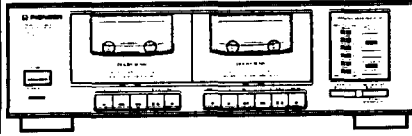


Service Manual



ORDER NO.
RRV1068

STEREO DOUBLE CASSETTE DECK

CT-W103

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	CT-W103		
KUXJ	○	AC120V	
KCXJ	○	AC120V	

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1. SAFETY INFORMATION

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



WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.



NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODELE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

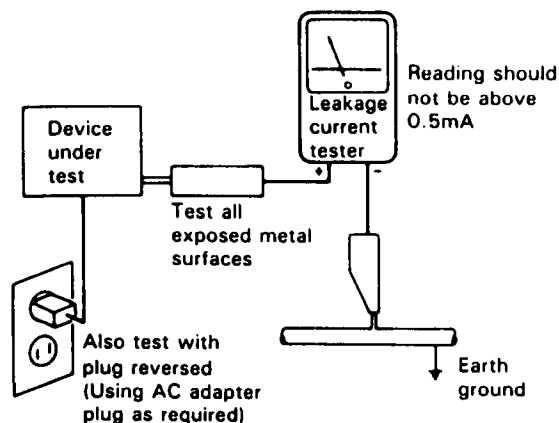
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

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

LEAKAGE CURRENT CHECK

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



AC Leakage Test

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

2. PRODUCT SAFETY NOTICE

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

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

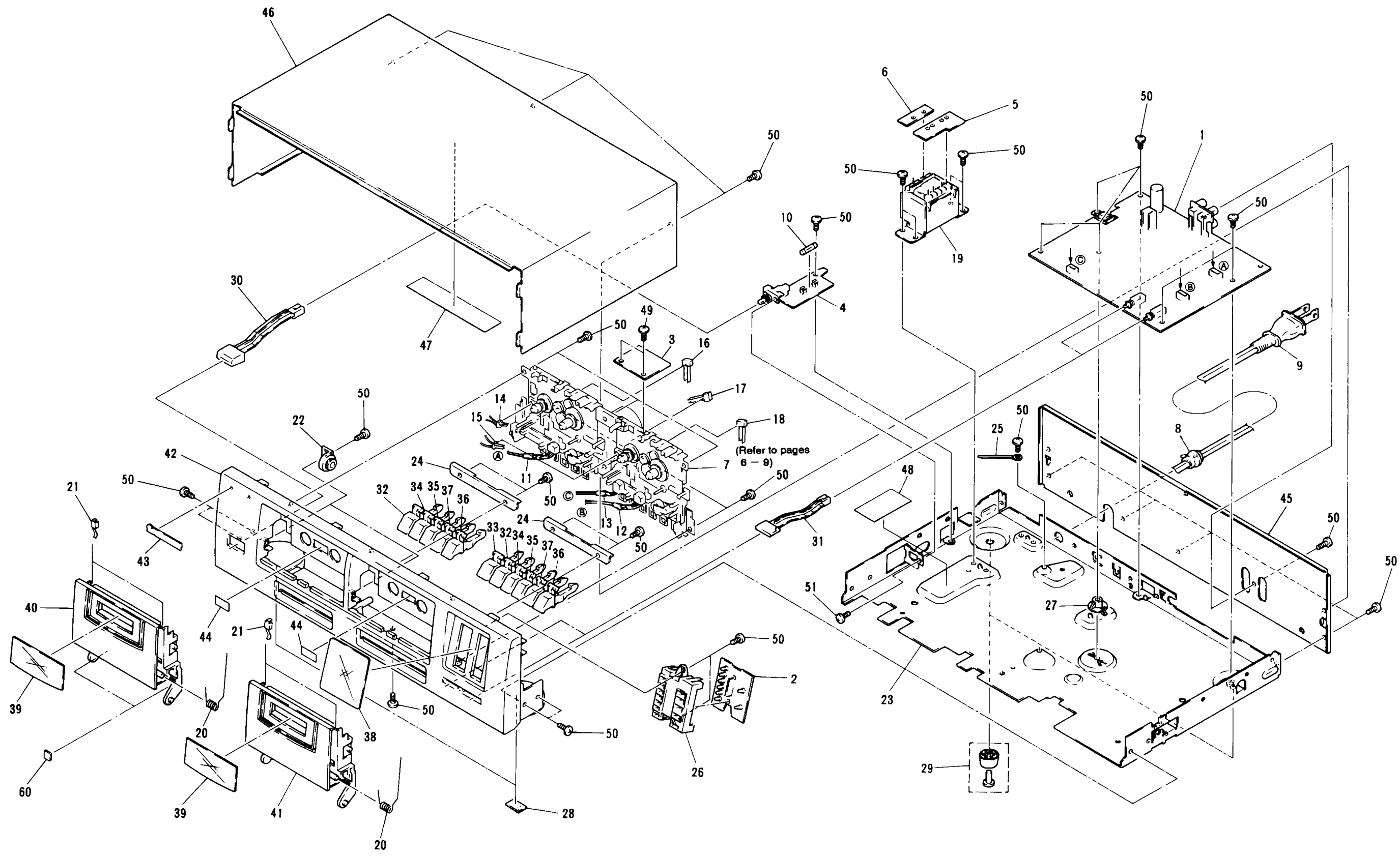
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

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

2. EXPLODED VIEWS, PACKING AND PARTS LIST

1. EXTERIOR AND PACKING

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



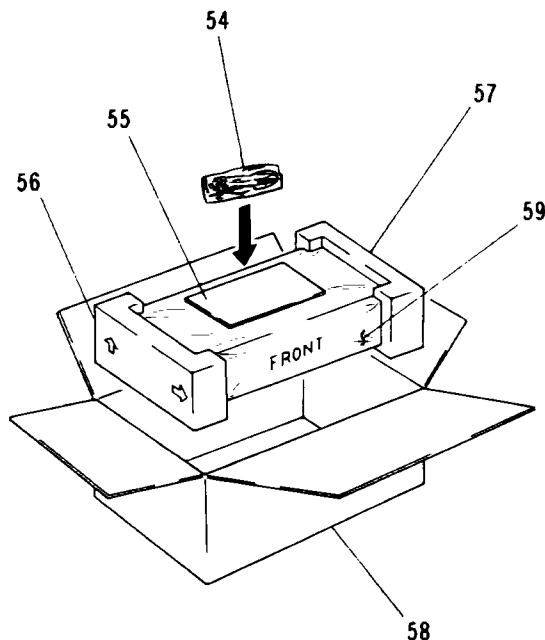
NOTES:

- Parts marked by "NSP" 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.

Parts List

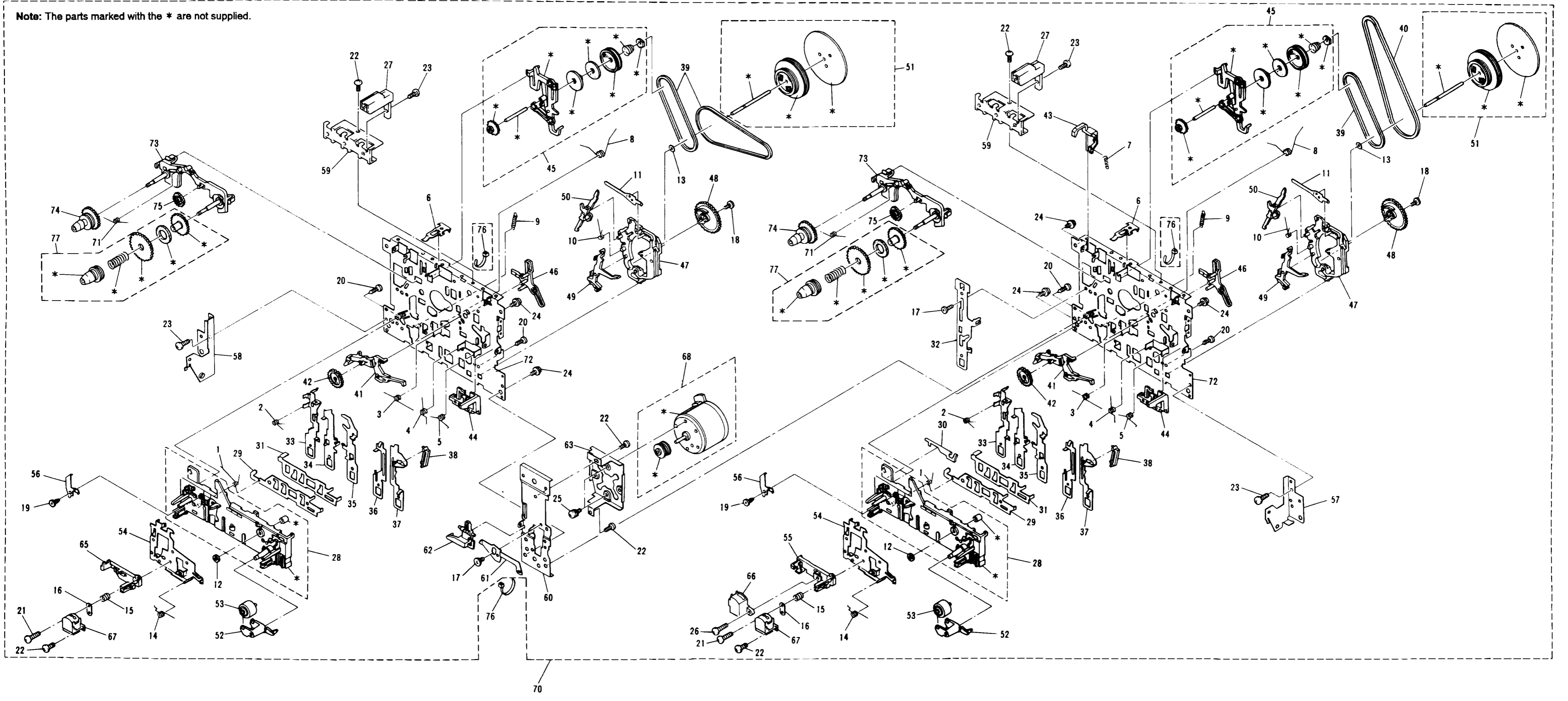
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Main Unit	RWZ3226		46	Bonnet	REA1077
NSP	2	Sub Unit	RWZ3227		47	65 Label (CT - W103/KUXJ Only)	ORW1069
NSP	3	Mechanism Connection Unit	RWZ3228	NSP	48	Fuse Caution Label	RRW - 111
NSP	4	Power Switch Unit	RWZ3229		49	Screw	BBZ20P060FMC
NSP	5	Transformer 1 Unit	RWZ3230		50	Screw	BBZ30P080FMC
NSP	6	Transformer 2 Unit	RWZ3231		51	Screw	PMA30P060FMC
	7	Cassette Mechanism Unit	RYM1229		52	
Δ	8	Cord Stopper	CM - 22C		53	
Δ	9	AC Power Cord	PDG1015		54	Connection Assy	RDE1036
Δ	10	Fuse (1A)	REK1057		55	Operating Instructions (English) (CT - W103/KUXJ)	RRB1140
	11	Connector Assy (3P)	RKP1672		55	Operating Instructions (English/French) (CT - W103/KCXJ)	RRE1082
	12	Connector Assy (3P)	RKP1673		56	Pad L	RHA1056
	13	Connector Assy (2P)	RKP1681		57	Pad R	RHA1057
	14	Leaf Switch (I PLAY)	RSN1025		58	Packing Case (CT - W103/KUXJ)	RHG1590
	15	Leaf Switch (II PLAY)	RSN1025		58	Packing Case (CT - W103/KCXJ)	RHG1538
	16	Leaf Switch (MAIN I)	RSN1025		59	Sheet	Z23 - 007
	17	Leaf Switch (MAIN II)	RSN1025		60	Spacer	REC1244
Δ	18	Leaf Switch (REC)	RSN1025				
	19	Power Transformer	RTT1265				
	20	Spring R	RBH1305				
	21	Spring	RBK1004				
	22	Damper Assy	REC1241				
NSP	23	Chassis	RNB1101				
	24	Bracket	RNE1765				
	25	Cord Clamper	RNH - 184				
	26	LED Holder	RNK2060				
NSP	27	Stud	RNL - 792				
	28	Rubber Sheet	AEB1111				
	29	Supporting Feet	AXA7010				
	30	POWER Knob	RAC1886				
	31	MODE Knob	RAC1887				
	32	PLAY Knob	RAC1888				
	33	REC Knob	RAC1889				
	34	REW Knob	RAC1890				
	35	FF Knob	RAC1891				
	36	PAUSE Knob	RAC1892				
	37	STOP Knob	RAC1893				
	38	Meter Lens	RAH2387				
	39	Door Lens	RAH2388				
	40	Door L	RAH2389				
	41	Door R	RAH2390				
	42	Panel	RAH2391				
	43	Name Plate	RAM1007				
	44	Indicating Panel	REE - 113				
	45	Panel	RNA1795				
	45	Panel (CT - W103/KUXJ)					
	45	Panel (CT - W103/KCXJ)	RNA1796				

Packing



2. CASSETTE MECHANISM UNIT

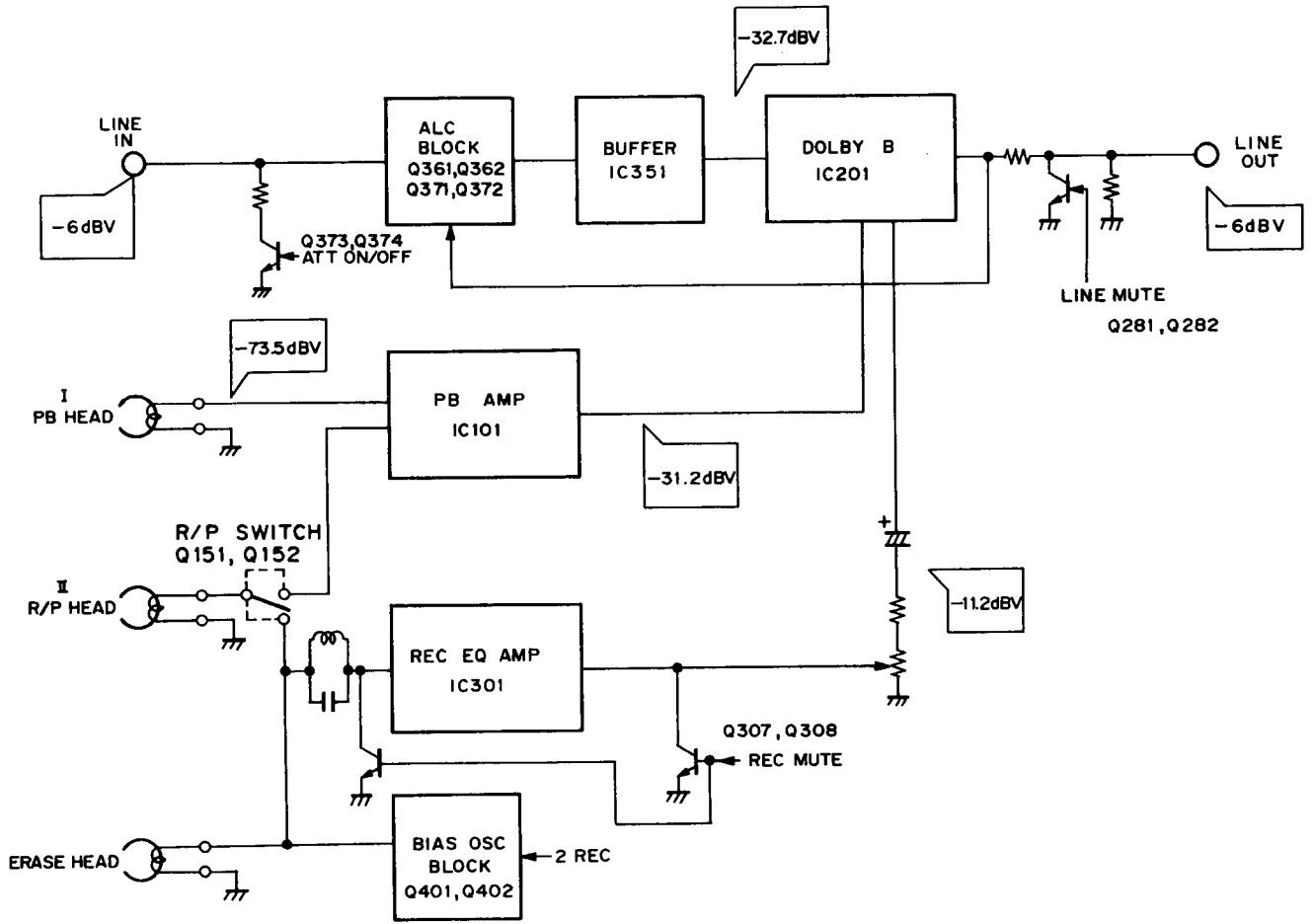
Note: The parts marked with the * are not supplied.



Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Spring	AZB1336		51	FW Assy	AZN2153
	2	Spring	AZB1337		52	Pinch Arm	AZN2157
	3	Spring	AZB1338		53	Pinch Roller	AZN2158
	4	Spring	AZB1339		54	Head Base	AZN2159
	5	Spring	AZB1340		55	Head Holder	AZN2160
	6	Cassette Spring	AZB1343		56	Switch Plate	AZN2162
	7	Spring	AZB1344		57	Button R Holder	AZN2163
	8	Spring	AZB1346		58	Button L Holder	AZN2164
	9	Spring	AZB1347		59	Plate SW	RNE1790
	10	Spring	AZB1348		60	Connect Plate	AZN2166
	11	Plate Spring	AZB1349		61	Connect Arm	AZN2167
	12	Washer	AZB1350		62	Release Arm	AZN2168
	13	Washer	AZB1351		63	Motor Holder	AZN2246
	14	Spring	AZB1352		64	
	15	Spring	AZB1353		65	Tape Guide	AZN2174
	16	Earth Lug	AZB1354		66	E Head	AZP1025
	17	Screw	AZB1355		67	R/P Head	AZP1036
	18	Screw	AZB1356		68	Motor Assy	AZX1037
	19	Screw	AZB1357		69	
	20	Screw	AZB1358		70	Cassette Mecha	RYM1229
	21	Screw	AZB1359		71	Spring	AZB1342
	22	Screw	AZB1360		72	Chassis	AZN2112
	23	Screw	AZB1361		73	Spindle Base	AZN2130
	24	Screw	AZB1362		74	S Reel	AZN2136
	25	Screw	AZB1363		75	FF Idler	AZN2137
	26	Screw	AZB1364	NSP	76	Nylon Binder	Z09 - 057
	27	Reaf SW (CRO)	RSN1024		77	T Reel Assy	AZN2131
	28	Frame Assy	AZN2113				
	29	Function Plate	AZN2116				
	30	REC Stopper	AZN2117				
	31	SW Lever	AZN2118				
	32	REC Lever	AZN2119				
	33	PLAY Lever	AZN2120				
	34	REW Lever	AZN2121				
	35	FF Lever	AZN2122				
	36	SE Lever	AZN2123				
	37	PAUSE Lever	AZN2124				
	38	PAUSE Arm	AZN2125				
	39	Belt	AZN2126				
	40	Belt	AZN2127				
	41	P Idler Arm	AZN2128				
	42	PL Idler	AZN2129				
	43	Inter Lock	AZN2138				
	44	Eject Lever	AZN2139				
	45	PF FF Idler Assy	AZN2140				
	46	Senser	AZN2148				
	47	AS Base	AZN2149				
	48	Cam Gear	AZN2150				
	49	Senser Lever	AZN2151				
	50	Control Lever	AZN2152				

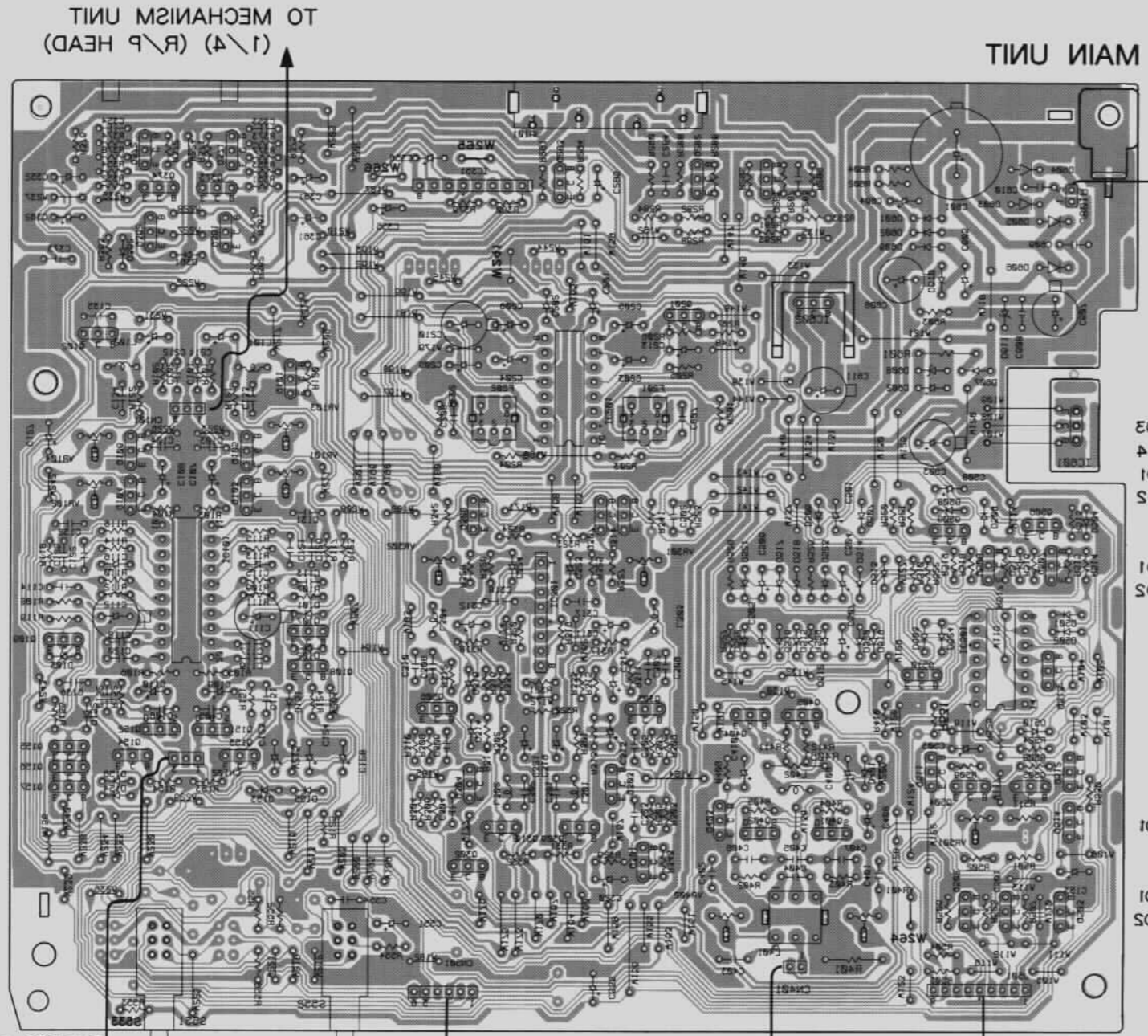
3. BLOCK DIAGRAM



4. PCB CONNECTION DIAGRAM

• This diagram is viewed from the foil side.

A
B
C
D



TO MECHANISM UNIT
(1\4) (R\ P HEAD)

MAIN UNIT

POWER SWITCH UNIT

TRANSFORMER
1 UNIT

TRANSFORMER
2 UNIT

AC POWER CORD
AC120V 60Hz

POWER
TRANSFORMER
RTT1255

TO MECHANISM UNIT
(3\4) (E. HEAD)

TO MECHANISM UNIT
(4\4) (MOTOR ASSY)

TO MECHANISM UNIT
(4\4)

TO MECHANISM UNIT
(4\4)

MECHANISM CONNECTION
UNIT

SUB UNIT

TO MECHANISM UNIT
(2\4) (R\ P HEAD)

IC201

• This diagram is viewed from the mounted parts side.

1 2 3 4 5 6

A

B

C

D

POWER SWITCH UNIT

MAIN UNIT

TO MECHANISM UNIT
(1/4) (R/P HEAD)

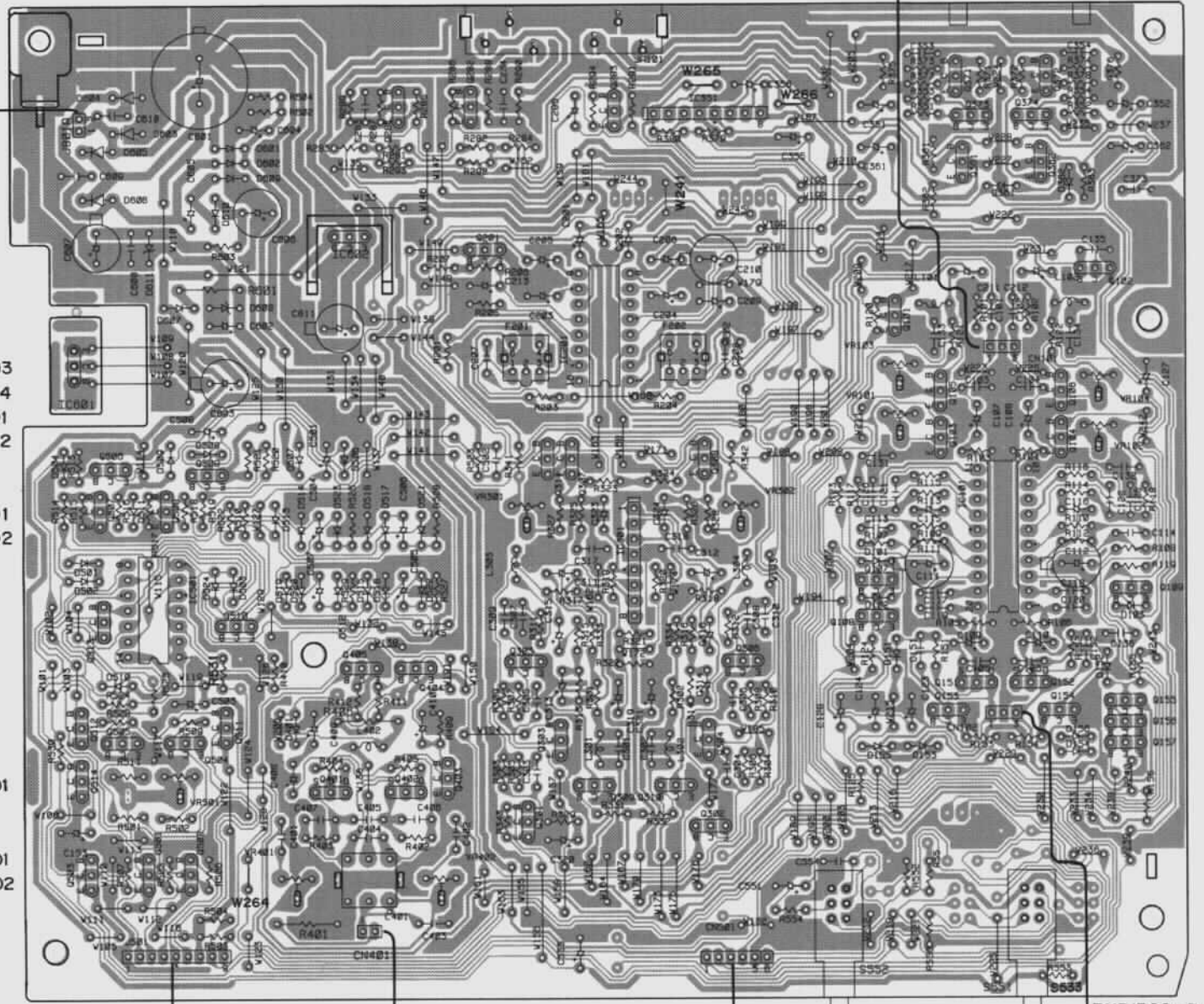
TRANSFORMER
1 UNIT

TRANSFORMER
2 UNIT

AC POWER CORD
AC120V 60Hz

POWER
TRANSFORMER
RTT1265

- Q371
- Q283 Q372
- Q281 Q373
- IC351 Q374
- Q282 Q361
- Q362
- Q201
- IC602 Q102
- IC201 Q101
- IC601
- Q105
- VR103
- VR104
- VR101
- VR102
- Q311 Q103
- Q307 Q104
- Q506 Q308
- Q509
- Q507 IC101
- Q508 IC301
- IC501
- Q405 Q107
- Q513 Q305 Q108
- Q510 Q404 Q306
- Q304 Q151
- Q511 Q153 Q152
- Q505 Q303 Q154 Q155
- Q303 Q154 Q155
- Q504 Q309 Q156
- Q401 Q403 Q310 Q157
- Q401 Q301 Q302
- Q402
- Q502
- Q501
- Q503



NOTE FOR PCB DIAGRAMS:
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

TO MECHANISM UNIT
(3/4) (E. HEAD)

TO MECHANISM UNIT
(4/4)
(MOTOR ASSY)
TO MECHANISM UNIT
(4/4)

TO MECHANISM UNIT
(4/4)

MECHANISM CONNECTION UNIT

SUB UNIT

TO MECHANISM UNIT
(2/4) (R/P HEAD)

IC701

RNP1562-B

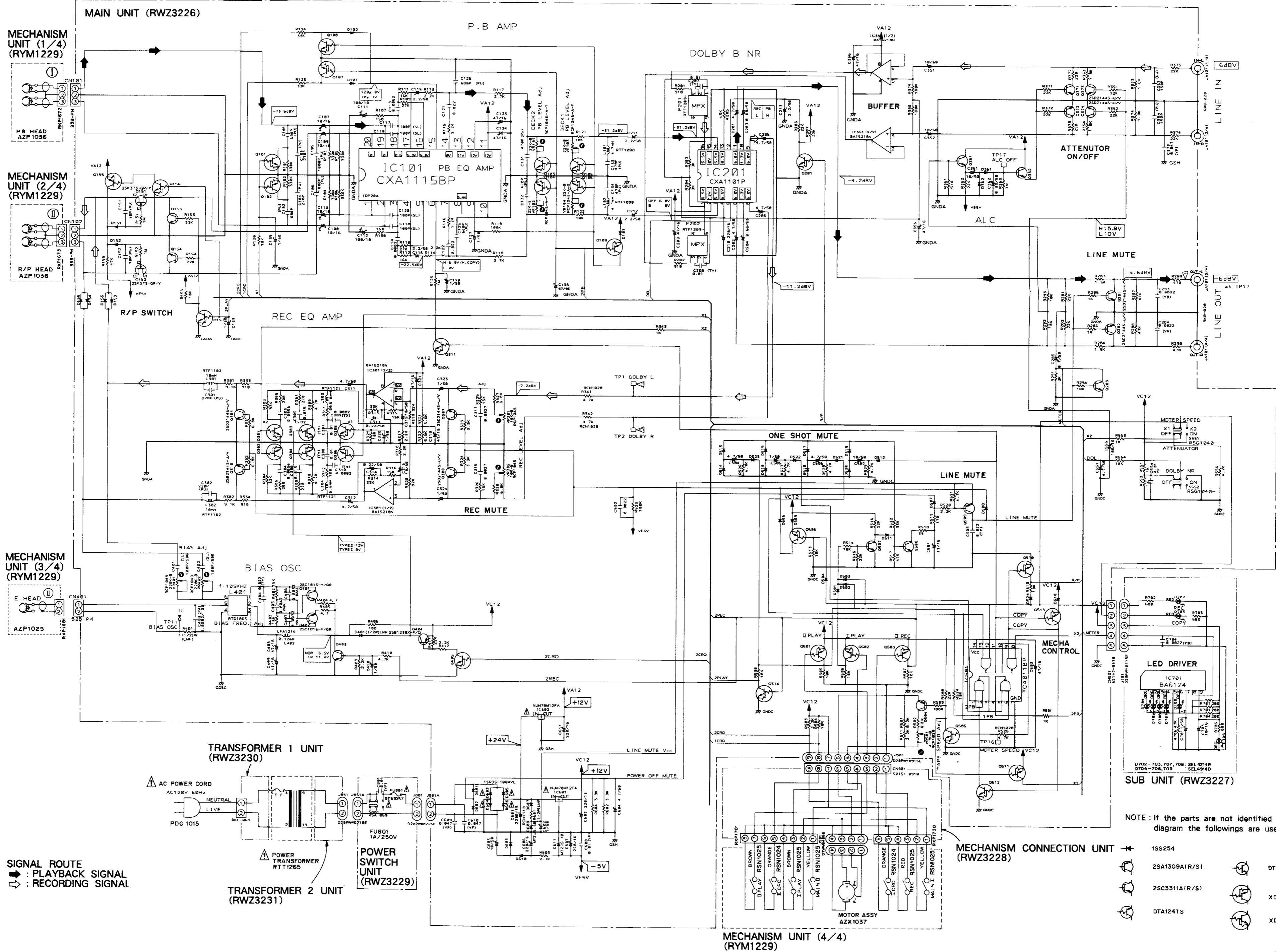
A

B

C

D

5. SCHEMATIC DIAGRAM



SIGNAL ROUTE
 → : PLAYBACK SIGNAL
 ⇄ : RECORDING SIGNAL

- NOTE: If the parts are not identified in the diagram the followings are used.
- 1SS254
 - 2SA1309A(R/S)
 - 2SC331A(R/S)
 - DTA124TS
 - DTC124TS
 - XDA124ES
 - XDC124ES

SE-T1900

SE-T50002
 SE-T19001

- NOTE FOR SCHEMATIC DIAGRAMS** (Type 6A)
 1. When ordering service parts, be sure to refer to "PARTS LIST" or "PCB PARTS LIST".
 2. Since these are basic circuits, some parts of them or values of some components may be changed for improvement.
 3. RESISTORS:
 Unit: k-kΩ, M-MΩ, or Ω unless otherwise noted.
 Rated power: 1/4W, 1/8W, 1/10W unless otherwise noted.
 Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
 Unit: p-pF or μF unless otherwise noted.
 4. CAPACITORS:
 Ratings: capacitor (μF) / voltage (V) unless otherwise noted.
 Rated voltage: 50V except for electrolytic capacitors.
 5. COILS:
 Unit: m: mH or μH unless otherwise noted.
 6. VOLTAGE AND CURRENT:
 DC voltage (V) in STOP mode unless otherwise noted.
 DC current in STOP mode unless otherwise noted.
 7. OTHERS:
 ⊕ or ⊙: Adjusting point.
 Δ: Measurement point.
 • The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
 8. SCH - □ ON THE SCHEMATIC DIAGRAM:
 • SCH - □ indicates the drawing number of the schematic diagram.
 gram. (SCH stands for schematic diagram.)

9. SWITCHES (Underline indicates switch position):
 MAIN UNIT
 SS51 : COPY SPEED NORM - HIGH
 SS52 : DOLBY BNR DEF - ON
 POWER SWITCH UNIT
 S801 : POWER

7. ADJUSTMENTS

7.1 MECHANICAL ADJUSTMENT

1. Tape Speed Adjustment and Check					
No.	Deck	Mode	Input signal & test tape	Adjustment location	Adjustment value
-	-	-	-	Terminate the test point (TP16) at GND using the short-pin, and press the PLAY buttons of DECK I and II.	-
1	I	Double speed PLAY	Play back STD-301 (3 kHz)	Check	6000 Hz ± 800 Hz
2	II	-		Remove the short-pin from the test point (TP16) at the beginning of FWD of DECK II.	-
3	II	Normal speed PLAY	-	VR501	3000Hz ± 5Hz

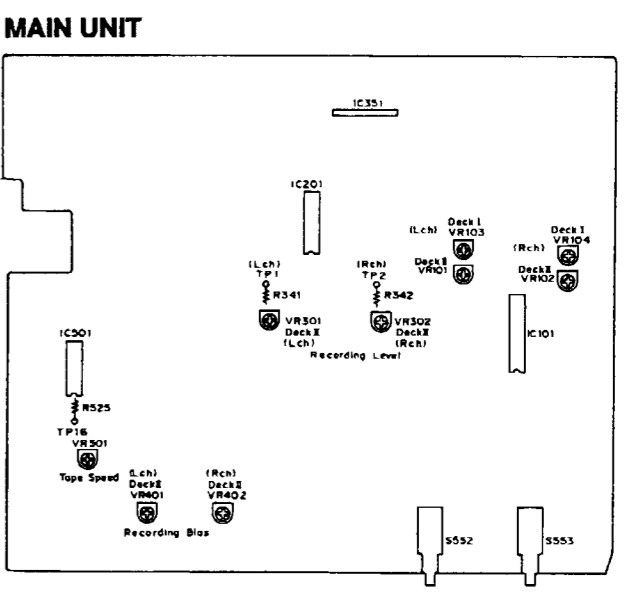


Fig. 7-1 Adjusting points

Door damping check and adjustment

- Attach the door spring at position (b) according to fig. 7-2, and stand the front panel assembly straight up as shown in fig. 7-3.
- Open the doors of DECK I and DECK II simultaneously, and when one of the doors is fully open, confirm that the difference between the two doors is within 15 mm.
- If the specification described in steps 1 and 2 above 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 II door spring to position (a).
 - When the door of DECK I opens faster than the one of DECK II: Change the DECK I door spring to position (a).

Fig. 7-2

Fig. 7-3

6. PCB PARTS LIST

- NOTES:**
- Parts marked by "NSP" 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.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
 - Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
 - 560 Ω → 56 × 10¹ → 561
 - 47k Ω → 47 × 10³ → 473
 - 0.5 Ω → 0R5
 - 1 Ω → 010
 - Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
 - 5.62k Ω → 562 × 10¹ → 5621

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	C121, C122	AUDIO FILM CAPACITOR	CFTYA223J50		C603	ELECT. CAPACITOR	CEAS221M16
	C123, C124	ELECT. CAPACITOR	CEAS470M16		C604	ELECT. CAPACITOR	CEAS4R7M50
	C125, C126	AXIAL CAPACITOR	CKPUB881K50		C605	ELECT. CAPACITOR	CEAS100M50
	C127, C128	ELECT. CAPACITOR	CEAS010M50		C606, C607	ELECT. CAPACITOR	CEAS221M16
	C131-C134	AXIAL CAPACITOR	CKPUB471K50		C608	CERAMIC CAPACITOR	CKCYF103Z50
	C135	ELECT. CAPACITOR	CEAS010M50		C609, C610	CERAMIC CAPACITOR	CKCYF473Z50
	C136	ELECT. CAPACITOR	CEAS470M16		C611	ELECT. CAPACITOR	CEAS221M16
	C151, C152	AXIAL CAPACITOR	CCPUSL100J50		RESISTORS		
	C153	ELECT. CAPACITOR	CEAS010M50		R341, R342	CARBON FILM RESISTOR (4.7k)	RCN1028
	C201, C202	ELECT. CAPACITOR	CEAS4R7M50		R401	CARBON FILM RESISTOR	RD1/2LPM010J
	C203, C204	ELECT. CAPACITOR	CEASR68M50		R406	CARBON FILM RESISTOR	RD1/2LMF101J
	C205, C206	ELECT. CAPACITOR	CEAS4R7M50		R525	CARBON FILM RESISTOR (4.7k)	RCN1028
	C207, C208	AUDIO FILM CAPACITOR	CFTYA103J50		R601	CARBON FILM RESISTOR (502, 1.5% T50002)	RD1/2LMF102J
	C209	ELECT. CAPACITOR	CEAS470M16		<i>R502 (Sec. T50002)</i>		
	C210	ELECT. CAPACITOR	CEAS221M16		VR101-VR104	VR(22k)	RB4/6FM512
	C211-C213	ELECT. CAPACITOR	CEAS2R2M50		VR301, VR302	VR(10k)	RCP1046
	C283, C284	CERAMIC CAPACITOR	CKCYB222K50		VR401, VR402	VR(220k)	RCP1045
	C285	ELECT. CAPACITOR	CEAS10M50		VR501	VR(4.7k) (Sec. T50002)	RCP1049
	C301, C302	AXIAL CAPACITOR	CKPUB221K50		OTHER RESISTORS		
	C303, C304	CERAMIC CAPACITOR	CGCYX562K25		CN101, CN102	CONNECTOR POST	B3B-PH-K
	C305, C306	CERAMIC CAPACITOR	CGCYX153K25		CN401	CONNECTOR POST	B2B-PH-K
	C307, C308	AUDIO FILM CAPACITOR	CFTYA103J50		CN501	SP JUMPER CONNECTOR	S2147-0510
	C309, C310	AUDIO FILM CAPACITOR	CFTYA822J50		JA101	JACK	RKB-020
	C311, C312	ELECT. CAPACITOR	CEAS4R7M50		EARTH PLATE		
	C313, C314	ELECT. CAPACITOR	CEASR22M50		SUB UNIT		
	C315, C316	ELECT. CAPACITOR	CEAS100M50		SEMICONDUCTORS		
	C317, C318	CERAMIC CAPACITOR	CGCYX272K25		IC701	LINEAR IC	BA6124
	C319	ELECT. CAPACITOR	CEAS470M16		D702, D703	LED	SEL4214R
	C320	ELECT. CAPACITOR	CEAS010M50		D704-D706	LED	SEL4914D
	C321	ELECT. CAPACITOR	CEAS470M16		D707, D708	LED	SEL4214R
	C323, C324	ELECT. CAPACITOR	CEAS010M50		D709	LED	SEL4914D
	C351, C352	ELECT. CAPACITOR	CEAS100M50		CAPACITORS		
	C353, C354	CERAMIC CAPACITOR	CKPUB151K50		C701	ELECT. CAPACITOR	CEAS010M50
	C355, C356	ELECT. CAPACITOR	CEAS470M16		C703	ELECT. CAPACITOR	CEAS100M16
	C361	ELECT. CAPACITOR	CEAS100M50		C704	CERAMIC CAPACITOR	CKCYB222K50
	C362	ELECT. CAPACITOR	CEASR33M50		RESISTORS		
	C373	CERAMIC CAPACITOR	CKCYF473Z50		ALL RESISTOR	RD1/6PM□□□J	
	C401, C402	CERAMIC CAPACITOR	CCCSL101K500		MECHANISM CONNECTION UNIT		
	C403	PL. PROPYLENE CAPACIT	QOPAR22J100		OTHERS		
	C404	AUDIO FILM CAPACITOR	CFTYA223J50		CN901	3PJUMPER CONNECTOR	S2151-0910
	C405	PLASTIC FILM CAPACITOR	QMAA472J50		POWER SWITCH UNIT		
	C406, C407	PLASTIC FILM CAPACITOR	QMAA332J50		SWITCHES AND RELAYS		
	C408, C409	ELECT. CAPACITOR	CEAS470M16		Δ S801	SWITCH	RSA-069
	C410	ELECT. CAPACITOR	CEAS010M50		CAPACITORS		
	C501	ELECT. CAPACITOR	CEAS470M16		C801	CERAMIC CAPACITOR	CKCYF103Z50
	C502	CERAMIC CAPACITOR	CKCYB222K50		OTHERS		
	C503	ELECT. CAPACITOR	CEAS470M16		Δ	TERMINAL	RKC-061
	C504	ELECT. CAPACITOR	CEAS4R7M50		TRANSFORMER 1 UNIT		
	C505	ELECT. CAPACITOR	CEAS010M50		This unit has no service parts.		
	C506	ELECT. CAPACITOR	CEAS4R7M50		TRANSFORMER 2 UNIT		
	C507	ELECT. CAPACITOR	CEAS100M50		This unit has no service parts.		
	C508	AUDIO FILM CAPACITOR	CFTYA223J50				
	C551	ELECT. CAPACITOR	CEAS4R7M50				
	C554	CERAMIC CAPACITOR	CKCYF103Z50				
	C555	ELECT. CAPACITOR	CEAS101M16				
	C601	ELECT. CAPACITOR (2200/35V)	RCH118				
	C602	ELECT. CAPACITOR	CEAS010M50				

7.2 ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBV=1 Vrms.
5. Connect a 10 kΩ load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.

DOLBY NR : OFF

Test Tapes

- STD-331E : Playback adjustments
(See Fig. 7-4)
- STD-631 or STD-632 : NORMAL blank tape
- STD-621 : CrO₂ blank tape

List of Adjustments

Playback sections

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

Recording sections

1. Recording bias adjustment.
2. Recording level adjustment.
3. Level meter check.

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"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

NOTE: This unit has an automatic tape selection feature.

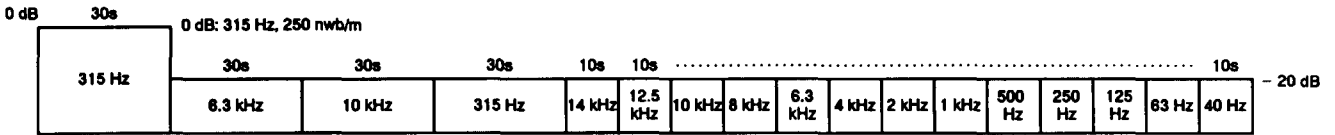
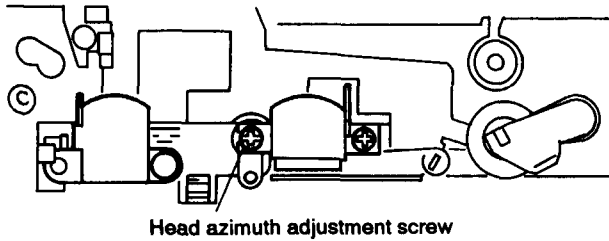
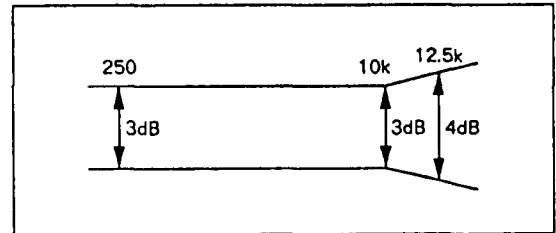


Fig. 7-4 Constants of the test tape STD-331E

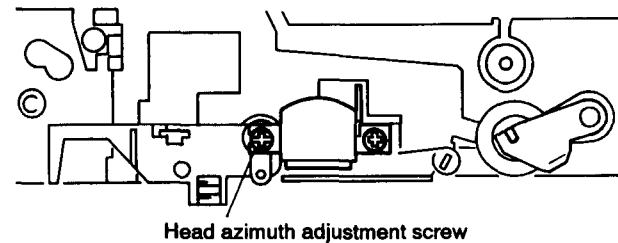
Deck II



PLAY BACK



Deck I



RECORDING

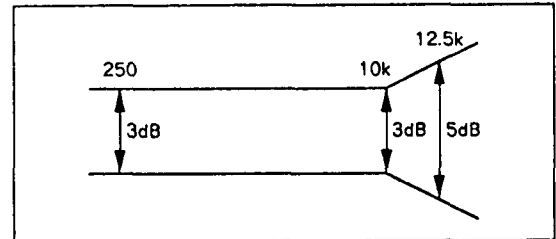


Fig. 7-5 Head azimuth adjustment

Fig. 7-6 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR101, 102 (Deck II) or VR103, 104 (Deck I) 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. 7-5)	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	VR 103 (Lch) VR 104 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	-10.7 dBV	
			Deck II	VR 101 (Lch) VR 102 (Rch)			

RECORDING SECTION

1. Recording Bias Adjustment

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 → PLAY	Load the STD-631 test tape. Record the 315 Hz and 6.3 kHz signals at -20 dBV input level and playback.	Deck II	VR401 (Lch) VR402 (Rch)	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.	

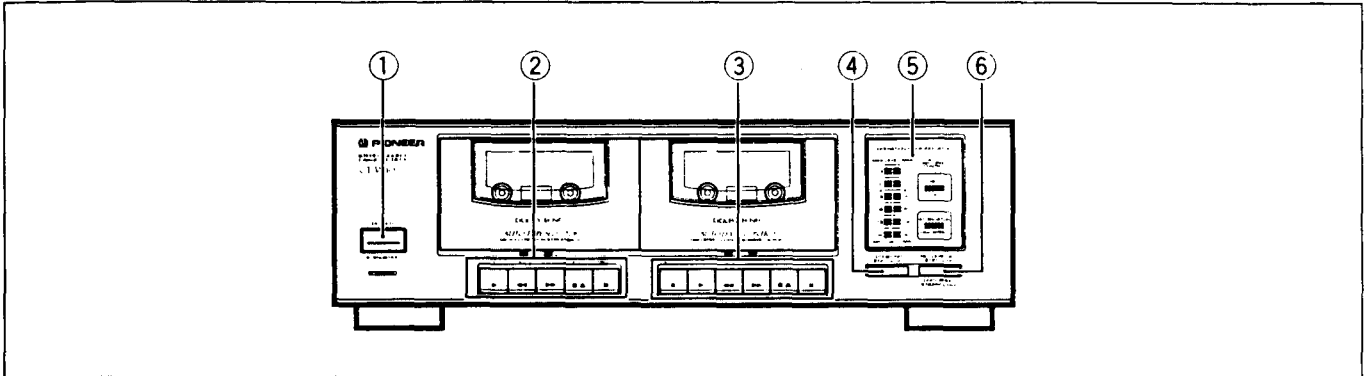
2. Recording Level Adjustment

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks	
1.	REC/ PAUSE	Apply a 315 Hz signal to the line input terminals, load the STD-631 or STD-632 test tape.	Volume of the output level of the oscillator		TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBV	
2.	REC → PLAY	Record the above signal onto the STD-631 or STD-632 test tape, and playback.	Deck II	VR301 (Lch) VR302 (Rch)		Repeatedly record, playback and adjust so that the playback signal level becomes -11.2 dBV.	
3.	REC → PLAY	Record the above signal onto the STD-621 test tape, and playback.	Check			-11.2 dBV ± 1.5 dB	

3. Level Meter Check

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	REC/ PAUSE	Apply a 315 Hz/-6 dBV (0.5V) signal to the Line Input terminals.	Volume of the output level of the oscillator.	TP. 1 (Lch) TP. 2 (Rch)	Check that the level meters "0 dB" light up within -11.2 dBV ± 2 dB of the signal output level.	

8. PANEL FACILITIES



① POWER (STANDBY/ON) switch

NOTE:

The POWER switch activates the secondary transformer only. Even when the switch is in the STANDBY position, there will be a power flow to the deck's circuits as long as the power cord is connected to a power outlet.

② Deck I operation buttons

- ▶ (PLAY) : Playback
- ◀◀ (REW) : Rewind
- ▶▶ (FF) : Fast forward
- /▲ (STOP/EJECT) : Stop/Eject
- ⏸ (PAUSE) : Pause

③ Deck II operation buttons

- (REC) : Recording
- ▶ (PLAY) : Playback
- ◀◀ (REW) : Rewind
- ▶▶ (FF) : Fast forward
- /▲ (STOP/EJECT) : Stop/Eject
- ⏸ (PAUSE) : Pause

④ DOLBY* NR switch (■ OFF, ▬ ON)

*

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

⑤ Function display

⑥ REC LEVEL ATT button (■ OFF, ▬ ON) / COPY SPEED button (■ NORM, ▬ HIGH)

- If the sound is distorted, set this button to ON to attenuate the level and reduce distortion.
- When recording from one tape to another tape, this button can be used to switch between NORMAL SPEED and HIGH SPEED recording.

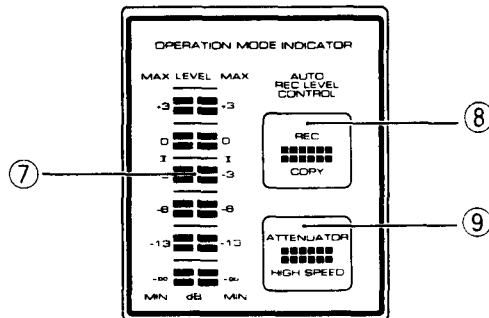
■ Dolby NR System

Dolby NR systems are designed to reduce the amount of tape hiss, mainly in the treble components. During recording, the high-pitched pianissimo sounds which are most characteristic of audible noise are boosted, and during playback, only these boosted sections are attenuated, so that the sound is returned to normal. As a result, the noise is attenuated by an amount equal to the boosting in the treble range. The Dolby NR ON system reduces noise in the treble range, cutting tape hiss and expanding the dynamic range.

NOTE:

When a tape has been recorded using the Dolby NR system, make sure that the DOLBY NR switch is set to the ON position during playback.

Function display



⑦ Level meter

- The between the -3 and 0 mark indicates the reference level for the Dolby NR system.

⑧ REC/COPY indicator

Lights up during recording or copying.

⑨ ATTENUATOR/HIGH SPEED indicator

- Lights up during recording when the REC LEVEL ATT switch is set to ON.
- Lights up during High speed copying.

9. SPECIFICATIONS

System	4 track, 2-channel stereo
Heads	"Hard Permalloy" recording/playback head x 1 "Hard Permalloy" playback head x 1 "Ferrite" erasing head x 1
Motor	DC servo motor x 1
Wow and Flutter	0.15% (WRMS, JIS)
Fast Winding Time	Approx. 115 seconds (C-60 tape)
Frequency Response (at -20 dB recording level)	
TYPE II (HIGH/CrO ₂) tape.....	30 to 16,000 Hz
TYPE I (Normal) tape.....	30 to 16,000 Hz
Signal-to-Noise Ratio	
Dolby NR OFF	More than 56 dB
Noise Reduction Effect	
Dolby NR ON	More than 10 dB (at 5 kHz)
Harmonic Distortion	No more than 1.0% (at -4 dB: 160 nwb/m)
Input (Sensitivity)	
LINE (INPUT).....	112 mV (Input impedance 24 kΩ)
Output (Reference level)	
LINE (OUTPUT)	0.5 V (Output impedance 1.9 kΩ)

Miscellaneous

Power Requirements	
Australian model	AC 230 ~ 240 V, 50/60 Hz
U.S. model.....	AC 120 V, 60Hz
Power Consumption.....	15 W
Dimensions	420 (W) x 130 (H) x 250 (D) mm
Weight	4.2 kg

Accessories

Operating instructions	1
Connection cord with pin plugs	2

Features

- DOLBY NR
- Synchronized copy start
- High-speed and normal-speed copy (Deck I → Deck II)
- Relay playback (Deck II → Deck I)
- 6-segment LED level meter
- Automatic tape selectors
- Automatic recording level control
- REC LEVEL Attenuator

NOTE:

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