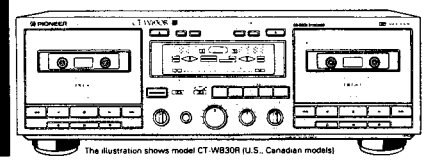
PIONEER®
The future of sound and vision.

Service Manual



ORDER NO.
ARP2011

STEREO DOUBLE CASSETTE DECK

CT-W830R
CT-W840R

CT−W830R AND CT−W840R HAVE FOLLOWING VERSIONS :

Type	Applicable model		Power requirement	Export destination
	CT−W830R	CT−W840R		
KUC	○		AC120V only	U.S.A. and Canada
HEM	○		AC220V, 240V (switchable) *	European continent
HB	○		AC220V, 240V (switchable) *	United Kingdom
SD		○	AC110V, 120V, 220V, 240V (swtichable)	Kingdom of Saudi Arabia and General market

*Change the primary wiring of the power transformer.

- **This manual is applicable to the CT − W830R/KUC, HEM, HB and CT − W840R/SD types.**
- **As to the CT − W830R/HEM, HB and CT − W840R/SD types, refer to page 44.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

CONTENTS

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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

SI APR. 1990 Printed in Japan

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

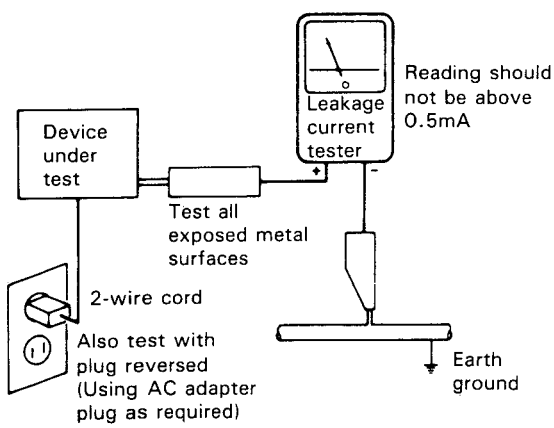
(FOR USA MODEL ONLY)

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

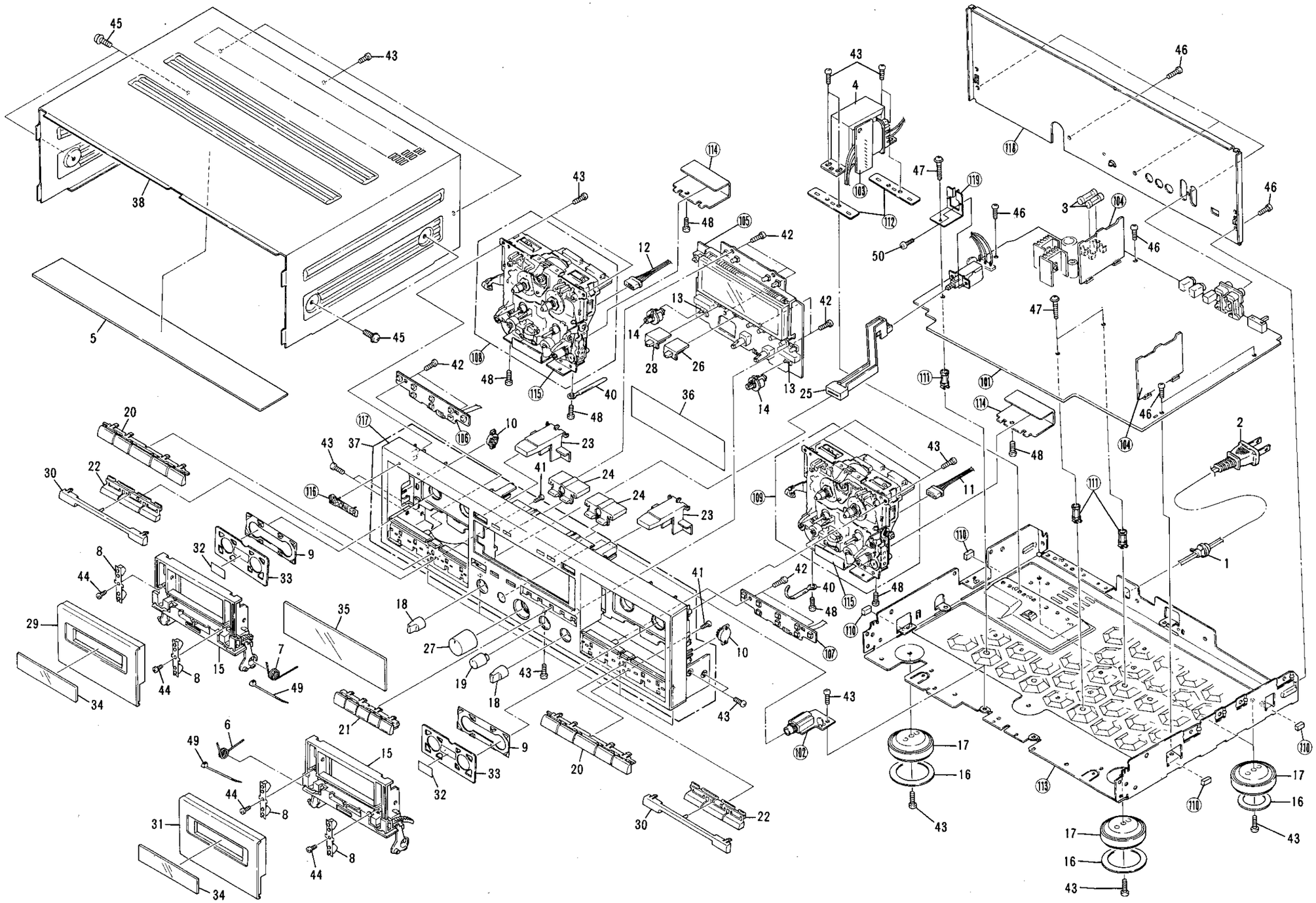
Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which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

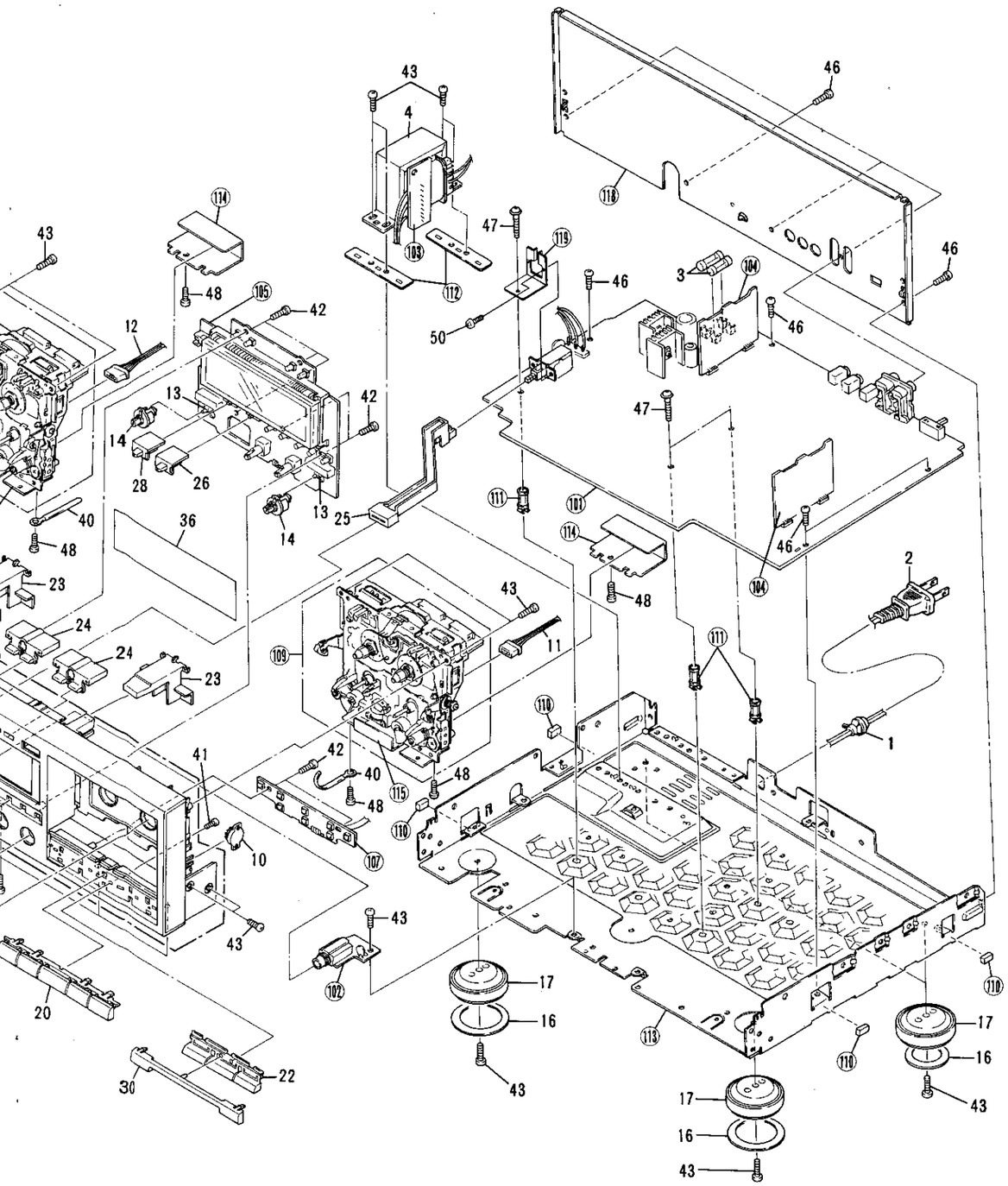
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts 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

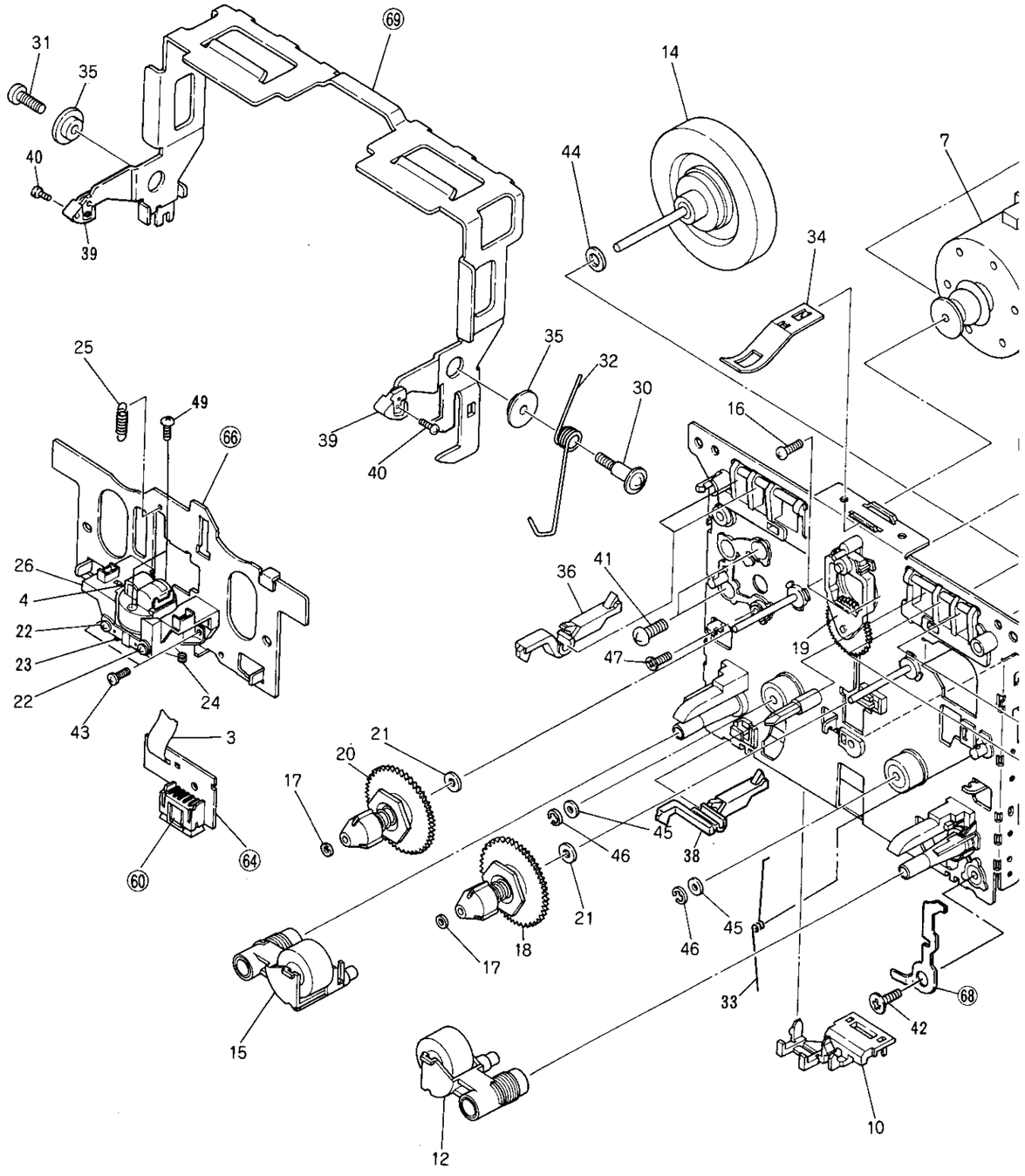
Mark	No.	Part No.	Description
	1	CM−22C	Strain relife
	2	RDG1002	AC power cord
	3	REK1001	Fuse (FU1001, FU1002/ 1.5A)
	4	RTT1127	Power transformer
	5	PNB1109	Absorber plate B
	6	RBH1224	Door spring (L)
	7	RBH1225	Door spring (R)
	8	RBK1013	Half pressure spring
	9	REB1085	Stabilizer B
	10	REC1005	Damper assembly
	11	RKP1323	Connector assembly 5P
	12	RKP1332	Connector assembly 5P
	13	RNK1522	Switch cap
	14	RNK1523	Rotary SW shaft
	15	RNT1010	Door pocket
	16	VEC1061	Stopper
	17	VNK1095	Insulator assembly
	18	RAC1414	Knob B
	19	RAC1421	VR knob B
	20	RAC1422	Function knob A
	21	RAC1423	Function knob C
	22	RAC1424	Function knob B
	23	RAC1425	Eject knob
	24	RAC1426	Counter knob
	25	RAC1427	Power knob
	26	RAC1428	Slide knob
	27	RAC1430	VR knob A
	28	RAC1431	Slide knob
	29	RAH1592	Door cover
	30	RAH1552	REC mold
	31	RAH1593	Door cover
	32	REE−113	Remain display paper
	33	RAH1483	Stabilizer panel
	34	RAH1553	Door lens
	35	RAH1594	FL lens
	36	RAH1596	FL filter
	37	RXX1296	Front panel assembly
	38	RXX1297	Bonnet
	39		.....
	40	RNH−184	Cord clamper
	41	BBZ20P060FMC	Screw
	42	BBZ30P060FZK	Screw
	43	BBZ30P080FCC	Screw
	44	BPZ20P060FMC	Screw
	45	FBT40P080FZK	Screw
	46	IBZ30P060FCC	Screw
	47	IBZ30P150FCU	Screw
	48	BCZ26P050FMC	Screw
	49	REC−371	Binder
	50	PMA30P060FCU	Screw

Mark	No.	Part No.	Description
	101		Main unit
	102		H.Phone unit
	103		Transformer 2 unit
	104		HX unit
	105		Display unit
	106		Operate SW (1) unit
	107		Operate SW (2) unit
	108		Mechanism unit (Deck I)
	109		Mechanism unit (Deck II)
	110		Multi spacer
	111		P.C.B. spacer
	112		Power transformer sheet
	113		Main chassis
	114		Shield plate
	115		Mechanism bracket
	116		Name plate
	117		Front panel
	118		Rear panel
	119		SW bracket

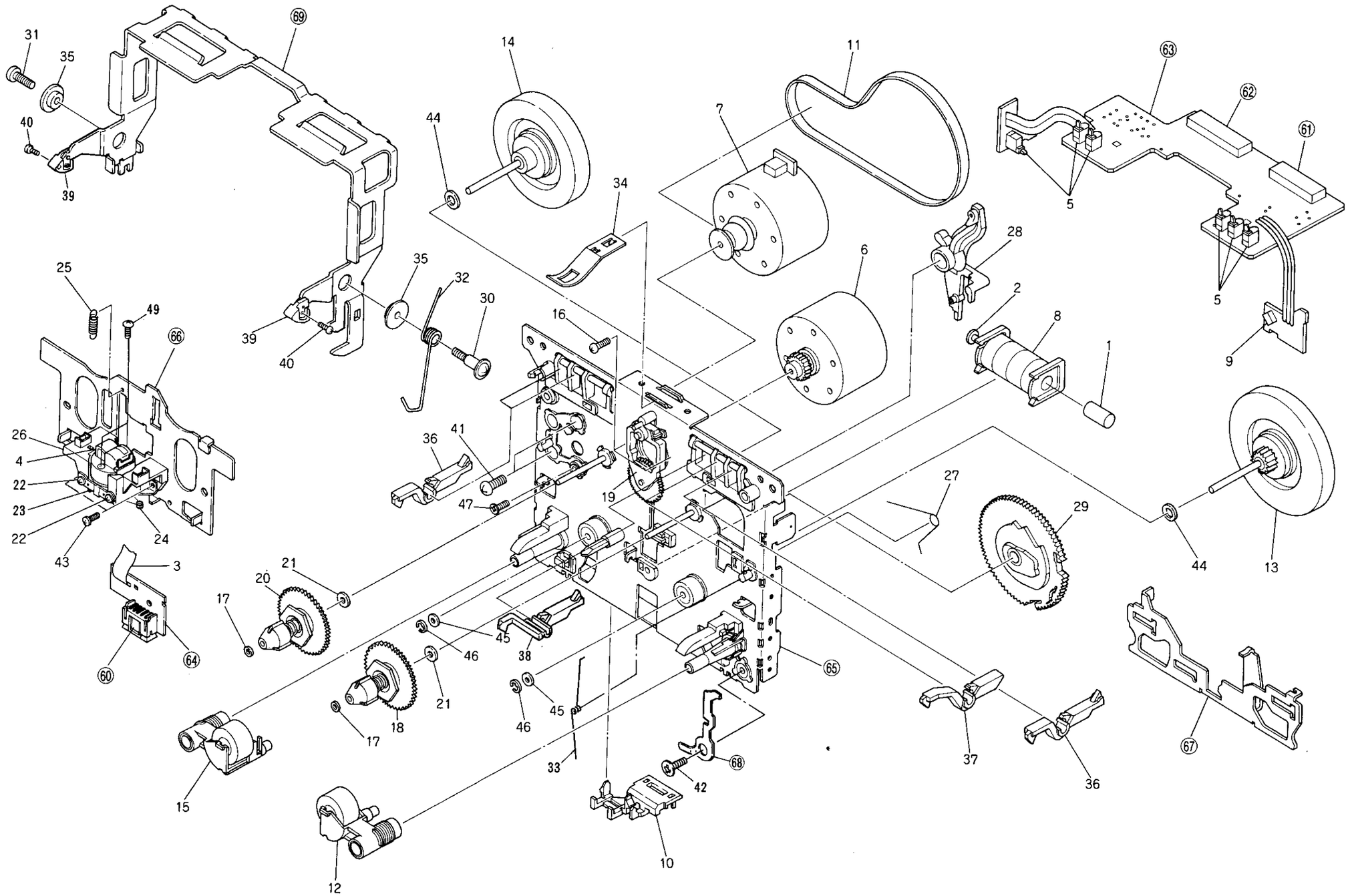
2.2 MECHANISM UNIT (DECK I)

Parts List of Mechanism Unit (Deck I)

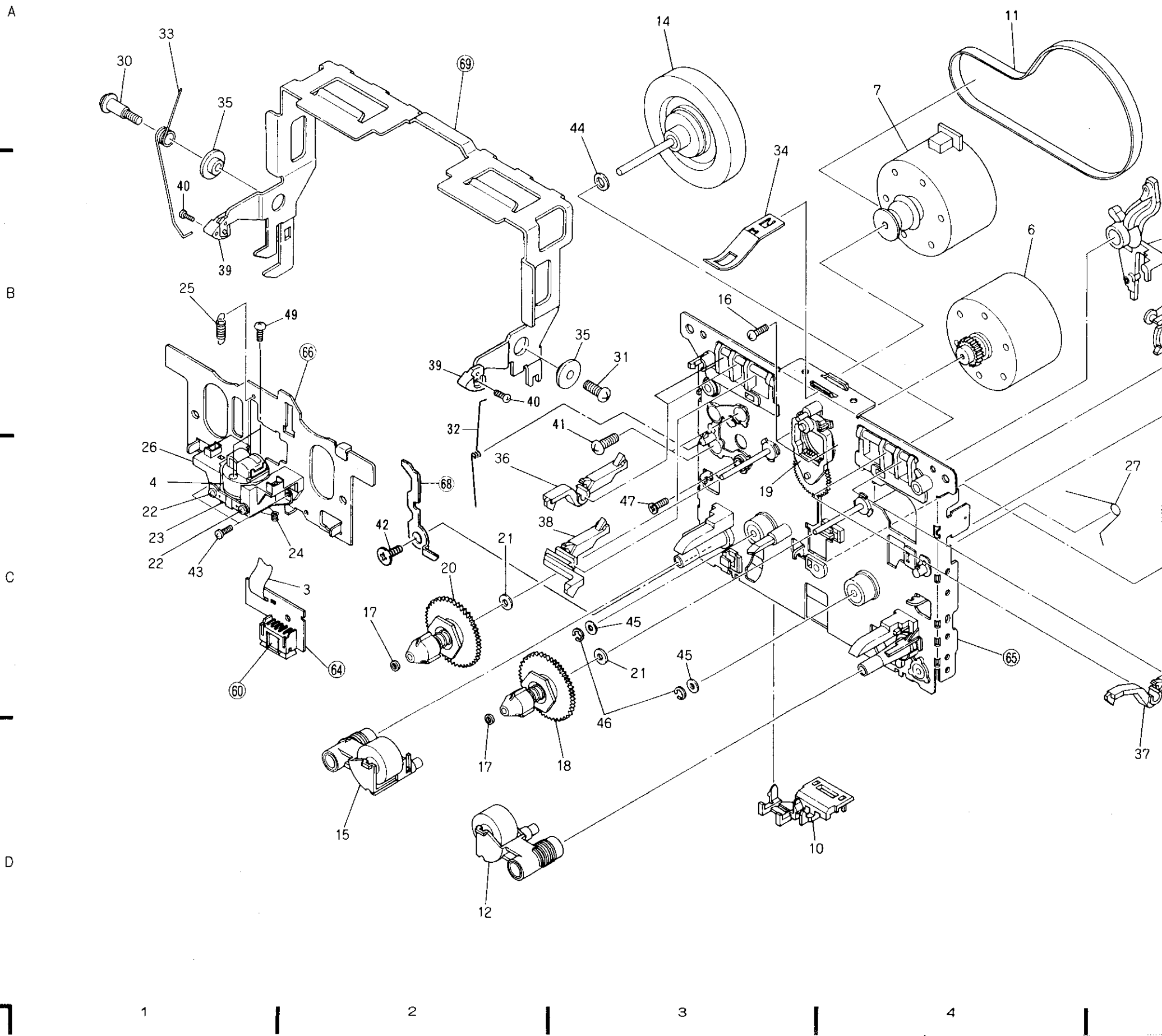
Mark	No.	Part No.	Description
	1	RLA1130	Shaft
	2	RLA1132	Plunger
	3	RNP1232	HD FPC (R/P)
	4	RPB1030	R/P, E head
	5	RSG1018	Push switch
	6	RXM1029	Reel motor block
	7	RXM1030	Main motor block
	8	RXP1010	Solenoid
	9	SPI3534FG	Photo transistor
	10	RNK1530	Wire holder
	11	REB1131	Main belt
	12	RXA1183	Pinch roller assembly
	13	RXA1294	Flywheel assembly
	14	RXA1295	Flywheel assembly
	15	RXA1296	Pinch roller assembly (L)
	16	RBA1076	Screw
	17	RBF−057	Washer
	18	RXA1184	Reel base block
	19	RXA1248	Idler assembly
	20	RXC−040	Reel base block
	21	RBF1038	Washer
	22	RBA1080	Azimuth screw
	23	RBK1029	Azimuth spring
	24	RBL−085	Rotation spring
	25	RBL1003	Head base spring
	26	RXA1293	Head housing assembly
	27	RBH1239	Slide spring
	28	RNK1525	Play arm
	29	RNK1526	Cam gear
	30	RBA1078	Screw
	31	RBA1079	Screw
	32	RBH1233	Eject lever spring (R)
	33	RBH1230	Eject prevention spring (R)
	34	RBK1031	Cassette hold spring
	35	RLA1133	Lever collar (A)
	36	RNK1527	REC detection lever
	37	RNK1528	PACK detection lever (L)
	38	RNK1537	Metal detection lever (R)
	39	RNM−160	Hook
	40	PCZ20P040FMC	Screw
	41	PMZ26P050FMC	Screw
	42	RBA1048	Screw
	43	RBA1077	Screw
	44	WA26D045D025	Washer
	45	WA26D047D050	Washer
	46	YE15FUC	Washer
	47	PBZ30P080FMC	Screw
	48	.....	
	49	PMZ14P050FNI	Screw
	60		Connector (5P)
	61		Connector (8P)
	62		Connector (10P)
	63		P.C. board
	64		Head P.C.B.
	65		Chassis assembly
	66		Head base
	67		Slide plate
	68		Eject prevention arm (R)
	69		Eject lever (WR)

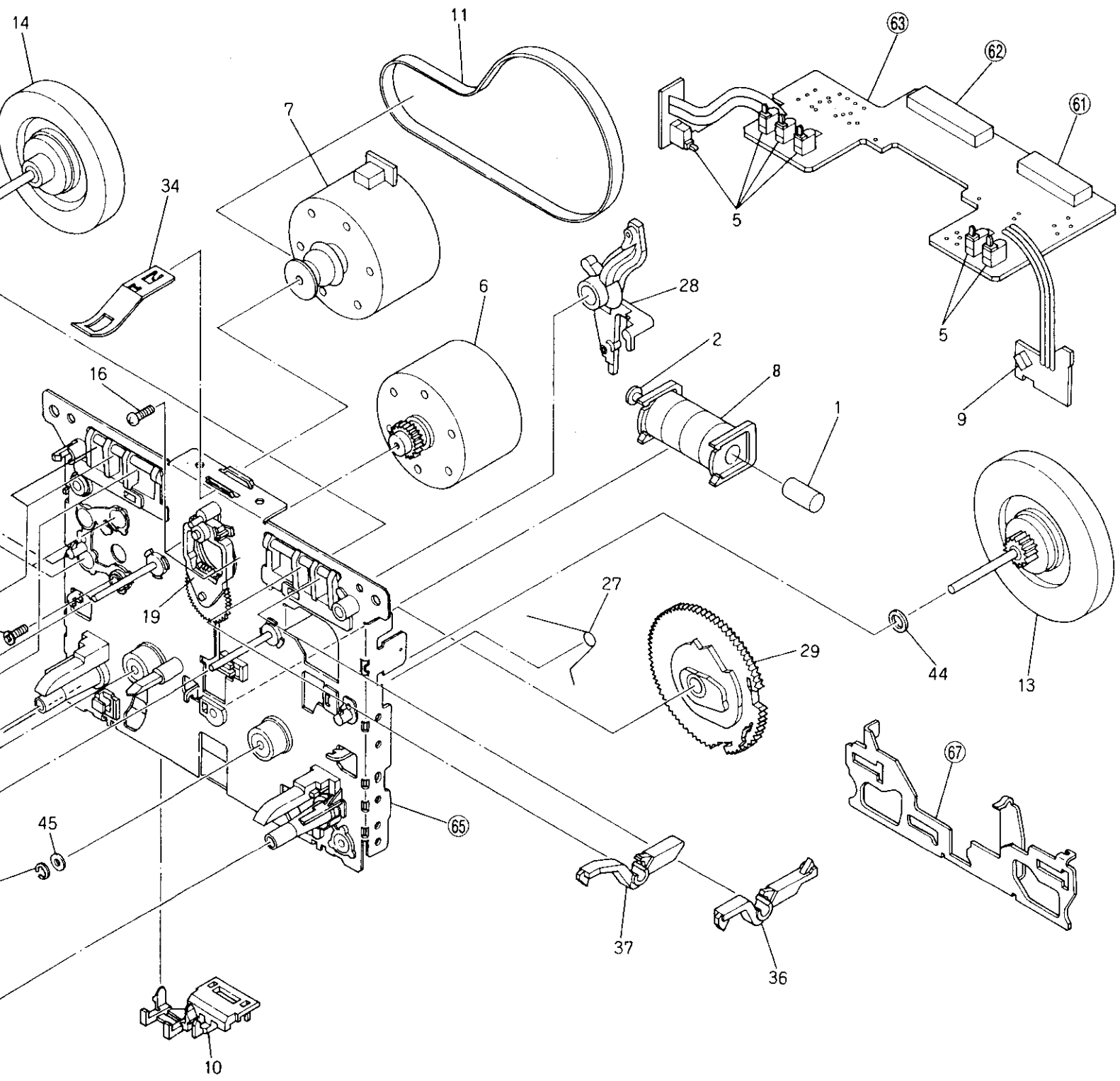


2.2 MECHANISM UNIT (DECK I)



2.3 MECHANISM UNIT (DECK II)

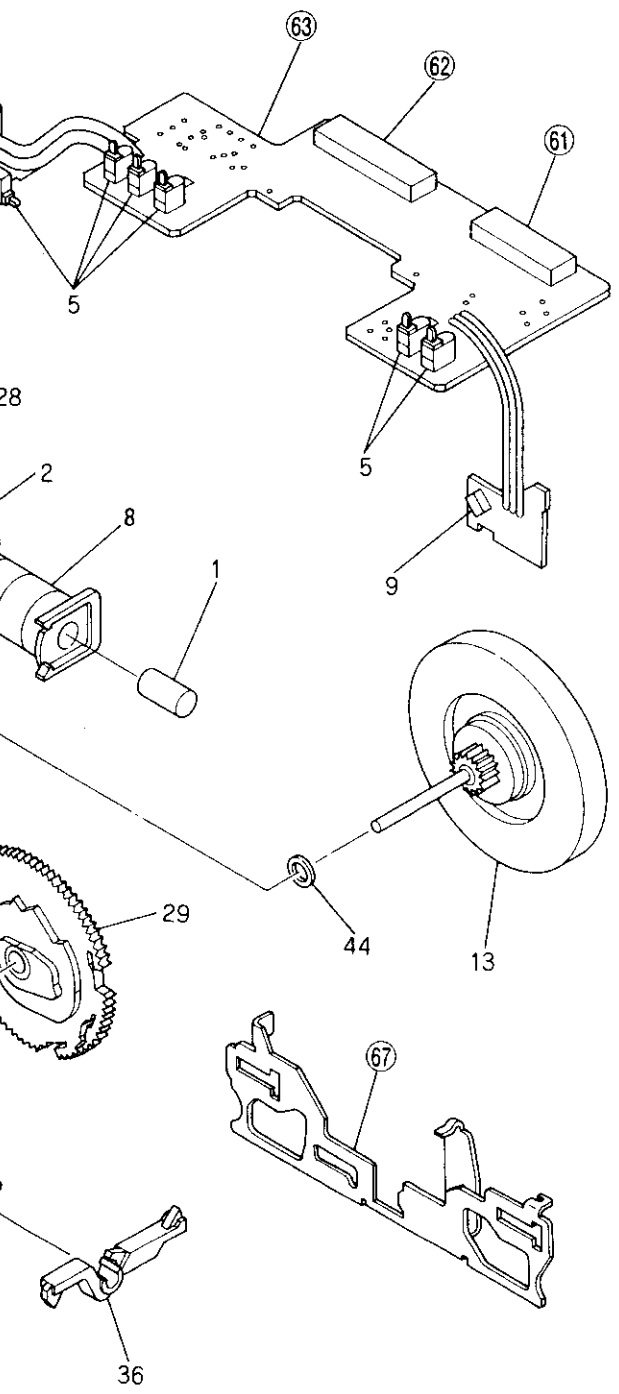




Parts List of Mechanism Un

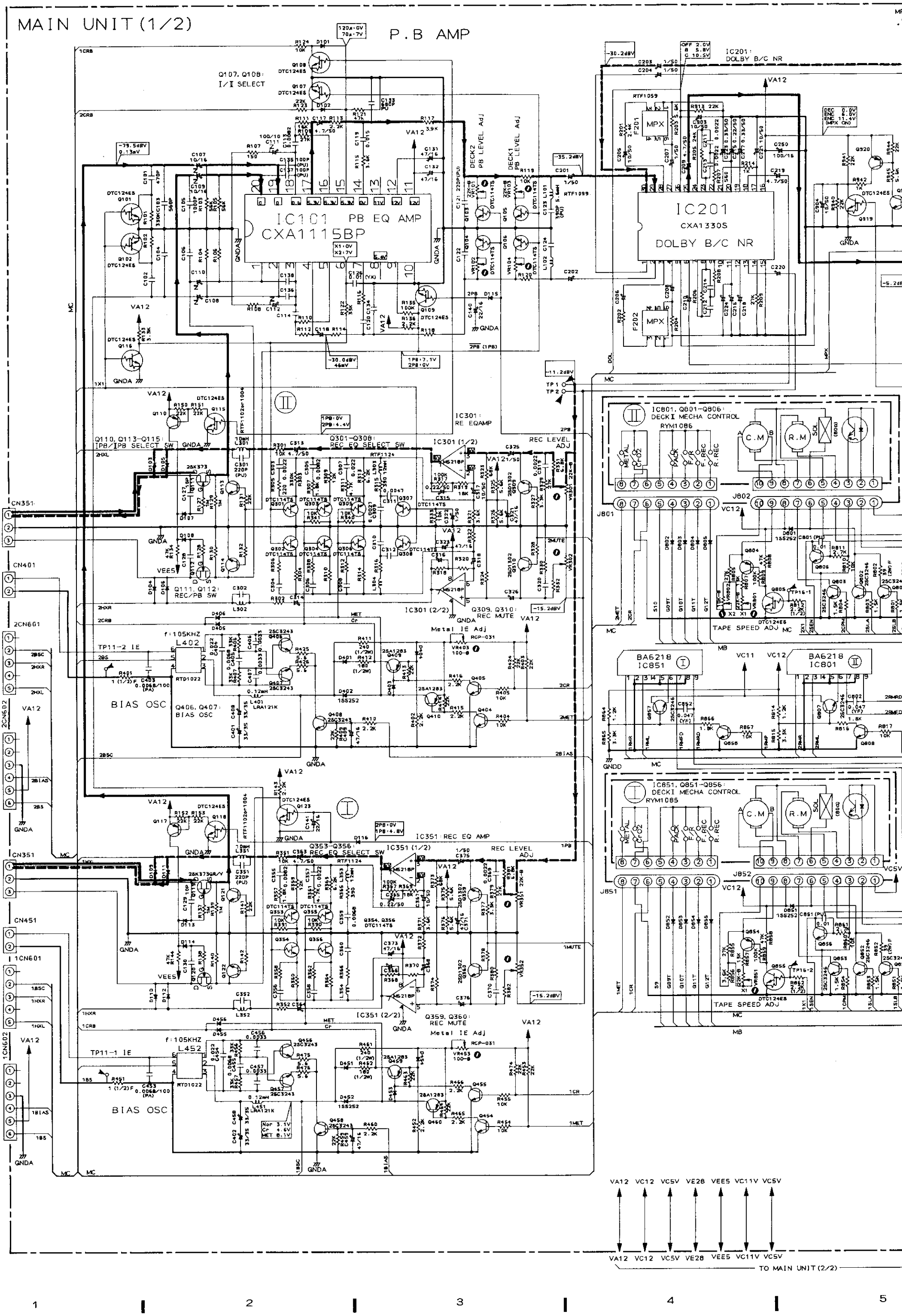
Mark	No.	Part No.	De
A	1	RLA1130	Shaft
	2	RLA1132	Plunger
	3	RNP1232	HD FPC
	4	RPB1030	R/P, E
	5	RSG1018	Push swi
	6	RXM1029	Reel mot
	7	RXM1030	Main mot
	8	RXP1010	Solenoid
	9	SPI33534FG	Photo tra
	10	RNK1530	Wire hold
	11	REB1131	Main belt
	12	RXA1183	Pinch roll
	13	RXA1294	Flywheel
	14	RXA1295	Flywheel
	15	RXA1296	Pinch roll
B	16	RBA1076	Screw
	17	RBF−057	Washer
	18	RXA1184	Reel base
	19	RXA1248	Idler asse
	20	RXC−040	Reel base
C	21	RBF1038	Washer
	22	RBA1080	Azimuth
	23	RBK1029	Azimuth
	24	RBL−085	Rotation
	25	RBL1003	Head bas
	26	RXA1293	Head hou
	27	RBH1239	Slide spri
	28	RNK1525	Play arm
	29	RNK1526	Cam gear
	30	RBA1078	Screw

Parts List of Mechanism Unit (Deck II)



Mark	No.	Part No.	Description
	1	RLA1130	Shaft
	2	RLA1132	Plunger
	3	RNP1232	HD FPC (R/P)
	4	RPB1030	R/P, E head
	5	RSG1018	Push switch
	6	RXM1029	Reel motor block
	7	RXM1030	Main motor block
	8	RXP1010	Solenoid
	9	SPI33534FG	Photo transistor
	10	RNK1530	Wire holder
	11	REB1131	Main belt
	12	RXA1183	Pinch roller assembly
	13	RXA1294	Flywheel assembly
	14	RXA1295	Flywheel assembly
	15	RXA1296	Pinch roller assembly (L)
	16	RBA1076	Screw
	17	RBF−057	Washer
	18	RXA1184	Reel base block
	19	RXA1248	Idler assembly
	20	RXC−040	Reel base block
	21	RBF1038	Washer
	22	RBA1080	Azimuth screw
	23	RBK1029	Azimuth spring
	24	RBL−085	Rotation spring
	25	RBL1003	Head base spring
	26	RXA1293	Head housing assembly
	27	RBH1239	Slide spring
	28	RNK1525	Play arm
	29	RNK1526	Cam gear
	30	RBA1078	Screw
	31	RBA1079	Screw
	32	RBH1234	Eject prevention spring (L)
	33	RBH1231	Eject lever spring (L)
	34	RBK1031	Cassette hold spring
	35	RLA1133	Lever collar (A)
	36	RNK1527	REC detection lever
	37	RNK1528	PACK detection lever (L)
	38	RNK1529	Metal detection lever (L)
	39	RNM−160	Hook
	40	PCZ20P040FMC	Screw
	41	PMZ26P050FMC	Screw
	42	RBA1048	Screw
	43	RBA1077	Screw
	44	WA26D045D025	Washer
	45	WA26D047D050	Washer
	46	YE15FUC	Washer
	47	P8Z30P080FMC	Screw
	48	.....	
	49	PMZ14P050FNI	Screw
	60		Connector (5P)
	61		Connector (8P)
	62		Connector (10P)
	63		P.C. board
	64		Head P.C.B.
	65		Chassis assembly
	66		Head base
	67		Slide plate
	68		Eject prevention arm (L)
	69		Eject lever (WL)

3. SCHEMATIC DIAGRAM



LINE OUT/IN

MPX SW ON-OFF
S201 RSH1022

IC201 : DOLBY B/C NR
IC201 CXA1330S DOLBY B/C NR

IC202 (1/2)
IC202 (2/2)
JA701 (1/4) RKB1003
JA701 (3/4) RKB1003
JA701 (2/4) RKB1003
JA701 (4/4) RKB1003

DISPLAY UNIT (2/2)
CN701 J701A J702A CN702
VR1501 (1/2)
VR1501 (2/2) RCV1057
RCS1014 VR1502

IC761 : MUSIC SEARCH
IC761 BA335
Q711, Q712 : LINE MUTE
2SD1302 Q711
2SD1302 Q712

METER AMP
IC501 (1/2)
IC502 (1/2)
IC502 (2/2)
IC501 (2/2)
MS2168
MS2332

IC801, Q801-Q806 : DECK I MECHA CONTROL
RYM1086
C.M R.M SOL
METAL CrO2 PACK F.FWD F.REC R.REC
J801 J802
TAPE SPEED ADJ
DTC124ES

IC851, Q851-Q856 : DECK I MECHA CONTROL
RYM1085
J851 J852
TAPE SPEED ADJ
DTC124ES

BA6218 IC851 (I)
BA6218 IC801 (II)

IC901 : μCOM
IC901
RA10T104J
RA4T223J

Q910-Q912 : I/I DOLBY SELECT

CD CYNC.
JA901 RKN1014

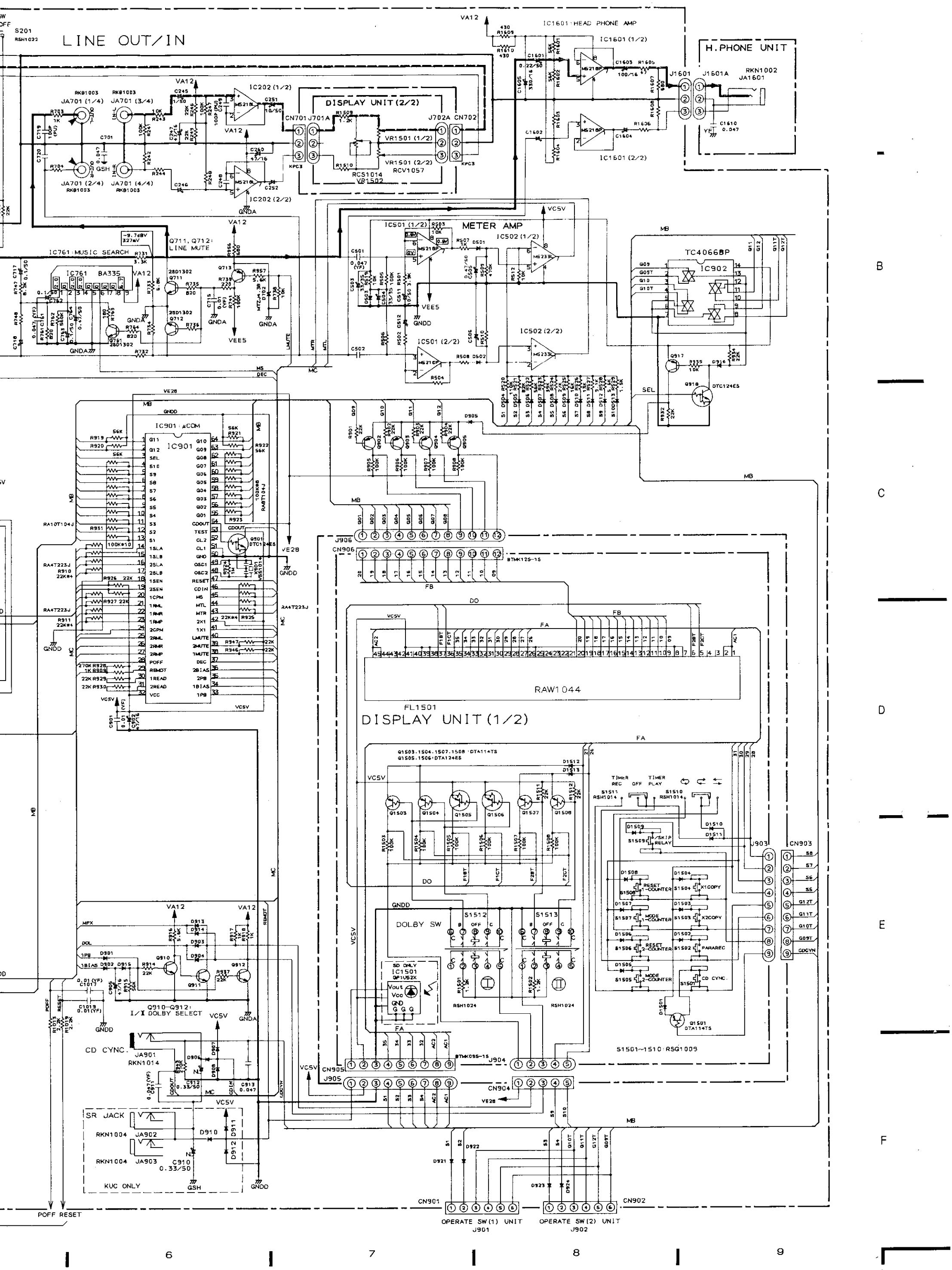
SR JACK
JA902 RKN1004
JA903 RKN1004

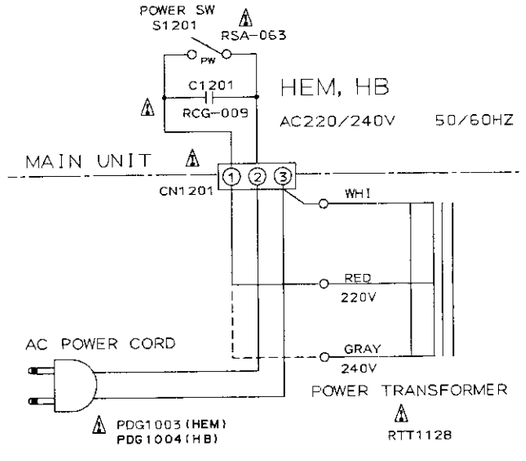
DOLBY SW
S1S12 S1S13
IC1S01 GP1US2X
RSH1024

DISPLAY UNIT (1/2)
FL1501
RAW1044

J906 CN906 BTMK12S-1S
CN905 J904 BTMK09S-15
J905 CN904
CN901
OPERATE SW(1) UNIT J901
OPERATE SW(J902

VA12 VC12 VC5V VE28 VEE5 VC11V VC5V
TO MAIN UNIT (2/2)
POFF RESET


LINE OUT/IN
S201
RSH1022
IC1601 : HEAD PHONE AMP
IC1601 (1/2)
IC1601 (2/2)
H.PHONE UNIT
J1601
J1601A
RKN1002
JA1601
DISPLAY UNIT (2/2)
CN701 J701A
J702A CN702
VR1501 (1/2)
VR1501 (2/2)
RCV1057
RCS1014
VR1502
JA701 (1/4)
JA701 (3/4)
JA701 (2/4)
JA701 (4/4)
RKB1003
IC202 (1/2)
IC202 (2/2)
GSH
GNDA
VA12
IC761 : MUSIC SEARCH
IC761 BA335
Q711, Q712 : LINE MUTE
2SD1302
METER AMP
IC501 (1/2)
IC502 (1/2)
IC502 (2/2)
VCSV
VEES
GNDD
MB
TC4066BP
IC902
IC901 : μCOM
IC901
SEL
DTC124ES
VE28
J906
CN906
BTMK12S-1S
FB
DO
FA
RAW1044
FL1501
DISPLAY UNIT (1/2)
Q1503.1504.1507.1508 : DTA114TS
Q1505.1506 : DTA124ES
TIMER REC
OFF
TIMER PLAY
S1511 RSH1014
S1510 RSH1014
/SKIP RELAY
RESET 1-COUNTER
X1COPY
MODE 1-COUNTER
X2COPY
RESET 2-COUNTER
PARAREC
MODE 2-COUNTER
CD CYNC.
S1501~1510 : RSG1009
DOLBY SW
S1512
S1513
RSH1024
SD ONLY
IC1501
GP1US2X
Vout
Vcc
GND
Q910~Q912 :
I/I DOLBY SELECT
CD CYNC.
JA901
RKN1014
SR JACK
JA902
JA903
RKN1004
KUC ONLY
J903
CN903
J904
CN904
CN905
J905
CN901
CN902
OPERATE SW(1) UNIT
J901
OPERATE SW(2) UNIT
J902
POFF
RESET
MC
MS
DEC
MTR
MTL
LMUTE
REMOT
-9.7dBV
327mV

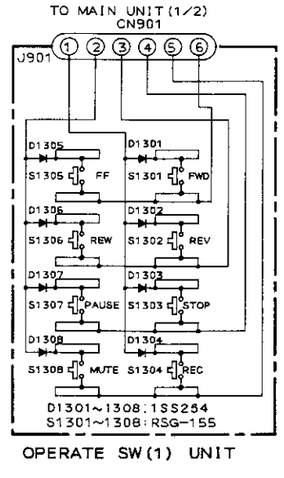


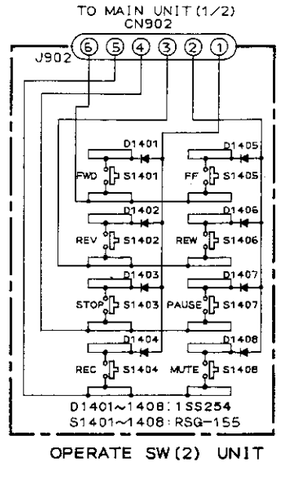
Line Voltage Selection

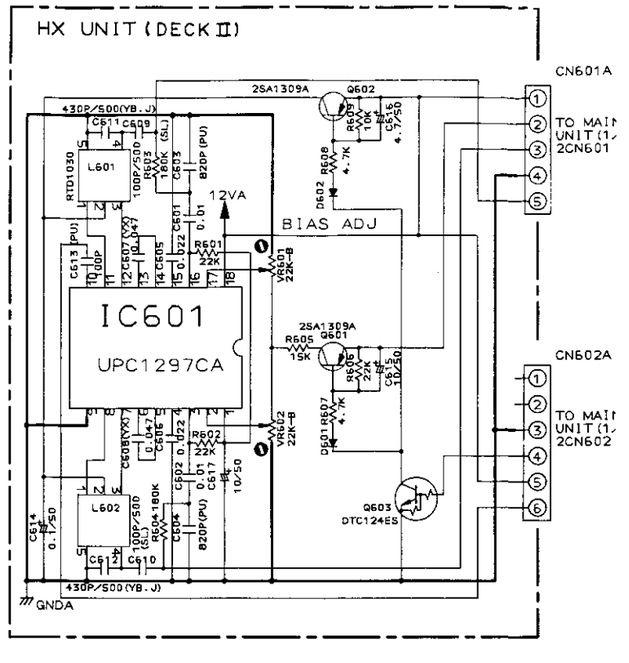
Line voltage can be changed with the following steps.

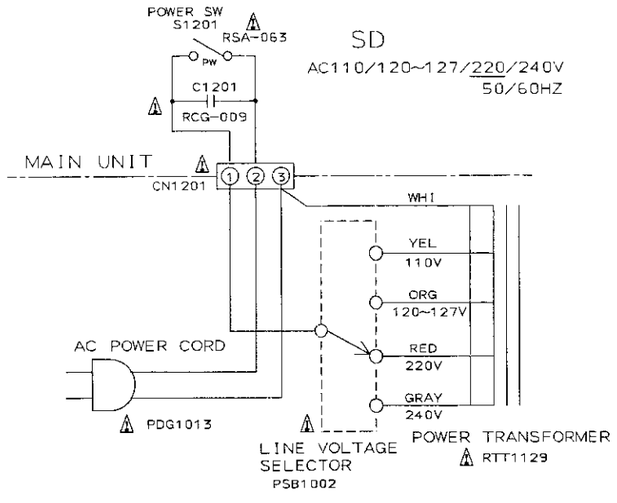
1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the power transformer primary taps.
   Note : In this unit, RED wire is used under 220V (HEM type) and GRAY wire under 240V (HB type).
4. Stick the line voltage label on the rear panel.

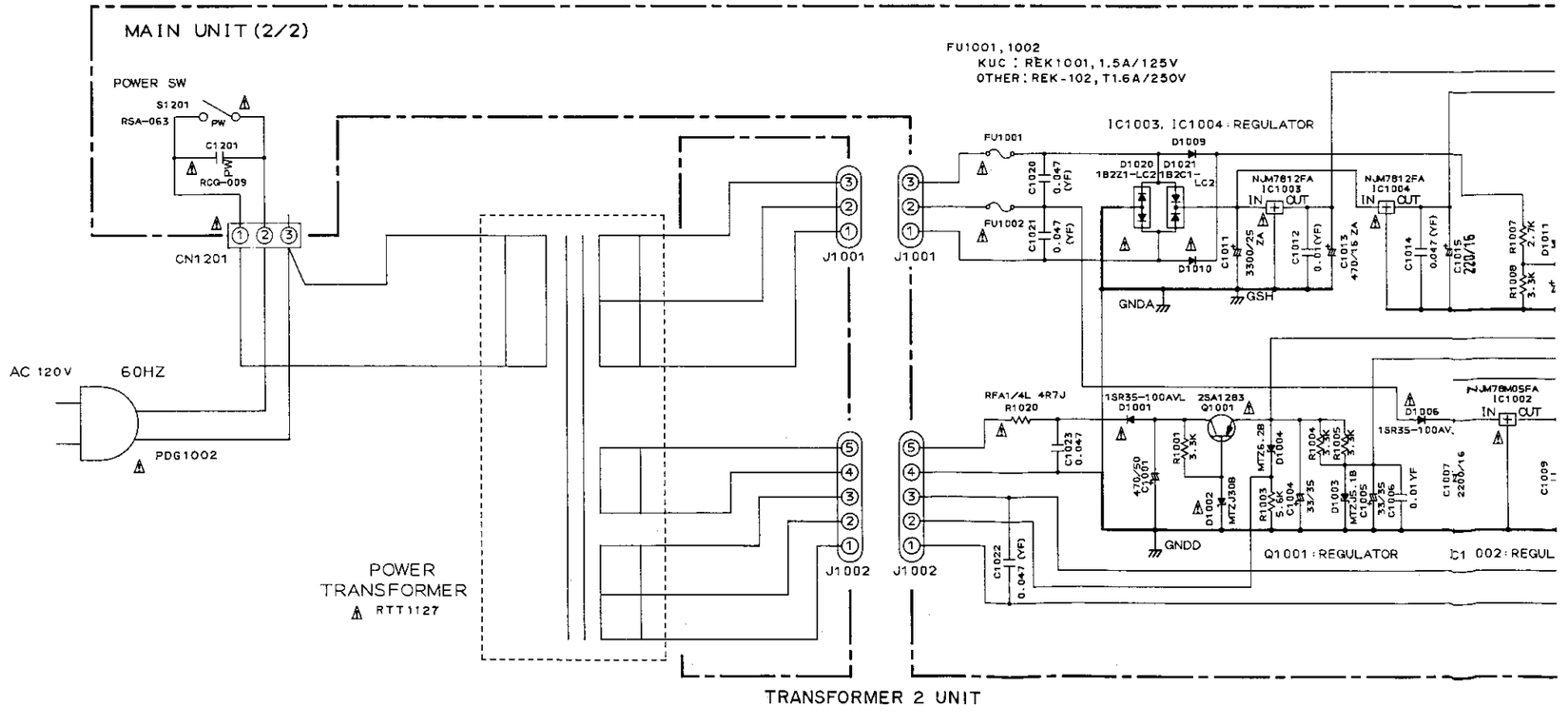
Part No.	Description
AAX-193	220V label
AAX-192	240V label

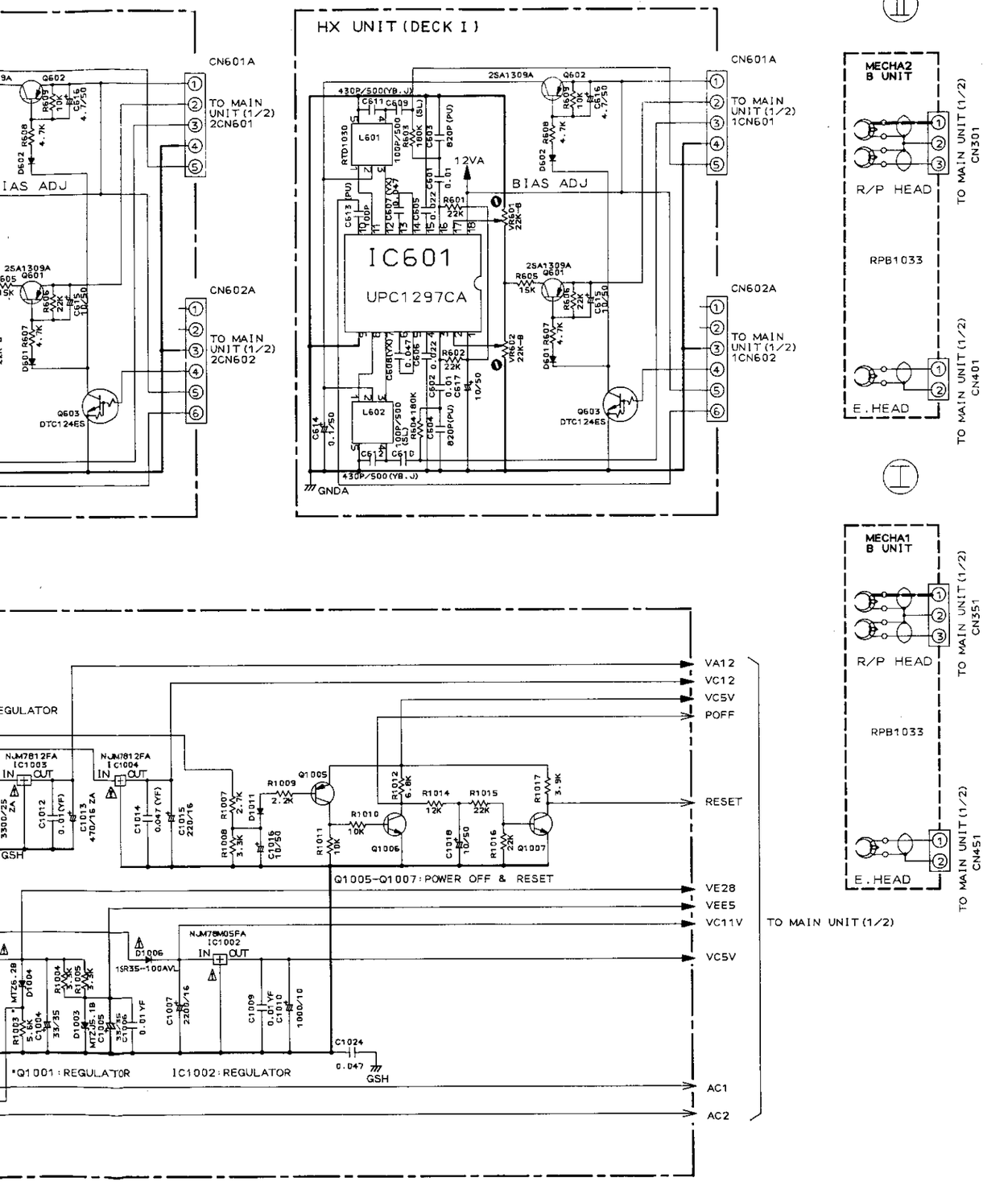












1. RESISTORS :
Indicated in Ω, 1/6W, ±5% tolerance unless otherwise noted
k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.

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 play state.
← mA ; DC current at play state.
Value in ( ) is DC current at stop state.

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 capacitor and resistors have parts numbers.

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

5. SWITCHES (Underline indicates switch position)

MAIN UNIT
S201 : MPX FILTER
S1201 : POWER
DISPLAY UNIT
S1501 : CD CYNCHRO
S1502 : PARALLEL REC
S1503 : X2 COPY
S1504 : X1 COPY
S1505 : TIME/COUNT (II)
S1506 : RESET (II)
S1507 : TIME/COUNT (I)
S1508 : RESET (I)
S1509 : RELAY/SKIP
S1510 : REVERSE MODE
S1511 : TIMER MODE
S1512 : DOLBY NR (I)
S1513 : DOLBY NR (II)

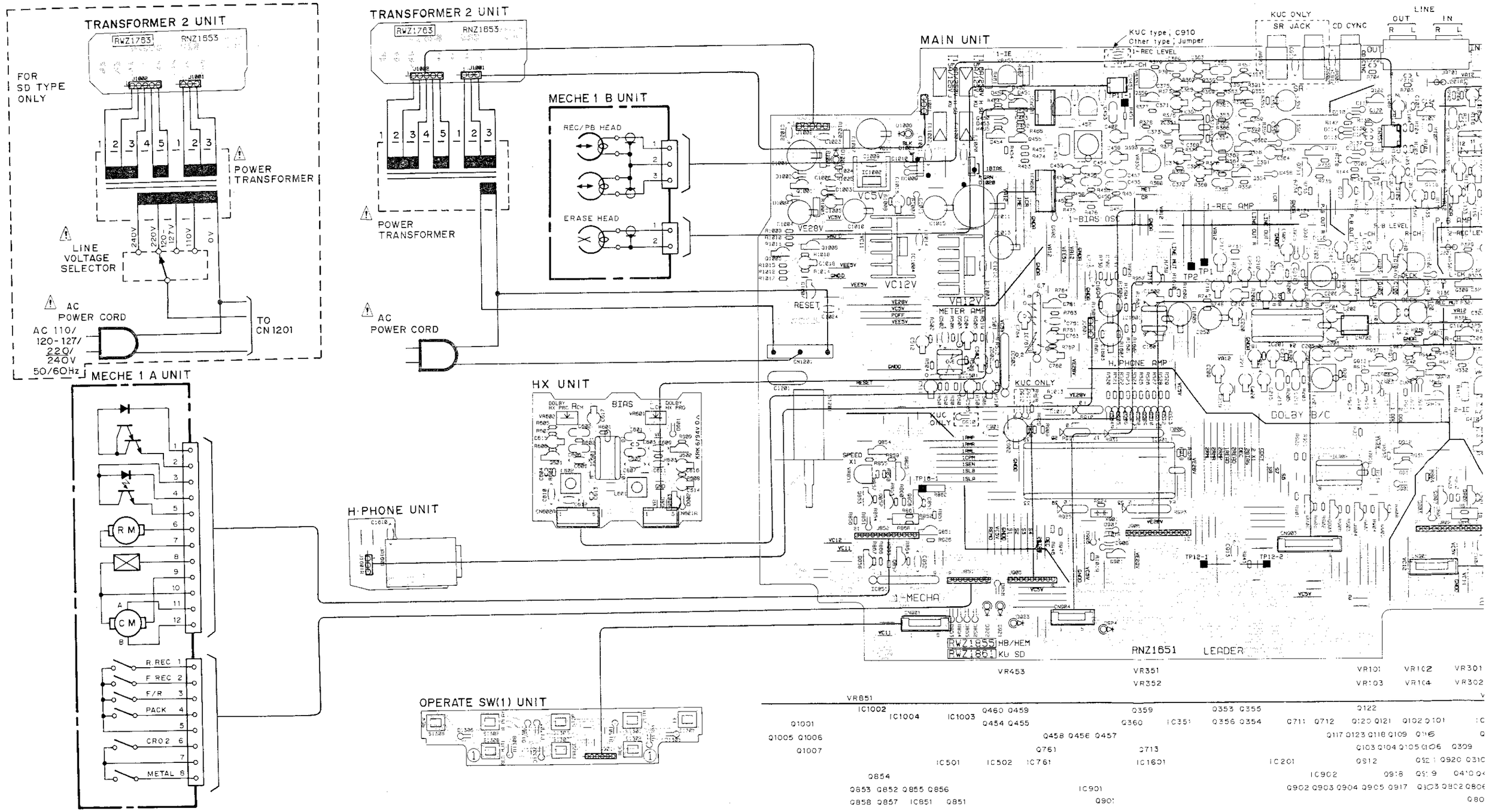
——— PLAYBACK
– – – – REC

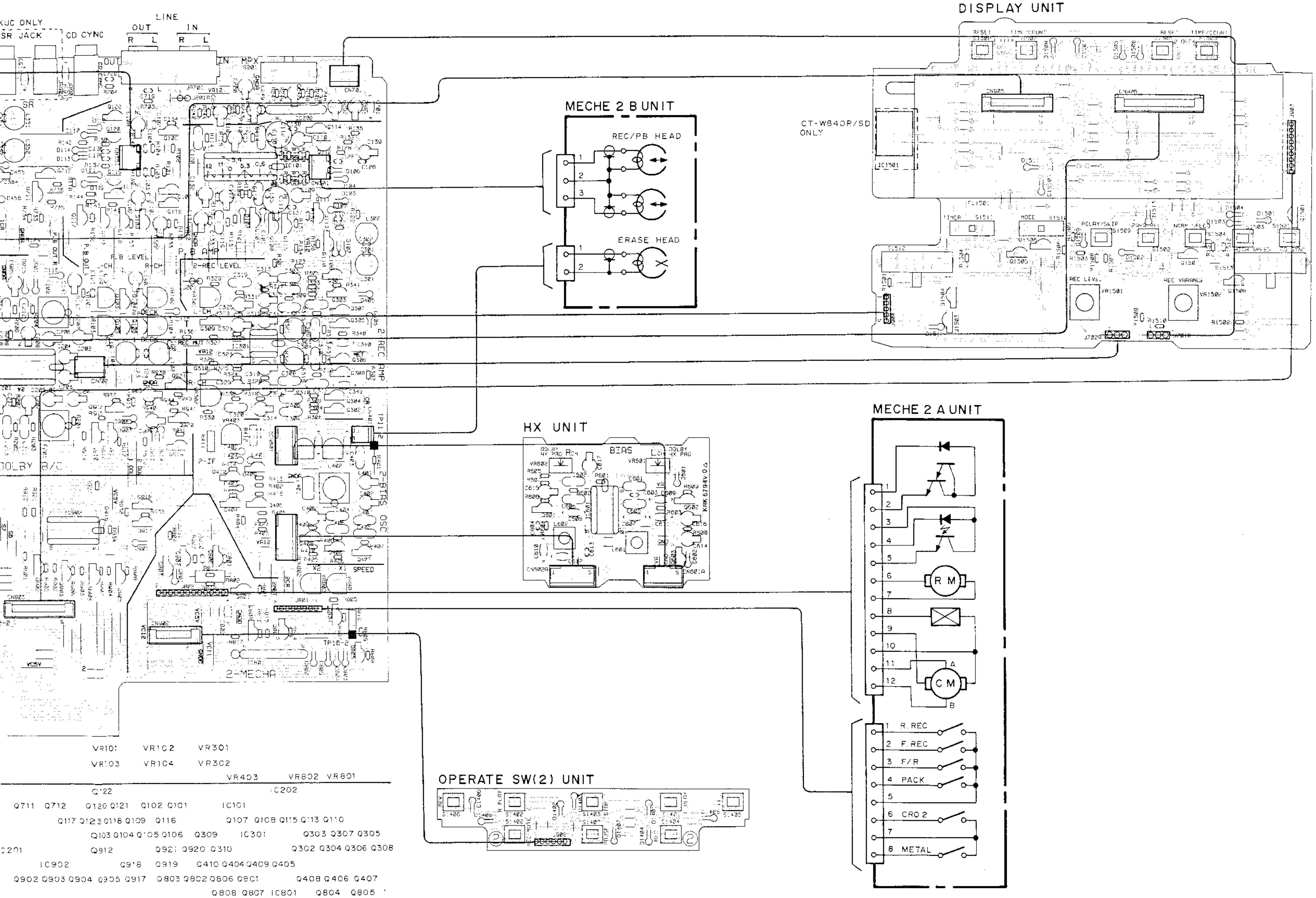
REC–OFF–PLAY
B–OFF–C
B–OFF–C

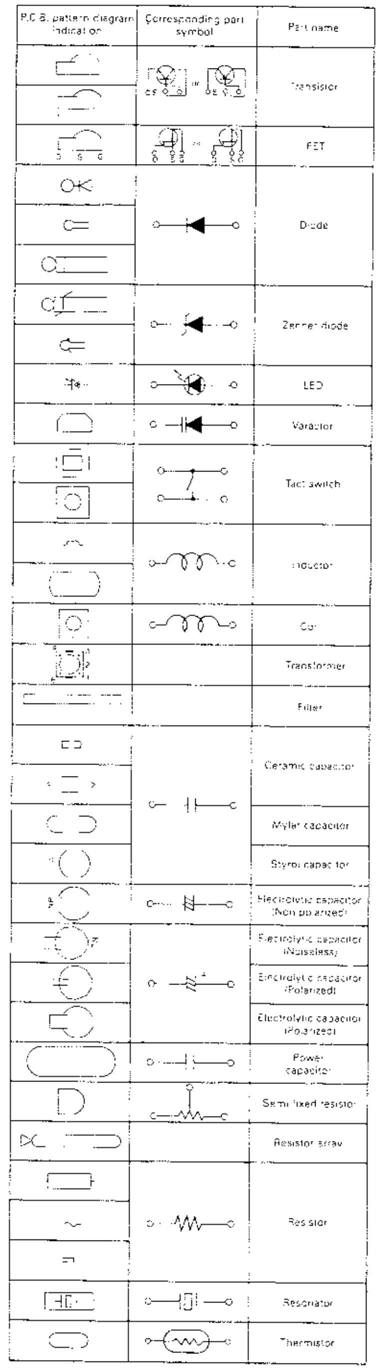
OPERATE 1 UNIT	OPERATE 2 UNIT
S1301 : ▶	S1401 : ▶
S1302 : ◀	S1402 : ◀
S1303 : ■	S1403 : ■
S1304 : ●	S1404 : ●
S1305 : ▶▶	S1405 : ▶▶
S1306 : ◀◀	S1406 : ◀◀
S1307 : ‖	S1407 : ‖
S1308 : ⏻	S1408 : ⏻

4. P.C. BOARDS CONNECTION DIAGRAM

• View from component side

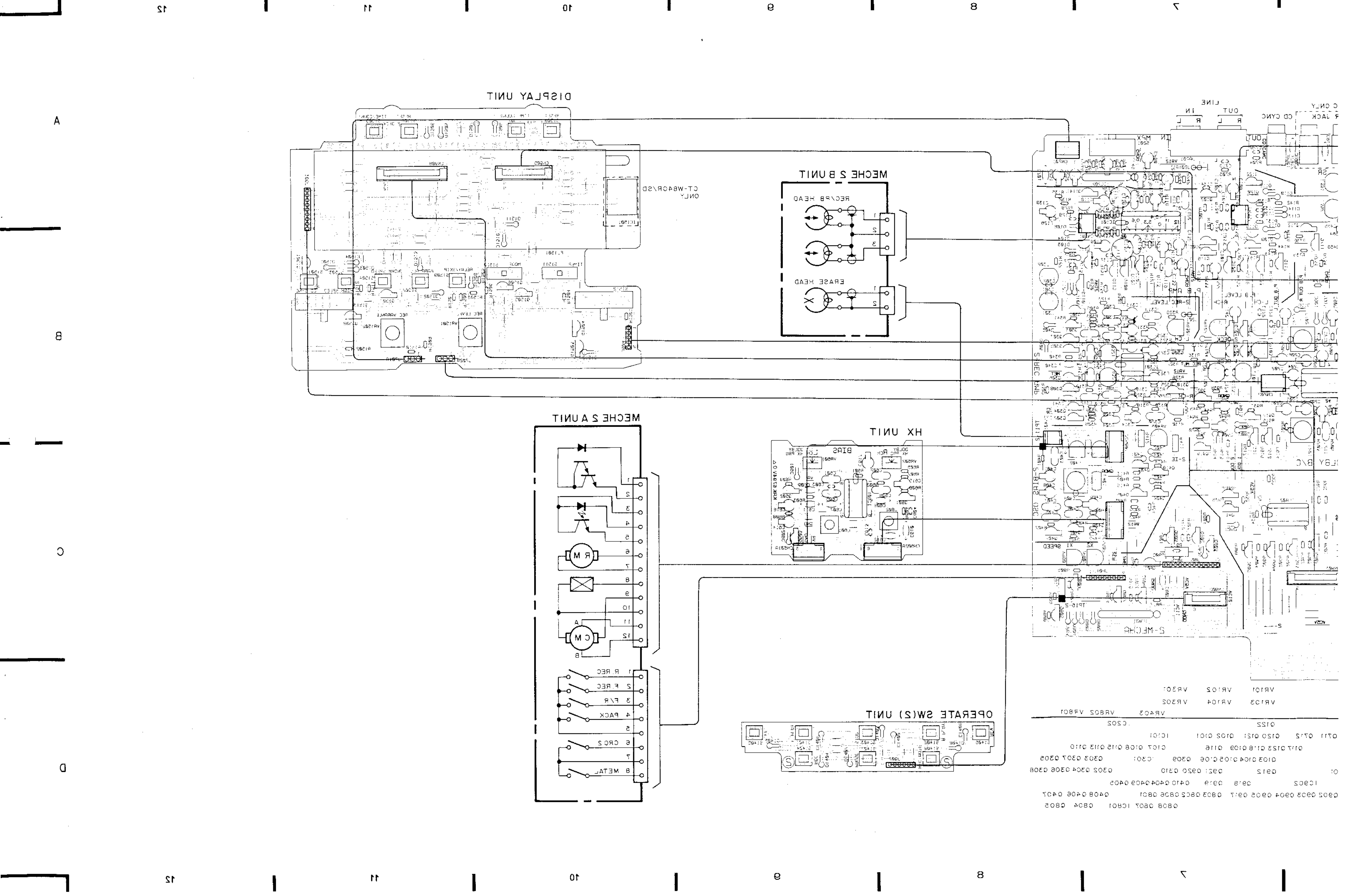






1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked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

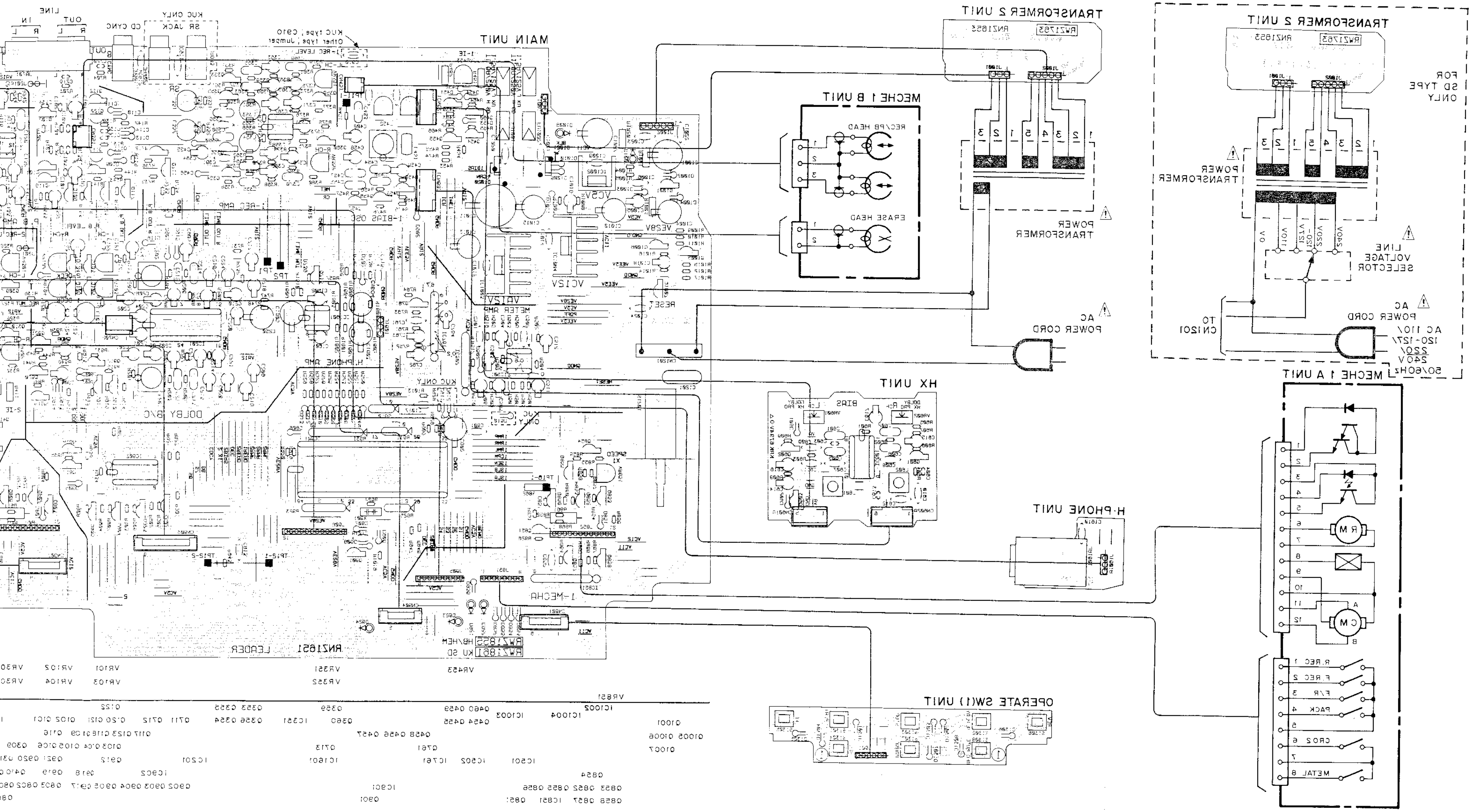
A B C D



12
11
10
9
8
7
A
B
C
D
DISPLAY UNIT
CT-W640R/SD ONLY
MECHE 2 B UNIT
REC/PB HEAD
ERASE HEAD
MECHE 2 A UNIT
R M
C M
1 R REC
2 F REC
3 F/R
4 PACK
5
6 CrO2
7
8 METAL
HX UNIT
BIAS
OPERATE SW(2) UNIT
LINE
IN
OUT

4. P.C. BOARDS CONNECTION DIAGRAM

• View from soldering side



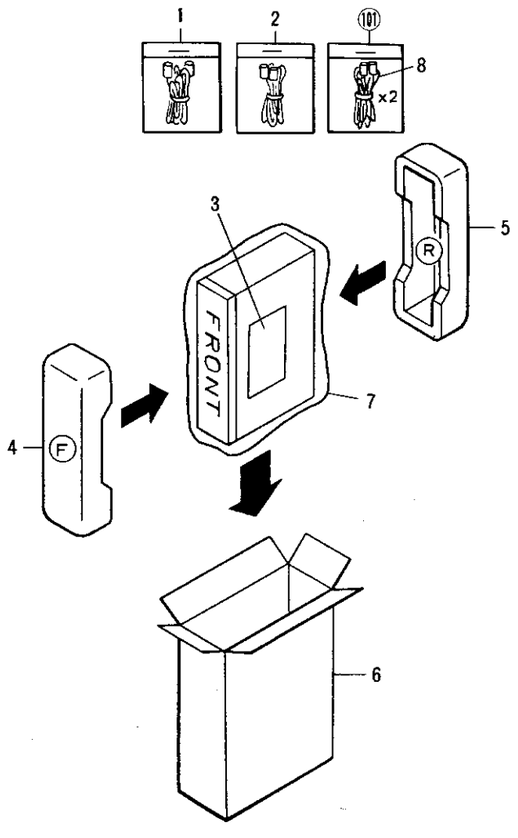
VR101	VR102	VR351	VR453	VR851
VR103	VR104	VR352		

Q122 Q353 Q355 Q359 Q460 Q459 IC1002
Q101 Q102 Q120 Q121 Q711 Q712 Q356 Q354 IC351 Q360 Q454 Q455 IC1003 IC1004 Q1001
Q116 Q109 Q118 Q123 Q117 Q458 Q456 Q457 Q1005 Q1006
Q309 Q106 Q105 Q104 Q103 Q713 Q761 Q1007
Q921 Q920 Q912 IC201 IC1601 IC761 IC502 IC501
Q410 Q919 Q918 IC902 Q854
Q902 Q903 Q904 Q905 Q917 Q803 Q802 IC901 Q853 Q852 Q855 Q856
Q901 Q851 IC851 Q857 Q858

5. PACKING

Parts List

Mark	No.	Part No.	Description
	1	PDE-319	Mini connection cord
	2	RDE1018	Control cord
	3	RRB1064	Operating instructions (English)
	4	RHA1044	Pad F
	5	RHA1045	Pad R
	6	RHG1180	Packing case
	7	RHX-034	Sheet
	8	RDE-010	Connection cord
	101		Connection cord assembly



6. B.C.B's PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ 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

Mark	No.	Symbol & Description	Part No.
		H.PHONE UNIT	
		CAPACITORS	
		C1610 CERAMIC CAPACITOR	CKCYF473Z50
		OTHERS	
		JA1601 JACK	RKN1002
		TRANSFORMER 2 UNIT	
		There is no supply part in this unit.	
		OPERATE SW (1) UNIT	
		SEMICONDUCTORS	
		D1301-1308 DIODE	1SS254
		SWITCHES	
		S1301-1308 SWITCH	RSG-155
		OPERATE SW (2)UNIT	
		SEMICONDUCTORS	
		D1401-1408 DIODE	1SS254
		SWITCHES	
		S1401-1408 SWITCH	RSG-155
		HX UNIT	
		SEMICONDUCTORS	
		IC601	UPC1297CA
		Q601, 602 TRANSISTOR	2SA1309A
		Q603 TRANSISTOR	DTC124ES
		D601, 602 DIODE	1SS254
		COILS/TRANSFORMERS	
		L601, 602	RTD1030
		CAPACITORS	
		C601, 602 AUDIO FILM CAPACITOR	CFTXA103J50
		C603, 604 AXIAL CAPACITOR	CKPUYB821K50
		C605, 606 AUDIO FILM CAPACITOR	CFTXA223J50
		C607, 608 CERAMIC CAPACITOR	CGCYX473K25
		C609, 610 CERAMIC CAPACITOR	CCCSL101K500
		C611, 612 CERAMIC CAPACITOR	RCG1005
		C613 AXIAL CAPACITOR	CKPUYB101K50
		C614 ELECTR. CAPACITOR	CEASR10M50
		C615 ELECTR. CAPACITOR	CEAS100M50
		C616 ELECTR. CAPACITOR	CEAS4R7M50
		C617 ELECTR. CAPACITOR	CEAS100M50
		RESISTORS	
		R601-609 CARBONFILM RESISTOR	RD1/6PM□□□J
		VR601, 602 VR	VRTB6HS223
		MAIN UNIT	
		SEMICONDUCTORS	
		IC101	CXA1115BP
		IC201	CXA1330S
		IC202	M5218L
		IC301	M5218P
		IC351	M5218P
		IC501	M5218P
		IC502	M5233L
		IC761	BA335
		IC801	BA6218
		IC851	BA6218
		IC901	PD3148
		IC902	TC4066BP
⚠		IC1002 REGULATOR IC	NJM78M05FA
⚠		IC1003, 1004	NJM7812FA
		IC1601	M5218P
		Q101, 102 TRANSISTOR	DTC124ES
		Q103-106 DIGITAL TRANSISTOR	DTC114TS
		Q107-109 TRANSISTOR	DTC124ES
		Q110 TRANSISTOR	2SA1309A
		Q111, 112 N-FET	2SK373
		Q113, 114 TRANSISTOR	2SC3311A
		Q115, 116 TRANSISTOR	DTC124ES
		Q117 TRANSISTOR	2SA1309A
		Q118 TRANSISTOR	DTC124ES
		Q119, 120 N-FET	2SK373

Mark	No.	Symbol & Description	Part No.
	Q121, 122	TRANSISTOR	2SC3311A
	Q123	TRANSISTOR	DTC124ES
	Q301-308	DIGITAL TRANSISTOR	DTC114TS
	Q309, 310	TRANSISTOR	2SD1302
	Q353-356	DIGITAL TRANSISTOR	DTC114TS
	Q359, 360	TRANSISTOR	2SD1302
	Q404, 405	TRANSISTOR	2SC3311A
	Q406-408		2SC3243
	Q409, 410		2SA1283
	Q454, 455	TRANSISTOR	2SC3311A
	Q456-458		2SC3243
	Q459, 460		2SA1283
	Q711, 712	TRANSISTOR	2SD1302
	Q713	TRANSISTOR	2SA1309A
	Q761	TRANSISTOR	2SD1302
	Q801-803	TRANSISTOR	2SC3246
	Q804	TRANSISTOR	2SA1309A
	Q805	TRANSISTOR	DTC124ES
	Q806	TRANSISTOR	2SC3311A
	Q807	TRANSISTOR	2SC3246
	Q808	TRANSISTOR	2SC3311A
	Q851-853	TRANSISTOR	2SC3246
	Q854	TRANSISTOR	2SA1309A
	Q855	TRANSISTOR	DTC124ES
	Q856	TRANSISTOR	2SC3311A
	Q857	TRANSISTOR	2SC3246
	Q858	TRANSISTOR	2SC3311A
	Q901	TRANSISTOR	DTC124ES
	Q902-905	TRANSISTOR	2SA1309A
	Q910-912	TRANSISTOR	2SC3311A
	Q917	TRANSISTOR	2SA1309A
	Q918, 919	TRANSISTOR	DTC124ES
	Q920	TRANSISTOR	2SA1309A
	Q921	TRANSISTOR	2SC3311A
⚠	Q1001		2SA1283
	Q1005	TRANSISTOR	2SA1309A
	Q1006, 1007	TRANSISTOR	2SC3311A
	D101-116	DIODE	1SS254
	D401	DIODE	1SS254
	D402	DIODE	1SS252
	D403-406	DIODE	1SS254
	D451	DIODE	1SS254
	D452	DIODE	1SS252
	D453-456	DIODE	1SS254
	D501-513	DIODE	1SS254
	D702		MTZJ4. 3B
	D801	DIODE	1SS252
	D802-806	DIODE	1SS254
	D851	DIODE	1SS252
	D852-856	DIODE	1SS254
	D901-908	DIODE	1SS254
	D910-916	DIODE	1SS254
	D921-924	DIODE	1SS254
⚠	D1001	DIODE	1SR35-100AVL
⚠	D1002		MTZJ30B

Mark	No.	Symbol & Description	Part No.
⚠	D1003	ZENER DIODE	MTZJ5. 1B
⚠	D1004		MTZ6. 2B
⚠	D1006	DIODE	1SR35-100AVL
	D1009-1011	DIODE	1SS254
⚠	D1020		1B2Z1-LC2
⚠	D1021		1B2C1-LC2
SWITCHES			
	S201		RSH1022
⚠	S1201	SWITCH	RSA-063
COILS/TRANSFORMERS			
	L101, 102	COIL	RTF1099
	L301, 302	COIL	RTF1004
	L303, 304	COIL	RTF1124
	L351, 352	COIL	RTF1004
	L353, 354	COIL	RTF1124
	L401		LRA121K
	L402	COIL	RTD1022
	L451		LRA121K
	L452	COIL	RTD1022
	F201, 202	FILTER	RTF1059
CAPACITORS			
	C101, 102	PL. STYRENE CAPACITOR	CQSA471J50
	C103, 104	PL. STYRENE CAPACITOR	CQSA561J50
	C105, 106	PL. STYRENE CAPACITOR	CQSA102J50
	C107-110	ELECTR. CAPACITOR	CEANL100M16
	C111, 112	ELECTR. CAPACITOR	CEANL101M10
	C113, 114		CFTXA822J50
	C117, 118	ELECTR. CAPACITOR	CEAS4R7M50
	C119, 120	AUDIO FILM CAPACITOR	CFTXA223J50
	C121, 122	AXIAL CAPACITOR	CKPUYB221K50
	C123, 124	AXIAL CAPACITOR	CKPUYB391K50
	C126	CERAMIC CAPACITOR	CKCYF103Z50
	C127-130	AXIAL CAPACITOR	CCPUSL100J50
	C131, 132	ELECTR. CAPACITOR	CEAS470M16
	C133, 134	AXIAL CAPACITOR	CKPUYB681K50
	C135-138	AXIAL CAPACITOR	CKPUYB101K50
	C140, 141	ELECTR. CAPACITOR	CEAS220M16
	C201-204	ELECTR. CAPACITOR	CEAS010M50
	C205, 206	ELECTR. CAPACITOR	CEAS100M50
	C207, 208	ELECTR. CAPACITOR	CEAS010M50
	C209, 210	ELECTR. CAPACITOR	CEAS4R7M50
	C211-214		CFTXA222J50
	C215, 216	ELECTR. CAPACITOR	CEASR22M50
	C217, 218	ELECTR. CAPACITOR	CEASR33M50
	C219, 220	ELECTR. CAPACITOR	CEAS4R7M50
	C221	ELECTR. CAPACITOR	CEAS100M50
	C223, 224	ELECTR. CAPACITOR	CEASR33M50
	C245, 246	ELECTR. CAPACITOR	CEAS010M50
	C247	ELECTR. CAPACITOR	CEAS470M16
	C248, 249	AXIAL CAPACITOR	CKPUYB101K50
	C250	ELECTR. CAPACITOR	CEAS101M16
	C251, 252	ELECTR. CAPACITOR	CEAS100M50
	C260	ELECTR. CAPACITOR	CEAS470M16
	C301, 302	AXIAL CAPACITOR	CKPUYB221K50

Mark	No.	Symbol & Description	Part No.
	C303, 304		CFTXA222J50
	C305, 306		CFTXA822J50
	C307, 308	AUDIO FILM CAPACITOR	CFTXA223J50
	C309, 310		CFTXA272J50
	C311, 312	AUDIO FILM CAPACITOR	CFTXA472J50
	C313, 314	ELECTR. CAPACITOR	CEAS4R7M50
	C315, 316	ELECTR. CAPACITOR	CEASR22M50
	C317, 318	ELECTR. CAPACITOR	CEAS100M50
	C319, 320		CFTXA222J50
	C321	ELECTR. CAPACITOR	CEAS470M16
	C322	ELECTR. CAPACITOR	CEAS010M50
	C323	ELECTR. CAPACITOR	CEAS470M16
	C325, 326	ELECTR. CAPACITOR	CEAS010M50
	C351, 352	AXIAL CAPACITOR	CKPUYB221K50
	C355, 356		CFTXA822J50
	C357, 358	AUDIO FILM CAPACITOR	CFTXA223J50
	C359, 360		CFTXA682J50
	C363, 364	ELECTR. CAPACITOR	CEAS4R7M50
	C365, 366	ELECTR. CAPACITOR	CEASR22M50
	C367, 368	ELECTR. CAPACITOR	CEAS100M50
	C369, 370		CFTXA222J50
	C371	ELECTR. CAPACITOR	CEAS470M16
	C373	ELECTR. CAPACITOR	CEAS470M16
	C375, 376	ELECTR. CAPACITOR	CEAS010M50
	C401, 402	ELECTR. CAPACITOR	CEAS330M35
	C403		CQPA682J100
	C404	AUDIO FILM CAPACITOR	CFTXA223J50
	C405		CFTXA682J50
	C406, 407	AUDIO FILM CAPACITOR	CFTXA332J50
	C408	ELECTR. CAPACITOR	CEAS330M35
	C409	ELECTR. CAPACITOR	CEAS470M16
	C453		CQPA682J100
	C454	AUDIO FILM CAPACITOR	CFTXA223J50
	C455		CFTXA682J50
	C456, 457	AUDIO FILM CAPACITOR	CFTXA332J50
	C458	ELECTR. CAPACITOR	CEAS330M35
	C459	ELECTR. CAPACITOR	CEAS470M16
	C501, 502	CERAMIC CAPACITOR	CKCYF473Z50
	C503	ELECTR. CAPACITOR	CEAS331M16
	C504	ELECTR. CAPACITOR	CEAS330M35
	C505, 506	ELECTR. CAPACITOR	CEASR47M50
	C511, 512	ELECTR. CAPACITOR	CEAS100M50
	C701	CERAMIC CAPACITOR	CKCYF473Z50
	C715	CERAMIC CAPACITOR	CKCYF103Z50
	C717, 718	ELECTR. CAPACITOR	CEASR10M50
	C719, 720	AXIAL CAPACITOR	CKPUYB101K50
	C761	CERAMIC CAPACITOR	CKCYF473Z50
	C762, 763	ELECTR. CAPACITOR	CEASR10M50
	C764	ELECTR. CAPACITOR	CEASR47M50
	C801		CKPUYY103M16
	C802	CERAMIC CAPACITOR	CKCYF473Z50
	C851		CKPUYY103M16
	C852	CERAMIC CAPACITOR	CKCYF473Z50
	C901	CERAMIC CAPACITOR	CKCYF103Z50

Mark	No.	Symbol & Description	Part No.
	C902	ELECTR. CAPACITOR	CEAS102M10
	C903, 904	ELECTR. CAPACITOR	CEAS100M50
	C905	ELECTR. CAPACITOR	CEAS470M16
	C910	ELECTR. CAPACITOR	CEASR33M50
	C911	CERAMIC CAPACITOR	CKCYF473Z50
	C912	ELECTR. CAPACITOR	CEASR33M50
	C913	CERAMIC CAPACITOR	CKCYF473Z50
	C1001	ELECTR. CAPACITOR	CEAS471M50
	C1004, 1005	ELECTR. CAPACITOR	CEAS330M35
	C1006	CERAMIC CAPACITOR	CKCYF103Z50
	C1007	ELECTR. CAPACITOR	CEAS222M16
	C1009	CERAMIC CAPACITOR	CKCYF103Z50
	C1010	ELECTR. CAPACITOR	CEAS102M10
	C1011	ELECTR. CAPACITOR	CEAS332M25
	C1012	CERAMIC CAPACITOR	CKCYF103Z50
	C1013	ELECTR. CAPACITOR	CEAS471M16
	C1014	CERAMIC CAPACITOR	CKCYF473Z50
	C1015	ELECTR. CAPACITOR	CEAS331M16
	C1016	ELECTR. CAPACITOR	CEAS100M50
	C1017	CERAMIC CAPACITOR	CKCYF103Z50
	C1018	ELECTR. CAPACITOR	CEAS100M50
	C1019	CERAMIC CAPACITOR	CKCYF103Z50
	C1020-1024	CERAMIC CAPACITOR	CKCYF473Z50
⚠	C1201	CAPACITOR (CERAMIC)	RCG-009
	C1601, 1602	ELECTR. CAPACITOR	CEASR22M50
	C1603, 1604	ELECTR. CAPACITOR	CEAS101M16
	C1605	ELECTR. CAPACITOR	CEAS331M16
RESISTORS			
	R101-124	CARBONFILM RESISTOR	RD1/6PM□□□J
	R127-144	CARBONFILM RESISTOR	RD1/6PM□□□J
	R150-153	CARBONFILM RESISTOR	RD1/6PM□□□J
	R201-209	CARBONFILM RESISTOR	RD1/6PM□□□J
	R214	CARBONFILM RESISTOR	RD1/6PM□□□J
	R241-244	CARBONFILM RESISTOR	RD1/6PM□□□J
	R246-249	CARBONFILM RESISTOR	RD1/6PM□□□J
	R301-333	CARBONFILM RESISTOR	RD1/6PM□□□J
	R340, 341	CARBONFILM RESISTOR	RD1/6PM□□□J
	R351, 352	CARBONFILM RESISTOR	RD1/6PM□□□J
	R357-382	CARBONFILM RESISTOR	RD1/6PM□□□J
	R390, 391	CARBONFILM RESISTOR	RD1/6PM□□□J
	R401	CARBONFILM RESISTOR	RD1/2LF□□□J
	R402-407	CARBONFILM RESISTOR	RD1/6PM□□□J
	R409, 410	CARBONFILM RESISTOR	RD1/6PM□□□J
	R411, 412	CARBONFILM RESISTOR	RD1/2LF□□□J
	R413-416	CARBONFILM RESISTOR	RD1/6PM□□□J
	R424-426	CARBONFILM RESISTOR	RD1/6PM□□□J
	R451	CARBONFILM RESISTOR	RD1/2LF□□□J
	R452-457	CARBONFILM RESISTOR	RD1/6PM□□□J
	R459, 460	CARBONFILM RESISTOR	RD1/6PM□□□J
	R461, 462	CARBONFILM RESISTOR	RD1/2LF□□□J
	R463-466	CARBONFILM RESISTOR	RD1/6PM□□□J
	R474-476	CARBONFILM RESISTOR	RD1/6PM□□□J
	R501-510	CARBONFILM RESISTOR	RD1/6PM□□□J
	R512	CARBONFILM RESISTOR	RD1/6PM□□□J

Mark	No.	Symbol & Description	Part No.
		R519-529 CARBONFILM RESISTOR	RD1/6PM□□□J
		R703, 704 CARBONFILM RESISTOR	RD1/6PM□□□J
		R731-736 CARBONFILM RESISTOR	RD1/6PM□□□J
		R738, 739 CARBONFILM RESISTOR	RD1/6PM□□□J
		R741 CARBONFILM RESISTOR	RD1/6PM□□□J
		R747, 748 CARBONFILM RESISTOR	RD1/6PM□□□J
		R761-764 CARBONFILM RESISTOR	RD1/6PM□□□J
		R801 CARBONFILM RESISTOR	RD1/6PM□□□J
		R802 METAL OXIDE RESISTOR	RS2LMF□□□J
		R803-805 CARBONFILM RESISTOR	RD1/6PM□□□J
		R807-811 CARBONFILM RESISTOR	RD1/6PM□□□J
		R812 CARBONFILM RESISTOR	RD1/2LF□□□J
		R814-818 CARBONFILM RESISTOR	RD1/6PM□□□J
		R851 CARBONFILM RESISTOR	RD1/6PM□□□J
		R852 METAL OXIDE RESISTOR	RS2LMF□□□J
		R853-861 CARBONFILM RESISTOR	RD1/6PM□□□J
		R862 CARBONFILM RESISTOR	RD1/2LF□□□J
		R864-868 CARBONFILM RESISTOR	RD1/6PM□□□J
		R901-909 CARBONFILM RESISTOR	RD1/6PM□□□J
		R910, 911 RESISTOR ARRAY	RA4T□□□J
		R913-922 CARBONFILM RESISTOR	RD1/6PM□□□J
		R923 RESISTOR ARRAY	RA8T□□□J
		R924 CARBONFILM RESISTOR	RD1/6PM□□□J
		R925 RESISTOR ARRAY	RA4T□□□J
		R926-930 CARBONFILM RESISTOR	RD1/6PM□□□J
		R931 RESISTOR ARRAY	RA10T□□□J
		R932 CARBONFILM RESISTOR	RD1/6PM□□□J
		R934, 935 CARBONFILM RESISTOR	RD1/6PM□□□J
		R937, 938 CARBONFILM RESISTOR	RD1/6PM□□□J
		R940-947 CARBONFILM RESISTOR	RD1/6PM□□□J
		R956, 957 CARBONFILM RESISTOR	RD1/6PM□□□J
		R1001 CARBONFILM RESISTOR	RD1/2LF□□□J
		R1003 CARBONFILM RESISTOR	RD1/2LF□□□J
		R1004, 1005 CARBONFILM RESISTOR	RD1/6PM□□□J
		R1007-1017 CARBONFILM RESISTOR	RD1/6PM□□□J
		R1019 CARBONFILM RESISTOR	RD1/6PM□□□J
⚠		R1020 FUSLIBLE RESISTOR	RFA1/4L4R7J
		R1601-1610 CARBONFILM RESISTOR	RD1/6PM□□□J
		VR101-104 VR	VRTB6VS223
		VR301, 302 VR	VRTB6VS223
		VR351, 352 VR	VRTB6VS223
		VR403 VARIABLE RESISTOR	RCP-031
		VR453 VARIABLE RESISTOR	RCP-031
		VR801	VRTG6VS223
		VR802 VR	VRTS6VS103
		VR851	VRTG6VS223
	OTHERS		
		CN701, 702 JUMPER CONNECTOR 3-P	KPC3
		JA701	RKB1003
		JA901 JACK	RKN1014
		JA902, 903 JACK	RKN1004
		X901 CERAMIC RESONATOR	VSS1014

Mark	No.	Symbol & Description	Part No.
		DISPLAY UNIT	
		SEMICONDUCTORS	
		Q1501	DTA114TS
		Q1503, 1504	DTA114TS
		Q1505, 1506 TRANSISTOR	DTA124ES
		Q1507, 1508	DTA114TS
		D1501-1513 DIODE	1SS254
		SWITCHES	
		S1501-1509	RSG1009
		S1510, 1511 SWITCH	RSH1014
		S1512, 1513	RSH1024
		RESISTORS	
		R1501-1512 CARBONFILM RESISTOR	RD1/6PM□□□J
		VR1501	RCV1057
		VR1502	RCS1014
		OTHERS	
		CN905	BTMK09S-1S
		CN906	BTMK12S-1S
		V1501	RAW1044

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.		
2		Double speed PLAY		check	6000 Hz ±600 Hz	
3		Normal speed PLAY		After checking, disconnect TP16-2 from ground.		
4	II			After playing back for 1 minute, ground TP16-1.		
5		Double speed PLAY		VR802	Within ±10Hz of step 2 (deck I) check value.	
6		Normal speed PLAY		After checking, disconnect TP16-1 from ground.		
7				VR801	3000 Hz ±5 Hz	
8	I			VR851	Within ±5 Hz of step 7 (deck II) adjustment value.	

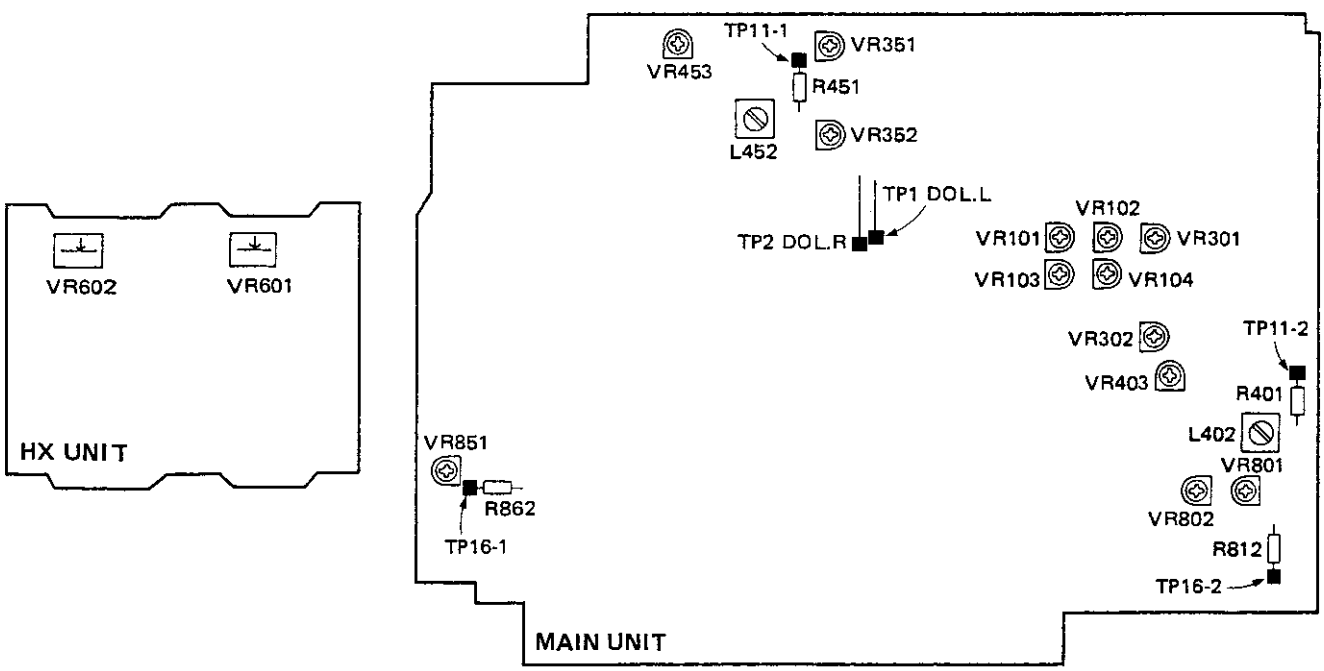


Fig. 7-1 Adjusting points

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 kΩ (or between 47k to 52 kΩ) 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. Level meter check.

NOTE: This unit has an automatic tape selection feature.

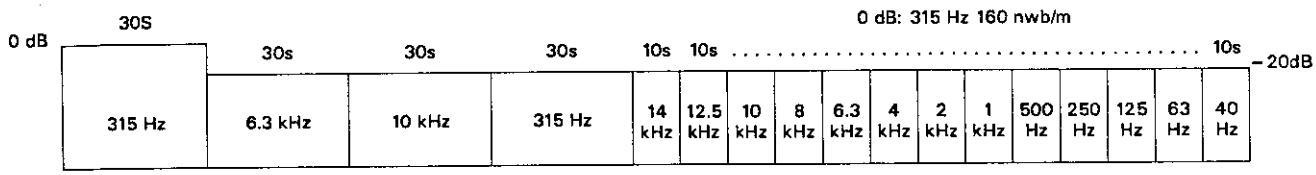


Fig. 7-2 Constants of the test tape STD-331B

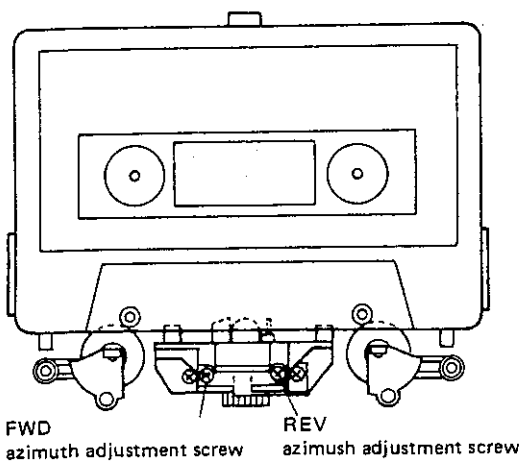


Fig. 7-3 Head azimuth adjustment

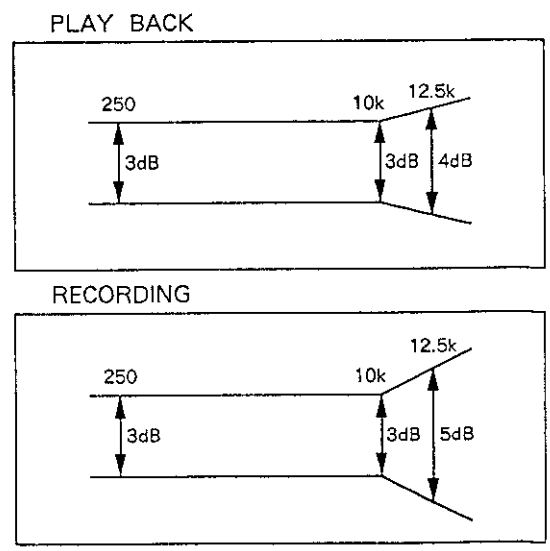


Fig. 7-4 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

• Turn VR101, VR102 (Deck I) or VR103, VR104 (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	VR103 (Lch) VR104 (Rch)	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	−10.7 dBv	
			Deck II	VR101 (Lch) VR102 (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 452	TP. 11-1	105 kHz±0.3 kHz	
			Deck II	L 402	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	VR453	TP. 11-1	165 mV AC	
			Deck II	VR403	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	VR601 (Lch) VR602 (Rch)	LINE OUT	Repeatedly record, playback and adjust so that the playback level of 6.3 kHz signal becomes +1.0 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		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	– 11.2 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	VR351 (Lch) VR352 (Rch)	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes – 11.2 dB.	
			Deck II	VR301 (Lch) VR302 (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		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	– 11.2 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		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	– 11.2 dBv ± 1.5 dB	

5. Level Meter Check

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	REC PAUSE	Apply a 315 Hz/– 10 dBv (316 mV) signal to the Line Input terminals.	Rec Level control volume	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	Check that the level meters "0 dB" light up within – 11.2 dBv ± 2 dB of the signal output level.	

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 TP16-2 à la terre.		
2		Lecture à vitesse double		Vérifier	6000 Hz ± 600 Hz	
3				Aprés vérification, déconnecter TP16-2 de la terre.		
4	II	Lecture à vitesse normale		Aprés une lecture pendant 1 minute, mettre TP16-1 à la terre.		
5		Lecture à vitesse double		VR802	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 TP16-1 de la terre.		
7				VR801	3000 Hz ± 5 Hz	
8	I			VR851	Dans la limite de ± 5 Hz de la valeur de réglage de 1'étape 7 (platine II).	

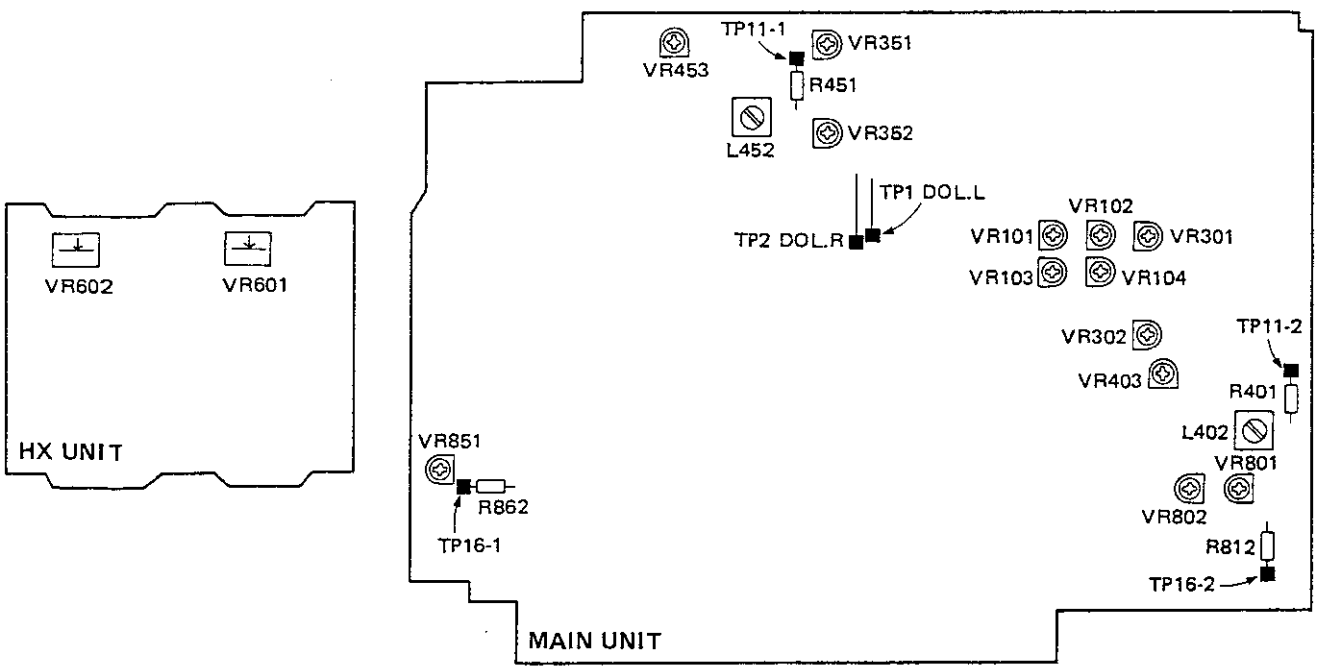


Fig. 7-1 Points de réglage

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 kΩ (tolérance 47k à 52 kΩ) 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 : NORM
   (TAPE SELECTOR)

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. Vérification de l'indicateur de niveau.

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

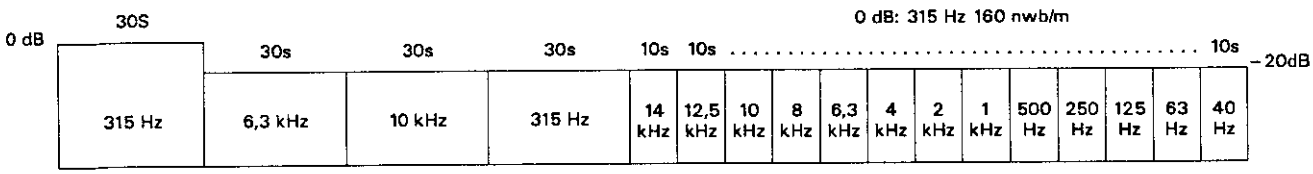


Fig. 7-2 Constantes de la bande d'essai STD-331B

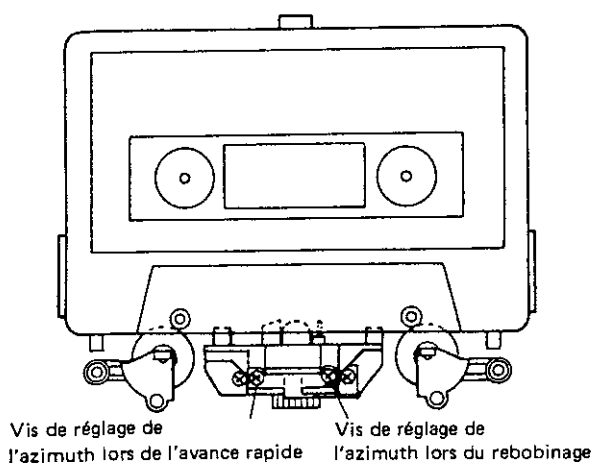


Fig. 7-3 Réglage de l'azimut de la tête

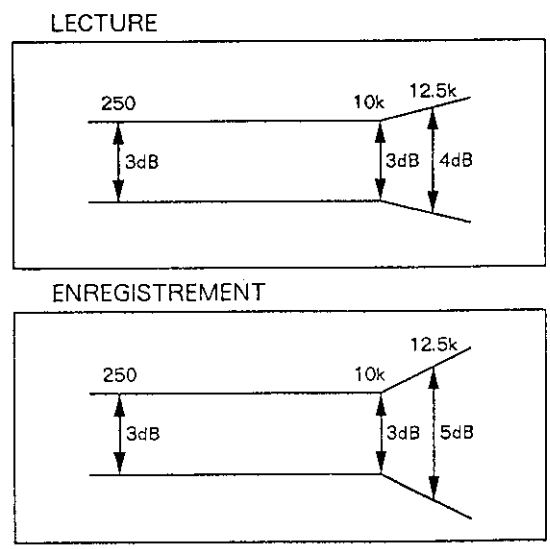


Fig. 7-4 Zone de réponse en fréquence

SECTION DE LECTURE

1. Réglage de l'azimut de la tête

• Tourner VR101, VR102 (Platine I) ou VR103, VR104 (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	VR103 (can. G) VR104 (can. D)	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	−10,7 dBv	
			Platine II	VR101 (can. G) VR102 (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 452	TP. 11-1	105 kHz±0,3 kHz	
			Platine II	L 402	TP. 11-1		

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	VR453	TP. 11-1	165 mV AC	
			Platine II	VR403	TP. 11-1		

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	VR601 (can. G) VR602 (can. D)	Sortie de ligne (LINE OUT)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau de lecture du signal 6,3 kHz devienne +1,0 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.		TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	– 11,2 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	VR351 (can. G) VR352 (can. D)	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau du signal devienne – 11,2 dB.	
			Platine II	VR301 (can. G) VR302 (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		TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	– 11,2 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		TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	– 11,2 dBv ± 1,5 dB	

5. Vérification de l'indicateur de niveau

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	REC PAUSE	Appliquer un signal de 315 Hz/– 10 dBv (316 mV) aux bornes d'entrée de ligne.	Volume de la commande de niveau d'enregistrement	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	Vérifier que les indicateurs de niveau "0 dB" s'allument dans la limite de – 11,2 dBv ± 2 dB du niveau de sortie du signal.	

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 TP16-2 a tierra.		
2		PLAY (velocidad doble)		Verificar	6000 Hz ± 600 Hz	
3		PLAY (velocidad normal)		Después de verificar, desconectar TP16-2 de tierra.		
4	II			Después de reproducir por 1 minuto, conectar TP16-1 a tierra.		
5		PLAY (velocidad doble)		VR802	Dentro de un margen de ±10 Hz del valor de verificación del paso 2 (platina I).	
6		PLAY (velocidad normal)		Después de verificar, desconectar TP16-1 de tierra.		
7				VR801	3000 Hz ±5 Hz	
8	I			VR851	Dentro de un margen de ±5 Hz del valor de verificación del paso 7 (platina II).	

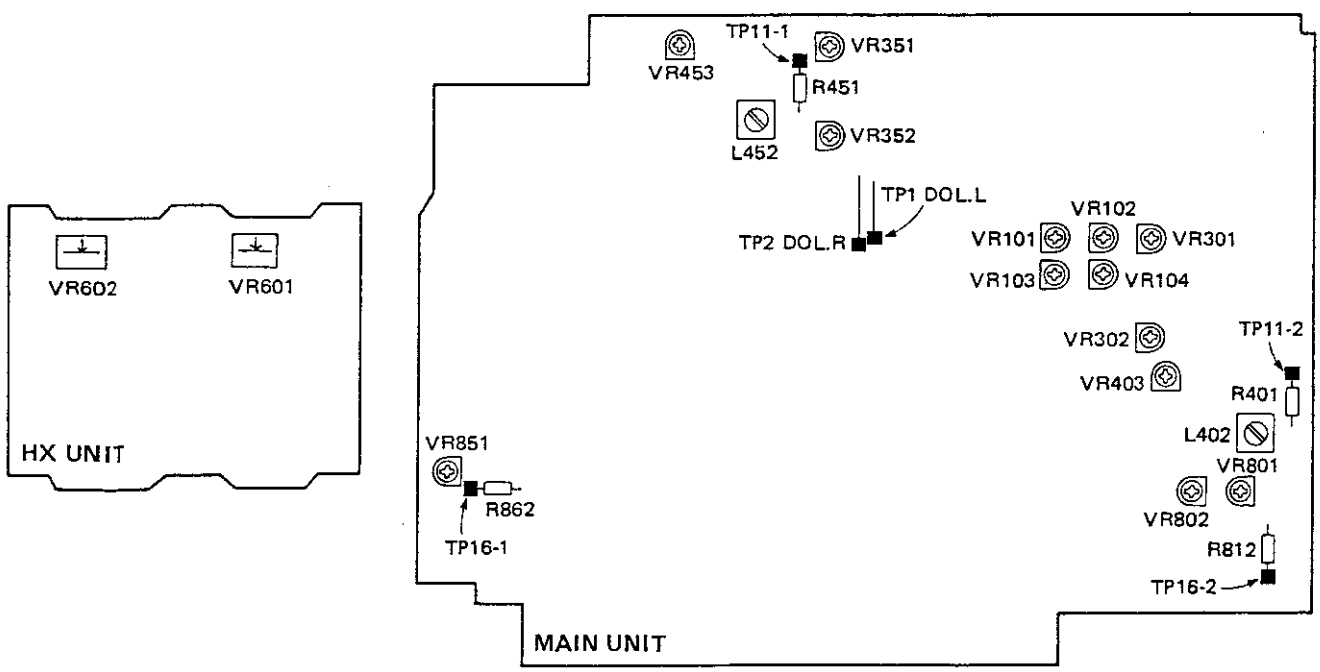


Figura. 7-1 Puntos de ajuste

7.2 AJUSTES ELÉCTRICOS

Condiciones de ajuste

1. Los ajustes mecánicos 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 47k 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 oscillador de polarización
2. Ajuste de la corriente de borrado
3. Ajuste de la polarización de grabación
4. Ajuste del nivel de grabación
5. Verificación del medidor de nivel

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

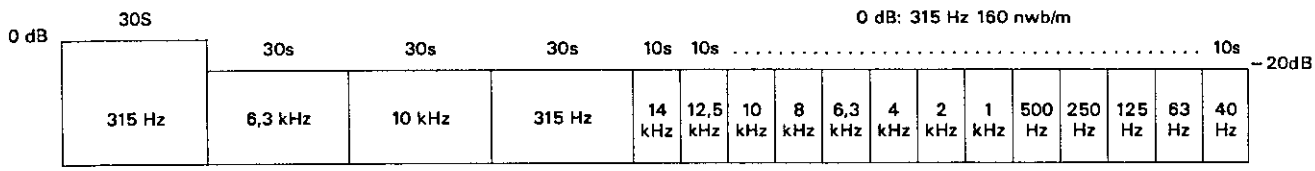


Figura 7-2 Constantes de la cinta de prueba STD-331B

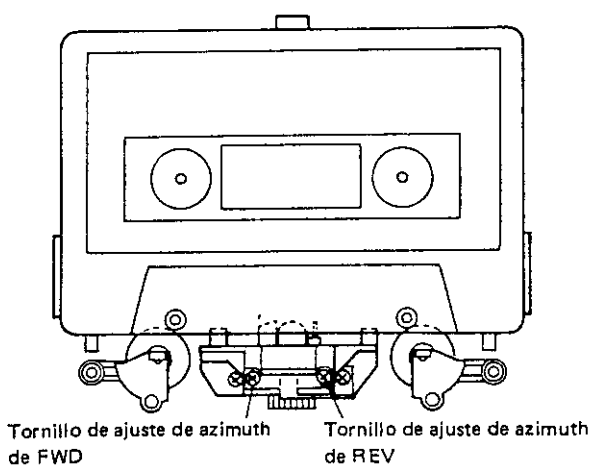


Figura 7-3 Ajuste de azimut de la cabeza

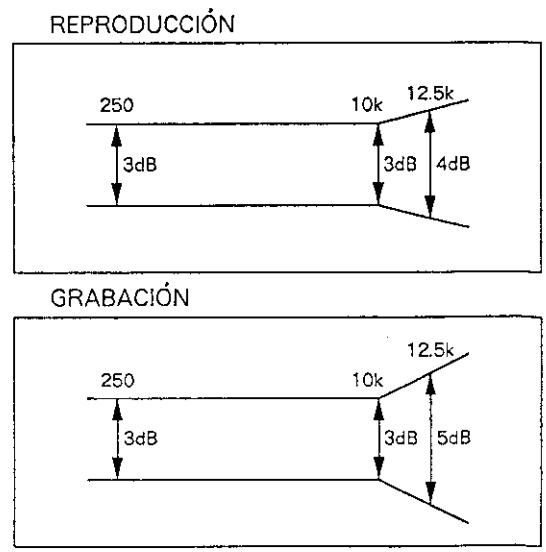


Figura 7-4 Zona de respuesta de frecuencia

SECCIÓN DE REPRODUCCIÓN

1. Ajuste del azimut de la cabeza

• Poner VR101, VR102 (platina I) o VR103, VR104 (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	VR103 (Lch) VR104 (Rch)	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	−10,7 dBv	
			Platina II	VR101 (Lch) VR102 (Rch)			

SECCION DE GRABACION

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 452	TP. 11-1	105 kHz ± 0,3 kHz	
			Platina II	L 402	TP. 11-1		

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	VR453	TP. 11-1	165 mV AC	
			Platina II	VR403	TP. 11-1		

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.°	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	VR601 (Lch) VR602 (Rch)	LINE OUT	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción de 6,3 kHz sea de + 1,0 dB ± 0,5 dB cuando se compare con la señal de 315 Hz.	
			Platina II	VR601 (Lch) VR602 (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.°	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.		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	– 11,2 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	VR351 (Lch) VR352 (Rch)	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción sea de – 11,2 dB.	
			Platina II	VR301 (Lch) VR302 (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		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	– 11,2 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		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	– 11,2 dBv ± 1,5 dB	

5. Verificación del medidor de nivel

N.°	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	REC PAUSE	Aplique una señal de 315 Hz/– 10 dBv (316 mV) a los terminales de entrada de línea.	Control de nivel de grabación	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	Verifique si se encienden los medidores de nivel "0 dB" cuando el nivel de salida de la señal sea – 11,2 dBv ± 2 dB.	

8. FOR CT-W830R/HEM, HB AND CT-W840R/SD TYPES

8.1 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.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The CT-W830R/HEM, HB and CT-W840R/SD types are the same as the CT-W830R/KUC type with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		CT-W830R/KUC type	CT-W830R/HEM type	CT-W830R/HB type	CT-W840R/SD type	
	Main unit	Non supply	Non supply	Non supply	Non supply	
	Display unit	Non supply	Non supply	Non supply	Non supply	
⚠	Strain relief	CM-22C	CM-22B	CM-22B	CM-22B	
⚠	AC power cord	PDG1002	PDG1003	PDG1004	PDG1013	
⚠	Fuse (1.5A/125V, FU1001, 1002)	REK1001	.....	.....	.....	
⚠	Fuse (T1.6A/250V, FU1001, 1002)	.....	REK-102	REK-102	REK-102	
⚠	Power transformer (AC120V)	RTT1127	.....	.....	.....	
⚠	Power transformer (AC220/240V)	.....	RTT1128	RTT1128	.....	
⚠	Power transformer (AC110/120-127/220/240V)	.....	.....	.....	RTT1129	
	Line voltage selector	.....	.....	.....	PSB1002	
⚠	FL filter	RAH1596	RAH1597	RAH1597	RAH1672	
	FL lens	RAH1594	RAH1594	RAH1594	RAH1567	
	Front panel assembly	RXX1296	RXX1298	RXX1298	RXX1299	
	Packing case	RHG1180	RHG1180	RHG1180	RHG1154	
	Operating instructions (French/German/Italian/Dutch/Spanish/Portuguese/Swedish)	.....	RRD1069	.....	.....	
	Connection cord (Mini)	PDE-319	.....	.....	.....	
	Remote control unit	.....	.....	.....	RPX1008	
	Case (C)	.....	.....	.....	VNK-634	Battery cover

MAIN UNIT

- **The main unit for CT-W830R/HEM type is the same as the main unit for CT-W830R/KUC type with the exception of the following section.**
- **The main units of CT-W830R/HB and CT-W840R/SD types are the same as that of CT-W830R/HEM.**

Mark	Symbol & Description	Part No.		Remarks
		CT-W830R/KUC type	CT-W830R/HEM type	
	D910-D912	1SS254	.....	
	C910	CEASR33M50	.....	
	JA902, JA903 Remote control jack	RKN1004	.....	

DISPLAY UNIT

- The display units of CT−W830R/HEM and HB types are the same as that of CT−W830R/KUC.
- The display unit of CT−W840R/SD type is the same as that of CT−W830R/KUC with the exception of the following components.

Mark	Symbol & Description	Part No.		Remarks
		CT−W830R/ KUC type	CT−W840R/ SD type	
	IC1501 Remote control reception	.....	GP1U52X	

9. SPECIFICATIONS

System ..... 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
Wow and Flutter ..... No more than 0.055% WRMS (JIS)
No more than ±0.16% (DIN)
Fast Winding Time ..... Approx. 100 sec. (C-60 tape)
Frequency Response (−20 dB recording)
Metal tape ..... 18 Hz ~ 18,500 Hz
Chrome tape ..... 18 Hz ~ 18,000 Hz
Normal tape ..... 18 Hz ~ 17,000 Hz
S/N
Dolby NR OFF ..... 57 dB or more
Dolby B-type NR ON ..... 10 dB improved at 5 kHz
Dolby C-type NR ON ..... 19 dB improved at 5 kHz
(third high frequency distortion 3%, acoustic equalizing)
Harmonic Distortion 0.7%
(third frequency distortion at 1 kHz, metal tape)

Subfunctions

- I/II automatic reverse
- Double recording/playback reverse
- DOLBY HX PRO headroom extension
- Deck I/II independent DOLBY NR switch
- Relay playback
- Relay recording
- Simultaneous recording (parallel recording)
- Normal speed/Double speed synchro copying (Deck I → II)
- MS ±15 Skip search
- Blank skip (during relay playback)
- CD·DECK SYNCHRO function
- Automatic tape selector
- Timer recording/playback start (automatically moves on to relay operation)
- Automatic recording mute
- Headphone jack
- FL peak level meter
- 2-mode electronic 4-digit tape counter (Deck I/II independent)

Input Terminals

LINE INPUT ..... RCA pin jack x 2
input sensitivity 63 mV
input impedance 50 kΩ
LINE OUTPUT ..... RCA pin jack x 2
standard output level 316 mV
output impedance 3 kΩ
HEADPHONE OUTPUT ..... stereo standard jack 0.25 mW
load impedance 8Ω

Power Supplies

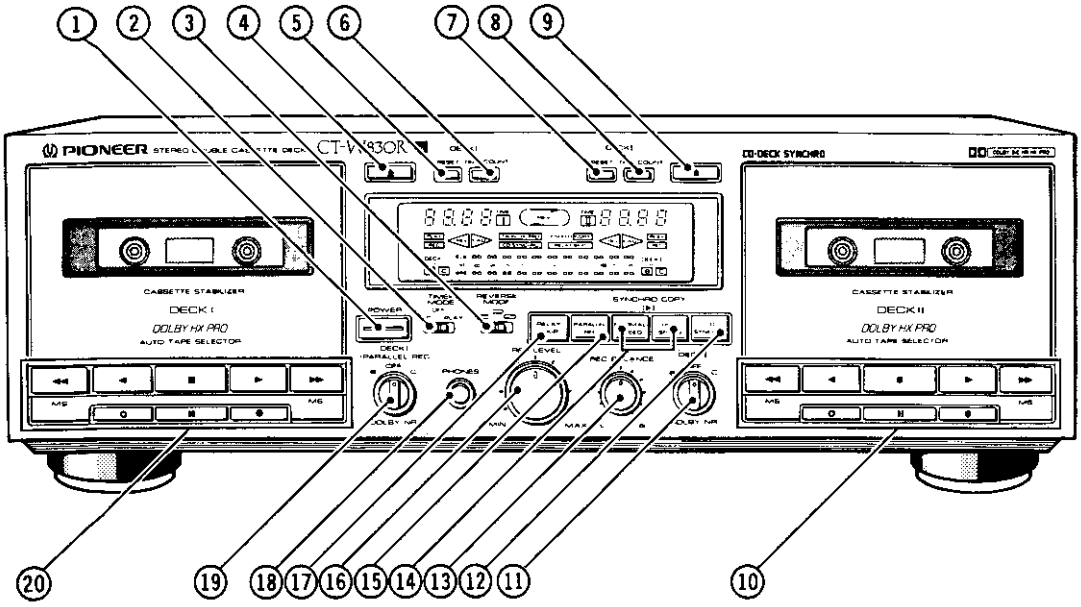
Power Requirements
U.S., Canadian models ..... AC 120 Volts, 60 Hz
European model ..... a.c. 220 Volts ~, 50/60 Hz
U.K. model ..... a.c. 240 Volts ~, 50/60 Hz
Multi voltage model/U.S.military model .....
AC 110/120 ~ 127/220/240V (switchable), 50/60 Hz
Power Consumption
U.S.,Canadian models 32W
European, U.K. model 32W
Multi voltage model/U.S. military model 31W
Dimensions ..... 420(W) x 135(H) x 318.5(D) mm
16-9/16(W) x 5-3/16(H) x 12-1/2(D) inches
Weight ..... approx. 5.7 kg (12 lb 9 oz)

Accessories

Operating instructions 1
Connection cords (RCA pin plugs) 2
CD·DECK SYNCHRO cord 1
Remote control cord (U.S. and Canadian models) 1
Remote control unit (CT-W840R only) 1
Dry cell batteries (size AAA/IEC R03) (CT-W840R only) 2

NOTE:
Specifications and design are subject to modification for improvement without any notice.

10. PANEL FACILITIES



① **POWER switch (POWER)**

② **TIMER switch (TIMER MODE)**
OFF: Set to this position when the timer is not in use.
REC: Set to this position for timer recording.
PLAY: Set to this position for timer playback.
NOTE:
If you set this switch either to REC or PLAY, the deck will automatically start to record or playback.

③ **REVERSE MODE switch (REVERSE MODE)**

④ **DECK I EJECT button (▲)**
Press to open the cassette door of DECK I. Press the stop button (■) first to stop a tape running before opening the door.
NOTE:
If you turn off the deck while the tape is running, the cassette door may not open. In this case, turn on the deck to open the door.

⑤ **DECK I COUNTER RESET button (RESET)**
Press to return the counter of DECK I to 0000.

⑥ **DECK I COUNTER MODE switch (TIME/COUNT)**
This button switches the counter of DECK I between the tape counter and time counter.

⑦ **DECK II COUNTER RESET button (RESET)**
Press to return the counter of DECK II to 0000.

⑧ **DECK II COUNTER MODE switch (TIME/COUNT)**
Press to switch the counter of DECK II between tape counter and time counter.

⑨ **DECK II EJECT button (▲)**
Press to open the cassette door of DECK II. Press the stop button (■) first to stop a tape running before opening the door.
NOTE:
If you turn off the deck while the tape is running, the cassette door may not open. In this case, turn on the deck to open the door.

⑩ **DECK II operation buttons**
◀◀ : Press to rewind a tape. If you press during playback, you can operate skip search, in which the number of the skipped tracks corresponds to the number of times you press the button.
◀ : Press to play the back side of a cassette tape (opposite to the labeled side), which is called reverse playback.
■ : Press to stop any operation, including simultaneous recording or copying.
▶ : Press to play the front side of a cassette tape (labeled side), which is called forward playback.
▶▶ : Press to fast forward a tape. Press to operate skip search during playback in which the number of the skipped tracks correspond to the number of times you press the button.
● : Press to recording standby. Press the Pause (❚❚) or Play (▶, ◀) to resume recording. You cannot record if the erasure prevention tabs are broken.
❚❚ : Press to stop a tape temporarily during recording or playback. Press it again to resume the operation (you can also start the operation by pressing ▶ or ◀). You cannot use this button during fast forward or rewinding.
○ : Press during recording, and the recording signals will be erased for about 4 sec. Then, recording standby.

⑪ DECK II DOLBY* NR switch (DOLBY NR)

This effects DECK II (except simultaneous recording and copying).

NOTE:

Use the same type of position, either B or C of the noise reduction, for playback as the one at recording.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
"DOLBY", the double-D symbol ⧈ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

⑫ CD SYNCHRO button

This button automatically operates a CD player while recording a CD.

⑬ RECORDING BALANCE CONTROL (REC BALANCE)

⑭ SYNCHRO COPY button (SYNCHRO COPY)

- **NORMAL SPEED (normal speed copying)**
  This setting enables you to copy from DECK I to II at normal speed.
- **HIGH SPEED (double speed copying)**
  This setting enables you to copy from DECK I to II at double the normal copying speed.

⑮ PARALLEL REC button

Press to record with the DECKs I and II simultaneously.

⑯ RECORDING LEVEL CONTROL (REC LEVEL)

⑰ RELAY/SKIP button (RELAY/SKIP)

Press to light the indicators, and you can operate relay playback or recording. During playback, if a blank section of the tape continues for about 15 sec., blank skip functions to fast-forward the tape to search the next recorded section for playback.

⑱ HEADPHONE jack (PHONES)

⑲ DECK I DOLBY* NR switch (DOLBY NR)

This switch effects DECK I. During parallel recording, the switch effects both DECKs I and II.

NOTE:

Use the same type of position, either B or C of the noise reduction, for playback as the one at recording.

⑳ DECK I operation buttons

- ◀◀ : Press to rewind a tape. If you press during playback, you can operate skip search, in which the number of the skipped tracks corresponds to the number of times you press the button.
- ◀ : Press to play the back side of a cassette tape (opposite to the labeled side), which is called reverse playback.
- ■ : Press to stop any operation, including simultaneous recording or copying.
- ▶ : Press to play the front side of a cassette tape (labeled side), which is called forward playback.
- ▶▶ : Press to fast forward a tape. Press to operate skip search during playback in which the number of the skipped tracks correspond to the number of times you press the button.
- ● : Press to stop recording temporarily. Press the PAUSE (II) or PLAY (▶, ◀) to resume recording. You cannot record if the erasure prevention tabs are broken.
- II : Press to stop a tape temporarily during recording or playback. Press it again to resume the operation (you can also start the operation by pressing ▶ or ◀). You cannot use this button during fast forward or rewinding.
- ● : Press during recording, and the recording signals will be erased for about 4 sec. Then, recording stops temporarily.

11. CONNECTIONS

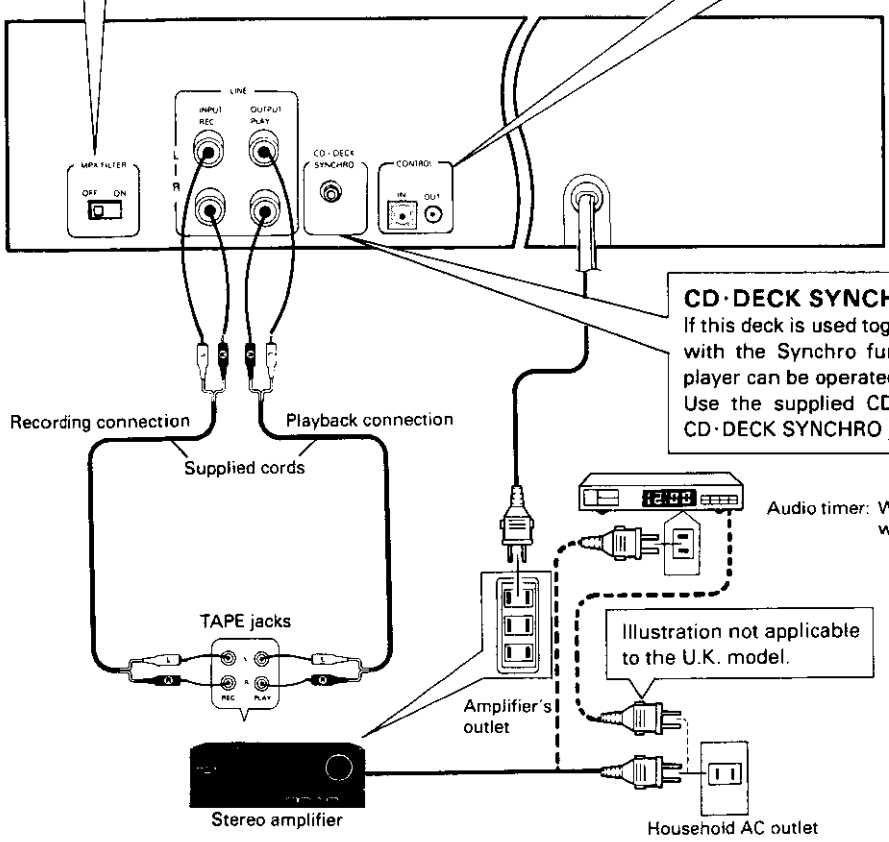
- Make sure to read the instruction manuals of the stereo components to be connected to this deck.
- Do not turn on the stereo component until all connections have been completed.
- Insert plugs firmly. Improper connection may cause noise.

MPX FILTER switch
Set the MPX FILTER switch, located on the rear panel, to ON when recording an FM stereo broadcasting using the Dolby NR system. Set it to OFF at other times.
Explanation on the MPX FILTER
The FM stereo signals contain the 19-kHz pilot signal and 38-kHz sub-carrier. Depending on tuners, these may cause a malfunction of the Dolby noise reduction circuit, disabling to reproduce the high-frequency sound. Set this switch to ON to prevent a malfunction.
Set the switch to OFF when the Dolby noise reduction system is not in use or recording non-FM stereo broadcasting. The switch does not effect playback.

(For U.S. and Canadian models only)

CONTROL IN jack
Connect the jack to the CONTROL OUT jack of a component provided with the PIONEER System Remote Control (bearing the SR mark) with the supplied Remote control cord. Then, you can operate both equipment by using the system remote control.

CONTROL OUT jack
Output intermediary of the remote control signals entered from the above CONTROL IN jack. Connect it to the CONTROL IN jack of another component compatible with the PIONEER System Remote Control.



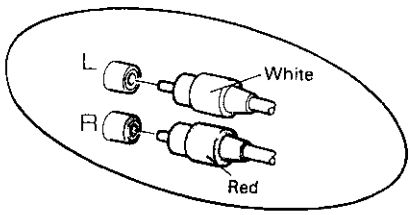
CD·DECK SYNCHRO jack
If this deck is used together with a PIONEER CD player provided with the Synchro function, synchronized recording with the player can be operated just pressing one button.
Use the supplied CD·DECK SYNCHRO cord to connect the CD·DECK SYNCHRO jacks on this deck and the player.

Audio timer: When performing unattended recording or wake-up playback.

Illustration not applicable to the U.K. model.

■ CONNECTING THE INPUT/OUTPUT CORDS

Use a cord with red and white pins. Connect the white pin (L) and red pin (R) to jacks matching the colors. Always insert pins further back. For connection cords, 2 cords for recording and playback are supplied.



■ CONNECTION TO AN AUDIO TIMER

Refer to the instruction manual of the audio timer when connecting to an audio timer.