operating instructions (Spanish – auxiliary)
	51		Batteries
	52		Warranty card
	53		Packing sheet





A

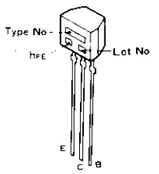
B

C

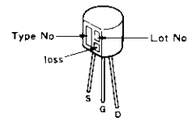
D

External appearance of transistors and ICs

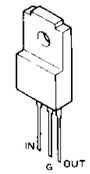
2SA1048
2SC2453
DTA143ES
DTA124ES
DTC124ES



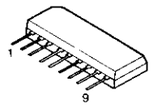
2SK373



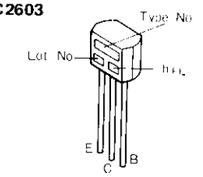
M5F78M05L



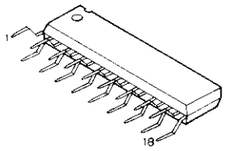
TA7291S



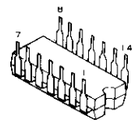
2SA1115
2SC2603



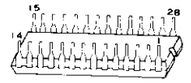
BA3812L



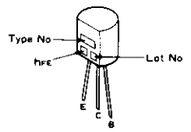
M74LS05P
TC4066BP
TC4069UBP



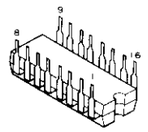
TC9162N



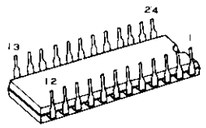
2SA1515



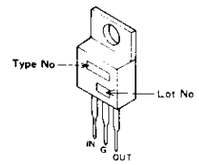
CXA1100P
TC4053BP



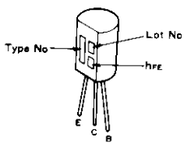
PD4142



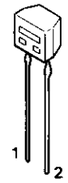
μPC7812H



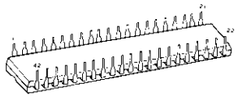
2SB560



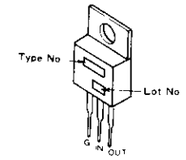
ICP-N10



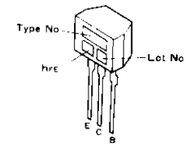
PDE025-A



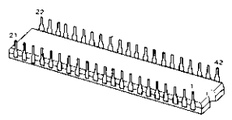
μPC7912H



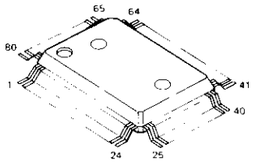
2SC1740SLN



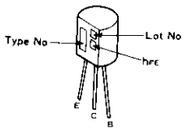
LC7570



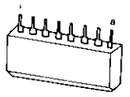
PDG015-B



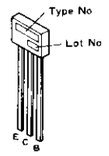
2SC2878



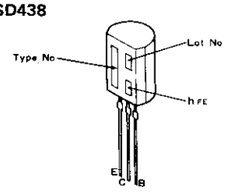
M5218L
M5218LF



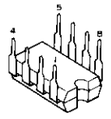
RN1201
RN1203
RN2203



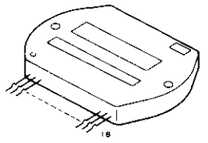
2SC3377
2SD438



M5218P
M5218PF
NJM4558DX



STK4192-2GP



5. SCHEMATIC DIAGRAM

SI-AA2055

R/P

AF ASSEMBLY (AWM1087)

DECK I (1/2)

DECK II (1/2)

IC301 : HEAD SELECT

IC302 : PLAYBACK AMP

IC303 : DOLBY

IC304 : MUSIC SCAN

IC401 : DUBBING SELECT

IC403 : REC AMP

IC201 : BUFFER

IC202 : FUNCTION SWITCH

IC203 : EQ AMP

Q301, Q302 : DECK I HIGH SPEED

Q303, Q304 : 70 μs

Q305, Q306 : ×2

Q307, Q308 : MECHANISM I

Q309, Q310 : MECHANISM II

Q311, Q312 : PLAYBACK MUTE

Q313, Q314 : PLAYBACK MUTE

Q322, Q323 : DECK II HIGH SPEED

Q316-Q321 : REC/PB SELECT

Q317, Q316 : MS

Q401-Q406 : ALC

Q407, Q408 : REC MUTE

Q327, Q328 : DUBBING ON/OFF SELECT

Q326 : DOLBY REC/PB SELECT

Q329, Q331 : REC/PB SELECT

Q410, Q412 : REC EQ SELECT

Q409, Q411 : REC EQ SELECT

IC402(4/5), (5/6), (6/6) : REC EQ SELECT

IC402(1/6), (2/6), (3/6) : REC EQ SELECT

Q421 : MECHANISM II Cr,O2 SELECT

Q420 : MECHANISM II METAL SELECT

Q428 : REC EQ SELECT

Q417 Q419:BIAS OSC

Q422-Q427:FADER

Q201-Q203 : DAT MUTE

VR401, VR404:BIAS ADJ

VR402 REC LEVEL L

VR403 REC LEVEL R

VR301, VR302:1 PB LEVEL
VR303, VR304:2 PB LEVEL

Cr,O2 METAL

EE

R/P

PB MUTE

REC MUTE

FADA

DOLBY

MS

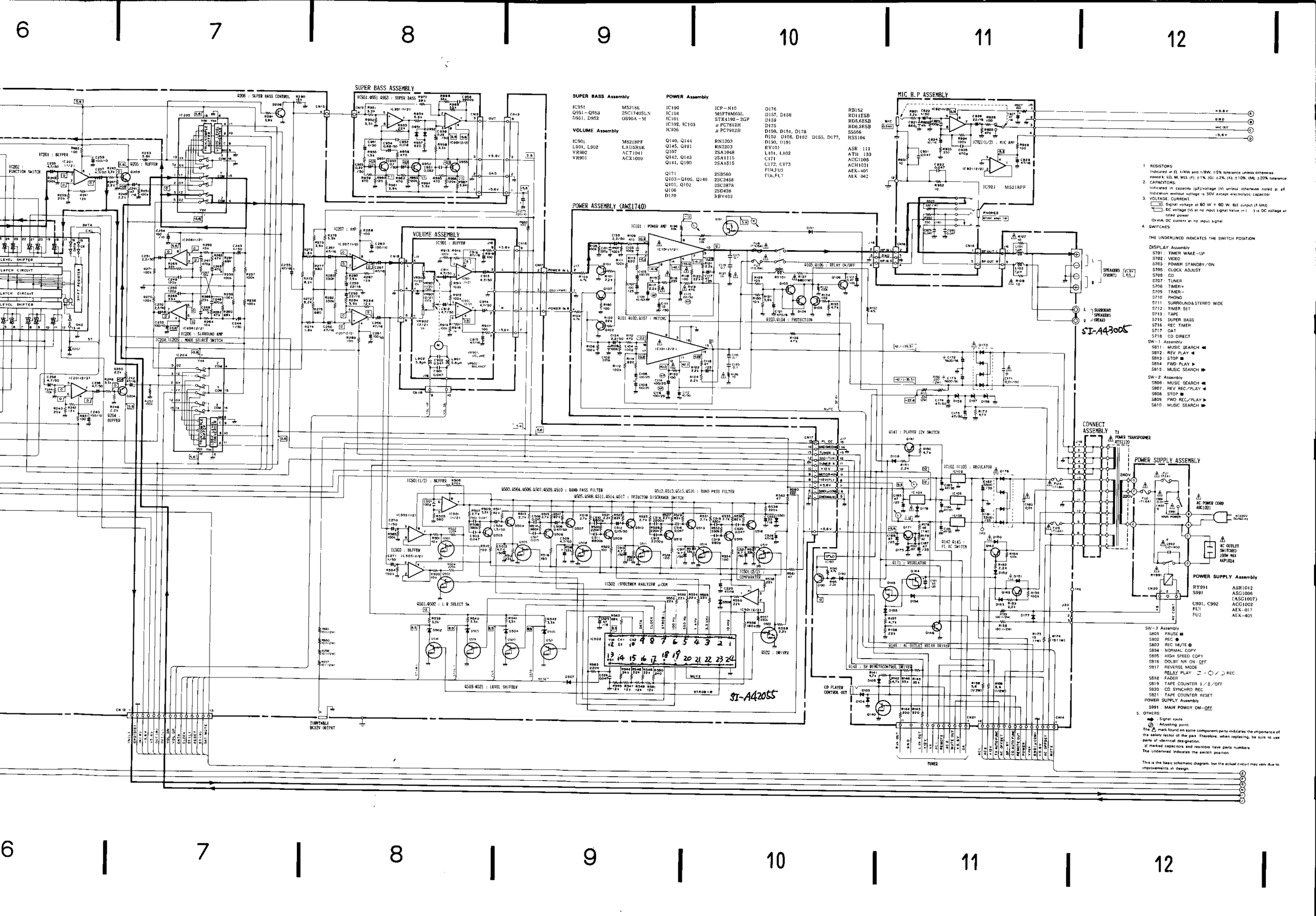
MOTOR +12V

SOL +12V

GND (MECHA)

IC303	CXA1100P	Q418, Q419	2SA1515	D301, D303 - D312, D403 D406,	HSS104
IC304, IC403	M5218L/F	Q204, Q205	2SC1740SLN	D409 - D412, D501, D506, D507	
IC302	M5218P	Q206, Q301 - Q314, Q316 - Q319,	2SC2458	D401, D402	1SS252
IC201, IC203, IC206, IC501, IC503	M5218FP	Q321, Q323, Q328, Q330, Q331,		D407, D408	1S2471
IC207	NJM4558DX	Q401 - Q406, Q409 - Q412, Q415,		D430	HZS5ALL
		Q416, Q423, Q427, Q428, Q503,			
IC402	M74LS05P	Q504, Q506, Q507, Q509, Q510,		D202	RD10ESB
IC502	PD4142	Q512, Q513, Q515, Q516		I.403, I.404	ATM - 037
IC204, IC205	TC4053BP			I.301, I.302	ATM1001
IC301, IC401	TC4066BP	Q420, Q421, Q424, Q425	2SC2603	I.405	I.TA102J
IC202	TC9162N	Q201, Q202, Q407, Q408	2SC2878	I.401, I.402	I.TA392J
		Q413, Q414	2SK373		
Q505, Q508, Q511, Q514, Q517	RN1201	D413	HZS7B2L	T401	ATX - 043
Q501, Q502, Q522	RN1203	D502 - D505	RD7.5ESB	F401, F402	ATF - 216
Q518 - Q521	RN2203			C449	ACE - 133
Q203, Q320, Q322, Q326, Q327,	2SA1048			VR301 - VR304, VR401, VR402	VRTM6VS203
Q329, Q422				VR403, VR404	VRTM6VS204
Q417, Q426	2SA1115				

DOLBY REC/PLAY



1. RESISTORS:
Indicated in Ω, 1/4W and 1/8W, ±5% tolerance unless otherwise noted k (Ω), M, M Ω, (F): ±1%, (G): ±2%, (K): ±10%, (M), ±20% tolerance
2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p: pF
Indication without voltage is 50V except electrolytic capacitor
3. VOLTAGE, CURRENT:
V Signal voltage at 60 W + 60 W, 8Ω output (1 kHz)
DC voltage (V) at no input signal Value in ( ) is DC voltage at rated power
mA: DC current at no input signal
4. SWITCHES:

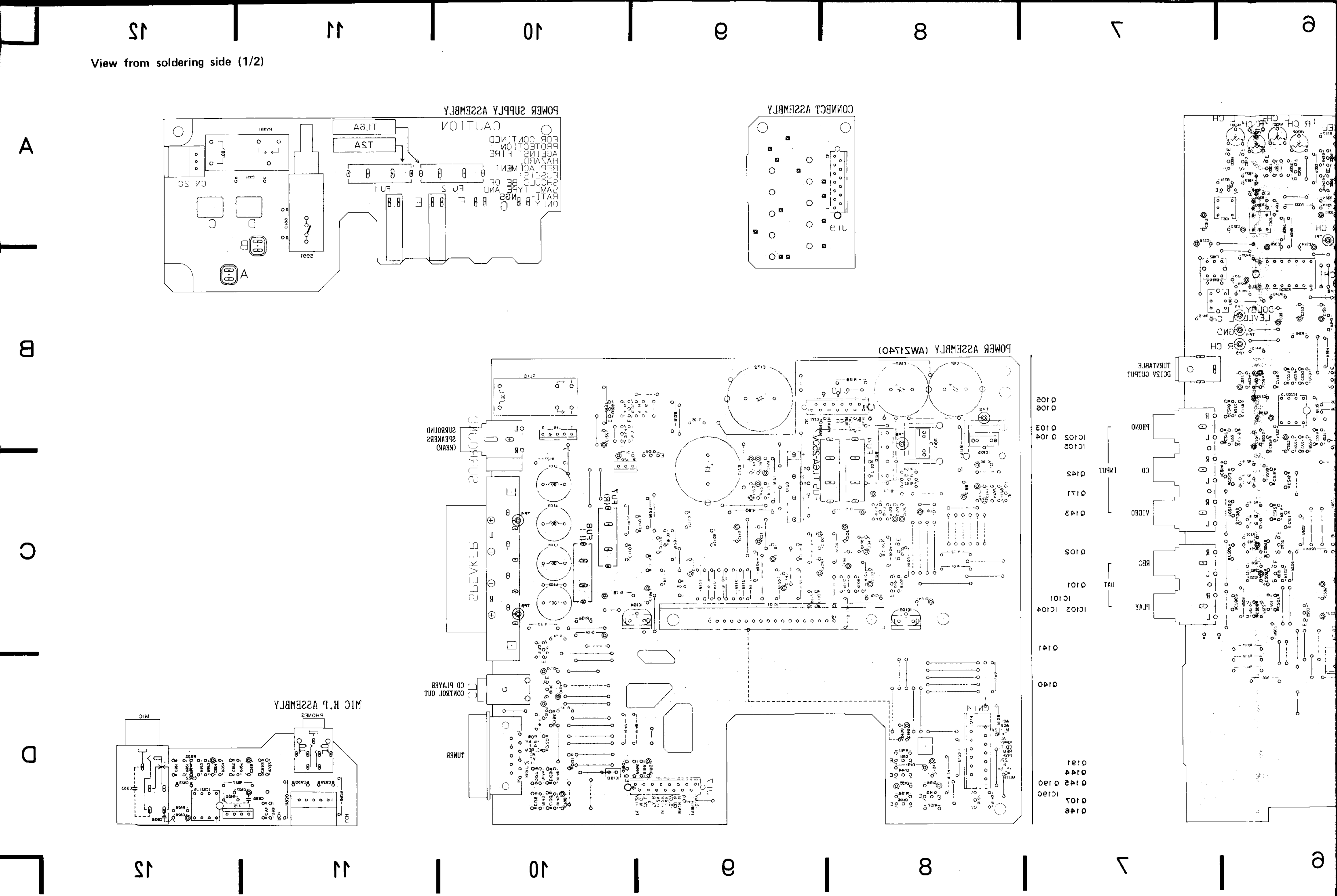
THE UNDERLINED INDICATES THE SWITCH POSITION

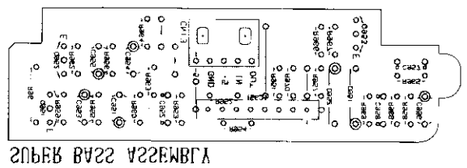
DISPLAY Assembly
S701 : TIMER WAKE – UP
S702 : VIDEO
S703 : POWER STANDBY/ON
S705 : CLOCK ADJUST
S706 : CD
S707 : TUNER
S708 : TIMER+
S709 : TIMER –
S710 : PHONO
S711 : SURROUND&STEREO WIDE
S712 : TIMER SET
S713 : TAPE
S715 : SUPER BASS
S716 : REC TIMER
S717 : DAT
S718 : CD DIRECT
SW – 1 Assembly
S811 : MUSIC SEARCH ⏮
S812 : REV PLAY ◀
S813 : STOP ■
S814 : FWD PLAY ▶
S815 : MUSIC SEARCH ⏭
SW – 2 Assembly
S806 : MUSIC SEARCH ⏮
S807 : REV REC/PLAY ◀
S808 : STOP ■
S809 : FWD REC/PLAY ▶
S810 : MUSIC SEARCH ⏭
SW – 3 Assembly
S801 PAUSE ⏸
S802 REC ●
S803 REC MUTE ⊘
S804 · NORMAL COPY
S805 · HIGH SPEED COPY
S816 · DOLBY NR ON · OFF
S817 · REVERSE MODE
RELAY PLAY · ▱ – ◯ / ◯ REC
S818 · FADER
S819 · TAPE COUNTER ⏵/⏸/OFF
S820 · CD SYNCHRO REC
S821 · TAPE COUNTER RESET
POWER SUPPLY Assembly
S991 · MAIN POWER ON–OFF

5. OTHERS:
➡ : Signal route
Ⓐ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers
The underlined indicates the switch position.

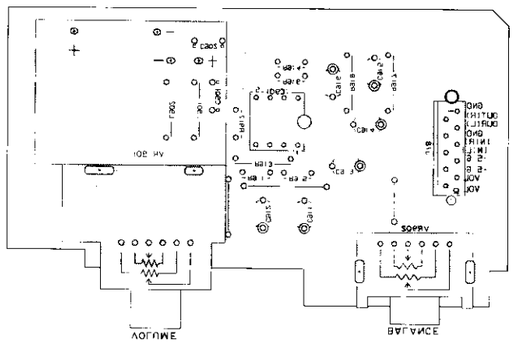
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

View from soldering side (1/2)

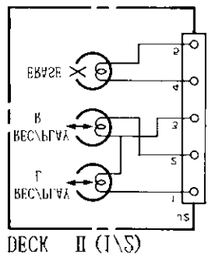




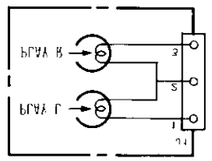
SUPER BASS ASSEMBLY



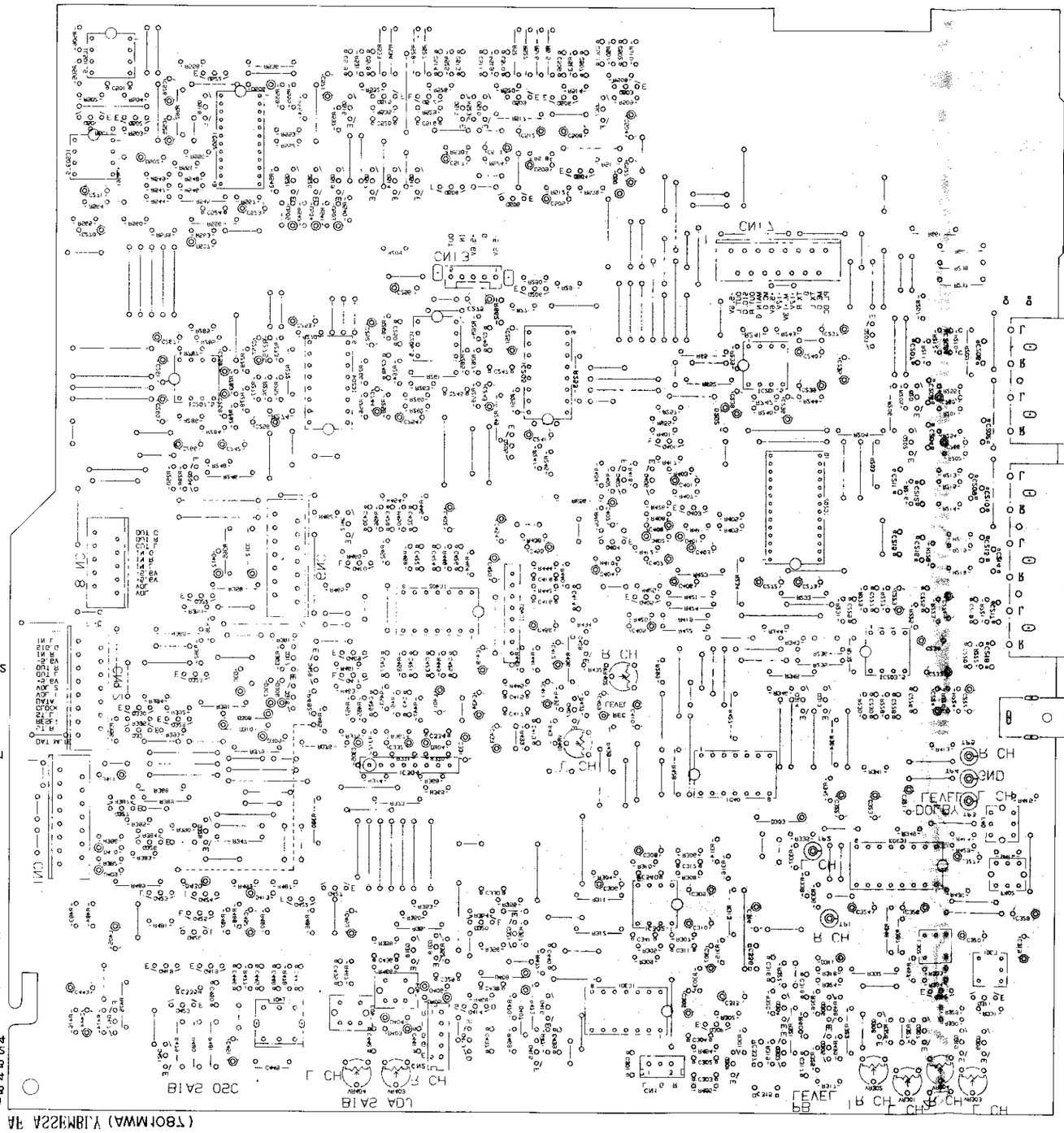
VOLUME ASSEMBLY



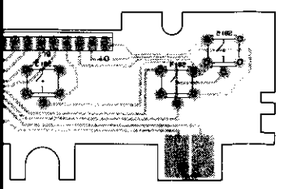
DECK II (T\S)

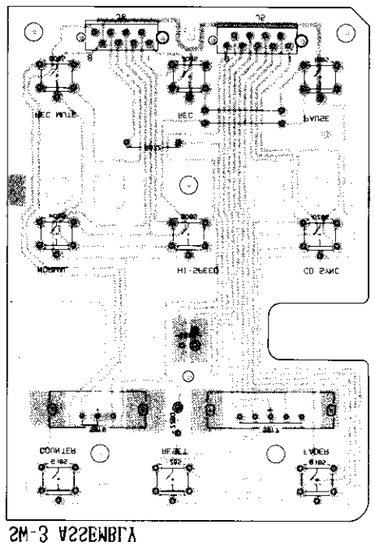


DECK I (T\S)

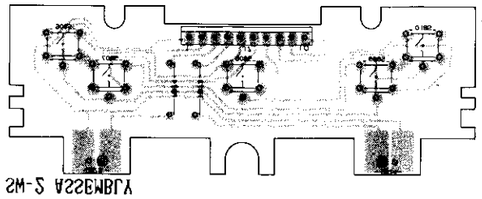


MAIN ASSEMBLY (AWM1087)





SM-S ASSEMBLY

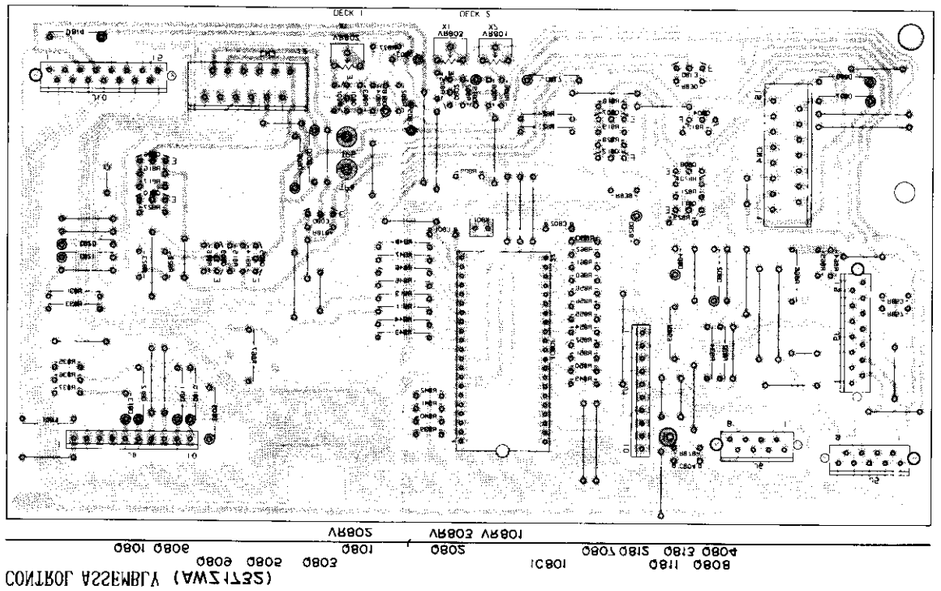


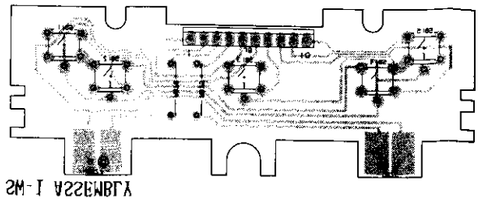
SM-E ASSEMBLY

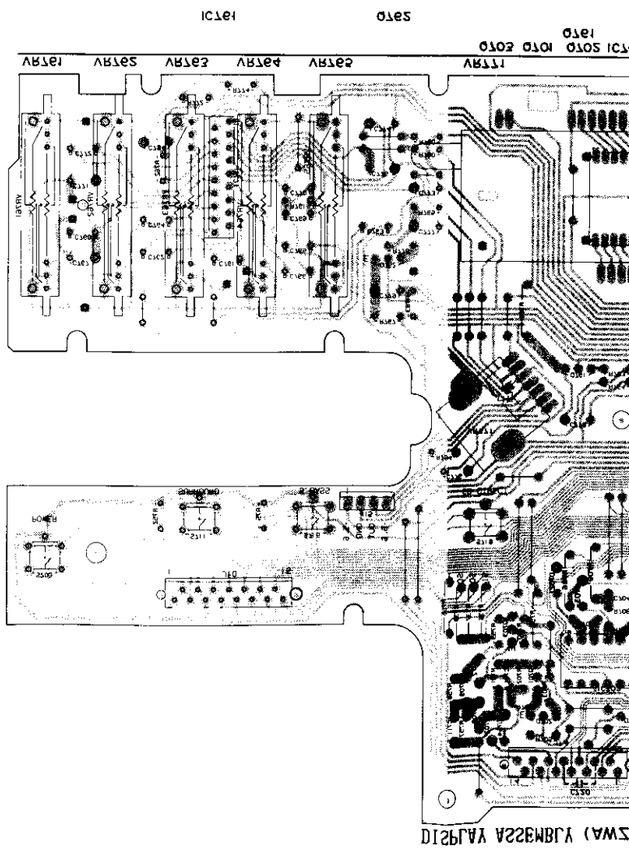
DISPLAY ASSEMBLY (SAT12WA)

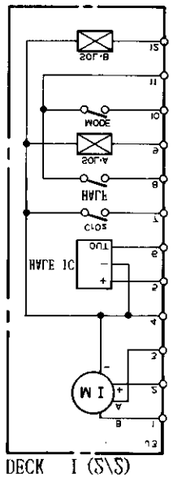
View from soldering side (2/2)

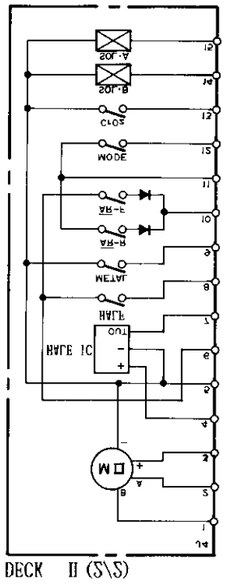
SAM/HES-DC











DISPLAY ASSEMBLY (AWZ1742)

IC761, IC762 BA3812L
IC763, IC764 LC7570
IC701 PDG015 B
IC703 TA7291S
IC702 TC4069UBP

Q704
Q761, Q762
Q701 – Q703
Q705
D710

2SA1115
2SC1740SLN
2SC2458
DTA143ES
RD4.7ESB

D761
D701 – D709
S701 – S703,
S705 S713,
S715 S718
L701
L702

RQ7.5ESB3
HSS104
ASG - 711

LAU2R2M
LAU220K

VR771
VR761 – VR770
V702
V701
X701
Remote control sensor unit

ACS1017
ACU1021
AAV1048
AAV1049
ASS1022
AXX1005

DOLBY
REC/PLAY

18 19 20 21 22 23 24

A B C D

SI-A4400 1

CONTROL ASSEMBLY (AWZ1732)

DECK I (2/2)

DECK II (2/2)

MUTE ASSEMBLY

MUTE Assembly

Q897	DTA124ES
Q898	DTC124ES
D899	1SS252

VR802: I NORMAL SPEED

Q801:DECK I HI-SPEED ON/OFF

VR801 HIGH SPEED
VR803: II NORMAL SPEED

Q802:DECK II HI SPEED ON/OFF

Q805,Q809:SOL IA DRIVER
Q806,Q810:SOL IB DRIVER
Q807,Q812:SOL IIB DRIVER
Q808,Q811:SOL IIA DRIVER
Q803:MOTOR I DRIVE
Q804:MOTOR II DRIVE

Q813:SOL SW DRIVER

IC801:MECHANISM AND DECK CONTROL

PIN VOLTAGES OF IC801:

1	0	9	4.5	17	12	25	4.7	33	0	42	0
2	0	10	0	18	12	26	4.7	34	12	42	0
3	4.8	11	4.8	19	0	27	0	35	10.6		
4	4.8	12	4.8	20	0	28	0	36	10.6		
5	4.9	13	12	21	2.1	29	4.8	37	10.6		
6	4.8	14	12	22	2.2	30	5.1	38	10.6		
7	0	15	12	23	4.7	31	6.6	39	10.6		
8	0	16	12	24	4.7	32	4.7	40	5		

REMOTE CONTROL SENSOR UNIT AXX1005

IC106

SW-3 ASSEMBLY

SW-2 ASSEMBLY

SW-1 ASSEMBLY

CONTROL Assembly

IC801	PDE025 A
Q801, Q802, Q809 - Q812	2SA1048
Q803, Q804	2SA1515
Q805 - Q808, Q813	2SC3377
D817	S5556
D802, D804 - D814, D818 - D822, D828	HSS104
L801	LAU221K
VR801	VRTM6H103
VR802, VR803	VRTM6H203
X801	ASS-039

SW-3 Assembly

D823	AEL-443
S801-S805, S818 S821	ASG-711
S817	ASH1011
S816	ASH1014

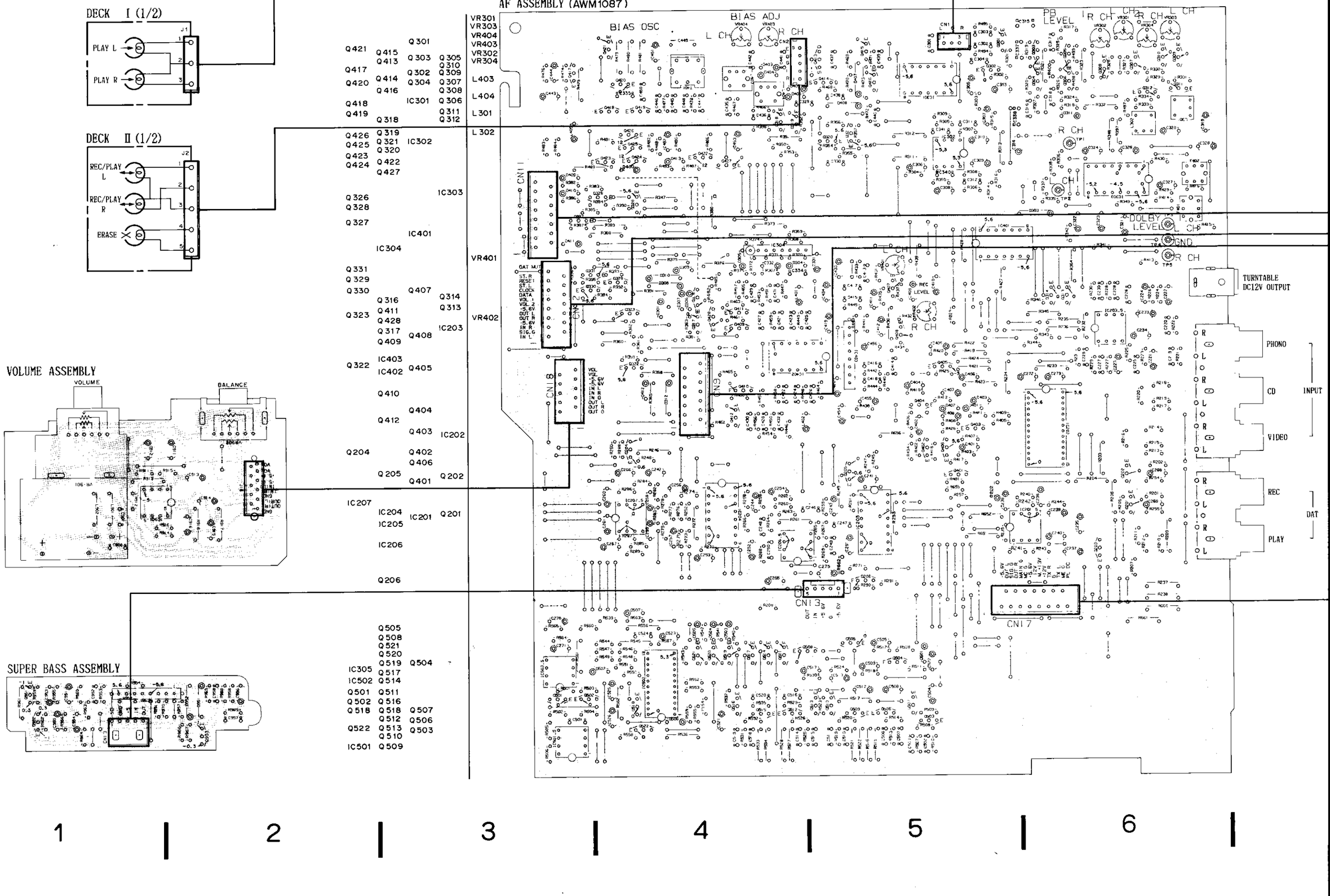
SW-2 Assembly

D824, D825	AEL1066
S806-S810	ASG-771

SW-1 Assembly

D826, D827	AEL1066
S811 S815	ASG-711

6. P.C. BOARDS CONNECTION DIAGRAM



CONNECT ASSEMBLY

POWER SUPPLY ASSEMBLY

POWER ASSEMBLY (AWZ1740)

MIC H.P ASSEMBLY

TURNTABLE
DC12V OUTPUT

PHONO
CD
VIDEO
REC
PLAY
INPUT
DAT

Q 105
Q 106
Q 103
Q 104
Q142
Q171
Q143
Q102
Q101
IC102
IC105
IC101
IC103
IC104
Q141
Q140
Q191
Q144
Q145
Q190
IC190
Q107
Q146

DOLBY LEVEL
L CH
GND
R CH

POWER TRANSFORMER

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSE(S) SHOULD BE OF SAME TYPE AND RATINGS ONLY
T1.6A
T2A
FU 2
FU1

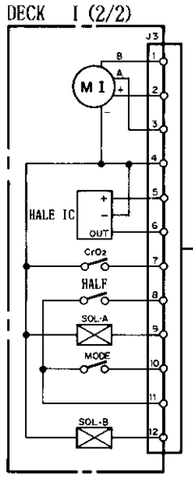
AC OUTLET
SWITCHED 100W MAX
AC POWER CORD
AC220V
50/60Hz

SURROUND SPEAKERS (REAR)
SPEAKFR
CD PLAYER CONTROL OUT
TUNER

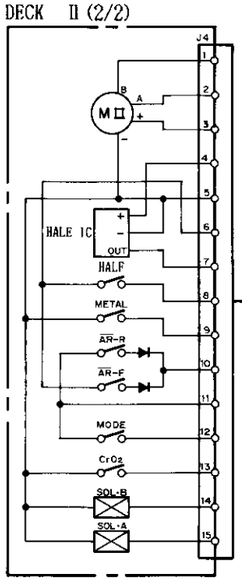
PHONES
MIC

13 14 15 16 17 18 19

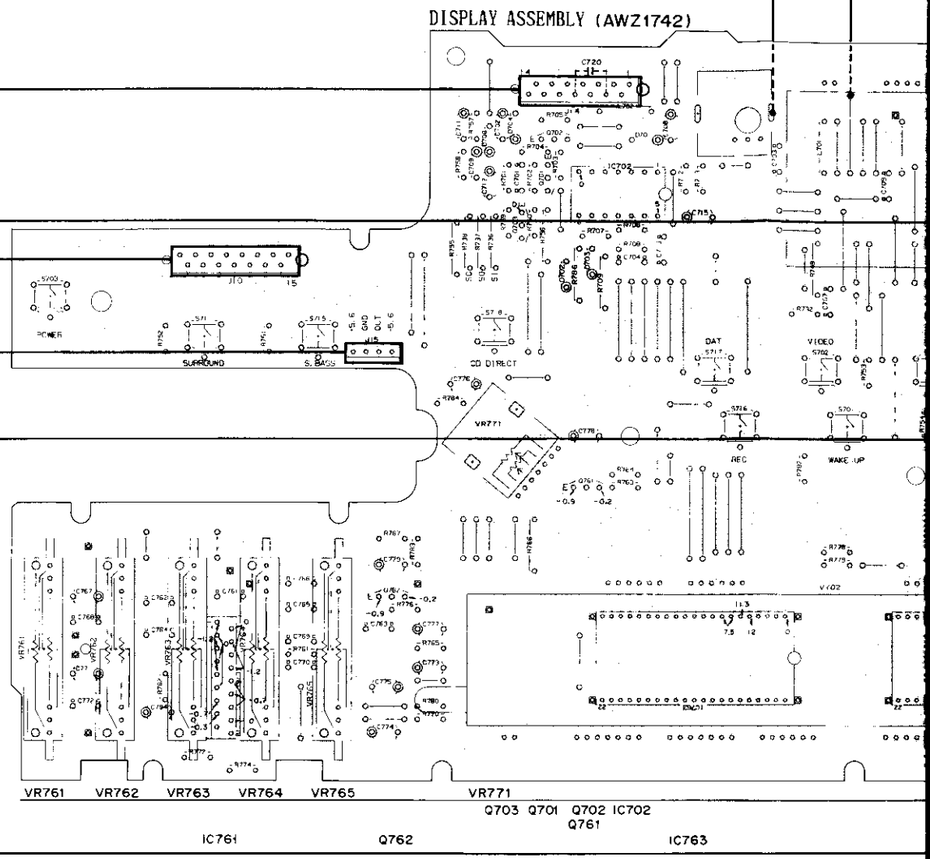
DECK I (2/2)



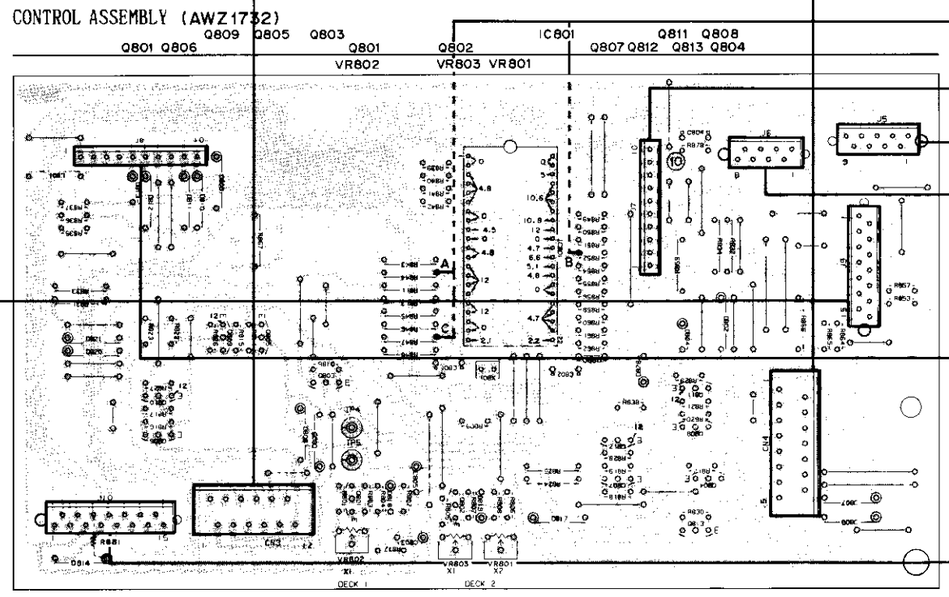
DECK II (2/2)



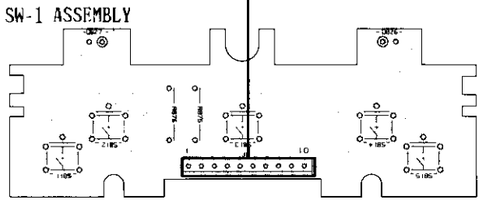
DISPLAY ASSEMBLY (AWZ1742)



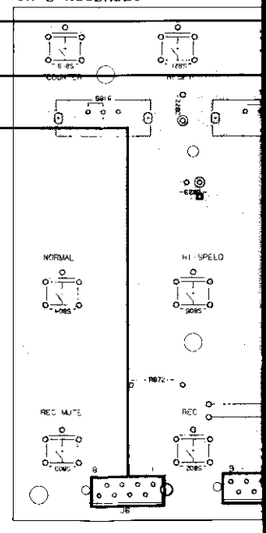
CONTROL ASSEMBLY (AWZ1732)



SW-1 ASSEMBLY

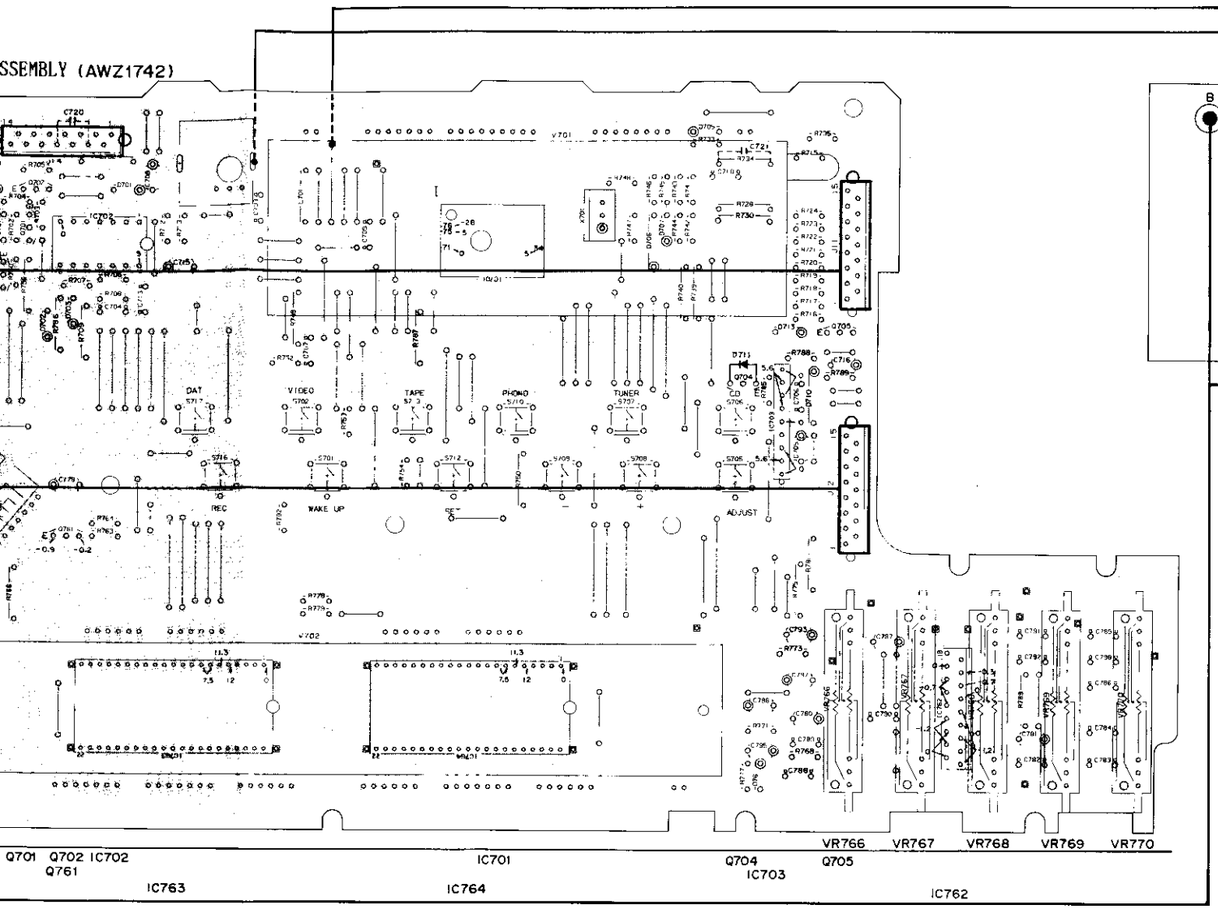


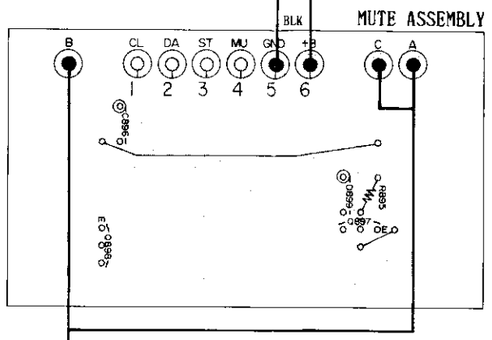
SW-3 ASSEMBLY

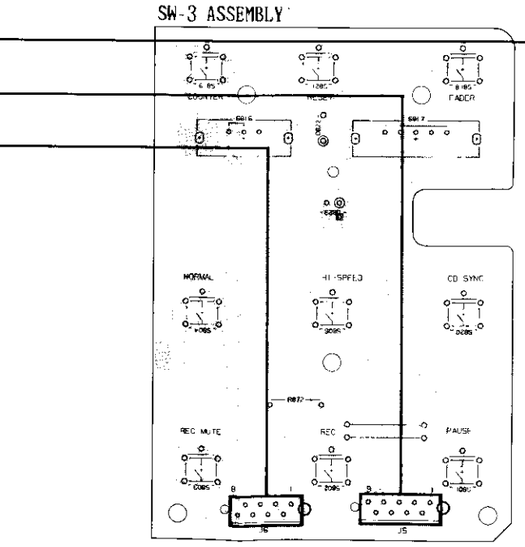


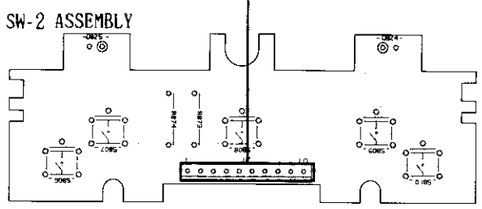
(11) (12) (9) (14) (15)

13 14 15 16 17 18 19









NOTE

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

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

Others

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

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.

24 | 23 | 22 | 21 | 20 | 19 | 18

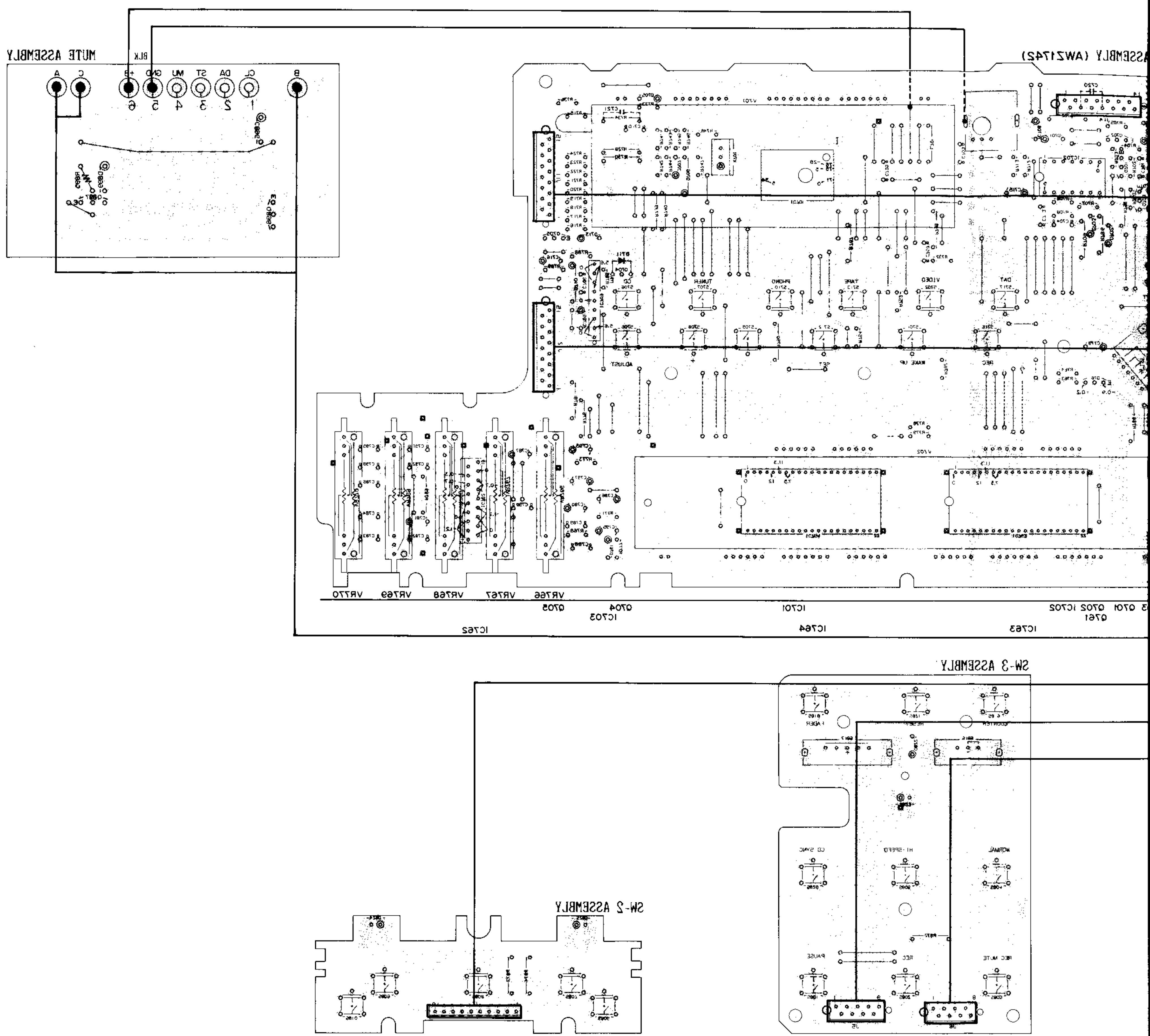
This diagram is as seen from foil side.

A

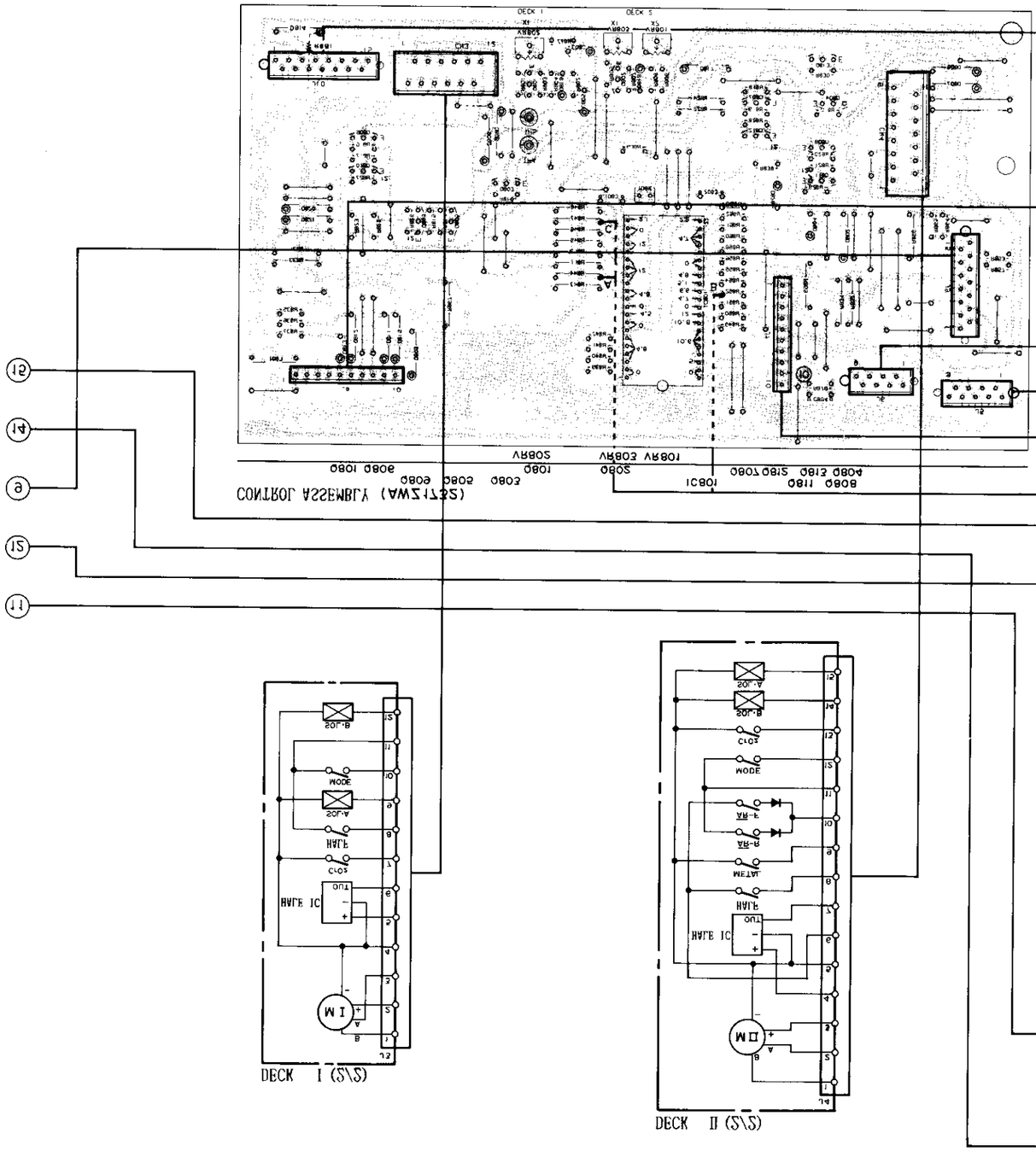
B

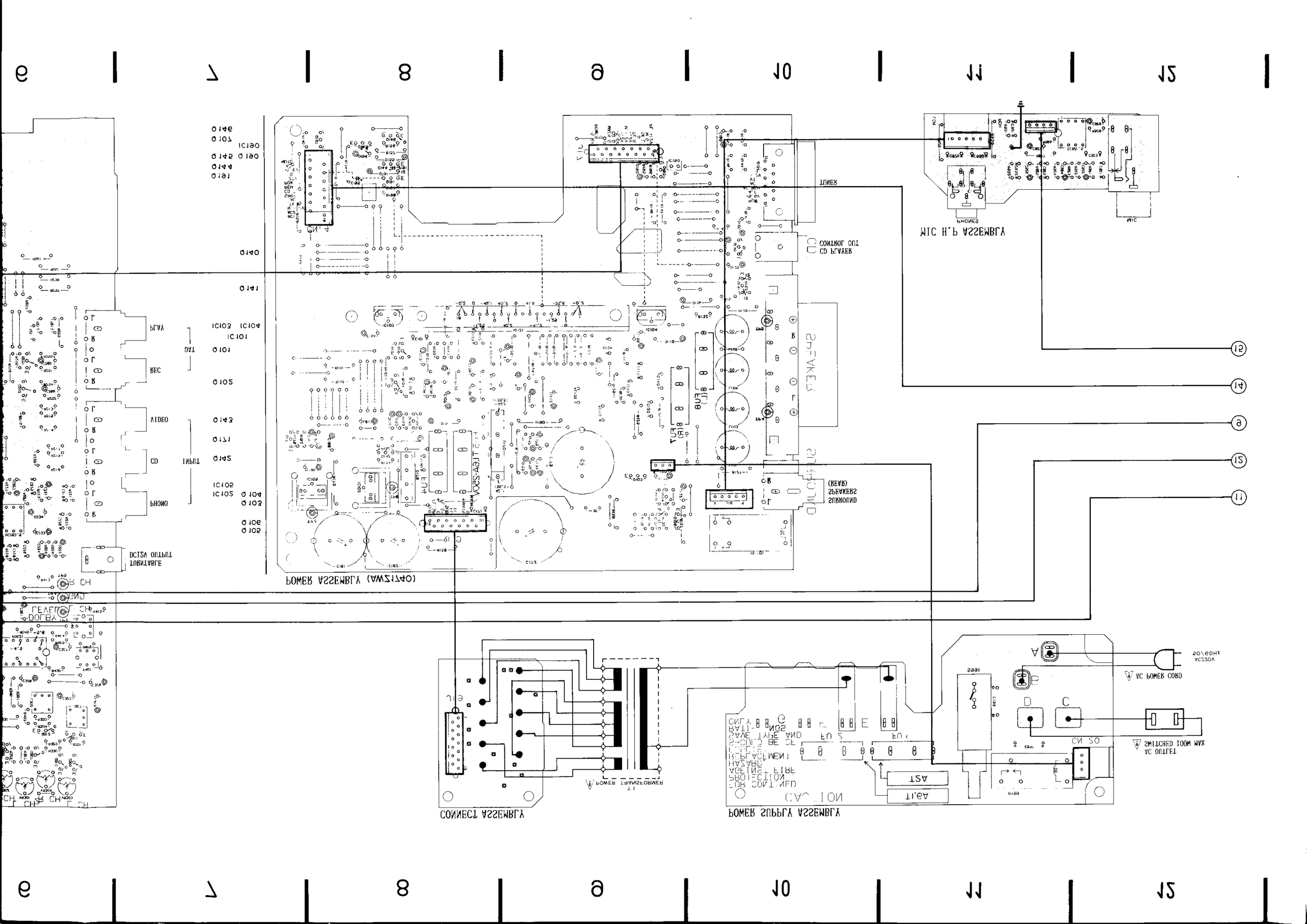
C

D



24 | 23 | 22 | 21 | 20 | 19 | 18


CONTROL ASSEMBLY (AWZ1125)
DECK I (S\S)
DECK II (S\S)
DISPLAY ASSEMBLY (AWZ1124)
1-M2 ASSEMBLY
2M-3 ASSEMBLY


MIC P.C.B ASSEMBLY
PHONES
MIC
TUNER
CD CONTROL OUT
CD BOARD
SPEAKERS (REAR)
SURROUND
SPEAKERS
POWER ASSEMBLY (AWS12410)
DC15V OUTPUT TERMINAL
R CH
L CH
CENTER CH
REAR L CH
REAR R CH
CONNECT ASSEMBLY
POWER TRANSFORMER
POWER SUPPLY ASSEMBLY
AC POWER CORD
AC OUTLET
SWITCHED 100W MAX
VOLTAGE SELECTOR
TAPE
VCR
CD
TUNER
PHONO
VIDEO
REC
TAPE
IC101
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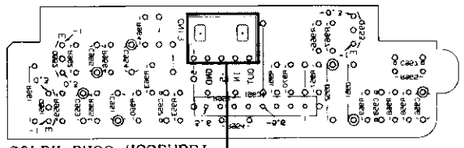
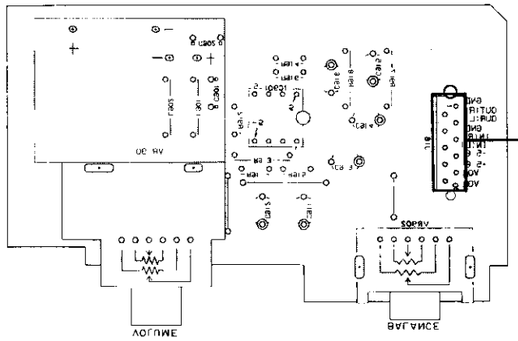
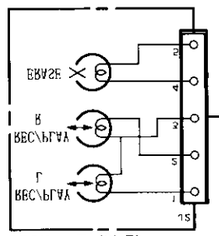
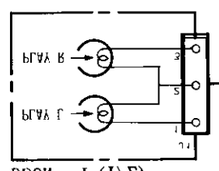
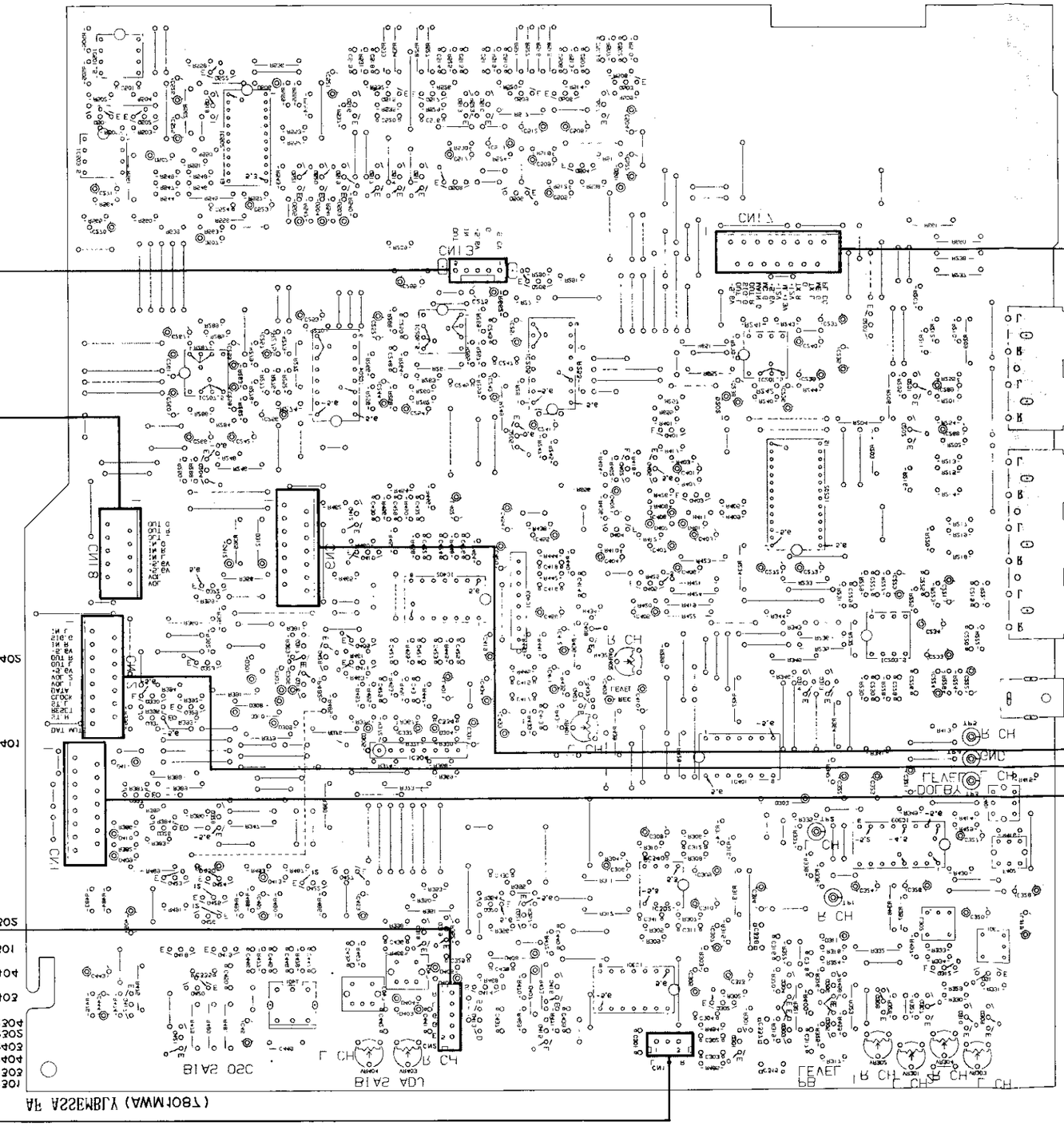

SUPER BASS ASSEMBLY


VOLUME
BALANCE
VOLUME ASSEMBLY


BASS
R
REC\PLAY
L
REC\PLAY
DECK II (T\S)


PLAY R
PLAY L
DECK I (T\S)


CN13
CN7
CN8
CN1
CN2
CN3
CN4
CN5
CN6
L CH
R CH
BIAS OSC
BIAS ADJ
REC
PLAY
AUDIO
CD
PHONO
TUNER
DC15V OUTPUT
UNREGULATED
TAPE
MAIN ASSEMBLY (MW,TBOT)

7. ELECTRICAL PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the impotance 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 Ω	56×10^{1}	561	RD1/4PS 5 6 1 J
47k Ω	47×10^{3}	473	RD1/4PS 4 7 3 J
0.5 Ω		0R5	RN2H 0 R 5 K
1 Ω		010	RS1P 0 1 0 K

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

5.62k Ω	562×10^{1}	5621	RN1/4SR 5 6 2 1 F

Miscellaneous Parts

P.C BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	AF Assembly	AWM1087
	CONTROL Assembly	AWZ1732
	DISPLAY Assembly	AWZ1742
	POWER Assembly	AWZ1740
	SW-1 Assembly	
	SW-2 Assembly	
	SW-3 Assembly	
	VOLUME Assembly	
	MIC, H・P Assembly	
	SUPER BASS Assembly	
⚠	POWER SUPPLY Assembly	
	MUTE Assembly	
⚠	CONNECT Assembly	

OTHERS

Mark	Symbol & Description	Part No.
⚠ ★	T1 Power transformer (AC220/240V)	ATS1120
⚠	AC Socket (AC OUTLET)	AKP1024
⚠★★	FU2, FU4, FU5 (T1.6A/250V)	AEK-405
⚠★★	FU6, FU7 (T3.15A/250V)	AEK-042
⚠★★	FU1 (T2A/250V)	AEK-017
⚠	AC power cord	ADG1021
★★	Hall IC	AZE1018
★★	Motor	AZX1019
★★	Leaf switch (MODE)	AZS1054
★★	Leaf switch (CrO_2)	AZS1034
★★	PLAY head (Deck I only)	AZP1022
★★	REC/PLAY/ERASE head (Deck II only)	AZP1014
★	Diode (Deck II only)	1S2473
★★	Motor assembly	AZX1020
★★	Head base assembly (Deak I only)	AZP1023
★★	Head base assembly (Deck II only)	AZP1016
	Remote control unit	AXD1042

AF Assembly (AWM1087)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC303	CXA1100P
★★	IC304, IC403	M5218LF
★★	IC302	M5218P
★★	IC201, IC203, IC206, IC501, IC503	M5218PF
★★	IC207	NJM4558DX
★★	IC402	M74LS05P
★★	IC502	PD4142
★★	IC204, IC205	TC4053BP
★★	IC301, IC401	TC4066BP
★★	IC202	TC9162N
★★	Q505, Q508, Q511, Q514, Q517	RN1201
★★	Q501, Q502, Q522	RN1203
★★	Q518-Q521	RN2203
★★	Q203, Q320, Q322, Q326, Q327, Q329, Q422	2SA1048
★★	Q417, Q426	2SA1115
★★	Q418, Q419	2SA1515
★★	Q204, Q205	2SC1740SLN
★★	Q206, Q301-Q314, Q316-Q319, Q321, Q323, Q328, Q330, Q331, Q401-Q406, Q409-Q412, Q415, Q416, Q423, Q427, Q428, Q503, Q504, Q506, Q507, Q509, Q510, Q512, Q513, Q515, Q516	2SC2458
★★	Q420, Q421, Q424, Q425	2SC2603
★★	Q201, Q202, Q407, Q408	2SC2878
★★	Q413, Q414	2SK373
★	D413	HZS7B2L
★	D502-D505	RD7.5ESB
★	D301, D303-D312, D403-D406, D409-D412, D501, D506, D507	HSS104
★	D401, D402	1SS252
★	D407, D408	1S2471
★	D430	HZS5ALL
★	D202	RD10ESB

COILS, TRANSFORMER, FILTERS

Mark	Symbol & Description	Part No.
	L403, L404 Trap coil	ATM-037
	L301, L302 Trap coil	ATM1001
	L405 Inductor (1mH)	LTA102J
	L401, L402 Inductor (3.9mH)	LTA392J
	T401 Bias osillation transformer	ATX-043
	F401, F402 Dolby filter	ATF-210

CAPACITORS

Mark	Symbol & Description	Part No.
	C449 (1500p/630V)	ACE-133
	C441, C442	CCCSL101K500
	C437, C438	CCMSL100D50
	C219, C220, C225, C226, C340, C341, C413, C414, C501	CCMSL101J50
	C249, C250	CCMSL121J50
	C512	CEASR15M50
	C443, C508	CEASR47M50
	C323, C324	CEASR68M50
	C221, C222, C332	CEAS0R1M50
	C243, C244, C270, C271, C331, C405, C409-C412	CEAS010M50
	C504	CEAS1R5M50
	C408	CEASR33M50
	C401-C404, C407	CEAS100M50
	C233, C234, C239, C240, C253, C254, C260, C261, C272, C273, C327, C328	CEAS101M10
	C453	CEAS101M16
	C251, C252, C326, C433, C434	CEAS2R2M50
	C223, C224	CEAS3R3M50
	C258, C259, C307, C308, C522	CEAS220M16
	C419, C420	CEAS330M16
	C452	CEAS331M16
	C275	CEAS221M10
	C235-C238, C268, C269, C305, C306, C313, C314, C319-C322, C451, C505, C509, C513, C517, C521	CEAS4R7M50
	C241, C242, C255-C257, C226, C267, C309, C310, C406, C444, C454-C456, C523, C525, C526	CEAS470M16
	C229, C230	CKCYB562K50
	C510, C511	CKCYB682K50
	C329, C330	CKCYF473Z50
	C506, C507	CKCYX153M25
	C502, C503, C516, C520, C524	CKCYX473M25
	C337, C338	CKDYB182K50
	C227, C228	CKMYB152K50
	C450	CKMYB221K50
	C301, C302	CKMYB271K50
	C245-C248, C303, C304	CKMYB471K50
	C334	CCCSL560J50
	C435, C436, C439, C440, C518, C519	CKMYB681K50
	C335	CKDYB681K50
	C514, C515	CKMYF222Z50
	C446, C447	CQMA103J50
	C448	CQMA123K250
	C425, C426, C445	CQMA153J50
	C415, C416	CQMA182J50
	C317, C318	CQMA183J50
	C427, C428	CQMA223J50
	C315, C316	CQMA273J50
	C311, C312	CQMA332J50
	C429, C430	CQMA393J50
	C431, C432	CQMA427J50
	C423, C424	CQMA562J50
	C421, C422	CQMA681J50
	C417, C418	CQMA683J50

RESISTORS

Mark	Symbol & Description	Part No.
	R237, R238, R660, R661	RD1/2PMFL100J
	R479-R481	RD1/2PM□□□J
	R561, R562	RD1/4PM470J
★	VR301-VR304, VR401, VR402 Semi-fixed (20k)	VRTM6VS203
★	VR403, VR404 Semi-fixed (2M)	VRTM6VS204
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Pin jack 4P (DAT REC/PLAY)	AKB1009
	Pin jack 6P (Input-PHONO, CD, VIDEO)	AKB1023
	DC jack (DC12V OUTPUT)	AKN-203

CONTROL Assembl

SEMICONDUCTORS

Mark	Symbol &
★★	IC801
★★	Q801, Q802, Q80
★★	Q803, Q804
★★	Q805-Q808, Q8
★	D817
★	D802, D804-D81 D828

COIL

Mark	Symbol &
	L801 Inductor

CAPACITORS

Mark	Symbol &
	C805
	C803
	C804
	C801, C802

RESISTORS

Mark	Symbol &
★	VR801 Semi-fixe
★	VR802, VR803 Semi-fixed
	Other resistors

OTHERS

Mark	Symbol &
★	X801 Ceramic re

DISPLAY Assembl

SEMICONDUCTORS

Mark	Symbol &
★★	IC761, IC762
★★	IC763, IC764
★★	IC701
★★	IC703
★★	IC702
★★	Q704
★★	Q761, Q762
★★	Q701-Q703
★★	Q705
★★	D710
★	D761
★	D701-D709

Part No.
CKCYB562K50
CKCYB682K50
CKCYF473Z50
CKCYX153M25
CKCYX473M25
CKDYB182K50
CKMYB152K50
CKMYB221K50
CKMYB271K50
CKMYB471K50
CCCSL560J50
CKMYB681K50
CKDYB681K50
CKMYF222Z50
CQMA103J50
CQMA123K250
CQMA153J50
CQMA182J50
CQMA183J50
CQMA223J50
CQMA273J50
CQMA332J50
CQMA393J50
CQMA427J50
CQMA562J50
CQMA681J50
CQMA683J50

Part No.
RD⅛PMFL100J
RD⅛PM□□□J
RD¼PM470J
RTM6VS203
RTM6VS204
D⅛PM□□□J

Part No.
KB1009
KB1023
KN−203

CONTROL Assembly (AWZ1732)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC801	PDE025−A
★★	Q801, Q802, Q809−Q812	2SA1048
★★	Q803, Q804	2SA1515
★★	Q805−Q808, Q813	2SC3377
★	D817	S5566
★	D802, D804−D814, D818−D822, D828	HSS104

COIL

Mark	Symbol & Description	Part No.
	L801 Inductor	LAU221K

CAPACITORS

Mark	Symbol & Description	Part No.
	C805	CEASR33M50
	C803	CEAS221M10
	C804	CKDYF473Z50
	C801, C802	CKMYB151K50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR801 Semi-fixed (10k)	VRTM6H103
★	VR802, VR803 Semi-fixed (20k)	VRTM6H203
	Other resistors	RD⅛PM□□□J

OTHERS

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

DISPLAY Assembly (AWZ1742)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC761, IC762	BA3812L
★★	IC763, IC764	LC7570
★★	IC701	PDG015−B
★★	IC703	TA7291S
★★	IC702	TC4069UBP
★★	Q704	2SA1115
★★	Q761, Q762	2SC1740SLN
★★	Q701−Q703	2SC2458
★★	Q705	DTA143ES
★★	D710	RD4.7ESB
★	D761	RD7.5ESB3
★	D701−D709	HSS104

SWITCHES

Mark	Symbol & Description	Part No.
★★	S701−S703, S705−S713, S715−S718 Tact switch (WAKE−UP, VIDEO, POWER, CLOCK ADJUST, CD, TUNER, +, −, PHONO, SURROUND & STEREO WIDE, SET, TAPE, SUPER BASS, REC TIMER, DAT, CD DIRECT)	ASG−711

COILS

Mark	Symbol & Description	Part No.
	L701 Inductor	LAU2R2M
	L702 Inductor	LAU220K

CAPACITORS

Mark	Symbol & Description	Part No.
	C770, C790	CCMSL101J50
	C702, C705	CEAS100M50
	C708	CEAS101M10
	C711, C712	CEAS4R7M50
	C767, C781	CEJAR15M50
	C716	CEAS331M6
	C771, C787	CEJAR68M50
	C776, C777, C795	CEJA100M25
	C774, C775, C796, C797, C778, C779	CEJA101M10
	C773, C780, C793, C794	CEJA4R7M50
	C715	CEAS470M16
	C792	CKCYB392K50
	C762, C786	CKDYB182K50
	C764	CKDYB392K50
	C701	CKDYX104M25
	C703, C706, C709, C713	CKDYF473Z50
	C714	CKCYF473Z50
	C704	CKMYB152K50
	C707	CKMYB221K50
	C769, C789	CKMYB331K50
	C766, C784	CKMYB391K50
	C761, C785	CQMA153J50
	C768, C782	CQMA183J50
	C791, C798	CQMA333J50
	C772, C788	CQMA393J50
	C765, C783	CQMA682J50
	C763	CQMA683J50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR771 Variable resistor (30k×2)	ACS1017
★	VR761−VR770 Slide type variable resistor (30k)	ACU1021
	Other resistors	RD⅛PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
★	V702 Fluorescent indicator	AAV1048
★	V701 Fluorescent indicator	AAV1049
★	X701 Ceramic resonator (4.19MHz)	ASS1022
	Remote control sensor unit	AXX1005

POWER Assembly (AWZ1740)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC190	ICP−N10
★★	IC104	M5F78M05L
⚠★★	IC101	STK4192−2GP
★★	IC102, IC103	μ PC7812H
★★	IC105	μ PC7912H
★★	Q140, Q144	RN1203
★★	Q145, Q191	RN2203
★★	Q107	2SA1048
★★	Q142, Q143	2SA1115
★★	Q141, Q190	2SA1515
★★	Q171	2SB560
★★	Q103−Q105, Q146	2SC2458
★★	Q101, Q102	2SC2878
★★	Q106	2SD438
⚠★	D170	RBV402
⚠★	D176	RB152
★	D157, D158	RD11ESB
★	D159	RD5.6ESB
★	D175	RD6.2ESB
⚠★	D150, D151, D178	S5566
★	D103−D106, D152−D155, D177, D190, D191	HSS104

RELAY

Mark	Symbol & Description	Part No.
★★	RY101 Relay	ASR−111

COILS

Mark	Symbol & Description	Part No.
	L101, L102 AF Choke coil (1 μ H)	ATH−133

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C171 (0.01 μ F/150V)	ACG1005
	C172, C173 (5600 μ F/56V)	ACH1031
	C103, C104	CCMSL101J50
	C122	CEASR47M100
	C111, C112	CEAS100M50
	C109	CEANP100M63
	C114, C116	CEXANP101M25
	C134, C135	CEAS2R2M50
	C113	CEANP220M50
	C105−C108	CEAS101M25
	C181, C182	CEAS332M35
	C117, C118, C185, C187, C188	CEAS470M25
	C183, C184, C186	CEAS470M35
	C191	CEAS330M25
	C195	CEAS010M50
	C174, C175	CEAS470M50
	C121	CEAS471M6
⚠	C180	CKCYF103Z50
	C101, C102	CKMYB221K50
	C110, C115, C119, C120	CQMA104J50

RESISTORS

Mark	Symbol & Description	Part No.
	R139	RD½PMFL101J
	R138, R158, R159	RD½PM□□□J
⚠	R116−R119, R125−R128, R103, R104, R113−R115, R121−R124, R147, R148	RD¼PMFL□□□J
		RD¼PM□□□J
⚠	R120	RFA¼PS101J
	R178	RS1LMF680J
⚠	R137	RS1LMF681J
	R173, R174	RS1LMF150J
⚠	R171, R190	RS2LMF221J
	Other resistors	RD⅛PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Pin jack 2P (SURROUND SPEAKERS)	AKB1039
	Terminal 4P (SPEAKERS)	AKE−109
	Mini jack (CD PLAYER CONTROL OUT)	AKN−207
	Socket 11P (TUNER)	AKP1025

SW−1 Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D826, D827	AEL1066

SWITCHES

Mark	Symbol & Description	Part No.
★★	S811−S815 Tact switch (◂◂, ◂, ■, ▸, ▸▸)	ASG−711

RESISTORS

Mark	Symbol & Description	Part No.
	R875, R876	RD¼PM681J

SW- 2 Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D824, D825	AEL1066

SWITCHES

Mark	Symbol & Description	Part No.
★★	S806-S810 Tact switch (◂◂, ◂, ■, ▸, ▸▸)	ASG-771

RESISTORS

Mark	Symbol & Description	Part No.
	R873, R874	RD¼PM681J

SW- 3 Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D823	AEL-443

SWITCHES

Mark	Symbol & Description	Part No.
★★	S801-S805, S818-S821 Tact switch (PAUSE, REC, REC MUTE, NORMAL COPY, HIGH SPEED COPY, FADER, TAPE COUNTER I / II • OFF, CD SYNCHRO REC, TAPE COUNTER RESET)	ASG-711
★★	S817 Slide switch (REVERSE MODE)	ASH1011
★★	S816 Slide switch (DOLBY NR)	ASH1014

RESISTORS

Mark	Symbol & Description	Part No.
	R872	RD¼PM102J

VOLUME Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC901	M5218PF

COILS

Mark	Symbol & Description	Part No.
	L901, L902 Inductor	LAU5R6K

CAPACITORS

Mark	Symbol & Description	Part No.
	C911-C914	CEAS4R7M50
	C901, C902	CKDYF473Z50
	C915, C916	CEAS470M16

RESISTORS

Mark	Symbol & Description	Part No.
★	VR902 Variable resistor (10k×2)	ACT1041
★	VR901 Variable resistor with motor (100k×2)	ACX1009
	Other resistors	RD⅛PM□□□J

MIC, H • P Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC921	M5218PF

CAPACITORS

Mark	Symbol & Description	Part No.
	C923	CCMSL101J50
	C922	CEAS010M50
	C924	CEAS100M50
	C926	CEAS220M16
	C927, C928	CEAS470M16
	C925	CKDYB471K50
	C921	CKDYB681K50
	C931, C932	CKDYF473Z50
	C929, C930	CKMYB102K50

RESISTORS

Mark	Symbol & Description	Part No.
	R929, R930	RS1PMF331J
	Other resistors	RD⅛PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Mini jack (PHONES)	AKN1004
	Mic jack (MIC)	AKN1005

SUPER BASS Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC951	M5218L
★★	Q951 – Q953	2SC1740SLN
★	D951, D952	0A90A – M

CAPACITORS

Mark	Symbol & Description	Part No.
	C953, C956	CEASR22M50
	C954	CEJAR68M50
	C951	CEJA010M50
	C955	CEAS0R1M50
	C952	CKCYX183M25
	C958	CKDYB392K50
	C957	CQMA823J50

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD⅛PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Socket 5P	AKP1001

POWER SUPPLY Assembly

RELAY & SWITCH

Mark	Symbol & Description	Part No.
⚠★★	RY991 Relay (POWER STANDBY/ON)	ASR1012
⚠★★	S991 Push switch (MAIN POWER ON/OFF)	ASG1006 (ASG1007)

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C991, C992 (0.01/400V)	ACG1002

OTHERS

Mark	Symbol & Description	Part No.
	Joint terminal	AKF1007
	Joint terminal	AKF1008

MUTE Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q897	DTA124ES
★★	Q898	DTC124ES
★	D899	1SS252

CAPACITOR

Mark	Symbol & Description	Part No.
	C896	CEASR22M50

RESISTOR

Mark	Symbol & Description	Part No.
	R895	RD⅛PM101J

8. ADJUSTMENTS

Tape Speed Adjustment

1. Connect the frequeny counter to the TP terminal (Dolby TP : Lch or Rch) of the AF assembly.
2. Turn the tape switch ON.
3. Insert test tape STD-301 into deck I.
4. Set deck I to the PLAY mode and adjust VR802 of the CONTROL assembly so that the playback signal frequency becomes 3010Hz±5Hz.
   (Note 1. Do not turn VR801 when performing the normal speed adjustment.)
   (Note 2. Make sure to perform double speed adjustment for deck II first.)
5. Set deck I to the PLAY mode, and then short between TP4 and TP5 terminals of the CONTROL assembly. (STD-301 will be played back at double speed.)
6. Measure the playback signal frequency of deck I.
7. Insert STD-301 into deck II.
8. Play back the tape in deck II at double speed (shorted between TP4 and TP5), and adjust VR801 so that the frequency becomes the same as deck I double speed playback frequency.
9. Remove short between TP4 and TP5.
10. Play back the tape in deck II, and adjust VR803 to 3010Hz±5Hz.
11. At this time, confirm that wow and flutter at normal speed is within 0.25%.

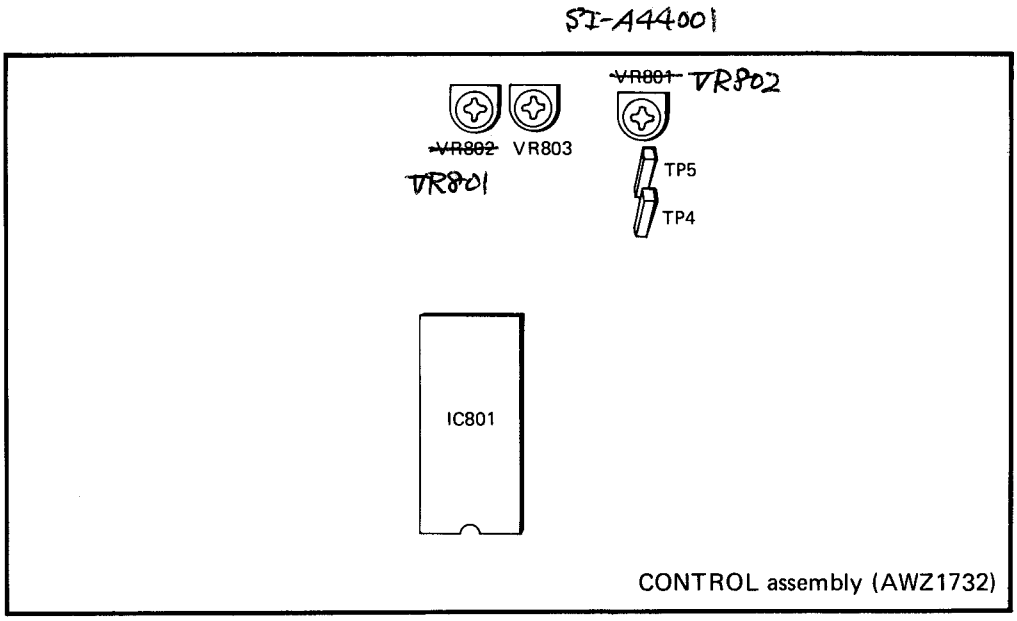


Fig. 8-1. Locations for adjustment

ELECTRICAL ADJUSTMENTS

- Confirm the following items before performing the electrical adjustments.

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized with a head eraser.
3. The measurement level is 0dBV=1V.
4. For adjustment, the specified tape should be used. The test tape has an A side and a B side; use the side labelled A.
   STD-331B : Playback adjustment
   STD-608A : NORMAL blank tape
   STD-620 : CrO2 blank tape
   STD-610 : METAL blank tape
5. Prepare the following measuring instruments : ACmV meter, AF oscillator, attenuator and oscilloscope.
6. Adjustment should be performed for both L and R channels, unless specified otherwise.
7. Unless specified otherwise, the DOLBY NR switch is left in the OFF position.
8. Be sure to warm up the unit for a few minutes before adjustment. In particular before performing recording/playback frequency response adjustment, the unit should be run for 3 to 5 minutes in the REC/PLAY mode.
9. For perfect adjustment, be sure to follow the order specified. Otherwise, the performance of the unit might be impaired.

Deck I

1. Head azimuth adjustment
2. Playback level adjustment

Deck II

1. Head azimuth adjustment
2. Playback level adjustment
3. Recording and playback frequency response adjustment
4. Recording level adjustment

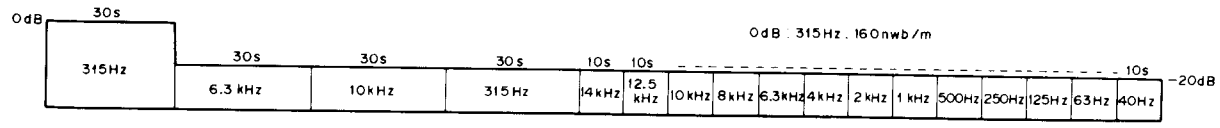


Fig. 8-2. Test tape STD-331B

• Adjustment for Deck I

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

1. Head Azimuth Adjustment

• Note : Do not fast forward or rewind the tape while the screwdriver is inserted.

Procedure	Tape selector	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remarks
1	NORM	PLAY	Play the 10kHz/−20dB section of test tape STD−331B.	Head azimuth adjustment screw (Fig. 8-4.)	TP3 (L CH) TP5 (R CH)	Maximum playback signal level	Lock the screw after adjustment.

2. Playback Level Adjustmet

• Perform this adjustment with great care, since it determines the DOLBY NR level.

Procedure	Tape selector	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remarks
1	NORM	PLAY	Play the 315Hz/0dB section of test tape STD-331B.	VR301 (L) VR302 (R)	TP3 (L CH) TP5 (R CH)	−13.5dBV	

• Adjustment for Deck II

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

1. Head Azimuth Adjustment

• Note : Do not fast forward or rewind the tape while the screwdriver is inserted.

Procedure	Tape selector	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remarks
1	NORM	PLAY	Play the 10kHz/−20dB section of test tape STD-331B.	Head azimuth adjustment screw (Fig. 8-4.)	TP3 (L CH) TP5 (R CH)	Maximum playback signal level	Lock the screw after adjustment.

2. Playback Level Adjustmet

• Perform this adjustment with great care, since it determines the DOLBY NR level.

Procedure	Tape selector	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remarks
1	NORM	PLAY	Play the 315Hz/0dB section of test tape STD-331B.	VR303 (L) VR304 (R)	TP3 (L CH) TP5 (R CH)	−5.2dBV	

3. Recording and Playback Frequency Response Adjustment

• When adjusting the recording bias, be careful not to set the bias too low, as this increases distortion.

Procedure	Tape selector	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remarks
1	NORM	REC	Insert test tape STD-608A and set to REC mode.	———	Between Ⓐ and Ⓑ of Fig. 8-3.	Confirm that the oscillation frequency is 105kHz±1kHz	If it is not in the specified range, adjust with T701.
2	NORM	REC	Apply 315Hz and 10kHz signals to CD terminal and turn CD switch ON.	Input signal level	TP2 (L CH) TP1 (R CH)	−25.2dBV	
3	NORM	REC/PLAY	Record and play back 315Hz and 10kHz signals to test tape STD-608A.	VR404 (L) VR403 (R)	TP3 (L CH) TP5 (R CH)	Record/play back and adjust repeatedly, until the playback level for the 10kHz signal is 0±0.5dB compared to the 315Hz signal.	

• Select the test tape, tape selector, and Dolby NR switch and satisfy the frequency response zone as shown in Figs. 8-5. and 8-6.

4. Recording Level Adjustment

• Set the graphic equalizer and balance controls to their center positions and the mic mixing control to SOURCE.

Procedure	Tape selector	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remarks
1	NORM	REC	Apply 315Hz signal to CD terminal and turn CD switch ON.	Input signal level	TP2 (L CH) TP1 (R CH)	−5.2dBV	
2	NORM	REC/PLAY	Record and play back the 315Hz signal to test tape STD-608A.	VR401 (L) VR402 (R)	TP3 (L CH) TP5 (R CH)	Record/play back and adjust repeatedly, until the playback level of the 315Hz signal becomes −5.2dBV.	
3	CrO2	REC/PLAY	Record and play back the 315Hz signal to test tape STD-620.	———	TP3 (L CH) TP5 (R CH)	Confirm that the playback level of the 315Hz signal becomes −5.2dBV.	
4	METAL	REC/PLAY	Record and play back the 315Hz signal to test tape STD-610.	———	TP3 (L CH) TP5 (R CH)	Confirm that the playback level of the 315Hz signal becomes −5.2dBV.	

Note : The signal will not be output to the TP terminal, unless the unit is set to REC/PLAY. (When set to REC PAUSE, no signal is output to TP.)

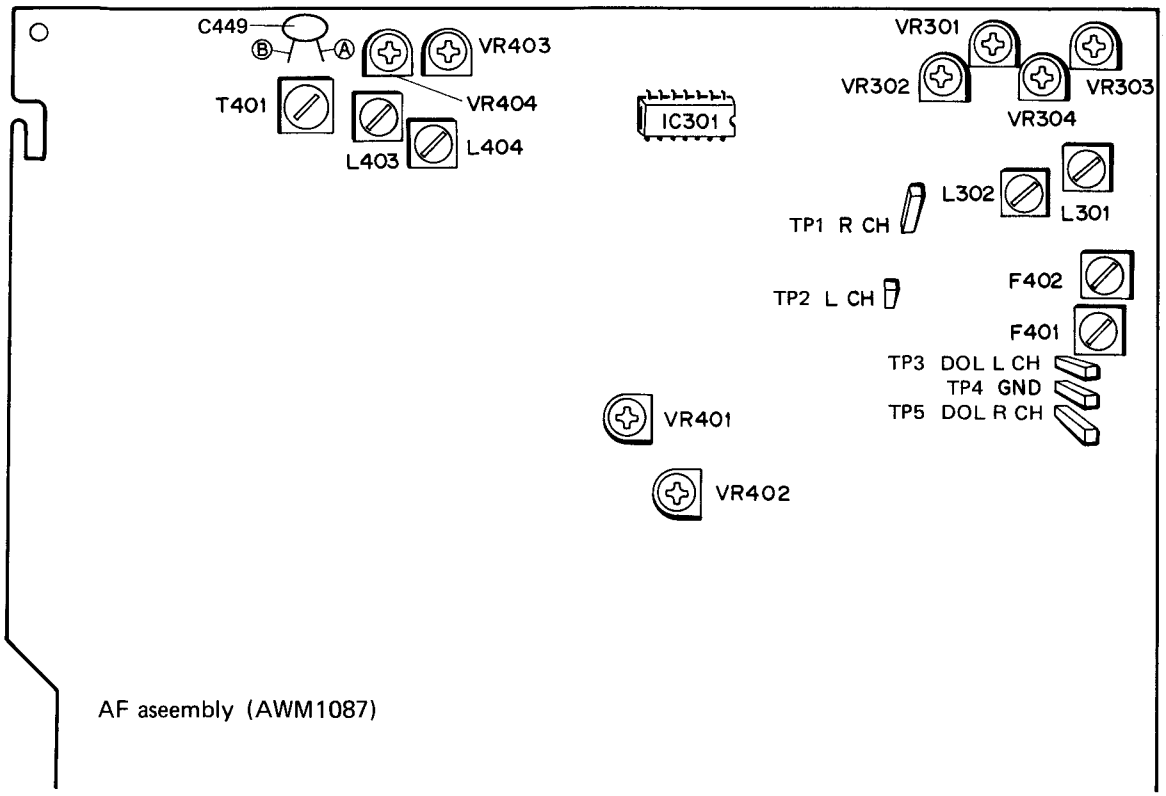


Fig. 8-3. Adjusting and measuring point of the AF assembly

• **Azimuth adjustment**
For azimuth adjustment, remove the mechanism cover (AEC1096) by pulling it out towards the front side.

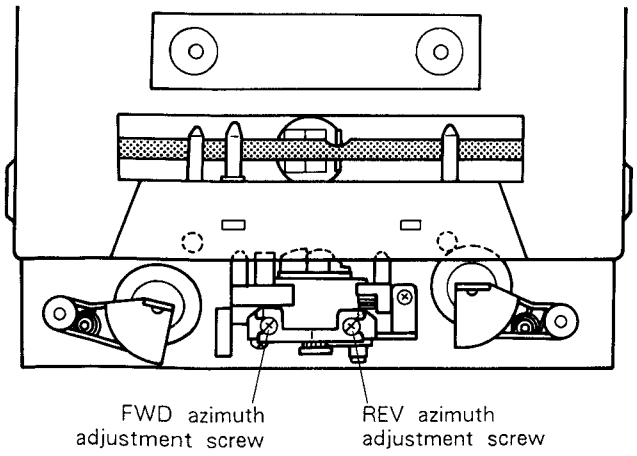


Fig. 8-4. Head azimuth adjustment

Test tape	STD-331B
DOLBY NR switch	OFF

• Because of border effects, compensate with −0.5dB at 125Hz and −1dB at 63Hz for the R channel.

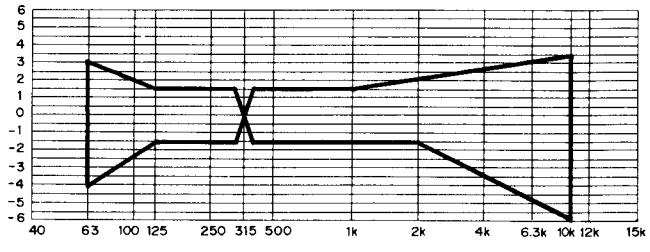


Fig. 8-5. Allowable playback frequency response zone

Test tape	STD-608A	Test tape	STD-608A
DOLBY NR switch	OFF	DOLBY NR switch	ON

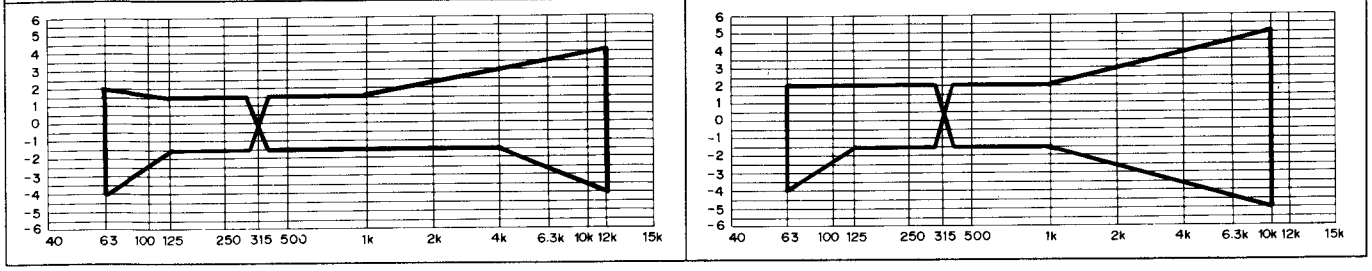


Fig. 8-6. Allowable recording/playback frequency response zone (NORM)

Test tape	STD-620	Test tape	STD-620
DOLBY NR switch	OFF	DOLBY NR switch	ON

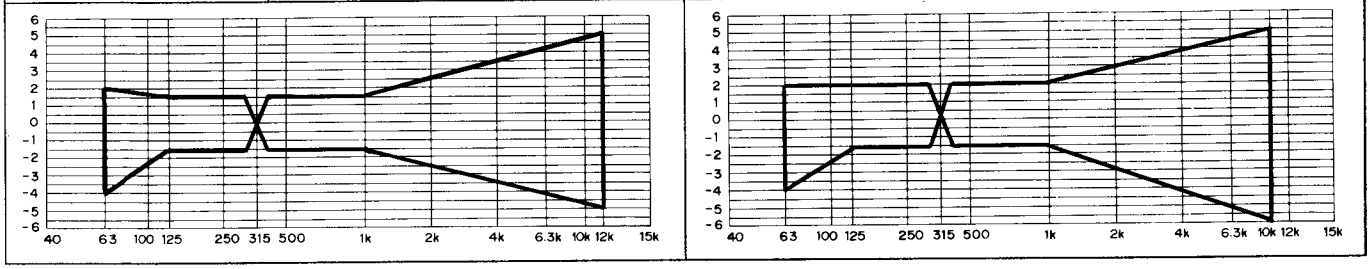


Fig. 8-7. Allowable recording/playback frequency response zone (CrO_2)

Test tape	STD-610	Test tape	STD-610
DOLBY NR switch	OFF	DOLBY NR switch	ON

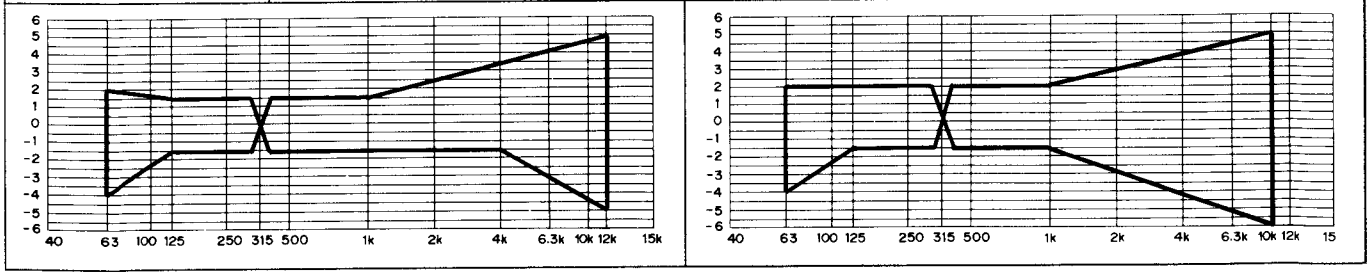


Fig. 8-8. Allowable recording/playback frequency response zone (METAL)

8. REGLAGE

Réglage de la vitesse de bande

1. Brancher le compteur de fréquence à la borne TP (Dolby TP: can. gauche ou can. droit) de l'ensemble AF.
2. Enclencher (ON) la touche de bande.
3. Insérer la bande d'essai STD-301 dans la Platine I.
4. Régler la Platine I sur le mode de lecture (PLAY) er régler VR802 de l'ensemble de commande (CONTROL) de sorte que la fréquence du signal de lecture devienne 3.010 Hz±5 Hz.
   (Remarque 1. Ne pas tourner VR801 lors du réglage de la vitesse normale).
   (Remarque 2. Toujours effectuer le réglage de la vitesse double tout d'abord pour la Platine II).
5. Régler la Platine I sur le mode de lecture (PLAY) puis court-circuiter les bornes TP4 et TP5 de l'ensemble de commande (CONTROL). (La bande STD-301 sera reproduite à double vitesse).
6. Mesurer la fréquence du signal de lecture de la Platine I.
7. Insérer la bande STD-301 dans la Platine II.
8. Reproduire la bande de la Platine II à double vitesse (court-circuit entre TP4 et TP5) et régler VR801 de sorte que la fréquence devienne la même que la fréquence de lecture à double vitesse de la Platine I.
9. Retirer le court-circuit entre TP4 et TP5.
10. Reproduire la bande de la Platine II et régler VR803 sur 3 010 Hz±5 Hz.
11. Vérifier, à ce moment-là, que le pleurage et scintillement à la vitesse normale est dans la limite de 0,25%

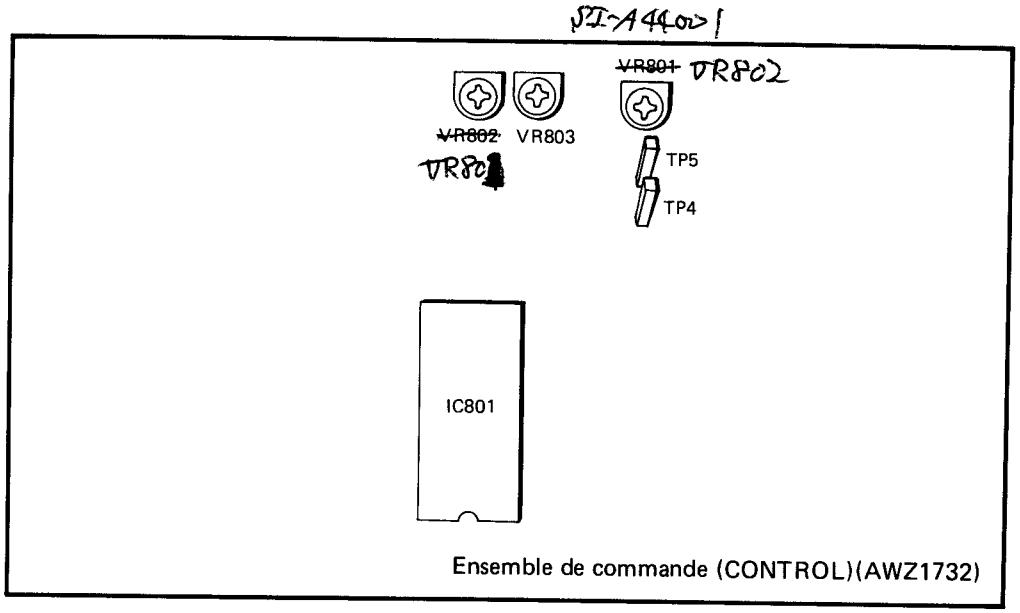


Fig. 8-1. Points de réglage

REGLAGES ELECTRIQUES

- Vérifier les points suivants avant d'effectuer les réglages électriques.

1. Les réglages mécaniques doivent tout d'abord être terminés.
2. La tête doit être nettoyée et démagnétisée avec un démagnétiseur de tête.
3. Le niveau de mesure est de 0 dBV = 1 V.
4. La bande spécifiée doit être utilisée pour le réglage. La bande d'essai a une face A et une face B; utiliser la face étiquetée A.
   STD-331B: Réglage de la lecture
   STD-608A: Bande vierge NORMAL
   STD-620: Bande vierge CrO_2
   STD-610: Bande vierge METAL
5. Préparer les instruments de mesure suivants: Compteur CAmV, oscillateur à basse fréquence, atténuateur et oscilloscope.
6. Le réglage doit être effectué pour les deux canaux L (gauche) et R (droit), sauf spécification contraire.
7. Sauf spécification contraire, le commutateur DOLBY NR est laissé sur la position OFF.
8. Toujours laisser chauffer l'appareil pendant quelques minutes avant le réglage. En particulier avant d'effectuer le réglage de la réponse en fréquence d'enregistrement/lecture, l'unité doit fonctionner pendant 3 à 5 minutes dans le mode d'enregistrement/lecture (REC/PLAY).
9. Pour que le réglage soit parfait, tou ours suivre l'ordre spécifié. Dans le cas contraire, les performances de l'appareil pourraient être altérées.

Platine I

1. Réglage de l'azimutage de la tête
2. Réglage du niveau de lecture

Platine II

1. Réglage de l'azimutage de la tête
2. Réglage dujniveau de lecture
3. Réglage de la réponse en fréquence d'enregistrement/lecture
4. Réglage du niveau d'enregistrement

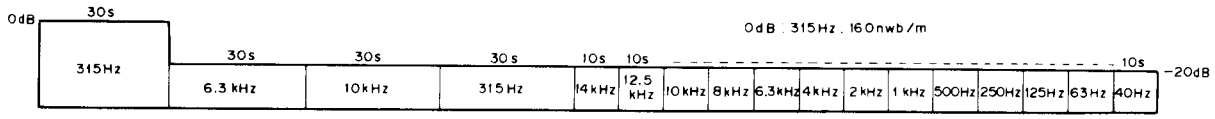


Fig. 8-2. Bande d'essai STD-331B

• Réglage de la Platine I • Cet appareil est équipé d'un mécanisme de sélection automatique de bande.

1. Réglage de l'azimutage de la tête • Remarque: Ne pas avancer rapidement ou rembobiner la bande pendant que le tournevis est insére.

Procédure	Sélecteur de bande	Mode	Signal d'entrée/ bande d'essai	Point de réglage	Point de mesure	Valeur de réglage	Remarques
1	NORM	Lecture (PLAY)	Reproduire la section 10 kHz/-20 dB de la bande d'essai STD-331B.	Vis de réglage de l'azimutage de la tête (Fig. 8-4.)	TP3 (can. gauche) TP5 (can. droit)	Niveau du signal de lecture maximum	Bloquer la vis après le réglage.

2. Réglage du niveau de lecture • Effectuer ce réglage avec beaucoup de soin car il détermine le niveau DOLBY NR.

Procédure	Sélecteur de bande	Mode	Signal d'entrée/ bande d'essai	Point de réglage	Point de mesure	Valeur de réglage	Remarques
1	NORM	Lecture (PLAY)	Reproduire la section 315 Hz/0 dB de la bande d'essai STD-331B.	VR301 (gauche) VR302 (droite)	TP3 (can. gauche) TP5 (can. droit)	- 13,5 dBV	

• Réglage de la Platine II

• Cet appareil est équipé d'un mécanisme de sélection automatique de bande.

1. Réglage de l'azimutage de la tête

•Remarque: Ne pas avancer rapidement ou rembobiner la bande pendant que le tournevis est inséré.

Procédure	Sélecteur de bande	Mode	Signal d'entrée/ bande d'essai	Point de réglage	Point de mesure	Valeur de réglage	Remarques
1	NORM	Lecture (PLAY)	Reproduire la section 10 kHz/ – 20 dB de la bande d'essai STD-331B.	Vis de réglage de l'azimutage de la tête (Fig. 8-4.)	TP3 (can. gauche) TP5 (can. droit)	Niveau du signal de lecture maximum	Bloquer la vis après le réglage.

2. Réglage du niveau de lecture

• Effectuer ce réglage avec beaucoup de soin car il détermine le niveau DOLBY NR.

Procédure	Sélecteur de bande	Mode	Signal d'entrée/ bande d'essai	Point de réglage	Point de mesure	Valeur de réglage	Remarques
1	NORM	Lecture (PLAY)	Reproduire la section 315 Hz/0 dB de la bande d'essai STD-331B.	VR303 (gauche) VR304 (droite)	TP3 (can. gauche) TP5 (can. droit)	– 5,2 dBV	

3. Réglage de la réponse en fréquence de l'enregistrement et de la lecture

• Lors du réglage de la polarisation d'enregistrement, faire attention de ne pas régler la polarisation trop bas car cela augmente la distorsion.

Procédure	Sélecteur de bande	Mode	Signal d'entrée/ bande d'essai	Point de réglage	Point de mesure	Valeur de réglage	Remarques
1	NORM	Enregistrement (REC)	Insérer la bande d'essai STD-608A et régler sur le mode d'enregistrement (REC).	Entre A et B de la Fig. 8-3.	Vérifier que la fréquence d'oscillation est 105 kHz ± 1 kHz.	Si elle n'est pas dans la gamme spécifiée, régler avec T701.	
2	NORM	Enregistrement (REC)	Appliquer des signux de 315 Hz et 10 kHz a la borne CD et enelencher (ON) la touche CD.	Niveau du signal d'entrée	TP2 (can. gauche) TP1 (can. droit)	– 25,2 dBV	
3	NORM	Enregistrement/ lecture (REC/PLAY)	Enregistrer et reproduire les signaux 315 Hz et 10 kHz sur la bande d'essai STD-608A.	VR404 (gauche) VR403 (droite)	TP3 (can. gauche) TP5 (can. droit)	Enregistrer/reproduire et régler de manière répétée, jusqu'à ce que le niveau de lecture pour le signal 10 kHz soit 0 ±0,5 dB comparé au signal 315 Hz.	

• Changer les bandes d'essai et les réglages du sélecteur de bande et du commutateur Dolby NR pour satisfaire aux zones de réponse en fréquence indiquées sur les Figs. 8-5. et 8-6.

4. Réglage du niveau d'enregistrement

• Régler les commandes d'égaliseur graphique et d'équilibre sur leurs positions centrales et la commande de mixage microphone sur la position SOURCE.

Procédure	Sélecteur de bande	Mode	Signal d'entrée/ bande d'essai	Point de réglage	Point de mesure	Valeur de réglage	Remarques
1	NORM	Enregistrement (REC)	Appliquer un signal de 315 Hz à la borne CD et enclencher (ON) la touche CD.	Niveau de signal d'entrée	TP2 (can. gauche) TP1 (can. droit)	– 5,2 dBV	
2	NORM	Enregistrement/ lecture (REC/PLAY)	Enregistrer et reproduire le signal 315 Hz sur la bande d'essai STD-608A.	VR401 (gauche) VR402 (droite)	TP3 (can. gauche) TP5 (can. droit)	Enregistrer/reproduire et régler de manière répétée, jusqu'à ce que le niveau de lecture du signal 315 Hz devienne – 5,2 dBV.	
3	CrO_2	Enregistrement/ lecture (REC/PLAY)	Enregistrer et reproduire le signal 315 Hz sur la bande d'essai STD-620.		TP3 (can. gauche) TP5 (can. droit)	Vérifier que le niveau de lecture du signal 315 Hz devient – 5,2 dBV.	
4	METAL	Enregistrement/ lecture (REC/PLAY)	Enregistrer et reproduire le signal 315 Hz sur la bande d'essai STD-610.		TP3 (can. gauche) TP5 (can. droit)	Vérifier que le niveau de lecture du signal 315 Hz devient – 5,2 dBV.	

Remarque: Le signal ne sera pas sorti à la borne TP, à moins que l'appareil soit réglé sur le mode enregistrement/lecture (REC/PLAY.)
(Lorsqu'il est réglé sur le mode de pause à l'enregistrement (REC PAUSE), aucun signal n'est sorti à TP).

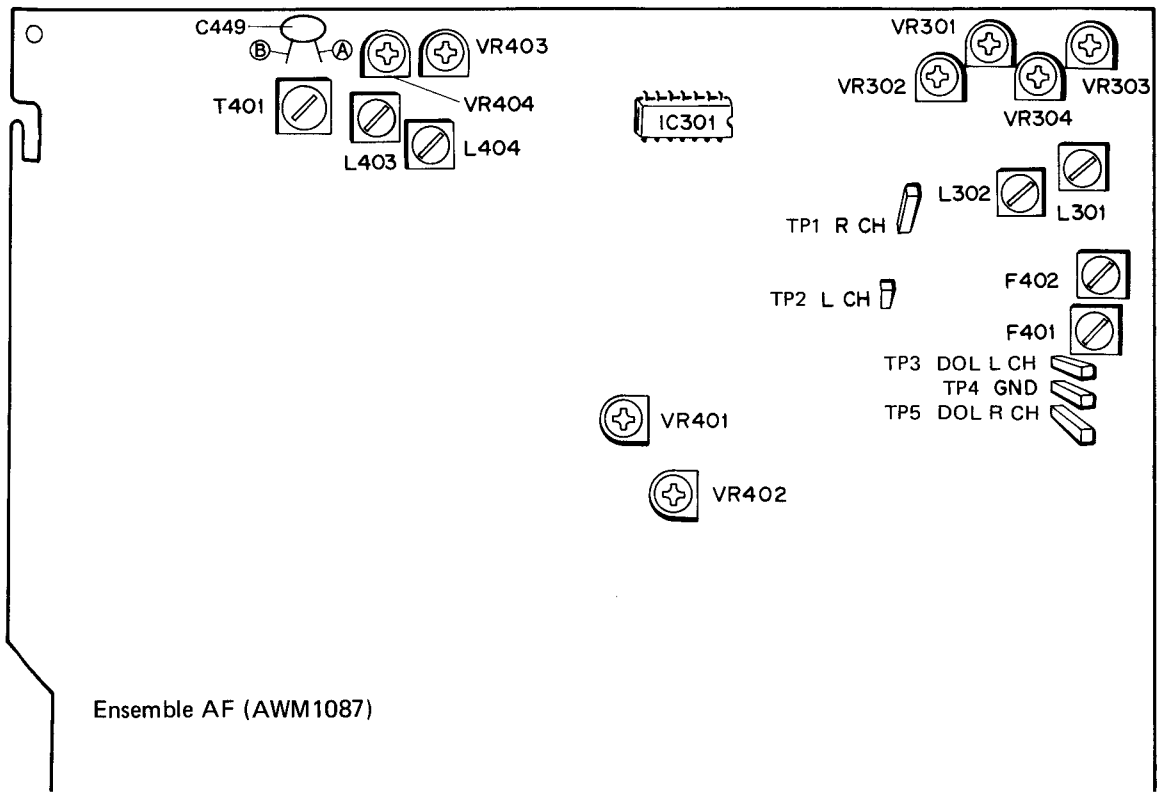


Fig. 8-3. Point de réglage et de mesure de l'ensemble AF.

• Réglage de l'azimutage
Pour le réglage de l'azimutage, déposer le couvercle du mécanisme (AEC1096) en le tirant vers l'avant.

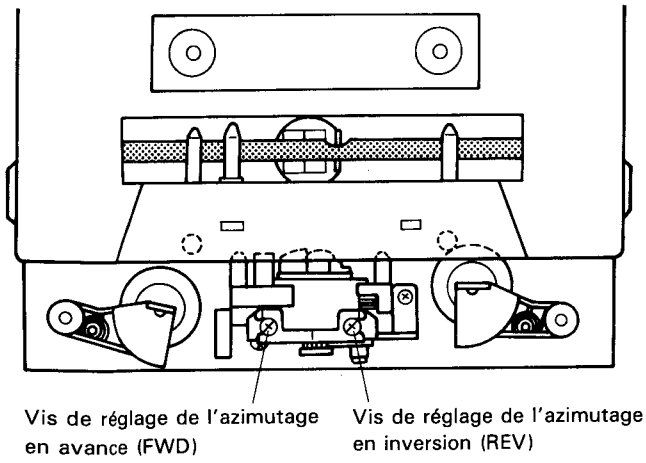


Fig. 8-4. Réglage de l'azimutage de la tête

Bande d'essai	STD-331B
Commutateur DOLBY NR	OFF

• Du fait des effets de bordure, compenser avec −0,5 dB à 125 Hz et −1 dB à 63 Hz pour le canal droit.

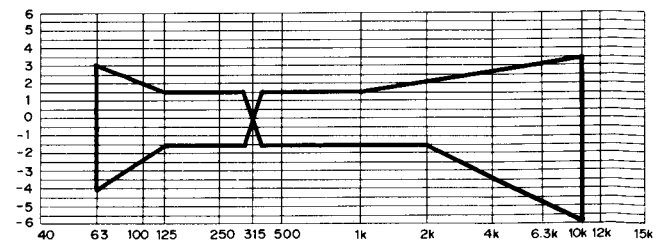


Fig. 8-5. Zone de réponse en fréquence de lecture admissible

Bande d'essai	STD-608A	Bande d'essai	STD-608A
Commutateur DOLBY NR	OFF	Commutateur DOLBY NR	ON

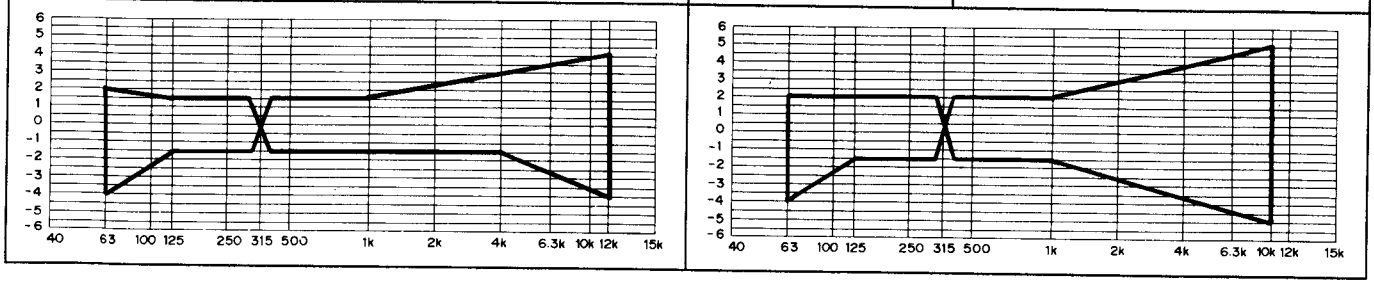


Fig. 8-6. Zone de réponse en fréquence d'enregistrement/lecture admissible (NORM)

Bande d'essai	STD-620	Bande d'essai	STD-620
Commutateur DOLBY NR	OFF	Commutateur DOLBY NR	ON

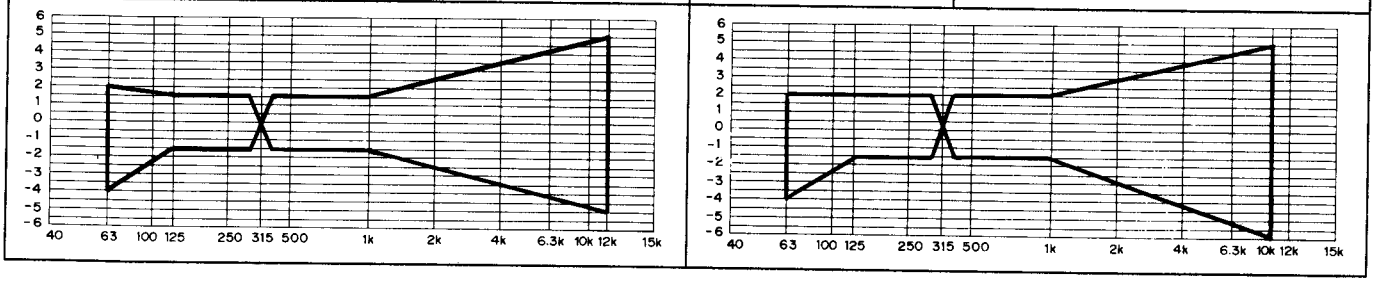


Fig. 8-7. Zone de réponse en fréquence d'enregistrement/lecture admissible (CrO_2)

Bande d'essai	STD-610	Bande d'essai	STD-610
Commutateur DOLBY NR	OFF	Commutateur DOLBY NR	ON

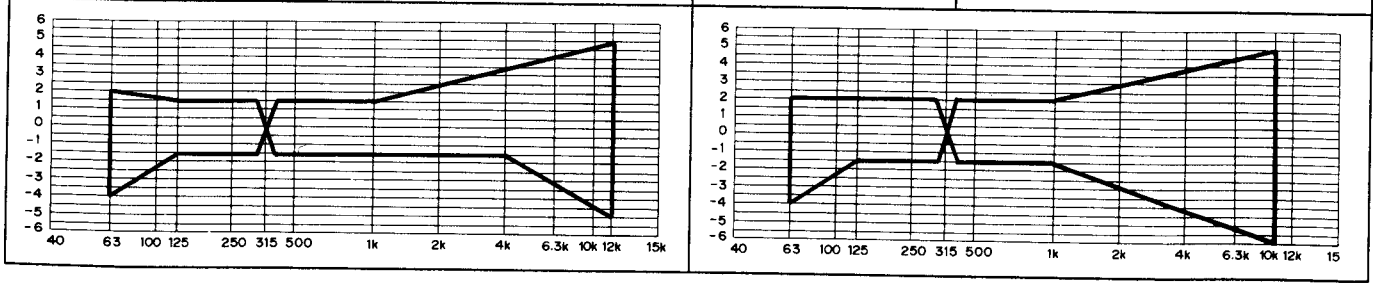


Fig. 8-8. Zone de réponse en fréquence d'enregistrement/lecture admissible (METAL)

8. AJUSTE

Ajuste de velocidad de cinta

1. Conecte el frecuencímetro en el terminal TP (Dolby TP: canal izquierdo o canal derecho) del conjunto AF.
2. Conecte el interruptor del deck.
3. Introduzca la cinta de prueba STD-301 en el deck I.
4. Ponga el deck I en el modo PLAY y ajuste VR802 del conjunto CONTROL para que la frecuencia de la señal de reproducción sea de 3.010Hz±5Hz.
   (Nota 1. No gire el VR801 cuando haga el ajuste de velocidad normal.)
   (Nota 2. Cerciórese de hacer el ajuste de velocidad doble en el deck II primero.)
5. Ponga el deck I en el modo PLAY y luego, cortocircuite los terminales TP4 y TP5 del conjunto CONTROL. (STD-301 se reproducirá al doble de la velocidad normal.)
6. Mida la frecuencia de la señal de reproducción del deck I.
7. Introduzca la STD-301 en el deck II.
8. Reproduzca la cinta del deck II al doble de la velocidad normal (cortocircuito entre los terminales TP4 y TP5) y ajuste el VR801 de forma que la frecuencia sea la misma que la del deck I cuando éste reproduzca al doble de la velocidad normal.
9. Elimine el cortocircuito entre TP4 y TP5.
10. Reproduzca la cinta en el deck II y ajuste el VR803 a 3 010Hz ± 5Hz.
11. Asegúrese en este momento que la fluctuación y el trémolo a la velocidad normal no excedan el 0,25%

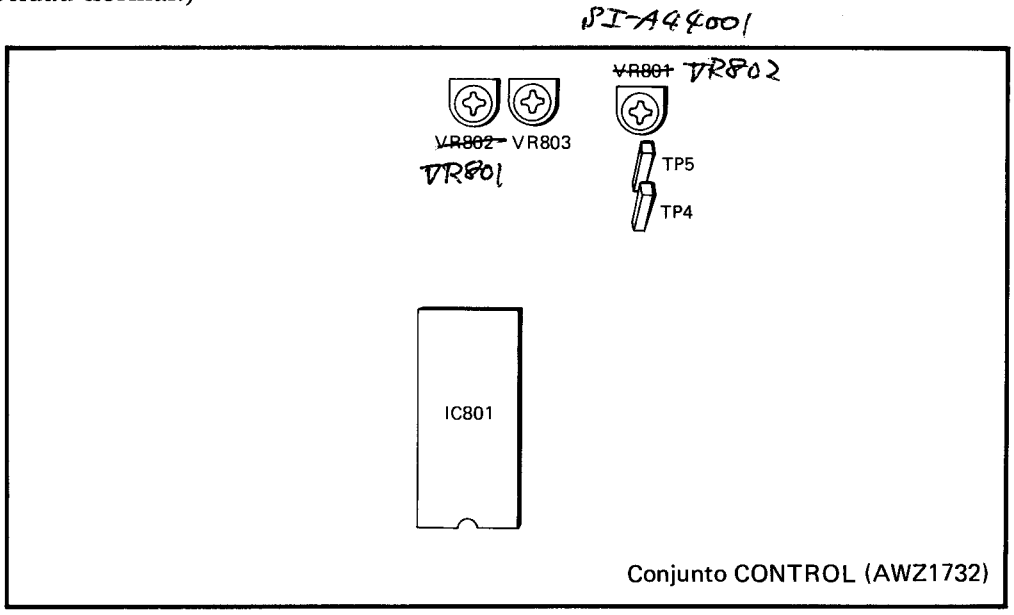


Figura 8-1. Ubicaciones para el ajuste

AJUSTES ELÉCTRICOS

- Confirme los ítemes indicados a continuación antes de realizar los ajustes eléctricos.

1. Primero deben completarse los ajustes mecánicos.
2. La cabeza debe estar limpia y desmagnetizada con un desmagnetizador de cabezas.
3. El nivel de medición debe ser de 0dBV = 1V.
4. Para realizar los ajustes debe utilizar la cinta especificada. La cinta de prueba tiene un lado A y un lado B. Uilice el lado A.
   STD-331B: Ajuste de reproducción
   STD-608A: Cinta virgen NORMAL
   STD-620: Cinta virgen de CrO_2
   STD-610: Cinta virgen de METAL
5. Prepare los instrumentos de medición siguientes: Medidor de CAmV, oscilador de baja frecuencia, atenuador y osciloscopio.
6. El ajuste deberá realizarlo para ambos canales, el izquierdo y el derecho, a menos que se especifique lo contrario.
7. A menos que se especifique lo contrario, el conmutador DOLBY NR debe dejarlo en la posición OFF.
8. Cerciórese de calentar el aparato durante unos pocos minutos antes de realizar el ajuste. Especialmente, antes de realizar el ajuste de respuesta de frecuencia para grabación y reproducción, el aparato debe haber funcionado de 3 a 5 minutos en el modo REC/PLAY.
9. Para realizar un ajuste perfecto, cerciórese de seguir el orden especificado. De lo contrario, el rendimiento del aparato podría empeorar.

Deck I

1. Ajuste del azimut de la cabeza
2. Ajuste del nivel de reproducción

Deck II

1. Ajuste del azimut de la cabeza
2. Ajuste del nivel de reproducción
3. Ajuste de respuesta de frecuencia para la grabación y la reproducción
4. Ajuste del nivel de grabación

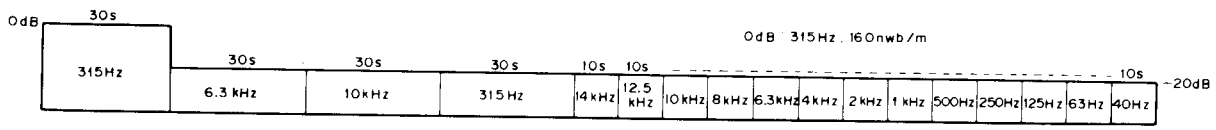


Figura 8-2. Cinta de prueba STD-331B

• Ajuste para el deck I • Este aparato está equipado con un mecanismo selector automático de cinta.

1. Ajuste del azimut de la cabeza • Nota: No haga que la cinta avance rápidamente o se rebobine estando introducido el destornillador.

Procedimiento	Selector de cinta	Modo	Señal de entrada/ cinta de prueba	Ubicación de ajuste	Ubicación de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Reproduzca la sección de 10kHz/ – 20 dB de la cinta de prueba STD-331B.	Tornillo de ajuste del azimut de la cabeza (Figura 8-4.)	TP3 (L CH) TP5 (R CH)	Nivel máximo de la señal de reproducción	Bloquee el tornillo después del ajuste.

2. Ajuste del nivel de reproducción • Haga este ajuste con mucho cuidado porque determina el nivel de DOLBY NR.

Procedimiento	Selector de cinta	Modo	Señal de entrada/ cinta de prueba	Ubicación de ajuste	Ubicación de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Reproduzca la sección de 315Hz/0dB de la cinta de prueba STD-331B.	VR301 (L) VR302 (R)	TP3 (L CH) TP5 (R CH)	– 13,5dBV	

• Ajuste para el deck II

• Este aparato está equipado con un mecanismo selector automático de cinta.

1. Ajuste del azimut de la cabeza

• Nota: No haga que la cinta avance rápidamento o se rebobine estando introducido el destornillador.

Procedimiento	Selector de cinta	Modo	Señal de entrada/ cinta de prueba	Ubicación de ajuste	Ubicación de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Reproduzca la sección de 10kHz/ – 20dB de la cinta de prueba STD-331B.	Tornillo de ajuste del azimut de la cabeza (Figura 8-4.)	TP3 (L CH) TP5 (R CH)	Nivel máximo de la señal de reproducción	Bloquee el tornillo después del ajuste.

2. Ajuste del nivel de reproducción

• Haga este ajuste con mucho cuidado porque determina el nivel de DOLBY NR.

Procedimiento	Selector de cinta	Modo	Señal de entrada/ cinta de prueba	Ubicación de ajuste	Ubicación de medición	Valor de ajuste	Observaciones
1	NORM	PLAY	Reproduzca la sección de 315Hz/0dB de la cinta de prueba STD-331B.	VR303 (L) VR304 (R)	TP3 (L CH) TP5 (R CH)	– 5,2dBV	

3. Ajuste de la respuesta de frecuencia de la grabación y de la reproducción

• Cuando ajuste la polarización de grabación, tenga cuidado de no ajustarla demasiado baja porque en ese caso aumenta la distorsión.

Procedimiento	Selector de cinta	Modo	Señal de entrada/ cinta de prueba	Ubicación de ajuste	Ubicación de medición	Valor de ajuste	Observaciones
1	NORM	REC	Introduzca la cinta de prueba STD-608A y ponga el modo REC.	Entre A y B de la figura 8-3.	Confirme si la frecuencia de oscilación es de 105kHz ± 1kHz.	Si no está dentro del margen especificado, ajuste con T701.	
2	NORM	REC	Aplique las señales de 315 Hz y 10kHz al terminal CD y conecte el conmutador CD.	Nivel de la señal de entrada	TP2 (L CH) TP1 (R CH)	– 25,2dBV	
3	NORM	REC/PLAY	Grabe y reproduzca las señales de 315 Hz y 10 kHz en la cinta de prueba STD-608A.	VR404(L) VR403 (R)	TP3 (L CH) TP5 (R CH)	Grabe/reproduzca y ajuste repetidamente hasta que el nivel de reproducción para la señal de 10kHz sea de 0 ± 0,5dB comparada con la señal de 315Hz.	

• Prepare las cintas de prueba, selector de cinta y conmutador Dolby NR para cumplir con las zonas de respuesta de frecuencia mostradas en las figuras 8-5. y 8-6.

4. Ajuste del nivel de grabación

• Ponga los controles del ecualizador gráfico y de balance en sus posiciones centrales y el control de mezcla microfónica en la posición SOURCE.

Procedimiento	Selector de cinta	Modo	Señal de entrada/ cinta de prueba	Ubicación de ajuste	Ubicación de medición	Valor de ajuste	Observaciones
1	NORM	REC	Aplique una señal de 315Hz al terminal CD y conecte el conmutador CD.	Nivel de la señal de entrada	TP2 (L CH) TP1 (R CH)	– 5,2dBV	
2	NORM	REC/PLAY	Gabe y reproduzca la señal de 315 Hz en la cinta de prueba STD-608A.	VR401 (L) VR402 (R)	TP3 (L CH) TP5 (R CH)	Grabe/reproduzca y ajuste repetidamente hasta que el nivel de reproducción de la señal de 315Hz sea de – 5,2dBV.	
3	CrO_2	REC/PLAY	Grabe y reproduzca la señal de 315Hz en la cinta de prueba STD-620.		TP3 (L CH) TP5 (R CH)	Asegúrese que el nivel de reproducción de la señal de 315Hz sea de – 5,2dBV.	
4	METAL	REC/PLAY	Grabe y reproduzca la señal de 315 Hz en la cinta de prueba STD-610.		TP3 (L CH) TP5 (R CH)	Asegúrese que el nivel de reproducción de la señal de 315Hz sea de – 5,2dBV.	

Nota: La señal no saldrá al terminal TP a menos que el aparato esté en el modo REC/PLAY. (En REC PAUSE, no sale señal al TP.)

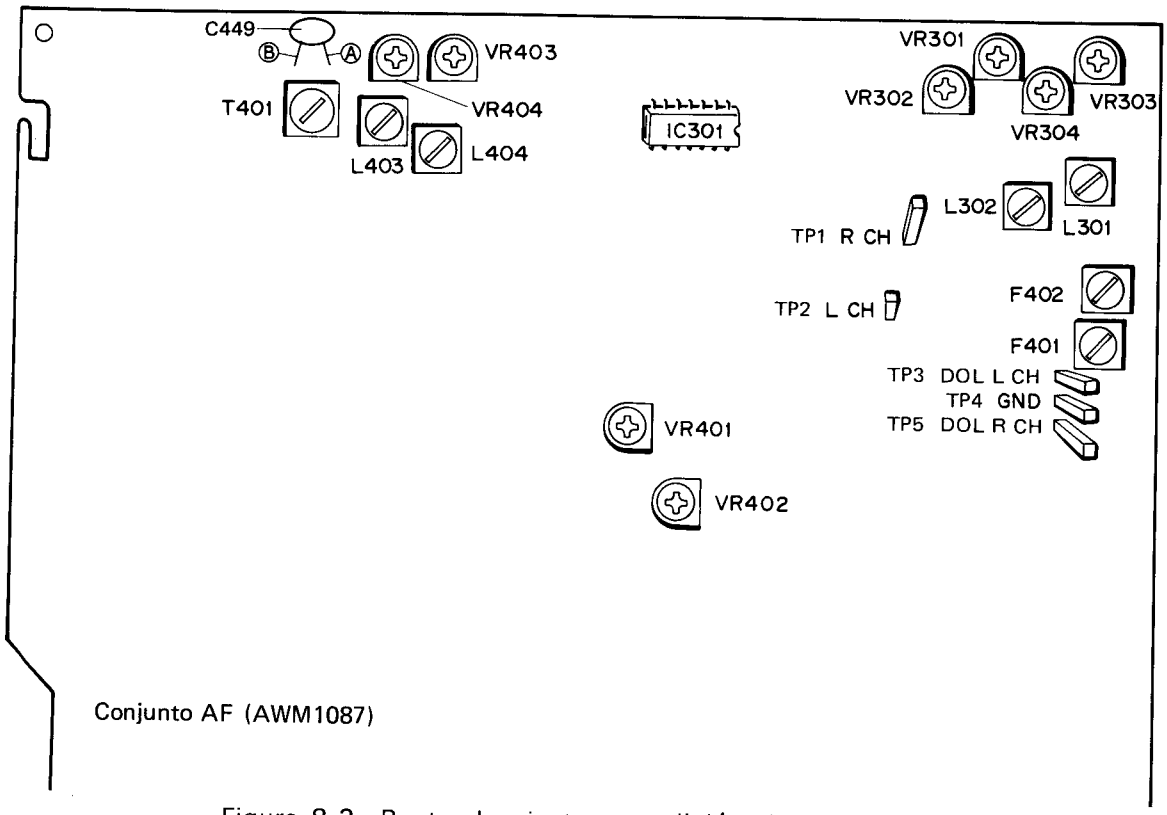


Figura 8-3. Punto de ajuste y medición del conjunto AF

• Ajuste de azimut
Para realizar el ajuste de azimut, retire la tapa del mecanismo (AEC1096) tirando de ella hacia delante para sacarla.

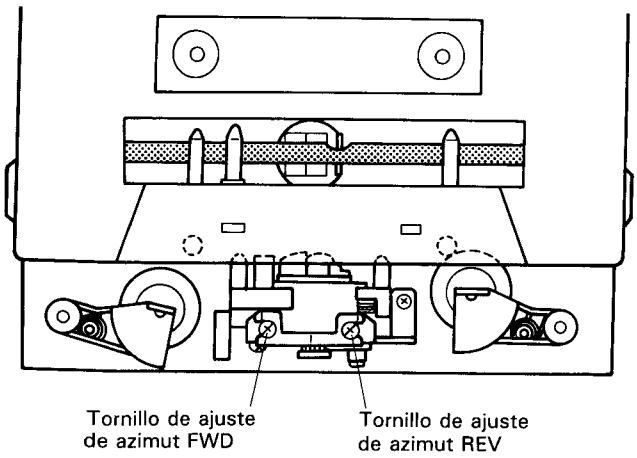


Figura 8-4. Ajuste de azimut de la cabeza

Cinta de prueba	STD-331B
Conmutador DOLBY NR	OFF

• Debido a los efectos de borde, compense adecuadamente con −0,5dB en 125Hz y −1dB en 63Hz para el canal derecho.

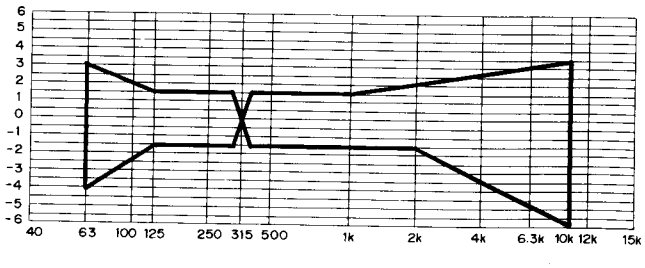


Figura 8-5. Zona de respuesta de la frecuencia de reproducción permisible

Cinta de prueba	STD-608A	Cinta de prueba	STD-608A
Conmutador DOLBY NR	OFF	Conmutador DOLBY NR	ON

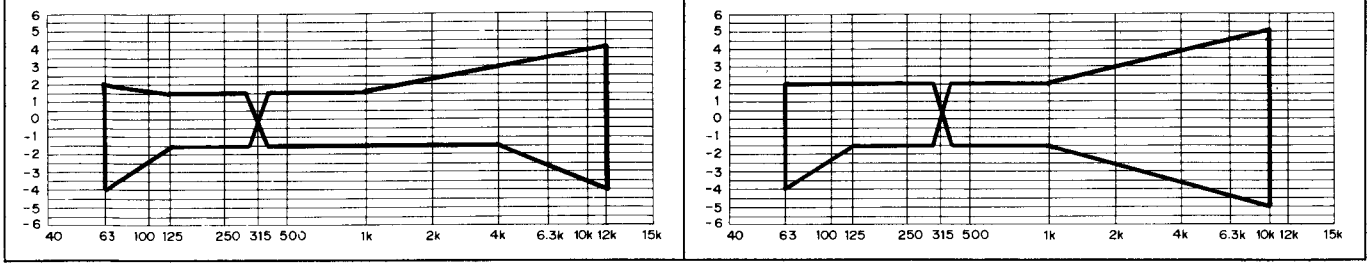


Figura 8-6. Zona de respuesta de frecuencia de grabación/reproducción permisible (NORM)

Cinta de prueba	STD-620	Cinta de prueba	STD-620
Conmutador DOLBY NR	OFF	Conmutador DOLBY NR	ON

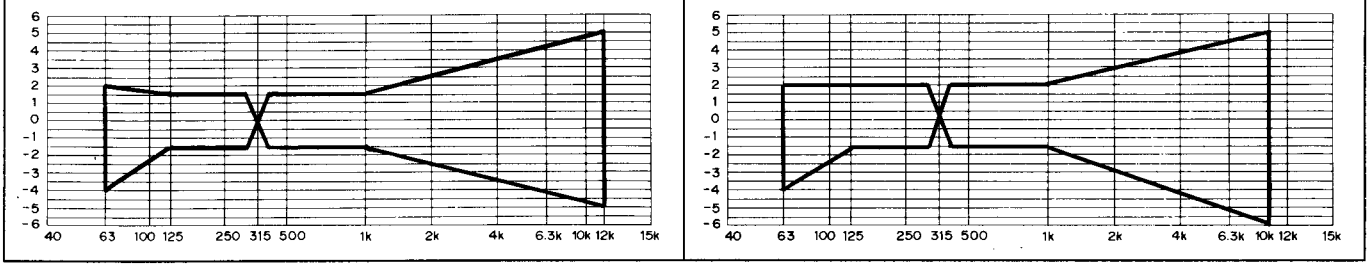


Figura 8-7. Zona de respuesta de frecuencia de grabación/reproducción permisible (CrO_2)

Cinta de prueba	STD-610	Cinta de prueba	STD-610
Conmutador DOLBY NR	OFF	Conmutador DOLBY NR	ON

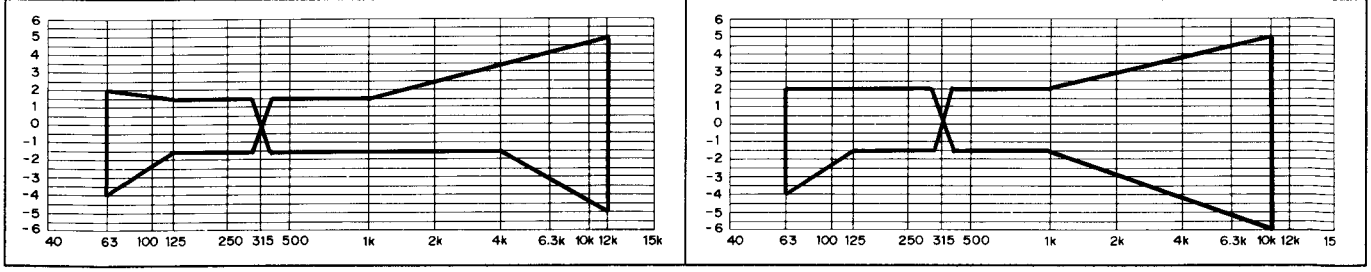


Figura 8-8. Zona de respuesta de frecuencia de grabación/reproducción permisible (METAL)

9. FOR HB AND SD TYPES

NOTES :

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the impotance 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.

CONTRAST OF MISCELLANEOUS PARTS

The DC−Z91/HB and SD types are the same as the DC−Z91/HE type with the exception of the following sections.

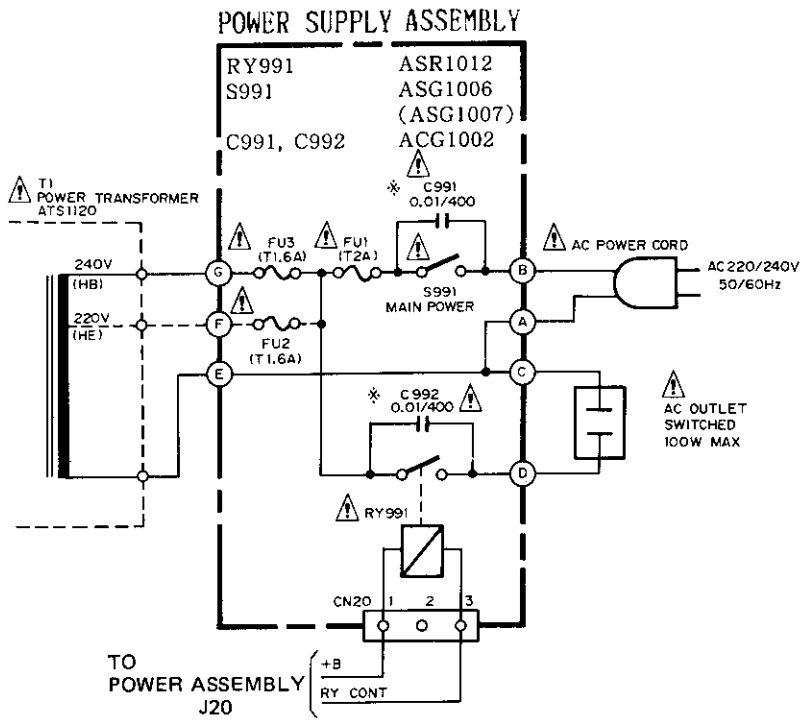
Mark	Symbol & Description	Part No.			Remarks
		DC−Z91/ HE type	DC−Z91/ HB type	DC−Z91/ SD type	
	Power supply assembly	Non supply	Non supply	Non supply	
⚠	AC power cord	ADG1021	ADG−063	ADG1015	
⚠★★	FU1 Fuse (T2A/250V)	AEK−017	AEK−511	.....	
⚠★★	FU2 Fuse (T1.6A/250V)	AEK−405	.....	AEK−405	
⚠★★	FU3 Fuse (T1.6A/250V)	.....	AEK−510	AEK−405	
⚠★★	FU4, FU5 Fuse (T1.6A/250V)	AEK−405	AEK−510	AEK−405	
⚠★★	FU6, FU7 Fuse (T3.15A/250V)	AEK−042	AEK−513	AEK−042	
⚠★★	FU1 Fuse (T4A/250V)	.....	.....	AEK−400	
⚠	AC socket (AC OUTLET)	AKP1024	AKP1023	AKP1022	
⚠★★	S1 Voltage selector switch (AC110/120−127/220/240V)	.....	.....	AKX−507	
⚠★	T1 Power transformer (AC220/240V)	ATS1120	ATS1120	.....	
⚠★	T1 Power transformer (AC110/120−127/220/240V)	.....	.....	ATS1122	
	Operating instructions (English, German, French, Italian)	ARE1068	.....	.....	
	Operating instructions (English)	.....	ARB1099	ARB1099	
	Operating instructions (Spanish−auxiliary)	ARC1073	.....	ARC1075	

POWER SUPPLY ASSEMBLY

The power supply assembly of DC−Z91/HB and SD types are the same as the power supply assembly of DC−Z91/HE type with the exception of the following section.

Mark	Symbol & Description	Part No.			Remarks
		DC−Z91/ HE type	DC−Z91/ HB type	DC−Z91/ SD type	
	Wrapping terminal	.....	.....	Non supply	

Schematic diagram for HB type



Line Voltage Selection

Line voltage can be changed with the following steps.

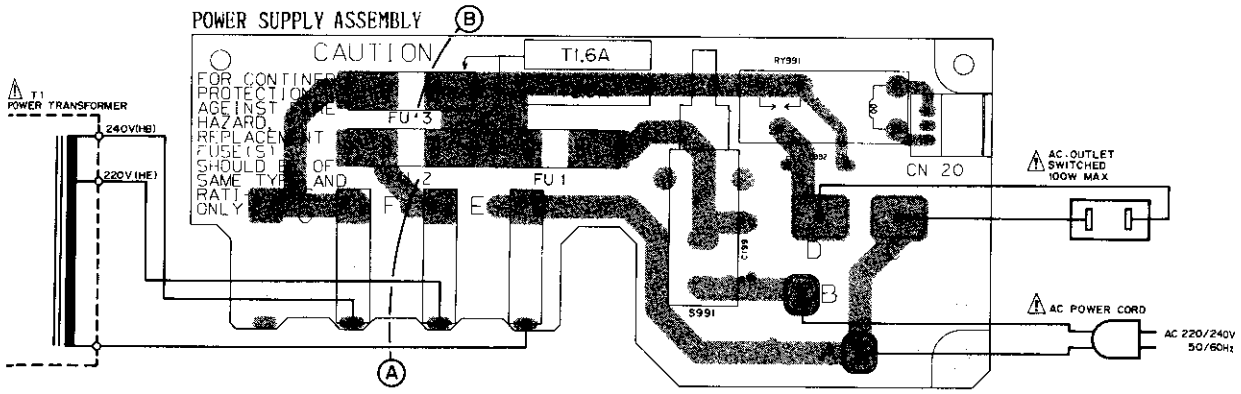
1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the position of the fuse Ⓐ or Ⓑ as follows.

Voltage	Fuse Ⓐ or Ⓑ position
220V	Ⓐ (FU2 ; HE type only)
240V	Ⓑ (FU3 ; HB type only)

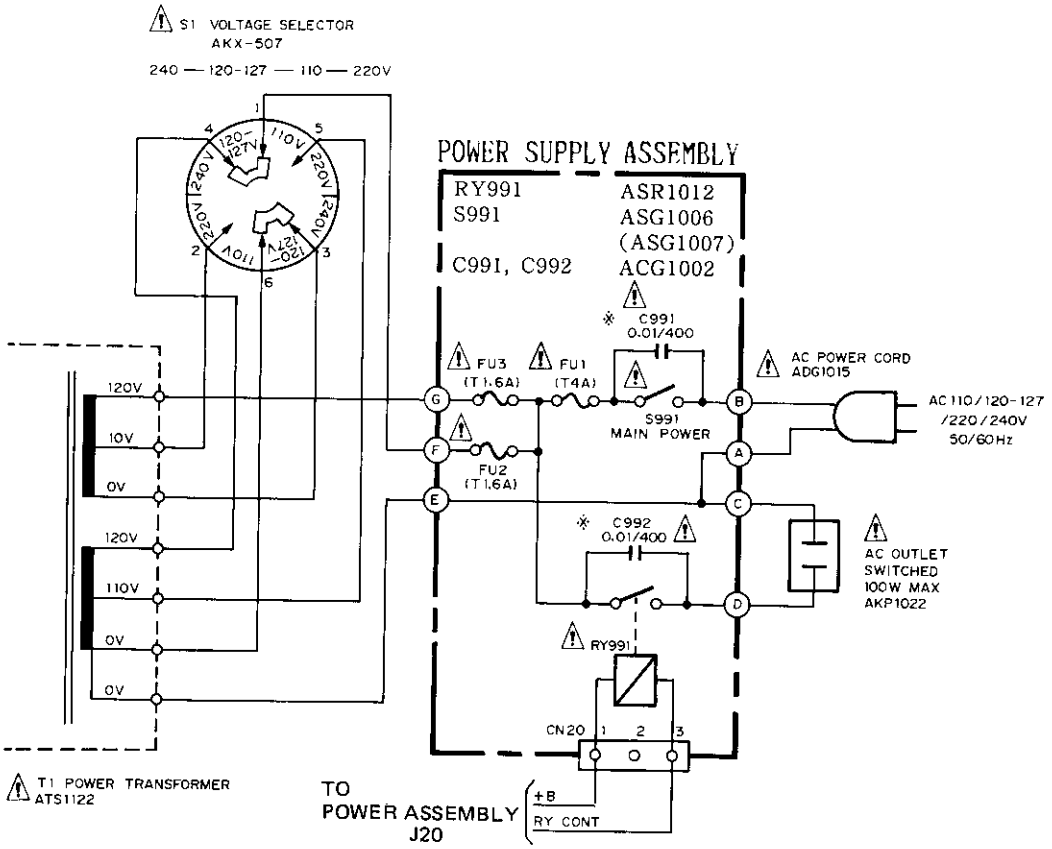
4. Stick the line voltage label on the rear panel.

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

P.C.Board patterns for HB type



Schematic diagram for SD type



P.C.Board patterns for SD type