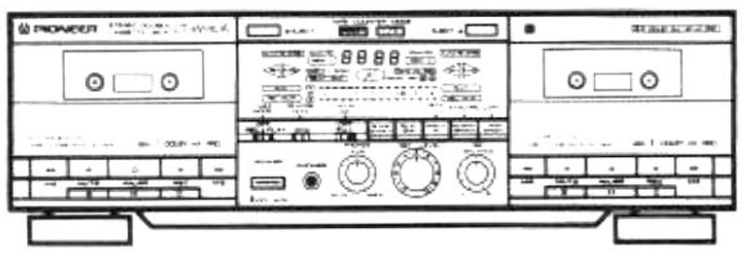
Service Manual

PIONEER
The future of sound and vision.



ORDER NO.
ARP1724

STEREO DOUBLE CASSETTE DECK

CT-W910R

CT-W910R HAS THREE VERSIONS :

Type	Power requirement	Export destination
KU/CA	AC120V only	U. S. A. and Canada
HEM	AC220V, 240V (switchable) *	European continent
SD/G	AC110V, 120V-127V, 220V, 240V (switchable)	U. S. Military

*Change the primary wiring of the power transformer.

- This manual is applicable to the CT-W910R/KU/CA, HEM and SD/G types.
- For the HEM and SD/G types, refer to pages 41-42.
- Ce manuel pour le service comprend les explications en français de réglage.
- Este manual de servicio trata del método ajuste escrito en español.

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SA APR. 1989 Printed in Japan

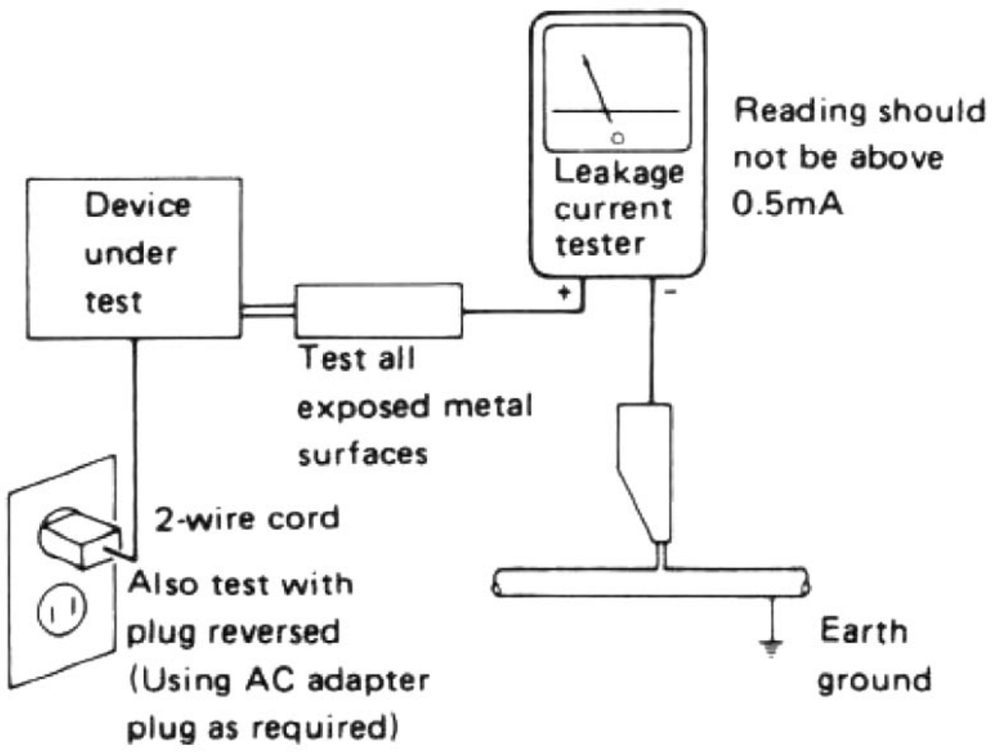
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

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

LEAKAGE CURRENT CHECK

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



AC Leakage Test

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

2. PRODUCT SAFETY NOTICE

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

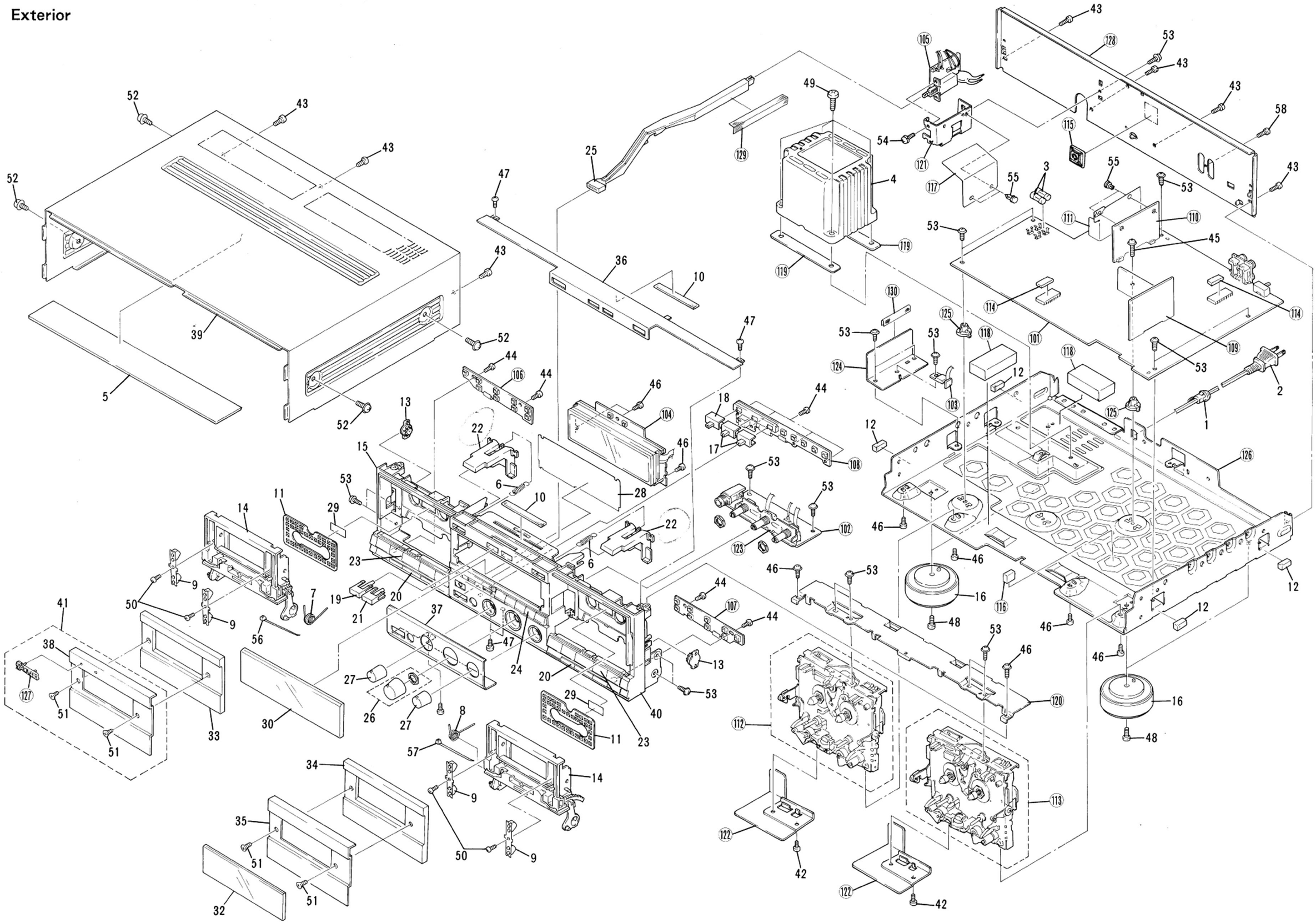
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

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

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

2. EXPLODED VIEWS AND PARTS LIST

2.1 Exterior



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.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

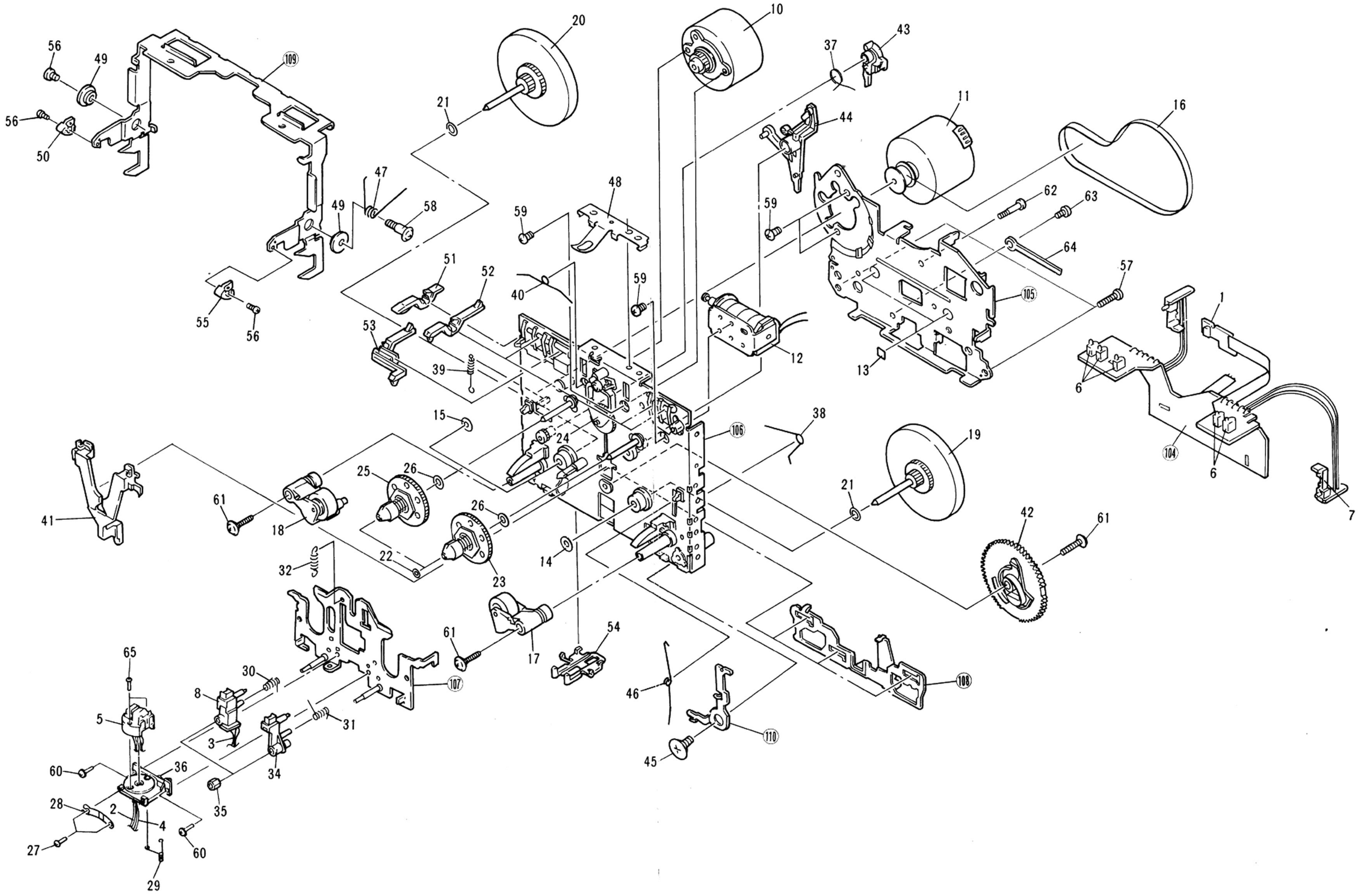
Parts List of Exterior

Mark	No.	Part No.	Description
⚠	1	CM−22C	Strain relife
⚠	2	PDG1002	AC Power cord
⚠	3	REK1001	Fuse (FU101, FU102/1.5A)
⚠	4	RTT1083	Power transformer (T1)
	5	PNB1109	Absorber plate
	6	RBH1132	Eject spring
	7	RBH1134	Door spring (L)
	8	RBH1135	Door spring (R)
	9	RBK1013	Half pressure spring
	10	REB−223	Cover cushion (D)
	11	REB1038	Stabilizer (B)
	12	REB1057	Rubber spacer (A)
	13	REC−436	Damper assembly
	14	RNT1010	Door pocket
	15	RNT1016	Panel stay assembly
	16	AMR1159	Leg assembly
	17	RAC1180	Knob (A) (DOLBY NR, REVERSE MODE)
	18	RAC1181	Knob (B) (TIMER MODE)
	19	RAC1184	Knob (RESET)
	20	RAC1187	Knob (B) (■, ▮▮, ●)
	21	RAC1189	Knob (TAPE COUNTER MODE I / II)
	22	RAC1192	Knob (EJECT)
	23	RAC1193	Knob (A) (◂◂, ◂, ■, ▸, ▸▸)
	24	RAC1355	Knob (C) (BLANK SEARCH, RELAY/SKIP, PARALLEL REC, SYNCHRO COPY NORMAL SPEED/HIGH SPEED)
	25	RAC1196	Knob (POWER)
	26	RAC1210	Knob (A) (REC LEVEL)
	27	RAC1211	Knob (B) (PHONES LEVEL, REC BALANCE)
	28	RAH1214	FL Filter
	29	REE−113	Remain display paper
	30	RLP1007	FL lens
	31		.....
	32	RLP1009	Door lens (R)
	33	RNK1253	Door panel base (L)
	34	RNK1254	Door panel base (R)
	35	RAH1419	Door panel (R)
	36	RAH1422	Front panel (upper)
	37	RAH1186	Front panel (under)
	38	RAH1418	Door panel (L)
	39	RXX1165	Bonnet
	40	RXX1046	Panel stay assembly
	41	RXX1214	Door panel (L) assembly
	42	ABZ30P080FMC	Screw
	43	BBZ30P060FCC	Screw
	44	BBZ30P060FZK	Screw
	45	BBZ30P080FCC	Screw
	46	BBZ30P080FMC	Screw
	47	BBZ30P080FZK	Screw
	48	BBZ40P100FZK	Screw
	49	BBZ40P180FCC	Screw
	50	BPZ20P060FMC	Screw
	51	CPZ26P080FMC	Screw
	52	FBT40P080FZK	Screw
	53	IBZ30P060FCC	Screw
	54	PMA30P060FCU	Screw
	55	RBM−003	Rivet (3×4.5)
	56	REC−265	Binder
	57	REC−371	Binder
	58	IBZ30P080FCC	Screw
	101		Main unit
	102		VR unit
	103		Transistor unit
	104		Display unit
	105		Power SW unit
	106		Control SW (1) unit
	107		Control SW (2) unit
	108		Control SW (C) unit
	109		Dolby HX (1) unit
	110		Dolby HX (2) unit
	111		Shild plate
	112		Mechanism unit I
	113		Mechanism unit II
	114		Plate
	115		Binder holder
	116		PCB spacer
	117		Cover
	118		Cushion
	119		Power transformer sheet
	120		Top plate
	121		Power switch holder
	122		Shield plate (A)
	123		Volume bracket
	124		Heat sink
	125		PCB stud
	126		Main shassis
	127		Name plate
	128		Rear panel
	129		Acetate tape (E)
	130		Acetate tape (F)

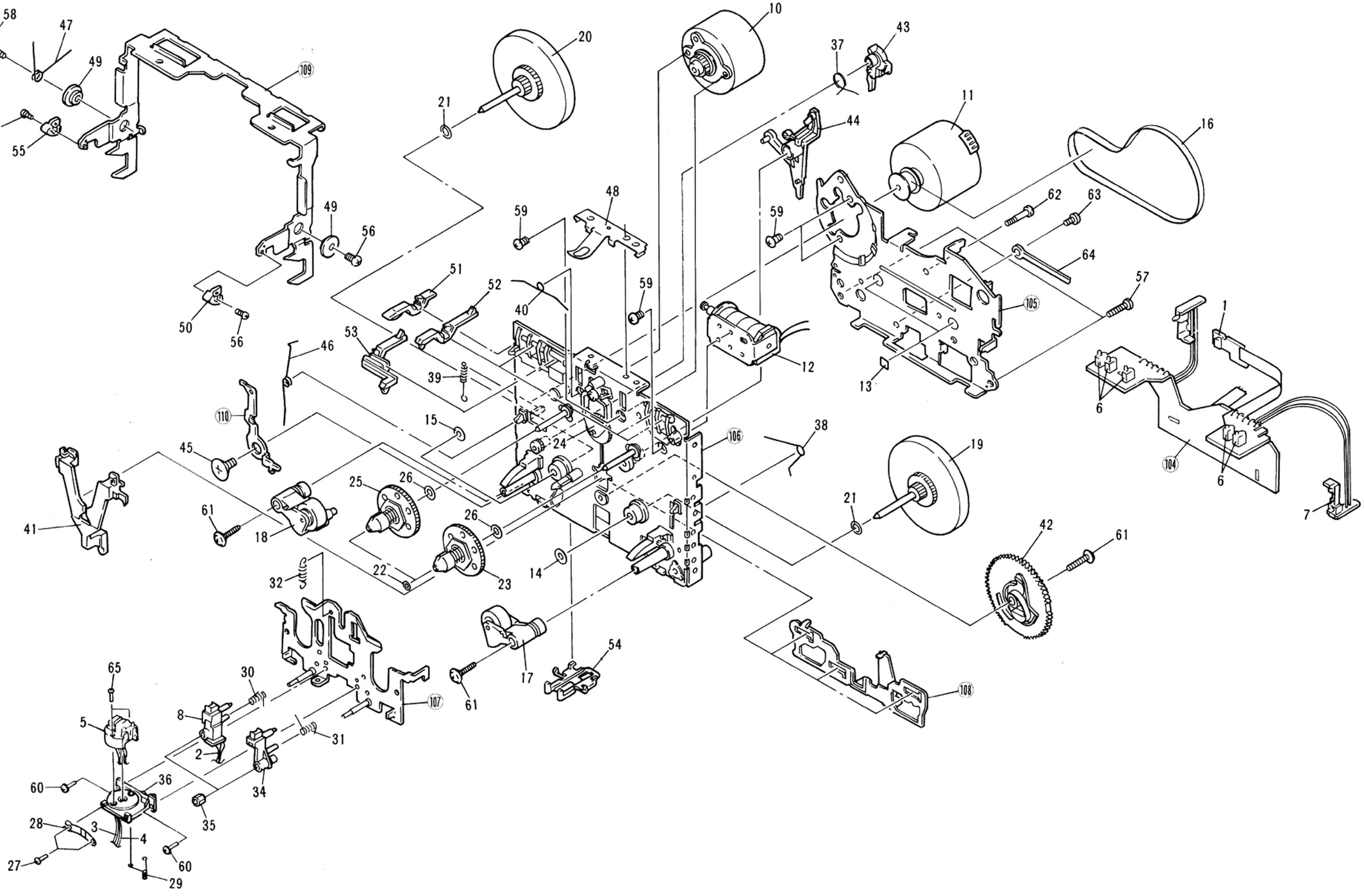
Parts List of Mechanism Unit (Deck I)

Mark	No.	Part No.	Description
	1	GP2S04B	Photo reflector
	2	RKP1106	Wire connector (3P)
	3	RKP1107	Wire connector (3P)
	4	RKS−033	Wire connector (6P)
	5	RPB1024	R/P, E Head
	6	RSG1018	Push switch
	7	RSN1010	Leaf switch
	8	RXC−180	Sensor assembly
	9		.....
	10	RXM1020	Motor assembly
	11	RXM1023	Motor assembly (Main)
	12	RXP1007	Solenoid
	13	REC1002	Spacer
	14	RBF−030	Washer
	15	RBF−089	Oilseal
	16	REB−558	Main belt
	17	RXA1183	P roller assembly
	18	RXA1244	P roller assembly
	19	RXC−083	F/W FHY assembly
	20	RXC−185	F/W (L) assembly
	21	WA26D045D025	Washer
	22	RBF−057	Washer
	23	RXA1184	TU Reel assembly
	24	RXA1248	Idler assembly
	25	RXC−040	Reel assembly
	26	WA21D070D013	Washer
	27	RBA1069	Azimuth screw
	28	RBK1025	Azimuth spring
	29	RBL−085	Spring
	30	RBL−087	Ajust spring (L)
	31	RBL−088	Ajust spring (R)
	32	RBL−140	Spring
	33		.....
	34	RNL−929	Tape guide
	35	RNL−930	Nut
	36	RXC−088	Head housing assembly
	37	RBH1192	Spring
	38	RBH1196	Spring
	39	RBL−143	Spring
	40	RBL−145	Spring
	41	RNK1340	Hold lever (C)
	42	RNK1433	Gear (E)
	43	RNK1437	Direction arm
	44	RNK1439	Play arm (F)
	45	RBA1048	Screw
	46	RBH1194	Eject prevention spring (R)
	47	RBH1195	Eject lever spring (R)
	48	RBK1002	Harf set spring
	49	RLB−558	Spacer
	50	RNK1281	Hook 2
	51	RNK1434	PACK detection lever
	52	RNK1435	REC detection lever
	53	RNK1436	Metal detection lever
	54	RNK1438	Wire holder
	55	RNM−160	Hook
	56	PCZ20P040FMC	Screw
	57	PRZ26P080FMC	Screw
	58	RBA−094	Screw
	59	RBA1005	Screw
	60	RBA1038	Screw
	61	RBA1064	Screw
	62	RBA1065	Screw
	63	RBA1066	Screw
	64	RNH−184	Cord clamper
	65	PMZ14P050FMC	Screw
	101		.....
	102		.....
	103		.....
	104		P.C. board
	105		F/W BKT
	106		Chassis assembly
	107		Plate head assembly
	108		Slide plate
	109		Eject lever (L)
	110		Eject prevention arm (R)

2.2 Mechanism Unit (Deck I)



2.3 Mechanism Unit (Deck II)



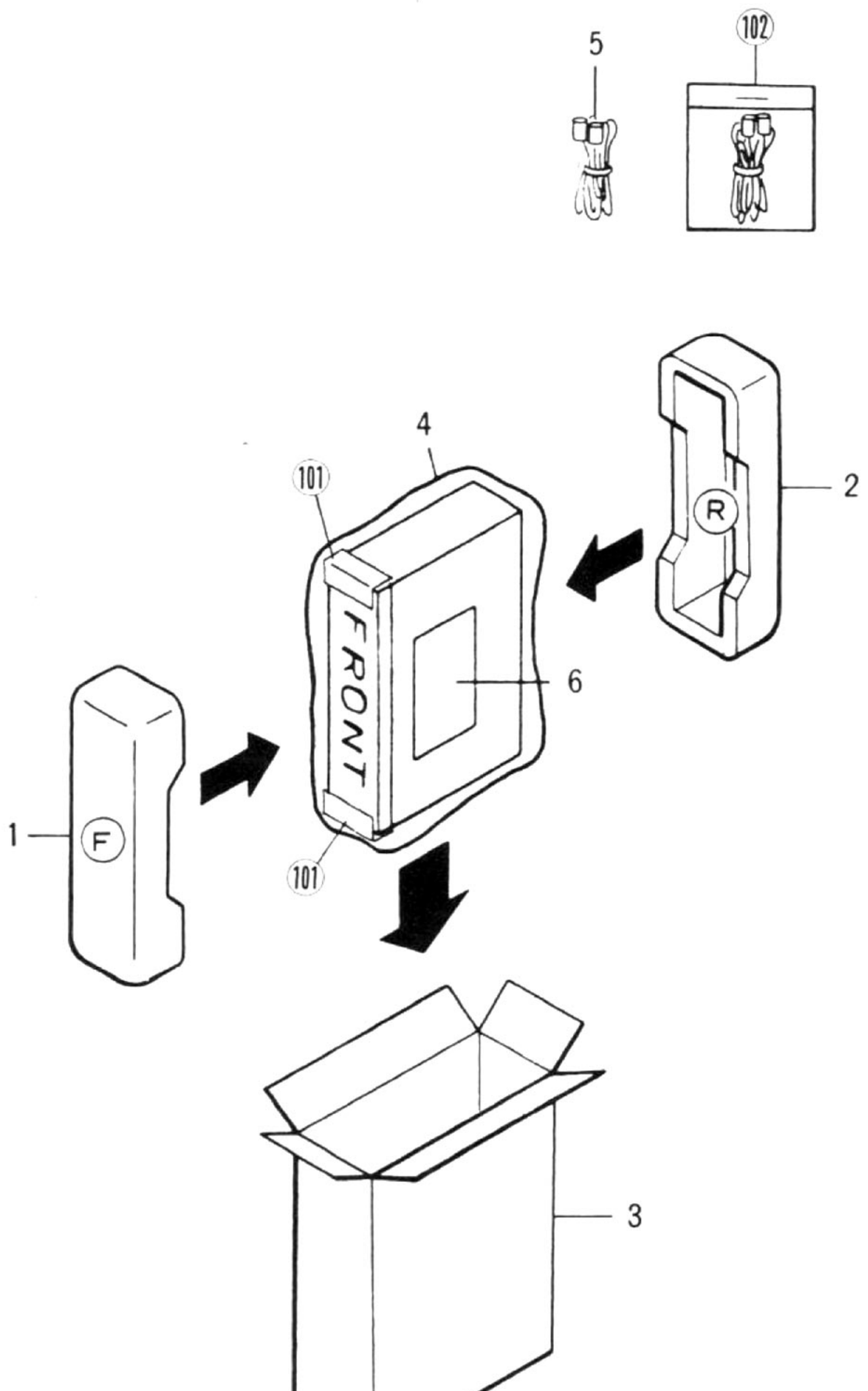
Parts List of Mechanism Unit (Deck II)

Mark	No.	Part No.	Description
	1	GP2S04B	Photo reflector
	2	RKP1107	Wire connector (3P)
	3	RKP1108	Wire connector (3P)
	4	RKS−033	Wire connector (6P)
	5	RPB1024	R/P, E Head
	6	RSG1018	Push switch
	7	RSN1010	Leaf switch
	8	RXC−180	Sensor assembly
	9		.....
	10	RXM1020	Motor assembly
	11	RXM1023	Motor assembly (Main)
	12	RXP1007	Solenoid
	13	REC1002	Spacer
	14	RBF−030	Washer
	15	RBF−089	Oilseal
	16	REB−558	Main belt
	17	RXA1183	P roller assembly
	18	RXA1244	P roller assembly
	19	RXC−083	F/W FHY assembly
	20	RXC−185	F/W (L) assembly
	21	WA26D045D025	Washer
	22	RBF−057	Washer
	23	RXA1184	TU reel assembly
	24	RXA1248	Idler assembly
	25	RXC−040	Reel assembly
	26	WA21D070D013	Washer
	27	RBA1069	Azimuth screw
	28	RBK1025	Azimuth spring
	29	RBL−085	Spring
	30	RBL−087	Adjust spring (L)
	31	RBL−088	Adjust spring (R)
	32	RBL−140	Headbase spring
	33		.....
	34	RNL−929	Tape guide
	35	RNL−930	Nut
	36	RXC−088	Head housing assembly
	37	RBH1192	Spring
	38	RBH1196	Spring
	39	RBL−143	Spring
	40	RBL−145	Spring
	41	RNK1340	Hold lever (C)
	42	RNK1433	Gear (E)
	43	RNK1437	Direction arm
	44	RNK1439	Play arm (F)
	45	RBA1048	Screw
	46	RBH1153	Eject prevention spring (L)
	47	RBH1193	Eject lever spring (L)
	48	RBK1002	Harf set spring
	49	RLB−558	Spacer
	50	RNK1281	Hook 2
	51	RNK1434	PACK detection lever
	52	RNK1435	REC detection lever
	53	RNK1436	Metal detection lever
	54	RNK1438	Wire holder
	55	RNM−160	Hook
	56	PCZ20P040FMC	Screw
	57	PRZ26P080FMC	Screw
	58	RBA−094	Screw
	59	RBA1005	Screw
	60	PCZ20P050FMC	Screw
	61	RBA1064	Screw
	62	RBA1065	Screw
	63	RBA1066	Screw
	64	RNH−184	Cord clamper
	65	PMZ14P050FMC	Screw
	101		.....
	102		.....
	103		.....
	104		P.C. board
	105		F/W BKT
	106		Chassis assembly
	107		Plate head assembly
	108		Slide plate
	109		Eject lever (R)
	110		Eject prevention arm (L)

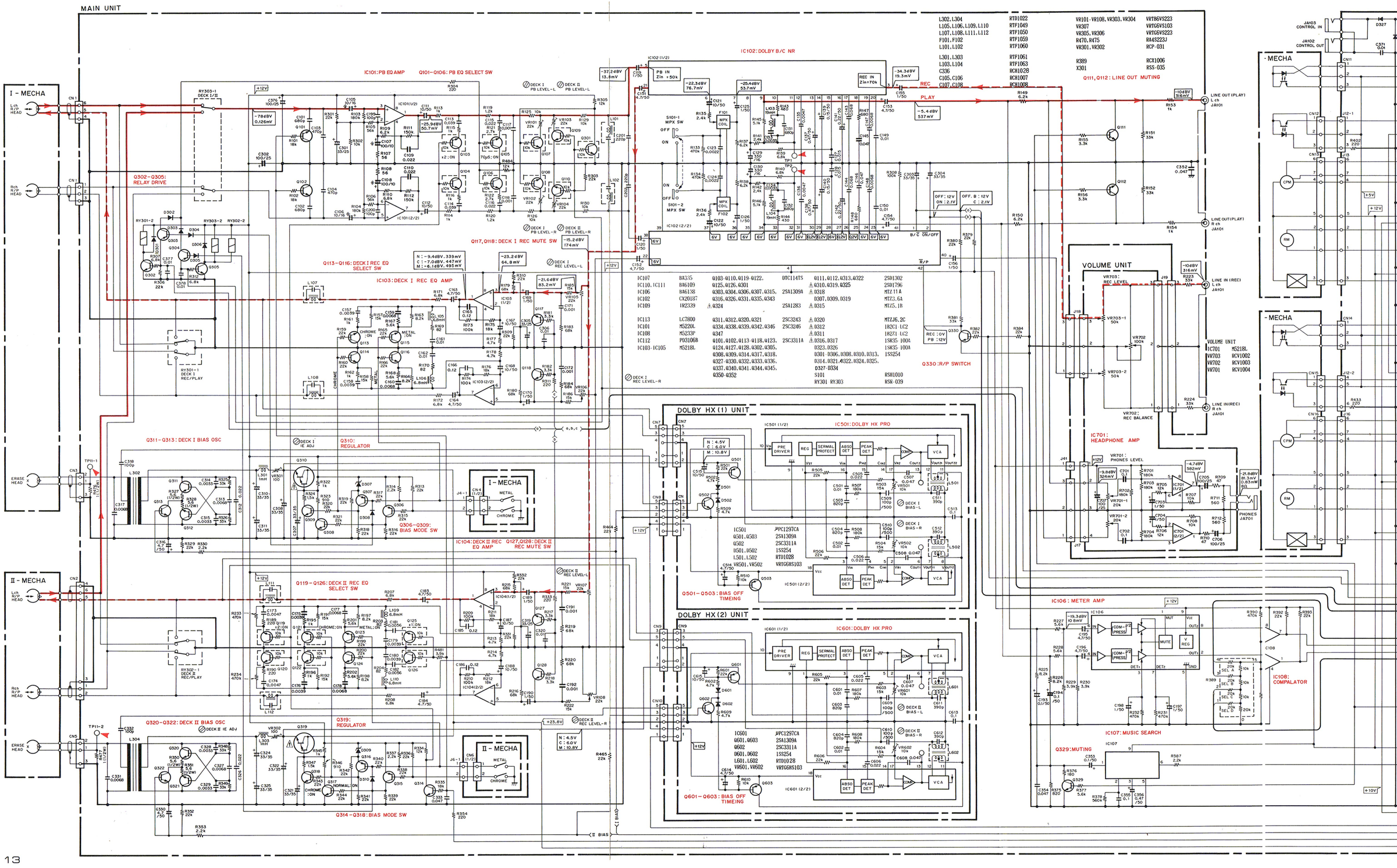
3. PACKING

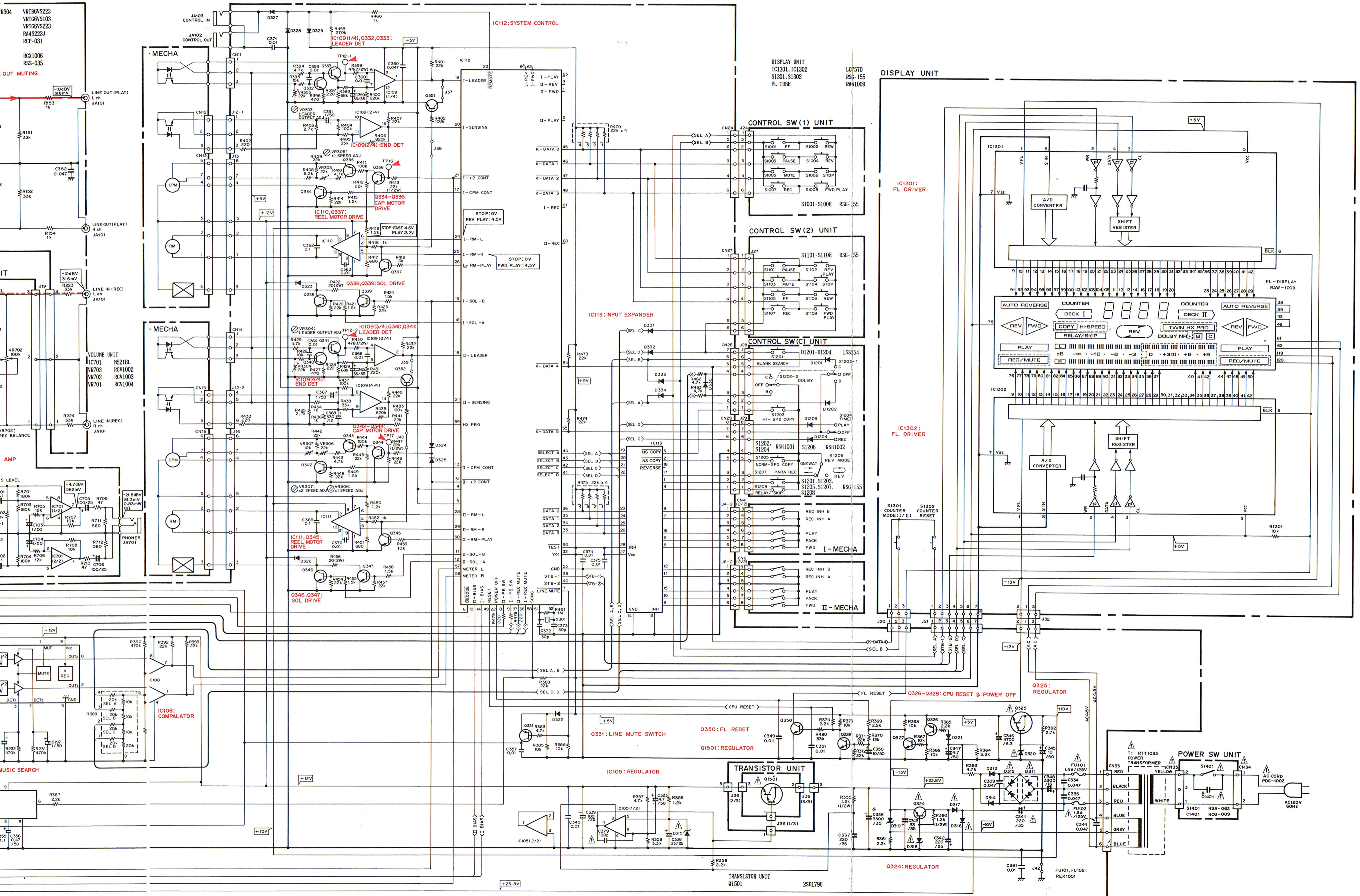
Patrs List

Mark	No.	Part No.	Description
	1	RHA1016	Pad (A)
	2	RHA1017	Pad (B)
	3	RHG1096	Packing case
	4	RHX−034	Sheet
	5	RDE−010	Connection coard
	6	RRB1040	Operating instructions (English)
	101		Spacer
	102		Connection cord assembly



4. SCHEMATIC DIAGRAM





1. RESISTORS:
Indicated in Ω, 1/4W, 1/6W, ±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:
; DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
4. OTHERS:
; Signal route.
⊘ ; Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

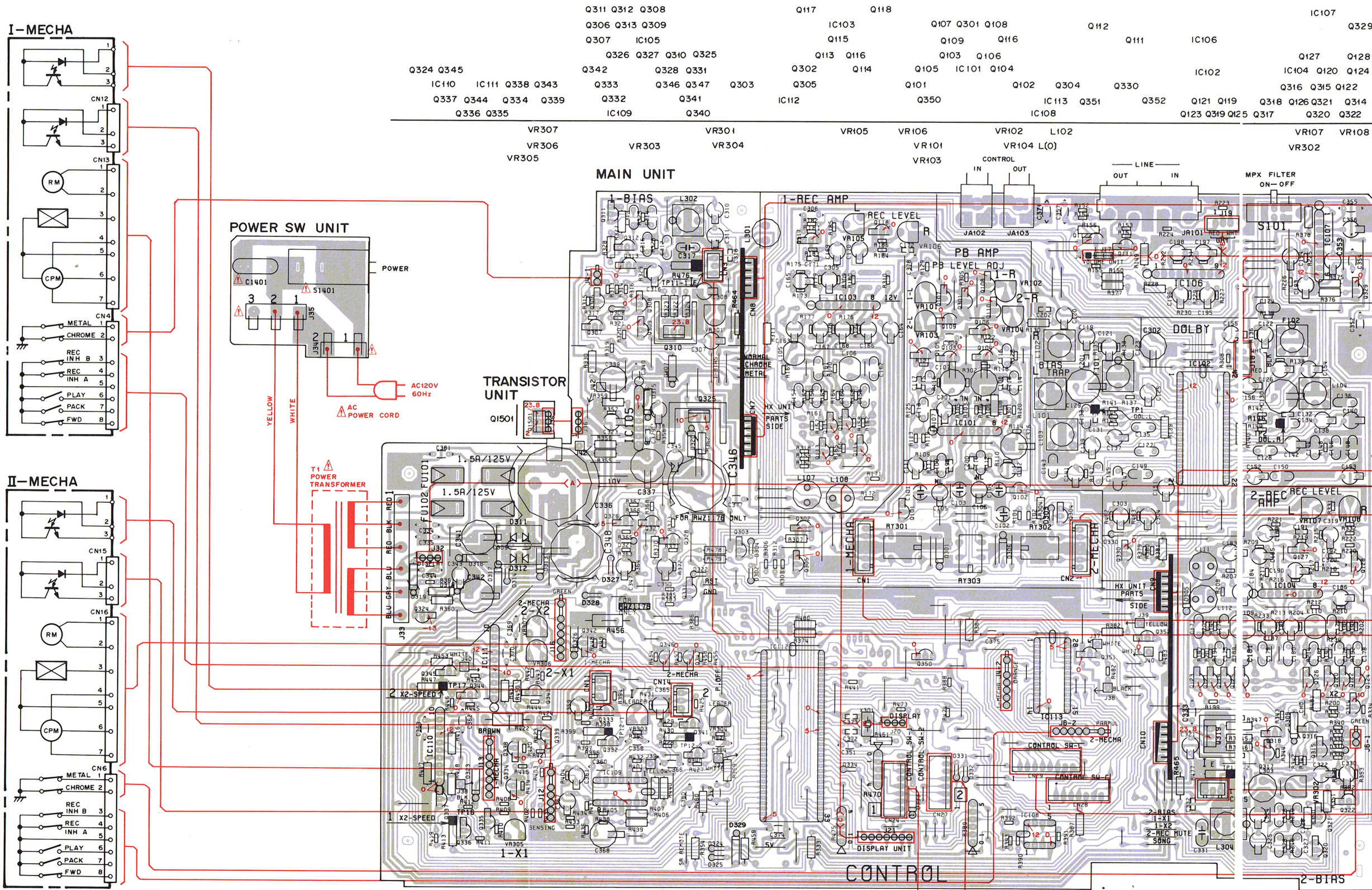
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

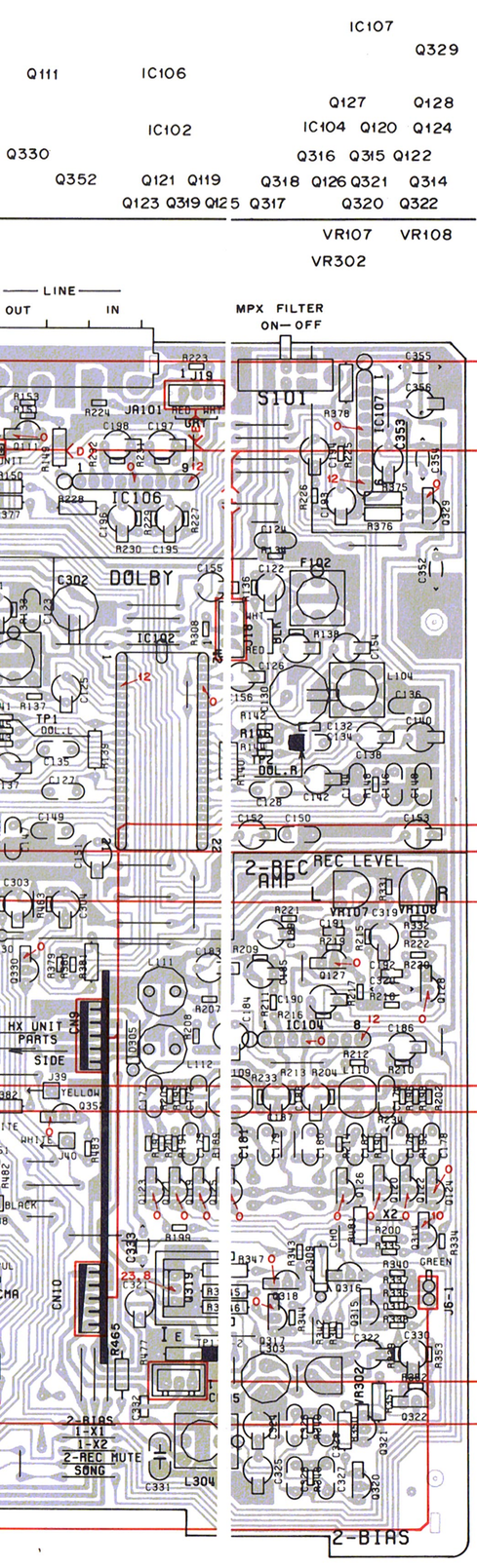
5. SWITCHES:
THE UNDERLINED INDICATES THE SWITCH POSITION.

MAIN UNIT
S101 : MPX FILTER — ON–OFF
DISPLAY UNIT
S1301 : I / II
S1302 : RESET
POWER SW UNIT
S1401 : POWER — ON–OFF
CONTROL SW (1) UNIT
S1001 : ▶▶
S1002 : ◀◀
S1003 : ❚❚
S1004 : ◀
S1005 : ○
S1006 : ■
S1007 : ●
S1008 : ▶
CONTROL SW (2) UNIT
S1101 : ❚❚
S1102 : ◀
S1103 : ○
S1104 : ■
S1105 : ▶▶
S1106 : ◀◀
S1107 : ●
S1108 : ▶
CONTROL SW (C) UNIT
S1201 : BLANK SEARCH
S1202 : DOLBY NR — B–OFF–C
S1203 : HIGH SPEED
S1204 : TIMER MODE — REC–OFF–PLAY
S1205 : NORMAL SPEED
S1206 : REVERSE MODE — ⇄ – ⊂⊃
S1207 : PARALLEL REC
S1208 : RELAY/SKIP

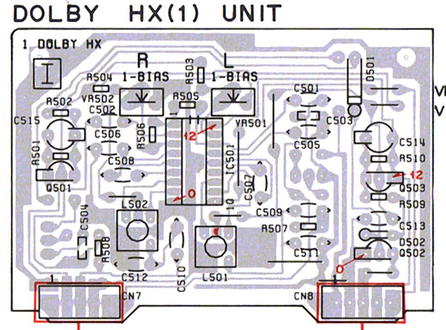
5. P.C. BOARDS CONNECTION DIAGRAM

- View from component side

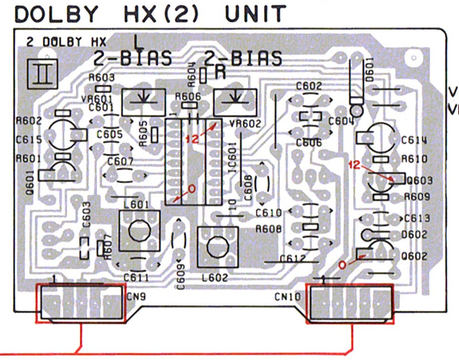




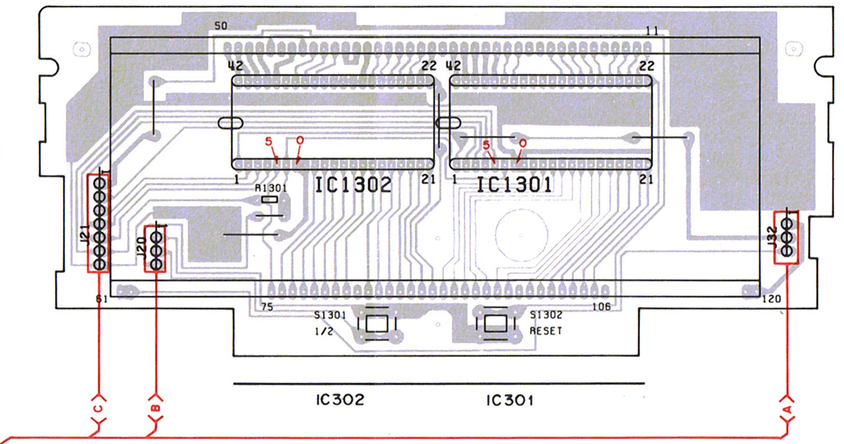
DOLBY HX(1) UNIT



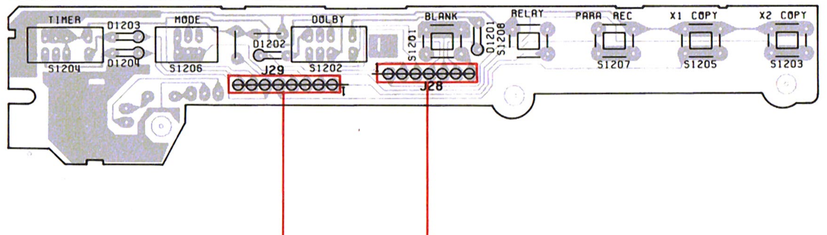
DOLBY HX(2) UNIT



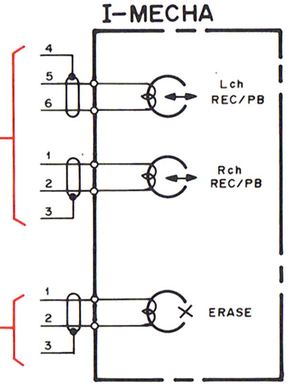
DISPLAY UNIT



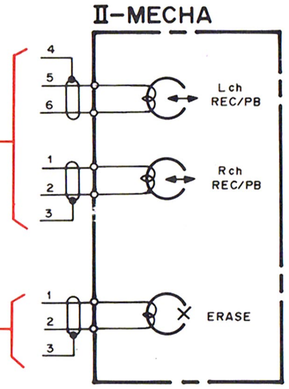
CONTROL SW(C) UNIT



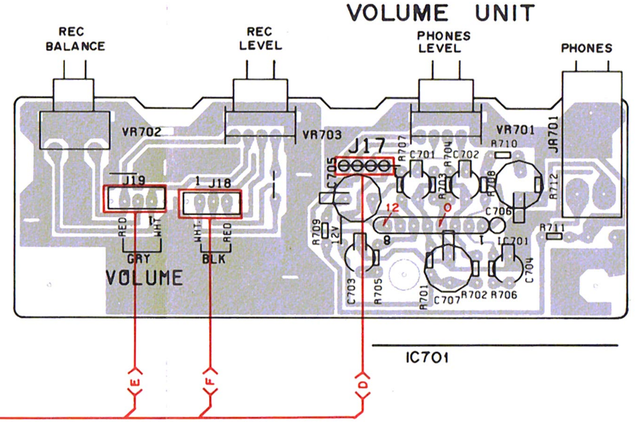
I-MECHA



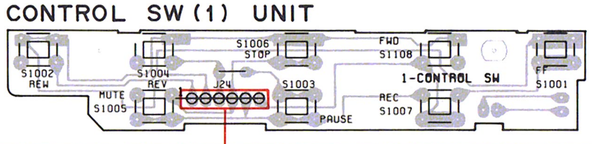
II-MECHA



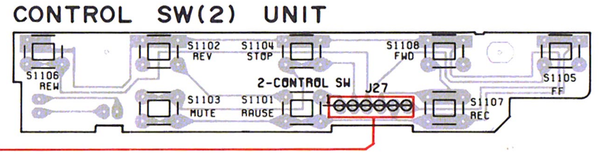
VOLUME UNIT



CONTROL SW (1) UNIT



CONTROL SW(2) UNIT



P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

5. P.C. BOARDS CONNECTION DIAGRAM

• View from soldering side

6. 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.
- 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.
	Main unit	
	VR unit	
	Transistor unit	
	Display unit	
	Power SW unit	
	Control SW (1) unit	
	Control SW (2) unit	
	Control SW (C) unit	
	Dolby HX (1) unit	
	Dolby HX (2) unit	

OTHERS

Mark	Symbol & Description	Part No.
⚠	Strain relife	CM-22C
⚠	AC Power cord	PDG1002
⚠	FU101, FU102 Fuse (1.5A)	REK1001
⚠	T1 Power transformer	RTT1083
	Photo reflector	GP2S04B
	R/P, E Head	RPB1008
	Push switch	RSG1018
	Leaf switch	RSN1010
	Sensor assembly	RXC-180
	Motor assembly	RXM1020
	Motor assembly (Main)	RXM1023
	Solenoid	RXP1007

Main Unit

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC107	BA335
	IC110, IC111	BA6109
	IC106	BA6138
	IC102	CX20187
	IC109	IR2339
	IC113	LC7800
	IC103-IC105	M5218L
	IC101	M5220L
	IC108	M5233P
	IC112	PD3106B
	Q103-Q110, Q119-Q122, Q125, Q126, Q301	DTC114TS
⚠	Q324	2SA1283
	Q303, Q304, Q306, Q307, Q315, Q316, Q326, Q331, Q335, Q343	2SA1309A
	Q311, Q312, Q320, Q321	2SC3243
	Q334, Q338, Q339, Q342, Q346, Q347	2SC3246
	Q101, Q102, Q113-Q118, Q123, Q124, Q127, Q128, Q302, Q305, Q308, Q309, Q314, Q317, Q318, Q327-Q330, Q332, Q333, Q336, Q337, Q340, Q341, Q344, Q345, Q350-Q352	2SC3311A
	Q111, Q112, Q313, Q322	2SD1302
⚠	Q310, Q319, Q325	2SD1796
⚠	D320	MTZJ6.2C
⚠	D318	MTZ11A
	D307, D309, D319	MTZ3.6A
⚠	D315	MTZ5.1B
⚠	D312	1B2C1-LC2
⚠	D311	1B2Z1-LC2
⚠	D316, D317	1SR35-100A
	D323, D326	1SR35-100A
	D301-D306, D308, D310, D313, D314, D321, D322, D324, D325, D327-D334	1SS254

SWITCH AND RELAYS

Mark	Symbol & Description	Part No.
	S101 Slide switch (MPX FILTER)	RSH1010
	RY301-RY303 Relay	RSR-039

COILS AND FILTER

Mark	Symbol & Description	Part No.
	L302, L304 Oscillator coil	RTD1022
	L105, L106, L109, L110 Peaking coil (6.8mH)	RTF1049
	L107, L108, L111, L112 Trap coil	RTF1050
	F101, F102 MPX filter	RTF1059
	L101, L102 Trap coil	RTF1060
	L301, L303 Line coil	RTF1061
	L103, L104 Coil (19mH)	RTF1063

CAPACITORS

Mark	Symbol & Description	Part No.
	C372, C373	CCPUSL300J50
	C193, C194, C353	CEASR10M50
	C139, C140	CEASR15M50
	C141, C142	CEASR22M50
	C137, C138, C356	CEASR47M50
	C197, C198, C361, C367	CEAS010M50
	C167, C168, C187, C188, C345, C350	CEAS100M50
	C341, C342	CEAS221M35
	C303, C304, C307, C308, C310, C311, C321, C322, C324, C325, C343, C359, C365	CEAS330M35
	C368	CEAS331M16
	C348	CEAS332M16
	C195, C196, C316, C330, C347	CEAS4R7M50
	C346	CEAS472M6R3
	C119, C120, C125, C126, C155, C156, C169, C170, C189, C190	CEYA010M50
	C111, C112, C121, C122	CEYA100M50
	C302, C339, C376	CEYA101M25
	C301, C305, C319, C338	CEYA330M25
	C129, C130	CEYA331M16
	C151－C154, C163, C164, C183, C184, C323	CEYA4R7M50
	C337	CEZA221M35
	C149, C150, C161, C162	CFTXA103J50
	C165, C166, C185, C186	CFTXA124J50
	C127, C128	CFTXA153J50
	C123, C124	CFTXA222J50
	C109, C110, C115, C116, C312, C326	CFTXA223J50
	C133, C134, C314, C315, C328, C329	CFTXA332J50
	C157, C158, C175, C176, C179, C180	CFTXA392J50
	C113, C114	CFTXA393J50
	C135, C136, C173, C174	CFTXA472J50
	C145, C146, C309	CFTXA473J50
	C181, C182	CFTXA562J50
	C147, C148, C159, C160, C177, C178, C313, C327	CFTXA682J50
	C143, C144	CFTXA683J50
	C355, C362, C369	CGCYX104K25
	C306, C320, C340, C349, C351, C357, C358, C360, C363, C364, C366, C370, C371, C374, C375, C377, C378, C381	CKCYF103Z50
	C333－C335, C344, C352, C354, C380	CKCYF473Z50
	C199, C200, C318, C332, C379	CKPUYB101K50
	C117, C118, C171, C172, C191, C192	CKPUYB102K50
	C201, C202	CKPUYB221K50
	C131, C132	CKPUYB681K50
	C317, C331	CQPA682J100
	C103, C104	CQSF471J50
	C101, C102	CQSF681J50
	C336 (3300 μF／35V)	RCH1028
	C105, C106 (10 μF／16V)	RCH1007
	C107, C108 (100 μF／10V)	RCH1008

RESISTORS

Mark	Symbol & Description	Part No.
	R442, R456	RS2LMF200J
	VR101－VR108, VR303, VR304 Semi－fixed (22k)	VRTB6VS223
	VR307 Semi－Fixed (10k)	VRTS6VS103
	VR305, VR306 Semi－fixed (22k)	VRTG6VS223
	R470, R475 Resistor arry	RA4S223J
	VR301, VR302 Semi－fixed (100B)	RCP－031
	R389 R／2R Rudder resistor (10k)	RCX1006
	R399, R413, R430, R447, R476, R477	RD½LF□□□J
	R327, R328, R350, R351, R355, R360	RD½PMF□□□J
	R107, R108, R130, R139, R140, R149, R150, R156, R228, R304, R307, R311, R322－R324, R330, R333, R345－R347, R354, R356, R359, R362, R369, R370, R374－R378, R381, R382, R384, R387, R406, R407, R416－R418, R439, R440, R450, R451, R453, R459－R461, R464, R465, R478－R481	RD¼PM□□□J
	Other resistors	RD⅙PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	JA101 Pin jack 4P (LINE IN／OUT)	RKB1003
	X301 Ceramic resonator	RSS－035
	JA102, JA103 Jack φ3.5 (CONTROL IN／OUT)	RKN－071

VR Unit

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	IC701	M5218L

CAPACITORS

Mark	Symbol & Description	Part No.
	C703, C704	CEYA010M50
	C705–C707	CEYA101M25
	C701, C702	CFTXA104J50

RESISTORS

Mark	Symbol & Description	Part No.
	VR703 Variable resistor (50kA×2 REC LEVEL)	RCV1002
	VR702 Variable resistor (100kB REC BALANCE)	RCV1003
	VR701 Variable resistor (20kB×2 PHONES LEVEL)	RCV1004
	Other resistors	RD ⅙ PM□□□J

OTHER

Mark	Symbol & Description	Part No.
	JA701 Jack (PHONES)	RKN1002

TRANSISTOR Unit

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
⚠	Q1501	2SD1796

Display Unit

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC1301, IC1302	LC7570

SWITCHES

Mark	Symbol & Description	Part No.
	S1301, S1302 Tact switch (I/II, RESET)	RSG–155

RESISTOR

Mark	Symbol & Description	Part No.
	R1301	RD ⅙ PM103J

OTHER

Mark	Symbol & Description	Part No.
	Fluorescent indicator	RAW1009

Power SW Unit

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C1401 (10000P/AC400V)	RCG–009

SWITCH

Mark	Symbol & Description	Part No.
⚠	S1401 Push switch (POWER)	RSA–063

Control SW (1) Unit

SWITCHES

Mark	Symbol & Description	Part No.
	S1001–S1008 Tact switch (FF, REW, PAUSE, REV PLAY, MUTE, STOP, REC, FWD PLAY)	RSG–155

Control SW (2) Unit

SWITCHES

Mark	Symbol & Description	Part No.
	S1101–S1108 Tact switch (PAUSE, REV PLAY, MUTE, STOP, FF, REW, REC, FWD PLAY)	RSG–155

Control SW (C) Unit

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D1201–D1204	1SS254

SWITCHES

Mark	Symbol & Description	Part No.
	S1201, S1203, S1205, S1207, S1208 Tact switch (BRANK SERCH, HIGHT SPEED COPY, NORMAL SPEED COPY, PALALLEL REC, RELAY/SKIP)	RSG–155
	S1202, 1204 Slide switch (DOLBY NR, TIMER ST–BY)	RSH1001
	S1206 Slide switch (REVERSE MODE)	RSH1002

Dolby HX (1) Unit

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC501	μ PC1297CA
	Q501, Q503	2SA1309A
	Q502	2SC3311A
	D501, D502	1SS254

COILS

Mark	Symbol & Description	Part No.
	L501, L502 Coil	RTD1028

CAPACITORS

Mark	Symbol & Description	Part No.
	C509, C510	CCCSL101K500
	C515	CEAS100M50
	C514	CEAS4R7M50
	C501, C502	CGCYX103K25
	C513	CGCYX104K25
	C505, C506	CGCYX223K25
	C507, C508	CGCYX473K25
	C511, C512	CKCYB391J500
	C503, C504	CKPUYB821K50

RESISTORS

Mark	Symbol & Description	Part No.
	VR501, VR502 Semi-fixed (10k)	VRTG6HS103
	Other resistors	RD 1/6 PM□□□J

Dolby HX (2) Unit

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC601	μ PC1297CA
	Q601, Q603	2SA1309A
	Q602	2SC3311A
	D601, D602	1SS254

COILS

Mark	Symbol & Description	Part No.
	L601, L602 Coil	RTD1028

CAPACITORS

Mark	Symbol & Description	Part No.
	C609, C610	CCCSL101K500
	C615	CEAS100M50
	C614	CEAS4R7M50
	C601, C602	CGCYX103K25
	C613	CGCYX104K25
	C605, C606	CGCYX223K25
	C607, C608	CGCYX473K25
	C611, C612	CKCYB391J500
	C603, C604	CKPUYB821K50

RESISTORS

Mark	Symbol & Description	Part No.
	VR601, VR602 Semi-fixed (10k)	VRTG6HS103
	Other resistors	RD 1/6 PM□□□J

7. ADJUSTMENTS

7.1 MECHANICAL ADJUSTMENT

1. Tape Speed Adjustment and Check						
No.	Deck	Mode	Test tape	Adjusting points	Specifications/Ratings (playback frequency)	Remarks
1	I	Normal speed PLAY	STD-301 (3 kHz)	After playing back for 1 minute, ground TP16.		
2		Double speed PLAY		check	6000 Hz ±600 Hz	
3		Normal speed PLAY		After checking, disconnect TP16 from ground.		
4	II			After playing back for 1 minute, ground TP17.		
5		Double speed PLAY		VR307	Within ±10Hz of step 2 (deck I) check value.	
6		Normal speed PLAY		After checking, disconnect TP17 from ground.		
7				VR306	3000 Hz ±5 Hz	
8	I			VR305	Within ±5 Hz of step 7 (deck II) adjustment value.	

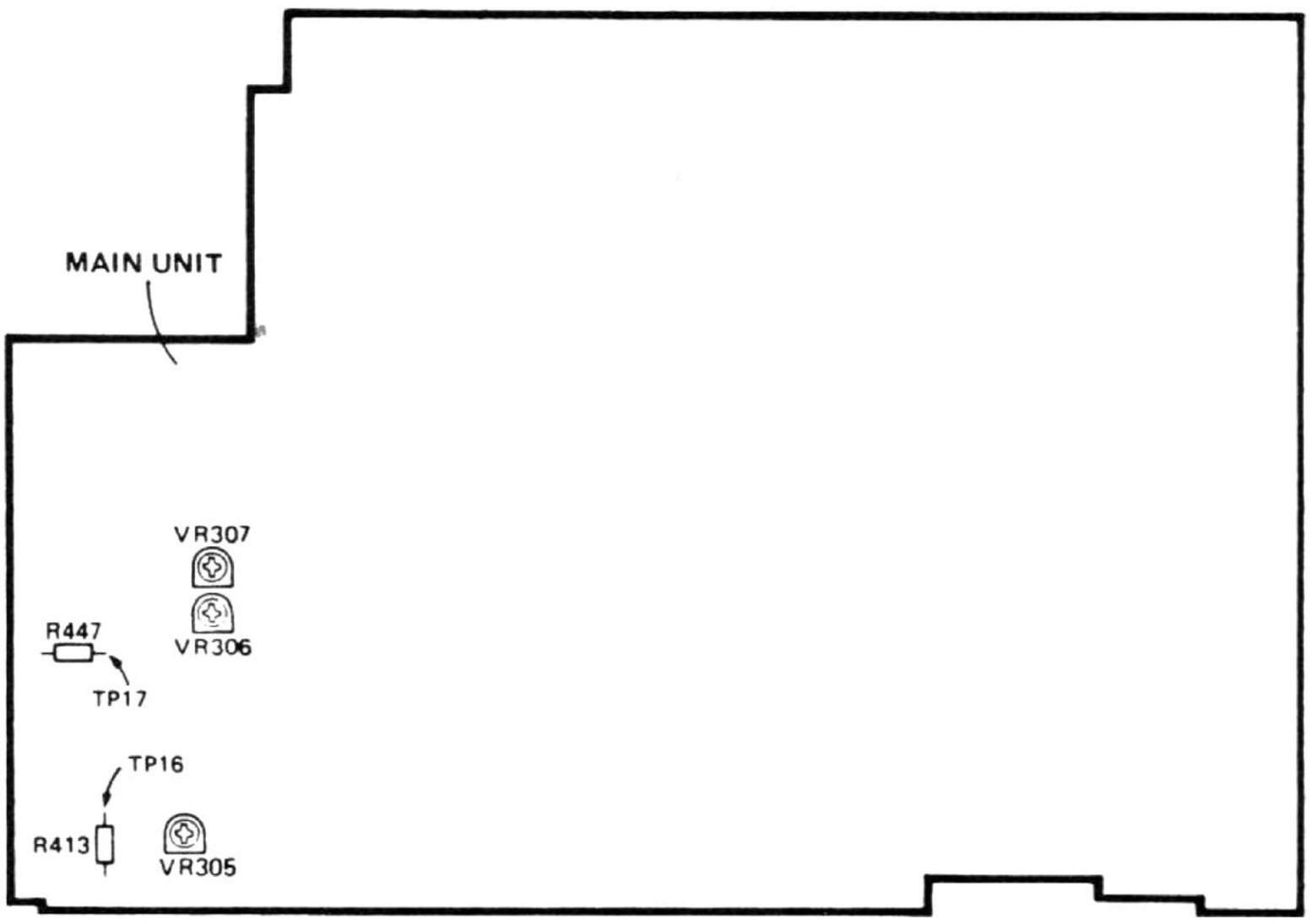
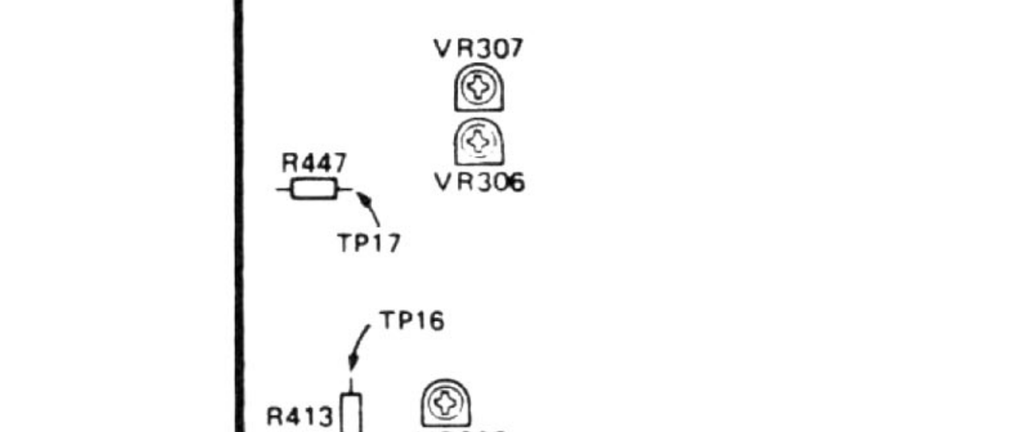
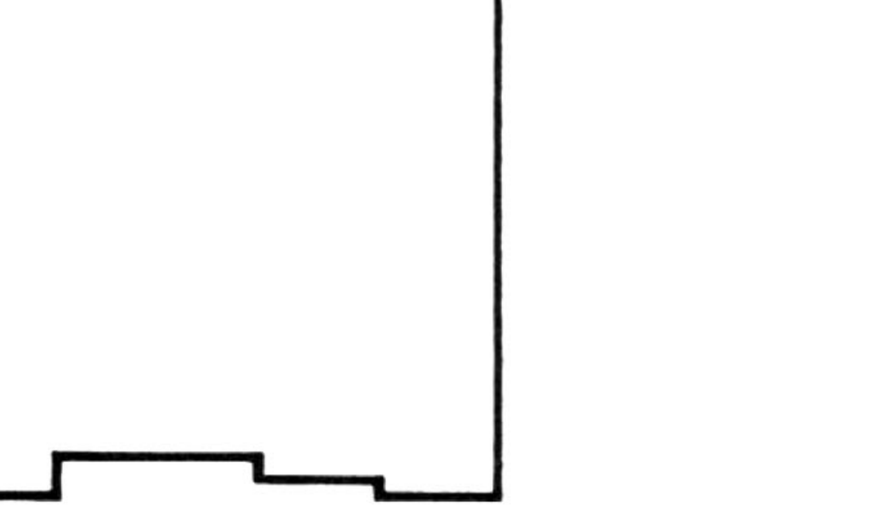


Fig. 7-1 Adjusting points

2. Door Lens Position Check	3. FL Lens Position Check
• The door lens must be attached so that it does not protrude from the door panel more than specified below.	• The FL lens must be attached so that it does not protrude from the front panel (upper), (middle) more than specified below.
 A≧0.3	 B≧ 0.3 (both left and right)

4. Door Speed Check
• Confirm that the difference in door speed between left and right is not more than 20 mm/sec.

7.2 ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0dBv=1Vrms.
5. Connect a 50 kilo-ohm (or between 47 to 52 kilo-ohm) load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Test Tapes

STD-331B : Playback adjustments (See Fig. 7-2)
STD-630 : NORMAL blank tape
STD-620 : CrO_2 blank tape
STD-610 : METAL blank tape

List of Adjustments

Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

Recording sections

1. Bias oscillator adjustment.
2. Erase current adjustment.
3. Recording bias adjustment.
4. Recording level adjustment.
5. Leader tape detection operation adjustment.

NOTE: This unit has an automatic tape selection feature.

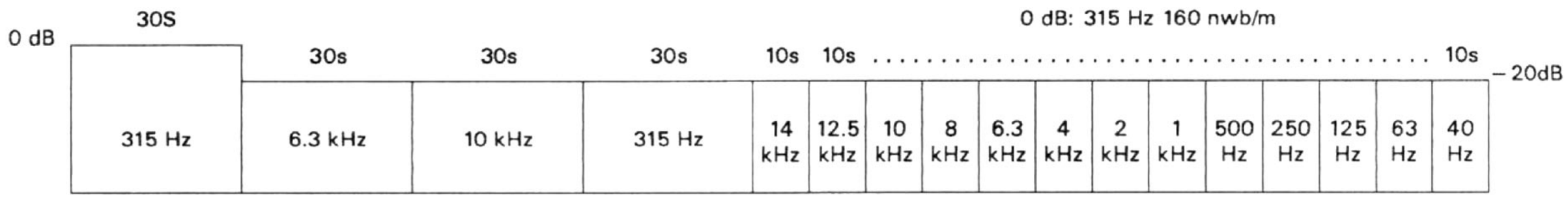


Fig. 7-2. Constants of the test tape STD-331B

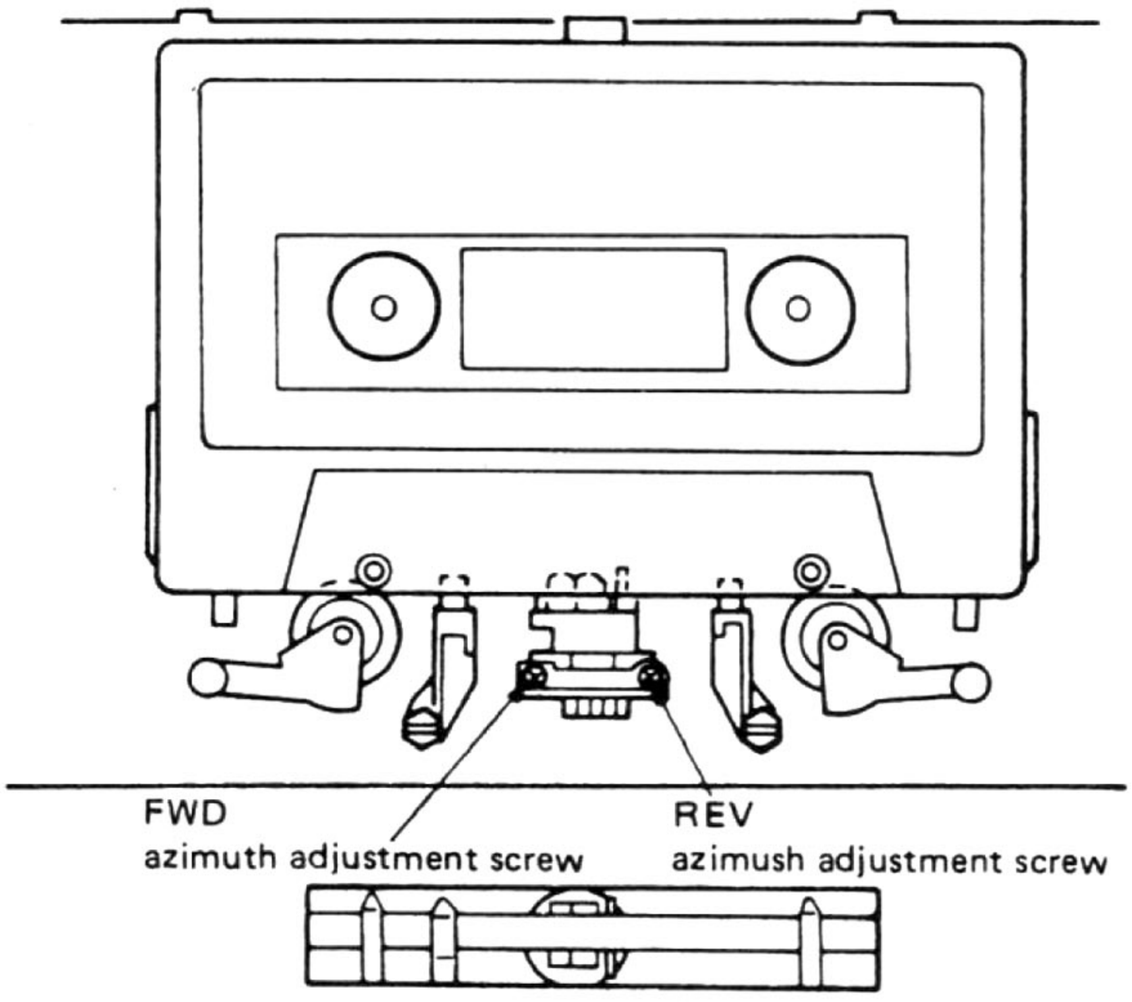


Fig. 7-3. Head azimuth adjustment

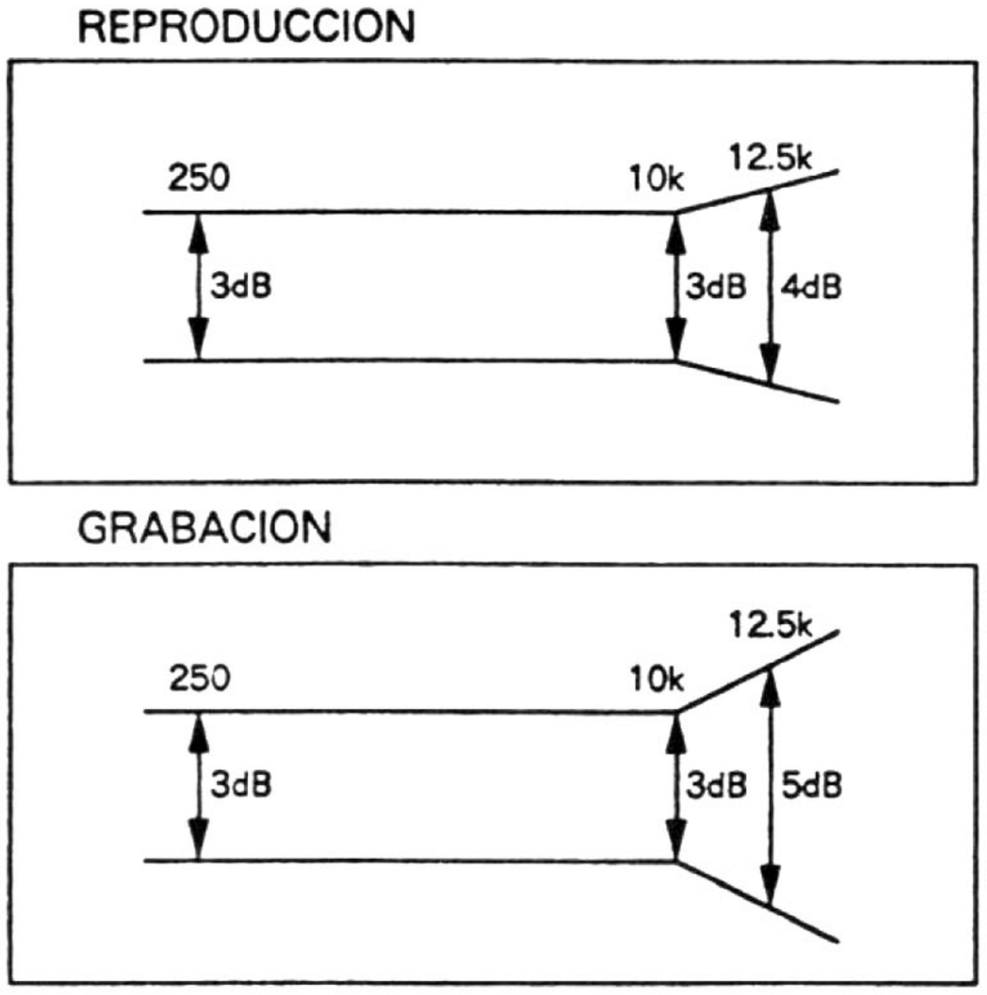


Fig. 7-4. Allowable playback frequency response zone

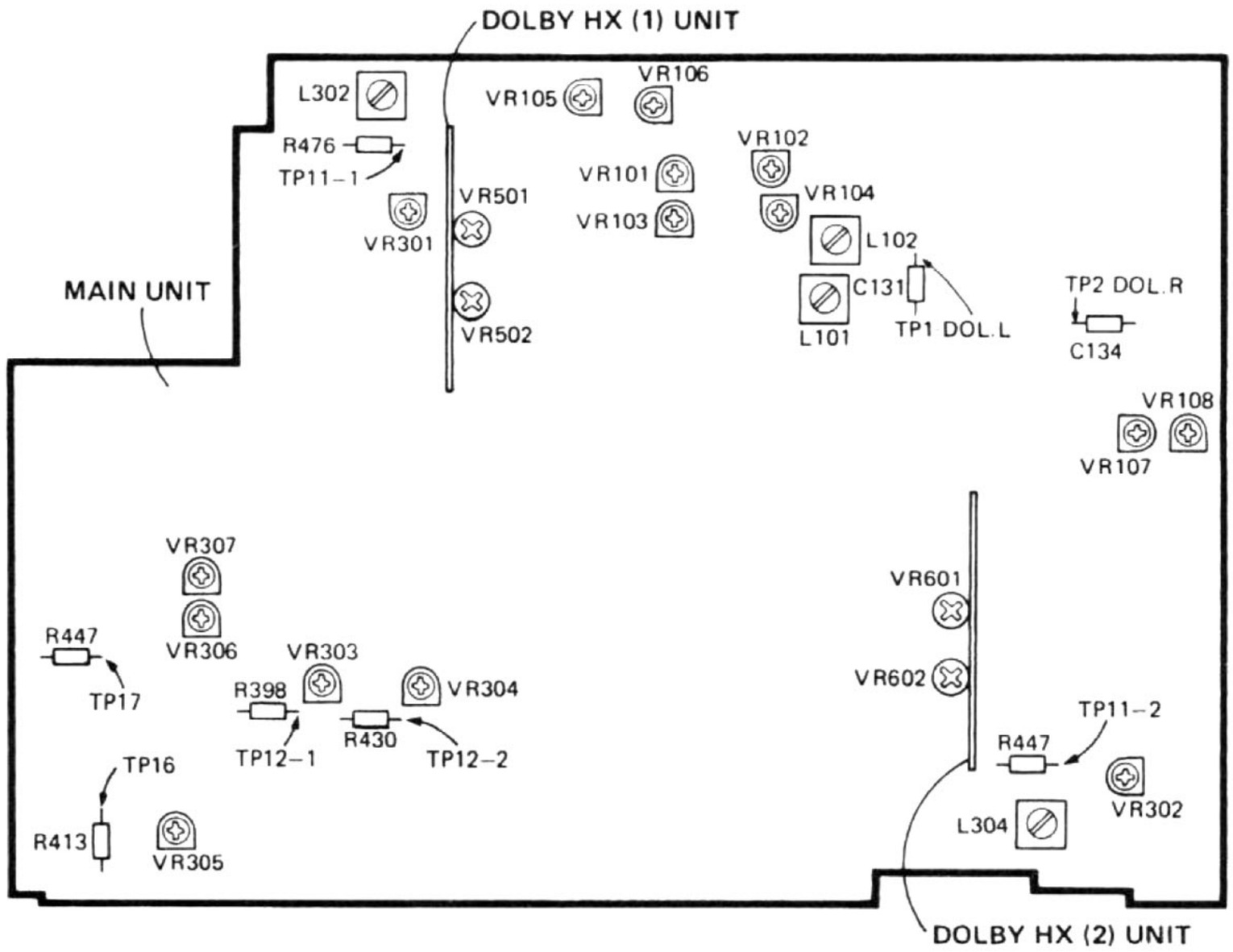


Fig. 7-5 Adjusting points

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR101, 102 (Deck I) or VR103, 104 (Deck II) to mechanical center positions.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10 kHz/–20 dB section of STD-331B test tape.	Head azimuth adjustment screw. (See Fig. 7-3)	LINE OUT	Maximum playback signal level.	
2.	STOP	Lock the screw with screw lock after completing adjustment.				

2. Playback level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315 Hz/0 dB section of the STD-331B test tape.	Deck I	VR101 (Lch) VR102 (Rch)	TP1. DOL.L (Lch) TP2. DOL.R (Rch)	– 15.2 dBv	
			Deck II	VR103 (Lch) VR104 (Rch)			

RECORDING SECTION

1. Bias Oscillator Adjustment

- Adjust the bias oscillator with checks set to recording mode simultaneously. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC	Load the STD-610 test tape with no input signal.	Deck I	L 302	TP. 11-1	105 kHz ±300 Hz	
			Deck II	L 304	TP. 11-2		

2. Erase Current Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode indenpendently. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC	Load the STD-610 test tape with no input signal.	Deck I	VR301	TP. 11-1	165 mV AC	
			Deck II	VR302	TP. 11-2		

3. Recording Bias Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode indenpendently. ← (Double R/P only)
- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC	Record the 315 Hz and 6.3 kHz signals at −20 dBv input level and playback.	Deck I	VR501 (Lch) VR502 (Rch)	LINE OUT Lch Rch (TERMINAL)	Repeatedly record, playback and adjust so that the playback level of 6.3 kHz signal becomes +1 dB±0.5 dB when compared with the 315 Hz signal.	
			Deck II	VR601 (Lch) VR602 (Rch)			

4. Recording Level Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode indenpendently. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC PAUSE	Apply a 315 Hz/0 dBv signal to the line Input terminals, load the STD-630 test tape.	Rec Level control volume		TP1. DOL.L (Lch) TP2. DOL.R (Rch)	−15.2 dBv	
3.	STOP	Set the DOLBY NR switch to the ON position. (DOLBY B)					
4.	REC/ PLAY	Record the above signal onto the STD-630 test tape, and playback.	Deck I	VR105 (Lch) VR106 (Rch)	TP1. DOL.L (Lch) TP2. DOL.R (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes −15.2 dB.	
			Deck II	VR107 (Lch) VR108 (Rch)			
5.	STOP	Set the TAPE SELECTOR switch to the CrO_2 position.					
6.	REC/ PLAY	Record the above signal onto the STD-620 test tape, and playback.	Check		TP1. DOL.L (Lch) TP2. DOL.R (Rch)	−14.6 dBv ±1.5 dB	
7.	STOP	Set the TAPE SELECTOR switch to the METAL position.					
8.	REC/ PLAY	Record the above signal onto the STD-610 test tape, and playback.	Check		TP1. DOL.L (Lch) TP2. DOL.R (Rch)	−14.6 dBv ±1.5 dB	

5. Leader Tape Detection Operation Adjustment

No.	Mode	Input signal & test tape	Adjustment location		Measuring location		Adjustment value	Remarks
1.	PLAY	No input-load an empty cassette half.	Deck I	VR303 (Lch)	Deck I	TP. 12-1	1.0V $^{+0.2}_{-0}$ V (DC)	
			Deck II	VR304 (Rch)	Deck II	TP. 12-2		
2.	Check that the leader tape is correctly detected (inboth FWD and REV directions when in endless reverse mode).							

7. RÉGLAGE

7.1 RÉGLAGES MECANIQUES

1. Réglage et vérification de la vitesse de defilement de la bande

No.	Platine	Mode	Bande test	Points de réglage	Spécifications/valeurs (fréquence de lecture)	Remarques
1	I	Lecture à vitesse normale	STD-301 (3 kHz)	Aprés une lecture pendant 1 minute, mettre TP16 à la terre.		
2		Lecture à vitesse double		Vérifier	6000 Hz ± 600 Hz	
3		Lecture à vitesse normale		Aprés vérification, déconnecter TP16 de la terre.		
4	II			Aprés une lecture pendant 1 minute, mettre TP17 à la terre.		
5		Lecture à vitesse double		VR307	Dans la limite de ±10 Hz de la valeur de vérification de 1' étape 2 (platine I)	
6		Lecture à vitesse normale		Après vérification, déconnecter TP17 de la terre.		
7				VR306	3000 Hz ±5 Hz	
8	I			VR305	Dans la limite de ±5 Hz de la valeur de réglage de 1'étape 7 (platine II).	

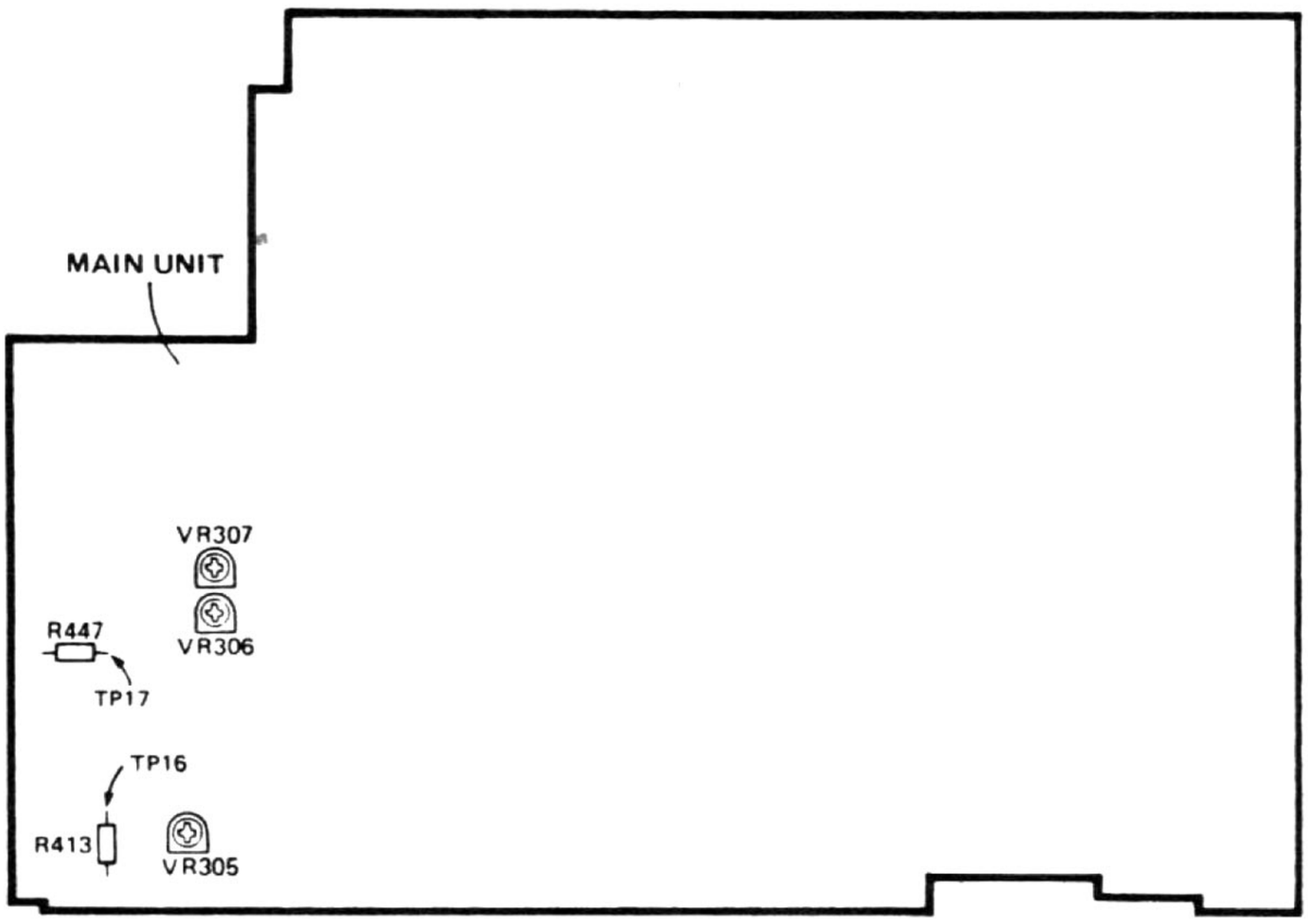
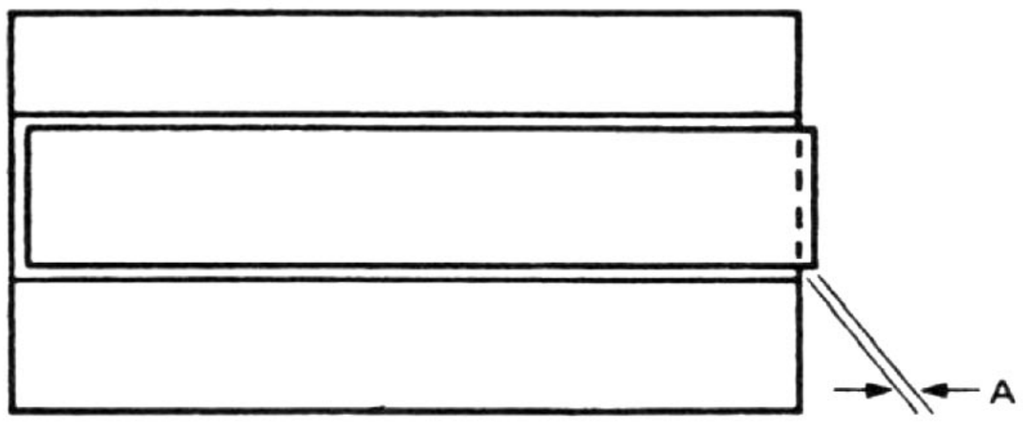


Fig. 7-1 Points de réglage

2. Vérification de la position de la fenêtre transparente de la porte

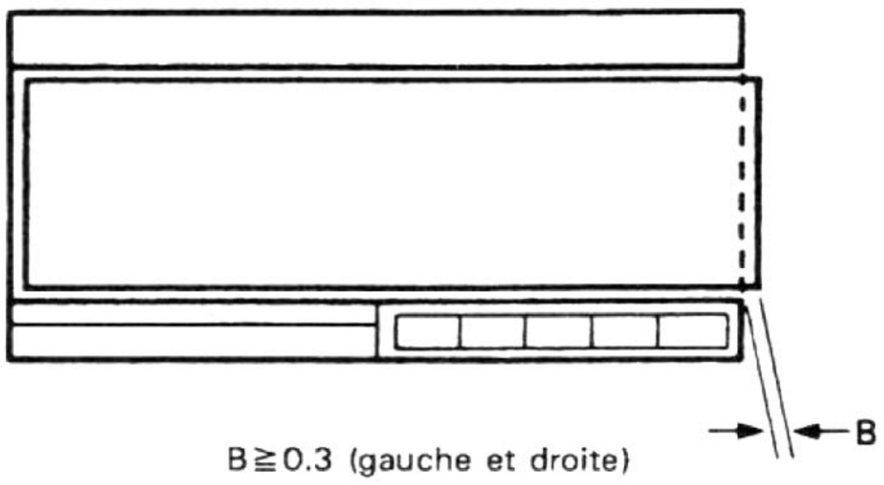
- La fenêtre transparente de la porte doit être fixée de sorte que son décalage par rapport au panneau de la porte ne dépasse pas les valeurs spécifiées ci-dessous.



A ≧ 0.3

3. Vérification de la position de la fenêtre transparente de l'affichage FL

- La fenêtre transparente de l'affichage FL doit être fixée de sorte que son décalage (en haut), (au milieu) par rapport au panneau avant ne dépasse pas les valeurs spécifiées ci-dessous.



B ≧ 0.3 (gauche et droite)

4. Vérification de la vitesse de la porte

- Vérifier que la différence de vitesse de la porte entre la gauche et la droite n'est pas supérieure à 20 mm/s.

7.2 REGLAGES ELECTRIQUES

Conditions de réglage

1. Les réglages mécaniques doivent tout d'abord être terminés.
2. Les têtes doivent être nettoyées et démagnétisées.
3. Mettre la platine sous tension et la laisser chauffer pendant au moins quelques minutes avant de commencer les réglages électriques.
4. Le signal de référence est de dBv=1 Vrms.
5. Connecter une résistance de charge de 50 kohms (tolérance 47 à 52 kohms) aux bornes de sortie (OUTPUT).
6. Sauf indication contraire, les commutateurs ci-dessous doivent être laissés sur les positions indiquées.
   DOLBY NR : OFF
   Sélecteur de bande (TAPE SELECTOR) : NORM

Bandes d'essai

STD-331B : Réglages de la lecture (Voir fig. 7-2)
STD-630 : Bande vierge de type normal
STD-620 : Bande vierge de type chrome
STD-610 : Bande vierge de type métal

Liste des réglages

Sections de lecture

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

Sections d'enregistrement

1. Réglage de l'oscillateur de polarisation.
2. Réglage du courant d'effacement.
3. Réglage de la polarisation d'enregistrement.
4. Réglage du niveau d'enregistrement.
5. Réglage du fonctionnement de la détection de bande amorce.

REMARQUE:
Cette unité est dotée d'une sélection automatique de bande.

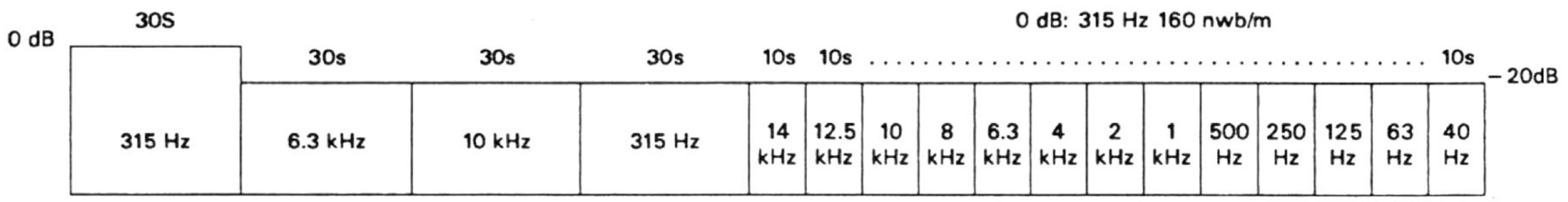


Fig. 7-2 Constantes de la bande d'essai STD-331B

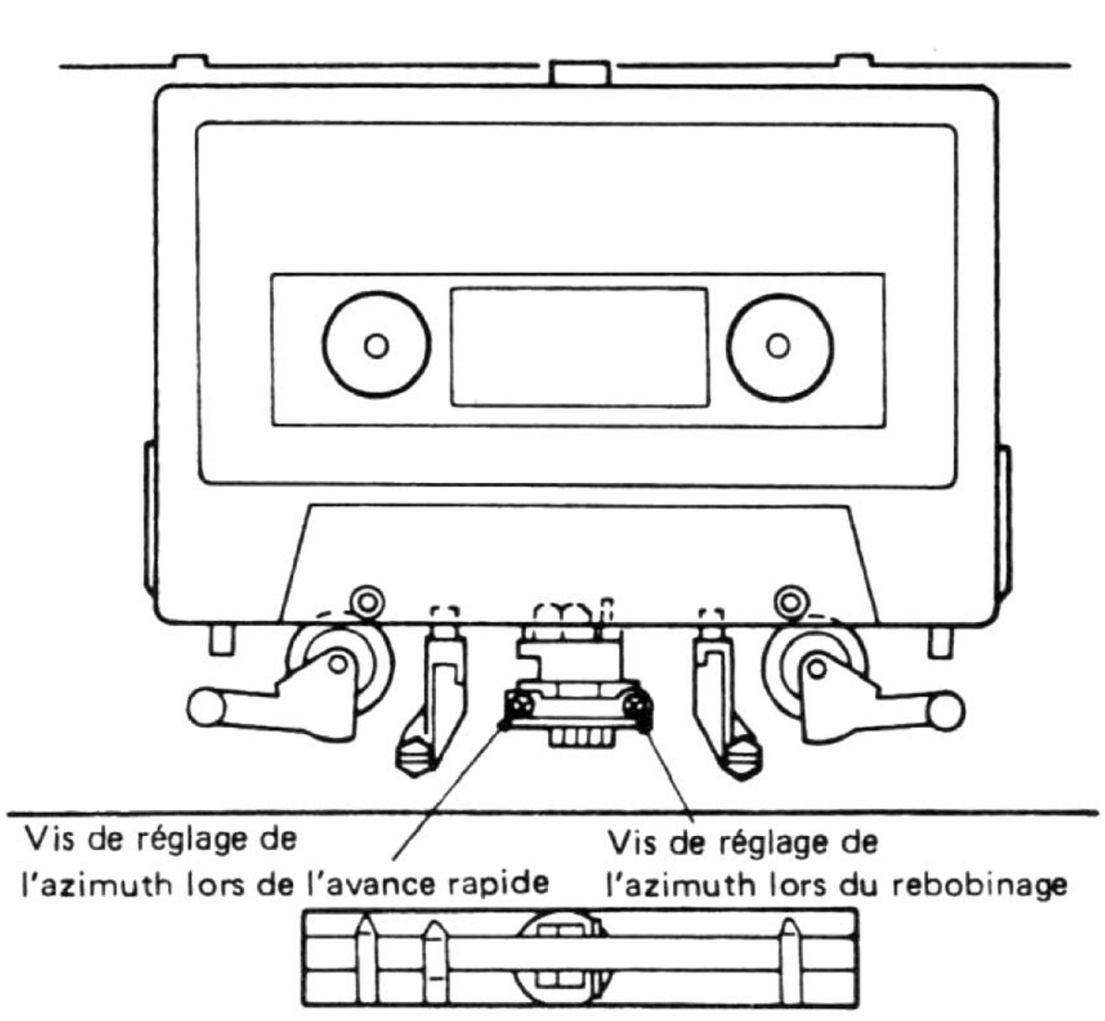


Fig. 7-3 Réglage de l'azimut de la tête

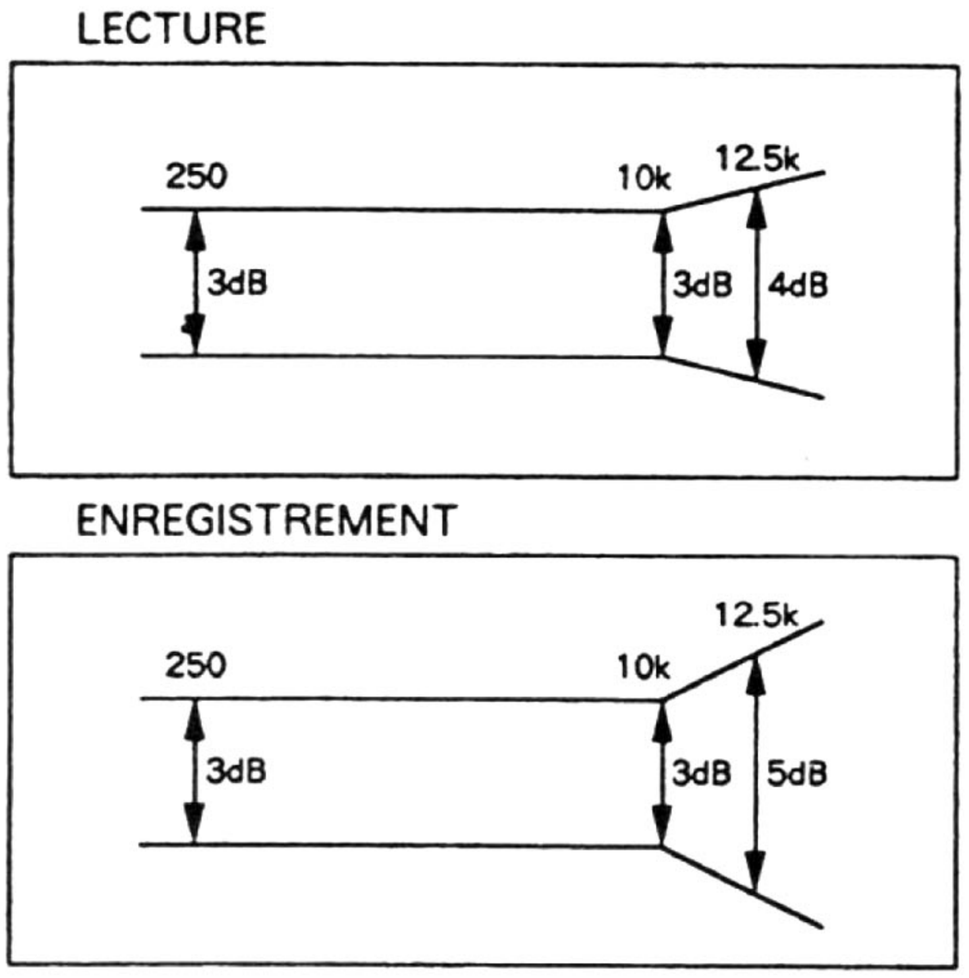


Fig. 7-4 Tolérance de la zone de réponse en fréquence de lecture

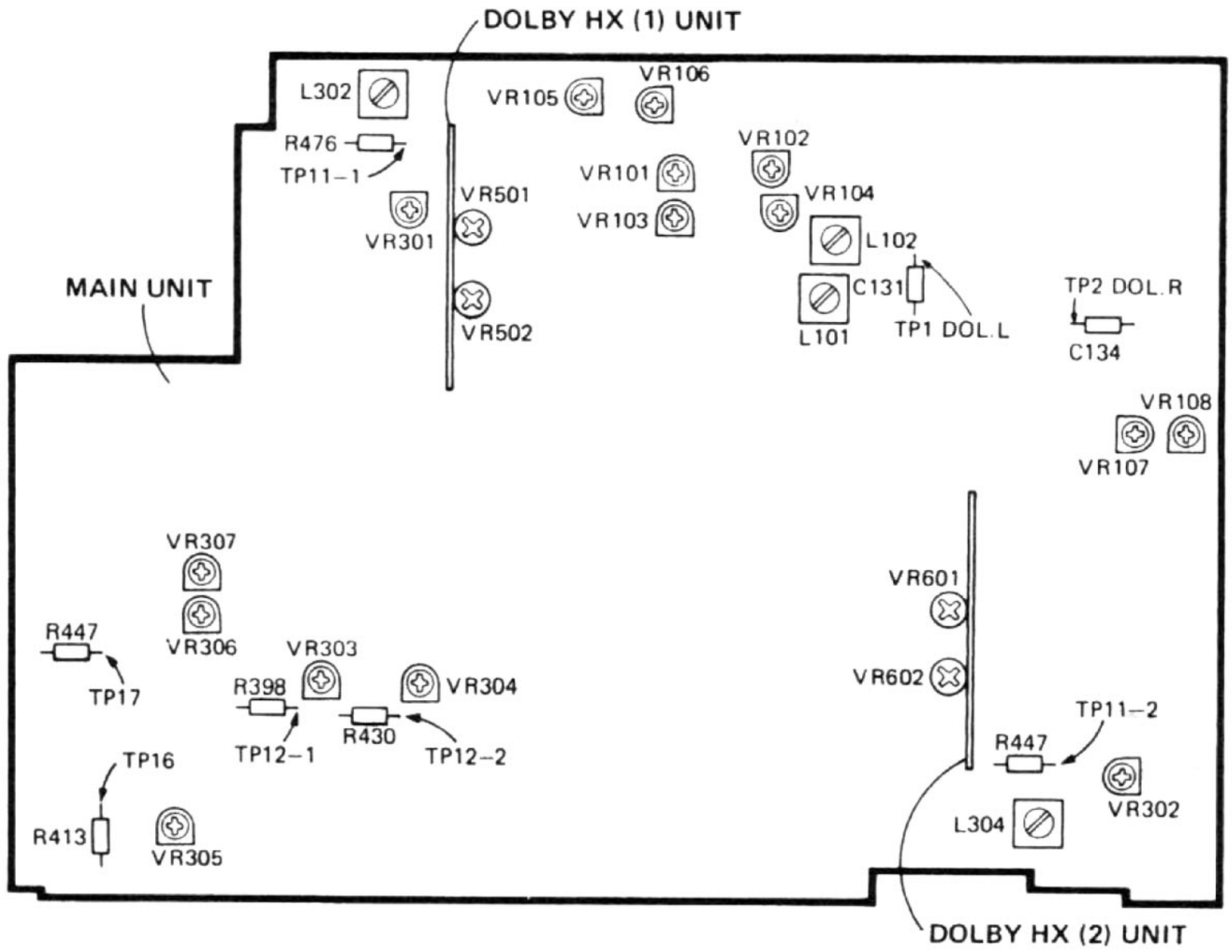


Fig. 7-5 Points de réglage

SECTION DE LECTURE

1. Réglage de l'azimut de la tête

• Tourner VR 101, 102 (Platine I) ou VR 103, 104 (Platine II) sur leur position centrale mécanique.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	PLAY	Reproduire la section 10 kHz/– 20 dB de la bande d'essai STD-331B.	Vis de réglage de l'azimut de la tête. (Voir fig. 7-3)	Sortie de ligne (LINE OUT)	Niveau du signal de reproduction maximum.	
2.	STOP	Verrouiller la vis avec le verrouillage de vis après avoir terminé le réglage.				

2. Réglage du niveau de lecture

• Ce réglage détermine le niveau DOLBY NR et il doit être effectué très soigneusement.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	PLAY	Reproduire la section 315 Hz/0 dB de la bande d'essai STD-331B.	Platine I	VR101(can. G) VR102(can. D)	TP1. DOL.L (can. G) TP2. DOL.R (can. D)	– 15.2 dBv	
			Platine II	VR103(can. G) VR104(can. D)			

SECTION D'ENREGISTREMENT

1. Réglage de l'oscillateur de polarisation

• Régler l'oscillateur de polarisation, les platines étant réglées simultanément dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	REC	Charger la bande d'essai STD-610 et n'introduire aucun signal.	Platine I	L 302	TP. 11-1	105kHz ± 300 Hz	
			Platine II	L 304	TP. 11-2		

2. Réglage du courant d'effacement

• Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	REC	Charger la bande d'essai STD-610 et n'introduire aucun signal.	Platine I	VR 301	TP. 11-1	165 mV AC	
			Platine II	VR 302	TP. 11-2		

3. Réglage de la polarisation d'enregistrement

• Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)
• Après le réglage, des précautions doivent être prises pour éviter une sous-polarisation en vérifiant le taux de distorsion.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position NORM.					
2.	REC	Enregistrer les signaux 315 Hz et 6,3 kHz à un niveau d'entrée de −20 dBv et les reproduire.	Platine I	VR501(can. G) VR502(can. D)	Sortie de ligne (LINE OUT) Lch Rch (BORNE)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau de lecture du signal 6,3 kHz devienne +1 dB ±0.5 dB lorsqu'il est comparé avec le signal 315 Hz.	
			Platine II	VR601(can. G) VR602(can. D)			

4. Réglage du niveau d'enregistrement

• Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position NORM.					
2.	REC PAUSE	Appliquer un signal de 315 Hz/0 dBv aux bornes d'entrée de ligne, charger la bande d'essai STD-630.	Volume de la commande de niveau d'enregistrement.		TP1. DOL.L (can. G) TP2. DOL.R (can. D)	−15.2 dBv	
3.	STOP	Régler le commutateur DOLBY NR sur la position ON. (DOLBY B)					
4.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-630 et le reproduire.	Platine I	VR105(can. G) VR106(can. D)	TP1. DOL.L (can. G) TP2. DOL.R (can. D)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau du signal devienne −15.2 dB.	
			Platine II	VR107(can. G) VR108(can. D)			
5.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position CrO_2.					
6.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-620 et le reproduire.	Vérifier		TP1. DOL.L (can. G) TP2. DOL.R (can. D)	−14.6 dBv ±1.5 dB	
7.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position METAL.					
8.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-610 et le reproduire.	Vérifier		TP1. DOL.L (can. G) TP2. DOL.R (can. D)	−14.6 dBv ±1.5 dB	

5. Réglage du fonctionnement de la détection de bande amorce

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure		Valeur de réglage	Remarques
1.	PLAY	Pas d'entrée - Charger une moitié de cassette vide.	Platine I	VR303 (can.G)	Platine I	TP. 12-1	1,0 V $^{+0,2}_{-0}$ V (DC)	
			Platine II	VR304 (can.D)	Platine II	TP. 12-2		
2.	Vérifier que la bande amorce est correctement détectée (à la fois dans le sens avant (FWD) et inverse (REV) dans le mode d'inversion sans fin).							

7. AJUSTE

7.1 AJUSTE MECANICO

1. Ajuste y verificación de la velocidad de cinta						
No.	Platina	Modo	Cinta de prueba	Puntos de ajuste	Especificaciones/valores nominales (frecuencia de reproducción)	Comentarios
1	I	PLAY (velocidad normal)	STD-301 (3 kHz)	Después de reproducir por 1 minuto, conectar TP16 a tierra.		
2		PLAY (velocidad doble)		Verificar	6000 Hz ± 600 Hz	
3		PLAY (velocidad normal)		Después de verificar, desconectar TP16 de tierra.		
4	II			Después de reproducir por 1 minuto, conectar TP17 a tierra.		
5		PLAY (velocidad doble)		VR307	Dentro de un margen de ± 10 Hz del valor de verificación del paso 2 (platina I).	
6		PLAY (velocidad normal)		Después de verificar, desconectar TP17 de tierra.		
7				VR306	3000 Hz ± 5 Hz	
8	I			VR305	Dentro de un margen de ± 5 Hz del valor de verificación del paso 7 (platina II).	

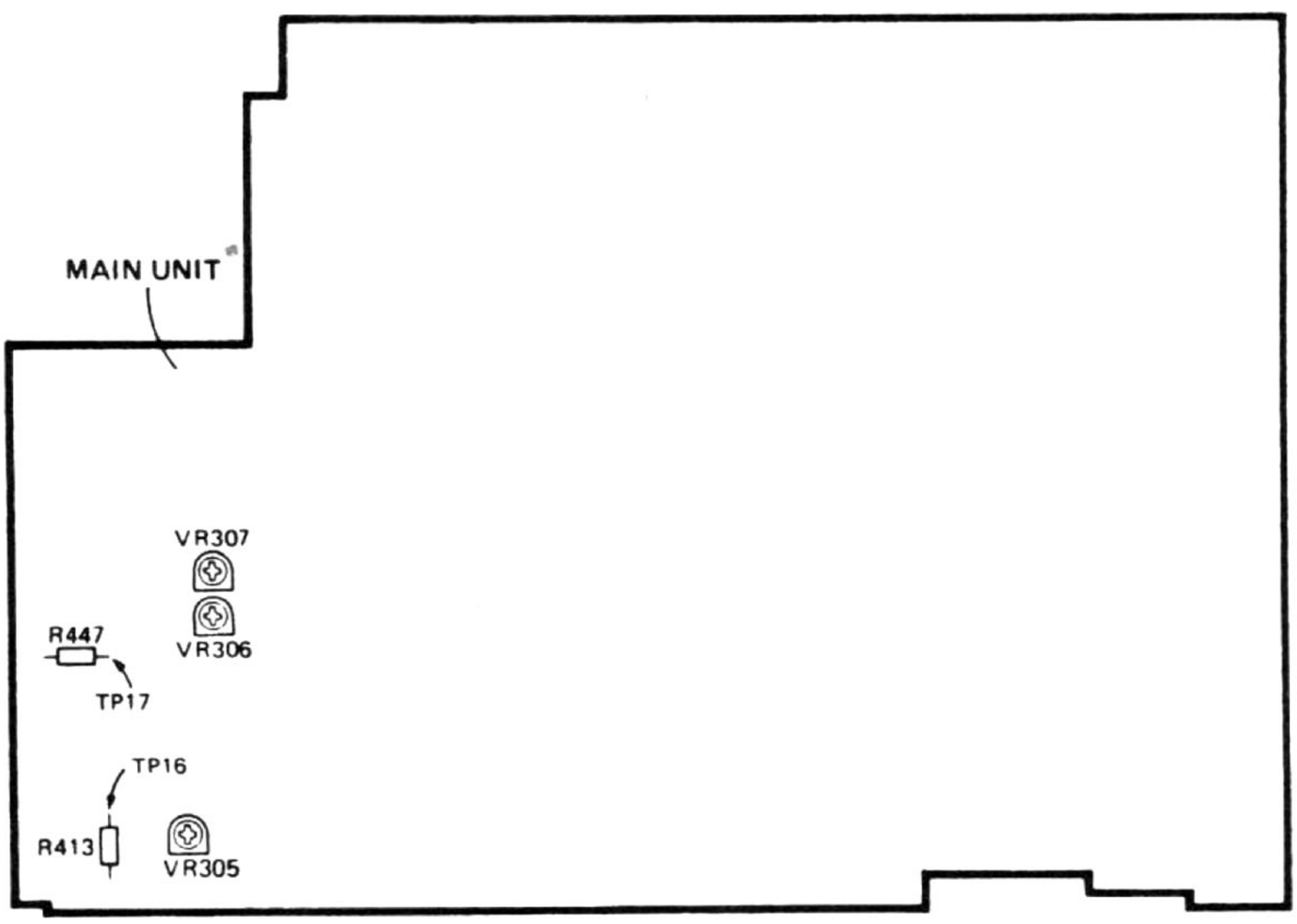
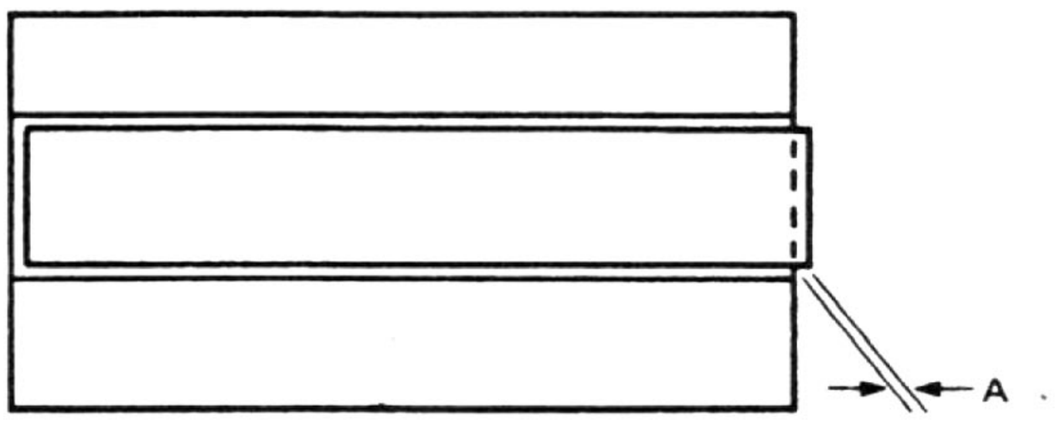
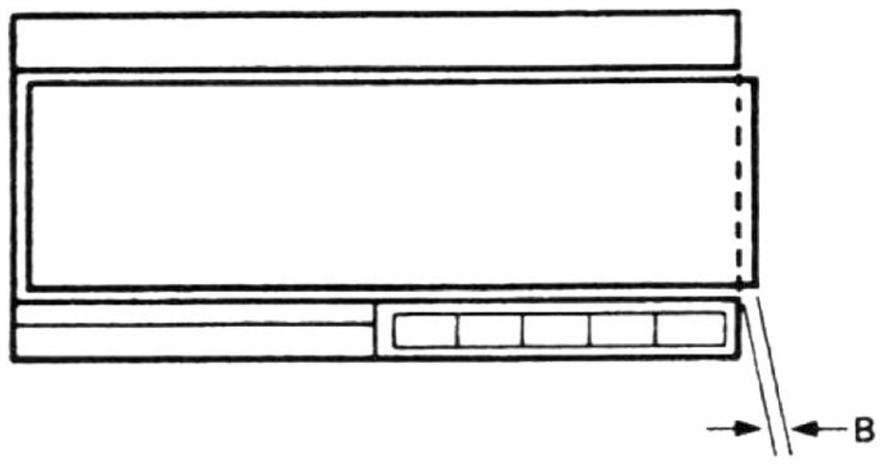


Fig. 7-1 Points de réglage

2. Posición de la ventanilla de puerta	3. Posición de la cubierta de indicador fluorescente
• La ventanilla de puerta dobe colocarse de modo guc no sobresalga de la puerta más que lo indicado abajo.	• La cubierta de indicador fluorescente debe colocarse de modo que no sobresalga del panel delantero (secciones superior y media) más que lo indicado abajo.
 A ≧ 0.3	 B ≧ 0.3 (tanto a la derecha como a la izquierda)
4. Comprobación de velocidad de puerta	
• Confirme que la diferencia de velocidad entre las puertas derecha e izquierda no sea superior a los 20 mm/s.	

7.2. AJUSTES ELÉCTRICOS

Condiciones de ajuste

1. Los ajustes mecanicos deben haberse completado primero.
2. La cabeza debe estar limpia y desmagnetizada.
3. Encienda la alimentación para permitir que la platina se caliente durante unos pocos minutos por lo menos antes de realizar cualquier ajuste eléctrico.
4. La señal de referencia es de 0 dBv=1 Vrms.
5. Conecte una resistencia de 50 kΩ (o entre 47 y 52 kΩ) en los terminales OUTPUT.
6. A menos que se especifique lo contrario, los conmutadores indicados más abajo deben dejarse en las posiciones indicadas.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Cintas de prueba

STD-331B : Ajustes de reproducción (Consulte la figura 7-2)
STD-630 : Cinta virgen NORMAL
STD-620 : Cinta virgen de CrO_2
STD-610 : Cinta virgen de METAL

Lista de ajustes

Secciones de reproducción

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

Secciones de grabación

1. Ajuste del oscilador de polarización.
2. Ajuste de la corriente de borrado
3. Ajuste de la polarización de grabación
4. Ajuste del nivel de grabación
5. Ajuste de la operación de detección del extremo incial de la cinta

NOTA:
Esta unidad posee una función de selección automática de cinta.

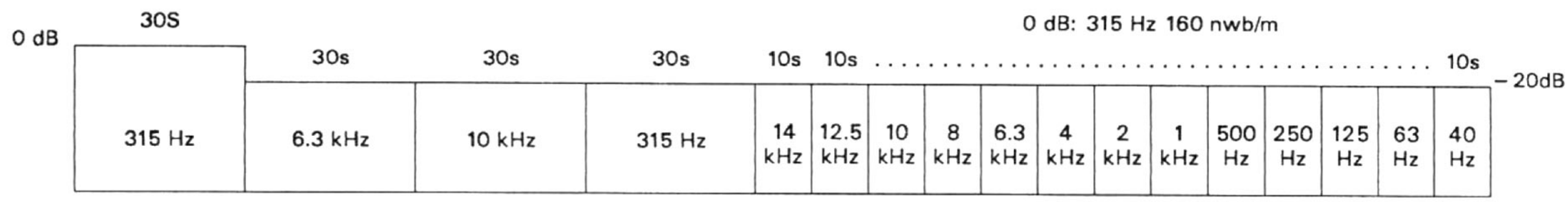


Figura 7-2 Constantes de la cinta de prueba STD-331B

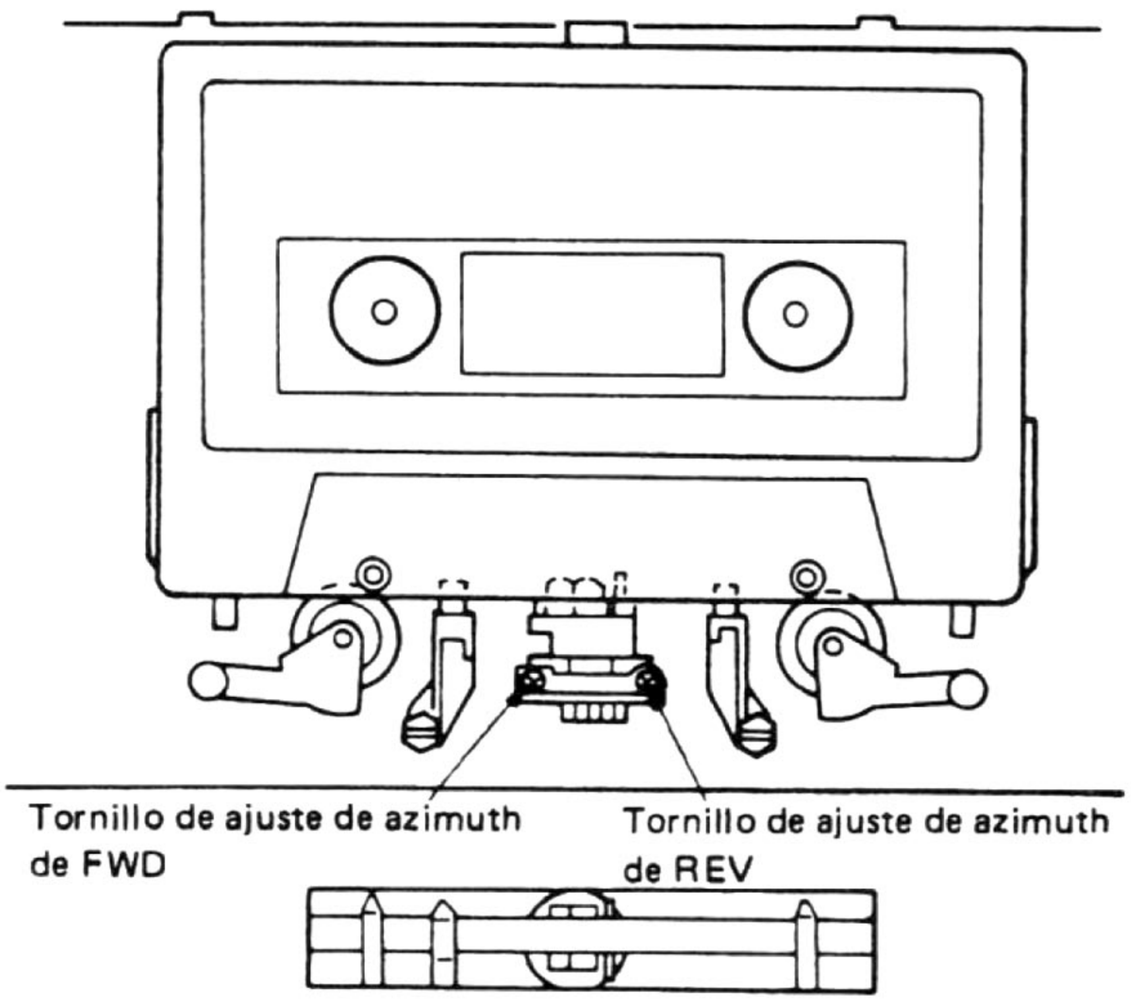


Figura 7-3 Ajuste de azimut de la cabeza

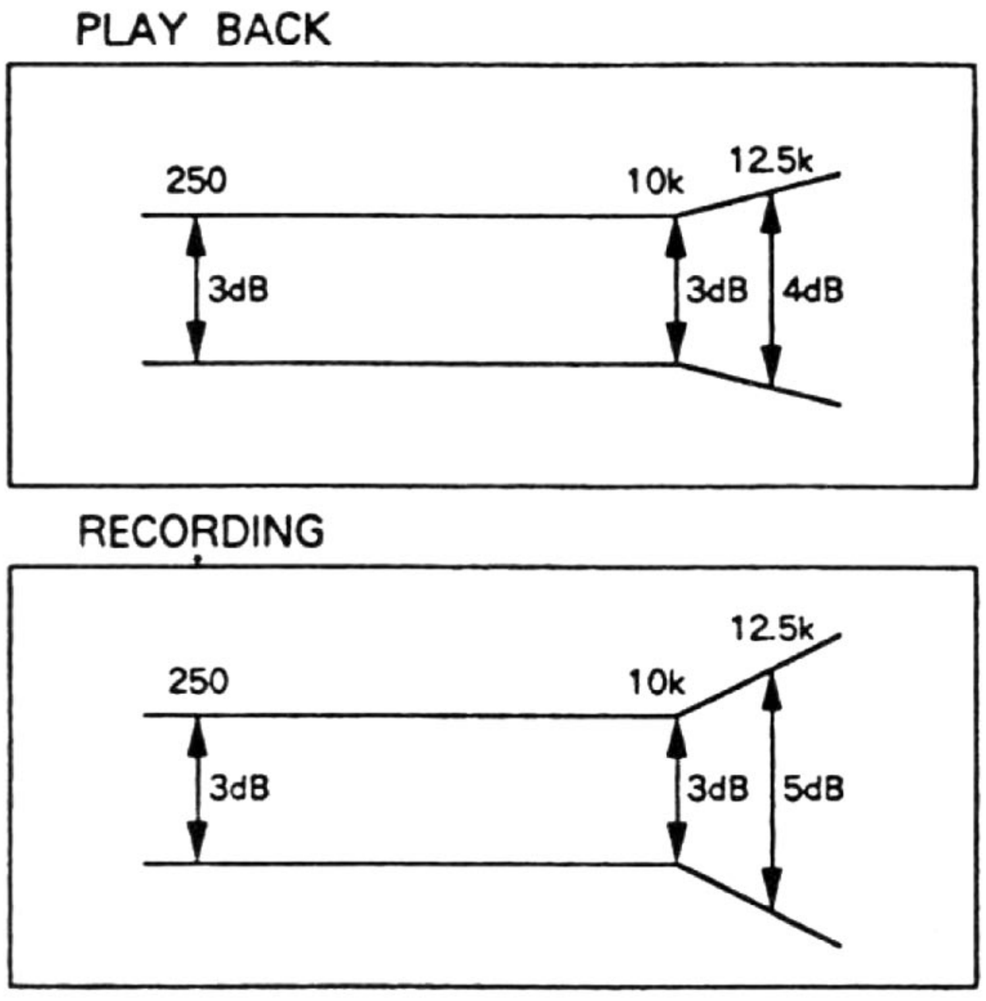


Figura 7-4 Zona permisible de respuesta de frecuencia de reproducción

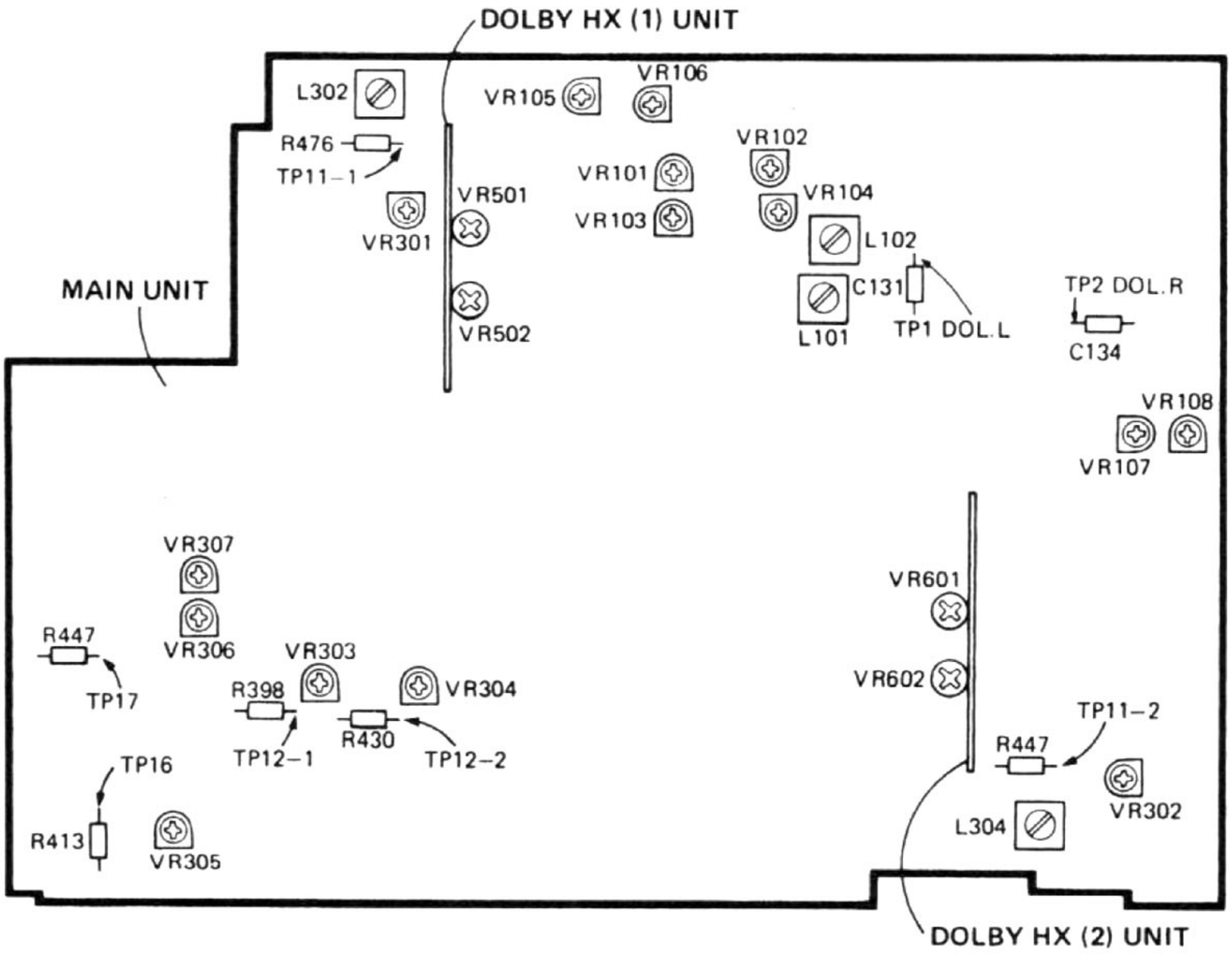


Fig. 7-5 Points de réglage

SECCIÓN DE REPRODUCCIÓN

1. Ajuste del azimut de la cabeza

• Poner VR 101, 102 (platina I) o VR 103, 104 (platina II) en las posiciones del centro mecánico.

N.°	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	PLAY	Reproduzca la sección de 10 kHz/– 20 dB de la cinta de prueba STD-331B.	Tornillo de ajuste del azimut de la cabeza. (Vea la figura 7-3)	LINE OUT	Nivel máximo de la señal de reproducción.	
2.	STOP	Bloquee el tornillo con su cierre una vez finalizado el ajuste.				

2. Ajuste del nivel de reproducción

• Este ajuste determina el nivel DOLBY NR y debe realizarse con mucho cuidado.

N.°	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	PLAY	Produzca la parte de 315 Hz/0 dB de la cinta de prueba STD-331B.	Platina I	VR 101 (Lch) VR 102 (Rch)	TP1. DOL.L (Lch) TP2. DOL.R (Rch)	– 15.2 dBv	
			Platina II	VR 103 (Lch) VR 104 (Rch)			

SECCIÓN DE GRABACIÓN

1. Ajuste del oscilador de polarización

• Ajuste el oscilador de polarización con los platinas puestas simultáneamente en el modo de grabación. (Doble G/R sólo)

N.°	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	REC	Introduzca la cinta de prueba STD-610 sin señal de entrada.	Platina I	L 302	TP. 11-1	105 kHz ±300 Hz	
			Platina II	L 304	TP. 11-2		

2. Ajuste de la corriente de borrado

• Ajuste el oscilador de polarización con las platinas I y II puestas independientemente en el modo de grabación. ← (Doble G/R sólo)

N.°	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	REC	Introduzca la cinta de prueba STD-610 sin señal de entrada.	Platina I	VR 301	TP. 11-1	165 mV AC	
			Platina II	VR 302	TP. 11-2		

3. Ajuste de polarización de grabación

- Ajuste el oscilador de polarización estando las platinas I y II ajustadas independientemente para el modo de grabación. ← (Doble G/R sólo)
- Una vez finalizado el ajuste, compruebe el porcentaje de distorsión para no obtener subpolarización.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	STOP	Ponga el conmutador TAPE SELECTOR en la posición NORM.					
2.	REC	Grabe la señal de 315 Hz y 6,3 kHz a un nivel de entrada de – 20 dBv y reprodúzcala.	Platina I	VR 501 (Lch) VR 502 (Rch)	LINE OUT Lch Rch (TERMINAL)	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción de 6,3 kHz sea de + 1 dB ± 0.5 dB cuando se compare con la señal de 315 Hz.	
			Platina II	VR 601 (Lch) VR 602 (Rch)			

4. Ajuste del nivel de grabación

- Ajuste el oscilador de polarización con las platinas I y II puestas independientemente en el modo de grabación. ← (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	STOP	Ponga el conmutador TAPE SELECTOR en la posición NORM.					
2.	REC PAUSE	Aplique una señal de 315 Hz/0 dBv a los terminales de entrada de línea e introduzca la cinta de prueba STD-630.	Control de nivel de grabación.		TP1. DOL.L (Lch) TP2. DOL.R (Rch)	– 15.2 dBv	
3.	STOP	Ponga el conmutador DOLBY NR en la posición ON. (DOLBY B)					
4.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-630 y reprodúzcala.	Platina I	VR 105 (Lch) VR 106 (Rch)	TP1. DOL.L (Lch) TP2. DOL.R (Rch)	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción sea de – 15.2 dB.	
			Platina II	VR 107 (Lch) VR 108 (Rch)			
5.	STOP	Ponga el conmutador TAPE SELECTOR en la posición CrO_2.					
6.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-620 y reprodúzcala.	Verifique		TP1. DOL.L (Lch) TP2. DOL.R (Rch)	– 14.6 dBv ± 1.5 dB	
7.	STOP	Ponga el conmutador TAPE SELECTOR en la posición METAL.					
8.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-610 y reprodúzcala.	Verifique		TP1. DOL.L (Lch) TP2. DOL.R (Rch)	– 14.6 dBv ± 1.5 dB	

5. Ajuste de la operación de detección del extremo incial de la cinta

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición		Valor de ajuste	Comentarios
1.	PLAY	Sin entrada - Introduzca un casete vacío la mitad.	Platina I	VR303 (Lch)	Platina I	TP. 12-1	1,0 V $^{+0,2}_{-0}$ V (DC)	
			Platina II	VR304 (Rch)	Platina II	TP. 12-2		
2.	Verifique si se detecta correctamente el extremo incial de la cinta (en las direcciones FWD y REV en el modo de inversión sin fon).							

8. FOR HEM AND SD/G TYPES

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.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The CT-W910R/HEM and SD/G types are the same as the CT-W910R/KU/CA type.

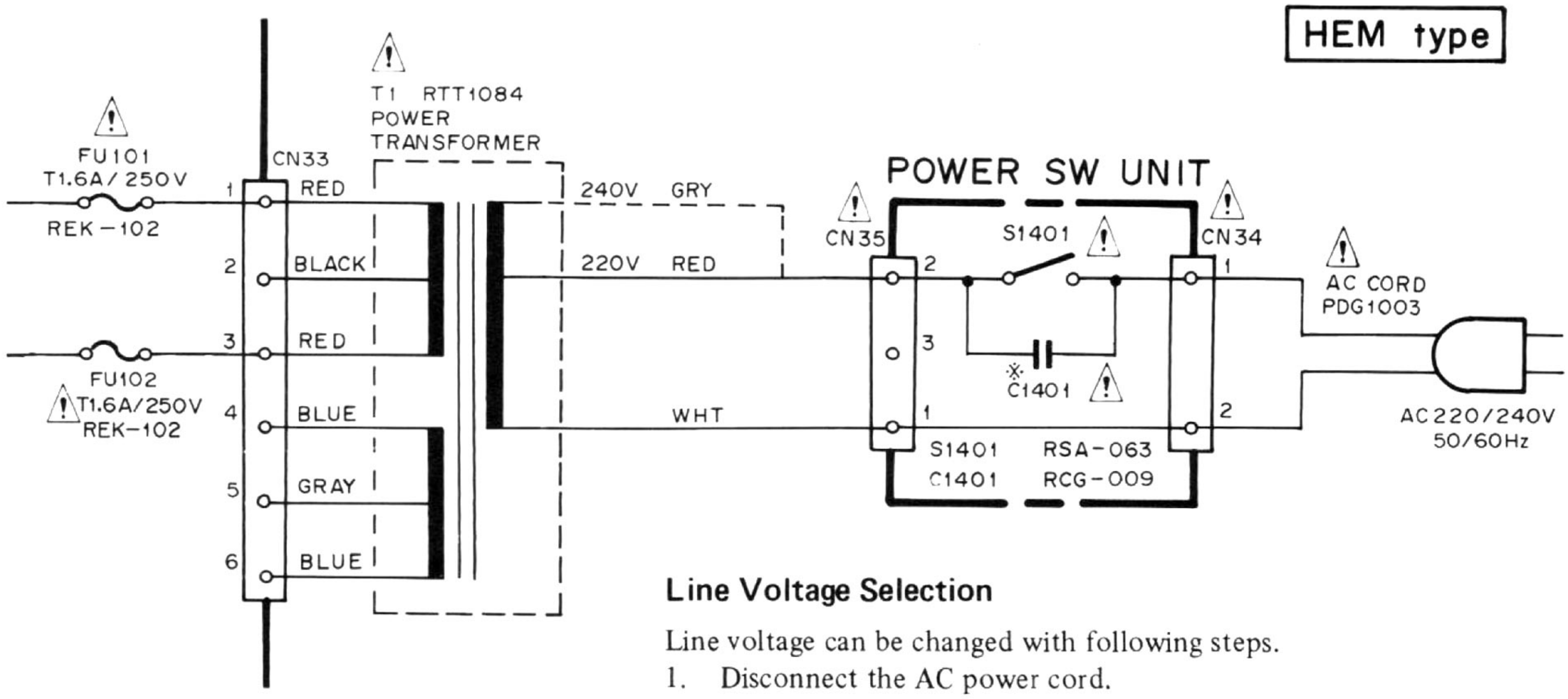
Mark	Symbol & Description	Part No.			Remarks
		CT-W910R /KU/CA type	CT-W910R /HEM type	CT-W910R /SD/G type	
	Main unit	Non supply	Non supply	Non supply	
⚠	Strain relife	CM-22C	CM-22B	CM-22B	
⚠	AC Power cord	PDG1002	PDG1003	PDG1013	
⚠	FU101, FU102 Fuse (1.5A)	REK1001	.....	.....	
⚠	FU101, FU102 Fuse (1.6A)	.....	REK-102	REK-102	
⚠	T1 Power transformer (AC120V)	RTT1083	.....	.....	
⚠	T1 Power transformer (AC220/240V)	.....	RTT1084	.....	
⚠	T1 Power transformer (AC120-127/220/240V)	.....	.....	RTT1085	
⚠	Voltage selector	.....	.....	PSB1002	
	FL filter	RAH1214	RAH1184	RAH1214	
	Door panel (R)	RAH1419	RAH1475	RAH1419	
	Operating instructions (French, German, Italian, Dutch, Spanish, Portuguese, Swedish)	.....	RRD1060	.....	

MAIN UNIT

The main unit (for CT-W910R/KU/CA type) is the same as the main unit (for CT-W910R/HEM and SD/G types) with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		CT-W910R /KU/CA type	CT-W910R /HEM type	CT-W910R SD/G type	
	D327-D329	1SS254	.....	1SS254	
	C371	CKCYF103Z50	.....	CKCYF103Z50	
	JA102, JA103 Jack φ 3.5 (CONTROL IN/OUT)	RKN-071	.....	RKN-071	

• Schematic diagram of HEM type



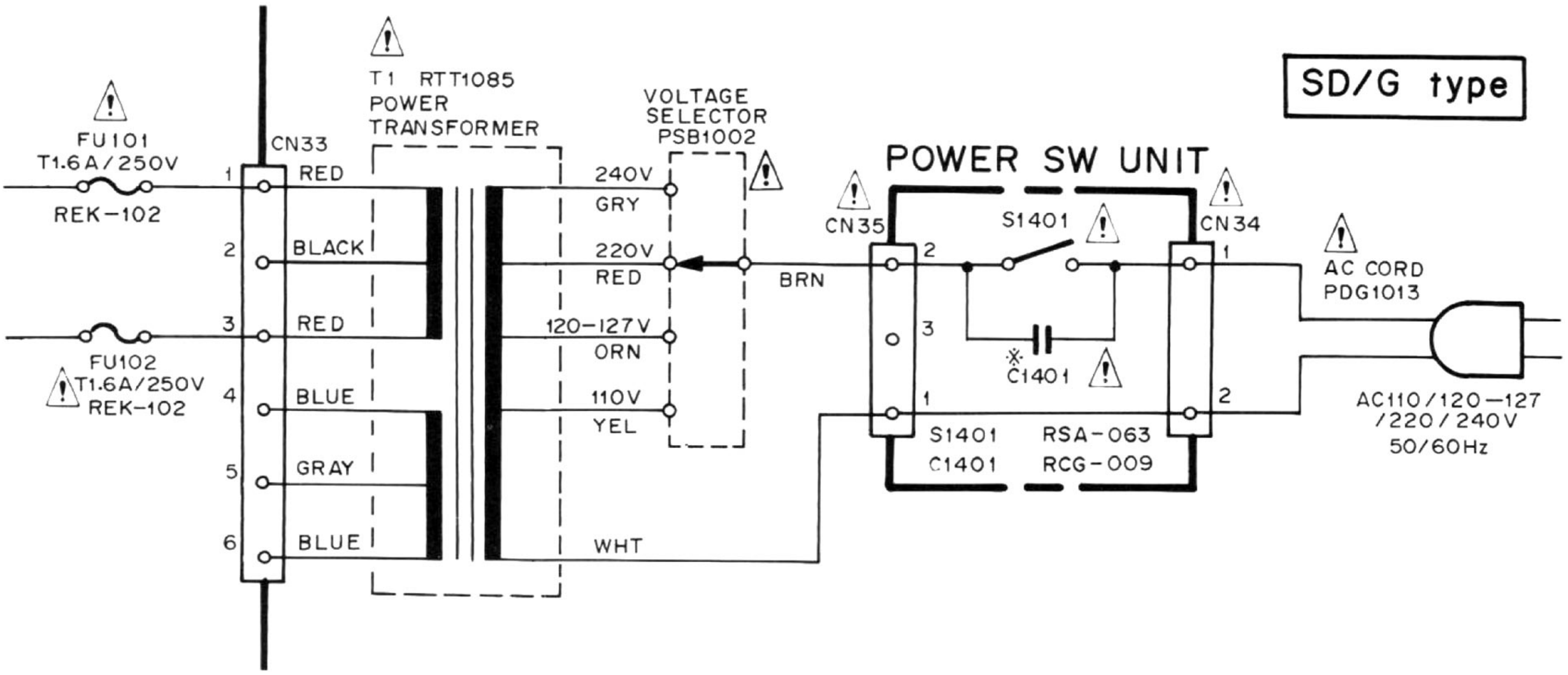
Line Voltage Selection

Line voltage can be changed with following steps.

1. Disconnect the AC power cord.
2. Remove the Bonnet case.
3. Change the connection of the power transformer lead wire.
4. Stick the line voltege label on the rear panel.

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

• Schematic diagram of SD/G type



9. SPECIFICATIONS

Systems ..... 4 track, 2-channel stereo
Heads ..... "Hard Permalloy" recording/playback head x 2

"Ferrite" erasing head x 2
Motor ..... DC servo capstan motor x 2
DC reel motor x 2
Wow and Flutter ..... No more than 0.055% WRMS (JIS)
No more than ±0.16% (DIN)
Fast Winding Time ..... Approximately 100 seconds
(C-60 tape)

Frequency Response
– 20 dB recording:
Metal tape ..... 18 to 18,500 Hz
Chrome tape ..... 18 to 18,000 Hz
Normal tape ..... 18 to 17,000 Hz
Signal-to-Noise Ratio
Dolby NR OFF ..... More than 58 dB

Noise Reduction Effect
Dolby B-type NR ON ..... More than 10 dB (at 5 kHz)
Dolby C-type NR ON ..... More than 19 dB (at 5 kHz)

Harmonic Distortion ..... No more than 0.7% (0 dB)
Input (Sensitivity)
LINE (INPUT) ..... 63 mV (Input impedance 56 kΩ)
Output (Reference level)
LINE (OUTPUT) .....
316 mV (Output impedance 5.6 kΩ)
Headphone .....
0.8 mW (Load impedance 8 Ω, headphone VR MAX)

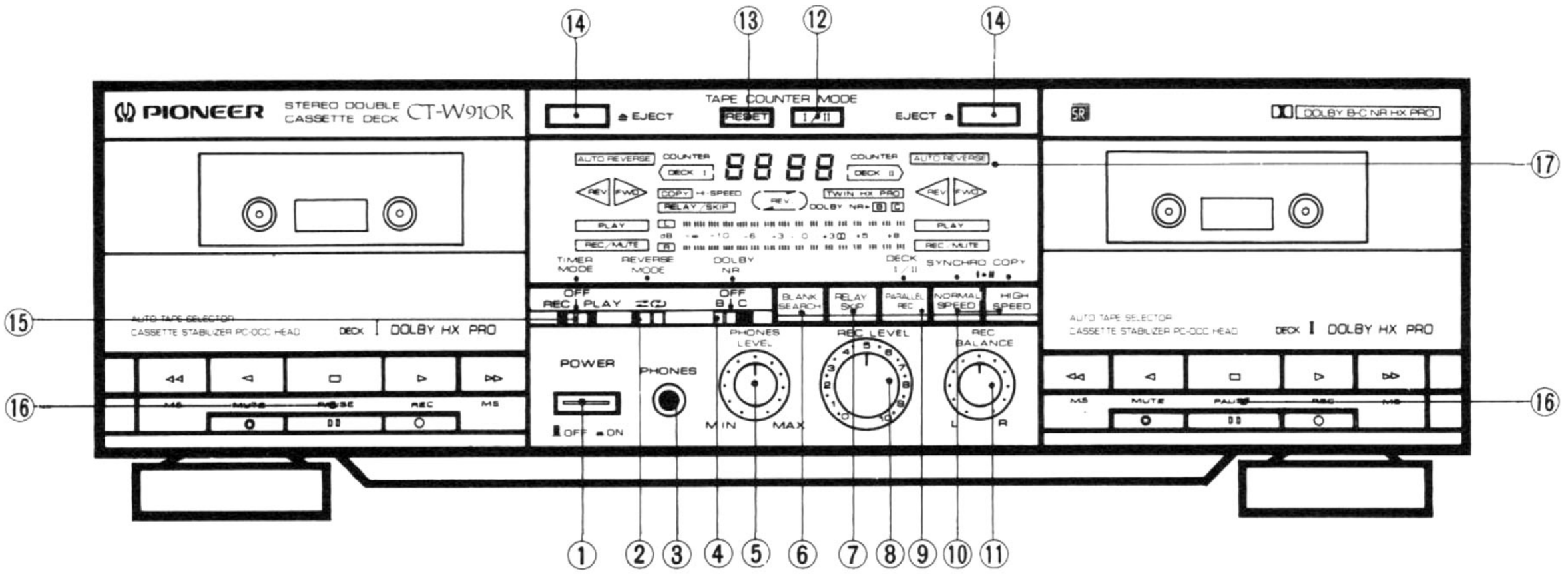
Subfunctions
- TWIN DOLBY HX PRO
- DOLBY NR B/C types
- Music search over ±15 selections
- Double-speed and normal-speed copy (DECK I → DECK II)
- Relay recording
- Relay playback/blank skip
- Parallel recording
- Automatic I/II deck switching, 4-digit electronic tape counter
- Peak level meter with peak-hold function
- Automatic space recording mute
- Blank search
- Automatic tape selector
- Quick auto reverse
- Headphones with volume control
- System remote control available (For U.S., U.S. military and Canadian models only.)
- TIMER Recording/PLAYBACK (Automatic relay on)

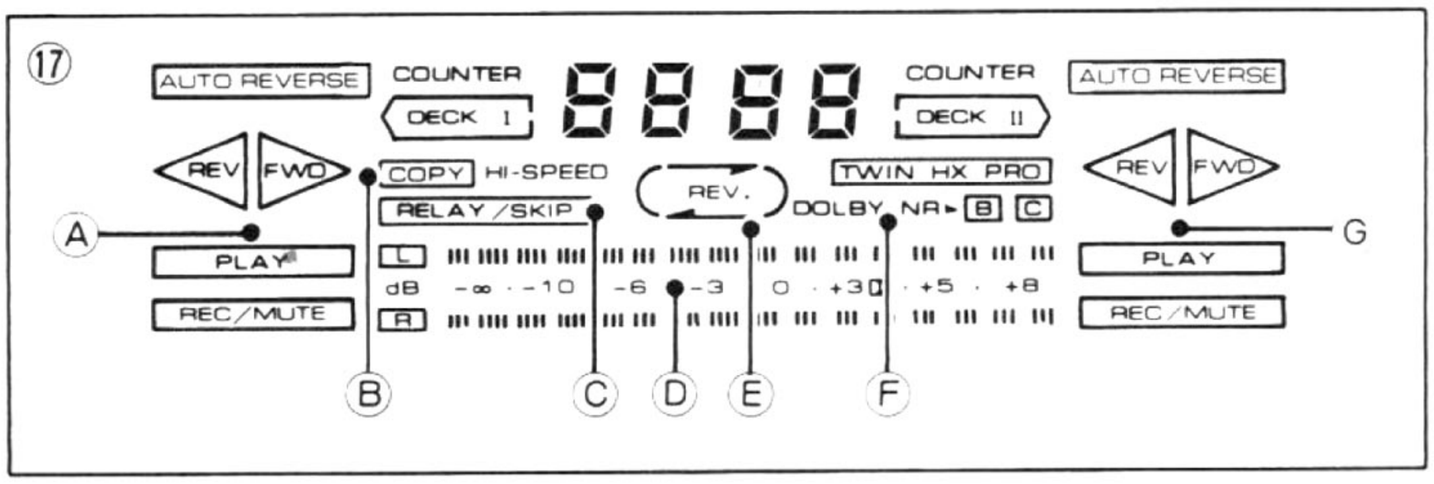
Miscellaneous
Power Requirements
U.S., Canadian models ..... AC 120 V, 60 Hz
European model ..... AC 220 Volts ~, 50/60 Hz
U.S. military model .....
AC 110 V/120 V – 127 V/220 V/240 V, 50/60 Hz (switchable)
Power Consumption
U.S., Canadian models ..... 26 W
European model ..... 26 W
U.S. military model ..... 26 W
Dimensions ..... 420 (W) x 132 (H) x 318 (D) mm
16-9/16 (W) x 5-3/16 (H) x 12-1/2 (D) in
Weight (without package) ..... 7.7 kg (17 lb)

Accessories
Operating instructions 1
Connection cord with pin plugs 2
SR Remote control cord (For U.S., U.S. military and Canadian models only.) 1

NOTE:
Specifications and design subject to possible modifications without notice, due to improvements.

10. PANEL FACILITIES





① POWER switch

② REVERSE MODE switch

③ PHONES jack
To insert headphone jack.

④ DOLBY NR switch
Works on both decks simultaneously (except during tape copy)

NOTE:
When playing back Dolby-encoded tapes, always set this switch to the same position (B-type or C-type) used for recording.

⑤ PHONES LEVEL control
To adjust volume of sound for headphones.

⑥ BLANK SEARCH button
To find unrecorded portions on the tape

⑦ RELAY/SKIP button
Press this button to perform relay recording/playback from deck I to deck II or from deck II to deck I.
It also activates the blank skip function, which fast-forwards the tape to the beginning of the next selection, resuming playback from there, when a mute playback of more than 15 seconds exists.

⑧ REC LEVEL control

⑨ PARALLEL REC button
Press this button to start recording of the same source at both decks simultaneously.

⑩ SYNCHRO COPY button
NORMAL SPEED:
Starts tape copy at normal speed from deck I to deck II.

HIGH SPEED:
Starts tape copy at double speed (half-time) from deck I to deck II.

⑪ REC BALANCE control
Balances the recording level between left (L) and right (R) channels.

Normally leave the REC BALANCE control in the center dick position. Adjust it if you want to change the relative recording levels of the right and left channels.

⑫ TAPE COUNTER switching button (I/II)
Switches the tape counter between the deck I and deck II readings.

⑬ TAPE COUNTER RESET button
Resets the tape counter reading to "0000."

⑭ EJECT button

Press to open the cassette door after you have pressed the stop (▭) button and the tape has stopped.

NOTE:
If power is turned off while the tape is moving, the cassette door may remain locked. In this case, turn the power on before pressing the EJECT button.

⑮ TIMER MODE switch

OFF:
Normally, be sure to leave the switch in this position.

REC:
For timer recording

PLAY:
For timer playback

- Recording or playback may suddenly start when turning power on with this switch in the REC or PLAY position.

⑯ Operation buttons

◁◁ : To fast-forward the tape in the direction of the arrows. When pressed during playback, the unit will skip as many selections as the number of times the button is pressed, then starts playback from the beginning of the next selection.

◁ : To playback the back side of the tape, that is the side opposite to the side whose label is visible (reverse playback).

▭ : To stop all operations, including parallel recording and tape copy.

▷ : To playback the front side of the tape, that is the side whose label is visible (forward playback).

▷▷ : To fast-forward the tape in the direction of the arrows. When pressed during playback, the unit will skip as many selections as the number of times the button is pressed, then start playback from the beginning of the next selection.

○ REC : To start recording. The unit will not enter the recording mode if it is loaded with a cassette whose erasure prevention tabs are removed.

▯▯ PAUSE : To stop tape transport momentarily during recording or playback. Press it again to resume operation. (This can also be done by pressing the ◁ or ▷ button.) This button does not work during fast-forward and rewind.

● MUTE : Press this button during recording to create a blank portion of approx. 4 seconds on the tape. The unit will then enter the recording pause mode.

⑰ Operating Display

Ⓐ Deck I Tape Transport Mode Indicators

Ⓑ Tape Copy Indicator

Lights up during the tape copy operation.

- Normal-speed copy

- Double-speed copy

Ⓒ RELAY/SKIP Indicator

Lights up when the RELAY/SKIP button is pressed to start relay recording or playback or to activate skip mechanism.

Ⓓ Level Meter

Holds peak indications for about 1.2 second. The ▯▯ beside the +3 dB mark indicates the Dolby NR systems standard level.

Ⓔ Reverse Mode Indicator (REV.)

- One-way recording/playback mode:

- Repeat playback/two-way recording mode:

Ⓕ DOLBY NR Indicator

- When Dolby NR is off

- Dolby B-type NR on

- Dolby C-type NR on

Ⓖ Deck II Tape Transport Mode Indicators