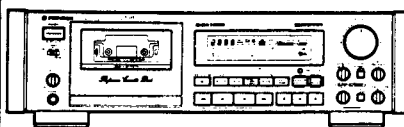


Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
ARP2217

STEREO CASSETTE DECK

CT-777

CT-777-S

CT-777 AND CT-777-S HAVE THE FOLLOWING:

Type	Model		Power Requirement	Remarks
	CT-777	CT-777-S		
HEM	○	—	AC220V-230V, 230V-240V (switchable) *	
HEWM	—	○	AC220V-230V, 230V-240V (switchable) *	

* Change the primary wiring of the power transformer.

- This manual is applicable to the CT-777/HEM and CT-777-S/HEWM types.
- As to the CT-777-S/HEWM type, refer to page 48.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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1. EXPLODED VIEWS AND PARTS LIST

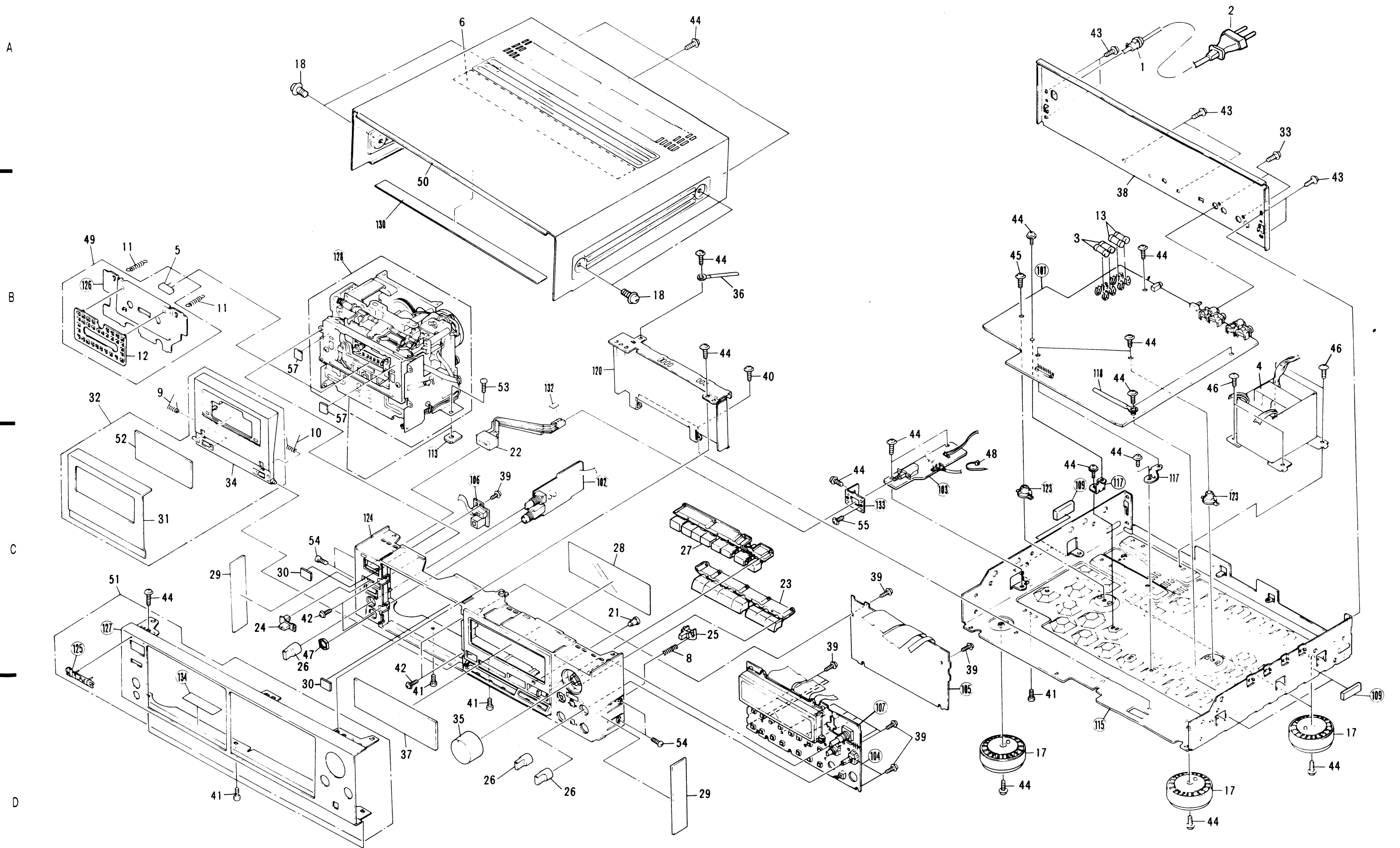
NOTES:

- Parts without part number cannot be supplied.
- 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.

1.1 PARTS LIST OF EXTERIOR

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
Δ	1	Strain relief	CM - 22B	46	Screw	IBZ40P080FCC	
Δ	2	AC power cord	PDG1003	47	Jack nut	RBN - 006	
Δ	3	FU703, FU704 Fuse(T2A)	REK - 103	48	Binder	REC - 371	
Δ	4	Power transformer (T1)	RTT1171	49	Cassette plate assembly	RXX1064	
	5	LED (D3)	SLF - 401C	50	Bonnet	RXX1376	
	6	Absorber plate (B)	PNB1109	51	Front panel assembly	RXX1385	
	7	.....		52	Door lens	RLP1026	
	8	Button spring	RBH1144	53	Screw	BBT30P080FCU	
	9	Door spring (L)	RBH1222	54	Screw	BBZ30P080FZK	
	10	Door spring (R)	RBH1223	55	Screw	PMA30P060FCU	
	11	Cassette plate spring	RBL - 059	56	.....		
Δ	12	Stabilizer B	REB1038	57	Door cushion	REB1117	
	13	FU701, FU702 Audio fuse (T500mA)	REK - 097	101	Main unit		
	14	.....		102	Headphone unit		
	15	.....		103	Power switch unit		
	16	.....		104	Operation unit		
	17	Leg assembly	AMR1159	105	Control unit		
	18	Screw	FBT40P080FZK	106	Timer switch unit		
	19	.....		107	VR unit		
	20	.....		108	.....		
	21	Counter reset knob	RAA1009	109	Rubber spacer (A)		
	22	Power button	RAC1410	110	.....		
	23	Function knob	RAC1411	111	.....		
	24	Slide SW knob	RAC1562	112	.....		
	25	Push knob	RAC1413	113	Mechanism sheet (2)		
	26	Knob (B)	RAC1414	114	.....		
	27	Mode knob	RAC1552	115	Main chassis		
	28	FL filter	RAH1542	116	.....		
	29	Side rubber	REB1094	117	P.C.B base		
	30	Door sheet	REB1138	118	Binder		
	31	Door panel	RAH1844	119	.....		
	32	Door assembly	RXX1417	120	FL shield plate		
	33	Screw	BBZ30P100FCC	121	.....		
	34	Door	RNK1495	122	.....		
	35	VR knob assembly	RXA1281	123	P.C.B stad		
	36	Cord clamber	RNH - 184	124	Panel stay	RNT1090	
	37	FL lens	RLP1027	125	Name plate		
	38	Rear panel		126	Cassette plate		
	39	Screw	ABZ26P080FZK	127	Front panel		
	40	Screw	BBT30P060FCC	128	Mechanism unit		
	41	Screw	BBT30P100FZK	129	.....		
	42	Screw	BBZ30P100FZK	130	Protector 300 × 10	RED1020	
	43	Screw	BBZ30P060FCC	131	.....		
	44	Screw	IBZ30P060FCC	132	Acetate tape 10 × 10		
	45	Screw	IBZ30P100FCC	133	PS holder		
				134	Acetate tape (K)		

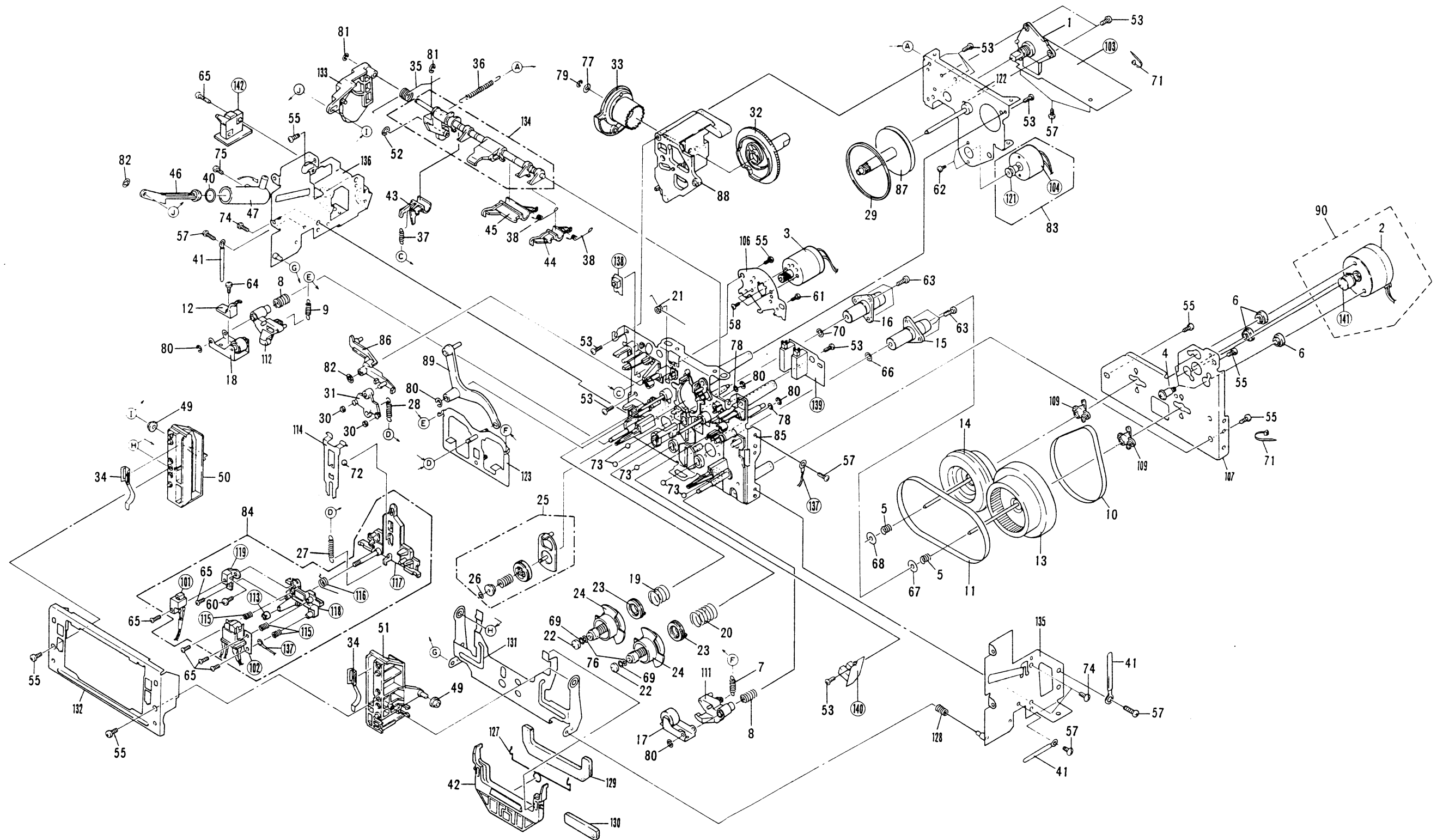
Exterior



1.2 PARTS LIST OF MECHANISM SECTION

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Rotary encoder	RSX1004		56	.....			121	First pulley	
	2	Capstan motor	RXM1036		57	Screw	BCZ30P060FMC		122	Gear chassis assembly	RXA1171
	3	Reel motor assembly	RXM1018		58	Screw	BMZ26P030FZK		123	Pinch base assembly	RXB - 878
	4	Step screw	RBA - 064		59	.....			124	.....	
	5	Thrust spring	RBL - 044		60	Screw	BMZ26P060FZK		125	.....	
	6	Rubber cushion	REB1125		61	Screw	BMZ30P080FZK		126	.....	
	7	Pinch spring	RBL - 028		62	Screw	JGZ20P025FMC		127	Cassette plate spring	RBH1227
	8	Pinch thrust spring	RBL - 030		63	Screw	PMA26P050FZK		128	Position spring	RBL - 045
	9	Sub - pinch spring	RBL - 098		64	Screw	PMA26P060FZK		129	Plate rubber (A)	REB1100
	10	Capstan belt	REB1143		65	Screw	PMZ20P080FZK		130	Plate rubber (B)	REB1101
	11	Capstan belt (A)	REB - 509		66	Washer	RBF - 030		131	Door arm	RNE1324
	12	Tape guide	RNL - 016		67	Thrust washer (A)	RBF - 069		132	Pocket frame	RNE1327
	13	Flywheel assembly	RXA1374		68	Thrust washer (B)	RBF - 070		133	Eject lever	RNL - 738
	14	Sub - flywheel assembly	RXA1375		69	Washer	RBF - 076		134	Shift shaft assembly	RXB - 885
	15	Metal holder assembly(A)	RXA1342		70	Washer	RBF1040		135	Door frame (R) assembly	RXA1284
	16	Metal holder assembly(B)	RXA1343		71	Binder	REC - 371		136	Door frame (L) assembly	RXA1285
	17	Pinch roller arm (R) assembly	RXB - 876		72	Steel ball (3mm)	REF - 022		136	Door frame	
	18	Pinch roller arm (A) assembly	RXB - 877		73	Steel ball (4mm)	REF - 023		137	Earth lead assembly	
	19	BT spring (C)	RBH1213		74	Screw	VCT30P060FZK		138	REC switch unit	
	20	BT spring (B)	RBL - 032		75	Screw	VCZ26P080FMC		139	Tape selector unit	
	21	Idler pressure spring	RBL - 033		76	Washer	WA21D040D013		140	Sensor unit (A)	
	22	Reel shaft cap (B)	RNK - 815		77	Washer	WA26N070W040		141	Motor pulley	
	23	BT disk assembly	RXB - 751		78	Washer	WA32D080D050		142	Door switch unit	
	24	Reel base assembly	RXB - 874		79	E ring	YE20FUC		143	2.5mm pitch sidepost (5P)BS5P - SHF	
	25	Take - up idler assembly	RXB - 875		80	E ring	YE25FUC				
	26	Washer	RBF - 065		81	E ring	YE30FUC				
	27	Head base spring	RBL - 037		82	Snapping	YS24FBT				
	28	Brake spring	RBL - 038		83	Power motor assembly	RXX1055				
	29	Drive belt	REB1169		84	Head base assembly	RXX1333				
	30	Brake shoe	REB - 511		85	Mechanism chassis assembly	RXA1366				
	31	Brake	RNL - 723		86	Brake lever	RNK1638				
	32	Cam gear	RNK1640		87	Second pulley assembly	RXA1350				
	33	Side cam gear assembly	RXA1349		88	Gear base assembly	RXA1351				
	34	Pocket spring (A)	RBL - 027		89	Pinch lever assembly	RXA1360				
	35	Eject spring	RBL - 039		90	Capstan motor assembly	RXX1334				
	36	Half set arm spring	RBL - 040		101	E head					
	37	REC functioning spring	RBL - 041		102	R & P head					
	38	Detection functioning spring	RBL - 042		103	Connector unit					
	39	.....			104	Power motor					
	40	O ring	REB - 447		105	.....					
	41	Cord clasper	RNH - 184		106	Reel motor mounting plate	RNE1169				
	42	Cassette plate	RNK1498		107	Flywheel holder	RNL - 304				
	43	REC detector arm	RNL - 733		108	.....					
	44	Chrom detector arm	RNL - 734		109	Thrust holder	RNL - 743				
	45	Metal detector arm	RNL - 735		110	.....					
	46	Piston	RNL - 739		111	Pressure arm (R)	RNL - 725				
	47	Cylinder	RNL - 740		112	Pressure arm (L)	RNL - 726				
	48	.....			113	Adjustment nut					
	49	Collar	RNL - 742		114	Head base set spring	RBL - 026				
	50	Pocket (L)	RNL - 849		115	Head adjustment spring (C)					
	51	Pocket (R)	RNL - 850		116	Hight spring					
	52	Washer	RBF - 057		117	Head base					
	53	Screw	BBZ26P080FZK		118	Sub - head base					
	54	.....			119	E head base					
	55	Screw	BBZ30P080FZK		120	.....					

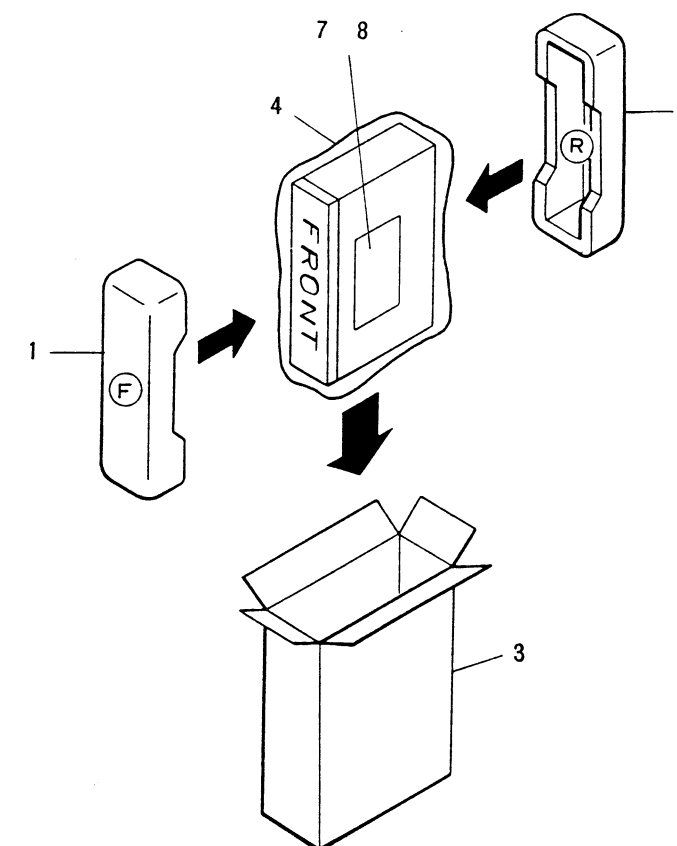
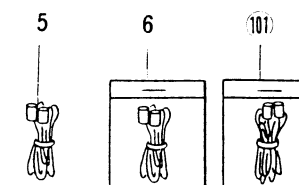
Mechanism Unit



2. PACKING

Parts List

Mark	No.	Description	Part No.
	1	Pad (F)	RHA1021
	2	Pad (R)	RHA1022
	3	Packing case	RHG1279
	4	Sheet	RHX - 034
	5	Control cord	RDE1030
	6	Connection cord	RDE1002
	7	Operating instructions (French, Italian, Dutch, Swedish, Spanish, Portuguese)	RRD1109
	8	Operating instructions (English, German)	RRE1044
	101	Connection cord assembly	



1. RESISTORS :

Indicated in Ω , $1/4W$, $1/6W$, $\pm 5\%$ tolerance unless otherwise noted k; Ω , M;M Ω , (F); $\pm 1\%$, (G); $\pm 2\%$, (K); $\pm 10\%$, (M); $\pm 20\%$ 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.

5. SWITCHES (Underline indicates switch position)

OPERATION UNIT

S921 : OPEN/CLOSE

S922 : REW

S923 : TAPE RETURN

S924 : STOP

S925 : COUNTER

S926 : RESET

S927 : PLAY

S928 : METER RANGE

S929 : FF

S930 : PEAK MODE

S931 : REC

S932 : DISPLAY

S933 : MONITOR SELECT

S934 : PAUSE

S935 : SYNCRO

S936 : REC/MUTE

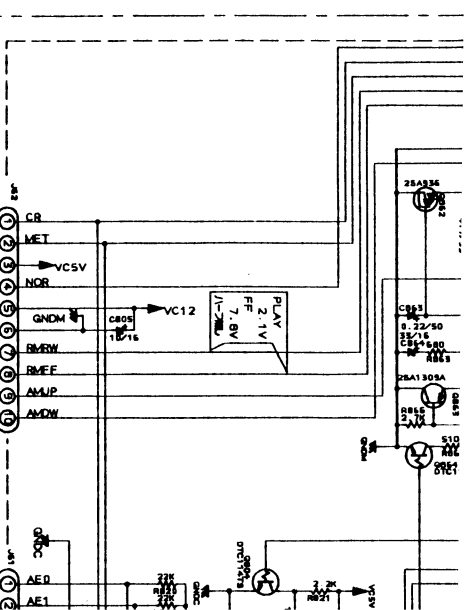
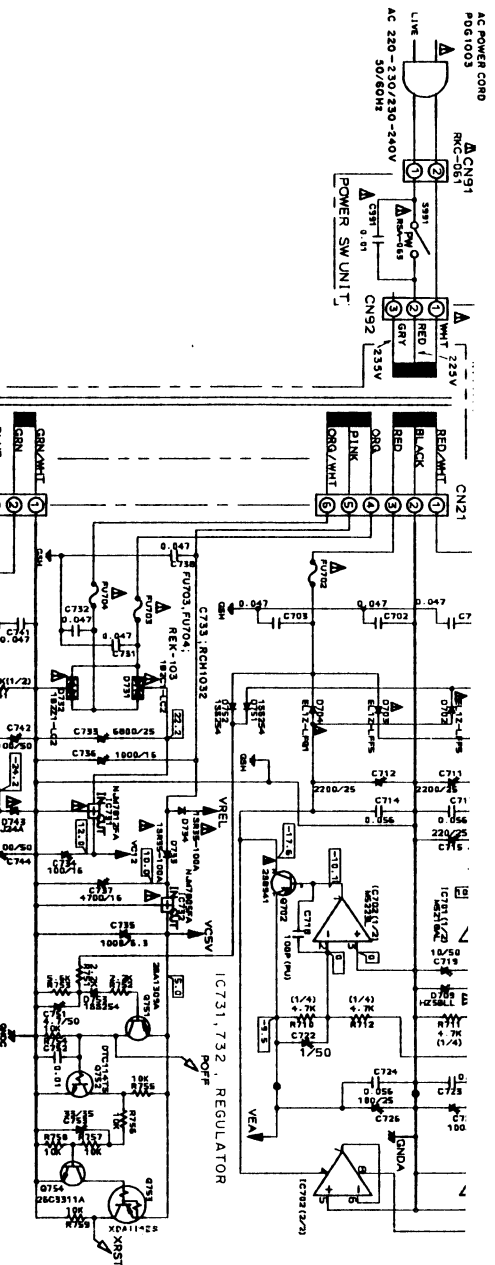
S951 : DOLBY NR

S961 : SUPER AUTO BLE

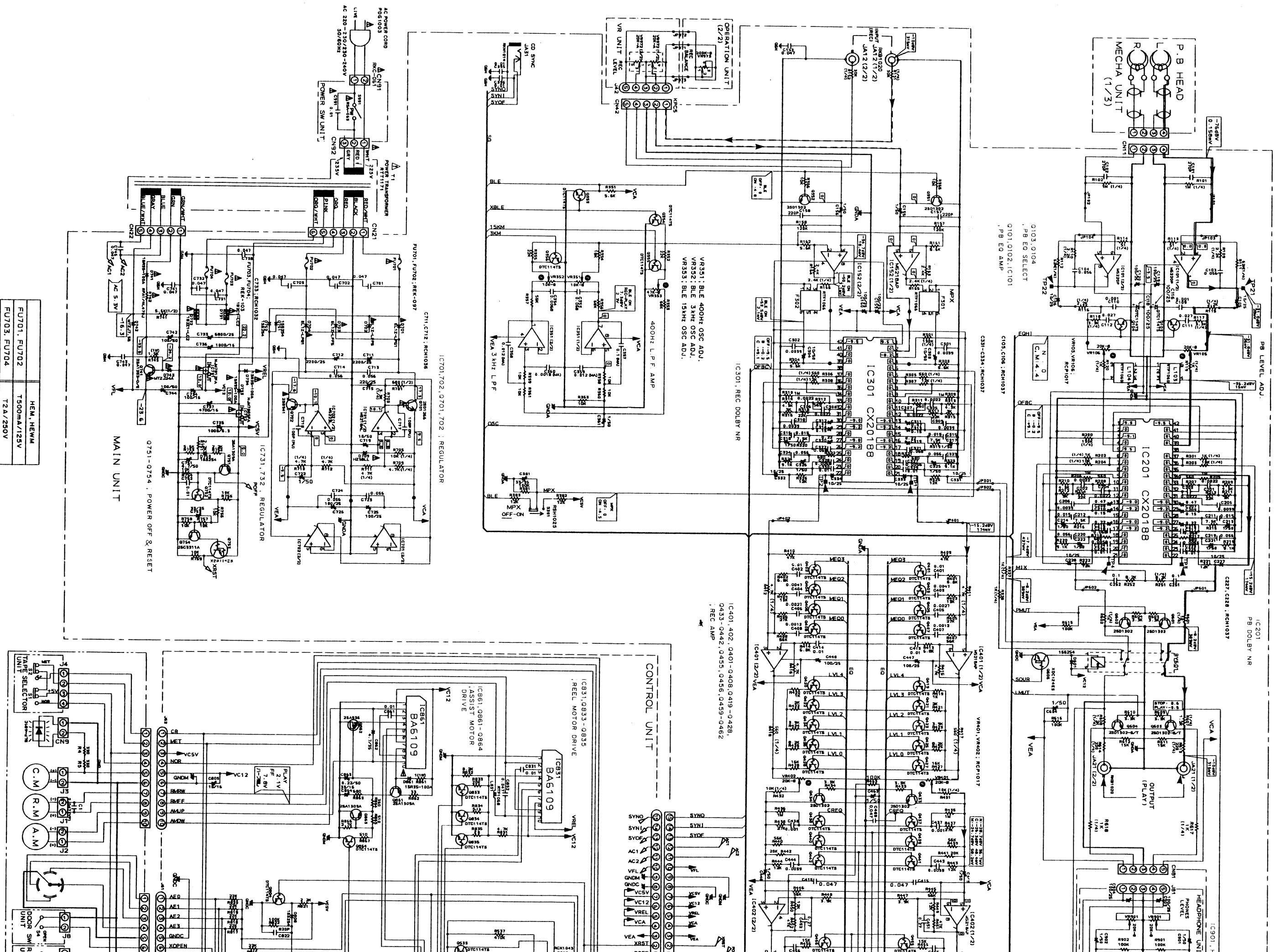
B -- OFF -- C

POWER SW UNIT

S991 : ON -- OFF

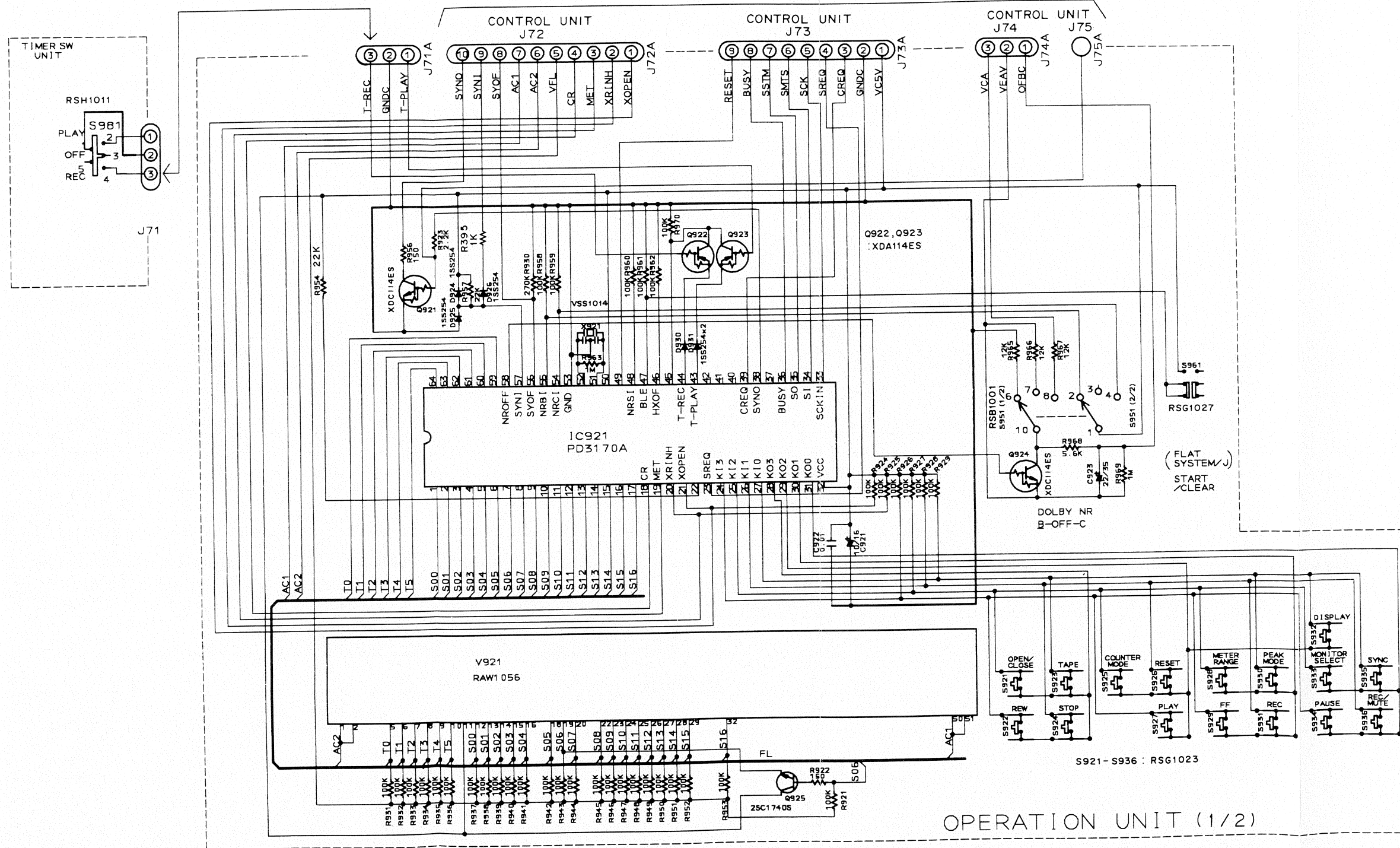


3. SCHEMATIC DIAGRAM



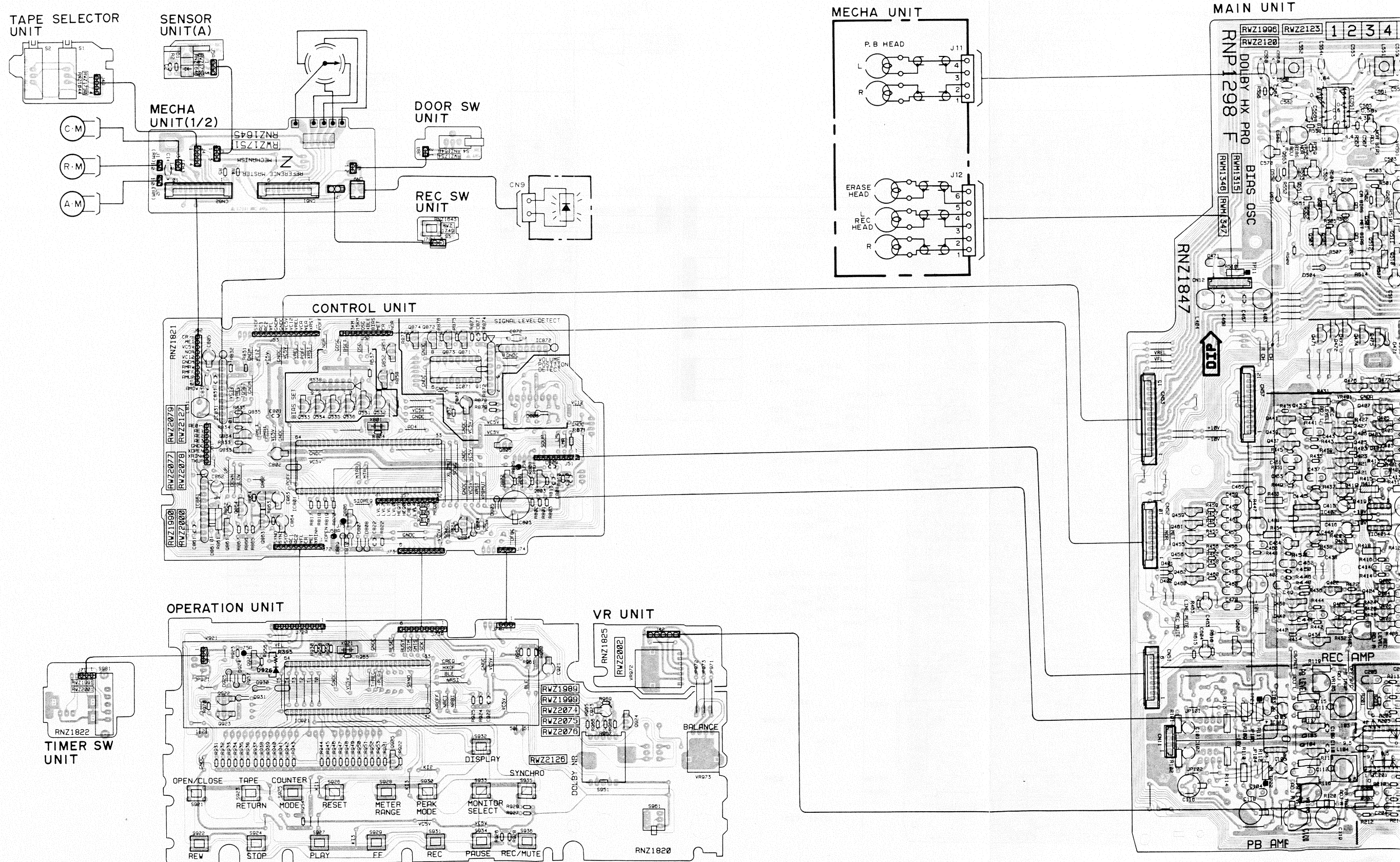
FU701, FU702	HEM, HEWM
FU703, FU704	T500mA/25V
	T2A/250V

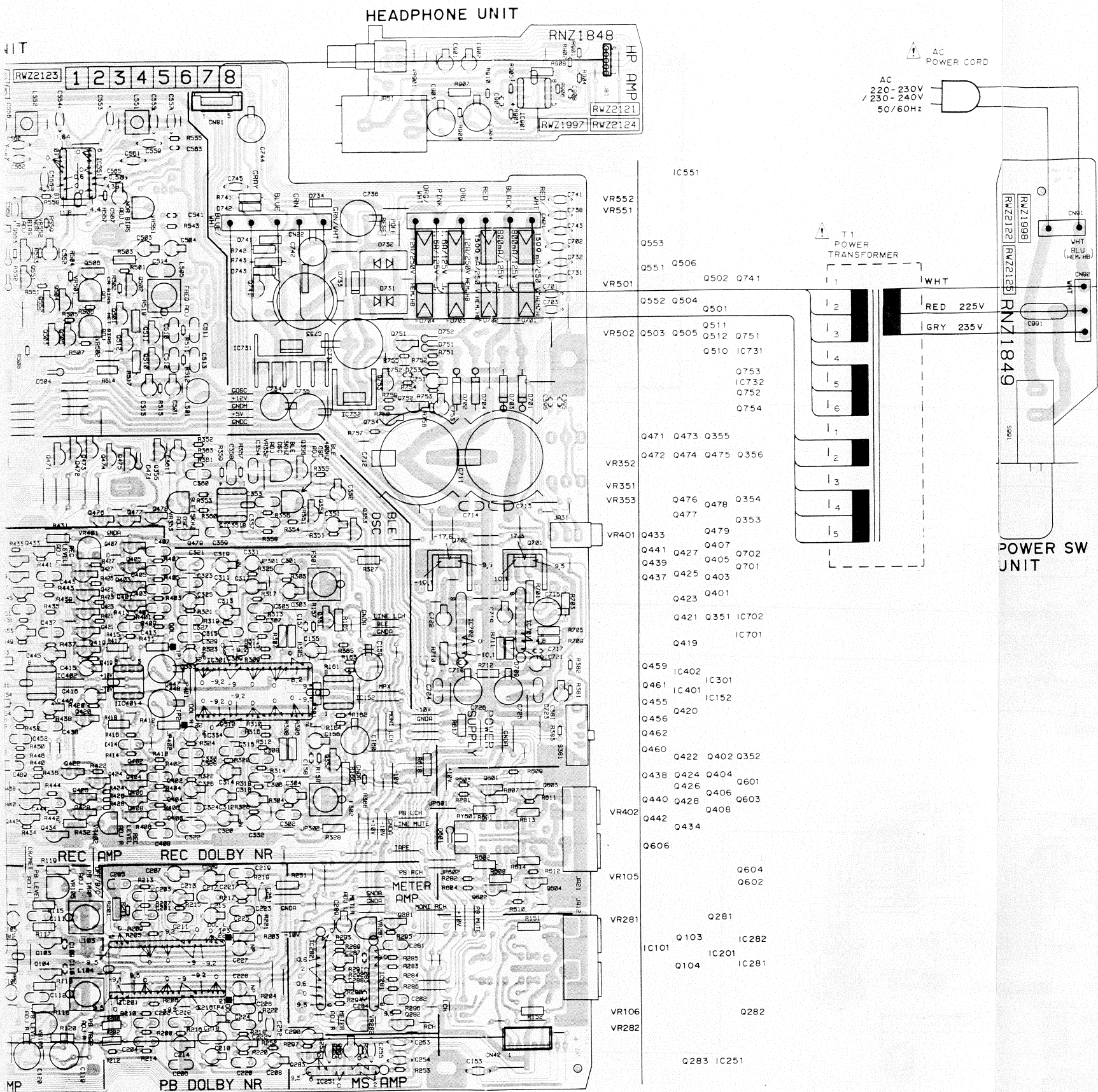
TO (1/2)



OPERATION UNIT (1/2)

4. P.C. BOARDS CONNECTION DIAGRAM





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
		Styroil capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

1. This 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.



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5. P.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 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 $\rightarrow 56 \times 10^1 \rightarrow 561$ RD1/4PS $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix}$ J

47k Ω $\rightarrow 47 \times 10^3 \rightarrow 473$ RD1/4PS $\begin{bmatrix} 4 & 7 & 3 \end{bmatrix}$ J

0.5 Ω $\rightarrow 0R5$ RN2H $\begin{bmatrix} 0 & R & 5 \end{bmatrix}$ K

1 Ω $\rightarrow 010$ RS1P $\begin{bmatrix} 0 & 1 & 0 \end{bmatrix}$ K

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 $\begin{bmatrix} 5 & 6 & 2 & 1 \end{bmatrix}$ F

Mark	No.	Description	Part No.
------	-----	-------------	----------

REC SW UNIT

SWITCHES

S3 SWITCH RSG-143

TAPE SELECTOR UNIT

SWITCHES

S1, 2 RSH-070

SENSOR UNIT(A)

SEMICONDUCTORS

D1 GP1A51HR

CAPACITORS

C2 CERAMIC CAPACITOR CKPUYY103N16

RESISTORS

R2 CARBONFILM RESISTOR RD1/6PM $\begin{bmatrix} \square & \square & \square \end{bmatrix}$ J

TIMER SW UNIT)

SWITCHES

S981 RSH1011

VR UNIT

RESISTORS

VR972 VARIABLE RESISTOR(20K) RCV1058

OPERATION UNIT

SEMICONDUCTORS

IC921 PD3170A
Q921 DIGITAL TRANSISTOR XDC114ES
Q922, 923 DIGITAL TRANSISTOR XDA114ES
Q924 DIGITAL TRANSISTOR XDC114ES
Q925 TRANSISTOR 2SC1740S

D924-926 DIODE 1SS254
D930, 931 DIODE 1SS254

SWITCHES

S921-936 SWITCH RSG1023

Mark	No.	Description	Part No.
------	-----	-------------	----------

S951 RSB1001
S961 SWITCH RSG1027

CAPACITORS

C921 ELECTR. CAPACITOR CEAS100M16
C922 CERAMIC CAPACITOR CKPUYY103N16
C923 ELECTR. CAPACITOR CEAS220M35

RESISTORS

R395 RD1/6PM $\begin{bmatrix} \square & \square & \square \end{bmatrix}$ J
R921-954 CARBONFILM RESISTOR RD1/6PM $\begin{bmatrix} \square & \square & \square \end{bmatrix}$ J
R956-963 CARBONFILM RESISTOR RD1/6PM $\begin{bmatrix} \square & \square & \square \end{bmatrix}$ J
R965-970 CARBONFILM RESISTOR RD1/6PM $\begin{bmatrix} \square & \square & \square \end{bmatrix}$ J
VR973 VARIABLE RESISTOR(200K) RCV1046

OTHERS

V921 RAW1056
X921 CERAMIC RESONATOR VSS1014

CONTROL UNIT

SEMICONDUCTORS

IC801 MAIN CPU PD4290C
IC831 IC BA6109
IC861 IC BA6109
IC871 LOGIC IC CD4050B
IC872 DUAL-COMPARATOR IC M5233L

Q531-536 DIGITAL TRANSISTOR DTC114TS
Q801-803 DIGITAL TRANSISTOR XDA114ES
Q804 DIGITAL TRANSISTOR DTC114TS
Q805 DIGITAL TRANSISTOR XDA114ES
Q806 TRANSISTOR DTC124TS

Q833-835 DIGITAL TRANSISTOR DTC114TS
Q851 DIGITAL TRANSISTOR DTC114TS
Q852 DIGITAL TRANSISTOR XDA114ES
Q861 TRANSISTOR 2SA1309A
Q862 TRANSISTOR 2SA936

Q863 TRANSISTOR 2SA1309A
Q864 DIGITAL TRANSISTOR DTC114TS
Q871 DIGITAL TRANSISTOR XDA114ES
Q872-874 DIGITAL TRANSISTOR DTC114TS

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
		D804-810 DIODE	1SS254				
△		D861 RECTIFIER DIODE	1SR35-100A			Q281, 282 DIGITAL TRANSISTOR	DTC114TS
COILS/TRANSFORMERS						Q283 TRANSISTOR	XDC124ES
	L831		RTF1068			Q351, 352 TRANSISTOR	2SD1302
CAPACITORS						Q353-356 DIGITAL TRANSISTOR	DTC114TS
		C801 CERAMIC CAPACITOR	CKPUYY103N16			Q401-408 DIGITAL TRANSISTOR	DTC114TS
		C802 ELECTR. CAPACITOR	CEAS101M10				
		C803 ELECTR. CAPACITOR	CEAS102M6R3			Q419-428 DIGITAL TRANSISTOR	DTC114TS
		C805 ELECTR. CAPACITOR	CEAS100M16			Q433, 434 TRANSISTOR	2SD1302
		C808-810 AXIAL CAPACITOR	CKPUYB101K50			Q437-442 DIGITAL TRANSISTOR	DTC114TS
						Q455, 456 DIGITAL TRANSISTOR	DTC114TS
		C822 AXIAL CAPACITOR	CKPUYB821K50			Q459-462 DIGITAL TRANSISTOR	DTC114TS
		C831 CERAMIC CAPACITOR	CKPUYY103N16				
		C832 CERAMIC CAPACITOR	CKCYF473Z50			Q471-479 DIGITAL TRANSISTOR	XDA114ES
		C861 CERAMIC CAPACITOR	CKPUYY103N16			Q501 TRANSISTOR	XDC124ES
		C862 ELECTR. CAPACITOR	CEANP4R7M35			Q502 TRANSISTOR	2SA1283
						Q503-505 TRANSISTOR	XDC124ES
		C863 ELECTR. CAPACITOR	CEASR22M50			Q506 TRANSISTOR	2SC3311A
		C864 ELECTR. CAPACITOR	CEAS330M16				
		C871 CERAMIC CAPACITOR	CKPUYY103N16			Q510, 511 TRANSISTOR	2SC3243
		C872 CERAMIC CAPACITOR	CKCYF473Z50			Q512 TRANSISTOR	2SD1302
		C873 ELECTR. CAPACITOR	CEAS100M16			Q551 DIGITAL TRANSISTOR	XDA114ES
RESISTORS						Q552 TRANSISTOR	XDC124ES
		R537 CARBONFILM RESISTOR	RD1/6PM□□□J			Q553 TRANSISTOR	2SA1309A
		R538	RCX1043	△			
		R801-810 CARBONFILM RESISTOR	RD1/6PM□□□J	△		Q601-604 TRANSISTOR	2SD1302
		R813 CARBONFILM RESISTOR	RD1/6PM□□□J	△		Q606 TRANSISTOR	XDC124ES
		R816-822 CARBONFILM RESISTOR	RD1/6PM□□□J	△		Q701 TRANSISTOR	2SD1266
						Q702 TRANSISTOR	2SB941
		R831-835 CARBONFILM RESISTOR	RD1/6PM□□□J			Q741 TRANSISTOR	2SA1283
		R857, 858 CARBONFILM RESISTOR	RD1/6PM□□□J				
		R861 METAL OXIDE RESISTOR	RS1LMF□□□J			Q751 TRANSISTOR	2SA1309A
		R862-867 CARBONFILM RESISTOR	RD1/6PM□□□J			Q752 DIGITAL TRANSISTOR	DTC114TS
		R872 (10K)	RCX1042			Q753 DIGITAL TRANSISTOR	XDA114ES
						Q754 TRANSISTOR	2SC3311A
		R873-876 METALFILM RESISTOR	RN1/6PQ□□□□F			D401, 402 DIODE	1SS254
		R877-879 CARBONFILM RESISTOR	RD1/6PM□□□J				
OTHERS				△		D471 DIODE	1SS254
		X801 CERAMIC RESONATOR	VSS1014			D504 DIODE	1SS254
MAIN UNIT						D551, 552 DIODE	1SS254
SEMICONDUCTORS						D601 DIODE	1SS254
		IC101 OP-AMP-IC	M5220P	△		D701 DIODE	EL12-LFG1
		IC152 OP-AMP, IC	M5218AP	△			
		IC201 DOLBY-B, C IC	CX20188	△		D702, 703 DIODE	EL12-LFF5
		IC251 IC	BA335	△		D704 DIODE	EL12-LFG1
		IC281 OP-AMP IC	XRA15218N	△		D709 ZENER DIODE	HZ5BLL
				△		D731 POWER DIODE	1B2C1-LC2
		IC282	BA6138	△		D732 POWER DIODE	1B2Z1-LC2
		IC301 DOLBY-B, C IC	CX20188				
		IC351 OP-AMP IC	XRA15218	△		D733, 734 RECTIFIER DIODE	1SR35-100A
		IC401, 402 OP-AMP, IC	M5218AP	△		D741 RECTIFIER DIODE	1SR35-100A
		IC551 DOLBY HX PRO IC	UPC1297CA			D742 ZENER DIODE	MTZJ7.5B
				△		D743 ZENER DIODE	MTZJ24A
		IC701 OP-AMP, IC	M5218AL			D751-753 DIODE	1SS254
		IC702 OP-AMP IC	M5223L	SWITCHES			
△		IC731 REGULATOR IC	NJM7812FA			S381	RSH1025
△		IC732 REGULATOR IC	NJM7805FA	RELAYS			
		Q103, 104 DIGITAL TRANSISTOR	DTC114TS			RY601	RSR1016
				COILS/TRANSFORMERS			
						L103, 104 COIL	RTF1060
						L401, 402 COIL	RTF1022
						L403, 404	RTF1017

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	L501		RTF1160		C358, 359	MYLOR FILM CAPACITOR	CQMA123J50
	L505		RTD1057		C360	MYLOR FILM CAPACITOR	CQMA182J50
	L551, 552		RTD1011		C361	ELECTR. CAPACITOR	CEAS010M50
	F301, 302	FILTER	RTF1066		C381	ELECTR. CAPACITOR	CEAS330M35
					C395, 396	CERAMIC CAPACITOR	CKPUYF103Z25
CAPACITORS							
	C101, 102	PL. STYRENE CAPACITOR	CQSF271J50		C401, 402	AUDIO FILM CAPACITOR	CFTXA103J50
	C103, 104	AUDIO FILM CAPACITOR	CFTXA563J50		C403, 404	AUDIO FILM CAPACITOR	CFTXA472J50
	C105, 106	(10/25)	RCH1037		C405, 406	AUDIO FILM CAPACITOR	CFTXA272J50
	C109, 110	CERAMIC CAPACITOR	CKPUYB102K50		C407, 408	AUDIO FILM CAPACITOR	CFTXA122J50
	C111, 112	AUDIO FILM CAPACITOR	CFTXA273J50		C413, 414	AUDIO FILM CAPACITOR	CFTXA103J50
	C116	(100/25)	PCH1076		C415, 416	AUDIO FILM CAPACITOR	CFTXA473J50
	C118-120	(100/25)	PCH1076		C437, 438	AUDIO FILM CAPACITOR	CFTXA102J50
	C153	CERAMIC CAPACITOR	CKCYF473Z50		C443, 444	AUDIO FILM CAPACITOR	CFTXA392J50
	C155, 156	ELECTR. CAPACITOR	CEYA010M50		C445, 446	ELECTR. CAPACITOR	CEYA010M50
	C157, 158	AXIAL CAPACITOR	CKPUYB221K50		C447, 448	(100/25)	PCH1076
	C159, 160	ELECTR. CAPACITOR (100/25)	PCH1076		C451, 452	AUDIO FILM CAPACITOR	CFTXA274J50
	C201-204	AUDIO FILM CAPACITOR	CFTXA222J50		C453, 454	ELECTR. CAPACITOR	CEYA100M50
	C205, 206	AUDIO FILM CAPACITOR	CFTXA392J50		C455, 456	AUDIO FILM CAPACITOR	CFTXA103J50
	C207, 208	ELECTR. CAPACITOR	CEASR47M50		C457, 458	AUDIO FILM CAPACITOR	CFTXA562J50
	C209, 210	ELECTR. CAPACITOR	CEASR15M50		C459, 460	AUDIO FILM CAPACITOR	CFTXA472J50
	C211, 212	AUDIO FILM CAPACITOR	CFTXA153J50		C461, 462	AUDIO FILM CAPACITOR	CFTXA332J50
	C213, 214	ELECTR. CAPACITOR	CEYA010M50		C463	ELECTR. CAPACITOR	CEAS010M50
	C215, 216	ELECTR. CAPACITOR	CEASR22M50		C465, 466	AUDIO FILM CAPACITOR	CFTXA222J50
	C217, 218	AUDIO FILM CAPACITOR	CFTXA683J50		C467, 468	CERAMIC CAPACITOR	CKPUYB102K50
	C219, 220	AUDIO FILM CAPACITOR	CFTXA563J50		C469-471	AUDIO FILM CAPACITOR	CFTXA473J50
	C221, 222	ELECTR. CAPACITOR	CEYA010M50		C501	ELECTR. CAPACITOR	CEAS101M16
	C223, 224	AUDIO FILM CAPACITOR	CFTXA562J50		C503, 504	ELECTR. CAPACITOR	CEAS330M35
	C225, 226	AUDIO FILM CAPACITOR	CFTXA103J50		C510	AUDIO FILM CAPACITOR	CFTXA223J50
	C227, 228	(10/25)	RCH1037		C511	AUDIO FILM CAPACITOR	CFTXA332J50
	C251, 252	AUDIO FILM CAPACITOR	CFTXA104J50		C512	AUDIO FILM CAPACITOR	CFTXA682J50
	C253	AUDIO FILM CAPACITOR	CFTXA473J50		C513	AUDIO FILM CAPACITOR	CFTXA332J50
	C254, 255	AUDIO FILM CAPACITOR	CFTXA104J50		C514	CAPACITOR	CQPA752J100
	C256	ELECTR. CAPACITOR	CEASR47M50		C515	ELECTR. CAPACITOR	CEAS330M35
	C257	AUDIO FILM CAPACITOR	CFTXA473J50		C541	AXIAL CAPACITOR	CKPUYB101K50
	C281, 282	AUDIO FILM CAPACITOR	CFTXA563J50		C552	ELECTR. CAPACITOR	CEAS101M16
	C283, 284	AXIAL CERAMIC C.	CCPUSL470J50		C553, 554	CERAMIC CAPACITOR	CKCYF473Z50
	C287-290	ELECTR. CAPACITOR	CEAS4R7M50		C555, 556	(390P/500)	RCG1004
	C301, 302	AUDIO FILM CAPACITOR	CFTXA392J50		C557, 558	CERAMIC CAPACITOR	CCCSL101K500
	C303, 304	ELECTR. CAPACITOR	CEYA100M50		C559-562	CERAMIC CAPACITOR	GCYX223K25
	C305-308	AUDIO FILM CAPACITOR	CFTXA222J50		C563, 564	AXIAL CAPACITOR	CKPUYB821K50
	C309, 310	AUDIO FILM CAPACITOR	CFTXA392J50		C565, 566	CERAMIC CAPACITOR	GCYX103K25
	C311, 312	ELECTR. CAPACITOR	CEASR47M50		C567	ELECTR. CAPACITOR	CEAS330M35
	C313, 314	ELECTR. CAPACITOR	CEASR15M50		C569	CERAMIC CAPACITOR	CKCYF473Z50
	C315, 316	AUDIO FILM CAPACITOR	CFTXA153J50		C570	ELECTR. CAPACITOR	CEAS010M50
	C317, 318	ELECTR. CAPACITOR	CEYA010M50		C604	ELECTR. CAPACITOR	CEAS010M50
	C319, 320	ELECTR. CAPACITOR	CEASR22M50		C701-703	CERAMIC CAPACITOR	CKCYF473Z50
	C321, 322	AUDIO FILM CAPACITOR	CFTXA683J50		C711, 712	ELECTR. CAPACITOR	RCH1036
	C323, 324	AUDIO FILM CAPACITOR	CFTXA563J50		C713, 714	AUDIO FILM CAPACITOR	CFTXA563J50
	C325, 326	ELECTR. CAPACITOR	CEYA010M50		C715	ELECTR. CAPACITOR	CEAS221M25
	C327, 328	AUDIO FILM CAPACITOR	CFTXA562J50		C717, 718	AXIAL CAPACITOR	CKPUYB101K50
	C329, 330	AUDIO FILM CAPACITOR	CFTXA103J50		C719	ELECTR. CAPACITOR	CEYA100M50
	C331-334	(10/25)	RCH1037		C722	ELECTR. CAPACITOR	CEYA010M50
	C353	AUDIO FILM CAPACITOR	CFTXA683J50		C723, 724	AUDIO FILM CAPACITOR	CFTXA563J50
	C354	AUDIO FILM CAPACITOR	CFTXA682J50		C725, 726	(100/25)	PCH1076
	C357	MYLOR FILM CAPACITOR	CQMA104J50		C731, 732	CERAMIC CAPACITOR	CKCYF473Z50

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	C733	(6800/25)	RCH1032		R543	CARBONFILM RESISTOR	RD1/6PM□□□J
	C734	ELECTR. CAPACITOR	CEAS101M16		R551-553	CARBONFILM RESISTOR	RD1/6PM□□□J
	C735	ELECTR. CAPACITOR	CEAS102M6R3		R555-559	CARBONFILM RESISTOR	RD1/6PM□□□J
	C736	ELECTR. CAPACITOR	CEAS102M16		R601, 602	CARBONFILM RESISTOR	RD1/4PM□□□J
	C737	ELECTR. CAPACITOR	CEAS472M16		R603, 604	CARBONFILM RESISTOR	RD1/6PM□□□J
	C738	CERAMIC CAPACITOR	CKCYF473Z50		R607, 608	CARBONFILM RESISTOR	RD1/4PM□□□J
	C741	CERAMIC CAPACITOR	CKCYF473Z50		R609-612	CARBONFILM RESISTOR	RD1/6PM□□□J
	C742	ELECTR. CAPACITOR	CEAS101M50		R613, 614	CARBONFILM RESISTOR	RD1/4PM□□□J
	C743	CERAMIC CAPACITOR	CKCYF473Z50		R615, 616	CARBONFILM RESISTOR	RD1/6PM□□□J
	C744	ELECTR. CAPACITOR	CEAS101M50		R617, 618	CARBONFILM RESISTOR	RD1/4PM□□□J
	C745	CERAMIC CAPACITOR	CKCYF473Z50		R701	CARBONFILM RESISTOR	RD1/2PMF□□□J
	C751	ELECTR. CAPACITOR	CEAS4R7M50		R703	CARBONFILM RESISTOR	RD1/4PM□□□J
	C752	CERAMIC CAPACITOR	CKPUYF103Z25		R705	CARBONFILM RESISTOR	RD1/4PM□□□J
	C753	ELECTR. CAPACITOR	CEAS330M35		R709-712	CARBONFILM RESISTOR	RD1/4PM□□□J
					R741	CARBONFILM RESISTOR	RD1/2PMF□□□J
RESISTORS							
	R101, 102	CARBONFILM RESISTOR	RD1/4PM□□□J	△	R742	FUSIBLE RESISTOR	RFA1/4L□□□J
	R109-120	CARBONFILM RESISTOR	RD1/4PM□□□J		R743	METAL OXIDE RESISTOR	RS1LMF□□□J
	R151, 152	CARBONFILM RESISTOR	RD1/4PM□□□J		R751-759	CARBONFILM RESISTOR	RD1/6PM□□□J
	R157, 158	CARBONFILM RESISTOR	RD1/6PM□□□J		VR105, 106 (20K)		RCP1017
	R161-164	CARBONFILM RESISTOR	RD1/6PM□□□J		VR281, 282	VR	VRTB6VS223
	R165, 166	CARBONFILM RESISTOR	RD1/4PM□□□J		VR351, 352	SEMI-FIXED RESISTOR	VRTB6VS103
	R200-204	CARBONFILM RESISTOR	RD1/4PM□□□J		VR353	VR	VRTB6VS473
	R205-222	CARBONFILM RESISTOR	RD1/6PM□□□J		VR401, 402 (20K)		RCP1017
	R251	CARBONFILM RESISTOR	RD1/4PM□□□J		VR501	VR	VRTB6VS222
	R252-255	CARBONFILM RESISTOR	RD1/6PM□□□J		VR502	VR	VRTB6VS223
	R281-286	CARBONFILM RESISTOR	RD1/6PM□□□J		VR551, 552	VR	VRTB6VS473
	R289-297	CARBONFILM RESISTOR	RD1/6PM□□□J	OTHERS			
	R301	CARBONFILM RESISTOR	RD1/4PM□□□J		JA12	JACK	RKB1020
	R303, 304	CARBONFILM RESISTOR	RD1/6PM□□□J		JA21	JACK	RKB1020
	R305-308	CARBONFILM RESISTOR	RD1/4PM□□□J		JA31	JACK	RKN1014
	R309-326	CARBONFILM RESISTOR	RD1/6PM□□□J	HEAD PHONE UNIT			
	R327, 328	CARBONFILM RESISTOR	RD1/4PM□□□J	SEMICONDUCTORS			
	R351-361	CARBONFILM RESISTOR	RD1/6PM□□□J		IC901	OP-AMP, IC	M5218AP
	R363	CARBONFILM RESISTOR	RD1/6PM□□□J	CAPACITORS			
	R365, 366	CARBONFILM RESISTOR	RD1/6PM□□□J		C901, 902	ELECTR. CAPACITOR	CEYA010M50
	R381-383	CARBONFILM RESISTOR	RD1/6PM□□□J		C903, 904 (100/25)		PCH1076
	R395	CARBONFILM RESISTOR	RD1/6PM□□□J		C907, 908	AXIAL CAPACITOR	CKPUYB221K50
	R401-410	CARBONFILM RESISTOR	RD1/6PM□□□J	RESISTORS			
	R411, 412	CARBONFILM RESISTOR	RD1/4PM□□□J		R901-906	CARBONFILM RESISTOR	RD1/6PM□□□J
	R413-416	CARBONFILM RESISTOR	RD1/6PM□□□J		R907, 908	CARBONFILM RESISTOR	RD1/4PM□□□J
	R417, 418	CARBONFILM RESISTOR	RD1/4PM□□□J		R909, 910	CARBONFILM RESISTOR	RD1/6PM□□□J
	R419-428	CARBONFILM RESISTOR	RD1/6PM□□□J		VR901	VARIABLE RESISTOR(20K)	RCV1043
	R431, 432	CARBONFILM RESISTOR	RD1/4PM□□□J	OTHERS			
	R433-452	CARBONFILM RESISTOR	RD1/6PM□□□J		JA51	JACK	RKN1019
	R453, 454	CARBONFILM RESISTOR	RD1/4PM□□□J	POWER SW UNIT			
	R455-463	CARBONFILM RESISTOR	RD1/6PM□□□J	SWITCHES			
	R501, 502	CARBONFILM RESISTOR	RD1/6PM□□□J	△	S991	SWITCH	RSA-063
	R503	CARBONFILM RESISTOR	RD1/2PMF□□□J	CAPACITORS			
	R504, 505	CARBONFILM RESISTOR	RD1/6PM□□□J	△	C991	CAPACITOR (CERAMIC)	VCG-044
	R508	CARBONFILM RESISTOR	RD1/6PM□□□J				
	R510	CARBONFILM RESISTOR	RD1/2LF□□□J				
	R511, 512	CARBONFILM RESISTOR	RD1/6PM□□□J				
	R514	CARBONFILM RESISTOR	RD1/4PM□□□J				
	R515	CARBONFILM RESISTOR	RD1/6PM□□□J				
	R517, 518	CARBONFILM RESISTOR	RD1/2PMF□□□J				

Mark	No.	Description	Part No.
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DOOR SW UNIT

SWITCHES

S4	RSK1002
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CONNECTOR UNIT

CAPACITORS

C1 CERAMIC CAPACITOR	CKCYF473Z50
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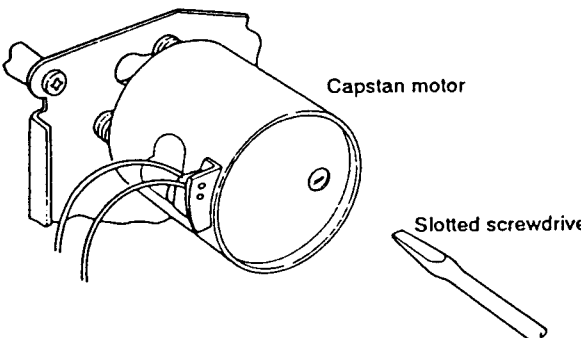
RESISTORS

R4,5 CARBONFILM RESISTOR	RD1/6PM331J
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6. ADJUSTMENTS

6.1 MECHANISM RELATED ADJUSTMENT

1. Tape Speed Adjustment		
Mode	Adjustment Location	Specifications
PLAY	Capstan motor adjustment hole (Refer to Fig. 1.)	Adjust so that the playback frequency is 3000 ± 5 Hz at the beginning of winding of test tape STD-301.
PLAY		Playback test tape STD-301 again and confirm that the above specifications are satisfied.

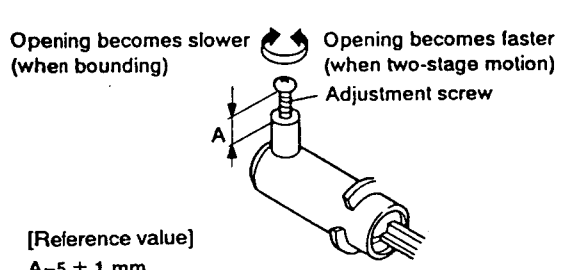


Capstan motor

Slotted screwdriver

Fig. 1

2. Adjustment of Door Damper	
Adjustment Location	Specifications
Cylinder adjustment screw (Refer to Fig. 2.)	Make sure that the door opens smoothly, there is no two-stage motion, and that there is no bounding when it opens completely. (Perform with no cassette half inserted.)



Opening becomes slower (when bounding)

Opening becomes faster (when two-stage motion)

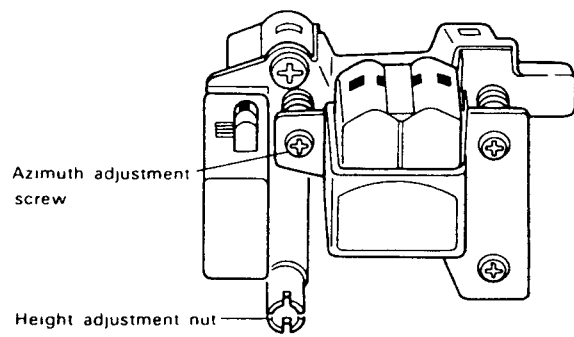
Adjustment screw

A

[Reference value]
A = 5 ± 1 mm

Fig. 2

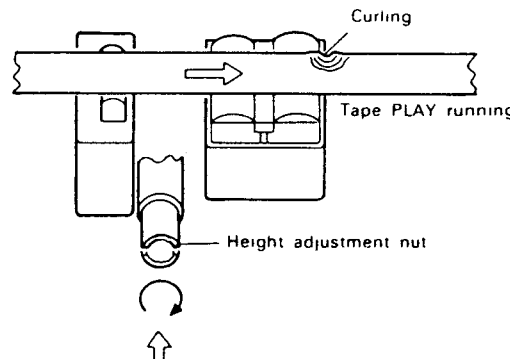
3. Tape running and azimuth adjustment			
No.	Mode	Adjustment Location	Specifications
1			Insert half mirror in side A (set screws at front).
2	PLAY	Height adjustment nut (Refer to Fig. 3.)	Playback the above tape and adjust so that there is no curling of the tape in the guide section of the head. (Refer to Fig. 4.)
3	PLAY	Azimuth adjustment screw (Refer to Fig. 3.)	Playback test tape STD-331B and adjust so that the 10 kHz output level is maximum and also so that there is no phase difference between L-ch and R-ch.
4	Check Item 2 above again and adjust again if it does not satisfy the specifications. (Be sure to adjust Item 3 when Item 2 is adjusted.)		



Azimuth adjustment screw

Height adjustment nut

Fig. 3



Curling

Tape PLAY running

Height adjustment nut

Fig. 4

6.2 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 0 dBV=1 Vrms.
5. Connect a 50 k Ω (or between 47k to 52 k Ω) 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. 6-1)
STD-630 : NORMAL blank tape
STD-620 : CrO₂ 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. Bias trap adjustment.
3. Recording bias adjustment.
4. Recording level adjustment.
5. Level meter check.
6. AUTO BLE adjustment.

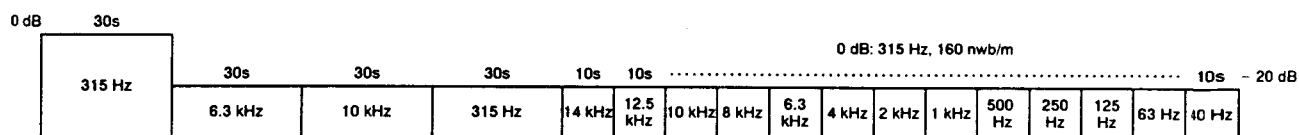


Fig. 6-1 Constants of the test tape STD-331B

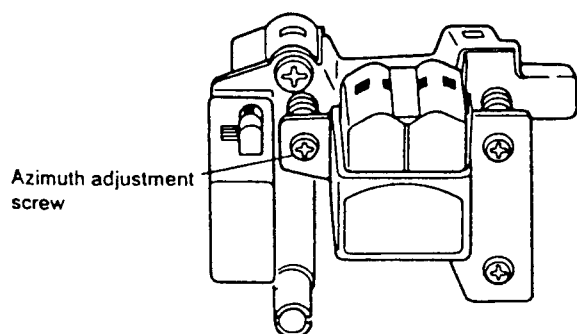
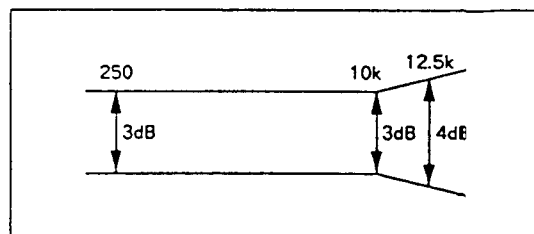


Fig. 6-2 Head azimuth adjustment

PLAY BACK



RECORDING

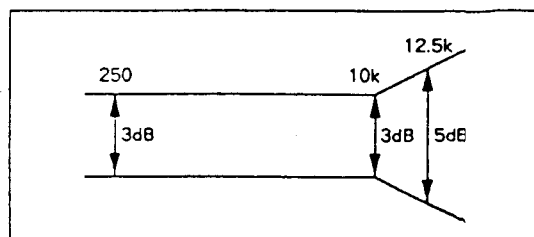


Fig. 6-3 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR105, 106 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. 6−2)	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 VR105 (Lch) VR106 (Rch)	TP. 3 (Lch) TP. 4 (Rch)	−14.7 dBv	This adjustment must be performed accurately for proper Dolby level setting.

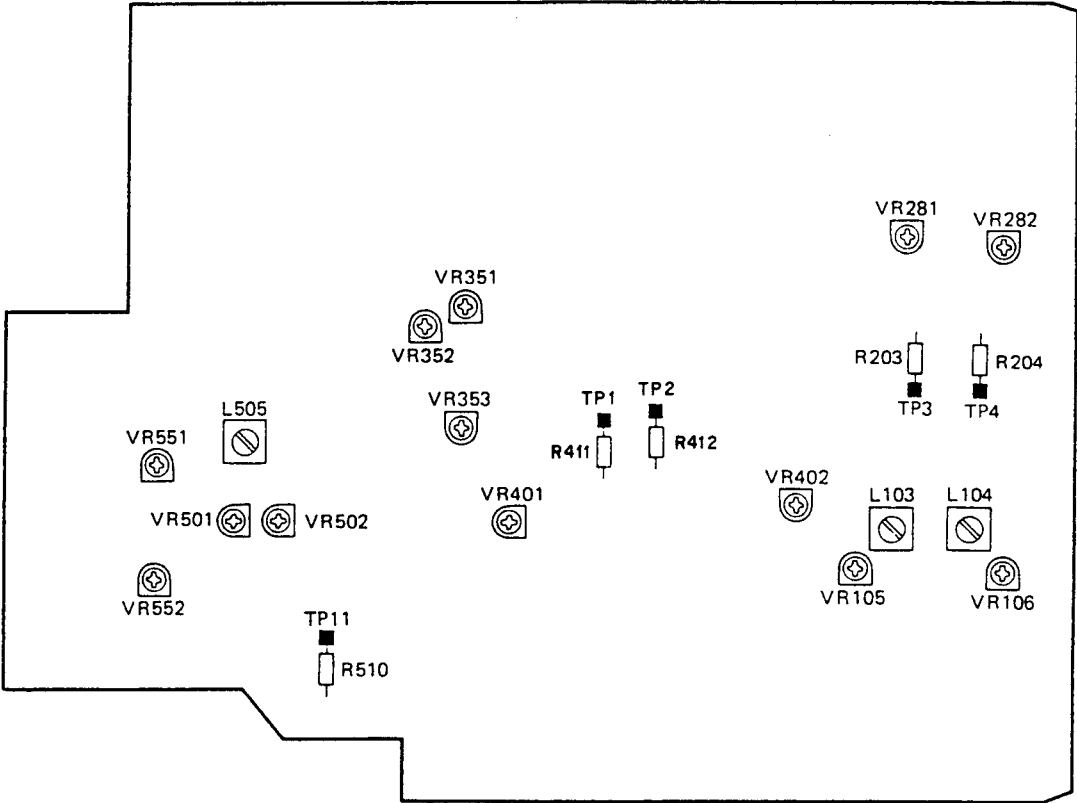


Fig. 6−4 Adjusting points

RECORDING SECTION

1. Bias Oscillator Adjustment

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	L505	TP. 11	108 kHz $\pm$ 300 Hz	

2. Bias Trap Adjustment

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	L103 (Lch) L104 (Rch)	TP. 3 (Lch) TP. 4 (Rch)	Minimum output	

3. Recording Bias Adjustment

- Turn ON the DOLBY HX PRO switch on the front panel, and set the BIAS control to the center position.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC/ PAUSE	Apply a 315 Hz/-20 dBv (-20VU meter reading) signal to the line input terminals and insert STD-630.			LINE OUT		
2.	REC →PLAY	Record and play back the 315 Hz signal and a 10 kHz signal at -20 dBv input level.	NOR	VR551 (L) VR552 (R)		Record and play back repeatedly, comparing the 315 Hz and 10 kHz playback levels, and adjust to 0 ± 0.5 dB.	
3.		Record the 10 kHz/315 Hz, -20 dBv signal on STD-620 and play back.	CrO2	VR501 (L/R)		$0 \text{ dBv} \pm 1.0 \text{ dB}$	
4.		Record the 10 kHz/315 Hz, -20 dBv signal on STD-610 and play back.	METAL	VR502 (L/R)		$0 \text{ dBv} \pm 1.0 \text{ dB}$	
5.	Check distortion value after adjustment is completed and confirm that there is no underbias.						

4. Recording Level Adjustment

- Turn ON the DOLBY NR switch.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC/ PAUSE	Apply the 315 Hz/0 dBv signal to the line input, and load STD-630 (NORM).	REC level control volume		TP. 3 (Lch) TP. 4 (Rch)	-15.2 dBv	
2.	REC → PLAY	Record and play back the 315 Hz/0 dBv signal.	Deck	VR401 (Lch)	TP. 3 (Lch) TP. 4 (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes -15.2 dB.	Recording bias adjustment and recording level adjustment with STD-630 must be performed accurately as reference for BLE adjustment.
				VR402 (Rch)			
3.	REC → PLAY	Record the 315 Hz/0 dBv signal on STD-620 (CrO2), and play it back.	Check					-15.2 dBv ± 1 dB
4.	REC → PLAY	Record the 315 Hz/0 dBv signal on STD-610 (METAL), and play it back.	Check			-15.2 dBv ± 1 dB	

5. Level Meter Adjustment

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.	VR281 (Lch) VR282 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Always set the enlarged mode when adjusting. Adjust so that the 0 dB segment lights at a level of -15.2 ± 0.5 dBv (-15.2 ± 1.0 dBv in the normal mode).	Adjust by turning clockwise until the lamp lights up.

6. AUTO BLE Adjustment

- BLE Adjustment must be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the test mode

Press the MODE (COUNTER), RANGE and MONITOR keys on the front panel simultaneously, with the power ON. The unit enters the test mode and oscillates a 400 Hz signal.

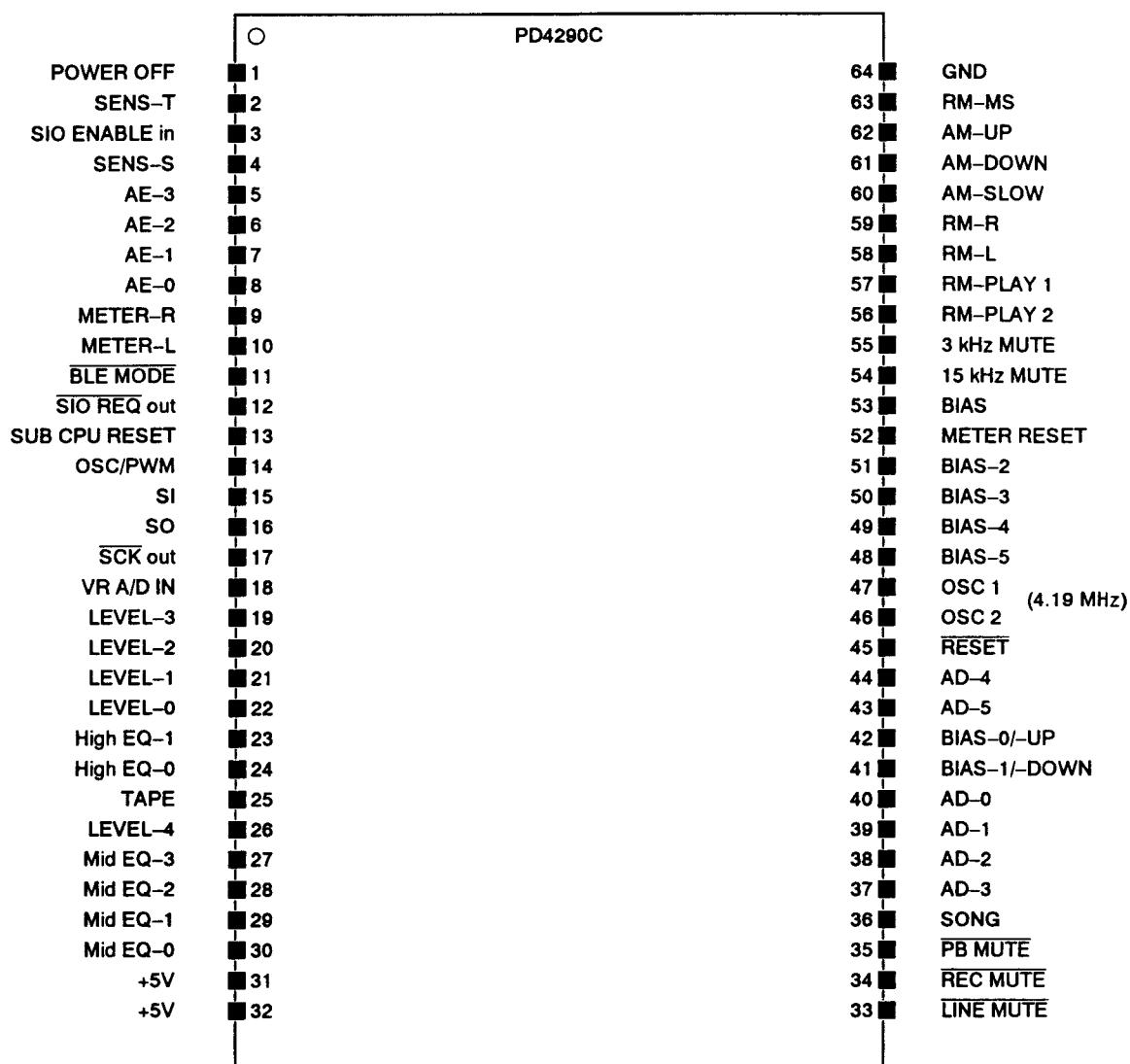
Thereafter, each time the START/CLEAR key is pressed, the oscillation frequency changes as follows: 3 kHz oscillation → 15 kHz oscillation → Release

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	-	REC LEVEL VR MIN or no signal input.	-	-	-	
2.		Press the three keys MODE (COUNTER), RANGE and MONITOR on the front panel simultaneously.	VR351	Level meter Rch	Adjust so that -3 dB on the level meter lights.	400 Hz adjustment
3.		Press the START/CLEAR key once.	VR352		Adjust so that -1 dB on the level meter lights.	3 kHz adjustment
4.		Press the START/CLEAR key once.	VR353		Adjust so that -1 dB on the level meter lights.	15 kHz adjustment
5.	When the START/CLEAR key is pressed again, the test mode is released.					

7. IC DESCRIPTIONS

7.1 PD4290C

7.1.1 Main CPU Port Arrangement PD4290C (BLE & Main Control)



7.1.2 I/O Matrix Table

	CrO ₂ (in) (Sub CPU)	METAL (in) (Sub CPU)	High EQ-1 (out) (Main CPU)	High EQ-0 (out) (Main CPU)
TAPE: NORMAL	L	L	1	0
TAPE: CrO ₂	H	L	1	0
TAPE: METAL	L	H	0	1

- Output standard value for setting
 LEVEL (5bit) : 01111
 Mid EQ (4bit) : 0111
 High EQ (2bit) : According to the table above.

7.1.3 PD4290C Pin Functions

Pin No.	I/O	Name	Function																
1	I	POWER OFF	POWER OFF trigger input and rising edge input when power is OFF. Normally "L".																
2		SENS-T	Rotation pulse input for the take-up side reel base. The tape end is detected when the signal change stops. Also, ATLC operation is based on the signal change.																
3		SIO ENABLE in	When this signal from the sub CPU becomes "H", the main CPU starts communication with the sub CPU.																
4		SENS-S	Rotation pulse input for the supply side reel base. When Ver REMAIN is ON, the operation for the remain function is performed by this signal. Also, when the signal change stops for 5 minutes with Ver REMAIN ON, PLAY or REC/PLAY mode changes to STOP mode.																
5		AE-3	<table><tr><th colspan="2">4-bit encoder input for position detection of the mechanism.</th></tr><tr><th>4-bit data</th><th>Mechanism mode</th></tr><tr><td>0000</td><td>PLAY, REC/PLAY</td></tr><tr><td>0010</td><td>PLAY/PAUSE, REC/PAUSE</td></tr><tr><td>0111</td><td>CUE, REVIEW</td></tr><tr><td>0100</td><td>STOP, PAUSE</td></tr><tr><td>1101</td><td>FF. REW</td></tr><tr><td>1001</td><td>EJECT</td></tr></table>	4-bit encoder input for position detection of the mechanism.		4-bit data	Mechanism mode	0000	PLAY, REC/PLAY	0010	PLAY/PAUSE, REC/PAUSE	0111	CUE, REVIEW	0100	STOP, PAUSE	1101	FF. REW	1001	EJECT
4-bit encoder input for position detection of the mechanism.																			
4-bit data		Mechanism mode																	
0000		PLAY, REC/PLAY																	
0010		PLAY/PAUSE, REC/PAUSE																	
0111		CUE, REVIEW																	
0100	STOP, PAUSE																		
1101	FF. REW																		
1001	EJECT																		
6	AE-2																		
7	AE-1																		
8	AE-0																		
9	METER-R	Input of results from comparison of 6-bit output (AD-0 through AD-5) with both R and L channels.																	
10	METER-L																		
11	O	BLE MODE	"L" is output during BLE tuning mode and test mode, and "H" is output at other times.																
12		SIO REQ out	"L" is output when main CPU requests communication with sub CPU, and "H" is output at other times.																
13		SUB CPU RESET	Reset output for resetting of sub CPU when power is turned ON/OFF and when the communication between main CPU and sub CPU is interrupted for a certain duration.																
14		OSC/PWM	Tuning oscillator output in BLE mode, and at other times PWM output for position detection of the input volume.																
15	I	SI	Serial input for communication with sub CPU.																
16	O	SO	Serial output for communication with sub CPU.																
17		SCK out	Clock pulse output for communication with sub CPU.																
18	I	VR A/D IN	Input of results from comparison of PWM smoothed level signal and position detection level signal of the input volume.																
26	O	LEVEL-4	BLE 5-bit LEVEL output.																
19		LEVEL-3																	
20		LEVEL-2																	
21		LEVEL-1																	
22		LEVEL-0																	
23		High EQ-1	BLE 2-bit High EQ output.																
24		High EQ-0																	
25		TAPE	Tape monitor output. Tape when "H", source when "L".																
27		Mid EQ-3	BLE 4-bit Mid EQ output.																
28		Mid EQ-2																	
29		Mid EQ-1																	
30		Mid EQ-0																	
33		LINE MUTE	Mute control output for LINE OUT. Muting is ON when "L".																
34		REC MUTE	Mute control output for recording signal. Muting is ON when "L".																
35		PB MUTE	Mute control output for playback signal. Muting is ON when "L".																

Pin No.	I/O	Name	Function																																																
36	I	SONG	Blank detection signal input. Blank when "L".																																																
43		AD-5	6-bit compensation level signal output for meter A/D.																																																
44		AD-4																																																	
37		AD-3																																																	
38		AD-2																																																	
39		AD-1																																																	
40		AD-0																																																	
41		BIAS-DOWN	Control output for BLE power drive bias volume when Ver VR-BLE is ON. When DOWN is "L" and UP is "H", the volume rotates clockwise and the bias current increases. When DOWN is "H" and UP is "L", the volume rotates counterclockwise and the bias current decreases. The power drive bias volume stops when the output status is "L", "L" or "H", "H".																																																
42		BIAS-UP																																																	
45	I	RESET	Reset input for main CPU. Reset when "L"; programming starts when "L" → "H".																																																
48	O	BIAS-5	Not used when Ver VR-BLE is ON.																																																
49		BIAS-4																																																	
50		BIAS-3																																																	
51		BIAS-2																																																	
52		METER RESET	Used to speed up A/D operation in BLE mode. Meter circuit is discharged when "H".																																																
53		BIAS	Control output for bias ON/OFF during recording. Bias is ON when "H".																																																
54		15 kHz MUTE	Used in accordance with the test signal for BLE tuning. Muting is ON when "H". Both are ON when the signal is 400 Hz. Only 15 kHz MUTE is ON when the signal is 3 kHz. Both are OFF when the signal is 15 kHz.																																																
55		3 kHz MUTE																																																	
56		RM-PLAY 2	For PLAY and REC (L) mode, PLAY torque is lowered only for the first 5 to 15 minutes of tape winding. During tape return and BLE rewind, tape speed is varied using the control lines of PLAY-2, PLAY-1 and MS.																																																
57		RM-PLAY 1																																																	
63		RM-MS	<table><tr><th>Mechanism mode</th><th>PLAY-2</th><th>PLAY-1</th><th>MS</th><th>L</th><th>R</th></tr><tr><td>FF</td><td>L</td><td>L</td><td>L</td><td>L</td><td>H</td></tr><tr><td>REW</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr><tr><td>CUE</td><td>L</td><td>L</td><td>H</td><td>L</td><td>H</td></tr><tr><td>REVIEW</td><td>L</td><td>L</td><td>H</td><td>H</td><td>L</td></tr><tr><td>PLAY, REC (H)</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td></tr><tr><td>PLAY, REC (L)</td><td>H</td><td>H</td><td>L</td><td>L</td><td>H</td></tr><tr><td>STOP, PAUSE, PLAY/PAUSE, REC/PAUSE</td><td>-</td><td>-</td><td>-</td><td>H</td><td>H</td></tr></table>	Mechanism mode	PLAY-2	PLAY-1	MS	L	R	FF	L	L	L	L	H	REW	L	L	L	H	L	CUE	L	L	H	L	H	REVIEW	L	L	H	H	L	PLAY, REC (H)	H	L	L	L	H	PLAY, REC (L)	H	H	L	L	H	STOP, PAUSE, PLAY/PAUSE, REC/PAUSE	-	-	-	H	H
Mechanism mode		PLAY-2	PLAY-1	MS	L	R																																													
FF		L	L	L	L	H																																													
REW		L	L	L	H	L																																													
CUE	L	L	H	L	H																																														
REVIEW	L	L	H	H	L																																														
PLAY, REC (H)	H	L	L	L	H																																														
PLAY, REC (L)	H	H	L	L	H																																														
STOP, PAUSE, PLAY/PAUSE, REC/PAUSE	-	-	-	H	H																																														
58	RM-L																																																		
59	RM-R																																																		
60	AM-SLOW	Assist motor control output. When DOWN is "L" and UP is "H", the mechanism raises the head base, and when DOWN is "H" and UP is "L" it lowers the head base for ejection of the tape. SLOW output is set to "H" only during the servo operation after one assist motor operation and during the assist motor operation between the EJECT and STOP mode.																																																	
61	AM-DOWN																																																		
62	AM-UP																																																		

8. FOR CT-777-S/HEWM TYPE

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- 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 CT-777-S/HEWM type is the same as the CT-777/HEM type with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		CT-777/ HEM type	CT-777-S/ HEWM type	
	Panel stay	RNT1090	RNT1110	
	Power button	RAC1410	RAC1503	
	Function knob	RAC1411	RAC1502	
	Push knob	RAC1413	RAC1505	
	Knob (B)	RAC1414	RAC1492	
	Mode knob	RAC1552	RAC1611	
	Slide SW knob	RAC1562	RAC1522	
	Side rubber	REB1094	REB1128	
	Door	RNK1495	RNK1731	
	VR knob assembly	RXA1281	.....	
	VR knob	.....	RAC1496	
	Door panel	RAH1844	RAH1845	
	Bonnet	RXX1376	RXX1377	
	Front panel assembly	RXX1385	RXX1386	
	Operating instructions (Dutch, Spanish, Portuguese, Swedish)	RRD1109	.....	
	Packing case	RHG1279	RHG1280	
	Door assembly	RXX1417	RXX1418	

9. SPECIFICATIONS

System	4 track, 2-channel stereo
Heads	
Recording and playback head:	
[CT-900S, CT-777]	
Hard permalloy playback head and Hard permalloy recording head combination × 1	
Erasing head: Ferrite head with sendust gurd × 1	
Motor	DC servo capstan motor × 1
	DC reel motor × 1
	DC auxiliary motor × 1
Wow and Flutter	
[CT-900S, CT-777]	No more than 0.023%(WRMS)
	No more than ±0.056% (DIN)
Fast Winding Time	Approximately 75 seconds (C-60 tape)
Frequency Response	
- 20 dB recording:	
[CT-900S, CT-777]	
Metal tape	15 to 22,000 Hz
Chrome tape	15 to 21,000 Hz
Normal tape	15 to 21,000 Hz
Signal-to-Noise Ratio (Dolby NR off)	
[CT-900S, CT-777]	More than 60 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)
Dolby S-type NR ON (CT-93, CT-900S)	More than 22 dB (at 5 kHz)
Harmonic Distortion	No more than 0.6% (0 dB)
Input (Sensitivity)	
LINE (INPUT)	60 mV (Input impedance 47 kΩ)
Output (Reference level)	
LINE (OUTPUT)	316 mV (Output impedance 1.8 kΩ)
Headphone	2.3 mW (Load impedance 8 Ω, PHONES LEVEL control max.)

Subfunctions

- Super AUTO BLE system
- Dolby B-type and C-type noise reduction systems
- MPX filter
- Level meter with 2 modes peak hold selection (16 + 1 segments)
- Level meter range selection (wide/expanded)
- 4-digit electronic tape counter with mode selection (CT-900S, CT-777: Normal/Time)
- Auto monitor selection (Tape/Source)
- Display off
- Music search (over ±15 selections)
- Automatic Tape Loose Canceller (ATLC)
- Tape return/Return play
- Auto space recording mute
- Auto tape selector
- Playback/recording timer start function
- CD•DECK SYNCHRO recording
- Headphones jack with level control
- Power eject (Open/Close)
- Repeat playback

Miscellaneous

Power Requirements	
European model	AC 220–230 Volts ~, 50/60 Hz
U.K. model	AC 230–240 Volts ~, 50/60 Hz
Multi-voltage model	AC 110/120–127/220/240 V (switchable), 50/60 Hz
Power Consumption	
[CT-777]	19W
Dimensions	
[CT-979, CT-900S, CT-777]	420(W) × 135(H) × 370(D) mm
Weight (without package)	
[CT-777]	7.6 kg

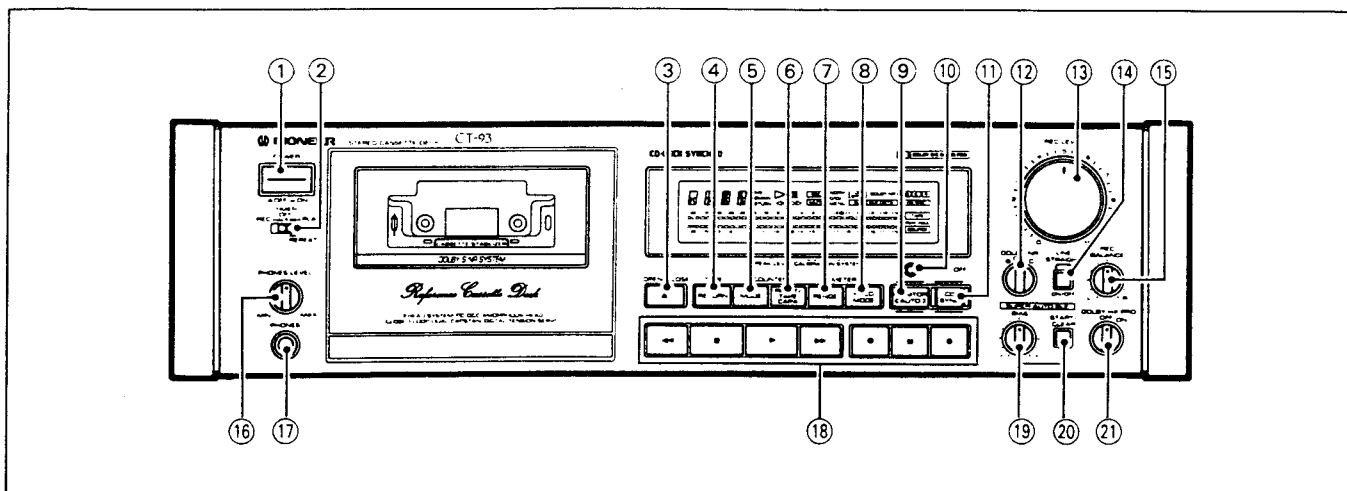
Accessories

Operating instructions	1
Connection cord with pin plugs	2
CD•DECK SYNCHRO control cord	1

NOTE:

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

10. PANEL FACILITIES



① **Power switch (POWER OFF/ON)**

② **Timer mode/repeat play switch (TIMER REC/OFF/PLAY-REPEAT)**

③ **Open/close button (OPEN/CLOSE)**

Press this button to open or close the cassette door. Whenever inserting or removing a cassette tape, be sure that the power is turned ON.

NOTE:

If the cassette door is closed while the unit is turned OFF, and the power is then turned ON, the cassette door may open and close after pressing one of the operation buttons. This occurs when the microprocessor resets the door mechanism to its initial state and does not indicate any malfunctioning of the unit.

④ **Tape return button (TAPE RETURN)**

This button is used in the normal tape counter mode to fast forward or rewind the tape to a point near the counter reading "0000."

⑤ **Counter mode button (COUNTER MODE) [CT-900S, CT-777]**

Each time this button is pressed, one of the two mode (Normal tape counter/Time counter) is set in sequence.

⑥ **Counter reset button (COUNTER RESET) [CT-900S, CT-777]**

Reset the counter indication to "0000."

⑦ **Level meter range selector button (METER RANGE)**

Selects wide or expanded range for the level meter.

⑧ **Level meter hold mode button (METER HOLD MODE)**

Selects the display mode of the peak level. When press this button so that the HOLD indicator lights up, the level meter holds the maximum level indications of the signal. To erase the maximum level indications, press this button again. When the HOLD indicator goes off, the level meter holds peak indications for about 1.2 second.

⑨ **Monitor selector button (MONITOR [AUTO])**

Used to monitor the source sound or just recorded sound during recording.

- When the unit is set to record or playback mode, the TAPE indicator light up and the monitor mode is automatically selected.

⑩ **Display off button (DISPLAY OFF)**

Press this button to turn off the function display.

⑪ **CD•DECK SYNCHRO recording button (CD SYNC)**

⑫ **DOLBY* NR switch**

[CT-979, CT-777]

3-position (B/OFF/C)

- 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 **Recording level control (REC LEVEL)**

⑭ **[CT-93, CT-979 only]**

Line straight button/indicator (LINE STRAIGHT)

When press this button so that the indicator lights up, the signal is passed the REC BALANCE control circuits.

⑮ **Recording balance control (REC BALANCE)**

⑯ **Headphones level control (PHONES LEVEL)**

⑰ **Headphones jack (PHONES)**

⑱ **Operation buttons**

- ◀◀: Rewind/music search
- : Stop
- ▶▶: Playback
- ▶▶▶: Fast forward/music search
- : Recording
- ||: Pause
- : Recording mute

⑲ **[CT-93, CT-979 only]**

Recording bias control/indicator (BIAS)

If you desire, you can readjust the recording bias condition after the AUTO BLE tuning.

⑳ **SUPER AUTO BLE button (START/CLEAR)**

㉑ **[CT-93, CT-979 only]**

DOLBY HX PRO switch (OFF/ON)