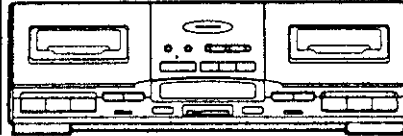


Service Manual

PIONEER®
The Art of Entertainment



ORDER NO.
ARP2410

STEREO DOUBLE CASSETTE DECK

CT-J400WR

CT-J300WR

CT-J200WR

CT-J400WR, CT-J300WR AND CT-J200WR HAVE THE FOLLOWING:

Type	Model			Power Requirement	Remarks
	CT-J400WR	CT-J300WR	CT-J200WR		
ZEBM	○	○	○	(DC power supply)	

- This manual is applicable to ZEBM type.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.
- These products are components of systems. As to the system composition, refer to the system manuals.
- Each of these products does not function properly when independent; to avoid malfunctions, be sure to connect it to the prescribed system component (s), otherwise damage may result.

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SN JAN. 1992 Printed in Japan

1. EXPLODED VIEWS AND PARTS LIST

1.1 EXTERIOR

NOTES:

- The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "O" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

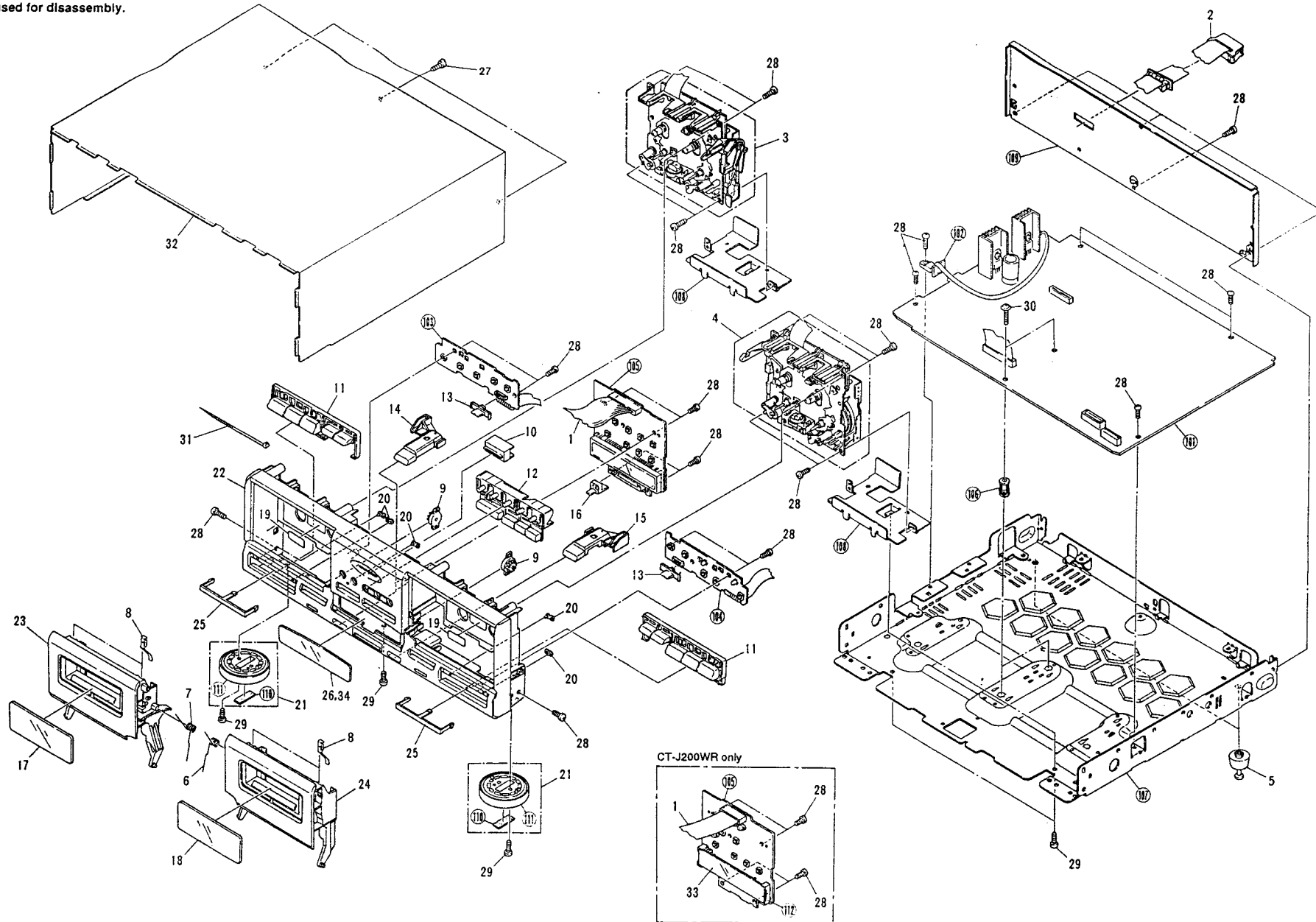
Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Lead card (29P) (CT-J400WR/CT-J300WR)	RDD1211	26	FL lens (CT-J400WR/CT-J300WR)	RAH2037	
		Lead card (17P) (CT-J200WR)	RDD1244	27	Screw	BBZ30P060FCC	
	2	Connector assembly (15P)	RKP1358	28	Screw	BBZ30P060FMC	
	3	Mechanism unit 1	RYM1162	29	Screw	BBZ30P100FZK	
⊙	4	Mechanism unit 2 (CT-J400WR/CT-J300WR)	RYM1163	30	Screw	IBZ30P150FCC	
⊙		Mechanism unit 2 (CT-J200WR)	RYM1164	31	Cord clasper	REC - 371	
	5	Leg assembly (S)	AMR1937	32	Bonnet assembly	RXX1476	
	6	Door spring R	RBH1313	33	Display lens (CT-J200WR)	RAH2012	
	7	Door spring L	RBH1314	34	LED lens (CT-J200WR)	RAH2015	
	8	Half pressure spring	RBK1004	101	Main unit (CT-J400WR)	RWZ2405	
	9	Damper assembly	VXA1153		Main unit (CT-J300WR)	RWZ2576	
	10	Indicator lens	AAK2224		Main unit (CT-J200WR)	RWZ2536	
	11	Operation button	RAC1678	102	Transistor 1 unit (CT-J400WR/CT-J300WR)	RWZ2573	
	12	Operation button C (CT-J400WR)	RAC1679		Transistor 1 unit (CT-J200WR)	RWZ2574	
		Operation button C (CT-J300WR/CT-J200WR)	RAC1680	103	Operate 1 unit	RWZ2407	
	13	Slide SW knob	RAC1687	104	Operate 2 unit	RWZ2408	
	14	Eject knob L	RAC1688	105	Display unit	RWZ2406	
	15	Eject knob R	RAC1689	106	PCB spacer	PNY - 404	
	16	VR knob (CT-J400WR/CT-J300WR)	RAC1690	107	Main chassis	RNE1072	
	17	Door lens L	RAH2010	108	Mechanism shield plate	RNE1503	
	18	Door lens R	RAH2011	109	Rear panel (CT-J400WR)	RNA1528	
	19	Remaining sheet	REE - 113		Rear panel (CT-J300WR)	RNA1527	
	20	Indicator lens	RNK1591		Rear panel (CT-J200WR)	RNA1526	
	21	Foot assembly (CT-J400WR/CT-J300WR)	RXA1448	110	Cushion	REB1091	
		Foot assembly (CT-J200WR)	RXA1277	111	Foot	RNK1770	
	22	Front panel (CT-J400WR/CT-J300WR)	RAH1976	112	LED holder	RNK1810	
		Front panel (CT-J200WR)	RAH1977				
	23	Door panel L (CT-J400WR)	RAH1979				
		Door panel L (CT-J300WR)	RAH1978				
		Door panel L (CT-J200WR)	RAH1980				
	24	Door panel R (CT-J400WR/CT-J300WR)	RAH1981				
		Door panel R (CT-J200WR)	RAH1982				
	25	Azimuth cover (CT-J400WR/CT-J300WR)	RAH2013				
		Azimuth cover (CT-J200WR)	RAH2014				

Exterior

NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

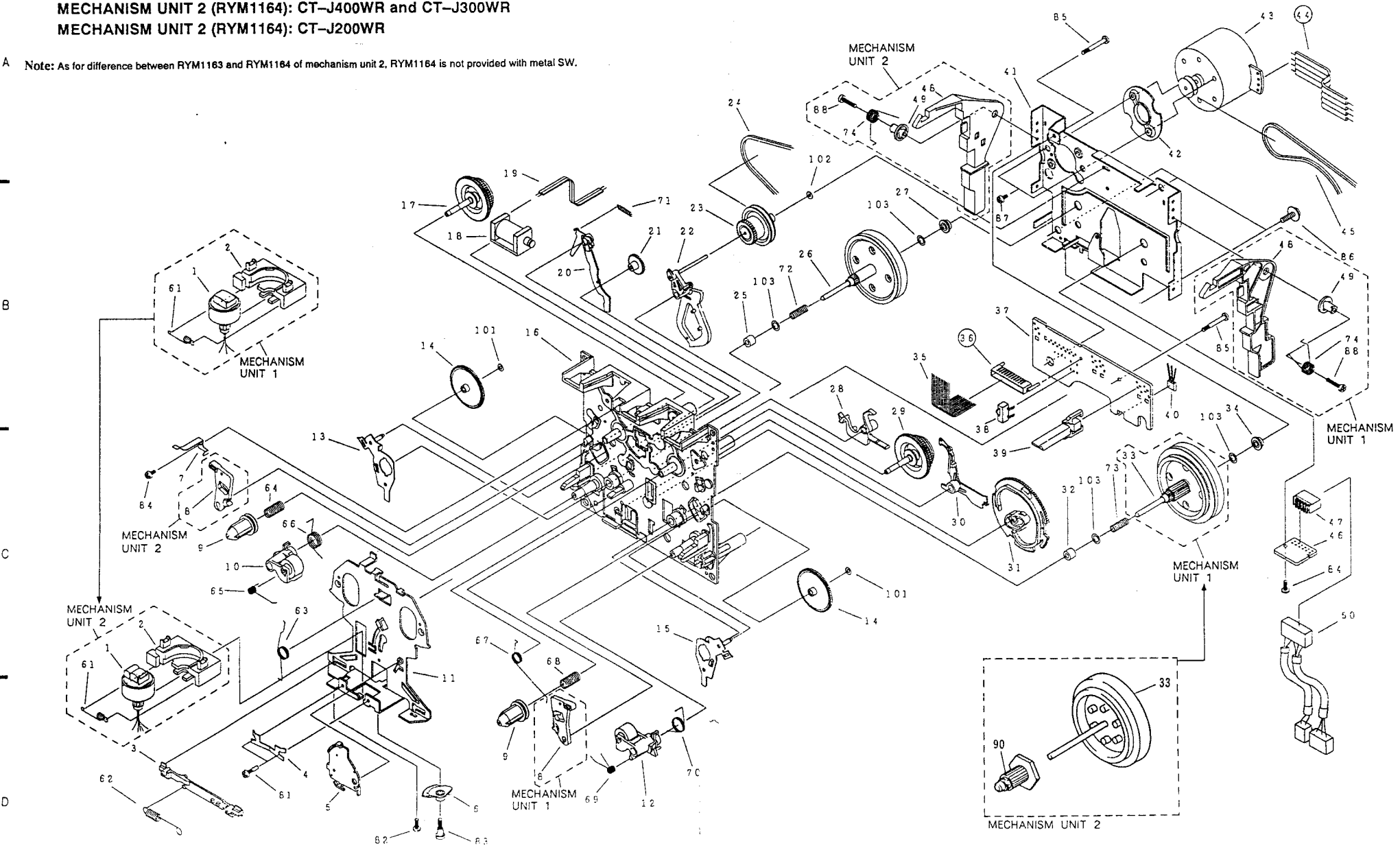
CT-J400WR, CT-J300WR, CT-J200WR



CT-J400WR, CT-J300WR, CT-J200WR

- 1.2 MECHANISM UNIT 1 (RYM1162)
- MECHANISM UNIT 2 (RYM1164): CT-J400WR and CT-J300WR
- MECHANISM UNIT 2 (RYM1164): CT-J200WR

A Note: As for difference between RYM1163 and RYM1164 of mechanism unit 2, RYM1164 is not provided with metal SW.



Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	ASSY HOLDER HEAD (Mechanism unit 2)	RXA1416		41	BRACKET FW	RNE1438
		ASSY HOLDER HEAD (Mechanism unit 1)	RXA1400		42	SPACER	RNK1822
	2	FLAME HEAD	RNK1715		43	ASSY MOTOR (Mechanism unit 2)	RXM1055
	3	LEVER HEAD	RNK1716			ASSY MOTOR (Mechanism unit 1)	RXM1053
	4	SPRING AZIMUTH	RBK1006		44	WIRE	RDD1012
	5	ASSY ARM ASSIST	RXA1401		45	BELT MAIN (Mechanism unit 1)	REB1159
	6	GEAR ARM HEAD	RNK1717			BELT MAIN (Mechanism unit 2)	REB1162
	7	SPRING CASSETTE	RBK1039		46	P.C. BOARD	RNP1348
	8	EJECT LOCK	RNK1718		47	HOUSING (Mechanism unit 2)	RKP1397
	9	CAP REEL	RNK1719			HOUSING (Mechanism unit 1)	RKP1396
	10	ASSY PINCH ARM L	RXA1403		48	EJECT LEVER L (Mechanism unit 2)	RNK1831
	11	CHASSIS HEAD	RNE1437			EJECT LEVER R (Mechanism unit 1)	RNK1811
	12	ASSY PINCH ARM R	RXA1404		49	COLLAR	RNK1704
	13	ASSY ARM PLAY L	RXA1405		50	WIRE HEAD (Mechanism unit 2)	RKP1502
	14	GEAR PLAY	RNK1720			WIRE HEAD (Mechanism unit 1)	RKP1501
	15	ASSY ARM PLAY R	RXA1406		61	SPRING	RBH1282
	16	CHASSIS OS.	RXA1411		62	SPRING	RBH1283
	17	ASSY SUB REEL L	RXA1407		63	SPRING	RBH1284
Δ	18	SOLENOID	RXP1017		64	SPRING	RBH1286
	19	WIRE	RDC1006		65	SPRING	RBH1288
	20	ARM RVS	RNK1721		66	SPRING	RBH1291
	21	GEAR FF	RNK1723		67	SPRING	RBH1285
	22	ASSY ARM FR	RXA1412		68	SPRING	RBH1287
	23	ASSY PULLEY FR	RXA1413		69	SPRING	RBH1289
	24	BELT FR	REB1158		70	SPRING	RBH1290
	25	METAL	RNG1048		71	SPRING	RBH1292
	26	ASSY FLYWHEEL L (Mechanism unit 1)	RXA1423		72	SPRING	RBH1061
		ASSY FLYWHEEL L (Mechanism unit 2)	RXA1476		73	SPRING	RBH1060
	27	METAL	RNG1005		74	SPRING (L) (Mechanism unit 2)	RBH1319
	28	ARM BRAKE	RNK1724			SPRING (R) (Mechanism unit 1)	RBH1320
	29	ASSY SUB REEL R	RXA1408		81	SCREW	RBA1023
	30	ARM TRIGGER	RNK1722		82	SCREW	RBA1027
	31	GEAR CAM	RNK1725		83	SCREW	RBA1030
	32	METAL	RNG1049		84	SCREW	PCZ20P040FMC
	33	ASSY FLYWHEEL R (Mechanism unit 1)	RXA1424		85	SCREW	RBA1093
		ASSY FLYWHEEL R (Mechanism unit 2)	RXA1415		86	SCREW	RBA1094
	34	METAL	RNG1004		87	SCREW	RBA1100
	35	WIRE (14P) (Mechanism unit 2)	RDD1217		88	SCREW	RBA1095
		WIRE (12P) (Mechanism unit 1)	RDD1249		89	
	36	HOLDER WIRE	RNK1883		90	GEAR FW R (Mechanism unit 2)	RNK1733
	37	P.C. BOARD	RNP1436		101	WASHER	RBF1044
	38	SWITCH MODE	RSN1020		102	WASHER	WA16D032D025
	39	SWITCH (LEAF)	RSN1019				
	40	HALL IC.	DN6851A				

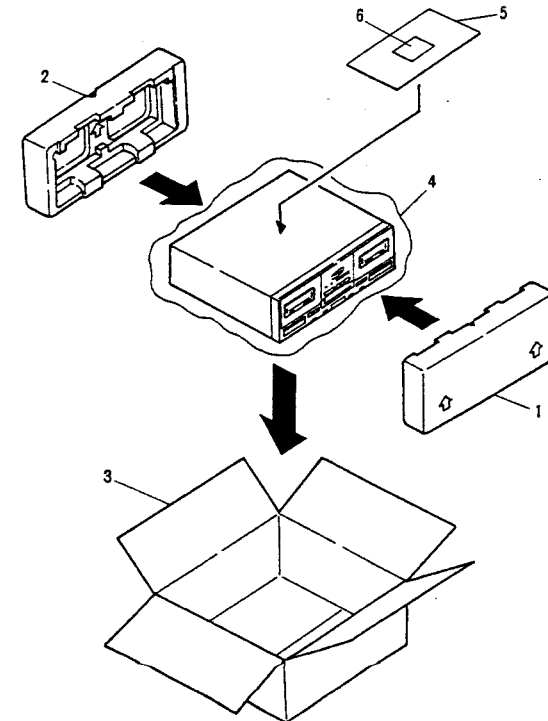
2. PACKING

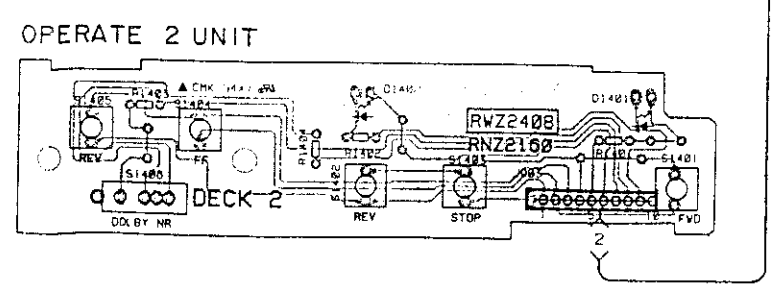
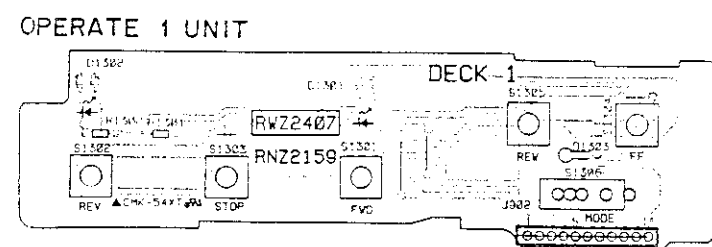
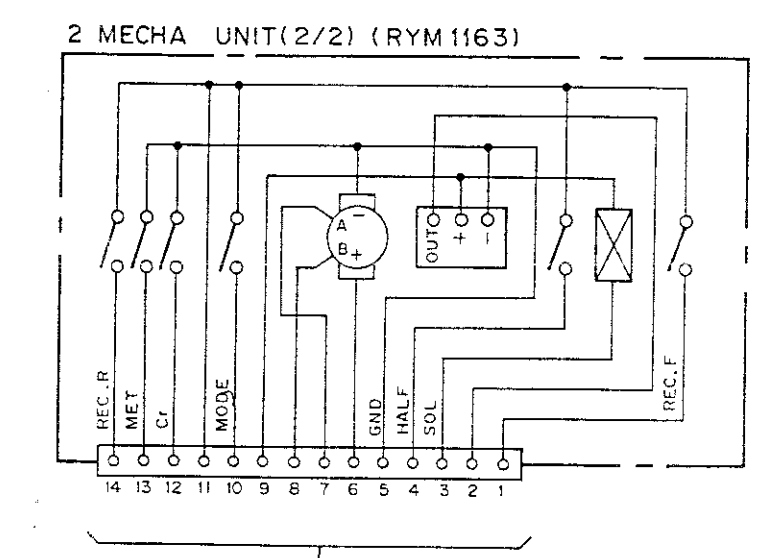
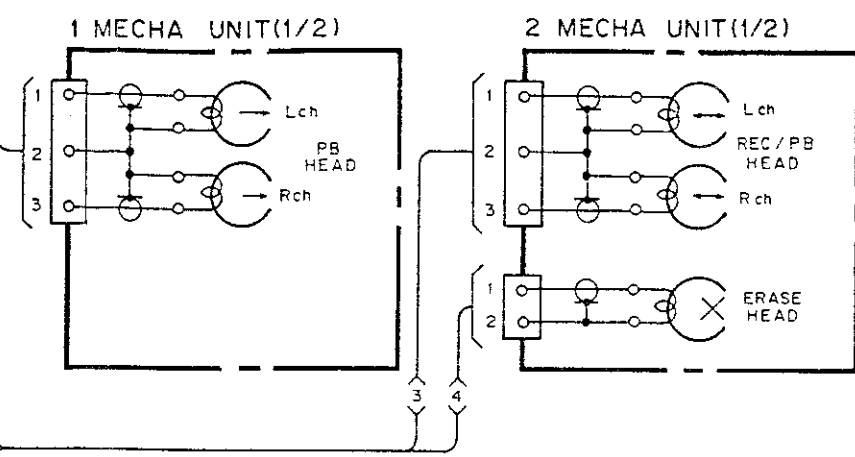
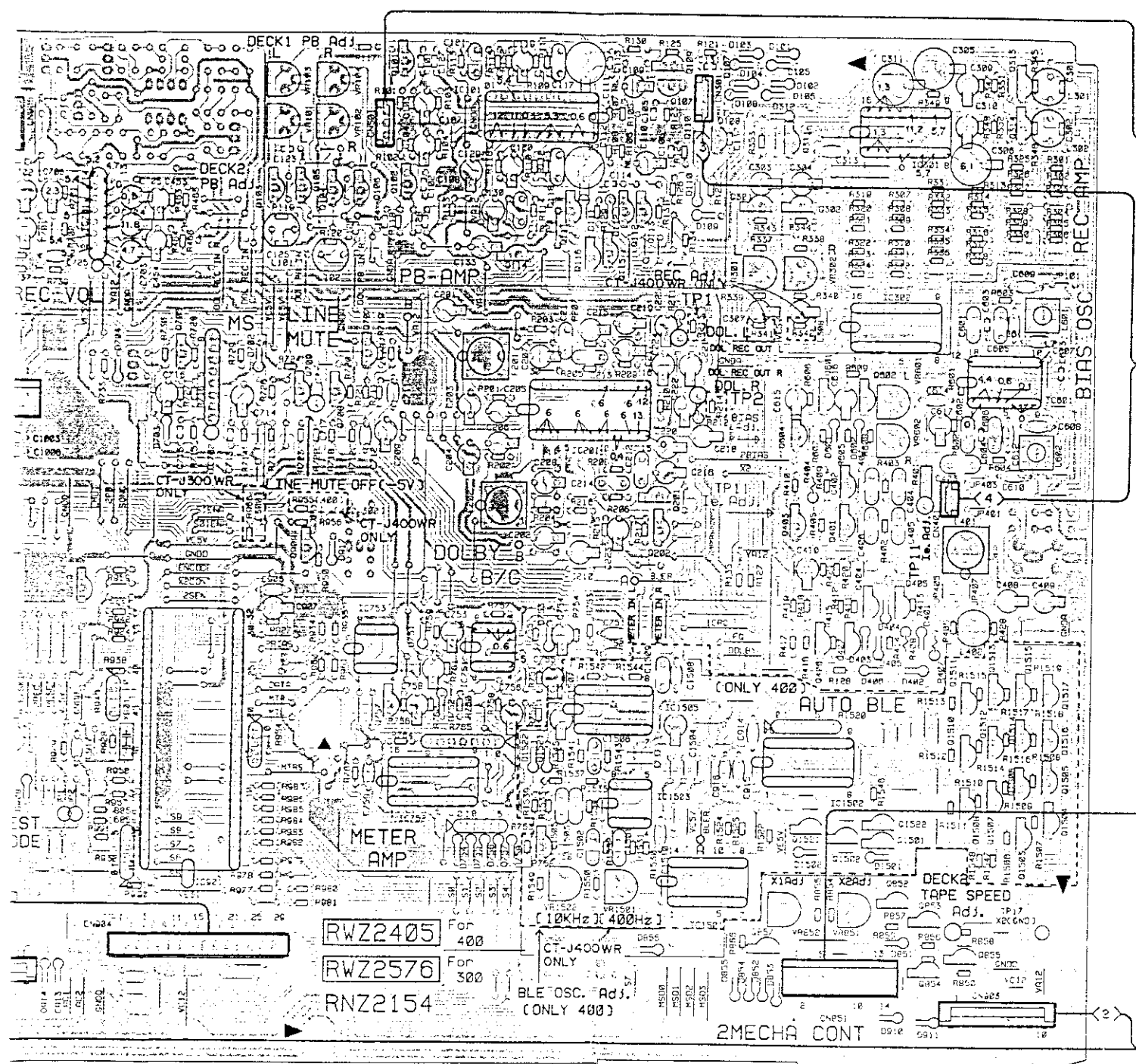
NOTES:

- The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The instruction manual is packed in the units of M-J200/M-J300 and M-J400/M-J500.

Parts List

Mark	No.	Description	Part No.
	1	Pad (F)	RHA1085
	2	Pad (R)	RHA1086
	3	Packing case	RHG1337 (CT-J400WR) RHG1336 (CT-J300WR) RHG1334 (CT-J200WR)
	4	Sheet	RHX1006
	5	Caution ("NOTE")	ARH1105
	6	Caution card	RRN1001





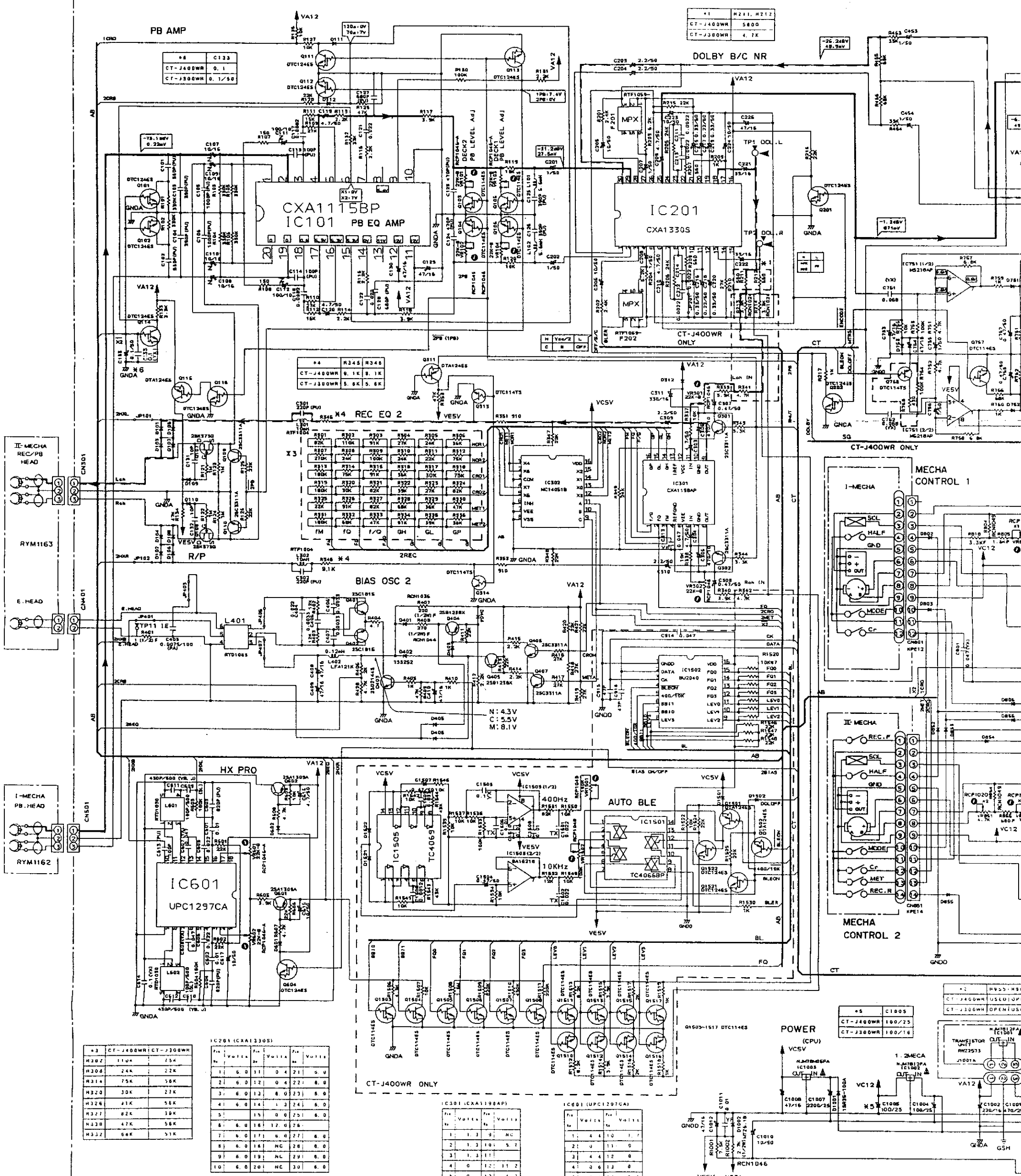
PCB pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zener diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styro capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Nonpolar)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

VR103 VR104 VR101 VR102	Q101	IC101	Q109	Q311	IC301	Q313
	Q103 Q105 Q104 Q106 Q102		Q107 Q110 Q108	Q301 Q302	IC302	Q314
	Q705 IC702	Q709 Q708 Q707	Q114	Q604	Q601 Q602	IC601
			Q116 Q115			
Q859	Q909		Q201	Q402	Q401	Q1511 Q1513 Q1515 Q1517
			Q202	Q403	Q404	Q1510 Q1512 Q1514 Q1516
	IC753	IC751	IC1505	Q406 Q407	Q405	Q1508 Q1507 Q1506 Q1505
IC901	Q757		IC1503	IC1502	Q1522	Q1508 Q1507 Q1506 Q1505
	IC752		Q758	IC1501	Q1521 Q1502 Q1501	Q1503 Q1504
					Q852 Q853	
					Q854 Q855	

A
B
C
D

1. This PCB 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.

MAIN UNIT



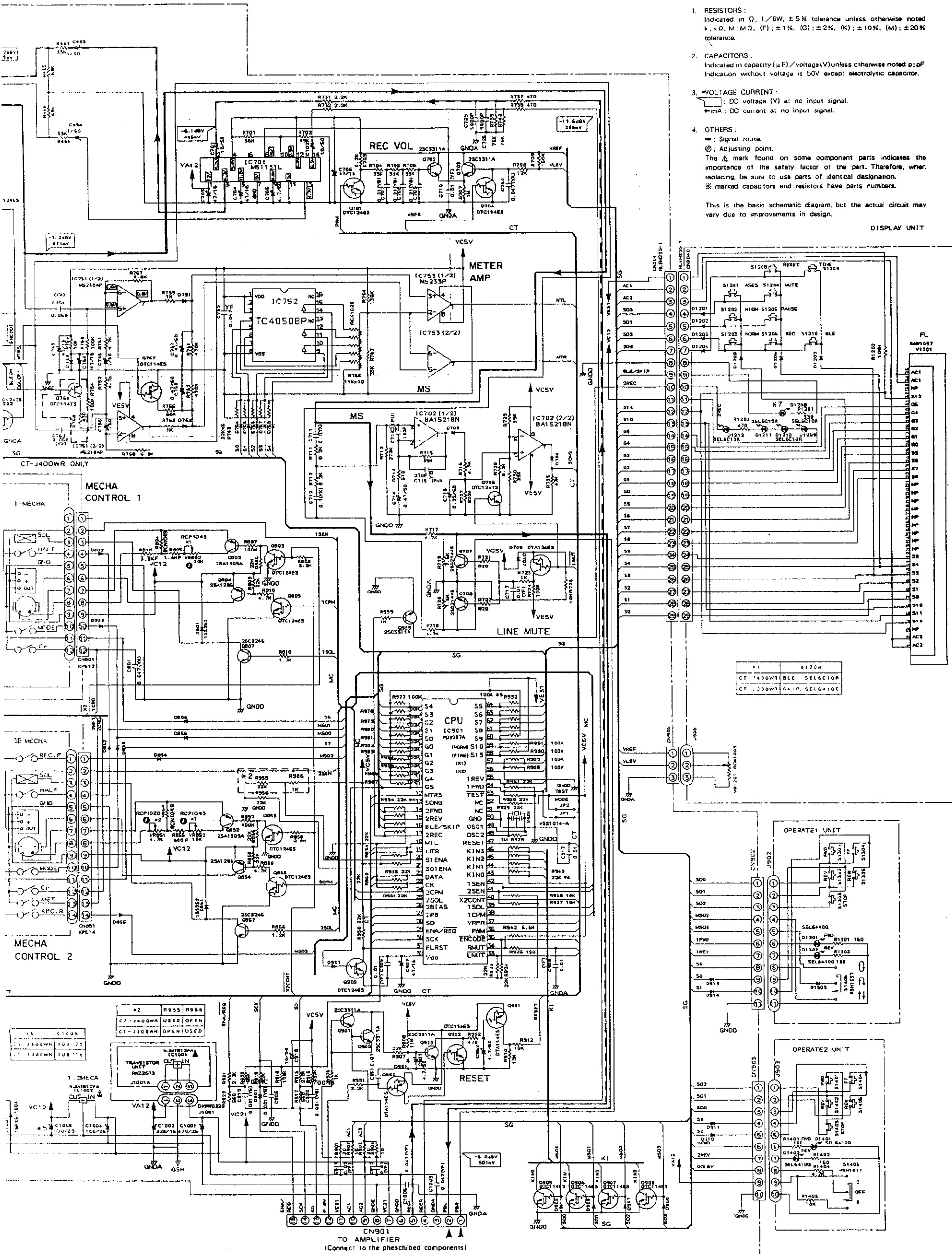
*3	CT-J400WR/CT-J300WR	R	Value	W	Value
H302		110K	15K		
H304		24K	22K		
H314		75K	58K		
H320		30K	27K		
H326		41K	56K		
H327		82K	39K		
H338		47K	58K		
H332		88K	51K		

IC201 (CXA1330S)					
N	Volet	N	Volet	N	Volet
1	6.0	11	0.4	21	6.0
2	6.0	12	0.4	22	6.0
3	6.0	13	8.0	23	6.0
4	6.0	14	1.3	24	6.0
5	15	0	75	1	6.0
6	6.0	16	12.0	26	6.0
7	6.0	17	0.0	27	6.0
8	6.0	18	NC	28	6.0
9	6.0	19	NC	29	6.0
10	6.0	20	NC	30	6.0

IC301 (CXA1198AP)					
N	Volet	N	Volet	N	Volet
1	1.3	9	NC		
2	1.3	10	5.7		
3	1.3	11			
4	0	12	11.2		
5	0	13	1.3		
6	5.7	14	1.3		
7	5.7	15	1.3		
8	6.1	16	1.3		

IC601 (UPC1297CA)					
N	Volet	N	Volet	N	Volet
1	4	10	1		
2	0	11	0		
3	4	12	0		
4	0	13	0		
5	0	14	0		
6	0	15	0		
7	0	16	4		
8	0	17	0		
9	0	18	12		

*5	C1805	H	Value	W	Value
CT-J400WR		100/25			
CT-J300WR		100/16			



- RESISTORS:**
Indicated in Ω, 1/6W, ±5% tolerance unless otherwise noted
k; K, M; M.O. (F); ±1%. (G); ±2%. (K); ±10%. (M); ±20% tolerance.
- CAPACITORS:**
Indicated in capacity (μF)/voltage (V) unless otherwise noted p; pF.
Indication without voltage is 50V except electrolytic capacitor.
- VOLTAGE CURRENT:**
—: DC voltage (V) at no input signal.
—mA: DC current at no input signal.
- OTHERS:**
→: Signal route.
⊙: Adjusting point.
The Δ 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.

DISPLAY UNIT

CT-J400WR	BLE	SEL610R
CT-J300WR	SKIP	SEL6410E

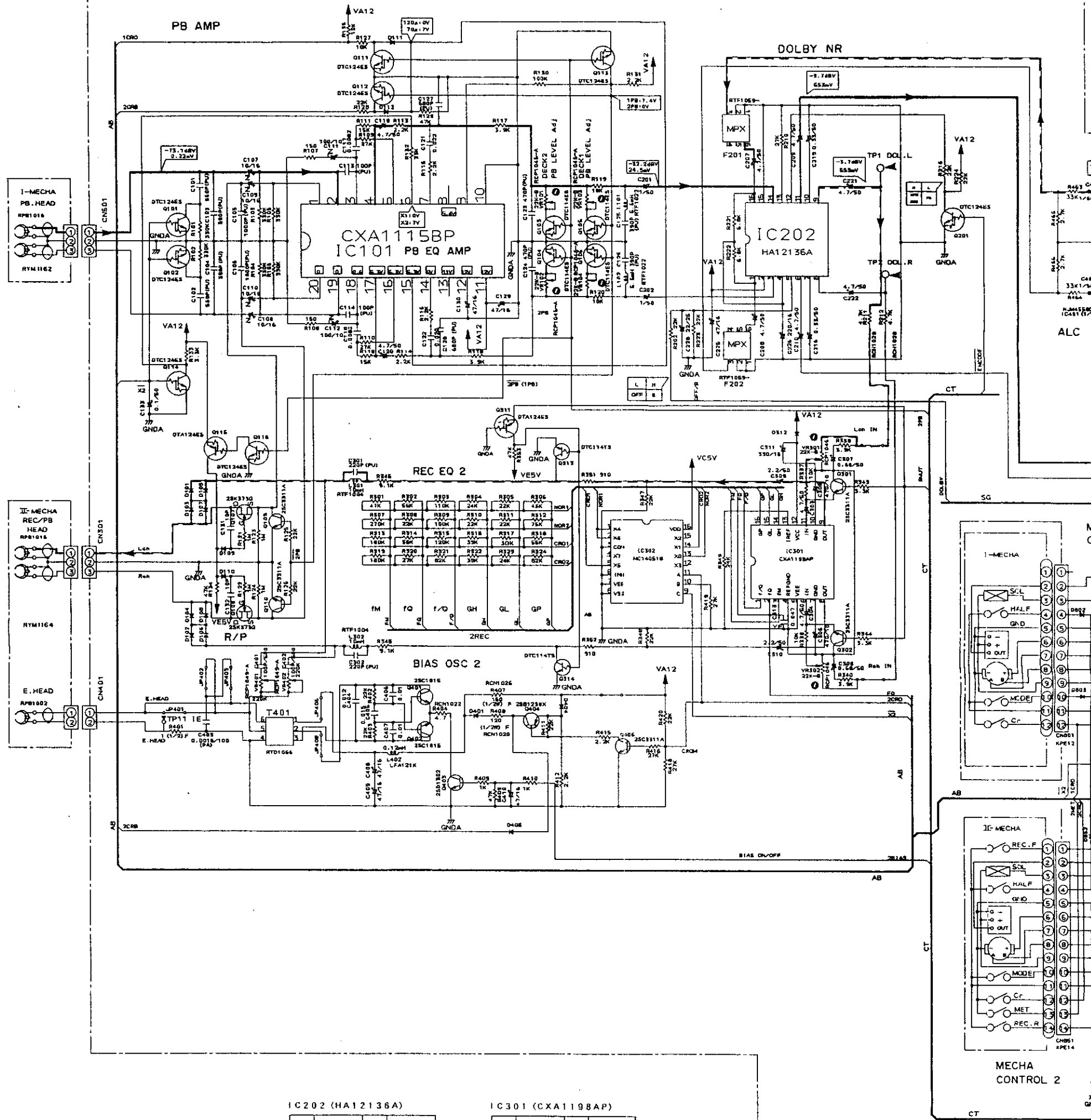
#2	R955	R966
CT-J400WR	USED	OPEN
CT-J300WR	OPEN	USED

#5	C1005
CT-J400WR	100/25
CT-J300WR	100/10

—: PLAYBACK SIGNAL
- - -: RECORDING SIGNAL
▶: MEASUREMENT POINT

3.2 FOR CT-J200WR

MAIN UNIT



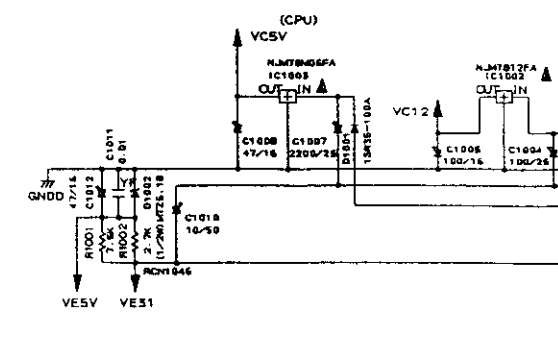
IC 202 (HA12136A)

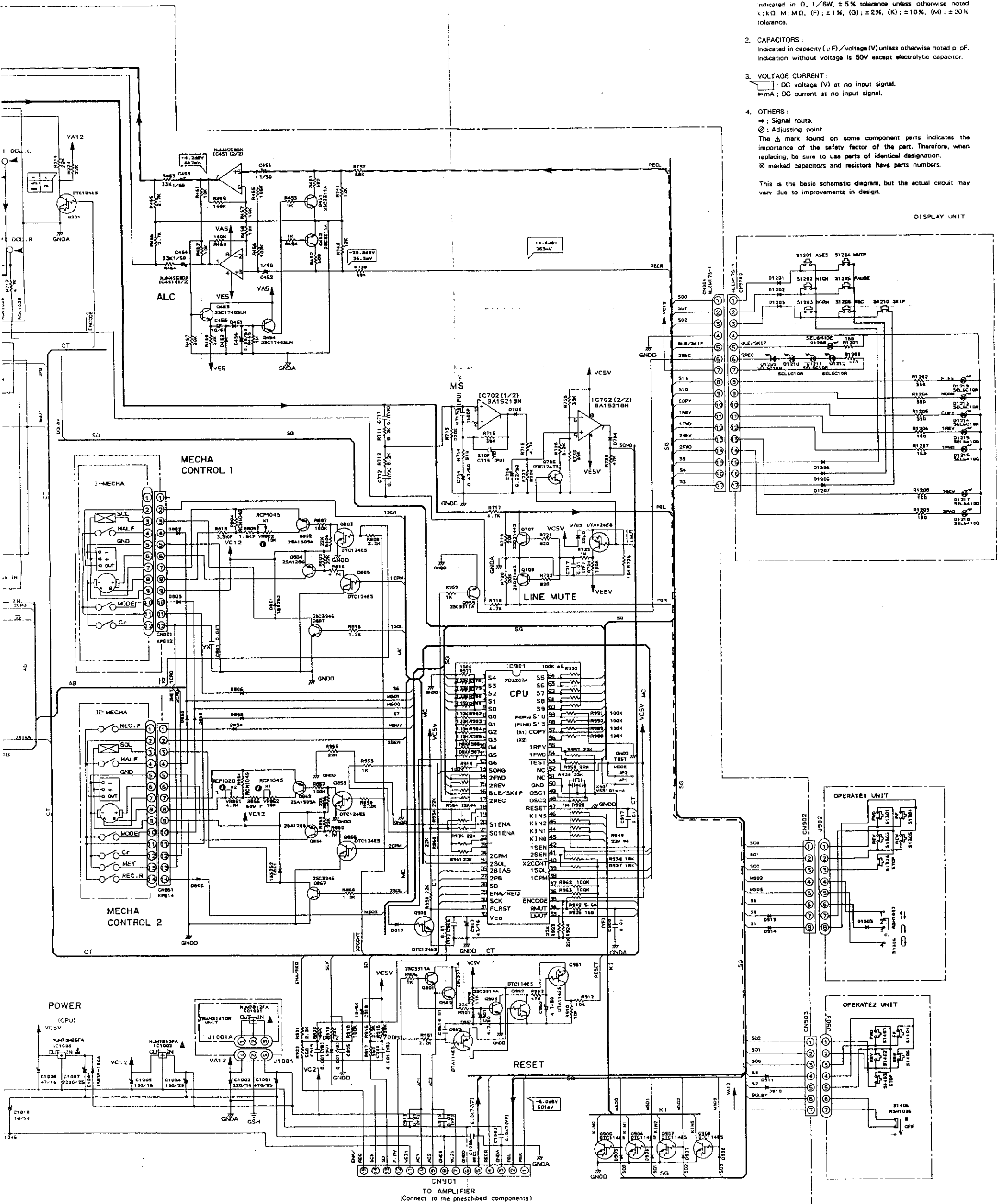
Pin No	Volts	Pin No	Volts
1	5.0	9	5.0
2	12.0	10	1.4
3	5.5	11	4.9
4	5.5	12	11.0
5	0 (OFF) & (B)	13	0.9
6	4.7	14	4.0
7	1.3	15	0
8	5.0	16	4.6

IC 301 (CXA1198AP)

Pin No	Volts	Pin No	Volts
1	1.3	9	NC
2	1.3	10	5.7
3	1.3	11	NC
4	0	12	11.2
5	0	13	1.3
6	5.7	14	1.3
7	5.7	15	1.3
8	6.1	16	1.2

POWER





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 no input signal.
⊖mA: DC current at no input signal.
4. OTHERS:
⊕: Signal route.
⊙: Adjusting point.
The Δ 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.

- : PLAYBACK SIGNAL
- - -: RECORDING SIGNAL
- ⊖: MEASUREMENT POINT

TO AMPLIFIER
(Connect to the prescribed components)

• View from component side

A

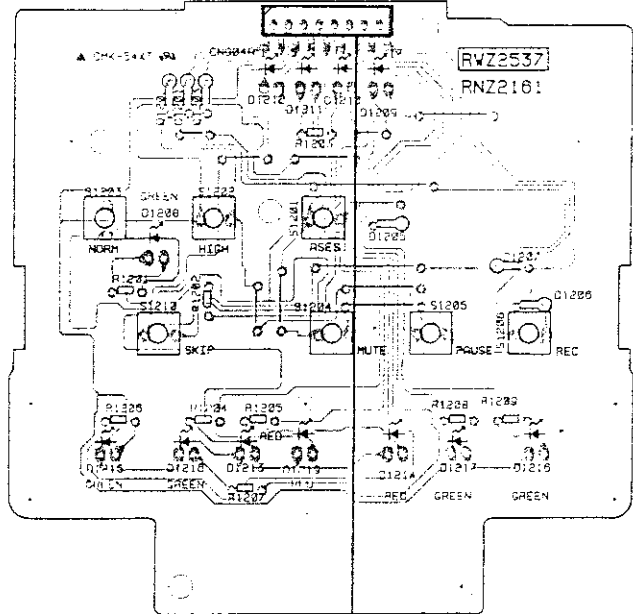
TRANSISTOR UNIT

MAIN UNIT

DISPLAY UNIT

B

TO AMPLIFIER

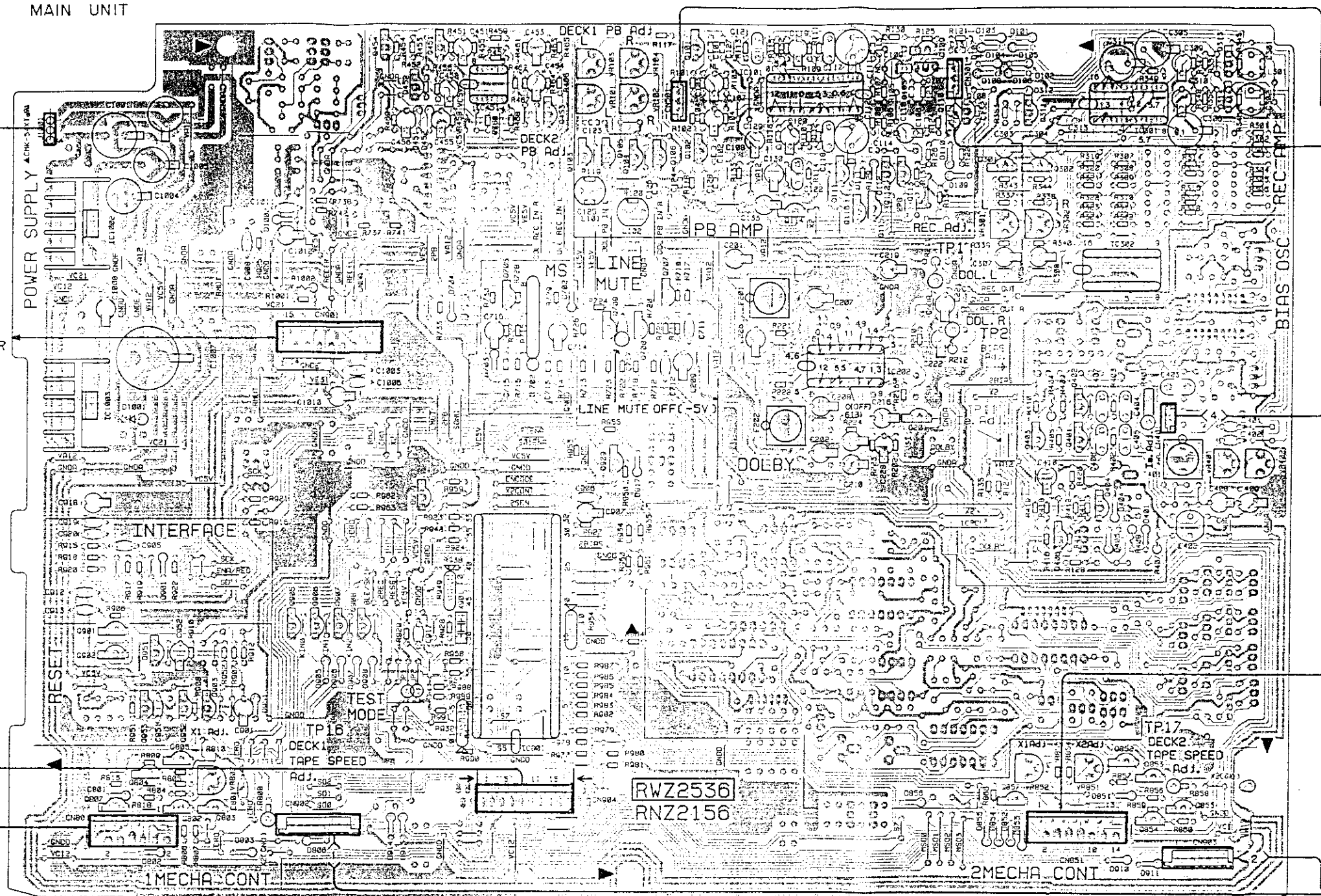
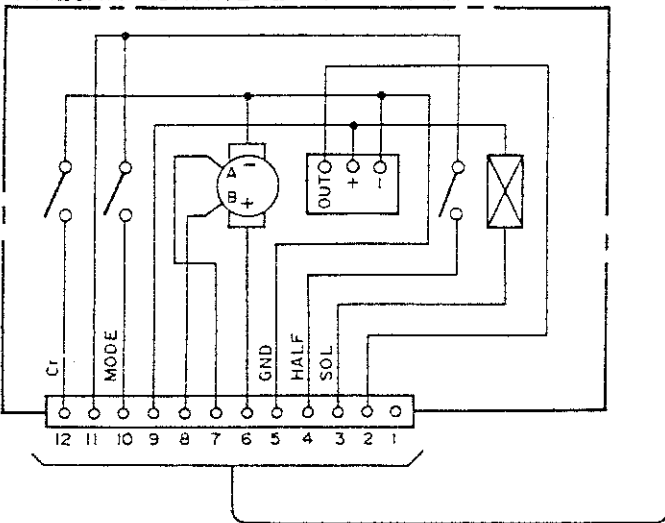


C

PNP1408-A

1 MECHA UNIT (2/2) (RYM1162)

D



PNP1401-B	VR802	VR103 VR104 VR101 VR102	VR1502 VR1501	VR301 VR302 VR852 VR851	VR401 VR 402
IC1002	Q454 Q451	Q101	IC101	Q109	Q313
IC1003	Q452 IC451	Q103 Q105 Q104 Q106 Q102	Q114	Q107 Q110 Q108	Q314
Q901	Q705 IC702	Q709 Q708 Q707	Q111 Q112 Q113	Q301 Q302	IC302
Q902 Q951	Q859	Q909	Q116 Q115		IC302
Q953 Q952 Q903 Q804 Q805			K202	Q201	Q402
Q807 Q802 Q803					Q401
					Q404
					Q406
					Q852 Q853 Q854 Q855
					Q857

1

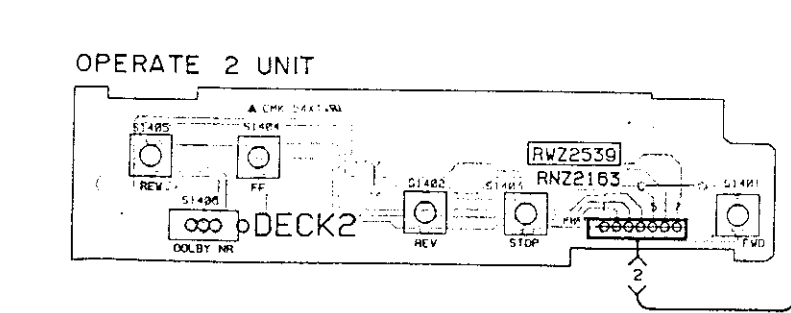
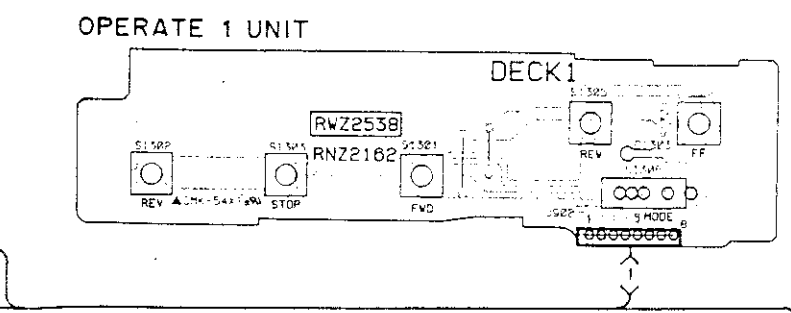
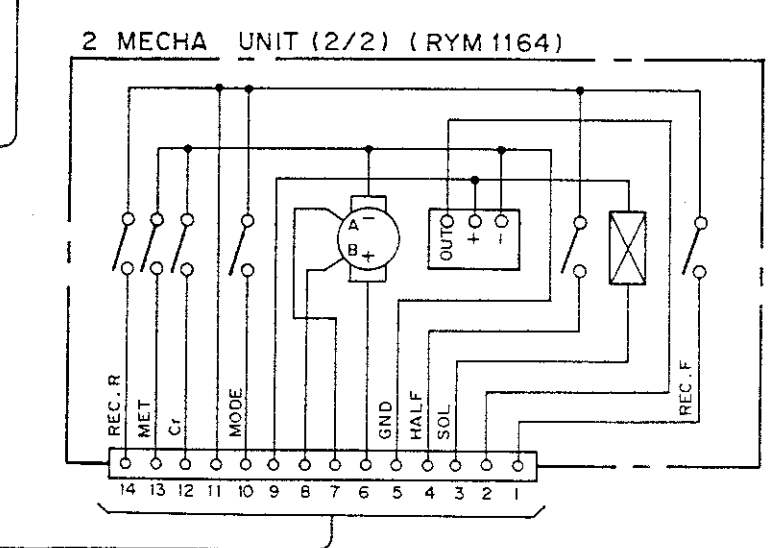
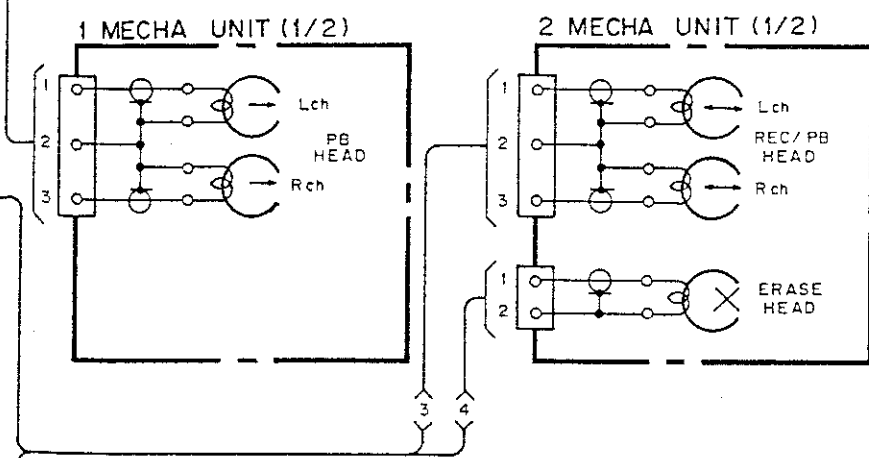
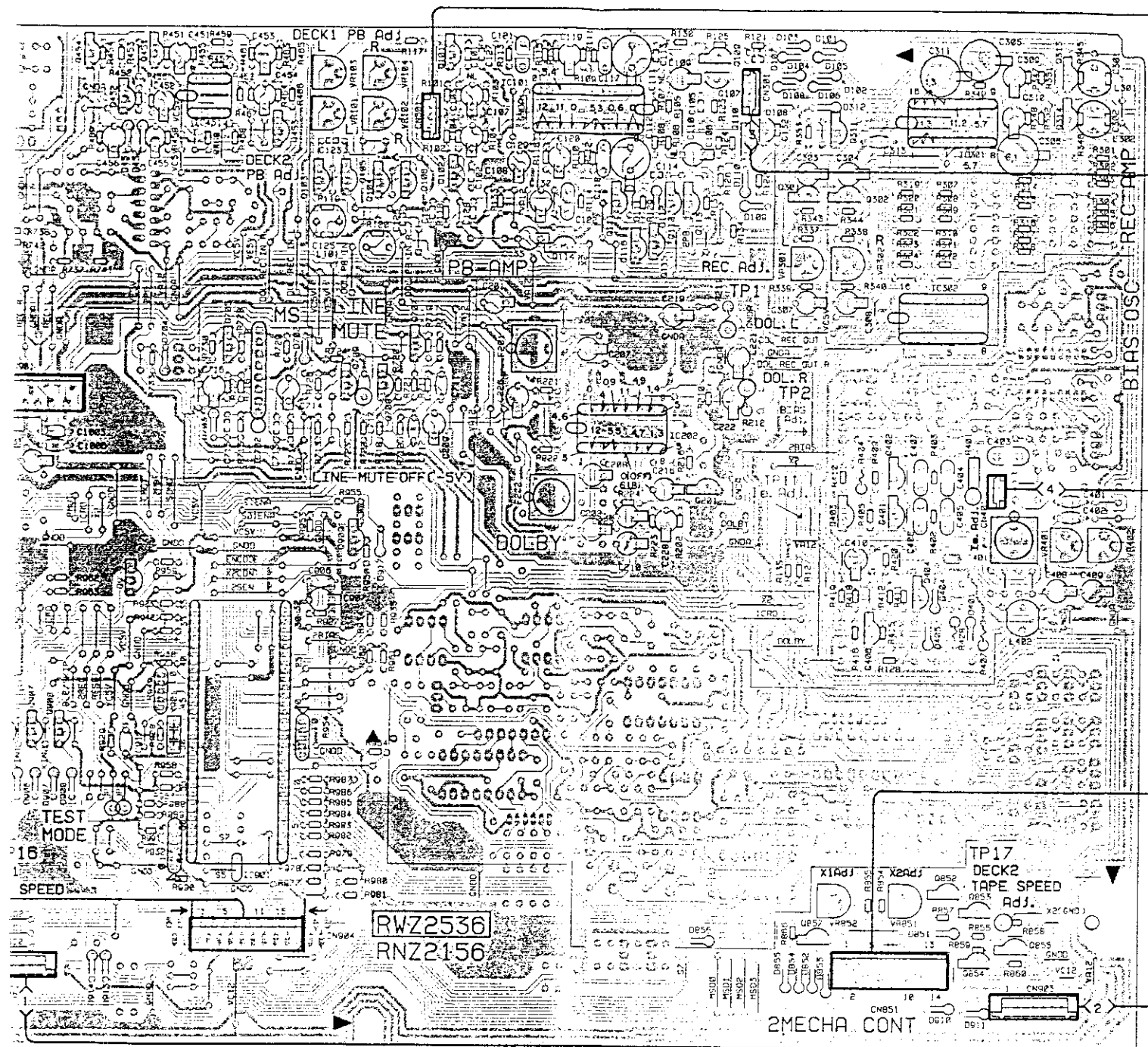
2

3

4

5

6



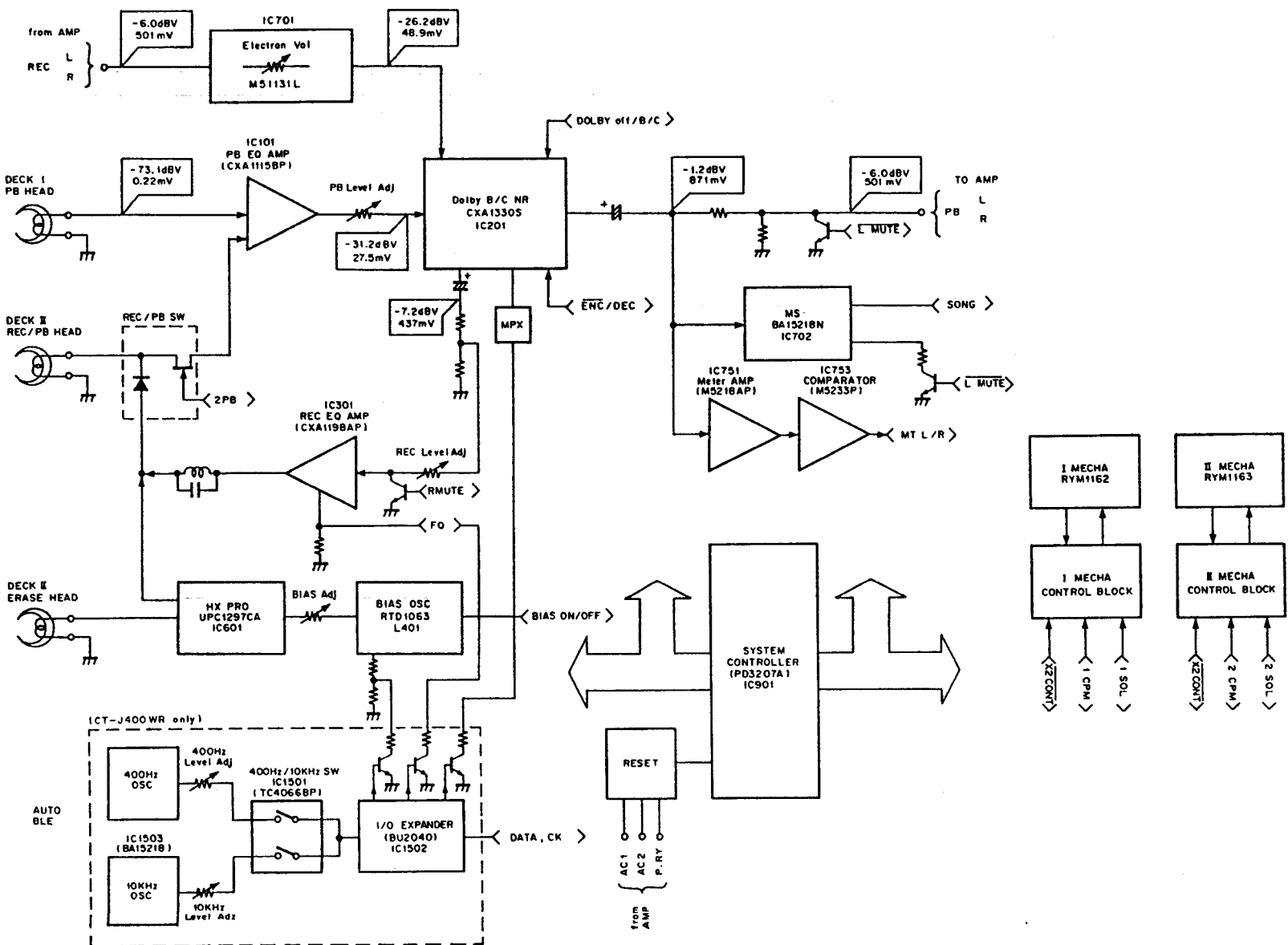
PCB pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zener diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Synov capacitor
		Electronic capacitor (non-polarized)
		Electronic capacitor (polarized)
		Electronic capacitor (polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Fusistor
		Resonator
		Thermistor

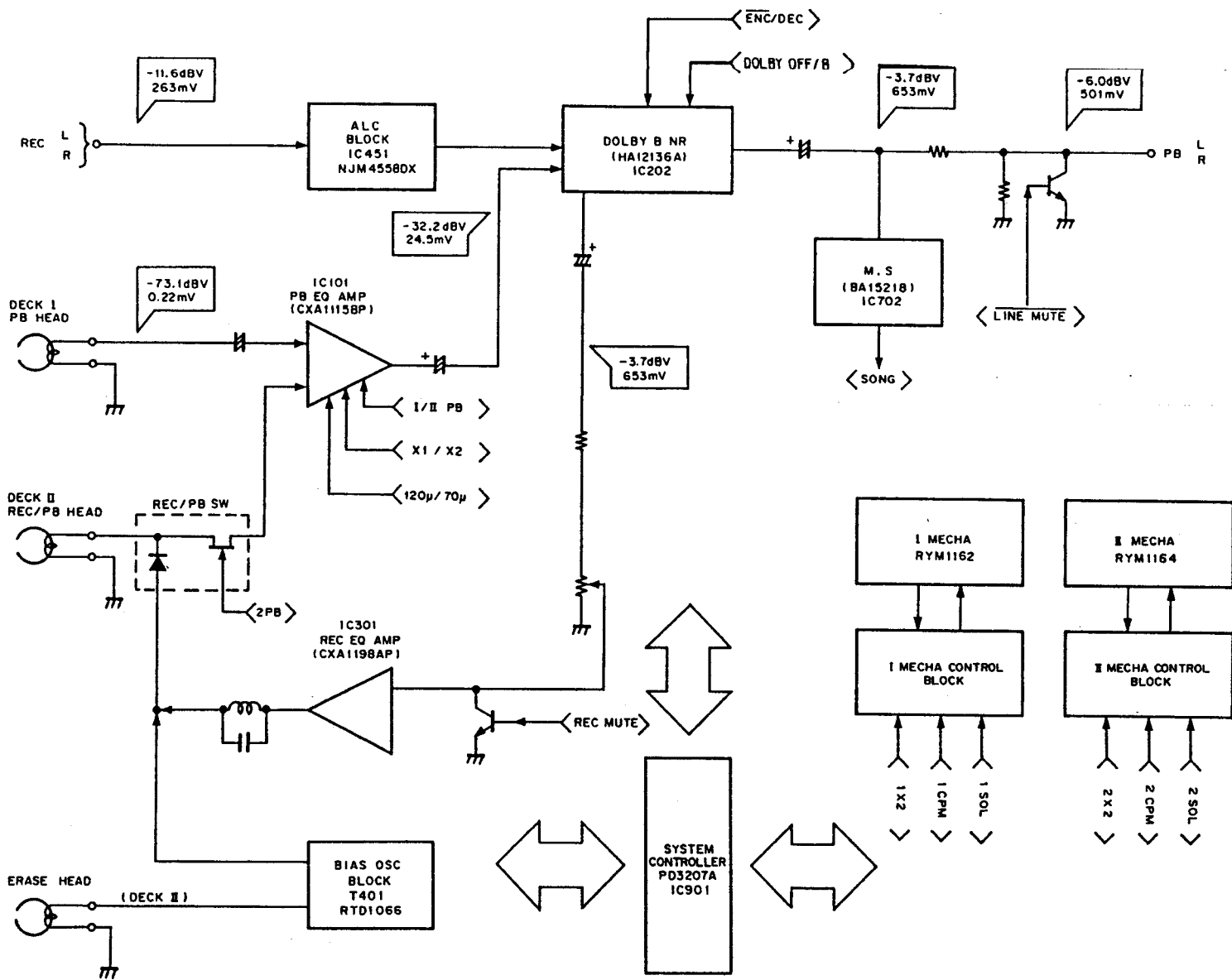
VR103 VR104 VR101 VR102	VR1502 VR1501	VR301 VR302 VR852 VR851	VR401 VR402
Q451 Q452	Q101 Q103 Q105 Q104 Q106 Q102	Q109 Q107 Q110 Q108	Q313 Q314
Q705 IC702	Q709 Q708 Q707	Q111 Q112 Q113 Q116 Q115	Q301 Q302 IC302
Q859	Q909	IC202	Q201
Q907 Q908	K901	Q403 Q406	Q402 Q401 Q404
		Q852 Q853 Q854 Q855	Q857

1. This PCB 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.

4. BLOCK DIAGRAM

4.1 FOR CT-J400WR AND CT-J300WR





5. PCB 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 Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

• When ordering resistors, first convert resistance values into code form as shown in the following examples.

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

560 Ω \rightarrow $56 \times 10^0 \rightarrow$ 561 RD1/4PS $\begin{bmatrix} 5 & 6 & 1 \\ \hline & & J \end{bmatrix}$
 47k Ω \rightarrow $47 \times 10^3 \rightarrow$ 473 RD1/4PS $\begin{bmatrix} 4 & 7 & 3 \\ \hline & & J \end{bmatrix}$
 0.5 Ω \rightarrow 0R5 RN2H $\begin{bmatrix} 0 & R & 5 \\ \hline & & K \end{bmatrix}$
 1 Ω \rightarrow 010 RS1P $\begin{bmatrix} 0 & 1 & 0 \\ \hline & & K \end{bmatrix}$

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

5.62k Ω \rightarrow $562 \times 10^1 \rightarrow$ 5621 RN1/4SR $\begin{bmatrix} 5 & 6 & 2 & 1 \\ \hline & & & F \end{bmatrix}$

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
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5.1 FOR CT-J400WR AND CT-J300WR

LIST OF ASSEMBLIES

⊙	MOTHER UNIT (CT-J400WR)	RWM1433
⊙	MOTHER UNIT (CT-J300WR)	RWM1488
├──MAIN UNIT		
├──TRANSISTOR UNIT		
⊙	SUB UNIT (CT-J400WR)	RWM1444
⊙	SUB UNIT (CT-J300WR)	RWM1495
├──OPERATE 1 UNIT		
├──OPERATE 2 UNIT		
├──DISPLAY UNIT		

MAIN UNIT

SEMICONDUCTORS

IC101 PB-EQ AMP IC	CXA1115BP	Q103-106 DIGITAL TRANSISTOR	XDC114ES
IC201 DOLBY B/C IC	CXA1330S	Q107, 108 N-FET	2SK373
IC301 REC EQUALIZER IC	CXA1198AP	Q109, 110 TRANSISTOR	2SC3311A
IC302 LOGIC IC	TC4051BP	Q111-114 TRANSISTOR	XDC124ES
IC601 DOLBY HX PRO IC	UPC1297CA	Q115 TRANSISTOR	XDA124ES
		Q116 TRANSISTOR	XDC124ES
IC701 VCA	MS1131L	Q201, 202 TRANSISTOR	XDC124ES
IC702 IC	BA15218N	Q301, 302 TRANSISTOR	2SC3311A
IC751 OP-AMP IC	MS218AP	Q311 TRANSISTOR	XDA124ES
IC752 CMOS LOGIC IC	TC4050BP	Q313, 314 DIGITAL TRANSISTOR	DTC1147S
IC753 COMPARATOR	MS233P	Q401, 402 TRANSISTOR	2SC1815
IC901 CPU(C-MOS)	PD3207A	Q403 TRANSISTOR	2SD2144S
Δ IC1002 REGULATOR IC	NJM7812FA	Q404, 405 TRANSISTOR	2SB1238X
Δ IC1003 REGULATOR IC	NJM78M05FA	Q406, 407 TRANSISTOR	2SC3311A
IC1501 LOGIC IC	TC4066BP	Q601, 602 TRANSISTOR	2SA1309A
IC1502 LOGIC IC	(CT-J400WR only)	Q604 TRANSISTOR	XDC124ES
	BU2040	Q701 TRANSISTOR	XDC124ES
	(CT-J400WR only)	Q702, 703 TRANSISTOR	2SC3311A
IC1503 OP-AMP IC	BA15218	Q704 DIGITAL TRANSISTOR	XDC114ES
	(CT-J400WR only)	Q705 TRANSISTOR	DTC1247S
IC1505 LOGIC IC	TC4069BP	Q707, 708 TRANSISTOR	2SD2144S
	(CT-J400WR only)	Q709 TRANSISTOR	XDA124ES
Q101, 102 TRANSISTOR	XDC124ES	Q757 DIGITAL TRANSISTOR	XDC114ES
		Q758 DIGITAL TRANSISTOR	DTC1147S
			(CT-J400WR only)
		Q802 TRANSISTOR	2SA1309A
		Q803 TRANSISTOR	XDC124ES
		Q804 TRANSISTOR	2SA1286
		Q805 TRANSISTOR	XDC124ES
		Q807 TRANSISTOR	2SC3246
		Q852 TRANSISTOR	2SA1309A
		Q853 TRANSISTOR	XDC124ES
		Q854 TRANSISTOR	2SA1286
		Q855 TRANSISTOR	XDC124ES
		Q857 TRANSISTOR	2SC3246
		Q901-903 TRANSISTOR	2SC3311A
		Q905-908 DIGITAL TRANSISTOR	XDC114ES
		Q909 TRANSISTOR	XDC124ES

Mark No.	Description	Part No.	Mark No.	Description	Part No.	Mark No.	Description	Part No.	Mark No.	Description	Part No.
Q951	DIGITAL TRANSISTOR	XDA114ES	C125, 126	AXIAL CAPACITOR	CKPUB391K50	0925, 926	CERAMIC CAPACITOR	CKPUB100250	R101-135	CARBONFILM RESISTOR	RD1/6PM□□□J
Q952	DIGITAL TRANSISTOR	XDC114ES	C127, 128	AXIAL CAPACITOR	CKPUB661K50		(CT-J300WR)	CKCYB102K50	R201-210	CARBONFILM RESISTOR	RD1/6PM□□□J
Q953	DIGITAL TRANSISTOR	XDA114ES	C129, 130	ELECTR. CAPACITOR	CEAS470M16	C751, 752	CERAMIC CAPACITOR	CGCYX683K25	R211, 212		RCN1024
Q959	TRANSISTOR	ZSC3311A	C131, 132	AXIAL CERAMIC C.	CCPUSL100J50	C753, 754	ELECTR. CAPACITOR	CEAS470M16			(CT-J400WR)
Q1501, 1502	TRANSISTOR	XDA124ES (CT-J400WR only)	C133	ELECTR. CAPACITOR	CEASR10M50 (CT-J300WR)						RCN1028
Q1503-1508	DIGITAL TRANSISTOR	XDC114ES (CT-J400WR only)	C133	CERAMIC CAPACITOR	CGCYX104K25 (CT-J400WR)	C755, 756	ELECTR. CAPACITOR	CEAS010M50			(CT-J300WR)
Q1510-1517	DIGITAL TRANSISTOR	XDC114ES (CT-J400WR only)	C201, 202	ELECTR. CAPACITOR	CEAS010M50	C757, 758	ELECTR. CAPACITOR	CEASR47M50			(CT-J300WR)
Q1521, 1522	TRANSISTOR	XDC124ES (CT-J400WR only)	C203, 204	ELECTR. CAPACITOR	CEAS2R2M50	C759	CERAMIC CAPACITOR	CKCYF473Z50	R213, 214	CARBONFILM RESISTOR	RD1/6PM□□□J
D101-112	DIODE	1SS254	C205, 206	ELECTR. CAPACITOR	CEAS100M50	C760	CERAMIC CAPACITOR	CGCYX473K25			(CT-J400WR only)
D312	DIODE	1SS254	C207, 208	ELECTR. CAPACITOR	CEAS010M50	C801	CERAMIC CAPACITOR	CGCYX473K25	R215, 216	CARBONFILM RESISTOR	RD1/6PM□□□J
D401	DIODE	1SS254	C209, 210	ELECTR. CAPACITOR	CEAS4R7M50	C901	ELECTR. CAPACITOR	CEAS4R7M50			(CT-J300WR)
D402	DIODE	1SS252	C211-214	AUDIO FILM CAPACITOR	CFTXA222J50	C905	CERAMIC CAPACITOR	CKCYB102K50	R301	CARBONFILM RESISTOR	RD1/6PM□□□J
D403-406	DIODE	1SS254	C215, 216	ELECTR. CAPACITOR	CEASR33M50	C906	CERAMIC CAPACITOR	CKCYF103Z50	R302	CARBONFILM RESISTOR	RD1/6PM114J
D601, 602	DIODE	1SS254	C217, 218	ELECTR. CAPACITOR	CEASR22M50	C907	ELECTR. CAPACITOR	CEAS470M16			(CT-J400WR)
D702-704	DIODE	1SS254	C219, 220	ELECTR. CAPACITOR	CEASR33M50	C908	CERAMIC CAPACITOR	CKCYF103Z50			(CT-J300WR)
D751-758	DIODE	1SS254	C221, 222	ELECTR. CAPACITOR	CEAS330M16	C912, 913	CERAMIC CAPACITOR	CKCYF103Z50	R303-307	CARBONFILM RESISTOR	RD1/6PM□□□J
D801	DIODE	1SS252	C223, 224	ELECTR. CAPACITOR	CEAS100M50	C914	CERAMIC CAPACITOR	CGCYX473Z50 (CT-J400WR only)	R308	CARBONFILM RESISTOR	RD1/6PM□□□J
D802, 803	DIODE	1SS252	C225	ELECTR. CAPACITOR	CEAS470M16	C915, 916	CERAMIC CAPACITOR	CCCSL470J50 (CT-J400WR only)			(CT-J400WR)
D806	DIODE	1SS254	C301, 302	AXIAL CAPACITOR	CKPUB221K50	C917	CERAMIC CAPACITOR	CKCYF103Z50	R309-313	CARBONFILM RESISTOR	RD1/6PM□□□J
D851	DIODE	1SS252	C303, 304	ELECTR. CAPACITOR	CEAS4R7M50	C918	ELECTR. CAPACITOR	CEAS100M50			(CT-J300WR)
D852-856	DIODE	1SS254	C305, 306	ELECTR. CAPACITOR	CEAS471M10	C919, 920	CERAMIC CAPACITOR	CKCYB102K50	R314	CARBONFILM RESISTOR	RD1/6PM753J
D901	DIODE	1SS254	C307, 308	ELECTR. CAPACITOR	CEASR47M50	C951	CERAMIC CAPACITOR	CKCYF103Z50			(CT-J400WR)
D905-908	DIODE	1SS254	C309, 310	ELECTR. CAPACITOR	CEAS2R2M50	C952	ELECTR. CAPACITOR	CEAS4R7M50	R315-319	CARBONFILM RESISTOR	RD1/6PM□□□J
D910, 911	DIODE	1SS254	C311	ELECTR. CAPACITOR	CEAS331M16	C1001	ELECTR. CAPACITOR	CEAS471M25	R320	CARBONFILM RESISTOR	RD1/6PM303J
D913, 914	DIODE	1SS254	C313	CERAMIC CAPACITOR	CQPA682J100	C1002	ELECTR. CAPACITOR	CEAS221M16			(CT-J400WR)
D917	DIODE	1SS254	C403	CAPACITOR		C1003	CERAMIC CAPACITOR	CKCYF473Z50	R321-325	CARBONFILM RESISTOR	RD1/6PM□□□J
D951	DIODE	1SS254	C404	AUDIO FILM CAPACITOR	CFTXA223J50	C1004	ELECTR. CAPACITOR	CEAS101M25	R326	CARBONFILM RESISTOR	RD1/6PM913J
D1001	DIODE	1SR35-100AVL	C405-407	AUDIO FILM CAPACITOR	CFTXA332J50	C1005	ELECTR. CAPACITOR	CEAS101M16 (CT-J300WR)			(CT-J400WR)
D1002	ZENER DIODE	MTZ5.1B	C408-410	ELECTR. CAPACITOR	CEAS470M16			CEAS101M25			(CT-J300WR)
D1501, 1502	DIODE	1SS254 (CT-J400WR only)	C453, 454	ELECTR. CAPACITOR	CEAS010M50			CKCYF473Z50 (CT-J400WR)			(CT-J300WR)
D1521, 1522	DIODE	1SS254 (CT-J400WR only)	C601, 602	AUDIO FILM CAPACITOR	CFTXA103J50	C1006	CERAMIC CAPACITOR	CKCYF473Z50	R327	CARBONFILM RESISTOR	RD1/6PM823J
			C603, 604	AXIAL CAPACITOR	CKPUB821K50	C1007	ELECTR. CAPACITOR	CEAS22M25			(CT-J400WR)
			C605, 606	AUDIO FILM CAPACITOR	CFTXA223J50	C1008	ELECTR. CAPACITOR	CEAS470M16	R328, 329	CARBONFILM RESISTOR	RD1/6PM□□□J
			C607, 608	CERAMIC CAPACITOR	CGCYX473K25	C1010	ELECTR. CAPACITOR	CEAS100M50	R330	CARBONFILM RESISTOR	RD1/6PM393J
			C609, 610	CERAMIC CAPACITOR	CCCSL101K500	C1011	CERAMIC CAPACITOR	CKCYF103Z50			(CT-J300WR)
			C611, 612	CERAMIC CAPACITOR	RG1005	C1012	ELECTR. CAPACITOR	CEAS470M16			(CT-J400WR)
			C613	AXIAL CAPACITOR	CKPUB101K50	C1501, 1502	AUDIO FILM CAPACITOR	CFTXA223J50 (CT-J400WR only)			(CT-J300WR)
			C614	CERAMIC CAPACITOR	CGCYX104M25	C1503	CERAMIC CAPACITOR	CGCYX104K25 (CT-J400WR only)	R331	CARBONFILM RESISTOR	RD1/6PM□□□J
			C615	ELECTR. CAPACITOR	CEAS100M50	C1504	ELECTR. CAPACITOR	CEASR47M50 (CT-J400WR only)	R332	CARBONFILM RESISTOR	RD1/6PM683J
			C616	ELECTR. CAPACITOR	CEAS4R7M50	C1505	AUDIO FILM CAPACITOR	CFTXA103J50 (CT-J400WR only)			(CT-J400WR)
			C617	ELECTR. CAPACITOR	CEAS100M50	C1506	AUDIO FILM CAPACITOR	CFTXA122J50 (CT-J400WR only)	R333-340	CARBONFILM RESISTOR	RD1/6PM□□□J
			C701, 702	ELECTR. CAPACITOR	CEAS100M50	C1507	ELECTR. CAPACITOR	CEAS47M50 (CT-J400WR only)			(CT-J400WR only)
			C703, 704	ELECTR. CAPACITOR	CEAS470M16	C1508	CERAMIC CAPACITOR	CKCYF103Z50 (CT-J400WR only)	R401	CARBONFILM RESISTOR	RD1/2LR□□□J
			C705	ELECTR. CAPACITOR	CEAS4R7M50	C1509	AUDIO FILM CAPACITOR	CFTXA333J50 (CT-J400WR only)	R402, 403	CARBONFILM RESISTOR	RD1/6PM□□□J
			C706	ELECTR. CAPACITOR	CEAS470M16						RCN1022
			C707-709	CERAMIC CAPACITOR	CKCYB103K50						RD1/6PM□□□J
			C710	CERAMIC CAPACITOR	CKCYF103Z50						
			C711, 712	CERAMIC CAPACITOR	CGCYX104K25						
			C713	AXIAL CAPACITOR	CKPUB101K50						
			C714	ELECTR. CAPACITOR	CEASR47M50						
			C715	AXIAL CAPACITOR	CKPUB271K50						
			C716	ELECTR. CAPACITOR	CEASR22M50						
			C717	CERAMIC CAPACITOR	CKCYF103Z50						

Mark No.	Description	Part No.
R407	CARBONFILM RESISTOR	RCN1036
R408	CARBONFILM RESISTOR	RCN1044
R409-421	CARBONFILM RESISTOR	RD1/6PM□□□J
R428	CARBONFILM RESISTOR	RD1/6PM□□□J
R463-466	CARBONFILM RESISTOR	RD1/6PM□□□J
R601-609	CARBONFILM RESISTOR	RD1/6PM□□□J
R701-709	CARBONFILM RESISTOR	RD1/6PM□□□J
R711-724	CARBONFILM RESISTOR	RD1/6PM□□□J
R726-733	CARBONFILM RESISTOR	RD1/6PM□□□J
R737-740	CARBONFILM RESISTOR	RD1/6PM□□□J
R751-762	CARBONFILM RESISTOR	RD1/6PM□□□J
R763	RESISTOR ARRAY (22K)	RAST□□□J
R764	CARBONFILM RESISTOR	RD1/6PM□□□J
R765	LADDER RESISTOR	RCX1020
R767	CARBONFILM RESISTOR	RD1/6PM□□□J
R768	CARBONFILM RESISTOR	RD1/6PM□□□J
R805	METALFILM RESISTOR	RN1/6PO□□□□F
R806-810	CARBONFILM RESISTOR	RD1/6PM□□□J
R804, 854 (10K)		RCN1049
R816	CARBONFILM RESISTOR	RD1/6PM□□□J
R818		RN1/6PO□□□□F
R855	METALFILM RESISTOR	RN1/6PO□□□□F
R856-860	CARBONFILM RESISTOR	RD1/6PM□□□J
R866	CARBONFILM RESISTOR	RD1/6PM□□□J
R901-904	CARBONFILM RESISTOR	RD1/6PM□□□J
R906-908	CARBONFILM RESISTOR	RD1/6PM□□□J
R910	CARBONFILM RESISTOR	RD1/6PM□□□J
R912	CARBONFILM RESISTOR	RD1/6PM□□□J
R915-925	CARBONFILM RESISTOR	RD1/6PM□□□J
R927-929	CARBONFILM RESISTOR	RD1/6PM□□□J
R932	RESISTOR ARRAY 100K	RAST□□□J
R934, 935	CARBONFILM RESISTOR	RD1/6PM□□□J
R938	CARBONFILM RESISTOR	RD1/6PM□□□J
R942	CARBONFILM RESISTOR	RD1/6PM□□□J
R949	RESISTOR ARRAY (22K)	RA4T□□□J
R950-952	CARBONFILM RESISTOR	RD1/6PM□□□J
R954	RESISTOR ARRAY (22K)	RA4T□□□J
R955		RD1/6PM□□□J (CT-J400WR only)
R956-961	CARBONFILM RESISTOR	RD1/6PM□□□J
R966		RD1/6PM□□□J (CT-J300WR only)
R977-991	CARBONFILM RESISTOR	RD1/6PM□□□J
R1001	CARBONFILM RESISTOR	RD1/6PM□□□J
R1002	CARBONFILM RESISTOR	RCN1046
R1506-1519	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
R1520	RESISTOR ARRAY (10K)	RA7T□□□J (CT-J400WR only)
R1522	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
R1524, 1525	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
R1530-1535	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
R1537	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
R1539	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)

Mark No.	Description	Part No.
R1541-1550	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
VR101-104	VR	RCP1046
VR301, 302	VR	RCP1046
YR601, 602	VR	RCP1046
YR802	VR	RCP1045
YR851	VR	RCP1020
YR852	VR	RCP1045
YR1501, 1502	VR	RCP1048 (CT-J400WR only)
OTHERS		
CN801	CONNECTOR (12P)	KPE12
CN851	CONNECTOR (14P)	KPE14
CN904	CONNECTOR	HLEM29S-1
X901	CERAMIC RESONATOR (4.19MHz)	VSS1014
TRANSISTOR UNIT		
SEMICONDUCTORS		
△ IC1001	REGULATOR IC	NJW7812FA
OPERATE 1 UNIT		
SEMICONDUCTORS		
D1301, 1302	LED	SEL6410G
D1303	DIODE	1SS254
SWITCHES		
S1301-1305	SWITCH	RSG1033
S1306	SWITCH	RSN1037
RESISTORS		
R1301, 1302	CARBONFILM RESISTOR	RD1/6PM□□□J
OPERATE 2 UNIT		
SEMICONDUCTORS		
D1401, 1402	LED	SEL6410G
SWITCHES		
S1401-1405	SWITCH	RSG1033
S1406	SWITCH	RSN1037
RESISTORS		
R1401-1404	CARBONFILM RESISTOR	RD1/6PM□□□J
DISPLAY UNIT		
SEMICONDUCTORS		
D1201-1207	DIODE	1SS254
D1208		SEL6C10R (CT-J400WR) SEL6410E (CT-J300WR) SEL6C10R
D1209-1212		
SWITCHES		
S1201-1206	SWITCH	RSG1033
S1208-1210	SWITCH	RSG1033
RESISTORS		
R1201-1203	CARBONFILM RESISTOR	RD1/6PM□□□J
VR1201	VARIABLE RESISTOR	RCW1009
FL HOLDER (ABS)		RNK1755
OTHERS		
CN904	CONNECTOR	HLEM29S-1
V1201		RAW1097

Mark No.	Description	Part No.
5.2 FOR CT-J200WR		
LIST OF ASSEMBLIES		
⊙	MOTHER UNIT	RWM1479
	├ MAIN UNIT	
	└ TRANSISTOR UNIT	
⊙	SUB UNIT	RWM1480
	├ OPERATE 1 UNIT	
	├ OPERATE 2 UNIT	
	└ DISPLAY UNIT	
MAIN UNIT		
SEMICONDUCTORS		
IC101	PB-EQ AMP IC	CXA1115BP
IC202	DOLBY IC	HAJ2136A
IC301	REC EQUALIZER IC	CXA1198AP
IC302	LOGIC IC	TC4051BP
IC451	OP-AMP IC	NJM4558DX
IC702	IC	BA15218N
IC901	CPU (C-MOS)	PD3207A
△ IC1002	REGULATOR IC	NJW7812FA
△ IC1003	REGULATOR IC	NJW78M05FA
△ Q101, 102	TRANSISTOR	XDC124ES
Q103-106	DIGITAL TRANSISTOR	XDC114ES
Q107, 108	N-FET	ZSK373
Q109, 110	TRANSISTOR	2SC3311A
Q111-114	TRANSISTOR	XDC124ES
Q115	TRANSISTOR	XDA124ES
Q116	TRANSISTOR	XDC124ES
Q201	TRANSISTOR	XDC124ES
Q301, 302	TRANSISTOR	2SC3311A
Q311	TRANSISTOR	XDA124ES
Q313, 314	DIGITAL TRANSISTOR	DTC114TS
Q401, 402	TRANSISTOR	2SC1815
Q403	TRANSISTOR	2SD1302
Q404	TRANSISTOR	2SB1238X
Q406	TRANSISTOR	2SC3311A
Q451, 452	TRANSISTOR	2SC3311A
Q453, 454	TRANSISTOR	2SC1740SLN
Q705	TRANSISTOR	DTC124TS
Q707, 708	TRANSISTOR	2SD2144S
Q709	TRANSISTOR	XDA124ES
Q802	TRANSISTOR	2SA1309A
Q803	TRANSISTOR	XDC124ES
Q804	TRANSISTOR	2SA1286
Q805	TRANSISTOR	XDC124ES
Q807	TRANSISTOR	2SC3246
Q852	TRANSISTOR	2SA1309A
Q853	TRANSISTOR	XDC124ES
Q854	TRANSISTOR	2SA1286
Q855	TRANSISTOR	XDC124ES
Q857	TRANSISTOR	2SC3246
Q901-903	TRANSISTOR	2SC3311A
Q905-908	DIGITAL TRANSISTOR	XDC114ES

Mark No.	Description	Part No.
Q909	TRANSISTOR	XDC124ES
Q951	DIGITAL TRANSISTOR	XDA114ES
Q952	DIGITAL TRANSISTOR	XDC114ES
Q953	DIGITAL TRANSISTOR	XDA114ES
Q959	TRANSISTOR	2SC3311A
D101-112	DIODE	1SS254
D312	DIODE	1SS254
D401	DIODE	1SS254
D404, 405	DIODE	1SS254
D451, 452	DIODE	1SS254
D702-704	DIODE	1SS254
D801	DIODE	1SS252
D802, 803	DIODE	1SS254
D806	DIODE	1SS254
D851	DIODE	1SS252
D852-856	DIODE	1SS254
D901	DIODE	1SS254
D905-908	DIODE	1SS254
D910, 911	DIODE	1SS254
D913, 914	DIODE	1SS254
D917	DIODE	1SS254
D951	DIODE	1SS254
△ D1001	DIODE	1SR35-100AVL
△ D1002	ZENER DIODE	MTZ5.1B
COILS/TRANSFORMERS		
L101, 102	COIL	RTF1022
L301, 302	COIL	RTF1004
L402	RADIAL INDUCTOR	LFA121K
T401	OSC TRANSFORMER	RTD1066
F201, 202	FILTER	RTF1059
CAPACITORS		
C101, 102	AXIAL CAPACITOR	CKPUB561K50
C103, 104	AXIAL CAPACITOR	CKPUB591K50
C105, 106	CERAMIC CAPACITOR	CKPUB102K50
C107-110	ELECTR. CAPACITOR	CEANL100M16
C111, 112	ELECTR. CAPACITOR	CEANL101M10
C113, 114	AXIAL CAPACITOR	CKPUB101K50
C117, 118	AUDIO FILM CAPACITOR	CFTXA822J50
C119, 120	ELECTR. CAPACITOR	CEAS4R7M50
C121, 122	AUDIO FILM CAPACITOR	CFTXA223J50
C123, 124	AXIAL CAPACITOR	CKPUB471K50
C125, 126	AXIAL CAPACITOR	CKPUB591K50
C127, 128	AXIAL CAPACITOR	CKPUB681K50
C129, 130	ELECTR. CAPACITOR	CEAS470M16
C131, 132	AXIAL CERAMIC C.	CCPUSL100J50
C133	ELECTR. CAPACITOR	CEASR10M50
C201, 202	ELECTR. CAPACITOR	CEAS010M50
C207-210	ELECTR. CAPACITOR	CEAS4R7M50
C216	ELECTR. CAPACITOR	CEASR33M50
C219	ELECTR. CAPACITOR	CEASR33M50
C221, 222	ELECTR. CAPACITOR	CEAS4R7M50
C225	ELECTR. CAPACITOR	CEAS470M16
C226	ELECTR. CAPACITOR	CEAS221M16
C228	ELECTR. CAPACITOR	CEAS220M25
C301, 302	AXIAL CAPACITOR	CKPUB221K50

Mark No.	Description	Part No.	Mark No.	Description	Part No.	Mark No.	Description	Part No.
C303, 304	ELECTR. CAPACITOR	CEAS4R7M50	R401	CARBONFILM RESISTOR	RD1/2LF□□□J	OPERATE 1 UNIT		
C305, 306	ELECTR. CAPACITOR	CEAS471M10	R402, 403	CARBONFILM RESISTOR	RD1/6PM□□□J	SEMICONDUCTORS		
C307, 308	ELECTR. CAPACITOR	CEASR68M50	R404	CARBONFILM RESISTOR	RCN1022	D1303	DIODE	1SS254
C309, 310	ELECTR. CAPACITOR	CEAS2R2M50	R405	CARBONFILM RESISTOR	RD1/6PM□□□J	SWITCHES		
C311	ELECTR. CAPACITOR	CEAS331M16	R407	CARBONFILM RESISTOR	RCN1026	S1301-1305	SWITCH	RSG1033
C313	CERAMIC CAPACITOR	CKCYF473Z50				S1306	SWITCH	RS41037
C401, 402	CERAMIC CAPACITOR	CCCSL101K500	R408	CARBONFILM RESISTOR	RCN1020	OPERATE 2 UNIT		
C403	CAPACITOR	CQPA162J100	R409-412	CARBONFILM RESISTOR	RD1/6PM□□□J	SWITCHES		
C404	AUDIO FILM CAPACITOR	CFTXA123J50	R415, 416	CARBONFILM RESISTOR	RD1/6PM□□□J	S1401-1405	SWITCH	RSG1033
C405	AUDIO FILM CAPACITOR	CFTXA153J50	R418-420	CARBONFILM RESISTOR	RD1/6PM□□□J	S1406	SWITCH	RS41037
C406, 407	AUDIO FILM CAPACITOR	CFTXA103J50	R451-469	CARBONFILM RESISTOR	RD1/6PM□□□J	OPERATE 2 UNIT		
C408-410	ELECTR. CAPACITOR	CEAS470M16	R711-724	CARBONFILM RESISTOR	RD1/6PM□□□J	SWITCHES		
C451-454	ELECTR. CAPACITOR	CEAS010M50	R726-730	CARBONFILM RESISTOR	RD1/6PM□□□J	S1401-1405	SWITCH	RSG1033
C455	ELECTR. CAPACITOR	CEAS100M50	R733	CARBONFILM RESISTOR	RD1/6PM□□□J	S1406	SWITCH	RS41036
C456	ELECTR. CAPACITOR	CEASR33M50	R737, 738	CARBONFILM RESISTOR	RD1/6PM□□□J	DISPLAY UNIT		
C711, 712	CERAMIC CAPACITOR	GCCYX104K25	R741, 742	CARBONFILM RESISTOR	RD1/6PM□□□J	SEMICONDUCTORS		
C713	AXIAL CAPACITOR	CKPUB101K50	R805	METALFILM RESISTOR	RN1/6PQ□□□□J	D1201-1203	DIODE	1SS254
C714	ELECTR. CAPACITOR	CEASR47M50	R804, 854(10K)		RCN1049	D1205-1207	DIODE	1SS254
C715	AXIAL CAPACITOR	CKPUB271K50	R806-810	CARBONFILM RESISTOR	RD1/6PM□□□J	D1208	LED	SEL6410E
C716	ELECTR. CAPACITOR	CEASR22M50	R816	CARBONFILM RESISTOR	RD1/6PM□□□J	D1209-1214		SEL6C10R
C717	CERAMIC CAPACITOR	CKCYF103Z50	R818		RN1/6PQ□□□□J	D1215-1218	LED	SEL6410G
C801	CERAMIC CAPACITOR	CKCYF473Z50	R855	METALFILM RESISTOR	RN1/6PQ□□□□J	D1219		SEL6C10R
C901	ELECTR. CAPACITOR	CEAS4R7M50	R856-860	CARBONFILM RESISTOR	RD1/6PM□□□J	SWITCHES		
C905	CERAMIC CAPACITOR	CKCYB102K50	R866	CARBONFILM RESISTOR	RD1/6PM□□□J	S1201-1206	SWITCH	RSG1033
C906	CERAMIC CAPACITOR	CKCYF103Z50	R906-908	CARBONFILM RESISTOR	RD1/6PM□□□J	S1210	SWITCH	RSG1033
C907	ELECTR. CAPACITOR	CEAS470M16	R910	CARBONFILM RESISTOR	RD1/6PM□□□J	RESISTORS		
C908	CERAMIC CAPACITOR	CKCYF103Z50	R912	CARBONFILM RESISTOR	RD1/6PM□□□J	R1201-1209	CARBONFILM RESISTOR	RD1/6PM□□□J
C912, 913	CERAMIC CAPACITOR	CKCYF103Z50	R915-925	CARBONFILM RESISTOR	RD1/6PM□□□J	OTHERS		
C917	CERAMIC CAPACITOR	CKCYF103Z50	R927-929	CARBONFILM RESISTOR	RA5□□□J	CN9040	CONNECTOR	HLEM17S-1
C918	ELECTR. CAPACITOR	CEAS100M50	R932	RESISTOR ARRAY 100K	RD1/6PM□□□J			
C919, 920	CERAMIC CAPACITOR	CKCYB102K50	R934, 935	CARBONFILM RESISTOR	RD1/6PM□□□J			
C951	CERAMIC CAPACITOR	CKCYF103Z50	R938	CARBONFILM RESISTOR	RD1/6PM□□□J			
C952	ELECTR. CAPACITOR	CEAS4R7M50	R942	CARBONFILM RESISTOR	RD1/6PM□□□J			
C1001	ELECTR. CAPACITOR	CEAS471M25	R949	RESISTOR ARRAY (22K)	RA4□□□J			
C1002	ELECTR. CAPACITOR	CEAS221M16	R950-953	CARBONFILM RESISTOR	RD1/6PM□□□J			
C1003	CERAMIC CAPACITOR	CKCYF473Z50	R954	RESISTOR ARRAY (22K)	RA4□□□J			
C1004	ELECTR. CAPACITOR	CEAS101M25	R955	CARBONFILM RESISTOR	RD1/6PM□□□J			
C1005	ELECTR. CAPACITOR	CEAS101M16	R957-964	CARBONFILM RESISTOR	RD1/6PM□□□J			
C1006	CERAMIC CAPACITOR	CKCYF473Z50	R977-991	CARBONFILM RESISTOR	RD1/6PM□□□J			
C1007	ELECTR. CAPACITOR	CEAS222M25	R1001	CARBONFILM RESISTOR	RD1/6PM□□□J			
C1008	ELECTR. CAPACITOR	CEAS470M16	R1002	CARBONFILM RESISTOR	RCN1046			
C1010	ELECTR. CAPACITOR	CEAS100M50	VR101-104	VR	RCP1046			
C1011	CERAMIC CAPACITOR	CKCYF103Z50	VR301, 302	VR	RCP1046			
C1012	ELECTR. CAPACITOR	CEAS470M16	VR401, 402	VR	RCP1049			
RESISTORS			VR802	VR	RCP1045			
R101-135	CARBONFILM RESISTOR	RD1/6PM□□□J	VR851	VR	RCP1020			
R202	CARBONFILM RESISTOR	RD1/6PM□□□J	VR852	VR	RCP1045			
R210	CARBONFILM RESISTOR	RD1/6PM□□□J	OTHERS					
R211, 212	CARBONFILM RESISTOR	RCN1028	CN801	CONNECTOR (12P)	KPE12			
R216	CARBONFILM RESISTOR	RD1/6PM□□□J	CN851	CONNECTOR (14P)	KPE14			
R221-224	CARBONFILM RESISTOR	RD1/6PM□□□J	CN904	CONNECTOR	HLEM17S-1			
R301-324	CARBONFILM RESISTOR	RD1/6PM□□□J	X901	CERAMIC RESONATOR (4.19MHz)	YSS1014			
R337-340	CARBONFILM RESISTOR	RD1/6PM□□□J	TRANSISTOR UNIT					
R343-349	CARBONFILM RESISTOR	RD1/6PM□□□J	SEMICONDUCTORS					
R351-353	CARBONFILM RESISTOR	RD1/6PM□□□J	△ IC1001	REGULATOR IC	NJM7812FA			

6. ADJUSTMENTS

6.1 MECHANICAL ADJUSTMENT

These adjustments must be performed in the TEST MODE.

- Entering the TEST MODE
- Set the Reverse Mode Switch to \curvearrowright , and short the TEST MODE jumper wire.
- Releasing the TEST MODE
- Press the STOP keys of DECKs I and II simultaneously.

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	check	Play back for 1 minute and then press the FF or REW key. * 1	
2		Double speed PLAY			6000 Hz \pm 600 Hz	
3		Normal speed PLAY			Press the FF or REW key after checking.	
4	II	Normal speed PLAY	(3 kHz)	VR851	Play back for 1 minute and then press the FF or REW key. * 1	
5		Double speed PLAY			Within \pm 10Hz of step 2 (deck I) check value.	
6		Normal speed PLAY			Press the FF or REW key after checking.	
7	I	Normal speed PLAY	VR802	VR802	3000 Hz \pm 5 Hz	
8	II	Normal speed PLAY			VR852	

* 1: If the FF or REW key is pressed during PLAY, double speed mode is selected.

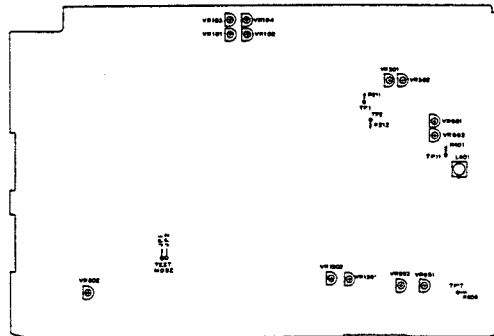


Fig. 6-1 Adjusting points

• Door damping check and adjustment

- When assembling the front panel attach the door spring to the position (a) according to fig. 6-2, and stand the front panel assembly straight up as shown in fig. 6-3.
- Open the doors of DECK I and DECK II simultaneously, and when one of the doors is fully open, confirm that the disparity between the two doors is within 15 mm.
- If the specification described in steps 2 is not satisfied, change the door spring position as follows and adjust.
 - When the door of DECK I opens slower than the one of DECK II: Change the DECK I door spring to position (b).
 - When the door of DECK I opens faster than the one of DECK II: Change the DECK II door spring to position (b). (Basically adjust the door which opens slower to the faster one.)

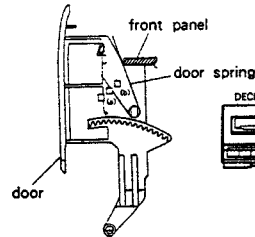


Fig. 6-2

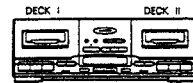


Fig. 6-3

6.2 ELECTRICAL ADJUSTMENTS

Adjustment Conditions

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

Test Tapes

- STD-331E : Playback adjustments (See Fig. 6-4)
STD-631 : NORMAL blank tape
STD-620 : CrO₂ blank tape
STD-610 : METAL blank tape

※ As the reference recording level is 250 nwb/m for STD-331E, the recording level will be higher by 4 dB for STD-331B (160 nwb/m). When adjusting, pay careful attention to the type of tape used.

List of Adjustments

Playback sections

- Head azimuth adjustment.
- Playback level adjustment.

Recording sections

- Bias oscillator adjustment.
- Recording bias adjustment.
- Recording level adjustment.
- AUTO BLE adjustment.

NOTE: This unit has an automatic tape selection feature.

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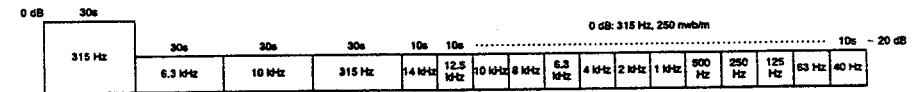


Fig. 6-4 Constants of the test tape STD-331E

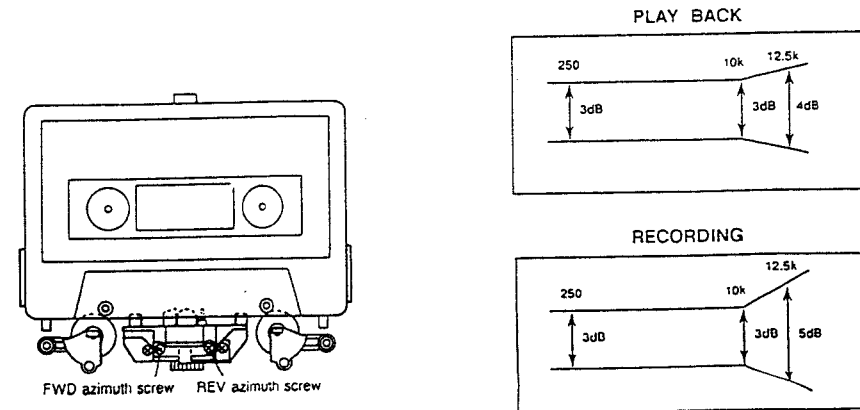


Fig. 6-5 Head azimuth adjustment

Fig. 6-6 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR103, VR104 (Deck I) or VR101, VR102 (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-331E test tape.	Head azimuth adjustment screw. (See Fig. 6-5)	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-331E test tape.	Deck I	VR103 (Lch) VR104 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	-8.7 dBv (CT-J400WR/J300WR) -3.2 dBv (CT-J200WR)
			Deck II	VR101 (Lch) VR102 (Rch)		

RECORDING SECTION

1. Bias Oscillator Frequency Adjustment (CT-J400WR/CT-J300WR)

- 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 II L401	TP. 11	108 ± 0.3 kHz	

2. Recording Bias Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (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 dB input level and playback.	Deck II	VR801 (Lch) VR802 (Rch) (CT-J400WR/ J300WR) VR401 (Lch) VR402 (Rch) (CT-J200WR)	LINE OUT	Repeatedly record, playback and adjust so that the playback level of 6.3 kHz signal becomes +0.5 dB ± 0.5 dB when compared with the 315 Hz signal.

3. Recording Level Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (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/-4 dB signal to the line input terminals, load the STD-631 test tape.	REC level control volume	TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBv (CT-J400WR/J300WR) -7.7 dBv (CT-J200WR)	
3.	STOP	Set the DOLBY NR switch to the ON position. (DOLBY B)				
4.	REC/ PLAY	Record the above signal onto the STD-631 test tape, and playback.	Deck II VR301 (Lch) VR302 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes -11.2 dBv (CT-J400WR/J300WR) -7.7 dBv (CT-J200WR)	
5.	STOP	Set the TAPE SELECTOR switch to the CrO2 position.				
6.	REC/ PLAY	Record the above signal onto the STD-620 test tape, and playback.	Check	TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBv ± 1.5 dB (CT-J400WR/J300WR) -7.7 dBv ± 1.5 dB (CT-J200WR)	
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 (Lch) TP. 2 (Rch)	-11.2 dBv ± 1.5 dB (CT-J400WR/J300WR) -7.7 dBv ± 1.5 dB (CT-J200WR)	

4. AUTO BLE Adjustment

- BLE adjustment should be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the test mode.
Short JP1 and JP2, and turn on the power switch to set the test mode.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.		Set to test mode.	-	-	-	
2.		Press the MUTE key on the front panel.	Level meter (Rch)	VR1501	Adjust so that -4 dB on the level meter lights up. *1	400 Hz adjustment
3.		Press the PAUSE key.		VR1502	Adjust so that -4 dB on the level meter lights up. *1	10 kHz adjustment

*1: Adjustment is performed starting with the lower level, by adjusting to the point where -6 dB changes to -4 dB.

6. REGLAGE

6.1 RÉGLAGES MECANIQUES

Ces réglages doivent être réalisés en TEST MODE.

- Commutation de TEST MODE
Positionner l'inverseur sur TEST et court-circuiter le câble de connexion.
- Relâchement de TEST MODE
Appuyer simultanément sur les touches STOP de DECK I et II.

1. Réglage et vérification de la vitesse de défilement 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)	Lire pendant 1 minute, puis appuyer sur la touche FF ou REW. *1		
2		Lecture à vitesse double		Vérifier	6000 Hz \pm 600 Hz	
3	Lecture à vitesse normale	Appuyer sur la touche FF ou REW après contrôle.				
4	Lecture à vitesse normale	Lire pendant 1 minute, puis appuyer sur la touche FF ou REW. *1				
5	II	Lecture à vitesse double		VR851	Dans la limite de ± 10 Hz de la valeur de vérification de l'étape 2 (platine I)	
6		Lecture à vitesse normale		Appuyer sur la touche FF ou REW après contrôle.		
7	I	Lecture à vitesse normale		VR802	3000 Hz \pm 5 Hz	
8	II	Lecture à vitesse normale		VR852	Dans la limite de ± 5 Hz de la valeur de réglage de l'étape 7 (platine I).	

*1: Le mode vitesse double est sélectionné lorsque la touche FF ou REW est enfoncée pendant la lecture PLAY.

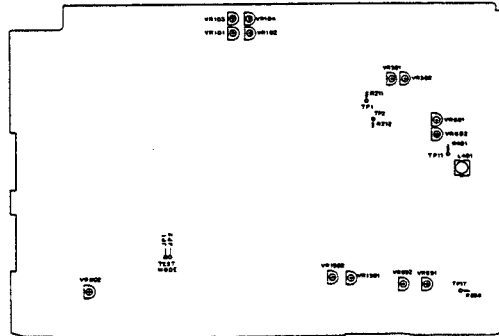


Fig. 6-1 Points de réglage

• Contrôle et réglage de l'amortissement de porte

1. Au montage du panneau avant, fixer le ressort de porte à la position (a) conformément à la fig. 6-2 et mettre debout l'ensemble de panneau avant comme illustré sur la Fig. 6-3.
2. Ouvrir simultanément les portes de la platine I (DECK I) et de la platine II (DECK II) et vérifier, lorsqu'une des portes est complètement ouverte, que la différence entre les deux portes est inférieure à 15 mm.
3. Si la spécification décrite dans les étapes 2 n'est pas satisfaisante, changer comme suit la position du ressort de porte et régler.
- Lorsque la porte de la Platine I s'ouvre plus lentement que celle de la Platine II: Placer le ressort de porte de la Platine I sur la position (b).
- Lorsque la porte de la Platine I s'ouvre plus rapidement que celle de la Platine II: Placer le ressort de porte de la Platine II sur la position (b). (En principe, ajuster la porte qui s'ouvre plus lentement à celle qui s'ouvre plus vite)

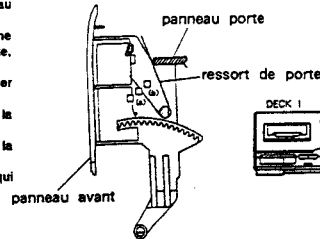


Fig. 6-2

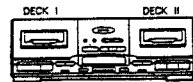


Fig. 6-3

6.2 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 0 dBV=1 Vrms.
5. Connecter une résistance de charge de 50 k Ω (tolérance 47k à 52 k Ω) 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-331E : Réglages de la lecture (Voir fig. 6-4)
STD-631 : Bande vierge de type normal
STD-620 : Bande vierge de type chrome
STD-610 : Bande vierge de type métal

* Le niveau d'enregistrement de référence étant de 250 nwb/m pour le STD-331E, le niveau d'enregistrement sera supérieur de 4 dB pour le STD-331B (160 nwb/m). Pour le réglage, tenir compte du type de bande utilisé.

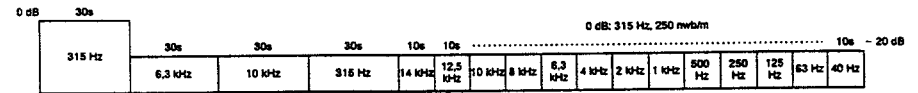


Fig. 6-4 Constantes de la bande d'essai STD-331E

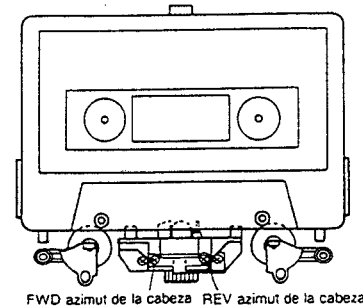


Fig. 6-5 Réglage de l'azimut de la tête

Liste des réglages

Sections de lecture

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

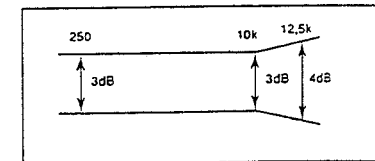
Sections d'enregistrement

1. Réglage de l'oscillateur de polarisation.
2. Réglage de la polarisation d'enregistrement.
3. Réglage du niveau d'enregistrement.
4. Réglage de AUTO BLE.

REMARQUE:

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

REPRODUCCION



GRABACION

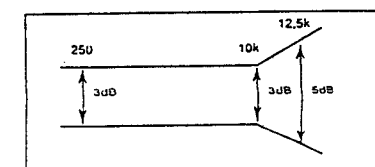


Fig. 6-6 Zone de réponse en fréquence

SECTION DE LECTURE

1. Réglage de l'azimut de la tête

• Tourner VR103, VR104 (Platine I) ou VR101, VR102 (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-331E.	Vis de réglage de l'azimut de la tête. (Voir fig. 6-5)	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-331E.	Platine I	VR103 (can. G) VR104 (can. D)	TP. 1 (can. G) TP. 2 (can. D)	-6.7 dBv (CT-J400WR/J300WR) -3.2 dBv (CT-J200WR)
			Platine II	VR101 (can. G) VR102 (can. D)		

SECTION D'ENREGISTREMENT

1. Réglage de la fréquence de l'oscillateur de polarisation (CT-J400WR/CT-J300WR)

• 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-810 et n'introduire aucun signal.	Platine II L401	TP. 11	108 ± 0.3 kHz	

2. 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 dB et les reproduire.	Platine II	VR801 (can. G) VR802 (can. D) (CT-J400WR/J300WR) VR401 (can. G) VR402 (can. D) (CT-J200WR)	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 +0.5 dB ± 0.5 dB lorsqu'il est comparé avec le signal 315 Hz.

3. 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/-4 dB aux bornes d'entrée de ligne, charger la bande d'essai STD-831.		Volume de la commande de niveau d'enregistrement.	TP. 1 (can. G) TP. 2 (can. D)	-11.2 dBv (CT-J400WR/J300WR) -7.7 dBv (CT-J200WR)
3.	STOP	Régler le commutateur DOLBY NR sur la position ON. (DOLBY B)				
4.	REC/PLAY	Enregistrer le signal ci-dessus sur la bande d'essai STD-831 et le reproduire.	Platine II	VR301 (can. G) VR302 (can. D)	TP. 1 (can. G) TP. 2 (can. D)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau du signal devienne -11.2 dBv (CT-J400WR/J300WR) -7.7 dBv (CT-J200WR)
5.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position CrO2.				
6.	REC/PLAY	Enregistrer le signal ci-dessus sur la bande d'essai STD-820 et le reproduire.		Vérifier	TP. 1 (can. G) TP. 2 (can. D)	-11.2 dBv ± 1.5 dB (CT-J400WR/J300WR) -7.7 dBv ± 1.5 dB (CT-J200WR)
7.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position METAL.				
8.	REC/PLAY	Enregistrer le signal ci-dessus sur la bande d'essai STD-810 et le reproduire.		Vérifier	TP. 1 (can. G) TP. 2 (can. D)	-11.2 dBv ± 1.5 dB (CT-J400WR/J300WR) -7.7 dBv ± 1.5 dB (CT-J200WR)

4. Réglage de AUTO BLE.

• Le réglage BLE doit être effectué après que tous les autres réglages sont complétés.
• Ce réglage doit être effectué dans le mode d'essai.
• Passage au mode d'essai.
Court-circuiter JP1 et JP2 et enclencher l'interrupteur d'alimentation pour régler le mode d'essai.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.		Régler dans le mode d'essai.	-	-	-	
2.	-	Appuyer sur la touche MUTE du panneau avant.	L'indicateur de niveau (can. D)	VR1501	Régler de sorte que -4 dB sur l'indicateur de niveau s'allume. *1	Réglage 400 Hz
3.		Appuyer sur la touche PAUSE.		VR1502	Régler de sorte que -4 dB sur l'indicateur de niveau s'allume. *1	Réglage 10 kHz

*1: Le réglage est effectué en commençant par le niveau inférieur, en ajustant sur le point où -6 dB change en -4 dB.

6. AJUSTE

6.1 AJUSTE MECANICO

Estos ajustes deben efectuarse en el modo de prueba.

- Cómo poner el modo de prueba.
- Coloque el interruptor del modo de inversión en \square , y cortocircuite el hilo de puenteado del modo de prueba.
- Cómo cancelar el modo de prueba.
- Pulse las teclas STOP de las platinas I y II simultáneamente.

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	Reproduzca durante 1 minuto y oprima, entonces, la tecla FF o la REW. * 1		
2		PLAY (velocidad doble)		Verificar	6000 Hz \pm 600 Hz	
3		Pulse la tecla FF o la REW después de la verificación.				
4	II	PLAY (velocidad normal)	(3 kHz)	Reproduzca durante 1 minuto y oprima, entonces, la tecla FF o la REW. * 1		
5		PLAY (velocidad doble)		VR851	Dentro de un margen de \pm 10 Hz del valor de verificación del paso 2 (platina I).	
6		Pulse la tecla FF o la REW después de la verificación.				
7		PLAY (velocidad normal)		VR802	3000 Hz \pm 5 Hz	
8	II	PLAY (velocidad normal)		VR852	Dentro de un margen de \pm 5 Hz del valor de verificación del paso 7 (platina I).	

* 1: Si pulsa la tecla FF o la REW durante la reproducción, se seleccionará el modo de doble velocidad.

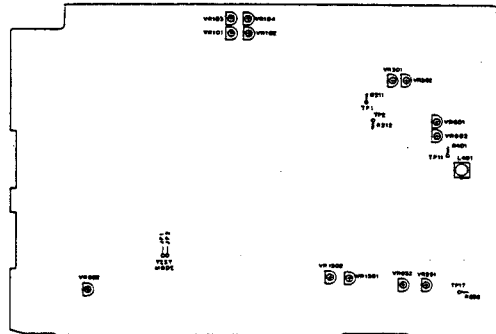


Fig. 6-1 Puntos de réglage

• Comprobación y ajuste del amortiguamiento de las puertas.

1. Cuando monte el panel frontal, fije el resorte de la puerta en la posición (a) de acuerdo con la fig. 6-2 y ponga de pie y recto el conjunto del panel delantero tal como muestra la Fig. 6-3.
2. Abra las puertas del DECK I y DECK II simultáneamente y, cuando una de las puertas esté completamente abierta, confirme que la diferencia entre las dos puertas es menor de 15 mm.
3. Si las especificaciones descritas en los pasos 2 no se satisfacen, cambie la posición del resorte de la puerta de la forma siguiente y ajústelo:
 - Cuando la puerta del DECK I se abra más lentamente que la del DECK II: Cambie el resorte de la puerta del DECK I a la posición (b).
 - Cuando la puerta del DECK I se abra más rápidamente que la del DECK II: Cambie el resorte de la puerta del DECK II a la posición (b). (Básicamente, adapte la puerta que se abre más despacio a la más rápida.)

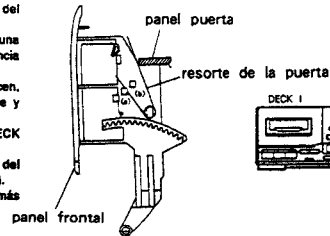


Fig. 6-2

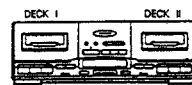


Fig. 6-3

6.2 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 k Ω (o entre 47k y 52 k Ω) 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-331E : Ajustes de reproducción (Consulte la figura 6-4)
STD-631 : Cinta virgen NORMAL
STD-620 : Cinta virgen de CrO₂
STD-610 : Cinta virgen de METAL

* Como el nivel de grabación de referencia es igual a 250 nwb/m para el STD-331E, el nivel de grabación será 4 dB mayor para el STD-331B (160 nwb/m). Al realizar el ajuste, preste suma atención al tipo de cinta que se está utilizando.

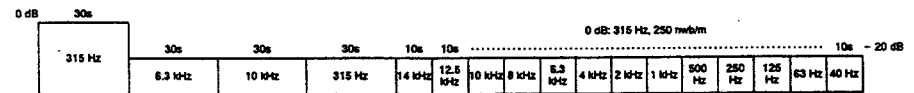


Figura 6-4 Constantes de la cinta de prueba STD-331E

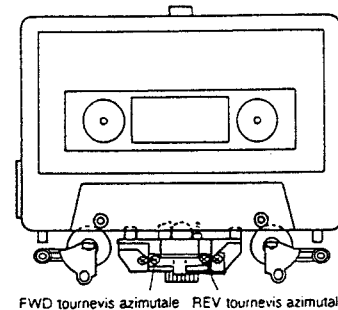


Figura 6-5 Ajuste de azimut de la cabeza

Lista de ajustes

Secciones de reproducción

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

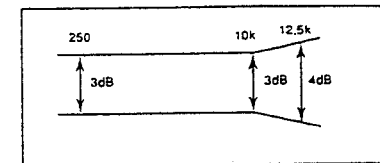
Secciones de grabación

1. Ajuste del oscilador de polarización
2. Ajuste de la polarización de grabación
3. Ajuste del nivel de grabación
4. Ajuste AUTO BLE

NOTA:

Esta unidad posee una función de selección automática de cinta.

LECTURE



ENREGISTREMENT

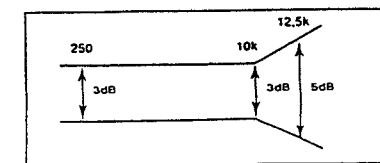


Figura 6-6 Zona de respuesta de frecuencia

SECCIÓN DE REPRODUCCIÓN

1. Ajuste del azimut de la cabeza

- Poner VR103, VR104 (platina I) o VR101, VR102 (platina II) en las posiciones del centro mecánico.

N.º	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-331E.	Tomillo de ajuste del azimut de la cabeza. (Vea la figura 6-5)	LINE OUT	Nivel máximo de la señal de reproducción.	
2.	STOP	Bloquee el tomillo 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.º	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-331E.	Platina I	VR103 (Lch) VR104 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	-8.7 dBv (CT-J400WR/J300WR) -3.2 dBv (CT-J200WR)
			Platina II	VR101 (Lch) VR102 (Rch)		

SECCIÓN DE GRABACIÓN

1. Ajuste de la frecuencial del oscilador de polarización (CT-J400WR/CT-J300WR)

- Ajuste el oscilador de polarización con las platinas puestas simultáneamente 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.	REC	Introduzca la cinta de prueba STD-810 sin señal de entrada.	Platina II L401	TP. 11	106 ± 0.3 kHz	

2. 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 dB y reproduzca.	Platina II	VR801 (Lch) VR802 (Rch) (CT-J400WR/ J300WR) VR401 (Lch) VR402 (Rch) (CT-J200WR)	LINE OUT	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción de 6.3 kHz sea de +0.5 dB ± 0.5 dB cuando se compare con la señal de 315 Hz.

3. 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/-4 dB a los terminales de entrada de línea e introduzca la cinta de prueba STD-831.	Control de nivel de grabación.	TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBv (CT-J400WR/J300WR) -7.7 dBv (CT-J200WR)	
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-831 y reproduzca.	Platina II VR301 (Lch) VR302 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción sea de -11.2 dBv (CT-J400WR/J300WR) -7.7 dBv (CT-J200WR)	
5.	STOP	Ponga el conmutador TAPE SELECTOR en la posición CrO2.				
6.	REC/PLAY	Grabe la señal de arriba en la cinta de prueba STD-820 y reproduzca.	Verifique	TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBv ± 1.5dB (CT-J400WR/J300WR) -7.7 dBv ± 1.5dB (CT-J200WR)	
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-810 y reproduzca.	Verifique	TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBv ± 1.5dB (CT-J400WR/J300WR) -7.7 dBv ± 1.5dB (CT-J200WR)	

4. Ajuste AUTO BLE

- El ajuste BLE debe efectuarse después de haber terminado todos los otros ajustes.
- Este ajuste debe efectuarse en el modo de prueba.
- Cómo establecer el modo de prueba.
Cortocircuite JP1 y JP2, y conecte el interruptor de corriente para establecer el modo de prueba.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.		Establezca el modo de prueba.	-	-	-	
2.	-	Pulse la tecla MUTE del panel delantero.	En medidor de nivel (Rch)	VR1501	Ajuste de modo que se encienda -4 dB en el medidor de nivel. *1	Ajuste de 400 Hz
3.		Pulse la tecla PAUSE.		VR1502	Ajuste de modo que se encienda -4 dB en el medidor de nivel. *1	Ajuste de 10 kHz

*1: El ajuste se efectúa empezando con el nivel inferior y ajustando el punto en donde -6 dB cambia a -4 dB.

7. IC DESCRIPTIONS

● IC901, PD3207A

Pin Function

Pin No.	Name	Function
1	S4	S0 to S7 perform FL segment input, key output, and level meter scan output.
2	S3	
3	S2	
4	S1	
5	S0	
6	G0	G0 to G5 perform FL grid output.
7	G1	
8	G2	
9	G3	
10	G4	
11	G5	
12	METER RESET	Resets the meter every time peak detection is performed during ASES peak search. RESET at "H". During BLE, RECOVERY FAST at "H".
13	SONG	Inputs the signal detecting the interval between songs during MS. Interval between songs at "L".
14	2-FWD LED	Displays the Side 2 FWD direction LED. LED lights up at "H".
15	2-REV LED	Displays the Side 2 REV direction LED. LED lights up at "H".
16	BLE/SKIP LED	Displays the BLE (SKIP) LED. LED lights up at "H".
17	2-REC LED	Displays the Side 2 REC LED. LED lights up at "H".
18	METER L	Pins which input the level during BLE, ASES when the level meter lights up. Synchronizes with the level scanning of Pins S0 to S4, takes in the "H" and "L" of the comparator output, and determines the level.
19	METER R	
20	S1 ENA	Sets the S1 mode at "H".
21	S01 ENA	Sets the S01 mode at "H".
22	BLE DATA	Communication data with the BLE expansion IC.
23	BLE CLK	Communication clock with expansion IC BU2040.
24	2-MOTOR	Turns on the 2-mechanism motor at "H".
25	2-SOL	Turns on the 2-mechanism solenoid at "H".
26	2-BIAS	Turns on the BIAS oscillator. BIAS ON at "H".
27	2-PB	Switches the REC and PB heads. Normally level "L". Becomes "H" during PLAY and MS, and the PB head turns on.
28	SD	System bus data. Functions as an input pin normally. Becomes an output pin when output is permitted.
29	ENA/REQ	Functions as an output pin normally. During communication, becomes an input mode, and determines the permission or prohibition of communication. Normally level "H".
30	SCK	System bus clock. Normally level "H".
31	FLRST	External interruption pin for key scan input. Interruption begins when G5 falls.
32	VCC	Power supply pin. +5V.

Pin No.	Name	Function
33	LINE MUTE	Turns off during PLAY. LINE MUTE ON at "L".
34	2-REC MUTE	Turns off during REC. However, turns on during space mute. REC MUTE ON at "H".
35	ENCODE	Becomes "H" when 1 or 2 mecha is during PLAY or MS. Switches the DECODE and ENCODE of the Dolby IC.
36	VR CONT	Controls the attenuation amount of the electronic VR using the PWM wave. The attenuation amount is 0 at "L", and infinite at "H".
37	VR FREE	Frees the electronic VR control from the manual VR, and sets the control by CPU. Always at level "L" except during ASES, and BLE.
38	1-MOTOR	Turns on the 1-mechanism capstan motor at "H".
39	1-SOL	Turns on the 2-mechanism solenoid at "H".
40	X2CONT	Controls the speeds of both mecha capstan motors. Speed doubles at "L".
41	2-SENS	SENS 1 and 2 input the sensing pulse from the reel table, determines tape end. Used for the tape counter display, etc.
42	1-SENS	
43	KEYIN 0	KEYIN0 to KEYIN3 are key and level scan input pins. Normally, level "H". Becomes "L" at key or SW ON.
44	KEYIN 1	
45	KEYIN 2	
46	KEYIN 3	
47	RESET	Resets the CPU at level "H". Becomes level "L" when the power supply is on, and "H" when the power supply is off or the unit is not connected to AC outlet.
48	OSC2	Connects a 4.19 MHz ceramic lock between OSC1 and OSC2.
49	OSC1	
50	GND	GND pin
51	CL1	Not used. Connected to GND.
52	CL2	Not used. NC.
53	TEST	Not used. Connected to the Vcc electric potential.
54	1-FWD LED	Displays the Side 1 FWD direction LED. LED lights up at "H". Enters the test mode if it is "H" when the power is on.
55	1-REV LED	Displays the Side 1 REV direction LED. LED lights up at "H".
56	NC	Not used.
57	COPY LED	Lights up during X1 copy, and flickers during X2 copy. LED lights up at "H".
58	S13 (FINE LED)	FL segment output ("FINE" LED during the S01 mode)
59	S10 (NORM LED)	FL segment output ("NORM" LED during the S01 mode)
60	S9	FL segment output
61	S8	FL segment output
62	S7	S0 to S7 perform FL segment output, key output and level meter scan output.
63	S6	
64	S5	

TEST MODE

1 Entering the Test Mode

Supply the power with Pin 54 of the CPU connected to +5V.

2 Test Mode Operations

The BLE/SKIP LED will flicker while the test mode is operating, indicating that test mode is being set. During REC and REC PAUSE, the LINE MUTE opens in the same way as a deck sold separately.

Moreover, as the 5 seconds key mask immediately after the power is supplied will not be performed, test mode operations can be started immediately after mecha initialization.

(a) FL Check (S2, S1)

After the CPU RESET is released, the FL becomes a fully lighted display with only half of the luminance. As a result, disconnections and soldered bridges (the luminance of the bridge section will be normal) can be checked.

After mecha initialization has been completed, it can be returned to the normal display using any key input.

(b) Bus Port Operation Check

When the ENA/REQ pin (Pin 29) is set to "L", the SD pin (Pin 28) outputs the reversed level against the input level ("H" or "L") of the SCK pin (Pin 30).

ENA/REQ (29 pin)	SCK (30 pin)	SD (28 pin)
H	—	—
L	L	H
L	H	L

(c) Electronic VR (M51131L) Operation and ASES LED Checks Using the Reverse Mode

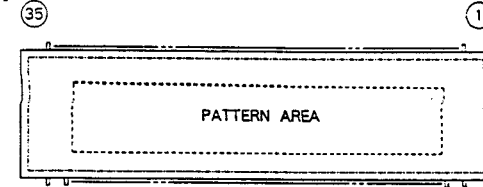
S2 and S1 switches the attenuation amount of M51131L when the reverse mode switches are used. S01 lights up the ASES LED.

Reverse Mode SW	S2, S1	S01
	Attenuation Amount (dB)	ASES LED
↔	-30	NORM LED lights up.
↶	Adjustment can be made with REC VR.	LED turns off.
↷	-1	FINE LED lights up.

3 Releasing the Test Mode

The test mode will be released and normal operations and displays will be set, when the ASES key is turned on with both mechanisms in the stop condition, or when the CPU hardware is reset.

● FL INFORMATION

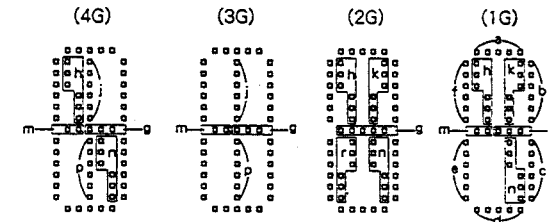
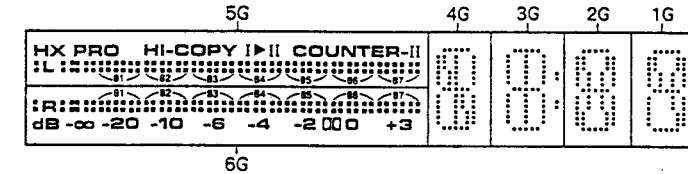


PIN CONNECTION

PIN NO.	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
CONNECTION	F2	F2	NP	P13	6G	5G	4G	3G	2G	1G	P6	P7	P8	NP	NP	NP	NP	NP

PIN NO.	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	NP	NP	NP	NP	NP	P10	P5	P4	P3	P2	P1	P11	P12	P14	NP	F1	F1

Note: 1) F1, F2Filament
 2) NPNo pin
 3) NCNo connection
 4) 1G-6GGrid

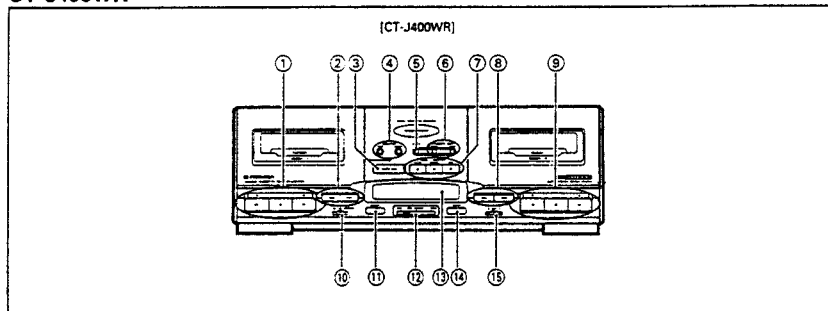


ANODE CONNECTION

	6G	5G	4G	3G	2G	1G
P1	B1	B1	a	a	a	a
P2	B2	B2	b	b	b	b
P3	B3	B3	c	c	c	c
P4	B4	B4	d	d	d	d
P5	B5	B5	e	e	e	e
P6	B6	B6	f	f	f	f
P7	B7	B7	g	g	g	g
P8	dB -∞ -20 -10 -6 -4 -2 00 +3	l	m	m	k, r	m
P9	—	COPY I▶II	i, p	i, p	h	h
P10	—	HI —	h, n	†	n	k
P11	—	—	—	—	—	n
P12	:R:	:L:	—	—	—	—
P13	—	HX PRO	—	—	—	—
P14	—	COUNTER - I	—	—	—	—

8. PANEL FACILITIES

CT-J400WR



① Deck I operation buttons/indicators

- ▶ (PLAY) : For playing back a tape in the forward mode.
- ◀ (PLAY) : For playing back a tape in the reverse mode.
- (STOP) : For stopping the tape.

② Deck I fast buttons

- ▶▶ (FAST) : Fast forward in forward mode, rewind in reverse mode. Music search (MS) starts if this is pressed during playback.
- ◀◀ (FAST) : Rewind in forward mode, fast forward in reverse mode. Music search (MS) starts if this is pressed during playback.

③ AUTO BLE (Bias, Level, Equalizing) button/indicator

Pressing this button automatically sets the optimum recording bias, level, and equalization for your selected tape.

④ COUNTER buttons

- TIME : Use this to switch between tape counter number display and display of elapsed time.
- RESET : Use this to reset the tape counter display to 0000.

⑤ ASES button

This can be used when recording from a PD-J500T or PD-J900M CD player.

The A.S.E.S. (Auto Synchro Editing System) function automatically edits when recording from a CD to a tape.

⑥ SYNCHRO COPY buttons

- Used for tape copying.
- NORMAL : Copying from the deck I tape to the deck II tape at normal speed.
 - HIGH : Copying at about twice normal tape speed. (Copies can be made in about half the NORMAL time.)

⑦ DECK II CONTROL buttons/indicator

- (MUTE) : Used for creating a blank space during recording.
- ⏸ (PAUSE) : Temporarily stops tape travel.
- (REC) : To set to recording standby mode. Recording begins when you press the play button (▶ or ▶▶) or PAUSE (⏸) button.

⑧ Deck II fast buttons

The same as the operation in ② Deck I fast buttons.

⑨ Deck II operation buttons/indicators

The same as the operation in ① Deck I operation buttons.

⑩ REV (reverse) MODE switch

- Use this to select tape travel direction during play and record.
- ≡ : One-sided play and record.
 - ⏮ : This enables auto reverse recording and auto reverse play. If you start with the tape running in reverse, only reverse play and recording are possible.

⏮ (RELAY) : This enables auto reverse recording and auto repeat playback.

The tape does not reverse if recording starts from the (◀) direction.

Select this position for DECK I and II relay play.

⑪ Deck I EJECT button

Press to open the cassette door.

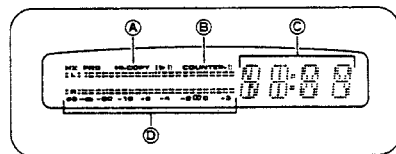
NOTE:

This button functions only when the power is turned on.

⑫ REC VOLUME/REC LEVEL control

Use to adjust the recording level. It adjusts the input signal level.

⑬ Display section



- A Lights during tape copy.
- B Indicates the deck (I or II) displaying counter indications.
- C Tape counter or time counter indication of elapsed tape time. During Music search operation, it indicates the number of tracks skipped.
- D Level meter. The □□ mark displayed on the level meter is the Dolby NR system standard level.

⑭ Deck II EJECT button

⑮ DOLBY* NR switch

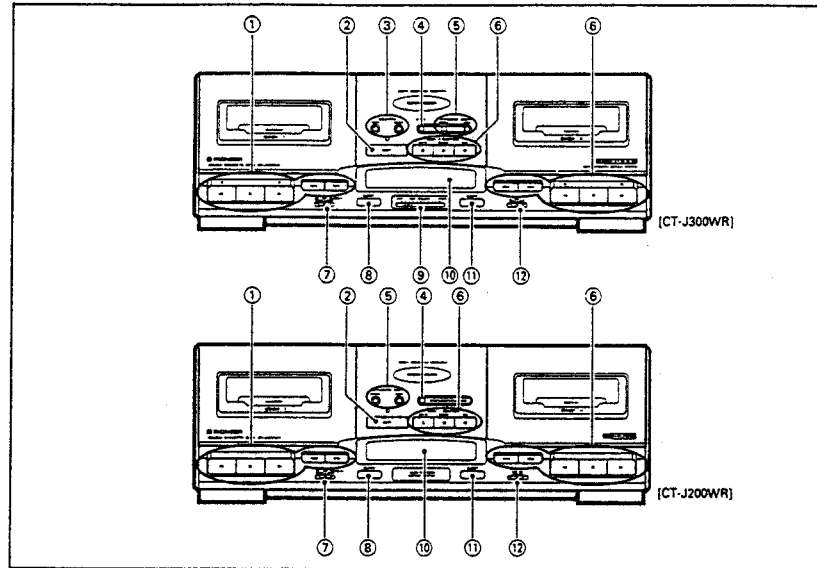
Set this switch to B or C for recording with the built-in Dolby Noise Reduction system and for playback of tapes which have been recorded using the Dolby Noise Reduction system. For other tapes, set the DOLBY NR switch to OFF.

NOTE:

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

* Dolby noise reduction and HX Pro headroom extension system 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.

CT-J300WR AND CT-J200WR



① Deck I operation buttons

- ▶ (PLAY FWD) : For playing back a tape in the forward mode.
- ◀ (PLAY REV) : For playing back a tape in the reverse mode.
- (STOP) : For stopping the tape.
- ▶▶ : Fast forward in forward mode, rewind in reverse mode.
- ◀◀ : Rewind in forward mode, fast forward in reverse mode.

② SKIP button

Press this button in a blank section of more than 15 seconds encountered during playback, the unit fast forwards the tape to the beginning of the next selection and playback starts at that point.

③ COUNTER button (CT-J300WR only)

- TIME : Use this to switch between tape counter number display and display of elapsed time.
- RESET : Use this to reset the tape counter display to 0000.

④ ASES button

Used for automatically recording a CD on cassette tape

⑤ SYNCHRO COPY buttons

- Used for tape copying.
- NORM : Copying from the Deck I tape to the Deck II tape at normal speed.
 - HIGH : Copying at about twice normal tape speed. (Copies can be made in about half the NORM time.)

⑥ DECK II operation buttons

- ▶ (PLAY FWD) : For playing back a tape in the forward mode.
- ◀ (PLAY REV) : For playing back a tape in the reverse mode.
- (STOP) : For stopping the tape.
- ▶▶ : Fast forward in forward mode, rewind in reverse mode.
- ◀◀ : Rewind in forward mode, fast forward in reverse mode.
- REC : To set to recording standby mode. Recording begins when you press the PLAY button (▶ or ▶▶) or PAUSE button.

○ MUTE

: When pressed once during recording, about four seconds non-recorded interval will be created on the tape, after which the unit will enter the recording pause mode. If held depressed continuously, the non-recorded interval will continue to be recorded for as long as the button is held depressed.

⏸ PAUSE

: Stops tape transport temporarily during recording or playback. Press the button again to resume operation. (This can be also done by pressing the PLAY (▶ or ▶▶) button.) This button does not work during fast-forward and rewind.

⑦ REVERSE MODE switch

Use this to select tape travel direction during play and record.

- ≡ : One-sided play and record.
- ⏮ : This enables auto reverse recording and auto reverse play. If you start with the tape running in reverse, only reverse play and recording are possible.

⏮ RELAY:

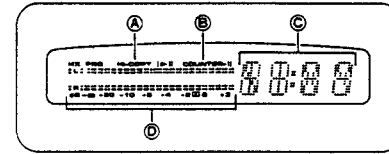
This enables auto reverse recording and auto repeat play of up to 16 times. If you start with the tape running in reverse (◀) during recording, recording is only possible in that direction. When the tape ends during reverse play (◀), it counts as one repetition.

⑧ Deck I EJECT button

⑨ REC VOLUME (CT-J300WR only)

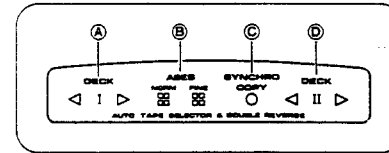
Use to adjust the recording level. It adjusts the recording signal level.

⑩ Display section
(CT-J300WR)



- ① Lights during tape copy.
- ② Indicates the deck I or II displaying counter indications.
- ③ Tape counter or time counter indication of tape length. During Music search operation, it indicates the number of tracks skipped.
- ④ Level Meter. The mark displayed on the level meter is the Dolby NR system standard level.

(CT-J200WR)



- ① Displays tape travel direction of DECK I.
- ② Lights during ASES MODE.
- ③ Lights during tape copy.
- ④ Displays tape travel direction of DECK II.

⑪ Deck II EJECT button

⑫ DOLBY* NR switch (B/OFF/C) [CT-J300WR]

Set this switch to B or C before recording with the built-in Dolby NR Systems and for playback of tapes which have been recorded using the Dolby NR systems.

- It is recommended that tapes recorded with Dolby B type NR or Dolby C type NR be so marked on the label. This will help prevent incorrect setting of the noise reduction switch during playback.
- 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.

⑬ DOLBY* NR switch (ON/OFF) [CT-J200WR]

Set this switch to the ON position to activate the DOLBY NR system.

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

9. SPECIFICATIONS

CT-J400WR

- Systems 4 track, 2-channel stereo
- Heads "Hard Permalloy" playback head x 1
"Hard Permalloy" recording/playback head x 1
"Ferrite" erasing head x 1
- Motor DC servo 2 speed motor x 2
- Wow and flutter $\pm 0.19\%$ (DIN)
0.09% (WRMS)
- Fast winding Time Approximately 120 seconds (C-60 tape)
- Frequency Response (-20 dB recording):
TYPE I (Normal) 25 Hz to 16,000 Hz ± 6 dB
TYPE II (HIGH/CrO₂) 25 Hz to 16,000 Hz ± 6 dB
TYPE IV (Metal) 25 Hz to 17,000 Hz ± 6 dB
- 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 1.0% (-4 dB; 160 nwb/m)

Miscellaneous

- Dimensions 360 (W) x 120.5 (H) x 327.5 (D) mm
- Weight (without package) 3.8 kg

CT-J300WR AND CT-J200WR

- Tracks 4-tracks, 2-channel stereo
- Playback head Hard permaloy (x 1)
- Recording/playback head Hard permaloy (x 1)
- Erasing head Ferrite (x 1)
- Motor DC servo 2-speed motor (x 2)
- Wow and flutter No more than $\pm 0.19\%$ (DIN)
- Rawind/fast forward time about 120 seconds (with C-60 tape)
- Frequency response:
Type IV (metal) tape (CT-J300WR only)
25 Hz to 17,000 Hz ± 6 dB
(recorded at -20 dB)
- TYPE II (CrO₂) tape 25 Hz to 16,000 Hz ± 6 dB
(recorded at -20 dB)
- TYPE I (normal) tape 25 Hz to 16,000 Hz ± 6 dB
(recorded at -20 dB)
- Signal-to-Noise ratio 58 dB
- With type B Dolby NR on 10 dB improvement at 5 kHz.
- With type C Dolby NR on (CT-J300WR only)
19 dB improvement at 5 kHz.

Other

- Dimensions 360 (W) x 120.5 (H) x 327.5 (D) mm
- Weight 3.8 kg