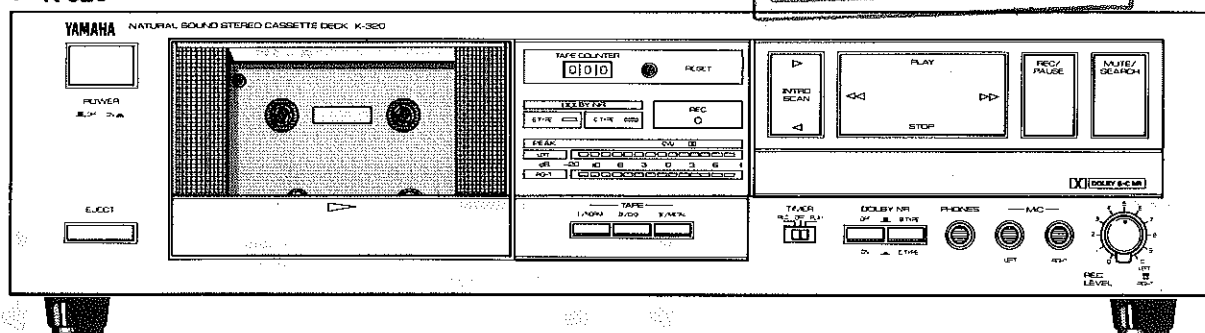


# STEREO CASSETTE DECK K-320/K-16

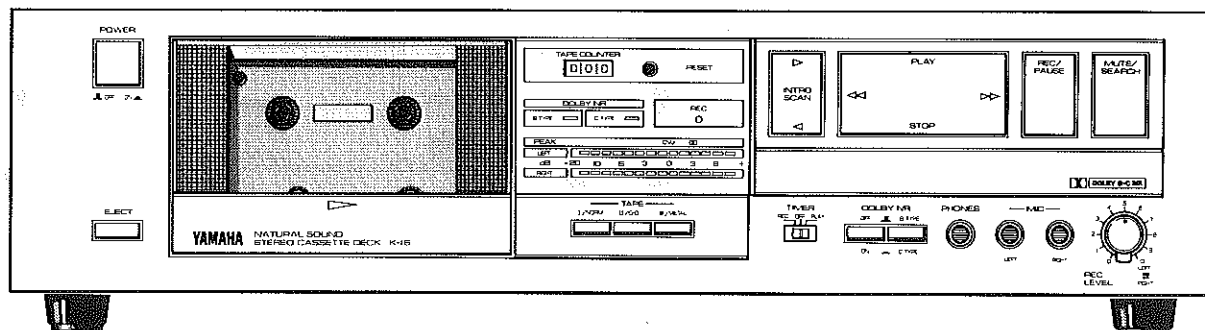
## SERVICE MANUAL

CENTER

### ● K-320



### ● K-16



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**YAMAHA**

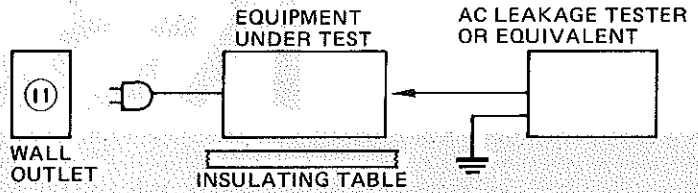
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

2.55K-042 © Printed in Japan 84.3

K-320/K-16

## TO SERVICE PERSONNEL

- Critical Components Information.**  
Components having special characteristics are marked  $\Delta$  and must be replaced with parts having specifications equal to those originally installed.
- Leakage Current Measurement (For 120V Model Only).**  
When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.
  - Meter impedance should be equivalent to 1500 ohm shunted by 0.15 $\mu$ F.
  - Leakage current must not exceed 0.5mA.
  - Be sure to test for leakage with the AC plug in both polarities.

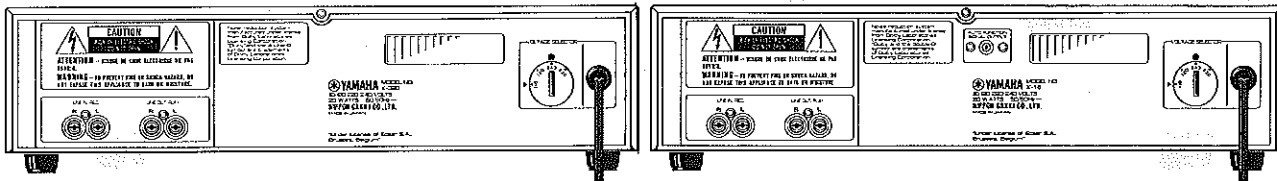


## REAR PANELS

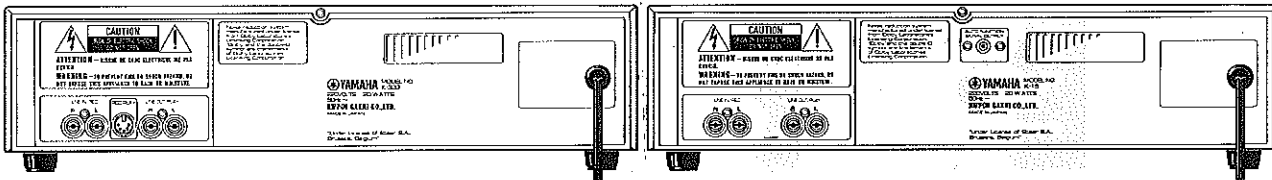
K-320

K-16

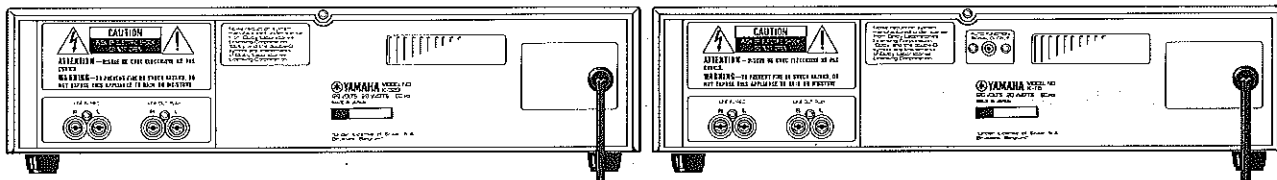
### GENERAL Model



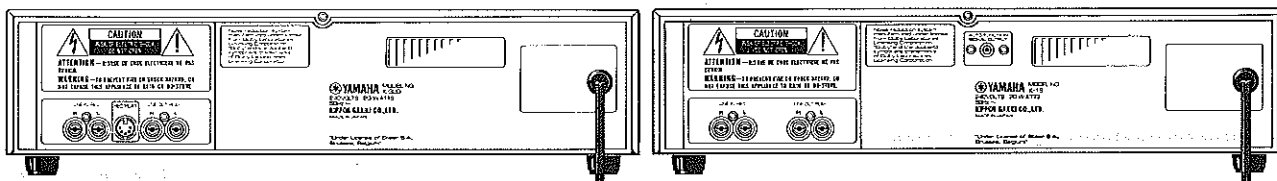
### EUROPEAN Model



### U.S.A. & CANADIAN Models

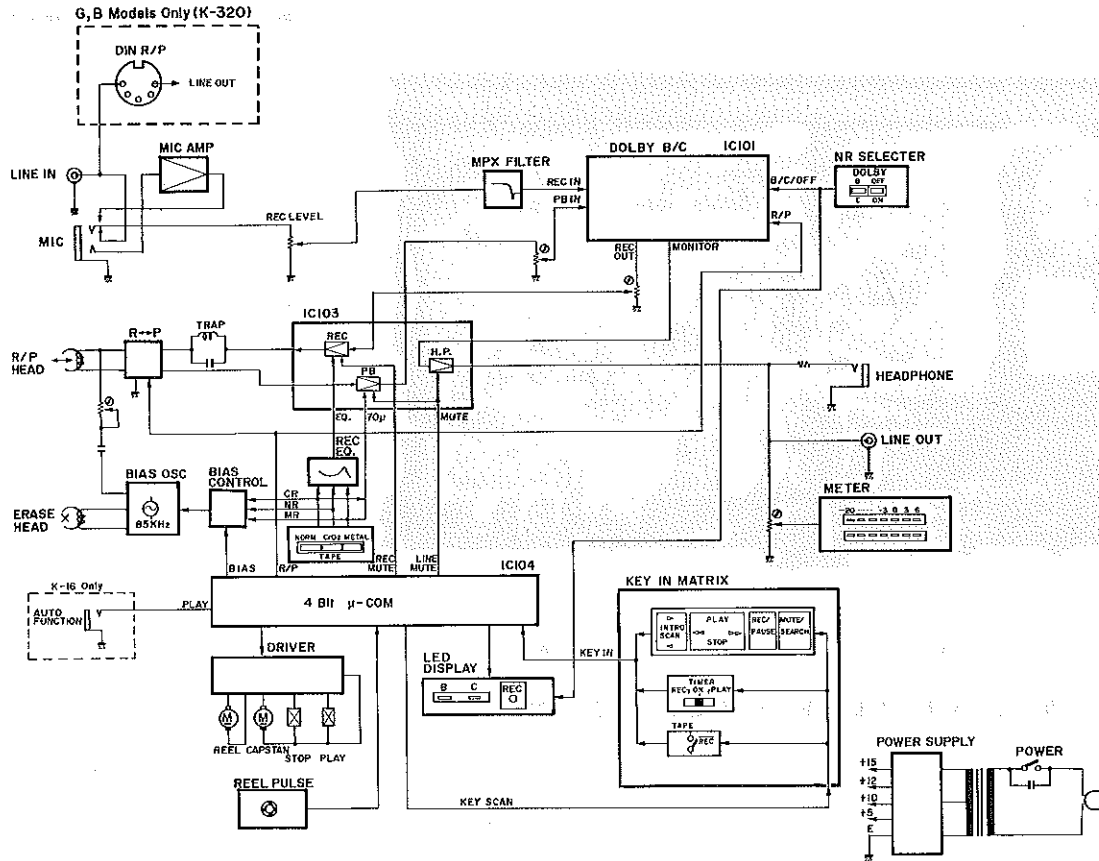


### BRITISH & AUSTRALIAN Models



\* DIN JACK: Except Australian Model

# ■ BLOCK DIAGRAM



# ■ SPECIFICATIONS

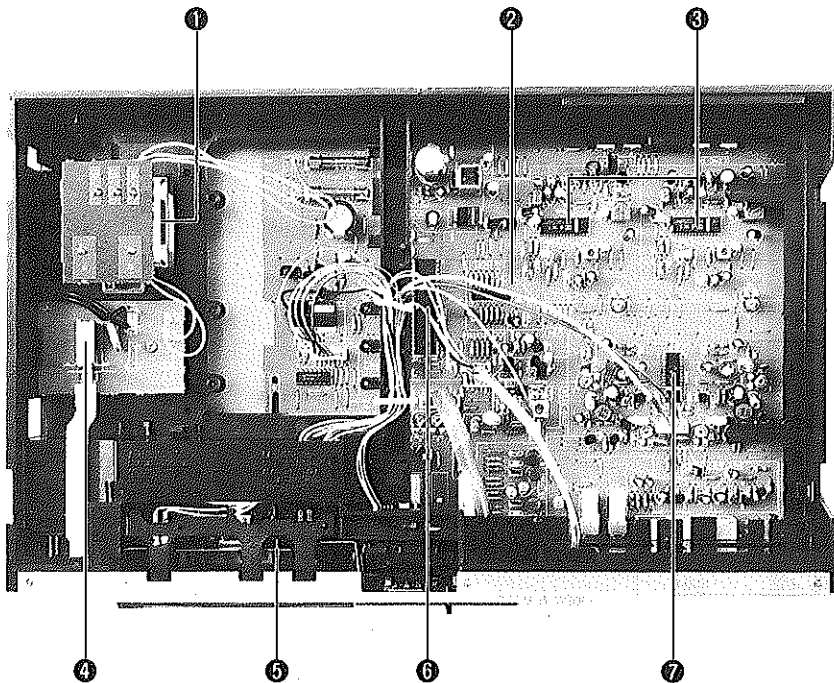
<b>Type</b>	4-track, 2-channel recording and playback stereo cassette tape deck	
<b>Heads</b>		
Rec/Play head		Hard permalloy
Erase head		Ferrite
<b>Motors</b>		
Capstan		DC servo motor
Reel		Flat torque DC motor
<b>Wow and Flutter</b>	Less than ±0.08% W, Peak Less than 0.05% W, RMS	
<b>Fast winding time</b>	Within 70 seconds (C-60)	
<b>Frequency response</b>		
Normal tape (-20dB)	30 to 16,000 Hz	±3dB
CrO <sub>2</sub> tape (-20dB)	30 to 16,000 Hz	±3dB
Metal tape (-20dB)	30 to 16,000 Hz	±3dB
<b>Signal to Noise ratio</b>		
Dolby off	58 dB	
Dolby B on	66 dB	
Dolby C on	74 dB	
<b>Harmonic distortion</b>	Less than 1%	
<b>Input Sensitivity/Impedance</b>		
Mic	0.35 mV/5 k-ohms	
Line	55 mV/50 k-ohms	

<b>Output Level/Load Impedance</b>		
Line	360 mV/47 k-ohms	
Headphones	60 mV/8 ohms	
<b>Power Supplies</b>		
U.S. & Canadian Models	120V AC, 60 Hz	
European Model	220V AC, 50 Hz	
British & Australian Models	240V AC, 50 Hz	
General Model	110/120/220/240V AC, 50/60 Hz	
Japanese Model	100V AC, 50/60 Hz	
<b>Power Consumption</b>	20W	
<b>Dimensions (W x H x D)</b>	435 x 112 x 277 mm (17-1/8" x 4-13/32" x 10-3/4")	
<b>Weight</b>	4.2 kg (9.24 lbs)	

Specifications subject to change without notice.

- (U) ..... U.S.A. model
- (C) ..... Canadian model
- (A) ..... Australian model
- (G) ..... European model
- (B) ..... British model
- (R) ..... General model

■各部の名称/ INTERNAL VIEW (K-320)



- ① POWER TRANSFORMER  
U.C.: GA67440  
R: GA67450  
G: GA67460  
A, B: GA67470
- ② MAIN CIRCUIT BOARD
- ③ DOLBY IC : HA12058
- ④ POWER SWITCH
- ⑤ CASSETTE MECHANISM UNIT
- ⑥  $\mu$ -COM IC : LM6402A
- ⑦ REC/PB AMP IC : HA12051

■分解手順/DISASSEMBLY PROCEDURES

(番号順に取りはずしを行なってください。)

(Remove parts in disassembly order as numbered.)

1. トップカバーのはずし方

- a. ①のネジ4本と②のプラスチックリベットをはずす。

1. Removal of Top Cover

- a. Remove 4 screws ( ① ) and plastic rivet ( ② ).

2. フロントパネルのはずし方

- a. REC LEVELつまみをはずす。
- b. ③のネジ7本をはずす。

2. Removal of Front Panel

- a. Remove the REC LEVEL knob by pulling out.
- b. Remove 7 screws ( ③ ).

3. ボトムカバーのはずし方

- a. ④のネジ7本をはずす。

3. Removal of Bottom Cover

- a. Remove 7 screws ( ④ ).

4. カセットメカユニットのはずし方

- a. ⑤のネジ4本をはずし、ゆっくりとカセットメカユニットを手前に引き出す。
- b. その際、必要なコネクターをはずす。

4. Removal of Cassette Mechanism Unit

- a. Remove 4 screws ( ⑤ ) and then pull out the cassette mechanism unit in this side gently.
- b. Detach the necessary connectors.

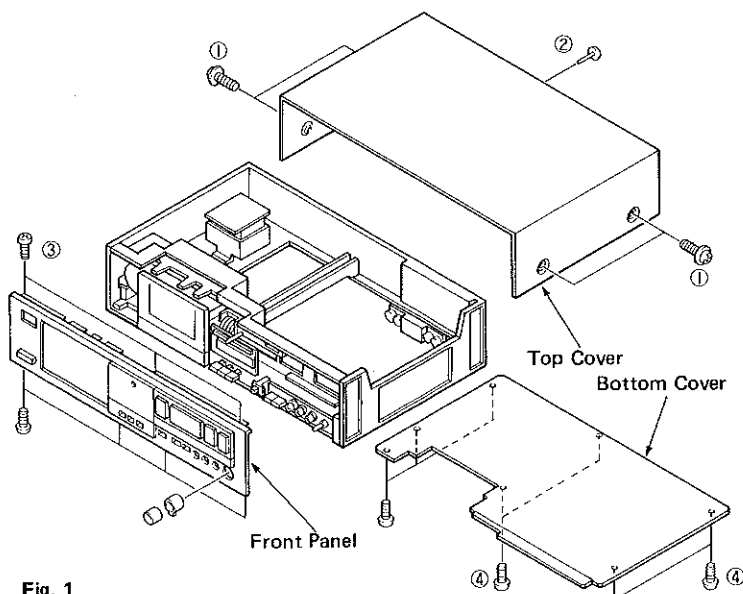


Fig. 1

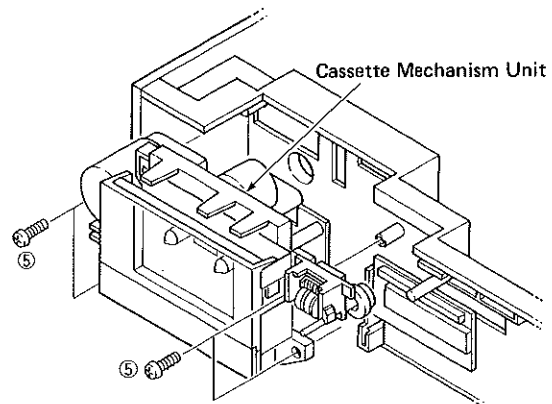


Fig. 2

## ■調整/ADJUSTMENTS

(電源電圧が100V±10%であることを確認してください。)

### 1. 調整の前に

- 帯磁およびヨゴレなどによる各測定誤差をなくすため、ヘッドイレース、ヘッドクリーニングを行なってください。
- 録音系の調整は再生系の調整が終わってから行なってください。

### 2. 測定器略称

W.F : ワウフラッター計  
 FC : 周波数カウンター  
 ACVM : 交流電圧計  
 OSCI : オシロスコープ  
 LOW,F : 低周波発振器

### 1. Before adjustment

- Since head magnetization, dust accumulations, etc. are likely to introduce error in the various characteristics, it is very important that the heads are properly demagnetized and cleaned.
- Proceed with the recording section adjustment after having finished the playback section adjustment.

### 2. Measuring instruments abbreviation

W.F : Wow/Flutter metter  
 FC : Frequency counter  
 ACVM : AC voltagemeter  
 OSCI : Oscilloscope  
 LOW F : Low frequency generator

Step ステップ	Adjustment item 調整項目	Tape テープ	Instrument required 測定器	Mode モード	Measurement Conditions 測定条件	Test Point テストポイント	Adjustment parts 調整箇所	Rating 規格	Remarks 備考
1	Tape speed テープスピード	MTT-111 3kHz, -10dB (250nwb/m)	W.F FC	PB	Perform adjustment at the center of the test tape length if possible. テストテープは、テープの中心付近を使用してください。	LINE OUT	Semi fixed variable resistor at the back of the capstan motor. (Fig. 3) キャプスタンモーター内部の半固定抵抗	3000Hz ± 15Hz	
2	Azimuth アジマス	MTT-114 10kHz, -10dB (250nwb/m)	ACVM OSC1	PB		LINE OUT	Azimuth adjustment screw アジマス調整ネジ (Fig. 3)	Set both channel levels to maximum output level. 両チャンネルの出力レベルが最大になること。	After the adjustment, make sure to apply screw lock paint. 調整後は必ずネジロックを施してください。
3	Playback level 再生レベル	MTT-212C 315Hz 160nwb/m or MTT-212 315Hz, 250nwb/m	ACVM	PB		LINE OUT	VR105(Lch) VR106(Rch)	160nwb/m: 360mV±25mV 250nwb/m: 570mV±35mV	Fig. 4
4	Meter メーター	CrO <sub>2</sub> Tape	ACVM LOW, F	REC/ PAUSE	Apply a 1kHz signal to LINE IN terminals. Set the REC LEVEL knob so that LINE OUT voltage is 360mV ± 25mV  LINE INから1kHzの信号を加え、LINE OUTが360mV ± 25mVとなるようにする。	Peak level meter ピークレベルメーター	VR101(Lch) VR102(Rch)	Adjust VR101 and VR102 to the lowest level where the 0dB display part of the level meter light up. レベルメーター 0dB表示が点灯する最小レベルに調整する。	
5	Record level 録音レベル	CrO <sub>2</sub> Tape	ACVM LOW, F	REC/PB		LINE OUT	VR103(Lch) VR104(Rch)	Set the same level of the record and playback level 信号を録音・再生して同じレベルになるようにする。 (360mV±25mV)	
6	Record bias 録音バイアス	LH Tape CrO <sub>2</sub> Tape Metal Tape	ACVM LOW, F	REC/PB	Apply signals to LINE IN terminals. Set the REC LEVEL knob so that LINE OUT voltage is -20dB	LINE OUT	VR107(Lch) VR108(Rch)	Set the same level of the record and playback level  信号を録音・再生して同じレベルになるようにする。	Table 1 各特性を満足すること。

● テストポイント / TEST POINT

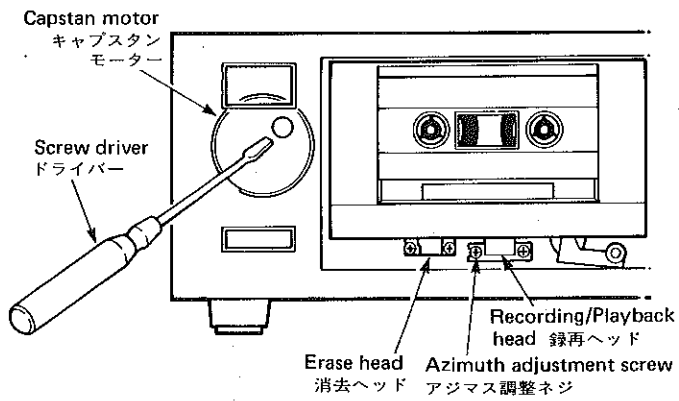
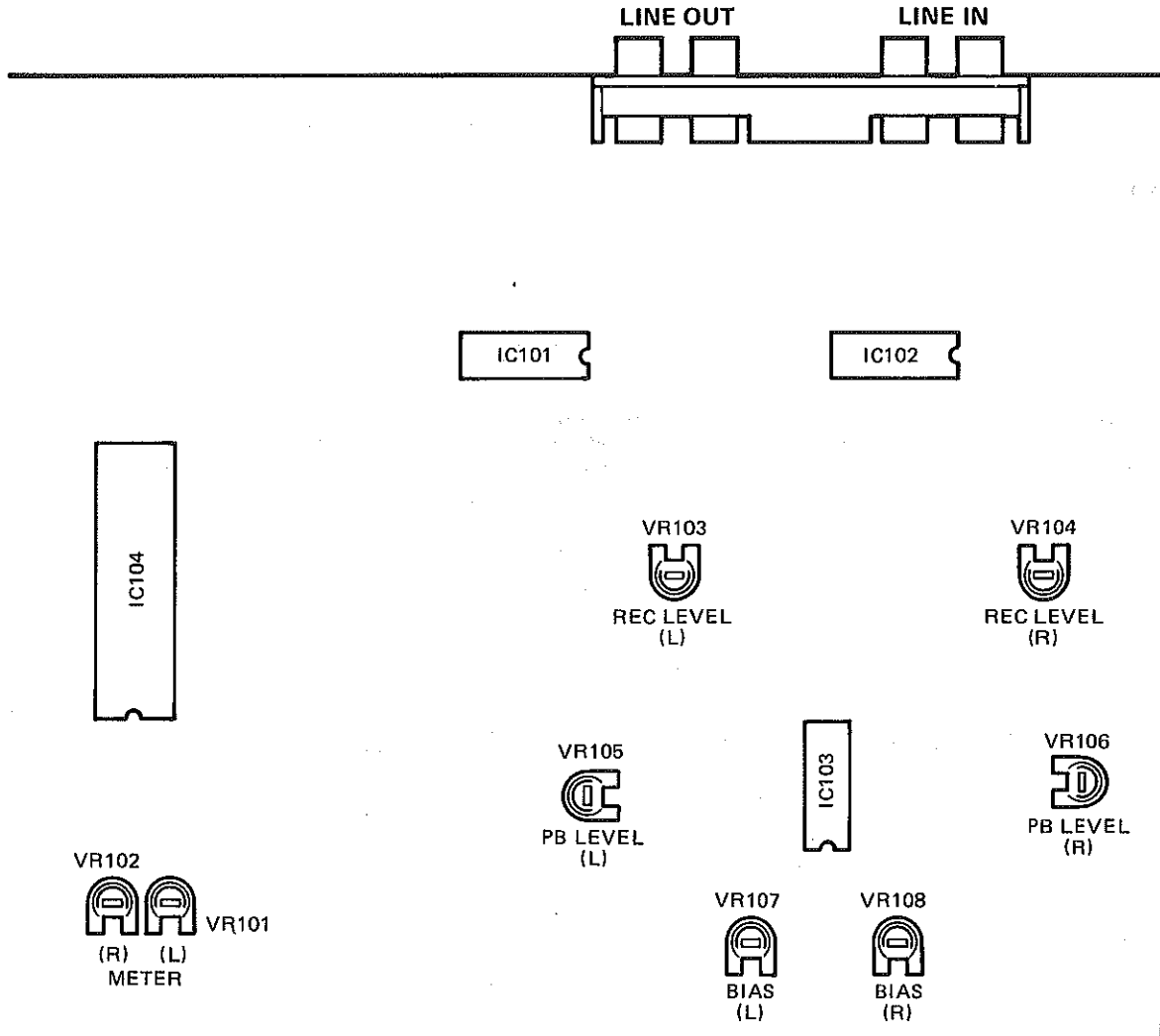


Fig. 3

● 再生周波数特性 / PLAYBACK FREQUENCY RESPONSE

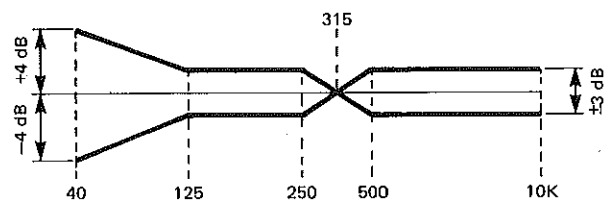


Fig. 4

● 総合周波数特性 / TOTAL FREQUENCY RESPONSE (-20dB)

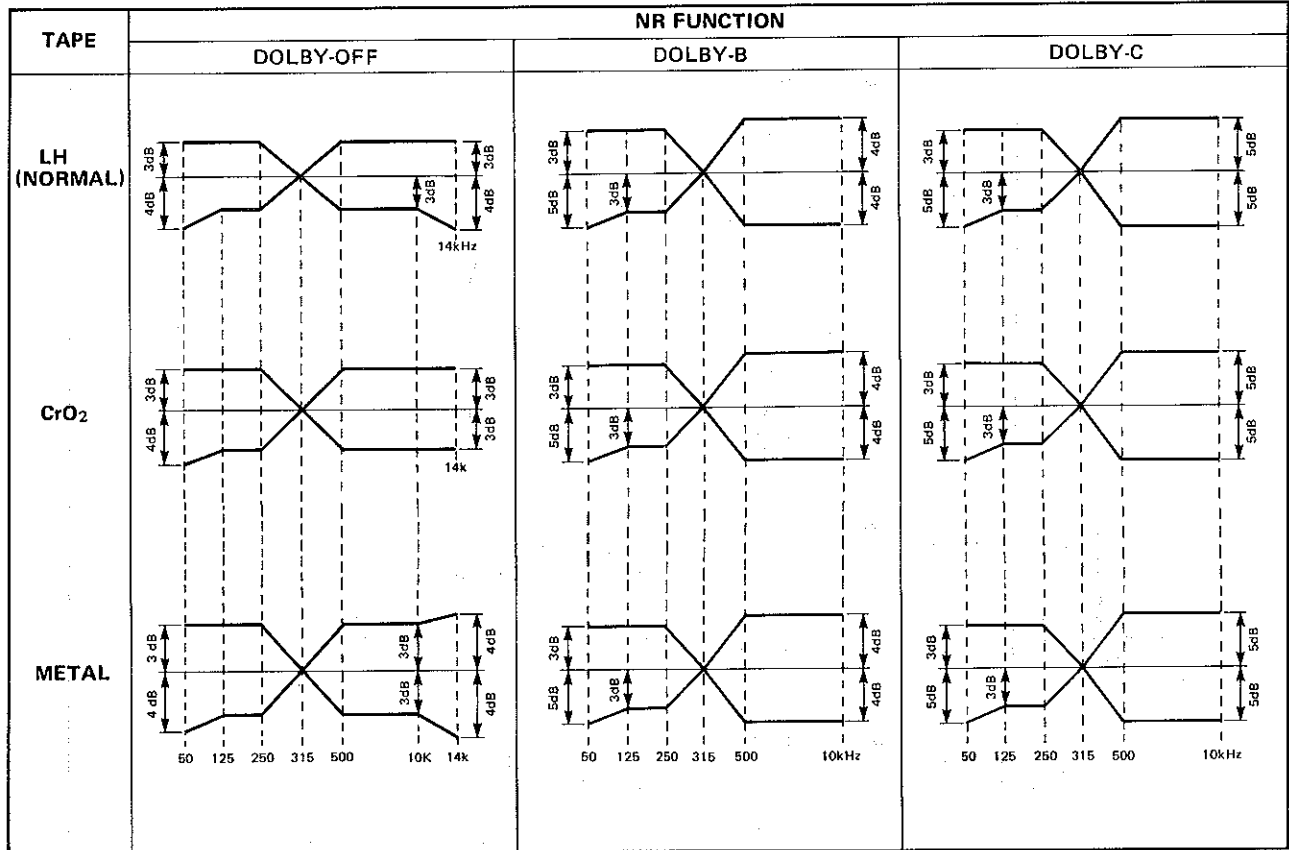
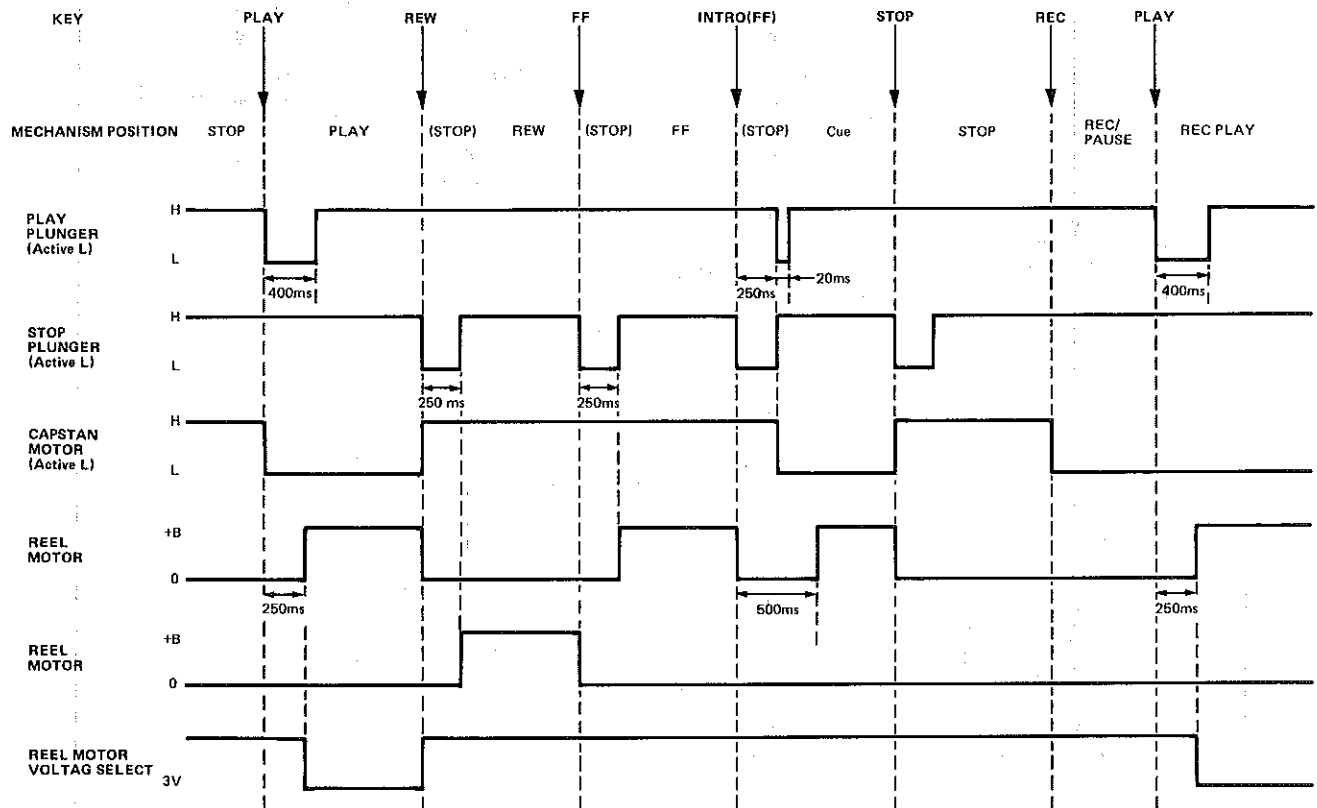
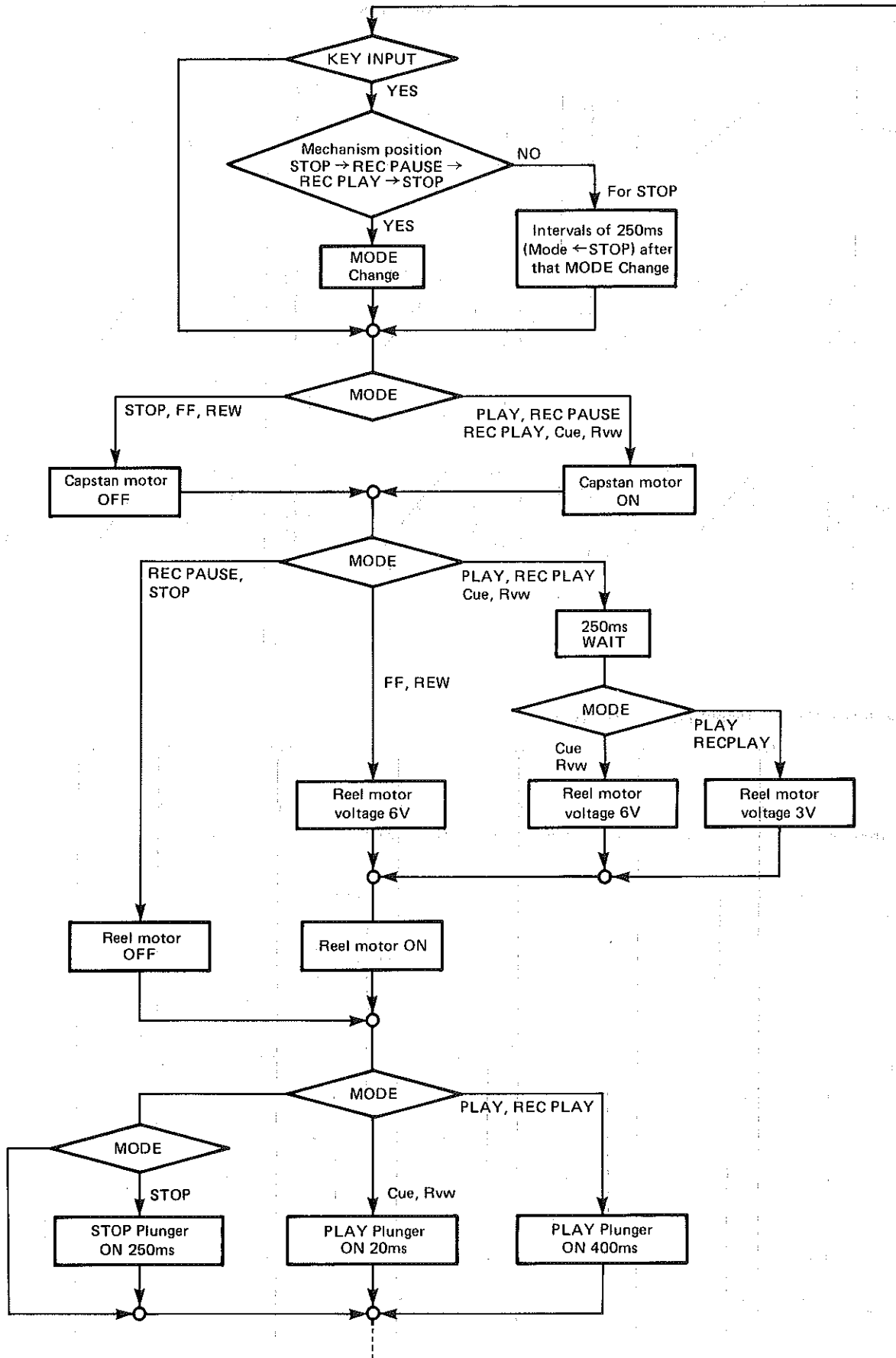


Table 1

● TIMING CHART (Mechanism Control)

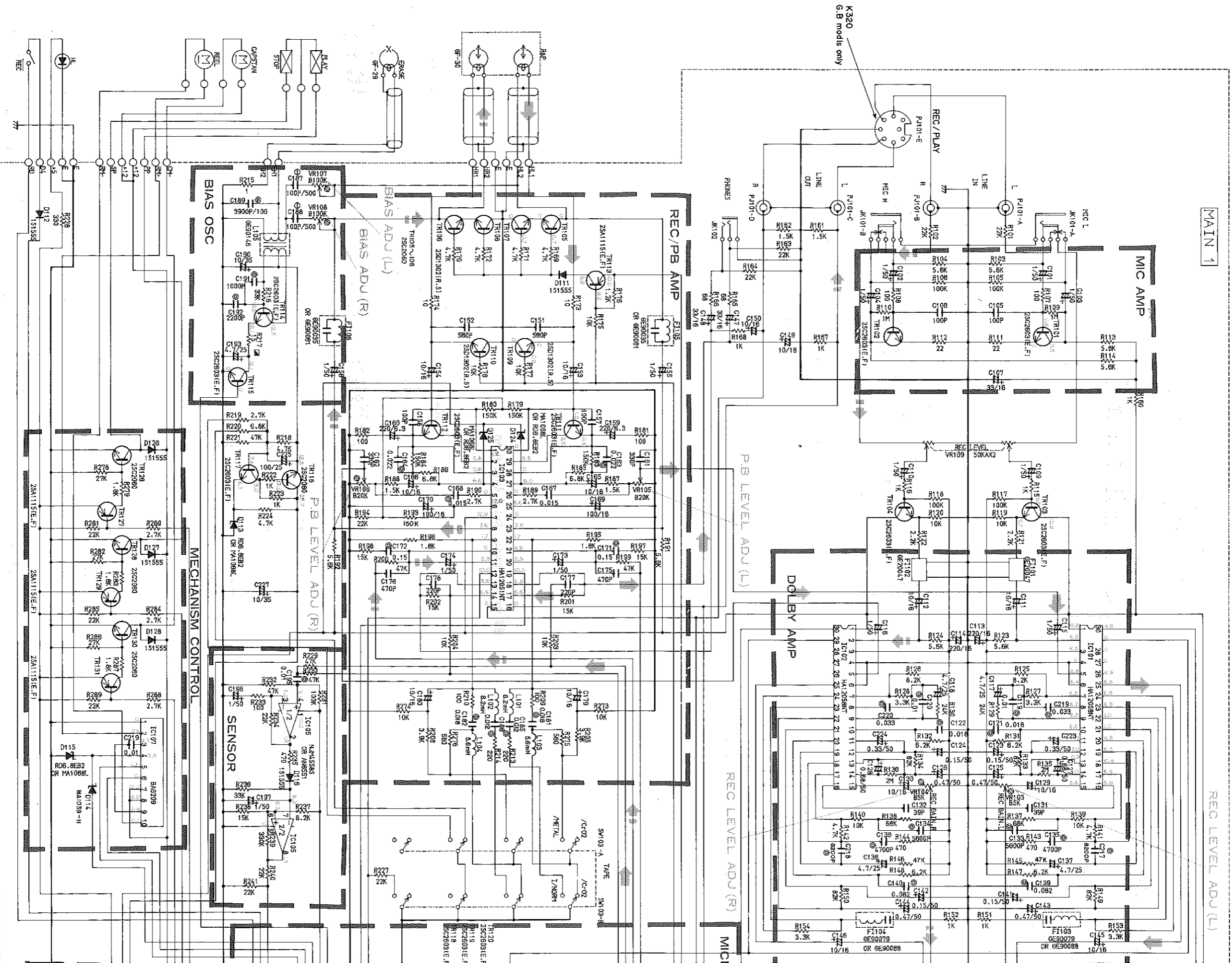


● MECHANISM CHART





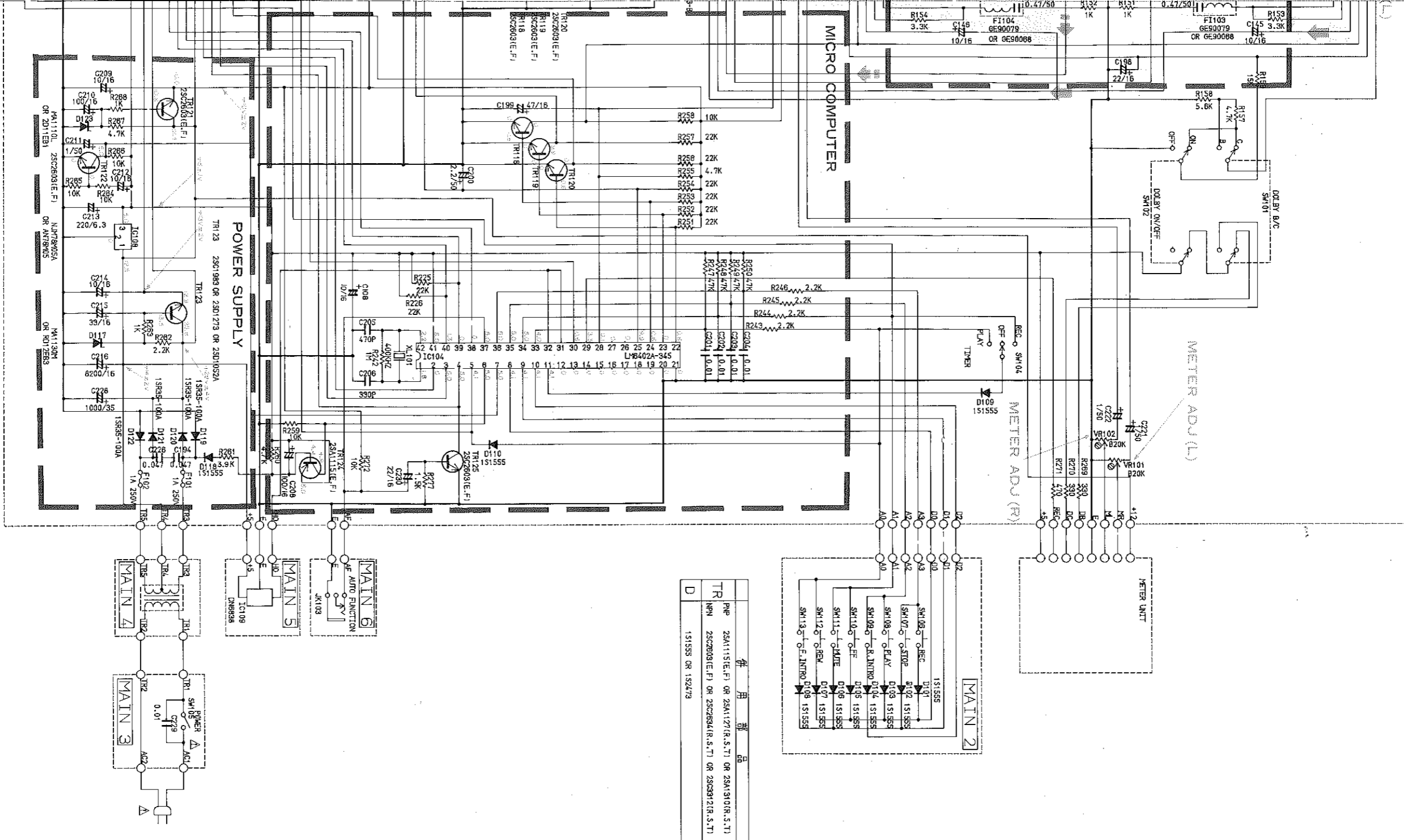
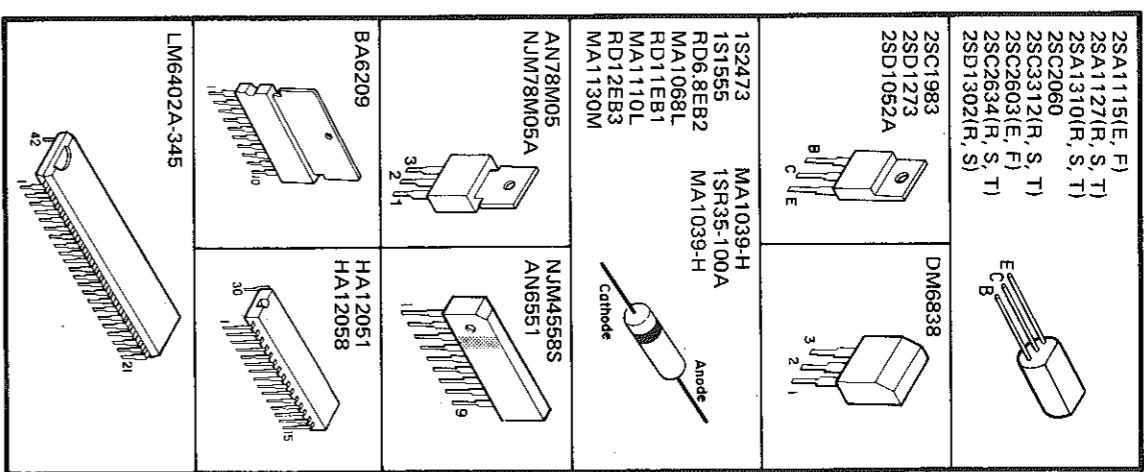
SCHEMATIC DIAGRAM



CAPACITOR	
NO MARK	CERAMIC CAPACITOR
①	POLYESTER FILM CAPACITOR
②	POLYPROPYLENE CAPACITOR
③	ELECTROLYTIC CAPACITOR
④	TANTALUM CAPACITOR
RESISTOR	
NO MARK	CARBON FILM RESISTOR
①	METAL OXIDE FILM RESISTOR
②	SEMI VARIABLE RESISTOR
③	FLAME PROOF CARBON RESISTOR

- The voltages are measured by LH tape at PLAY mode (no-signal condition)
- All voltages are measured with a 10MΩ/V DC electric volt meter.
- Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- Schematic diagram is subject to change without notice.

**PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.**



TR	PNP	2SA1151(E, F) OR 2SA1127(R, S, T) OR 2SA1310(R, S, T)
D	NPN	2SC2603(E, F) OR 2SC2634(R, S, T) OR 2SC3312(R, S, T) OR 2SC3912(R, S, T)

	R	U, C	G, B	A
F101, 102	TIA250V	IA250V	T800mA 250V	TIA250V
C229	0.01	0.01	0.01	0.01/250

	K-320	K-16
JK103		Set

**VOLTAGE TABLE**

CHECK ITEM	MODE	POINT	VOLTAGE
CAPSTAN MOTOR	PLAY	+12CM-	+14V ±2V
REEL MOTOR (1)	FF	RM+/RM-	+6.5V ±1V
" (2)	PLAY	RM+/RM-	+ 3V ±1V
PLAY PLUNGER	PLAY ON	+12/PP	+14V ±2V
STOP PLUNGER	STOP ON	+12/SP	+14V ±2V
BIAS OSC (LH)	REC PLAY	TR116 EMITTER	+8.5V ±2V
" (C-O <sub>2</sub> )	REC PLAY	TR116 EMITTER	+13V ±2V
" (METAL)	REC PLAY	TR116 EMITTER	+21V ±2V

- U ..... U.S.A. model
- C ..... Canadian model
- R ..... General model
- A ..... Australian model
- G ..... European model
- B ..... British model

This schematic diagram is for U.S.A. and Canadian models. As the following part and values differ from each model, so refer to the corresponding column.

LSI DATA

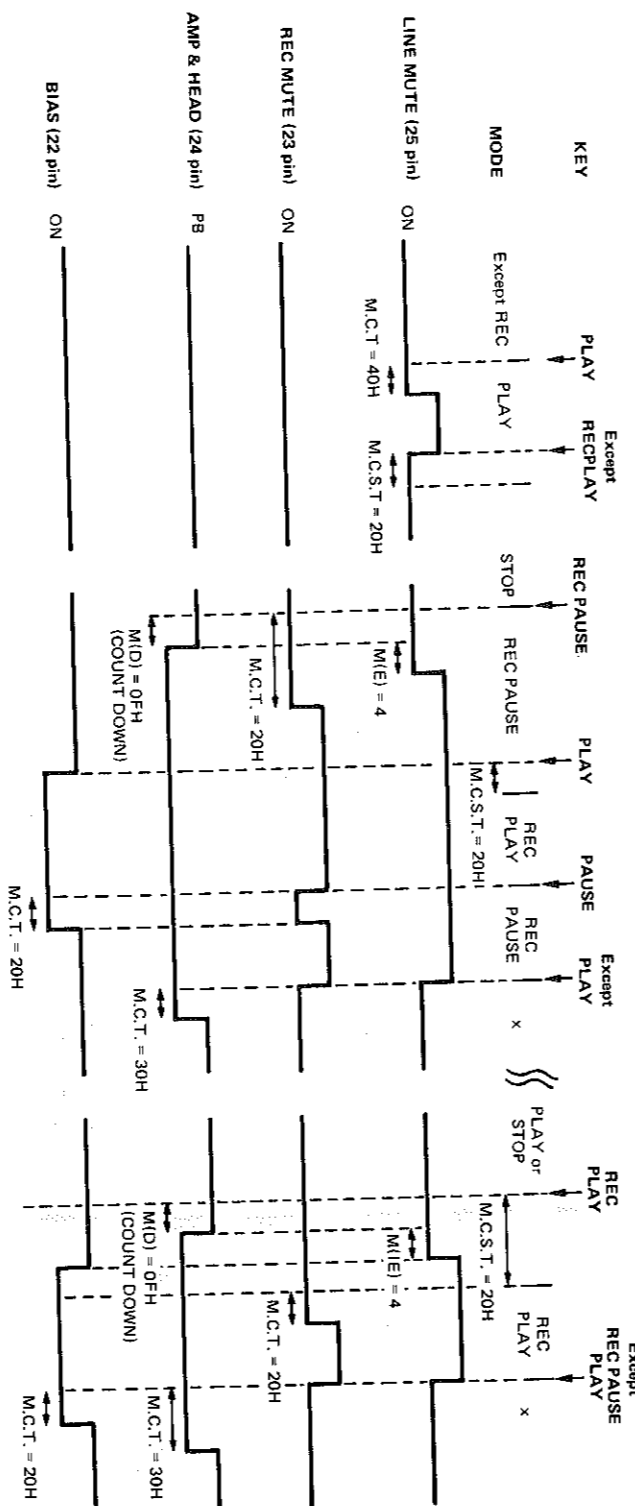
LM6402A-345 (IC104)

PIN No.	NAME	FUNCTION	PIN No.	NAME	FUNCTION
1	Xtal	CLOCK, Microcomputer 400KHz	42	EXtal	CLOCK, Microcomputer 400KHz
2	C0	Capstan Stop plunger Control	41	VDD	+5V
3	C1	Play plunger Control	40	B3	Direction control of REEL MOTOR
4	C2		40	B2	
5	C3	LED DIGIT OUTPUT (Dot LED) · KEY SCANS	39	B1	
6	INT	POWER OFF DETECT (Power off at "L" level)	38	B0	PLAY SIGNAL OUTPUT
7	RES	RESET, Microcomputer (Reset at "L" level)	37	A3	PLAY SIGNAL OUTPUT
8	D0	LED DIGIT OUTPUT (1 figure) · KEY SCAN 1	36	A2	
9	D1	" (2 figure) · " 2	35	A1	
10	D2	" (3 figure) · " 3	34	A0	
11	D3	" (4 figure) · " 4	33	A0	INPUT PORT control switches, Sensor
12	E0	Non Connection	32	I2	
13	E1		31	I1	
14	E2		30	I0	
15	E3		29	H3	
16	F0	Non Connection	28	H2	
17	F1		27	H1	
18	F2		26	H0	
19	F3		25	G3	
20	TEST	Gnd.	24	G2	LINE MUTE (Mute ON at "L" level)
21	Vss	Gnd.	23	G1	REC SELECT (Recording at "L" level)
			22	G0	REC MUTE (Mute ON at "L" level)
					REC BIAS control (Bias ON at "L" level)

MATRIX OF INPUT

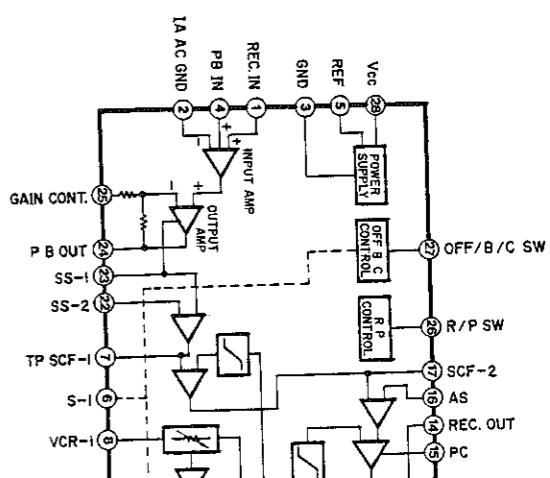
PORT	D0	D1	D2	D3	C3
A0	REW	INTRO SCAN (FF)	INTRO SCAN (REW)	TIMER PLAY	REC INHIBIT
A1	FF	REC MUTE	TIMER REC	REC INHIBIT	70µs TAPE
A2	PLAY	STOP	70µs TAPE	METAL TAPE	METAL TAPE
A3	REC				

MECHANISM CONTROL CHART

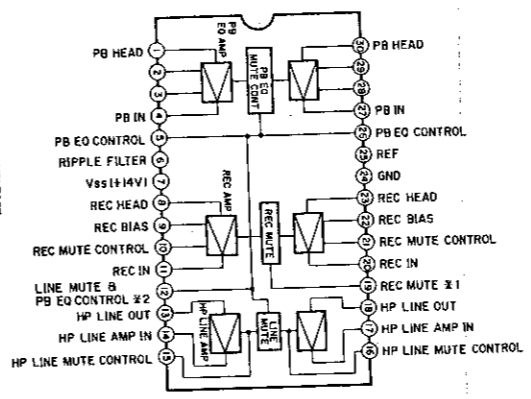


IC BLOCK DIAGRAM

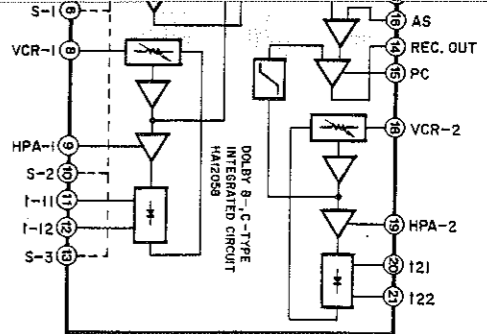
IC101, 102 : HA12058



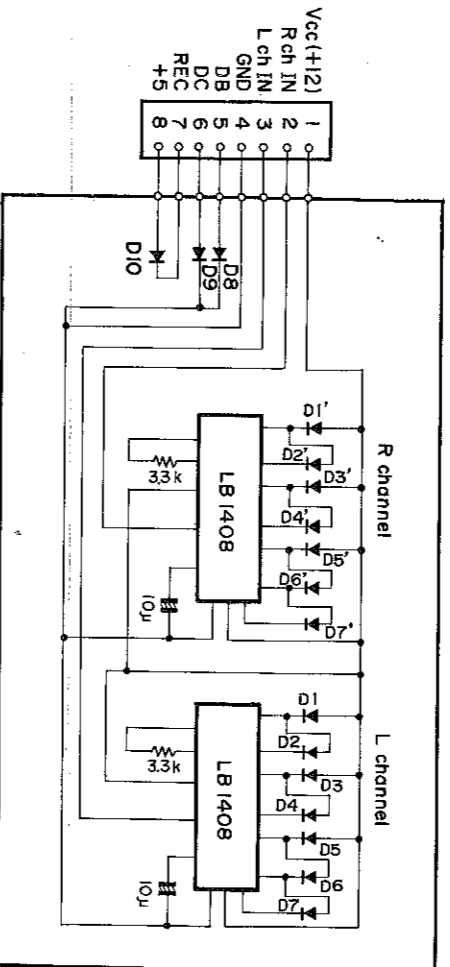
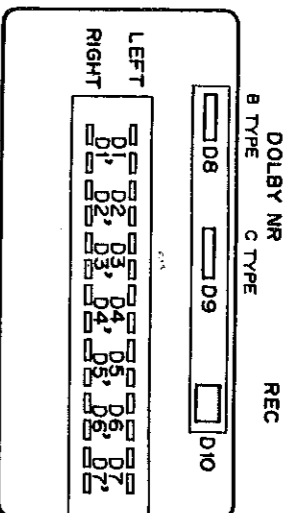
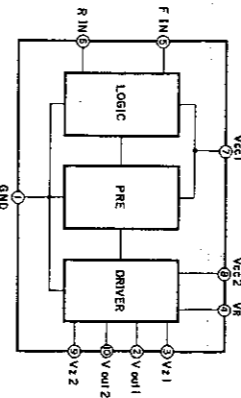
IC103 : HA12051



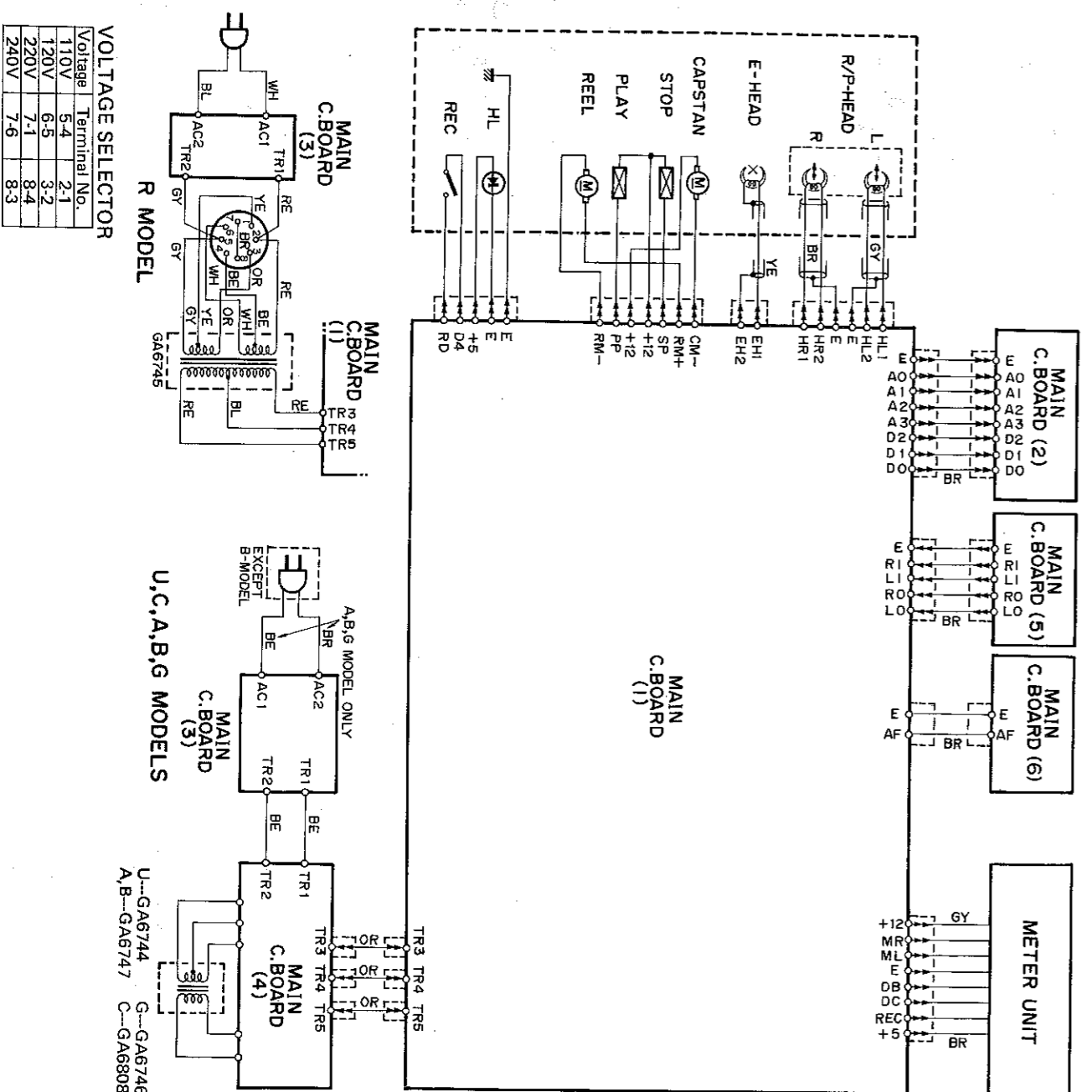
- x1. REC MUTE CONTROL VOLTAGE
- HSV1: MUTE ON
- L1OV1: MUTE OFF
- x2. LINE MUTE CONTROL VOLTAGE
- HSV2: MUTE ON
- L1OV2: MUTE OFF
- HSV3: MUTE ON
- L1OV3: MUTE OFF



IC107 : BA6209

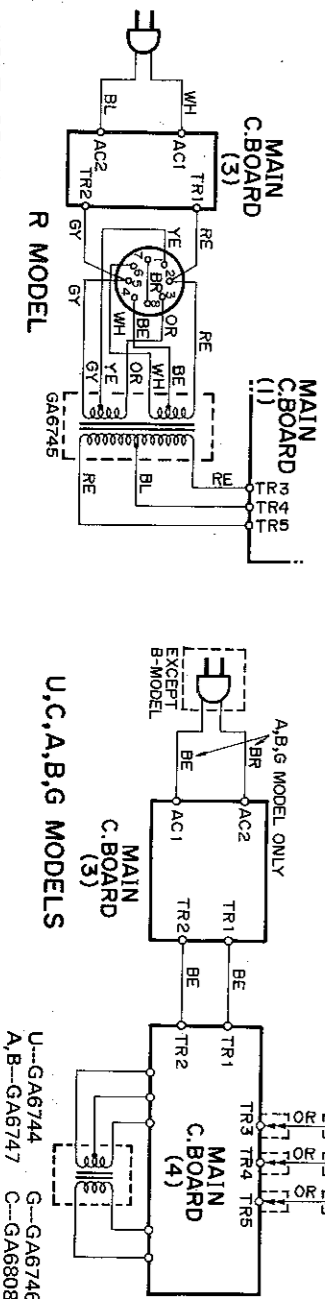


WIRING DIAGRAM



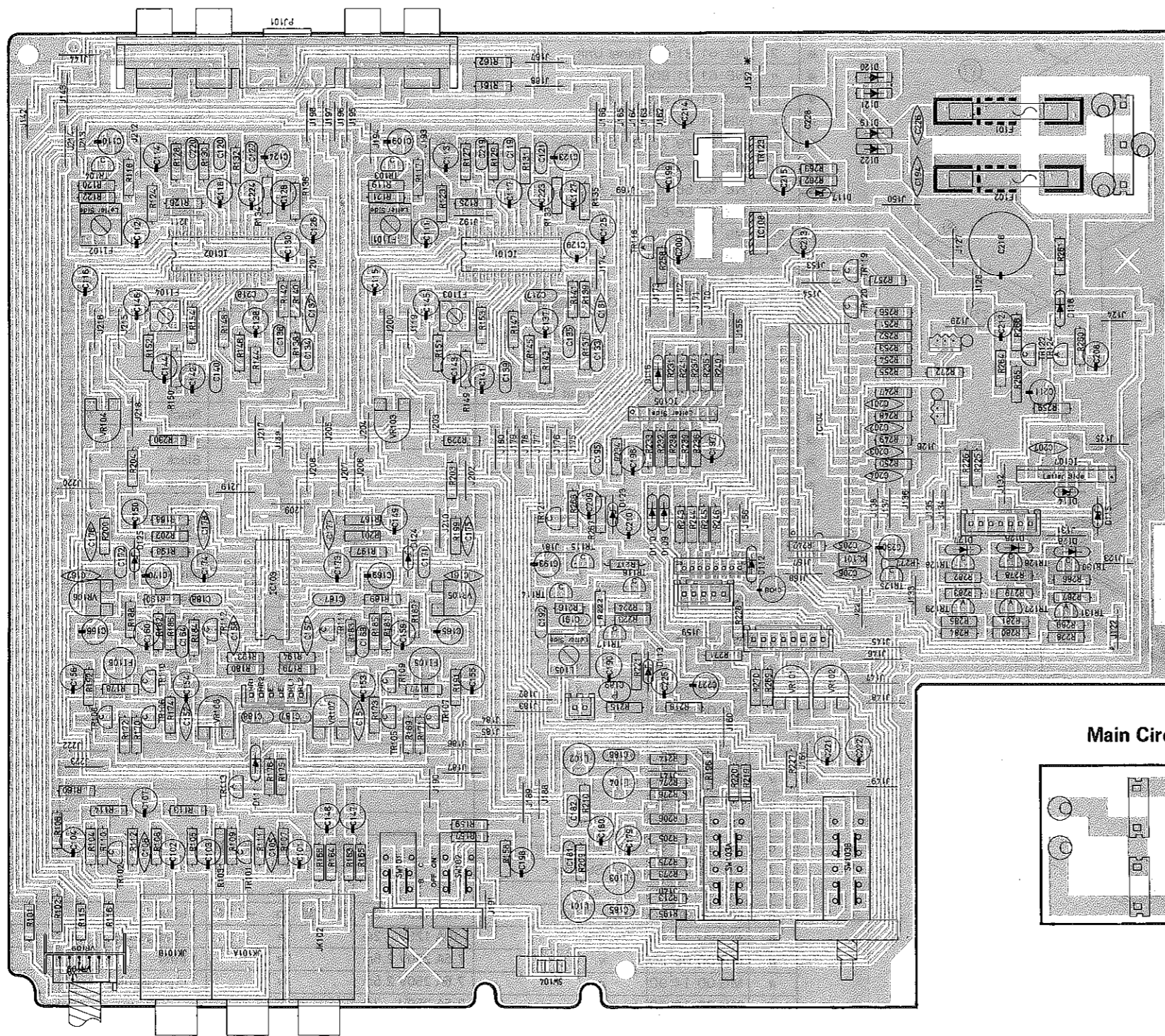
VOLTAGE SELECTOR

Voltage	Terminal No.
110V	5-4 2-1
120V	6-5 3-2
220V	7-1 8-4
240V	7-6 8-3

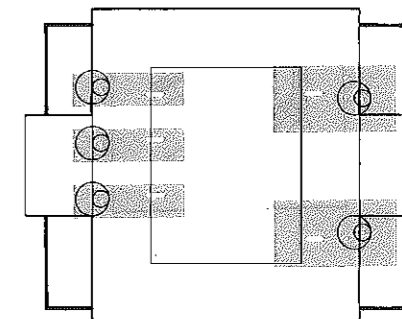


# PRINTED CIRCUIT BOARD

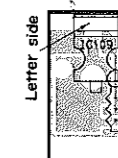
## Main Circuit Board (1)



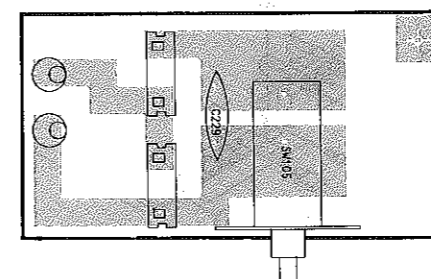
## Main Circuit Board (4)



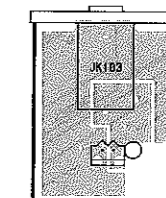
## Main Circuit Board (5)



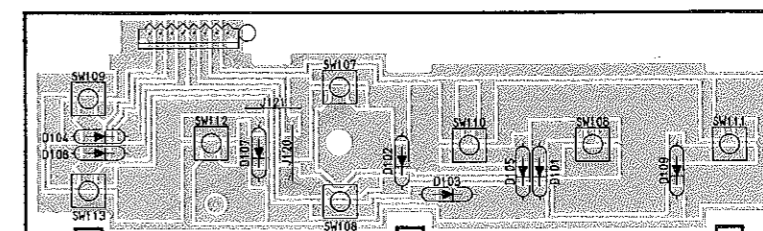
## Main Circuit Board (3)



## Main Circuit Board (6) .... K-16 only



## Main Circuit Board (2)



1

2

3

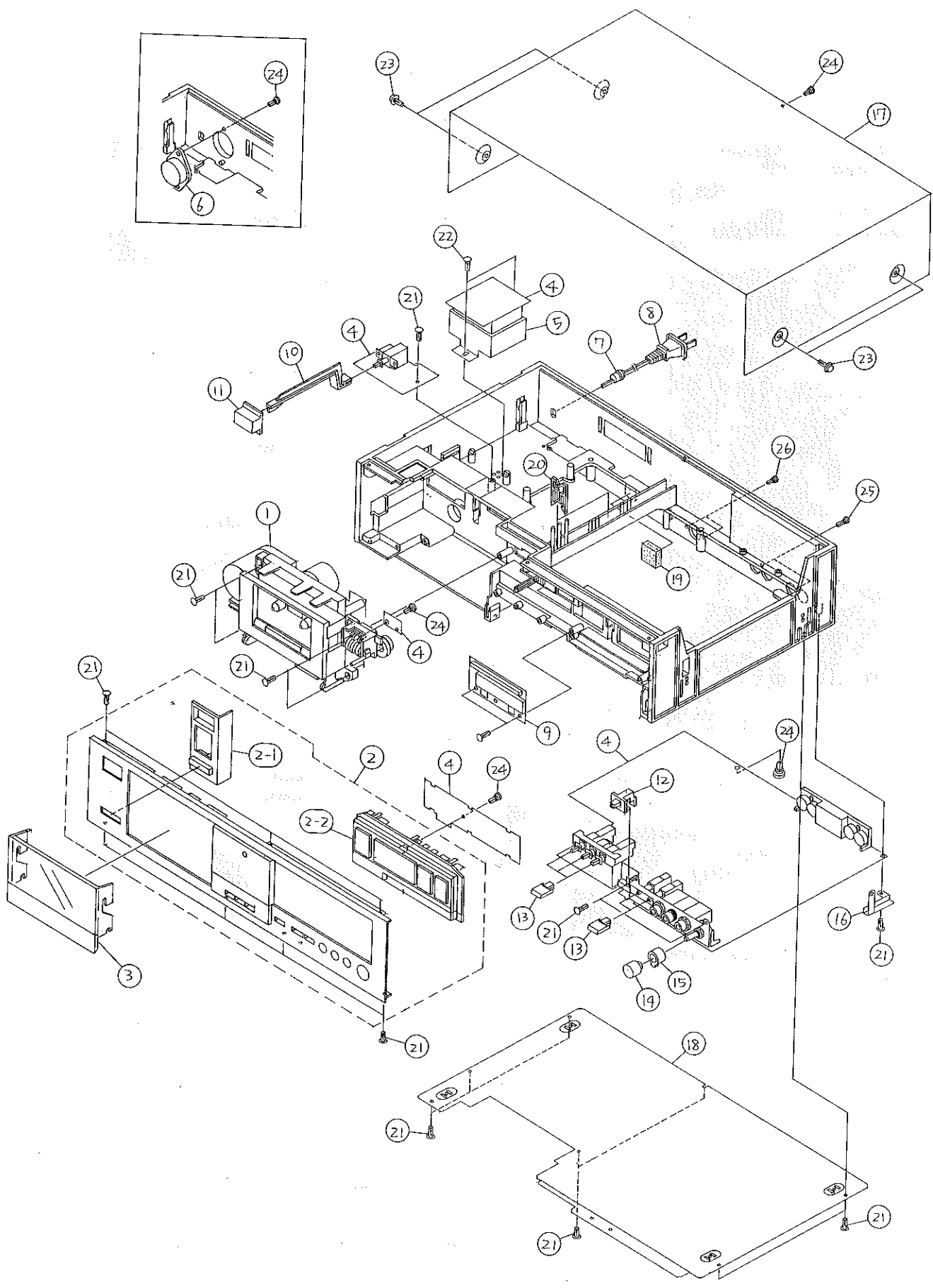
4

5

6

1 ■ EXPLODED VIEW

1  
2  
3  
4  
5  
6  
7



# PARTS LIST

● Components having special characteristics are marked  $\Delta$  and must be replaced with parts having specifications equal to those originally installed.

## MECHANISM PARTS

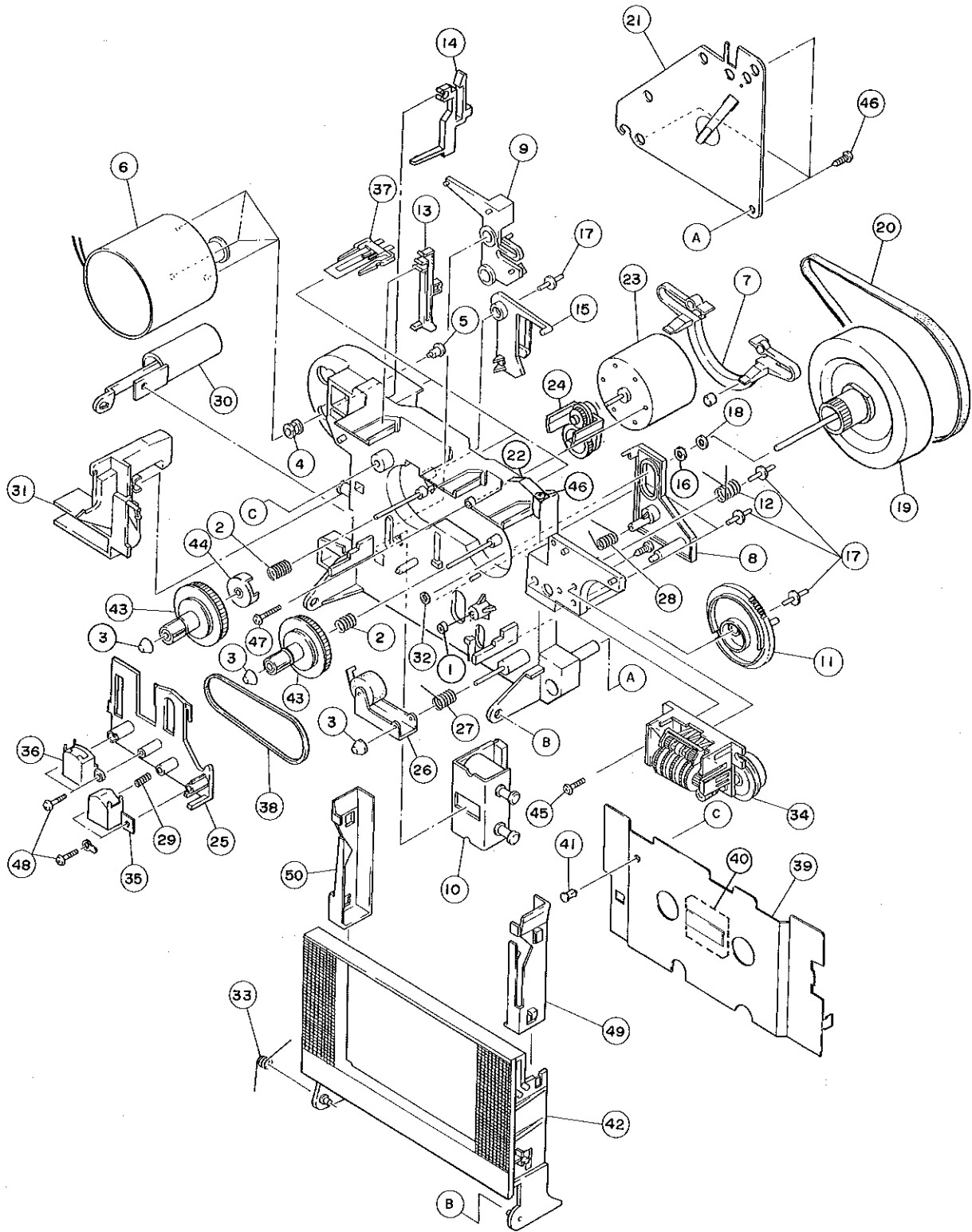
Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 1	SM 60 30 00	Mechanism Unit	TM-7A (S)	メカユニット	Silver		
※ "	SM 60 31 00	"	TM-7A (B)	"	Black		
※ 2	NB 61 81 70	Panel Unit		パネルユニット	Silver K-320		
※ "	NB 61 81 80	"		"	Black "		
※ "	NB 61 81 90	"		"	Silver K-16		
※ "	NB 61 82 20	"		"	Black "		
※ 2-1	NB 61 79 70	Button Ass'y	(EJECT)	ボ タ ン Ass'y	Silver K-320		
※ "	NB 61 79 80	"	"	"	Black "		
※ "	NB 60 56 60	"	"	"	Silver K-16		
※ "	NB 60 56 80	"	"	"	Black "		
※ 2-2	NB 61 80 10	"	(OPERATION)	"	Silver K-320		
※ "	NB 61 80 20	"	"	"	Black "		
※ "	NB 61 80 40	"	"	"	Silver K-16		
※ 3	NB 61 81 10	Lid Cover Ass'y		リッドカバー Ass'y	Silver K-320		
※ "	NB 61 81 20	"		"	Black "		
※ "	NB 61 81 30	"		"	Silver K-16		
※ "	NB 61 81 60	"		"	Black "		
※ 4	NA 08 37 40	Main Circuit Board		メ イン シ ー ト	Silver K-320	A	
※ "	NA 08 37 50	"		"	Black "	A	
※ "	NA 08 37 60	"		"	Silver "	R	
※ "	NA 08 37 70	"		"	Black "	R	
※ "	NA 08 37 80	"		"	Silver "	U.C	
※ "	NA 08 37 90	"		"	Black "	U.C	
※ "	NA 08 38 00	"		"	Silver "	G.B	
※ "	NA 08 38 10	"		"	Black "	G.B	
※ "	NA 08 38 20	"		"	Silver K-16	A	
※ "	NA 08 38 30	"		"	Black "	A	
※ "	NA 08 38 40	"		"	Silver "	R	
※ "	NA 08 38 50	"		"	Black "	R	
※ "	NA 08 38 60	"		"	Silver "	U.C	
※ "	NA 08 38 70	"		"	Black "	U.C	
※ "	NA 08 38 80	"		"	Silver "	G.B	
※ "	NA 08 38 90	"		"	Black "	G.B	
※ 5	GA 67 44 00	Power Transformer		電 源 ト ラ ン ス		U.C	$\Delta$
※ "	GA 67 45 00	"		"		R	$\Delta$
※ "	GA 67 46 00	"		"		G	$\Delta$
※ "	GA 67 47 00	"		"		A.B	$\Delta$
6	LB 20 14 80	Voltage Selector		電 圧 切 換 器		R	
7	CB 61 68 10	Cord Stopper		コ ー ド ス ト ッ パ ー		U.C	
※ "	CB 62 01 90	"		"		R.A.G.B	
8	MG 00 08 40	Power Cord	10A 125V 2m	電 源 コ ー ド	Inter- changeable	U.C	$\Delta$
※ "	MG 00 12 40	"	10A 125V 2m	"		U.C	$\Delta$
※ "	MG 00 09 20	"	7.5A 250V 2.5m	"	Inter- changeable	A	$\Delta$
※ "	MG 00 14 90	"	7.5A 250V 2.5m	"		A	$\Delta$
※ "	MG 00 16 20	"	2.5A 250V 2m	"		G	$\Delta$
※ "	MG 00 16 30	"	6A 250V 2m	"		R	$\Delta$
※ "	MG 00 18 60	"	2.5A 250V 2m	"		B	$\Delta$
※ 9	NA 08 37 20	LED Meter Unit		LEDメーターユニット	Silver		
※ "	NA 08 37 30	"		"	Black		
10	CB 60 80 90	Rod		ロ ッ ド			
※ 11	CB 62 51 70	Button		ボ タ ン	Silver K-320	POWER	
※ "	CB 62 51 80	"		"	Black "	"	
※ "	CB 60 80 80	"		"	Silver K-16	"	

※ New Parts (新規部品)





■ EXPLODED VIEW (CASSETTE MECHANISM)



## ■ CASSETTE MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	SM:60:30:00	Cassette Mechanism Unit	TM-7A (S)	カセットメカユニット	Silver		
※	SM:60:31:00	"	TM-7A (B)	"	Black		
※	1 BB:07:00:90	Oilless Metal		オイレスメタル			
※	2 AA:60:88:80	Spring, BT		B T ス プ リ ン グ			
※	3 CB:60:61:50	Reel Cap		リールキャップ			
※	4 CB:61:11:80	Mounting Plate, Motor		モーター取付座			
※	5 AA:60:66:50	Screw, Motor		モーター取付ネジ			
※	6 JC:00:10:70	Capstan Motor	BFA2R	キャプスタンモーター			
※	7 NB:60:58:00	Brake Ass'y		ブ レ ー キ Ass'y			
※	8 CB:60:61:60	Cam Follower		カムフォロア			
※	9 CB:60:61:70	Play-Triger		P L A Y ト リ ガ			
※	10 JF:00:03:30	Solenoid Ass'y		ソレノイド Ass'y			
※	11 CB:60:61:80	Cam		カ ム			
※	12 AA:60:88:90	Spring, Cam		カムスプリング			
※	13 CB:62:28:70	Lever		C R レ バ ー			
※	14 CB:62:28:80	Sensor, Tape		テ ー プ セ ン サ ー			
※	15 CB:60:61:90	Stop-Triger		S T O P ト リ ガ			
※	16 CB:60:62:10	Washer	PW-2.5-7	ポリスライダワッシャー			
※	17 CB:60:62:00	Rivet		リベット			
※	18 CX:60:01:60	Washer	2.6×4.7×0.13	ポリスライダワッシャー			
※	19 NB:60:33:70	Flywheel Ass'y		フライホイール Ass'y			
※	20 CB:60:62:20	Belt, Main		メインベルト			
※	21 NB:61:50:70	Back Plate Ass'y		バックプレート Ass'y			
※	22 AA:62:24:30	Plate, Spring		スプリングプレート			
※	23 JC:00:07:20	Reel Motor	BFS9B	リールモーター			
※	24 NB:61:50:00	Gear Ass'y		ギ ャ Ass'y			
※	25 CB:62:28:90	Head Base		ヘッドベース			
※	26 NB:61:50:60	Pinch Roller Ass'y		ピンチローラー Ass'y			
※	27 AA:60:89:10	Spring, Return		リターンスプリング			
※	28 AA:60:89:20	Spring, Head Base		ヘッドベーススプリング			
※	29 AA:60:89:30	Spring, R/P Head		ヘッドスプリング			
※	30 NB:60:33:40	Damper Ass'y		ダンパー Ass'y			
※	31 CB:60:61:10	Lever, Lock		ロックレバー			
※	32 CB:08:26:10	Washer		キャプスタンワッシャー			
※	33 AA:60:88:70	Spring Housing		ハウジングスプリング			
※	34 PB:06:43:80	Counter		テープカウンター			
※	35 GF:00:03:00	REC/Playback Head		録 再 ヘ ッ ド			
※	36 GF:00:02:90	Erase Head		消 去 ヘ ッ ド			
※	37 KA:60:05:20	Leaf Switch		リーフスイッチ			
※	38 CB:60:62:40	Belf, Counter		カウンターベルト			
※	39 NB:61:86:50	Blind Plate Ass'y		ブラインドプレート Ass'y			
※	40 iF:00:35:70	LED	SLF-301C	L E D			
※	41 CB:06:88:80	Plastic Rivet		プラスチックリベット			
※	42 CB:62:69:80	Housing	(GY)	ハウジング	Silver		
※	" CB:62:69:90	"	(BL)	"	Black		
※	43 NB:60:34:30	Reel Base Ass'y		リール台 Ass'y		TM-5	
※	44 NB:60:33:50	Disc Ass'y, BT		バックテンションディスク Ass'y		TM-5	
※	45 Ei:02:60:80	Binding Head Tapping Screw	2.6×8 ZMC2-Y	バインドタッピングネジ			
※	46 Ei:03:01:06	"	3×10 ZMC2-Y	"	PACK		
※	47 ED:02:62:06	Binding Head Screw	2.6×20 ZMC2-Y	バインド小ネジ	PACK		
※	48 ED:02:01:26	"	2×12 ZMC2-Y	"	PACK		
※	49 CB:60:98:80	Guide R, Cassette		カセットガイドR			
※	50 CB:62:85:70	Guide L, Cassette		カセットガイドL			

※New Parts (新規部品)

● Carbon resistors of this deck are 1/4W.  
There is no description about them in this parts list.  
Use the "Part No." HJ35○○○○ or equivalent.

**ELECTRICAL PARTS**

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA:08:37:40	Main Circuit Board	メ イ ン シ ー ト	K-320 Silver		A	
※	NA:08:37:50	"	"	" Black		A	
※	NA:08:37:60	"	"	" Silver		R	
※	NA:08:37:70	"	"	" Black		R	
※	NA:08:37:80	"	"	" Silver		U,C	
※	NA:08:37:90	"	"	" Black		U,C	
※	NA:08:38:00	"	"	" Silver		G,B	
※	NA:08:38:10	"	"	" Black		G,B	
※	NA:08:38:20	"	"	K-16 Silver		A	
※	NA:08:38:30	"	"	" Black		A	
※	NA:08:38:40	"	"	" Silver		R	
※	NA:08:38:50	"	"	" Black		R	
※	NA:08:38:60	"	"	" Silver		U,C	
※	NA:08:38:70	"	"	" Black		U,C	
※	NA:08:38:80	"	"	" Silver		G,B	
※	NA:08:38:90	"	"	" Black		G,B	
	Fi:40:41:00	Ceramic Cap	セ ラ コ ン	0.01 $\mu$ F 250V	C229	A	
	Fi:41:41:00	"	"	0.01 $\mu$ F	"	R,U,G,C,B	
	FU:15:21:00	Mica Cap	マ イ カ コ ン	100pF 500V	C187,188		
	UA:25:31:00	Mylar Cap	マ イ ラ ー コ ン	1000pF 50V	C191		
	UA:25:32:20	"	"	2200pF 50V	C192		
	UA:25:34:70	"	"	4700pF 50V	C135,136		
	UA:25:35:60	"	"	5600pF 50V	C133,134		
	UA:25:41:00	"	"	0.01 $\mu$ F 50V	C119,120,195		
	UA:25:41:20	"	"	0.012 $\mu$ F 50V	C185,186		
	UA:25:41:50	"	"	0.015 $\mu$ F 50V	C167,168		
	UA:25:41:80	"	"	0.018 $\mu$ F 50V	C181,182,121,122		
	UA:25:42:20	"	"	0.022 $\mu$ F 50V	C163,164		
	UA:25:43:30	"	"	0.033 $\mu$ F 50V	C219,220		
	FA:15:48:20	"	"	0.082 $\mu$ F 50V	C139,140		
	UA:25:51:50	"	"	0.15 $\mu$ F 50V	C171,172		
	FG:41:13:90	Ceramic Cap	"	39pF 50V	C131,132		
	FG:41:21:00	"	"	100pF 50V	C105,106,157,158		
	FG:41:22:20	"	"	220pF 50V	C177,178		
	FG:41:23:30	"	"	330pF 50V	C161,162,206		
	FG:41:24:70	"	"	470pF 50V	C175,176,206		
	FG:41:25:60	"	"	560pF 50V	C151,152		
	FG:44:41:00	"	"	0.01 $\mu$ F 50V	C201~204,207		
	FG:44:44:70	"	"	0.047 $\mu$ F 50V	C194,226		
	FT:16:33:90	Polypropylene Cap	"	3900pF 100V	C189		
	UW:91:82:20	Electrolytic Cap	ケ ミ コ ン	220 $\mu$ F 6.3V	C159,160,213		
	UW:93:71:00	"	"	10 $\mu$ F 16V	C111,112,129,130,145,146,149,150,153,154,165,168,179,180,209,212,214,108		
	UW:93:72:20	"	"	22 $\mu$ F 16V	C198,230		
	UW:93:73:30	"	"	33 $\mu$ F 16V	C107,147,148,215		
	UW:93:74:70	"	"	47 $\mu$ F 16V	C199		
	UW:93:81:00	"	"	100 $\mu$ F 16V	C169,170,210,208		
	UW:93:82:20	"	"	220 $\mu$ F 16V	C113,114		
	UW:94:64:70	"	"	4.7 $\mu$ F 25V	C117,118,137,138		
	UW:94:81:00	"	"	100 $\mu$ F 25V	C225		
	UW:95:71:00	"	"	10 $\mu$ F 35V	C227,190		
	UW:56:51:50	"	"	0.15 $\mu$ F 50V	C123,124,141,142		
	UW:56:53:30	"	"	0.33 $\mu$ F 50V	C223,224		
	UW:56:54:70	"	"	0.47 $\mu$ F 50V	C125,126,143,144		

※ New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	UW 96:56:80	Electrolytic Cap	0.68 $\mu$ F 50V	ケ ミ コ ン	C127,128		
	UW 96:61:00	"	1 $\mu$ F 50V	"	C101-104,109,110,115,116,155,156, 173,174,196,197,211,221,222		
	UW 96:62:20	"	2.2 $\mu$ F 50V	"	C200		
	Uf 93:98:20	"	8200 $\mu$ F 16V	"	C216		
	UJ 15:91:00	"	1000 $\mu$ F 35V	"	C228		
	GE 20:04:70	Dolby Filter		ドルビーフィルター	Fi101,102		
	GE 90:03:50	Bias Trap Coil	85kHz	バイアストラップコイル	Fi105,106	Inter- changeable	
	GE 90:06:10	"	"	"	"		
	GE 90:06:80	Coil	20kHz	コ イ ル	Fi103,104	Inter- changeable	
	GE 90:07:90	"	19kHz	"	"		
※	GE 90:16:00	Coil	5.6mH	コ イ ル	L103,104		
※	GE 90:16:20	"	8.2mH	"	L101,102		
※	GE 90:14:60	Bias OSC Coil		バイアスOSCコイル	L105		
	GG 00:05:00	Ceramic Crystal Unit	400kHz	セラミック振動子	XL101		
	HV 55:41:50	Flame Proof Carbon Resistor	15 $\Omega$	不燃化カーボン抵抗	R217		
※	HS 41:21:70	Variable Resistor	A50k $\Omega$ ×2	可 変 抵 抗 器	VR109		
※	HT 37:03:70	Semi Variable Resistor	B5k $\Omega$	半 固 定 抵 抗	VR103,104		
※	HT 37:03:90	"	B20k $\Omega$	"	VR101,102,105,106		
※	HT 37:04:20	"	B100k $\Omega$	"	VR107,108		
	iA 11:15:10	Transistor	2SA1115 (E,F)	ト ラ ン ジ ス タ	TR113,124,127,129,131	Inter- changeable	
	iA 11:27:00	"	2SA1127 (R,S,T)	"	"		
※	iX 60:31:70	"	2SA1310 (R,S,T)	"	"		
※	iC 20:60:00	"	2SC2060	"	TR126,128,130,105~108,116		
	iC 26:03:10	"	2SC2603 (E,F)	"	TR101-104,111,112, 115,117~122,125,114	Inter- changeable	
	iC 26:34:00	"	2SC2634 (R,S,T)	"	"		
※	iX 60:31:80	"	2SC3312 (R,S,T)	"	"		
	iD 13:02:00	"	2SD1302 (R,S)	"	TR109,110		
	iC 19:83:00	"	2SC1983	"	TR123	Inter- changeable	
	iD 12:73:00	"	2SD1273 (Q)	"	"		
	iD 10:52:10	"	2SD1052A	"	"		
	iF 00:06:70	Diode	IS2473	ダ イ オ ード	D101-112,116, 118,126-128	Inter- changeable	
	iF 00:00:40	"	IS1555	"	"		
※	iF 00:16:70	Zener Diode	RD6.8EB2	ツェナーダイオード	D113,115,124,125	Inter- changeable	
※	iF 00:67:80	"	MA1068L	"	"		
※	iF 00:69:30	"	MA1110L	"	D123		
※	iF 00:70:00	"	MA1130M	"	D117		
※	iF 00:66:20	"	MA1039-H	"	D114		
	iH 00:14:20	Diode	ISR35-100A	ダ イ オ ード	D119~122		
	iG 03:04:50	IC	DN6838	I C	IC109		
	iG 07:53:00	"	AN78M05	"	IC108	Inter- changeable	
	iG 07:56:00	"	NJM78M05A	"	"		
	iG 07:68:00	"	NJM4558S	"	IC105	Inter- changeable	
	iG 03:47:00	"	AN6551	"	"		
	iG 10:11:00	"	BA6209	"	IC107		
※	iG 12:51:00	"	HA12051	"	IC103		

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	iG 12 52 00	IC	HA12058	I C	IC101,102		
※	iG 12 66 00	〃	LM6402-345	〃	IC104		
※	KA 80 28 20	Push Switch		プッシュスイッチ	SW101,102		
※	KA 80 44 30	Push Switch		〃	SW103		
※	KA 40 14 20	Slide Switch		スライドスイッチ	SW104		
※	KA 80 36 10	Push Switch		プッシュスイッチ	SW105		
	KA 90 63 80	Switch		ライトタッチスイッチ	SW106~113		△
	KB 00 03 30	Fuse	T1A 250V	ヒューズ	F101,102	R,A	
	KB 00 07 20	〃	T800mA 250V	〃	〃	G,B	
	KB 00 10 60	〃	1A 250V	〃	〃	U,C	
※	LB 20 19 90	Jack		ジャック	K-16 JK103		
※	LB 30 21 50	Phone Jack	Gr	ホンジャック	Silver JK102		
※	LB 30 21 40	〃	BL	〃	Black 〃		
※	LB 60 69 90	Mic Jack	GY	マイクジャック	Silver JK101		
※	LB 60 70 00	〃	BL	〃	Black 〃		
	LB 40 08 00	Pin Jack	4P	ピンジャック	PJ101	R,U,A,C	
	LB 60 71 80	〃	4P WITH DIN	〃	〃 K-320	G,B	
	LB 40 08 00	〃	4P	〃	〃 K-16	G,B	
	LA 00 21 40	Wrapping Terminal	P=10 2P i-Type	i型ラッピング端子板			
	LA 00 21 50	〃	P=10 3P i-Type	〃		R	
	LB 20 18 80	Fuse Holder Pin		ヒューズホルダーピン			
	LB 91 80 20	Base Pin	2P i-Type	ベースピン			
	LB 91 80 50	〃	5P i-Type	〃			
	LB 91 80 60	〃	6P i-Type	〃			
	LB 91 80 70	〃	7P i-Type	〃			
	LB 91 80 80	〃	8P i-Type	〃			
※	LB 92 50 80	Short Plug	8P i-Type	ショートプラグ			
※	AA 61 98 90	Bracket		PCBブラケット			
	BA 08 40 00	Heat Sink		放熱板			
	CB 61 22 40	Cushion		シートクッション			
※	CB 62 23 90	Plastic Rivet		プラスチックリベット			
	CB 60 99 00	Holder,IC		ICホルダー			
	Ei 03 00 66	Binding Head Tapping Screw	3×6 ZMC2-Y	バインドタッピングネジ	PACK		

※ New Parts (新規部品)