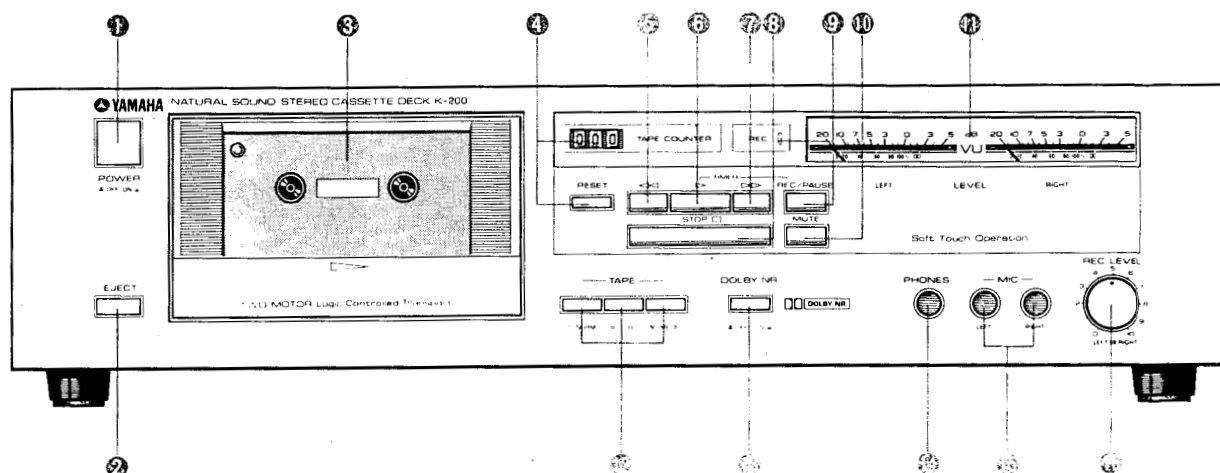


STEREO CASSETTE DECK

K-2000

SERVICE MANUAL

FRONT PANEL



- | | |
|--|---|
| ① Power Switch (POWER) | ⑨ Record-Standby/Pause Button (REC/PAUSE) |
| ② Eject Button (EJECT) | ⑩ Record-Muting Button (MUTE) |
| ③ Cassette Holder | ⑪ VU Level Meters (LEVEL) |
| ④ Tape Counter/Reset Button (TAPE COUNTER/RESET) | ⑫ Tape Selector Switches (TAPE) |
| ⑤ Rewind Button (⏮) | ⑬ Dolby NR Switch (DOLBY NR) |
| ⑥ Play Button (▶) | ⑭ Headphone Jack (PHONES) |
| ⑦ Fast-Forward Button (⏭) | ⑮ Microphone Jacks (MIC) |
| ⑧ Stop Button (⏹) | ⑯ Record Level Control (REC LEVEL) |

CONTENTS

Rear Panel	1
Names of the Parts	2
Disassembly Instructions	3
General Adjustments	4
Specifications	7
Block Diagram	7
Performance Chart for Mechanism Logic	8
Printed Circuit Board Pattern-side Layout	10
Printed Circuit Board Parts-side Components Layout/Wiring	11
Schematic Diagram	12

004463

SINCE 1887



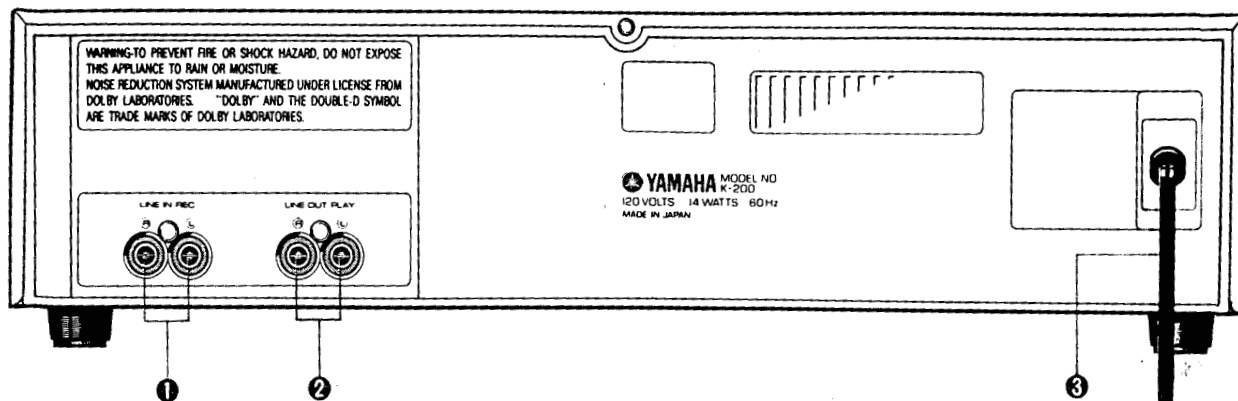
YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

Printed in Japan 5.82 2.65K

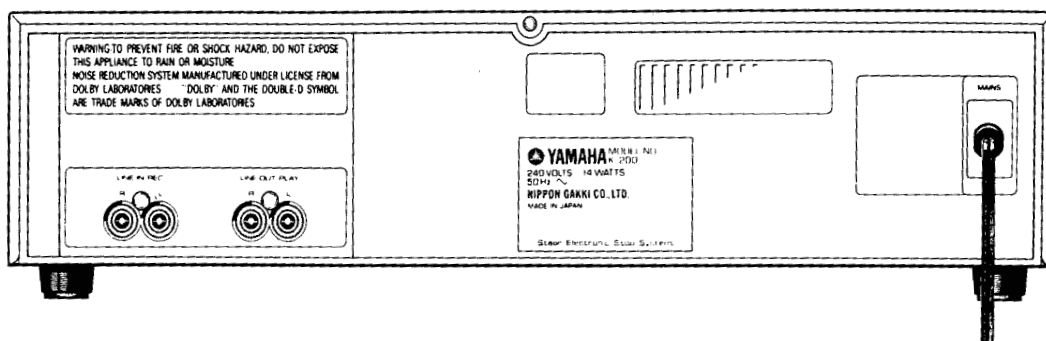
REAR PANEL

U.S.A. and Canadian Models

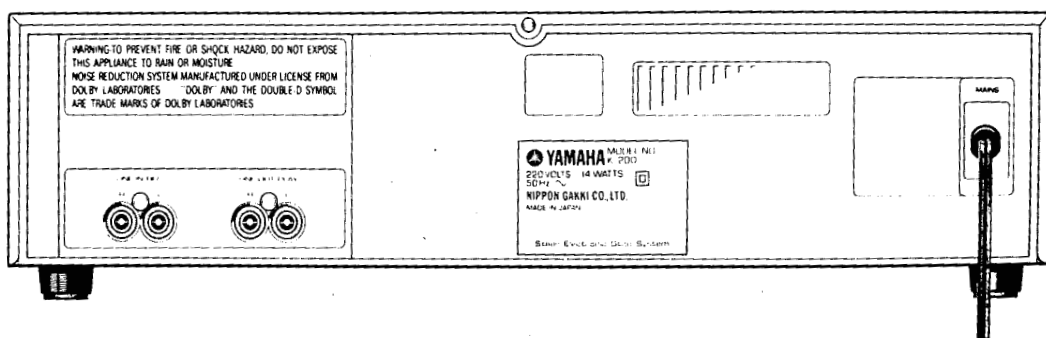


- ① Record Input Jacks (LINE IN/REC)
- ② Playback Output Jacks (LINE OUT/PLAY)
- ③ Power Cord

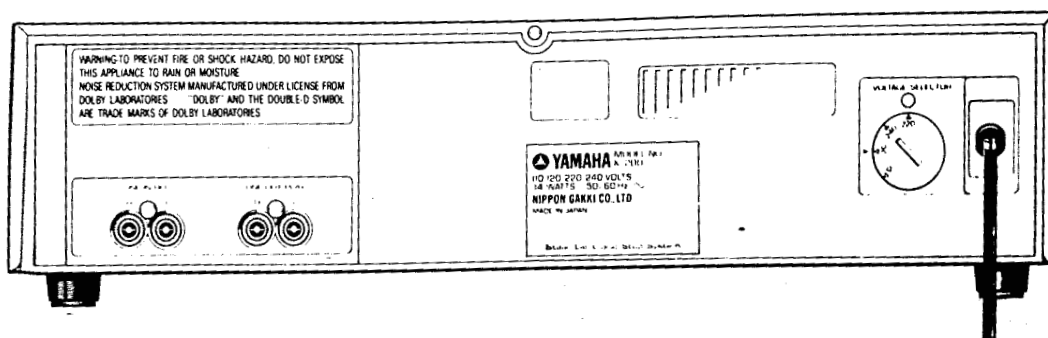
Australian and British Models



European Model

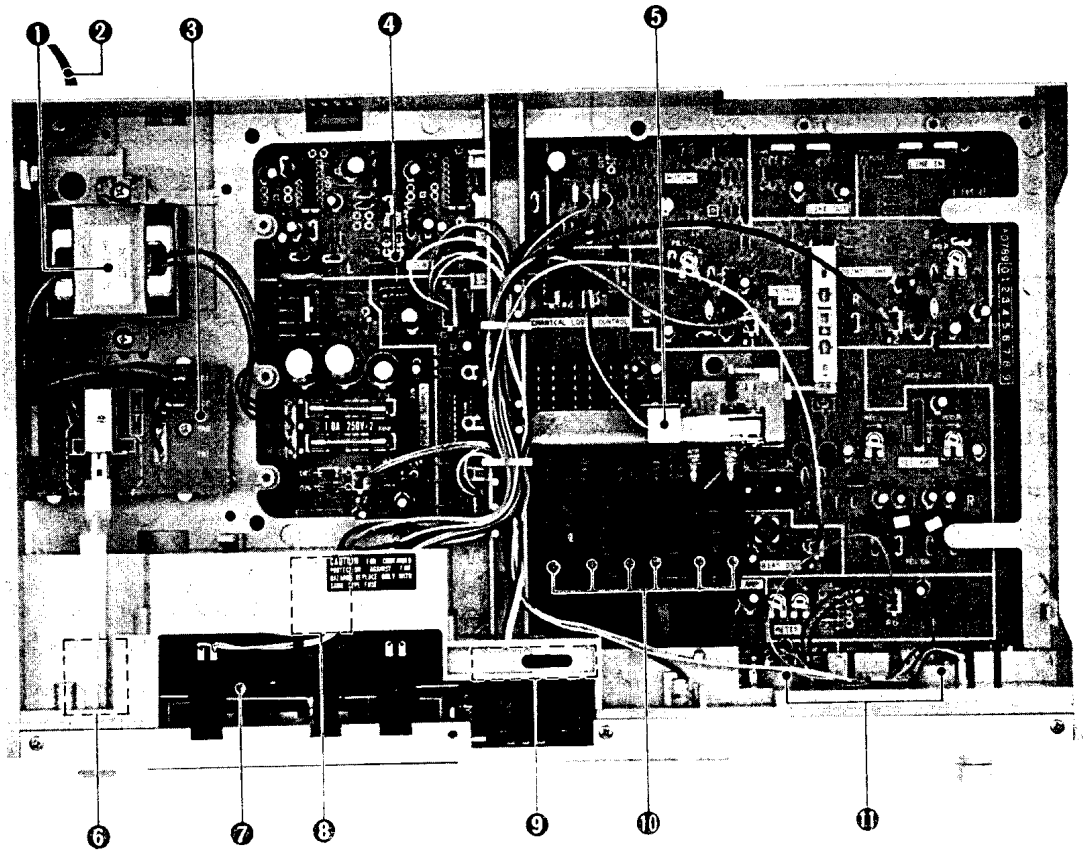


General Model



■ NAMES OF THE PARTS

Top View

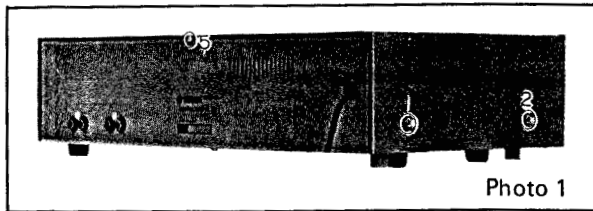


- ① Power transformer
- ② Power cord
- ③ Main circuit board (2)
- ④ Main circuit board (1)
- ⑤ Auto-Shut off solenoid
- ⑥ Capstan drive motor
- ⑦ Transport mechanism TM-5A
- ⑧ Reel drive motor
- ⑨ Main circuit board (3)
- ⑩ Switch rods
- ⑪ VU meters

DISASSEMBLY INSTRUCTIONS

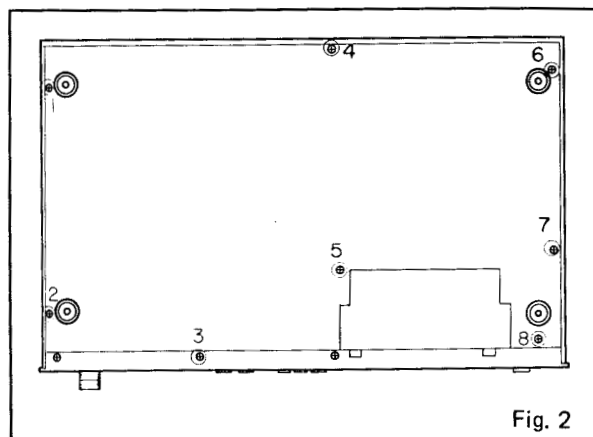
1. Removal of Top Cover

Remove screws ① and ② shown in photo 1 (4 screws each right and left) and remove plastic rivet ⑤. The top cover can now be removed.



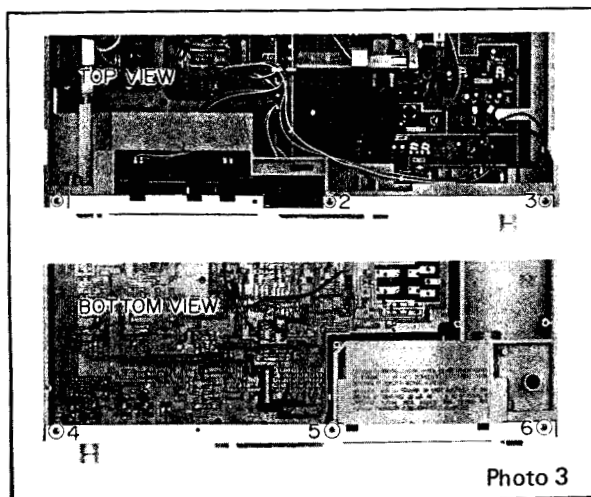
2. Removal of Bottom Cover

Remove screws ① ~ ⑧ shown in fig 2, and remove the bottom cover.



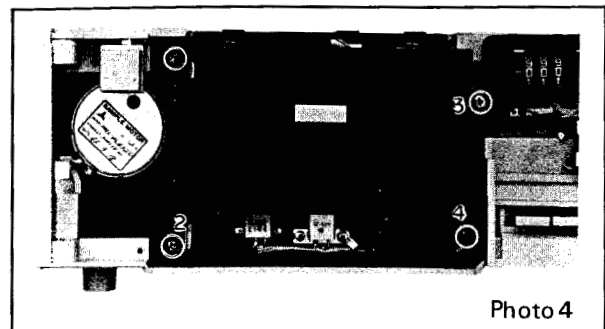
3. Removal of Front Panel

- Remove the top and bottom covers per steps 1, and 2.
- Remove screws ① ~ ⑥ shown in photo 3, and remove the front panel.



4. Removal of Transport Mechanism

- Remove the front panel according to step 3.
- Remove the cassette cover.
- Unplug all connectors from the mechanism section.
- Remove screws ① ~ ④ shown in photo 4, and remove the transport mechanism.

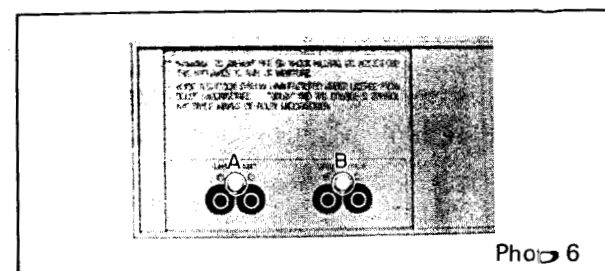
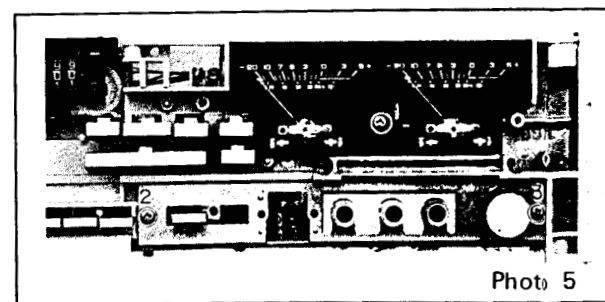


5. Removal of VU Meters

- Remove the front panel according to step 3.
- Remove screw ① shown in photo 5, and remove the VU meters.

6. Removal of Circuit Board

- Remove the top and bottom covers and the front panel according to steps 1, 2 and 3.
- Remove screws ② and ③ shown in photo 5.
- Remove the plastic rivets A and B shown in photo 6.
- Remove screw ① shown in photo 7, and remove plastic rivets A ~ C.
- After removing all switch rods, the circuit board can be detached.



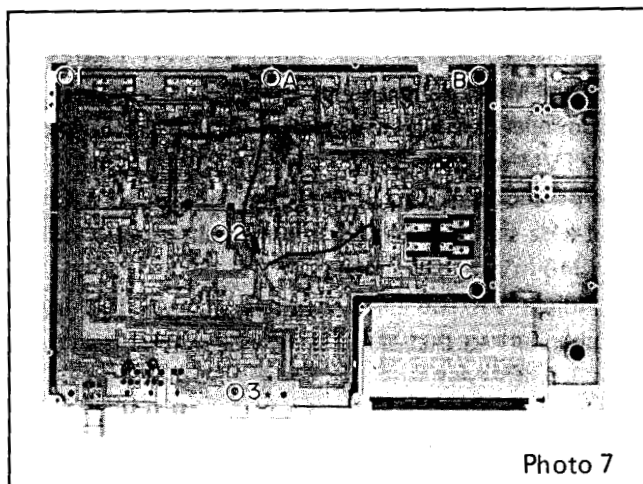


Photo 7

■ GENERAL ADJUSTMENTS

Before Adjustment

1. Set the Dolby NR switch to OFF.
2. As dirty or magnetized heads can deteriorate measurement results for various parameters, be sure to perform head demagnetizing and head cleaning, especially before adjusting frequency response or head azimuth.

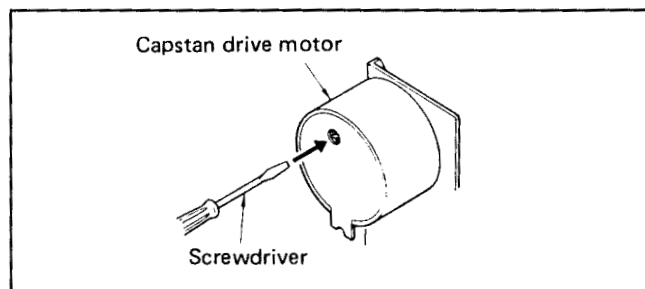
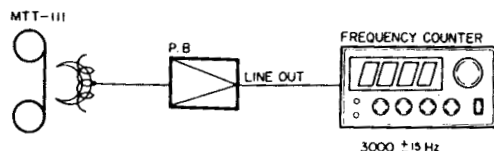
Designated Test Tapes

TEAC	MTT-111 (3 kHz)
TEAC	MTT-212C (160 nWb/m)
	or MTT-212 (250 nWb/m)
TEAC	MTT-114 (10 kHz)
TEAC	MTT-216 (3180 + 120 μ s)
	or MTT-316 (3180 + 70 μ s)
TDK	SA C-60 (CrO ₂ tape)
TDK	AD C-60 (LH tape)
TDK	MA C-60 (Metal tape)

Playback Adjustments

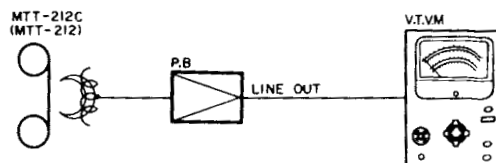
1. Tape Speed Adjustment

- a) Connect a frequency counter to the left or right channel LINE OUT.
- b) Play test tape TEAC MTT-111 (3 kHz) and adjust the semi-fixed VR in the drive motor base for a frequency counter reading of 3000 Hz ± 15 Hz.



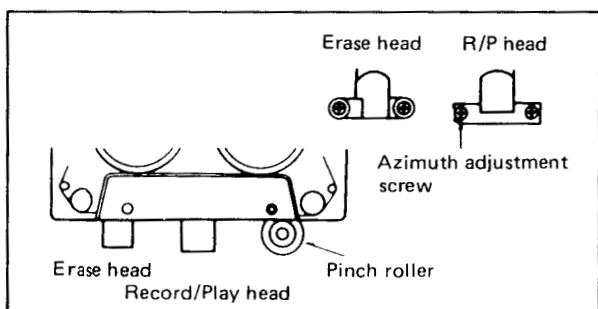
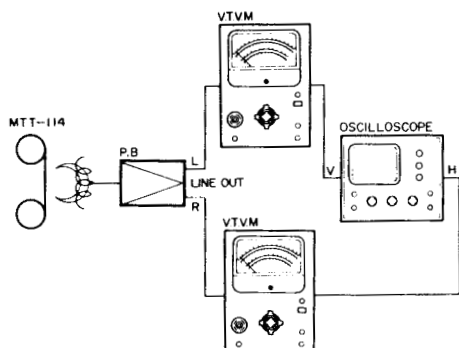
2. Playback Level Adjustment

- a) Connect a VTVM to LINE OUT.
- b) Play test tape TEAC MTT-212C (160 nWb/m) and adjust VR 101 (left channel) and VR 102 (right channel) for a LINE OUT level reading of -7 ± 1 dBm (346 mV).



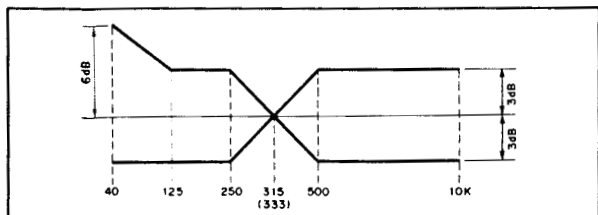
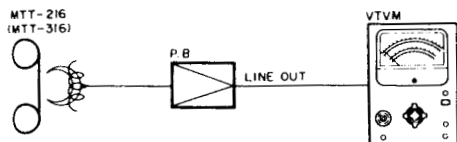
3. Head Azimuth Adjustment

- Remove the cassette cover.
- Connect two VTVMs and an oscilloscope to the left and right channels of LINE OUT.
- Play test tape TEAC MTT-114 (10 kHz) and turn the R/P head azimuth adjustment screw so that the outputs of both left and right channels are maximum, equal, and in phase.
- After adjustment, apply screw lock paint.



4. Playback Frequency Response Check

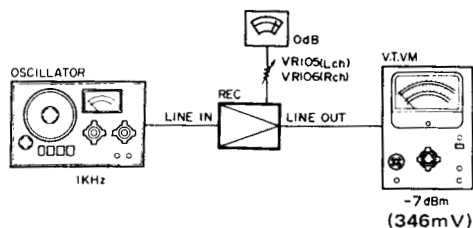
- Connect a VTVM to LINE OUT.
- Play test tape TEAC MTT-216 (3180 + 120 μ s : LH) or MTT-316 (3180 + 70 μ s : CrO₂) and confirm that the 10-kHz reading is within ± 3 dB of the 315-Hz reading.



Recording Adjustments

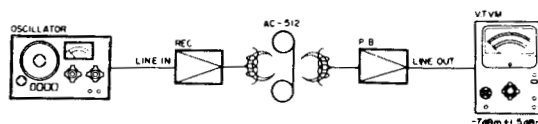
1. Level Meter Adjustment

- Connect an audio oscillator to LINE IN and a VTVM to LINE OUT.
- Put the deck into the record mode and apply a 1-kHz signal to LINE IN which will cause -7 dBm (346 mV) at the LINE OUT.
- Adjust VR 105 (left channel) and VR 106 (right channel) so that the VU meter pointers read 0 dB ± 1.5 dB.



2. Record Level Adjustment

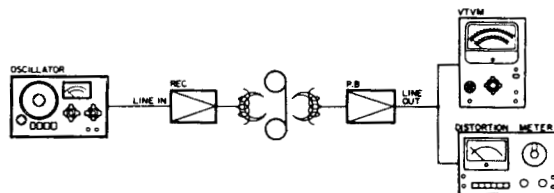
- Establish the same connections as for level meter adjustment above.
- Put the deck into the record mode and apply a 315-Hz (1-kHz, 333-Hz) signal to LINE IN which will read -7 dBm (346 mV) at LINE OUT.
- Use the TDK SA C-60 CrO₂ tape and record this signal.
- Adjust VR 103 (left channel) and VR 104 (right channel) so that the recorded signal reads -7 dBm (346 mV) upon playback.



3. Check of Recording Bias Current

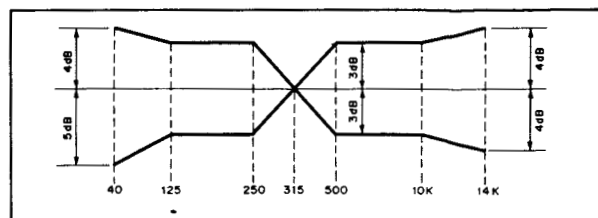
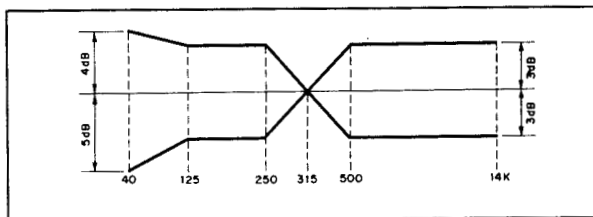
* Set the DOLBY NR switch to OFF.

- Connect an audio oscillator to LINE IN and a VTVM and distortion meter to LINE OUT.
- Apply a signal to LINE IN which will read -27 dBm (34.6 mV, -20 VU) at LINE OUT.



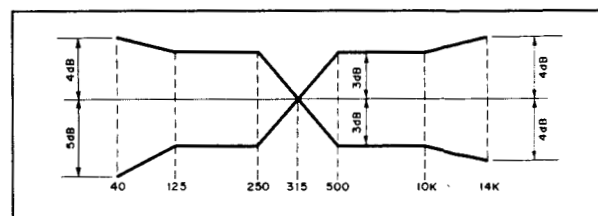
- CrO₂ Position

- Use a TDK SA C-60 CrO₂ tape and adjust VC 101 (trimmer capacitor, L and R) so that the 14-kHz record/playback level is within ± 3 dB of the 1-kHz (315-Hz, 333-Hz) record/playback level.
- At this time, distortion at 315-Hz (1-kHz, 333-Hz), 0 VU must be below 2.5%.



- METAL Position

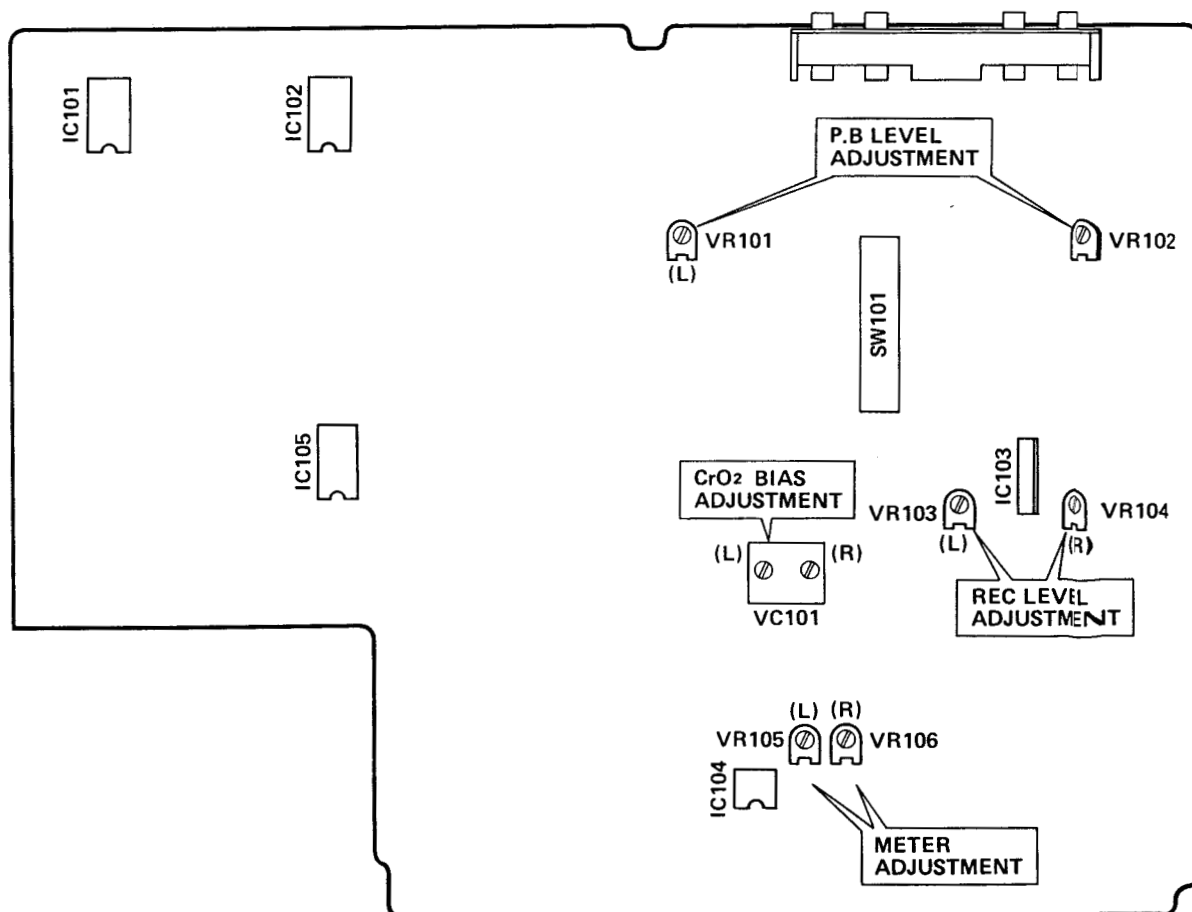
- Use a TDK MA C-60 metal tape and check that the 14-kHz record/playback level is within ± 4 dB of the 315-Hz (1-kHz, 333-Hz) record/playback level.



- LH Position

- Use a TDK AD C-60 (LH) tape and check that the 14-kHz record/playback level is within ± 4 dB of the 315-Hz (1-kHz, 333-Hz) record/playback level.

Location of Adjustment Points



SPECIFICATIONS

Track Configuration	4 track, 2 channel stereo
Motor	DC servo motor (capstan) Flat torque DC motor (reel)
Heads	Hard permalloy rec/play- back head Double-gap ferrite erase head
Tape Speed	4.75 cm/sec
Wow and Flutter	
WRMS	0.05%
DIN-45507	0.08%
Signal-to-Noise Ratio	
(Dolby off, CrO ₂ tape)	better than 58 dB
(Dolby on, CrO ₂ tape)	better than 66 dB
Frequency Response	
Normal tape (-20 dB)	40 ~ 15,000 Hz $\pm$ 3 dB
CrO ₂ tape (-20 dB)	40 ~ 15,000 Hz $\pm$ 3 dB
Metal tape (-20 dB)	40 ~ 15,000 Hz $\pm$ 3 dB
(0 dB)	40 ~ 12,000 Hz $\pm$ 3 dB
Overall Distortion	
Metal tape	less than 1.0% (315 Hz)
Channel Separation	better than 35 dB (1K Hz)
Crosstalk	better than 60 dB (125 Hz)
Erase rate	better than 60 dB (400 Hz)

Input Sensitivity/Impedance

Mic	0.3mV/5K ohms
Line	60 mV/80K ohms

Output Level

Line	350 mV/2.2K ohms
Phones	0.6mW/8 ohms

Power Supply

	AC 120V, 60 Hz (U,C)
	AC 220V, 50 Hz (G)
	AC 240V, 50 Hz (A,B)
	AC 110/120/220/240V, 50/60 Hz (R)

Power Consumption

	14 W
Dimensions (W x H x D)	435 x 112 x 278 mm (17-1/8 x 4-13/32 x 11")

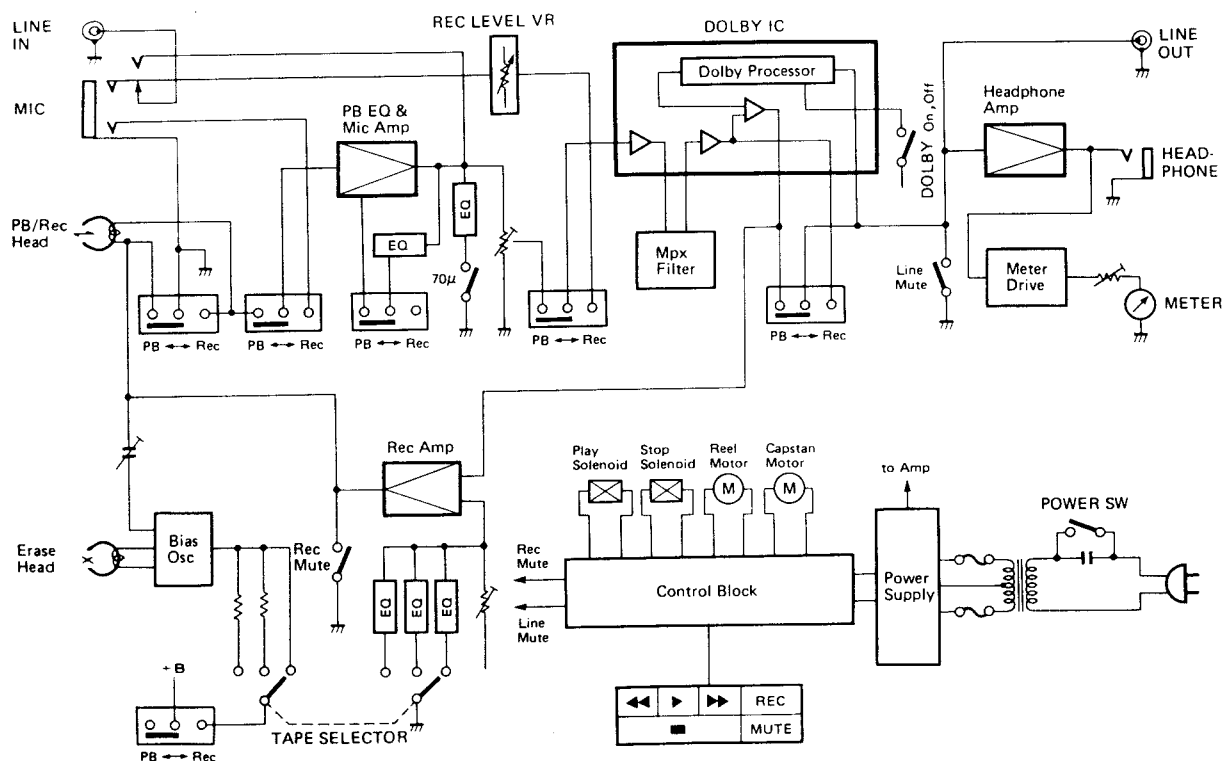
Weight

	4.5 kg (9.9 lbs)
--	------------------

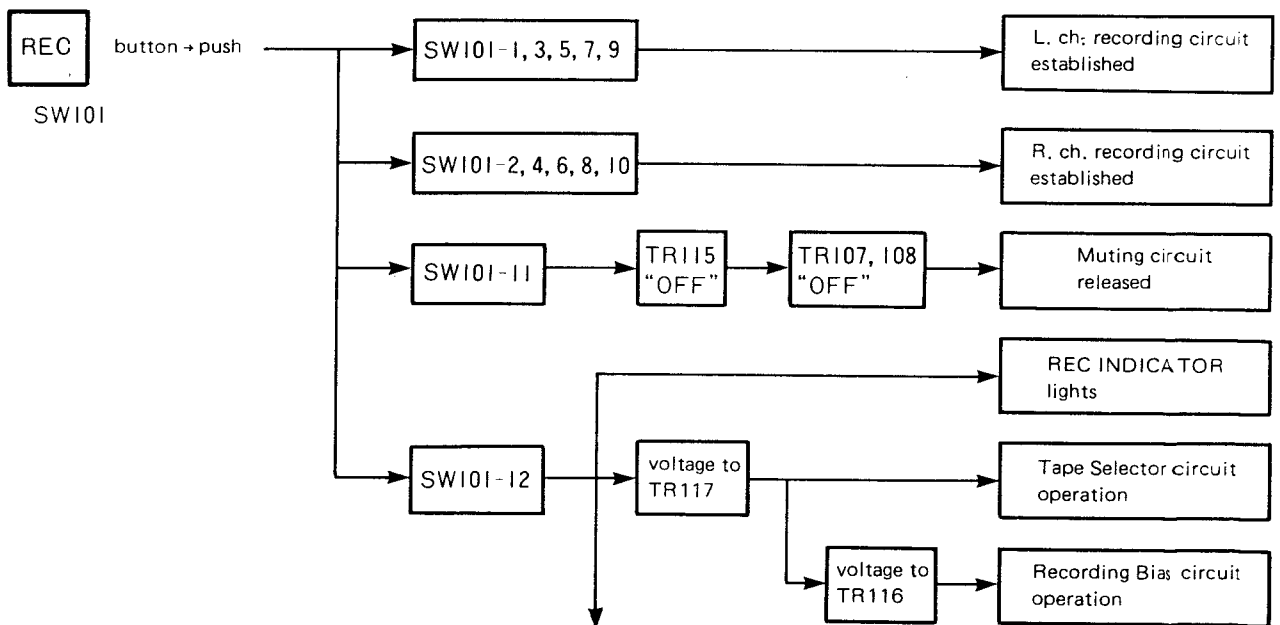
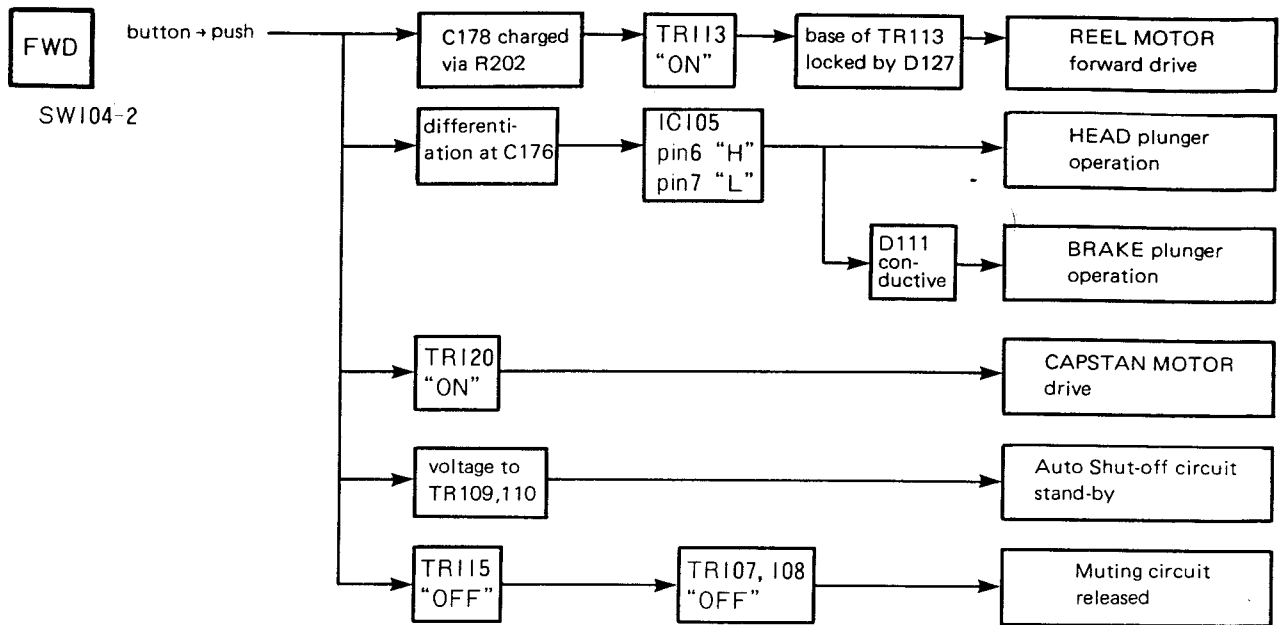
Specifications subject to change without notice.
TM Dolby Laboratories Licensing Corp.

U : U.S.A. Model
C : Canadian Model
R : General Model
A : Australian Model
B : British Model
G : European Model

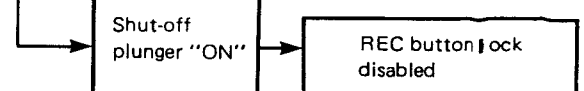
BLOCK DIAGRAM

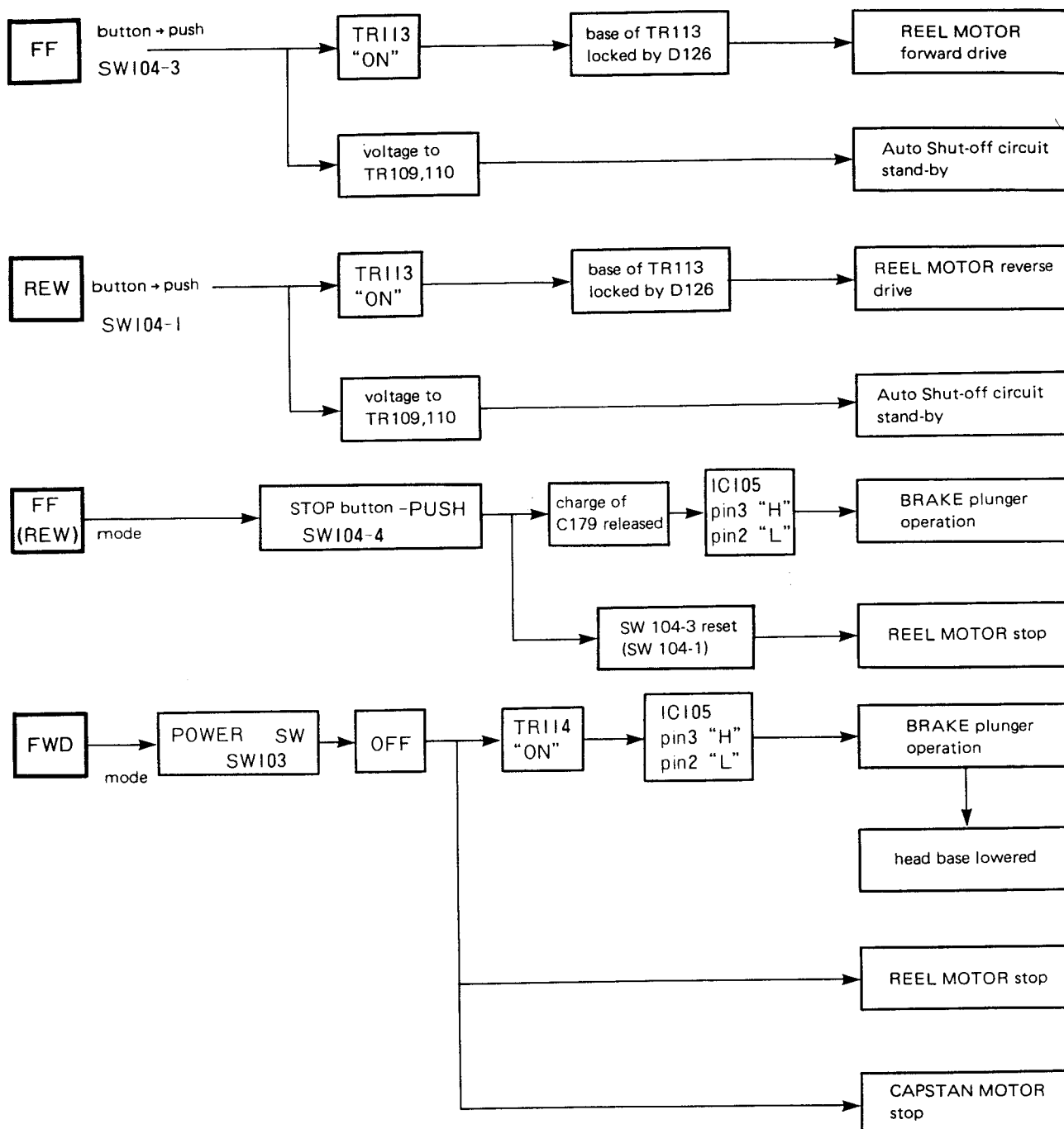


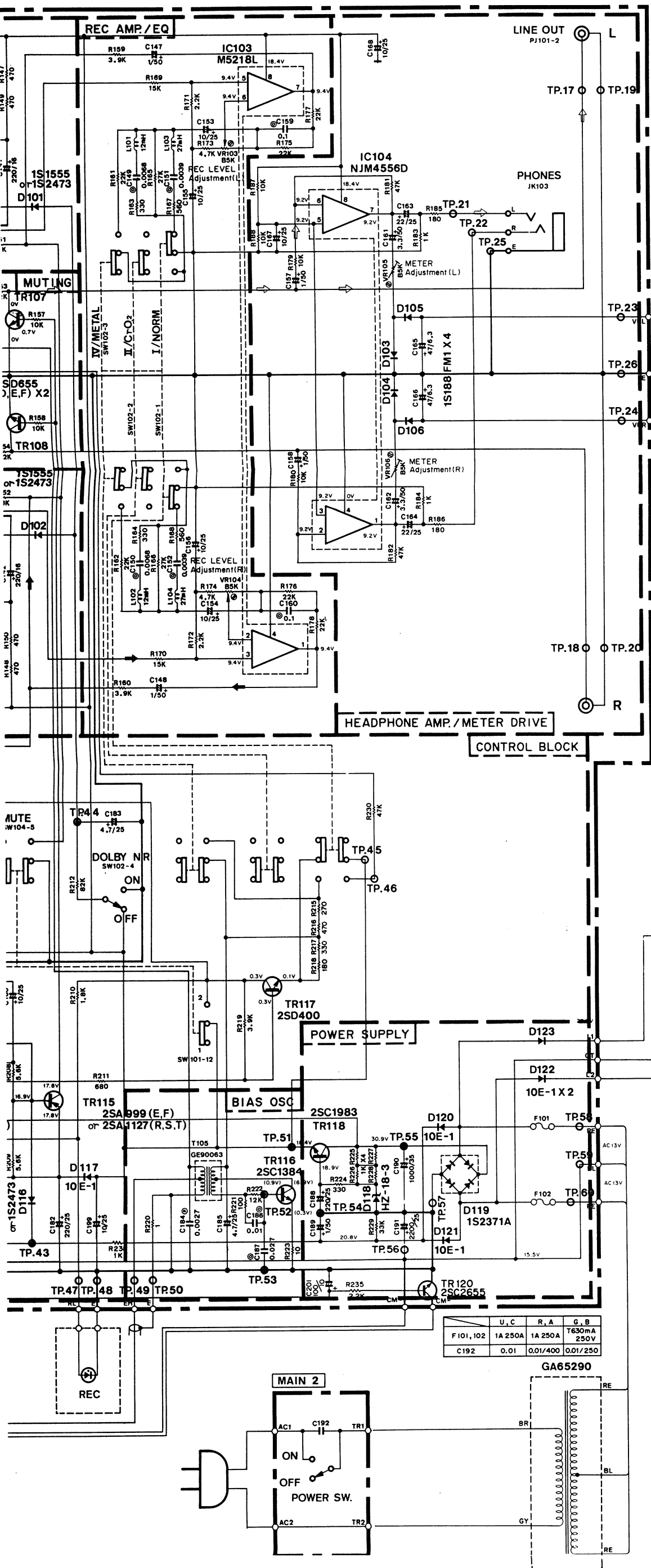
■ PERFORMANCE CHART FOR MECHANISM LOGIC



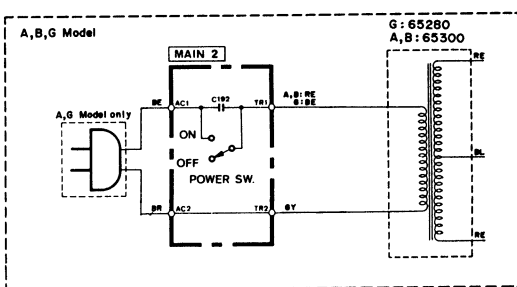
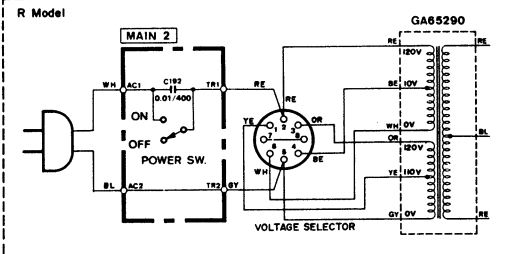
	Record Protection Tab	
	present	missing
REC IHN SW	open	closed
IC105 pin14	"L"	"H"
IC105 pin15	"H"	"L"







Note 1: Voltages shown in brackets are recording mode values, others are stop mode values.
Note 2: Voltages have been measured with a voltmeter of 1Mohms internal resistance.
Note 3: Signal path display:
Left channel-playback signal
Right channel-recording signal
Note 4: Circuit diagram may be subject to change for improvement without further notice.



2SA999 2SC2634
2SA1127 2SD400
2SC1384 2SD655
2SC2320

2SD880

2SC1983

M5218L

NJM4556D

NE646N

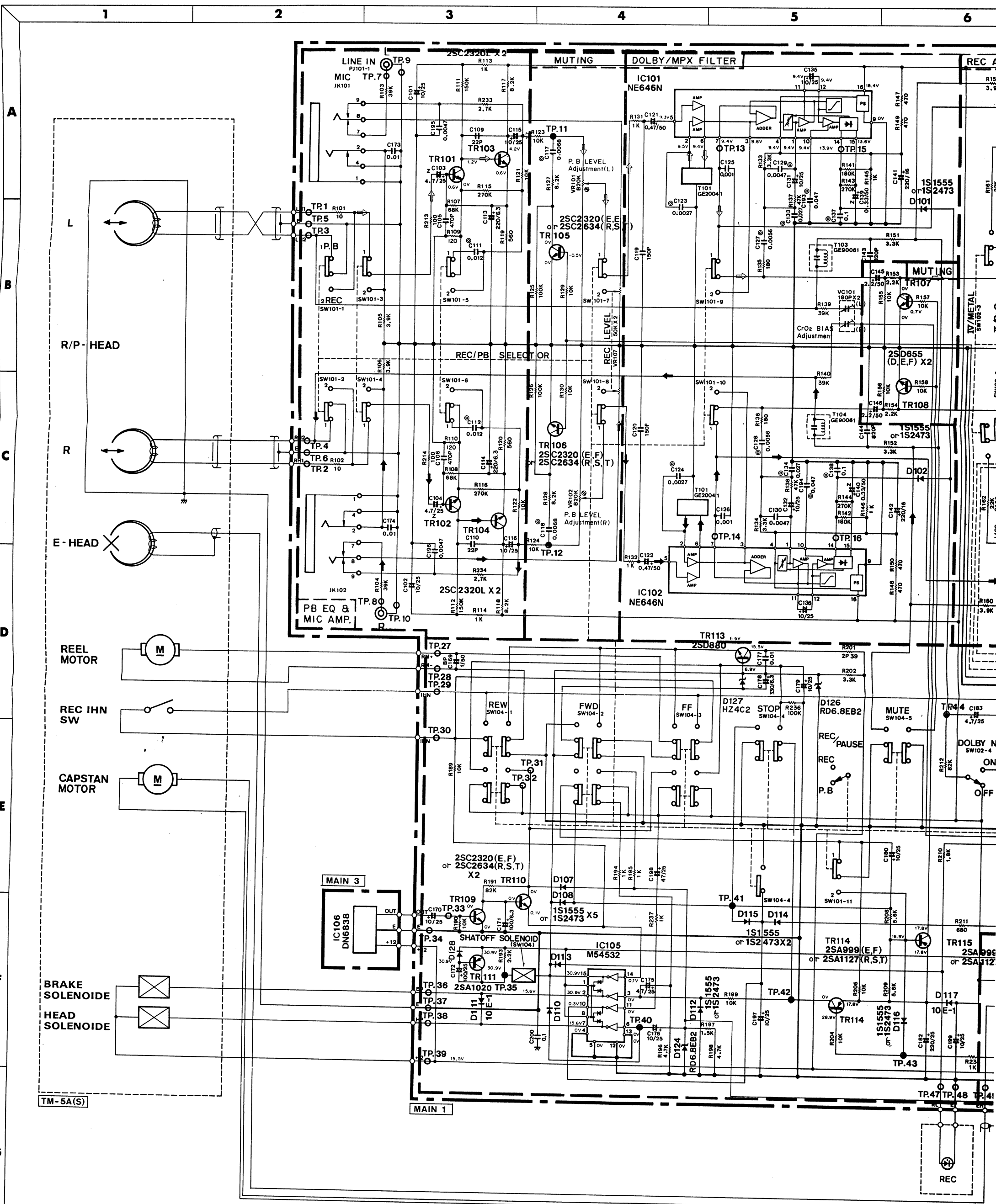
DN6838 ① +12(Vcc)
② Ground
③ Out

Anode
Cathode

Anode
Cathode
DIODE

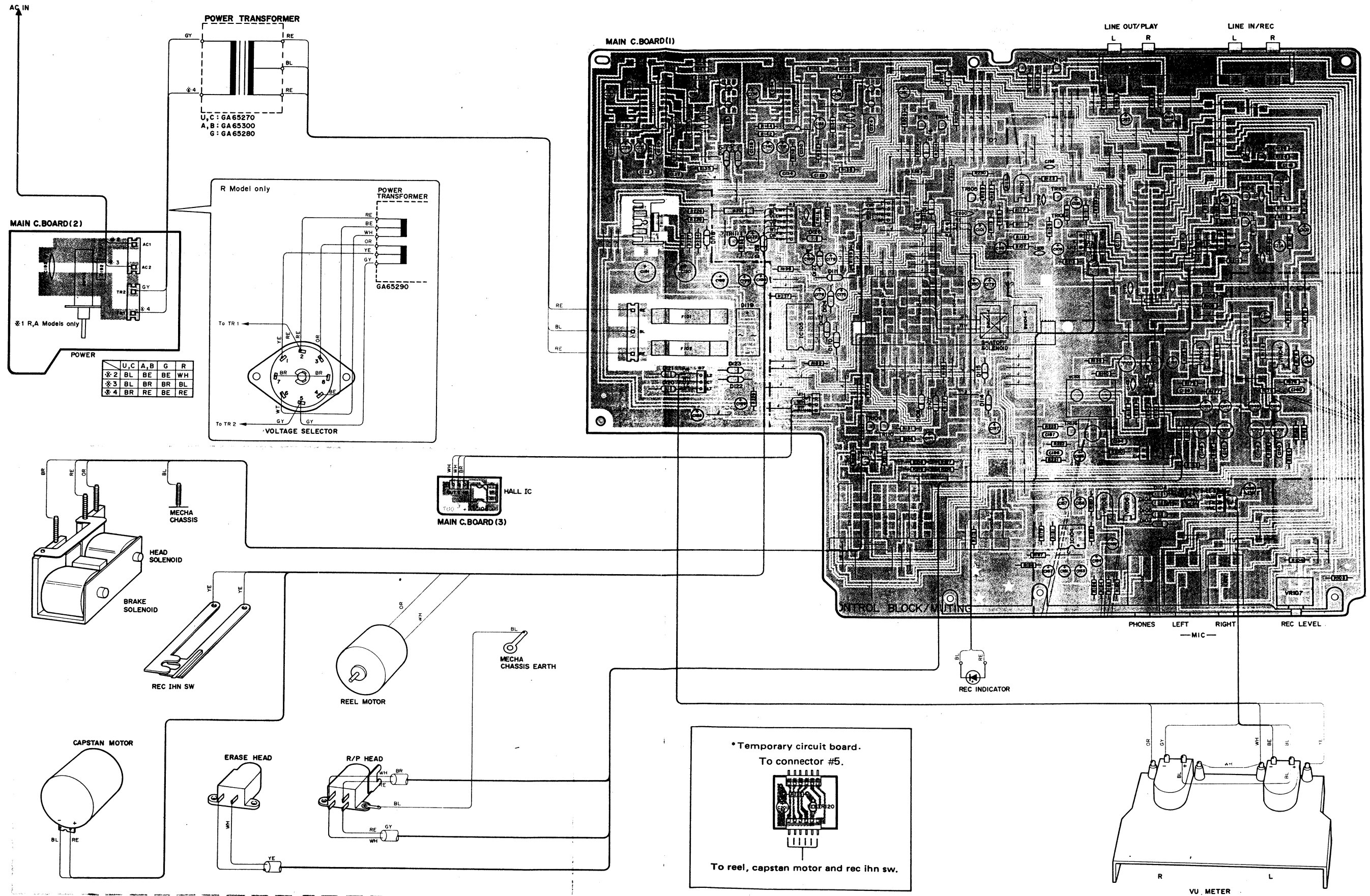
1S2371A

SCHEMATIC DIAGRAM



RESISTOR		CAPACITOR	
REMARKS	PARTS NAME	REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR	NO MARK	CERAMIC CAPACITOR
⊙	SEMI VARIABLE RESISTOR	⊙	POLYESTER FILM CAPACITOR
		⊙	POLYPROPYLENE CAPACITOR
		NO MARK	ELECTROLYTIC CAPACITOR
		BP	BYPOLAR CAPACITOR

PRINTED CIRCUIT BOARD PARTS-SIDE COMPONENTS LAYOUT/WIRING



PARTS LIST

K-200

STEREO CASSETTE DECK

■CONTENTS	Page
■EXPLODED VIEW(Allover)	1
■PARTS LIST (Allover)	2
■EXPLODED VIEW (Mechanism)	3
■PARTS LIST (Mechanism)	4
■PARTS LIST (Circuit Board) Main Circuit Board	6

Notes

DESTINATION ABBREVIATIONS

U	U.S.A
C	CANADIAN
G	EUROPEAN
B	BRITISH
R	GENERAL
A	AUSTRALIAN
J	JAPAN

004463

SINCE 1887

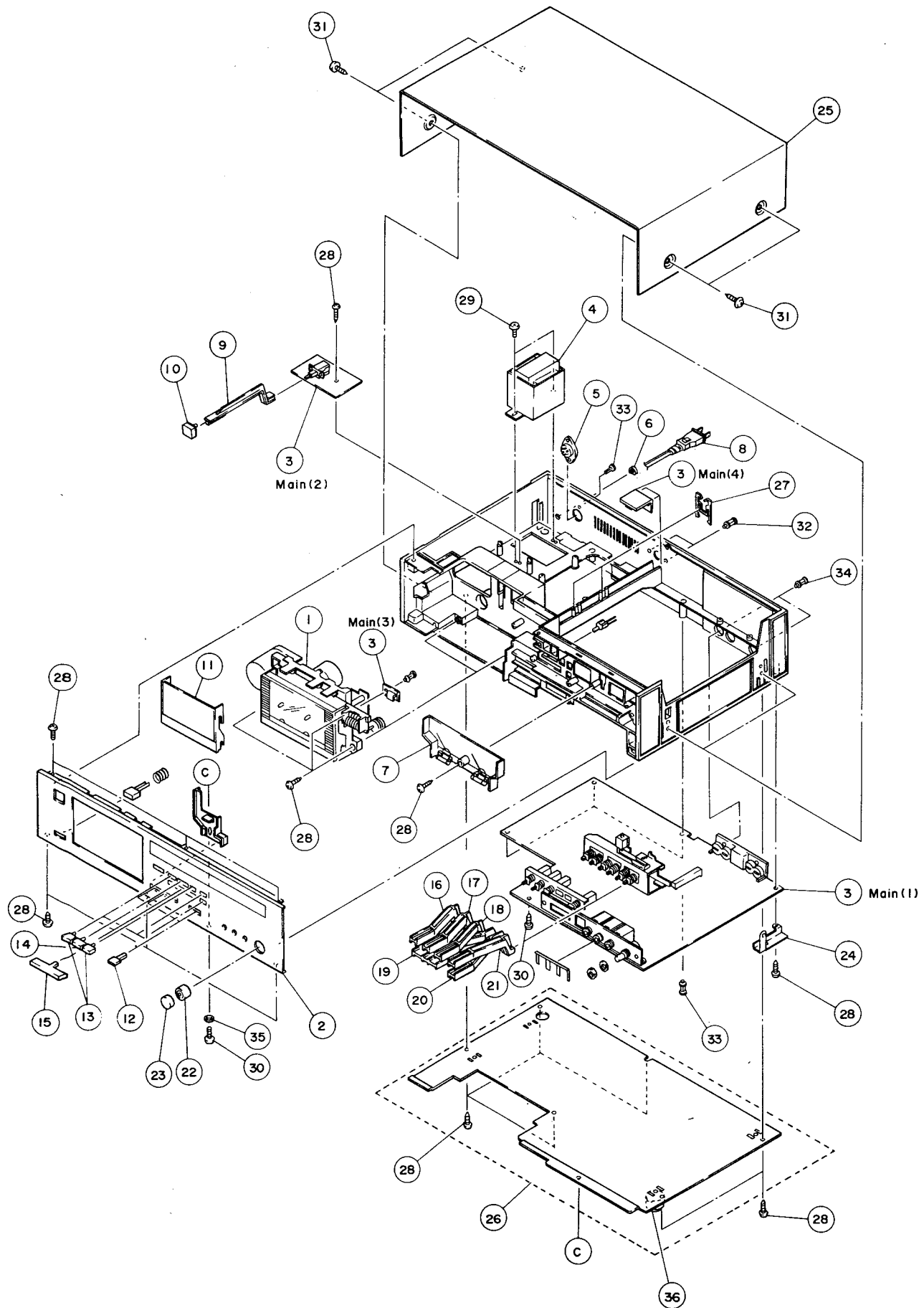


YAMAHA

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Printed in Japan 5.82  2.65 K

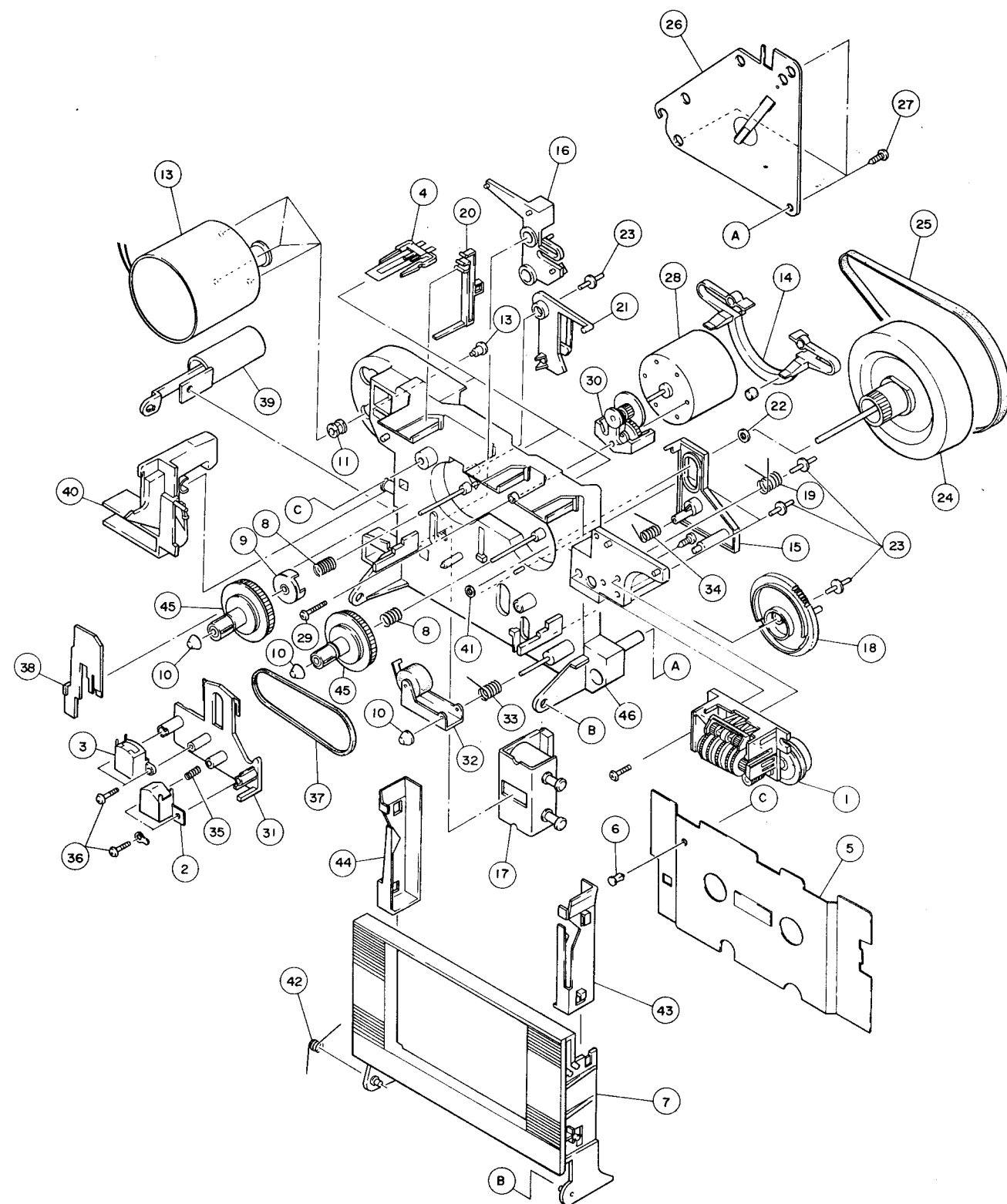
EXPLODED VIEW (Allover)



※: New Parts (新部品)

※: New Parts (新部品)

EXPLODED VIEW (Mechanism)



PARTS LIST (Mechanism)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
* SM 60:18:00		Cassette Mechanism	TM-5A(S)	カセットメカ総組立		
* SM 60:19:00			TM5A(B)	"	Black Model	G
* 1	PB 06:21:50	Counter		テープカウンター		
* 2	GF 00:01:90	REC/Playback Head		録再ヘッド		
* 3	GF 00:01:80	Erase Head		消去ヘッド	K-550 K-560	
* 4	KA 60:05:20	Leaf Switch		リーフSW		
* 5	BA 08:18:90	Blind Plate T	N3.5 Gray	ブラインドプレートT		
* "	BA 08:28:30	"	N3.5 Black	"	Black Model	G
* 6	CB 06:88:80	Plastic Rivet	φ3.5 Black	プラスチックリベット		
* 7	NB 60:58:30	Housing Ass'y	N3 Gray	ハウジングAss'y		
* "	NB 60:58:20	"	N3 Black	"	Black Model	G
* 8	AA 60:88:80	BT-Spring		BT-スプリング		
* 9	NB 60:33:50	BT-Disc Ass'y		BTディスクAss'y		
* 10	CB 60:61:50	Reel Cap		リールキャップ		
* 11	CB 61:11:80	Mounting Plate, Motor		モーター取付座		
* 12	AA 60:66:50	Screw, Motor	(ZMC2)	モーター取付ネジ	K-550 K-560	
* 13	JC 00:07:10	Capstan Motor	MMi-6	キャプスタンモーター		
* 14	NB 60:58:00	Brake Ass'y		ブレーキAss'y		
* 15	CB 60:61:60	Cam Follower		カムフォロア		
* 16	CB 60:61:70	Play-Triger		Play-トリガ		
* 17	JF 00:03:30	Solenoid Ass'y		ソレノイドAss'y		
* 18	CB 60:61:80	Cam		カム		
* 19	AA 60:88:90	Cam-Spring		カムスプリング		
* 20	CB 60:75:90	Sensor, Lid		リッドセンサ		
* 21	CB 60:61:90	Stop-Triger		STOP-トリガ		
* 22	CB 60:62:10	Washer	PW-2.5-7	ポリスライダワッシャー		
* 23	CB 60:62:00	Rivet		リベット		
* 24	NB 60:33:70	Flywheel Ass'y		フライホイールAss'y		
* 25	CB 60:62:20	Main Belt		メインベルト		
* 26	NB 60:79:10	Back Plate Ass'y		バックプレートAss'y		
* 27	Ei 03:01:00	Bind Head Tapping Screw	3×10	鉄バインドタッピングネジ		
* 28	JC 00:07:20	Reel Motor	BFS9B	リールモーター		
* 29	ED 02:62:00	Bind Head Screw	2.6×20(ZMC2-Y)	鉄バインド小ネジ		
* 30	NB 60:33:90	Gear Ass'y		ギヤAss'y		
* 31	CB 60:62:30	Head Base		ヘッドベース		
* 32	NB 60:34:00	Pinch Roller Ass'y		ピンチローラーAss'y		
* 33	AA 60:89:10	Spring, Return		リターンズスプリング		
* 34	AA 60:89:20	" Head Base		ヘッドベーススプリング		
* 35	AA 60:89:30	" RPH		RPHスプリング		
* 36	ED 02:01:20	Bind Head Screw	2×12(ZMC2-Y)	鉄バインド小ネジ	R/P Head	
* 37	CB 60:62:40	Counter-Belt		カウンターベルト		
* 38	CB 60:61:00	Lever, Play Lock		プレイロックレバー		
* 39	NB 60:33:40	Damper Ass'y		ダンパーAss'y		
* 40	CB 60:61:10	Lever, Lock		ロックレバー		
* 41	CB 08:26:10	Washer		キャプスタンワッシャー	K-550 K-560	
* 42	AA 60:88:70	Spring, Housing		ハウジングSp		
* 43	CB 60:98:80	Guide R, Cassette		カセットガイドR		
* 44	CB 60:98:90	Guide L, Cassette		カセットガイドL		
* 45	NB 60:34:30	Reel Base Ass'y		リール台Ass'y		
* 46	NX 60:00:60	Chassis, Mechanism		メカシャーシサブAss'y		
	EJ 02:60:80	Pan Head Tapping Screw	2.6×8(ZMC2-Y)	鉄ナベタッピングネジ	for Tape Counter	

* : New Parts (新部品)

PARTS LIST (Circuit Board)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
* NA 07 89 00		Main Circuit Board	メインシート			J
* NA 07 89 10						U, C
* NA 07 89 20						G, B
* NA 07 89 30						R, A
NA 07 89 40				Black Model		G
C101 C102	UW 84 71 00	Electrolytic Capacitor	10 μ F 25V	ケミコン		
C103 C104	FM 51 64 70	"	4.7 μ F 25V	Zコン		
C105 C106	FG 41 24 70	Ceramic Capacitor	470pF 50V(K)	セラコン		
C109 C110	FG 41 12 20	Ceramic Capacitor	22pF 50V(K)	セラコン		
C111 C112	UA 25 41 20	Mylar Capacitor	0.012 μ F 50V(J)	マイラーコン		
C113 C114	UW 91 82 20	Electrolytic Capacitor	220 μ F 6.3V	ケミコン		
C115 C116	UW 84 71 00	"	10 μ F 25V	"		
C117 C118	UA 25 36 80	Mylar Capacitor	0.0068 μ F 50V(J)	マイラーコン		
C119 C120	FG 41 21 50	Ceramic Capacitor	150pF 50V(K)	セラコン		
C121 C122	UW 96 54 70	Electrolytic Capacitor	0.47 μ F 50V	ケミコン		
C123 C124	FG 71 32 70	Mylar Capacitor	0.0027 μ F 50V(J)	マイラーコン		
C125 C126	FG 41 31 00	Ceramic Capacitor	0.001 μ F 50V(K)	セラコン		
C127 C128	UA 25 35 60	Mylar Capacitor	0.0056 μ F 50V(J)	マイラーコン		
C129 C130	UA 25 34 70	"	0.0047 μ F 50V(J)	"		
C131 C132	UW 84 71 00	Electrolytic Capacitor	10 μ F 25V	ケミコン		
C133 C134	UA 25 42 70	Mylar Capacitor	0.027 μ F 50V(J)	マイラーコン		
C135 C136	UW 84 71 00	Electrolytic Capacitor	10 μ F 25V	ケミコン		
C137 C138	UA 25 51 00	Mylar Capacitor	0.1 μ F 50V(J)	マイラーコン		
C139 C140	FM 42 53 30	Electrolytic Capacitor	0.33 μ F 50V	Zコン		
C141 C142	UW 83 82 20	"	220 μ F 16V	ケミコン		
C143 C144	FG 41 28 20	Ceramic Capacitor	820pF 50V(K)	セラコン		
C145 C146	UW 86 62 20	Electrolytic Capacitor	2.2 μ F 50V	ケミコン		
C147 C148	UW 86 61 00	"	1 μ F 50V	"		
C149 C150	UA 25 36 80	Mylar Capacitor	0.0068 μ F 50V(J)	マイラーコン		
C151 C152	FA 15 33 90	"	0.0039 μ F 50V(J)	"		
C153 C156	UW 84 71 00	Electrolytic Capacitor	10 μ F 25V	ケミコン		
C157 C158	UW 86 61 00	"	1 μ F 50V	"		
C159 C160	UA 25 51 00	Mylar Capacitor	0.1 μ F 50V(J)	マイラーコン		
C161 C162	UW 96 63 30	Electrolytic Capacitor	3.3 μ F 50V	ケミコン		
C163 C164	UW 94 72 20	"	22 μ F 25V	"		
C165 C166	UW 91 74 70	"	47 μ F 6.3V	"		
C167 C168	UW 84 71 00	"	10 μ F 25V	"		
C169	UK 16 61 00	"	1 μ F 50V	B.Pコン		
C170	UW 84 71 00	"	10 μ F 25V	ケミコン		
C171	UW 91 81 00	"	100 μ F 6.3V	"		
C172	UW 94 81 00	"	100 μ F 25V	"		
C173 C174	FG 44 41 00	Ceramic Capacitor	0.01 μ F 50V(Z)	セラコン		
C175	UW 94 74 70	Electrolytic Capacitor	47 μ F 25V	ケミコン		
C176	UW 84 71 00	"	10 μ F 25V	"		
C177	FG 44 41 00	Ceramic Capacitor	0.01 μ F 50V(Z)	セラコン		
C178	UW 91 83 30	Electrolytic Capacitor	330 μ F 6.3V	ケミコン		
C179 C180	UW 84 71 00	"	10 μ F 25V	"		
C182	UW 84 82 20	Electrolytic Capacitor	220 μ F 25V	ケミコン		
C183	UW 94 64 70	"	4.7 μ F 25V	"		
* C184	FT 85 32 70	Polypropylene Capacitor	0.0027 μ F 100V(J)	ポリプロコン ECQ-P		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
C185	UW:94:64:70	Electrolytic Capacitor	4.7 μ F 25V ケミコン			
C186	UA:25:41:00	Mylar Capacitor	0.01 μ F 50V(J) マイラーコン			
C187	UA:25:42:70	"	0.027 μ F50V(J) "			
C188	UW:84:82:20	Electrolytic Capacitor	220 μ F 25V ケミコン			
C189	UW:86:61:00	"	1 μ F 50V "			
C190	UW:95:91:00	"	1000 μ F 35V "			
C191	UW:94:92:20	"	2200 μ F 25V			
C192	Fi:32:41:00	Ceramic Capacitor	0.01 μ F AC250V(DE) セラコン			J
"	Fi:33:41:00	"	0.01 μ F AC400V(DE) "			R, A
"	Fi:34:41:00	"	0.01 μ F MY(DE) "			U, C
"	FR:16:41:00	MP Capacitor	0.01 μ F AC250V MPコン			G, B
C193 C194	UA:25:44:70	Mylar Capacitor	0.047 μ F 50V(K) マイラーコン			
C195 C196	FG:41:34:70	Ceramic Capacitor	0.0047 μ F 50V(K) セラコン			
C197	UW:84:71:00	Electrolytic Capacitor	10 μ F 25V ケミコン			
C198	UW:94:74:70	"	47 μ F 25V "			
C199	UW:84:71:00	"	10 μ F 25V "			
C200	FG:44:51:00	Ceramic Capacitor	0.1 μ F 50V(K) セラコン			
C201	UW:82:81:00	Electrolytic Capacitor	100 μ F 10V ケミコン			
* VC101	FY:00:02:10	Trimmer Capacitor	180pF トリマーコン 2連			
* T101 T102	GE:20:04:10	MPX Coil	MPXコイル			
* T103 T104	GE:90:06:10	Trap Coil	85K トラップコイル			
* T105	GE:90:06:30	OSC Coil	85K OSCコイル			
L101 L102	GE:90:02:60	Coil	12mH 固定コイル			
* L103 L104	GE:90:08:10	"	27mH "			
R101 R102	HJ:35:41:00	Carbon Resistor	10 Ω RD25S カーボン抵抗			
R103 R104	HJ:35:73:90	"	39K Ω "			
R105 R106	HJ:35:63:90	"	3.9K Ω "			
R107 R108	HJ:35:76:80	"	68K Ω "			
R109 R110	HJ:35:51:20	"	120 Ω "			
R111 R112	HJ:35:81:50	"	150K Ω "			
R113 R114	HJ:35:61:00	"	1K Ω "			
R115 R116	HJ:35:82:70	"	270K Ω "			
R117 R118	HJ:35:68:20	"	8.2K Ω "			
R119 R120	HJ:35:55:60	"	560 Ω "			
R121 ~124	HJ:35:71:00	"	10K Ω "			
R125 R126	HJ:35:81:00	"	100K Ω "			
R127 R128	HJ:35:68:20	"	8.2K Ω "			
R129 R130	HJ:35:71:00	"	10K Ω "			
R131 R132	HJ:35:61:00	"	1K Ω "			
R133 R134	HJ:35:63:30	"	3.3K Ω "			
R135 R136	HJ:35:51:80	"	180 Ω "			
R137 R138	HJ:35:74:70	"	47K Ω "			
R139 R140	HJ:35:71:00	"	10K Ω "			
R141 R142	HJ:35:81:80	"	180K Ω "			
R143 R144	HJ:35:82:70	"	270K Ω "			
R145 R146	HJ:35:61:00	"	1K Ω "			
R147 ~150	HJ:35:54:70	"	470 Ω "			
R151 R152	HJ:35:63:30	"	3.3K Ω "			
R153 R154	HJ:35:62:20	"	2.2K Ω "			

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
R155 ~158	HJ 35 71 00	Carbon Resistor	10KΩ RD25S	カーボン抵抗		
R159 R160	HJ 35 63 90	"	3.9KΩ "	"		
R161 R162	HJ 35 72 20	"	22KΩ "	"		
R163 R164	HJ 35 53 30	"	330Ω "	"		
R165 R166	HJ 35 72 70	"	27KΩ "	"		
R167 R168	HJ 35 55 60	"	560Ω "	"		
R169 R170	HJ 35 71 50	"	15KΩ "	"		
R171 R172	HJ 35 62 20	"	2.2KΩ "	"		
R173 R174	HJ 35 64 70	"	4.7KΩ "	"		
R175 ~178	HJ 35 72 20	"	22KΩ "	"		
R179 R180	HJ 35 71 00	"	10KΩ "	"		
R181 R182	HJ 35 74 70	"	47KΩ "	"		
R183 R184	HJ 35 61 00	"	1KΩ "	"		
R185 R186	HJ 35 51 80	"	180Ω "	"		
R187 ~190	HJ 35 71 00	"	10KΩ "	"		
R191	HJ 35 78 20	"	82KΩ "	"		
R192	HJ 35 64 70	"	4.7KΩ "	"		
R193	HJ 35 62 20	"	2.2KΩ "	"		
R194 R195	HJ 35 61 00	"	1KΩ "	"		
R196	HJ 35 64 70	"	4.7KΩ "	"		
R197	HJ 35 61 50	"	1.5KΩ "	"		
R198	HJ 35 64 70	"	4.7KΩ "	"		
R199	HJ 35 71 00	"	10KΩ "	"		
R201	HL 72 43 90	Metal Oxide Film Resistor	39Ω 2P	酸金被膜抵抗		
R202	HJ 35 63 30	Carbon Resistor	3.3KΩ RD25S	カーボン抵抗		
R204 R205	HJ 35 71 00	Carbon Resistor	10KΩ RD25S	カーボン抵抗		
R208 R209	HJ 35 65 60	Carbon Resistor	5.6KΩ RD25S	カーボン抵抗		
R210	HJ 35 61 80	"	1.8KΩ "	"		
R211	HJ 35 56 80	"	680Ω "	"		
R212	HJ 35 78 20	"	82KΩ "	"		
R213 R214	HJ 35 51 00	"	100Ω "	"		
R215	HJ 35 52 70	"	270Ω "	"		
R216	HJ 35 54 70	"	470Ω "	"		
R217	HJ 35 53 30	"	330Ω "	"		
R218	HJ 35 51 80	"	180Ω "	"		
R219	HJ 35 63 90	"	3.9KΩ "	"		
R220	HJ 35 31 00	"	1Ω "	"		
R221	HJ 35 51 00	"	100Ω "	"		
R222	HJ 35 71 20	"	12KΩ "	"		
R223	HV 35 41 00	Flame Proof Carbon Resistor	10Ω	不燃化カーボン抵抗		
R224	HJ 35 53 30	Carbon Resistor	330Ω RD25S	カーボン抵抗		
R225 ~228	HJ 35 61 00	"	1KΩ "	"		
R229	HJ 35 73 30	"	33KΩ "	"		
R230	HJ 35 74 70	"	47KΩ "	"		
R233 R234	HJ 35 62 70	Carbon Resistor	2.7KΩ RD25S	カーボン抵抗		
R235	HJ 35 62 20	"	2.2KΩ "	"		
R236	HJ 35 81 00	"	100K "	"		
R237 R238	HJ 35 61 00	"	1KΩ "	"		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
VR101 VR102	HT 17:02:90	Semi Variable Resistor	B20K V8K4-11	半固定VR	Inter-changeable	
"	HT 37:00:80	"	" EVN-K4A	"		
VR103 ~106	HT 17:02:70	Semi Variable Resistor	B5K V8K4-11	半固定VR	Inter-changeable	
"	HT 37:00:50	"	B5K EVN-K4A	"		
* VR107	HS 41:16:00	Variable Resistor	50K×2 2-2	VR 2軸2連		
TR101 ~104	iC 23:20:30	Transistor	2SC2320L	トランジスタ		
TR105 TR106	iC 23:20:10	"	2SC2320(E,F)	"	Inter-changeable	
"	iC 26:34:00	"	2SC2634(R,S,T)	"		
TR107 TR108	iD 06:55:00	"	2SD655 (D,E,F)	"		
TR109 TR110	iC 23:20:10	"	2SC2320(E,F)	"	Inter-changeable	
"	iC 26:34:00	"	2SC2634(R,S,T)	"		
TR111	iA 10:20:00	"	2SA1020	"		
TR113	iD 08:80:00	"	2SD880	"		
TR114 TR115	iA 09:99:10	"	2SA999 (E,F)	"	Inter-changeable	
"	iA 11:27:00	"	2SA1127(R,S,T)	"		
* TR116	iC 13:84:00	"	2SC1384	"		
TR117	iD 04:00:00	"	2SD400	"		
TR118	iC 19:83:00	"	2SC1983	"		
TR120	iC 26:55:00	Transistor	2SC2655(O,Y)	トランジスタ		
D101 D102	iF 00:00:40	Diode	IS1555	ダイオード	Inter-changeable	
"	iF 00:06:70	"	IS2473	"		
D103 ~106	iF 00:03:30	"	IS188FM1	"		
D107 D108	iF 00:00:40	"	IS1555	"	Inter-changeable	
"	iF 00:06:70	"	IS2473	"		
D110	iF 00:00:40	"	IS1555	"	Inter-changeable	
"	iF 00:06:70	"	IS2473	"		
D111	iH 00:05:90	"	10E-1	"		
D112 ~116	iF 00:00:40	"	IS1555	"	Inter-changeable	
"	iF 00:06:70	"	IS2473	"		
D117	iH 00:05:90	"	10E-1	"		
D118	iF 00:16:00	Zener Diode	HZ-18-3	ツェナーダイオード		
D119	iH 00:09:70	Bridge Diode	IS2371A	ダイオードブリッジ		
D120 ~123	iH 00:05:90	Diode	10E-1	ダイオード		
D124	iF 00:16:70	Zener Diode	RD6,8EB2	ツェナーダイオード		
D126	iF 00:16:70	Zener Diode	RD6,8EB2	ツェナーダイオード		
* D127	iF 00:38:90	"	HZ4C2	"		
D128	iF 00:00:40	Diode	IS1555	ダイオード	Inter-changeable	
"	iF 00:06:70	"	IS2473	"		
IC101 IC102	iG 03:46:00	IC	NE646N	IC		
IC103	iG 05:82:00	"	M5218L	"		
IC104	iG 04:25:00	"	NJM4556D	"		
* IC105	iG 05:50:00	"	M54532	"		
IC106	iG 03:04:50	"	DN6838	"		
* SW101	KA 40:09:70	Switch, REC/PLAY	12-Circuit	録再スイッチ		
* SW102	KA 80:29:10	Push Switch	4-Action	プッシュSW		
* SW103	KA 80:29:60	Power Switch		パワーSW 4連		J
* "	KA 80:29:70	"		"		U, C
* "	KA 80:29:80	"		"		R, A, G, B,
* SW104	KA 80:29:00	Push Switch	6-Action	プッシュSW 6連		

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