

PDSM58000180K



## Personal Computer **MZ-80K**

DC 6 PS

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### FEATURES

- The MZ-80K is a full-fledged personal microcomputer equipped with 8-bit microprocessor (Z-80) and it can meet a variety of applications like hobbies, educations, office works, controls (of apparatus in every industrial field), etc.
- It is a compact desk-top type, itself a simplified unit including CPU board, CRT display, cassette tape recorder and keyboard all together.
- Speaker (3 octaves) and clock function are built in.
- Applicable Languages (BASIC, MACHINE LANGUAGE, ASSEMBLER etc.) are changed easily with variations of tape mode: a free selection of them is possible according to the purposes of users.
- Memory extension is allowed up to 48K bytes in the board.

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### Caution in Service

- \* Maintain the safety and protecting ability of the apparatus after service.
- \* High voltage shall not be rised to excess voltage so as to prevent this apparatus from the extra X-ray radiation.

# SPECIFICATIONS

## ■ General

CPU	Z-80	Clock Function:	Built in
Memory	Monitor ROM; 4K bytes RAM; 20K bytes (dynamic RAM) Memory extension; 48K bytes (max.)	Editor function	Cursor control; "up", "down", "right", "left", "home", "clear home" Edit key, Delete key
Display	10" CRT (black/white), 8 x 8 dot matrix, Characters; 1000 (40 characters x 25 lines)	Power supply	AC 220V $\pm 10\%$ , 50 Hz AC 240V $\pm 10\%$ , 50 Hz (for UK)
		Power consumption	Approx. 45W
Cassette	Standard audio cassette tape Data transfer speed; 1200 bits/sec. Data transfer system; SHARP PWM	Temperature	Operating temp.; 0°C to 35°C Storage temp.; -15°C to 60°C
		Humidity	Lower than 80° during operation
Sound output	400mW (max.)	Weight	Approx. 13 kg
Keys layout	Number; 78 keys ASCII standard (alphabet capital letter, figures), Small letter, Graphic	Dimensions	410(W) x 270(H) x 470(D)mm
		Music function	Built in


## ■ CPU Board Section (DCPU-0006PAZZ)

CPU	Z-80; 1 pc.	Programmable counter	1 pc.
ROM	Monitor; 1 pcs. (4K bytes) Character generator; 1 pcs. (2K bytes)		
RAM	Standard; 16K dynamic RAM; 8 pcs. (16K bytes) 4K dynamic RAM; 8 pcs. (4K bytes) Video RAM; 2 pcs. (1K bytes)	Programmable peripheral interface	1 pc.
		Other ICs	53 pcs.

## ■ Power Supply Section (DBOXD0004PAZZ), (DBOX0005PAZZ ----- for UK)

Input	AC 220V $\pm 10\%$ , 50Hz AC 240V $\pm 10\%$ , 50Hz (for UK)
Output	DC 12V, 1.6A max. DC 5V, 1.6A max. DC -5V, 0.2A max.

### ■ Display Section (DUTT0004PAZZ)

I. General specifications		II. Electrical specifications	
Size	10"	Video output	40Vp-p standard (35Vp-p limit)
Frequency	60Hz (vertical), 15.75kHz (horizontal) 15.75kHz (horizontal)	Resolution	Horizontal  These patterns must be clear-cut.
Power source	DC 12V, 1.1A ±10%	Non-linearity distortion	Horizontal; ±8% (±14% max.) Vertical; ±8% (±12% max.)
Picture tube	Quick start type (3 sec.) 240NB4; 10"90° deflection explosion proof type Heater; 12V, 75mA	Geometrical distortion	Pincushion dist.; 1% (2% max.) Barrel dist.; 1% (2% max.) Trapezoidal dist.; 1% (2% max.) Parallelogram dist.; 1° (2.5° max.)
IC	2 pcs.	High voltage	Zero beam; 11.0kV (10.0kV, min., 12.0kV, max.)
Transistor	5 pcs.	Power supply	DC12.0V, 1.05A (1.2A max.)
Diodes	9 pcs.	Working range	12V ±10%
Sound output	400mW max. (400 Hz) Speaker 8cm, round dynamic type (32Ω)	Scan size	Horizontal; 10% (15% max.) Vertical; 10% (15% max.)
Control knobs	Volume, V-Hold, Contrast, H-Hold, Brightness, Focus	Horizontal lock-in range	±300 Hz (±100Hz)
		Vertical lock-in range	-12 Hz (-6 Hz limit)
Working temperature	-10°C to 50°C	Audio frequency characteristic	400 Hz (0dB) -10dB ±4dB at 100 Hz -12dB ±4dB at 10kHz
		Sound maximum output	400mW at 400 Hz (350mW min.)

### ■ Cassette tape recorder Section (KTRC-0004PAZZ)

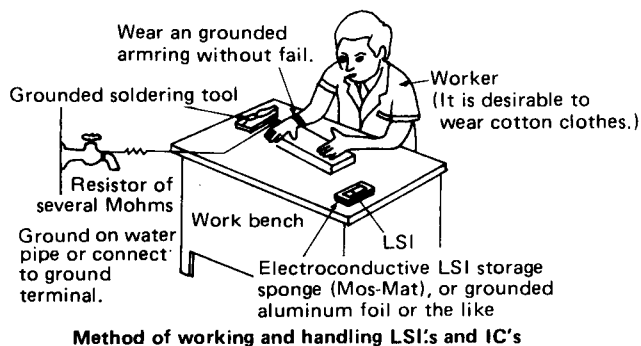
System	PWM recording	Biasing	DC system
Power source	5V ±0.25V (rated)	Erasing	DC system
Rated amperage	Wait; 2mA Record; 70mA (TEAC test tape) Playback; 7mA (TEAC test tape)	Playback sensitivity	1m sec. to 500μ sec. (standard)
		Input level	Below 0.4V ("L") Over 2.0V ("H")
Semiconductors	4 transistors 1 IC 4 diodes	Input impedance	Over 10kΩ (record jack)
		Output level	Below 0.4V ("L") Over 2.0V ("H")
Applied tape	From C30 to C120	Working temperature	-10°C to 50°C
Tape speed	4.75 cm/sec.		
Track	2-track monaural type	Storage temperature	-25°C to 70°C
Motor	Electronic governor motor (12V)		

\* Specifications subject to change without prior notice.

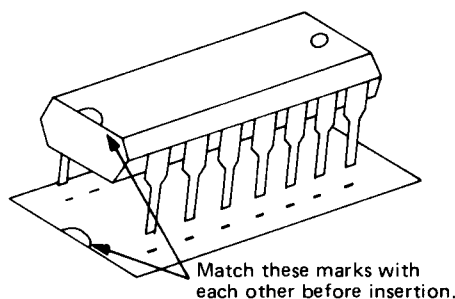
## Precautions on Handling LSI's and IC's

LSI's and IC's used in the MZ-80K are semiconductor integrated circuits whose basic element is MOS FET. The IC's, so poor in static electricity or leakage current from soldering tool, are liable to suffer breakdown. It is essential therefore to read the following instructions carefully and handle them properly.

- ① Ground your body before handling LSI's or IC's. Grounding must be made through a resistor of several Mohms for avoiding danger. Note that if possible, you wear cotton gloves and working clothes, but not chemical fiber ones easily charged with static electricity.



- ⑤ When inserting LSI's or IC's, don't mistake their inserting direction unconditionally. Reverse insertion damages them.



- ⑥ When storing and transporting an LSI or IC separately, wrap it with aluminum foil or insert into electroconductive sponge (Mos-Mat) to maintain terminals at the same potential.

- ② When putting LSI's on a work bench during repair, lay grounded aluminum foil or the like superior in electric conductivity under them.

- ⑦ Storage temperature of LSI is  $-20$  to  $+70^{\circ}\text{C}$ , and that of IC  $-40$  to  $+125^{\circ}\text{C}$ . It is recommended, however, to store them at a temperature near room temperature if possible. Avoid storing them on a place extremely high or low in humidity.

- ③ Use a grounded soldering tool free from leakage current. Even if current leaks out to the tip of soldering tool, gate insulation layer is protected by the action of protective diode. However, too much leakage current, which is caused by the tip in direct contact with power supply, for instance, may break the protective diode itself. Therefore, never fail to use a soldering tool free from leakage current.

- ⑧ Be careful to refrain from giving an unreasonable mechanical impact to LSI's or IC's, or from giving an unreasonable force to lead wires.

A low-voltage soldering tool (6V, 12W) is optimal.

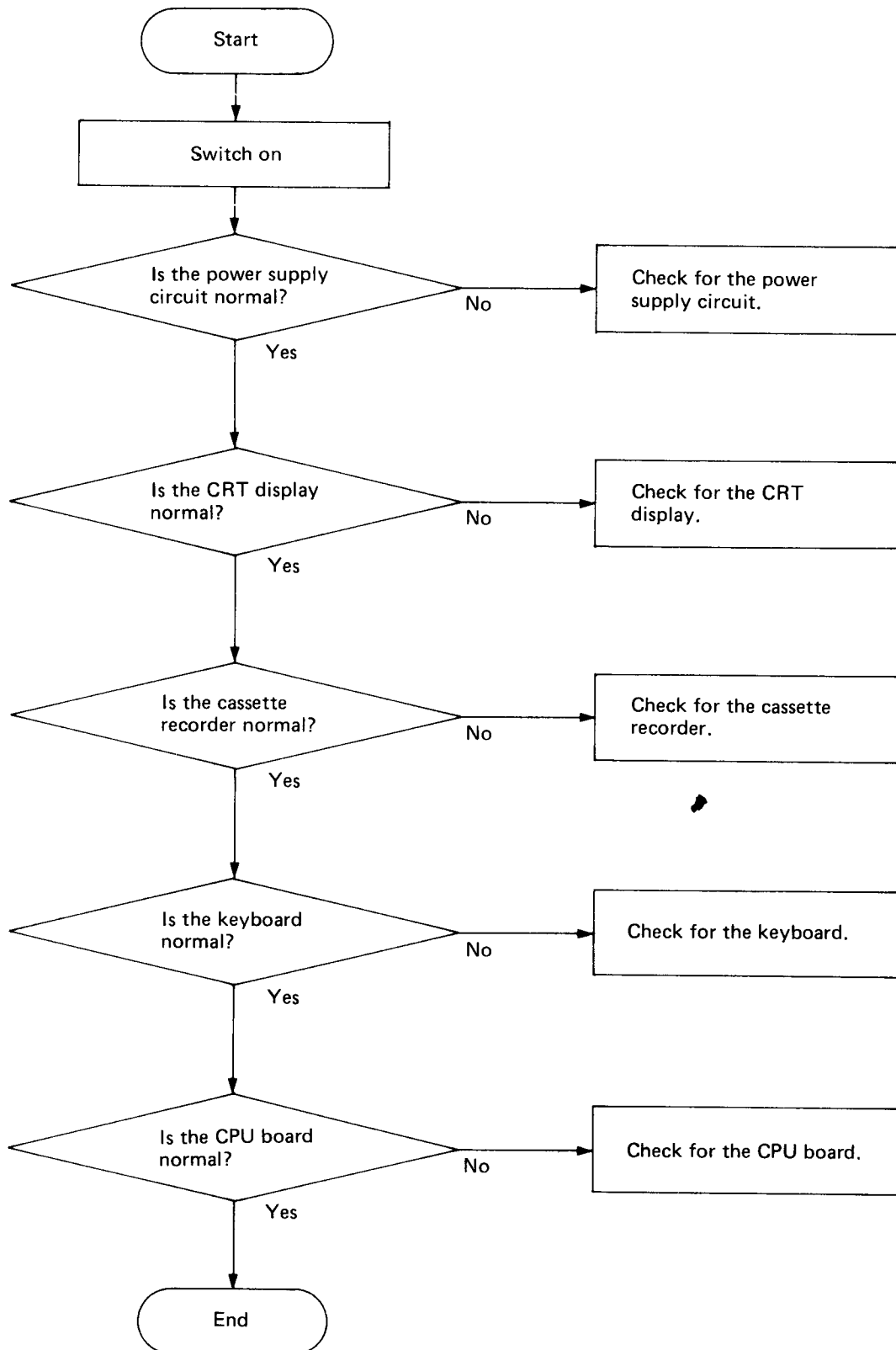
- ⑨ Turn off the power switch without fail before detaching LSI's or IC's from the main body.

- ④ When inserting LSI's or IC's into the printed wiring board, avoid touching their pins directly, but hold their black plastic packages.

- ⑩ Solder LSI's or IC's in a short time so as to prevent an unseasonable thermal impact to them.

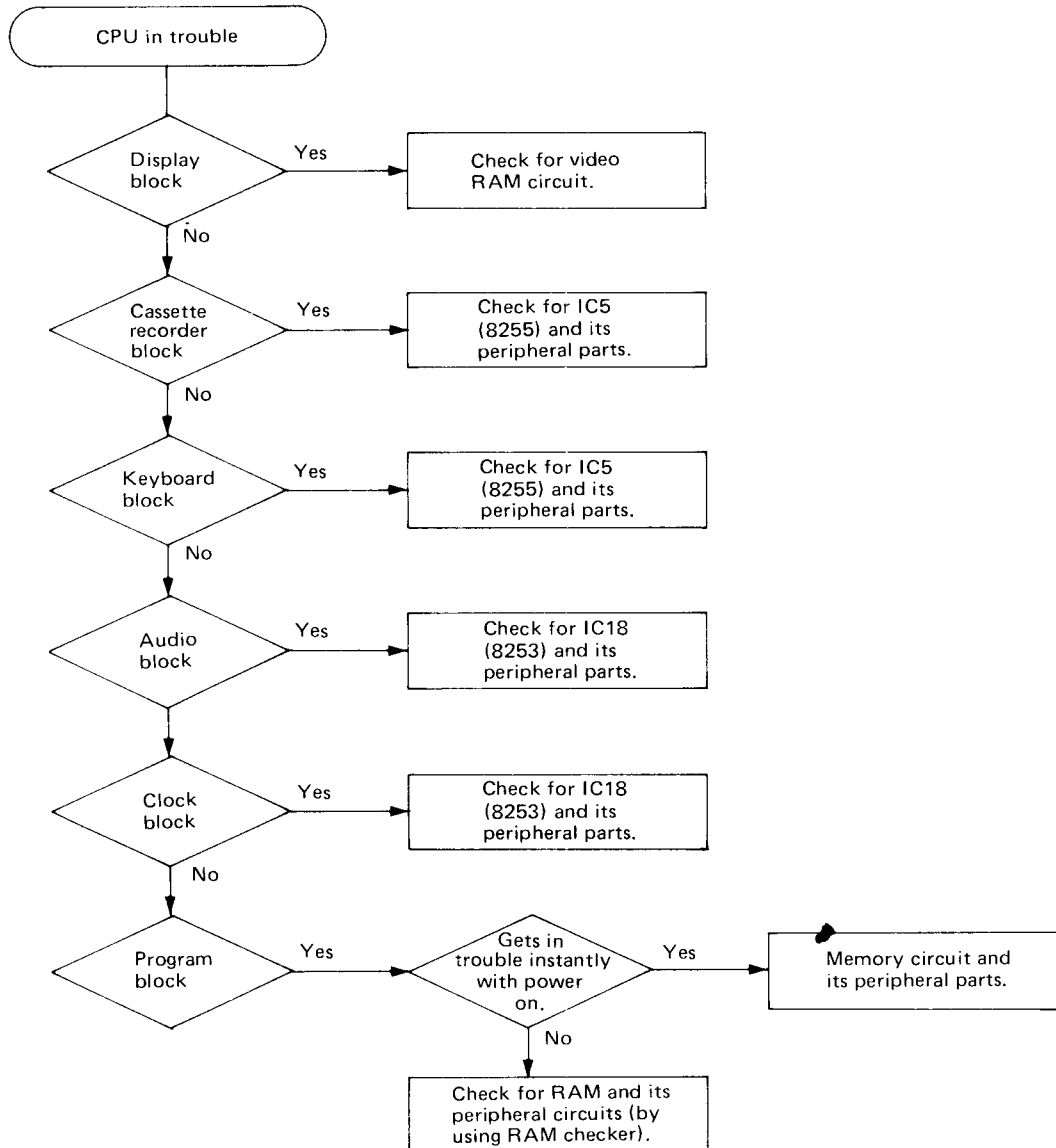
## TROUBLE SHOOTING GUIDE

The machine comprises five main units, CPU board, display, cassette tape recorder, keyboard, and power supply circuits. For a quick solution to most operating difficulties, first consult the chart below to find which section of the machine is subjected to the trouble, and next to do the checkings according to more detailed instructions given in the succeeding pages.



# CPU BOARD SECTION

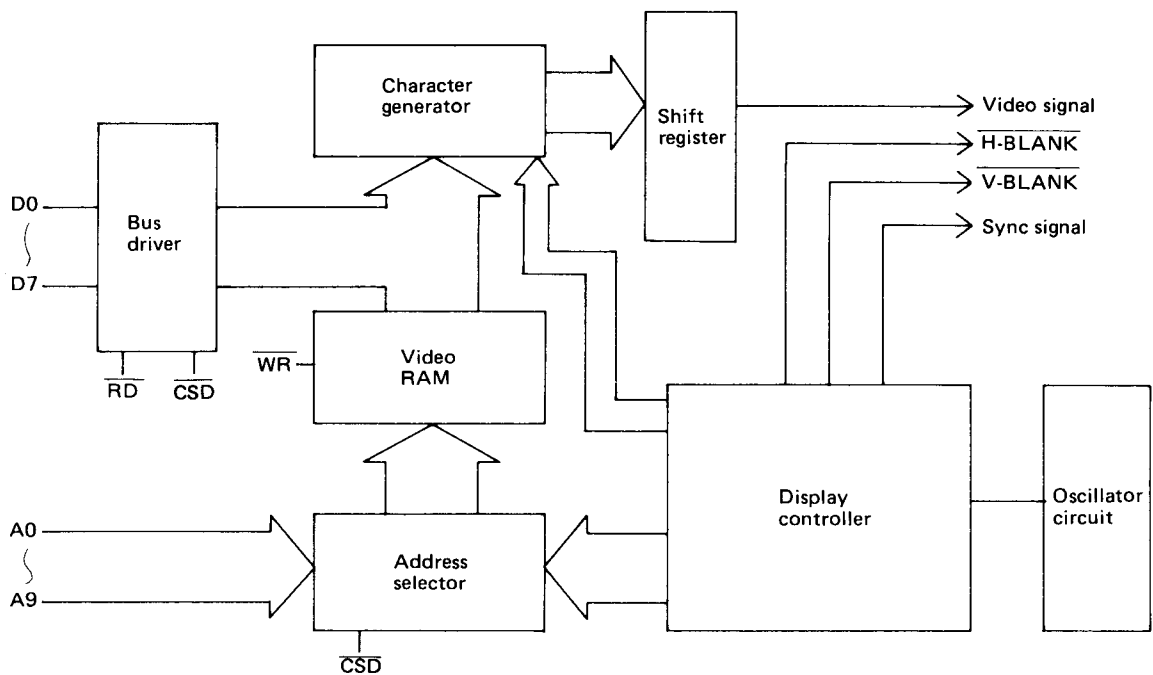
The CPU board is composed of the following six blocks. When it gets in trouble, first locate which block is concerned with the trouble, and next try to check for its corresponding circuits; the wiring diagrams of every block will be shown separately.



## ■ Checking methods of each circuit

1. By touching IC insulating parts by fingers:
  - If they seem too hot by heat generation; IC is defective, IC load is heavy or components are touching each other – ROM and V-RAM are exempted from this checking, however.
  - If a circuitry state is changed to another; Soldering is poor, socket contact is improper, or printed-wiring is erroneous.
2. By using a synchroscope:
  - If the relation between input and output of TTL IC is illogical, this means defective IC gate.
  - Check if the voltage level of TTL IC is as specified: High level; over 2.4V, Low level; below 0.5V.

## ■ Display Block

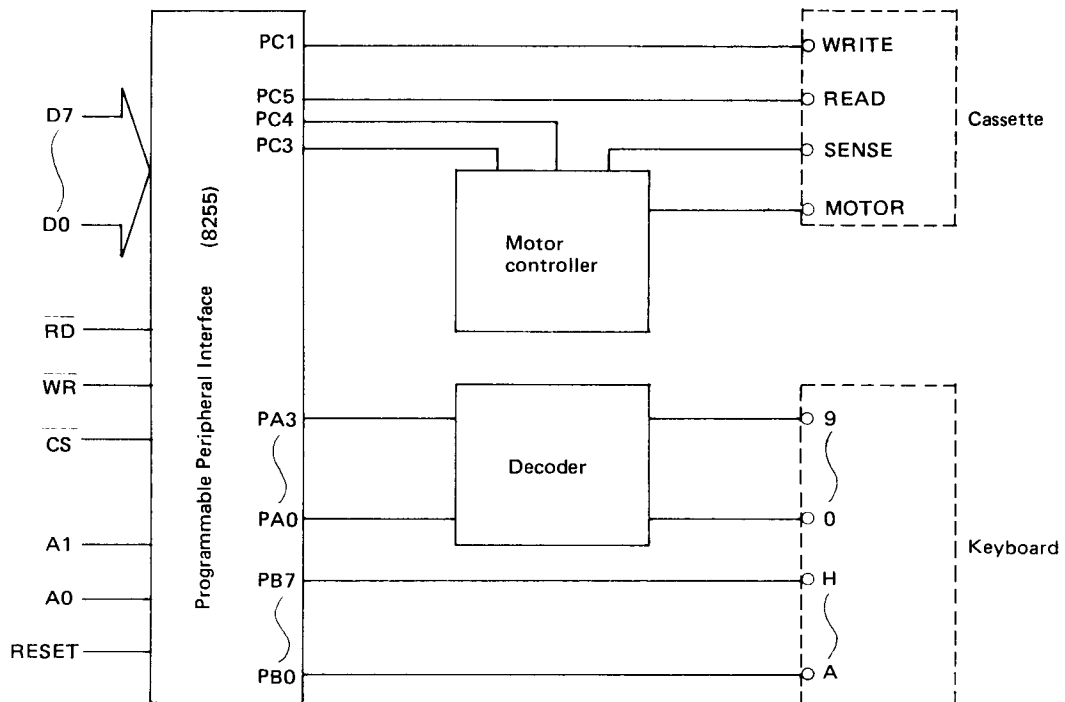


Block Diagram of Parts around Video RAM

Problem	Check Point
1. Sync. signal is not produced.	Vertical sync. signal: Check for IC15 and IC16. Horizontal sync. signal: Check for IC10.
2. Video signal is not produced.	Is $\overline{V-GATE}$ signal present at pin ① of IC24? Yes; IC24 No; IC5 Is $\overline{V-BLANK}$ signal present at pin ② of IC24? Yes; IC24 No; IC20 Is $\overline{H-BLANK}$ signal present at pin ⑬ of IC17? Yes; IC17, IC3 No; IC15 Is output signal present at pin ② of IC17? Yes; IC17, IC3 No; IC29
3. Displayed character(s) is partly invisible.	Check for IC29 and CG.
4. The display is positionally deviated.	Check for sync. signal circuit.



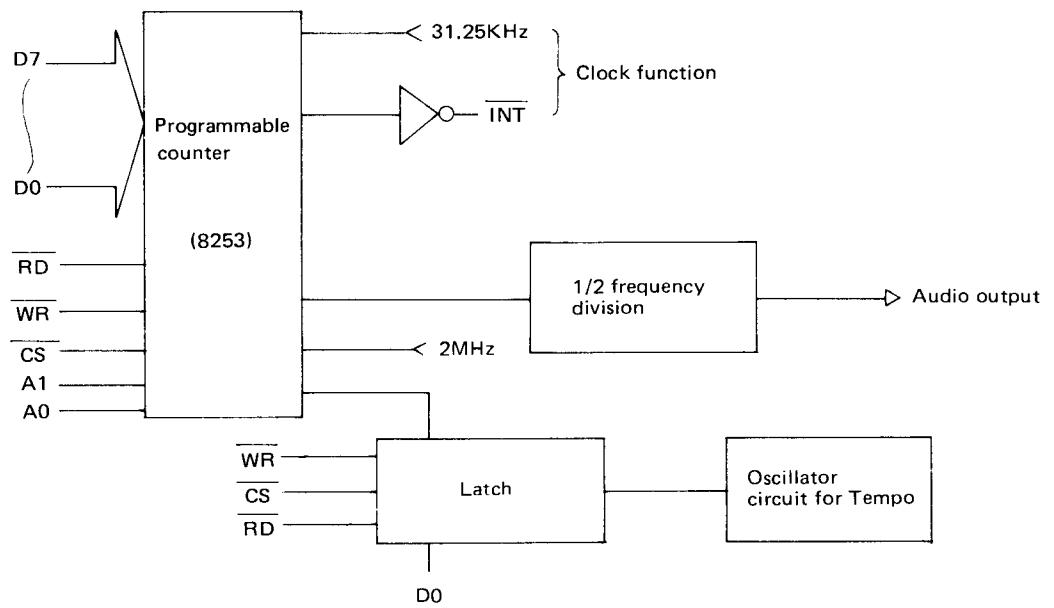
## ■ Cassette recorder/Keyboard Block



Block diagram of Parts around Cassette recorder/Keyboard.

Problem	Check Point
1. "LOAD" operation is impossible.	Is output signal present at pin ④ of IC4? Yes; IC5 No; IC4
2. "SAVE" operation is impossible.	Is output signal present at pin ⑮ of IC5? Yes; IC4 No; IC5
3. Motor doesn't rotate.	Is voltage at pin ⑥ of IC2 at "low" level? Yes; IC3, Q1, Q2 No; IC2, IC24, IC4, IC5
4. Motor doesn't stop.	Is voltage at pin ⑥ of IC2 at "high" level? Yes; IC3, Q1, Q2 No; IC2, IC24, IC4, IC5
5. Key input is ineffective.	Check for IC5 and IC6.

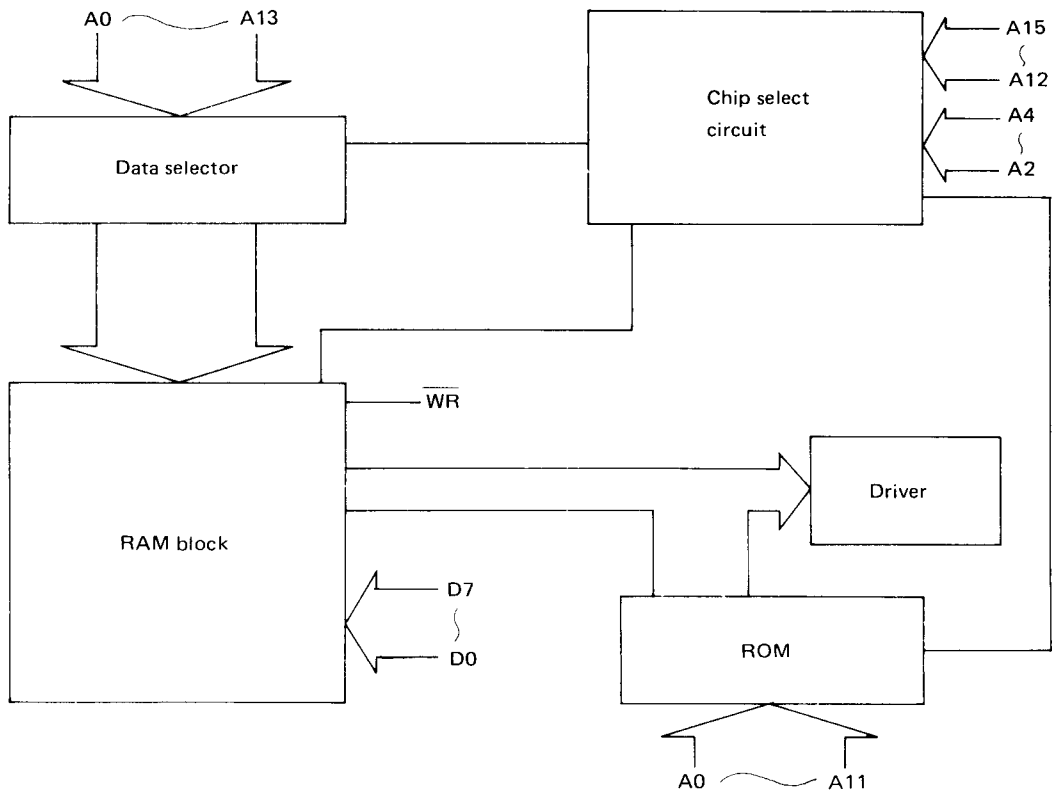
■ Audio/Clock Block



Block Diagram of Parts around Audio/Clock Block

Problem	Check
1. No sound is produced.	Is output signal present at pin ⑩ of IC18? Yes; IC12, IC3 No; IC18
2. Sound is distorted.	Check for IC12 and IC18.
3. Tempo is abnormal.	Check for IC13.
4. Clock function is abnormal.	Check for IC18.

## ■ Memory Circuit Block



Block Diagram of Parts around Memory Circuit

Problem	Check Point
1. Reproduced pictur shows "panic".	Check for the following: ROM, IC46, CG, IC43 Address bus line; A0 to A15 (IC44, IC45) Data bus line; D0 to D7 (IC36, IC37, IC50) Control line; IC35 RAM (by using RAM checker*), IC52, IC53, IC56
2. Error display or misoperation is caused as a result of program execution.	RAM
3. Cursol disappears.	IC46, IC1
4. Returns to "MONITOR SP-1002."	RAM
5. Error is caused after a long operation.	RAM

### \* How to Use RAM Checker

Remove monitor ROM from the socket ("M-ROM" marked on the PWB) and insert RAM checker into the socket and turn on the power switch (the picture gets "panic" for about 1 second): then the following RAM TEST-1 and RAM TEST-2 will be automatically carried out from the address \$1000 to the maximum address and the tested results will be displayed: the maximum address refers to \$5FFF in the case of the standard set.

The following is an example of the testing performed with the standard set (with RAMs being all normal).

Note: RAM (I) block, 16K bytes; RAM (II) block, 4K bytes

RAM TEST-1	1000-OK	2000-OK	3000-OK	4000-OK	5000-OK
	6000-ER-6000-00,	7F,			
RAM TEST-2	00	FF	00	FF	F0 OK

#### 1) RAM TEST-1

In the range from the address \$1000 to the maximum address, data \$00 and \$FF are subjected to automatic write/read test; if error is caused, "ER" mark is indicated in the unit of 4K bytes.

In the above table,

**3000-OK:** this means write/read operation has been normal from the address \$3000 to \$3FFF.

**6000-ER-6000-00, 7F:** this means there exists error somewhere from the address \$6000 to \$6FFF; this error is because the standard set is provided with up to \$5FFF but with no more address, so it doesn't show a malfunction of RAM itself.

An example showing an error really caused:

2000-ER-235B-00, 01
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An error is caused in the addresses \$2000s; namely, although data \$00 has been written in the address \$235B, its read-out data is \$01.

#### 2) RAM TEST-2

Write/read test is carried out with the following data.

- Write-in data \$00 (from the address \$1000 to the maximum address)
- Write-in data \$FF (from the address \$1000 to the maximum address)
- Write-in data \$00 (from the maximum address to the address \$1000)
- Write-in data \$FF (from the maximum address to the address \$1000)
- Write-in data \$F0 and \$0F to be entered alternately (from the address \$1000 to the maximum address and vice versa).

The above table (RAM TEST-2) shows all the items (a) thru (e) are normal — the indications "00", "FF", "00", "FF" and "F0" correspond to (a) thru (e) respectively.

An example showing an error really caused:

RAM TEST-2	00	FF	00	ER-23FF-01
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From the above, it can be seen that the tests (a) and (b) are both normal and that although data \$00 in the test (c) has been written in the address \$23FF, its read-out data is \$01, which means that an error has been caused.

In this way, which RAM block (I, II or III) has been subjected to the error is first located, and then so does which RAM component having undergone the error, by the respective information given by the RAM tester. In the above example, the display of "\$23FF" means RAM (I) block is in trouble, and the display of read-out data "\$01" (with respect to write-in data "\$00") shows RAM 1 of the block (I) is defective.

	D7	D6	D5	D4	D3	D2	D1	D0	
Write-in data \$00	0	0	0	0	0	0	0	0	← Error to occur
Read-out data \$01	0	0	0	0	0	0	0	1	

	RAM(II)	RAM(I)	RAM(I)
D0	17	9	1
D1	18	10	2
D2	19	11	3
D3	20	12	4
D4	21	13	5
D5	22	14	6
D6	23	15	7
D7	24	16	8

RAM (I)

\$1000 ~ \$4FFF (with 16KRAM)

RAM (II)

\$5000 ~ \$8FFF (with 16KRAM)

\$5000 ~ \$5FFF (with 4KRAM)

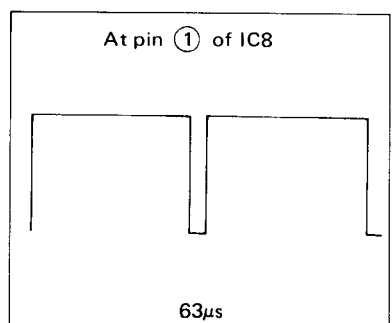
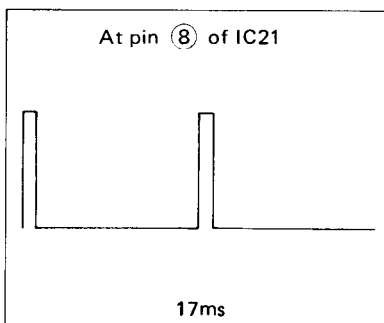
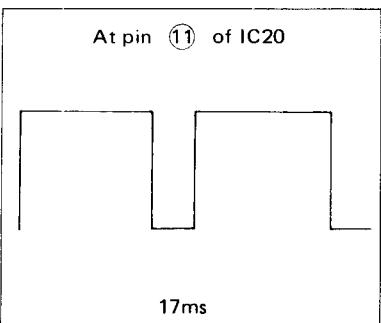
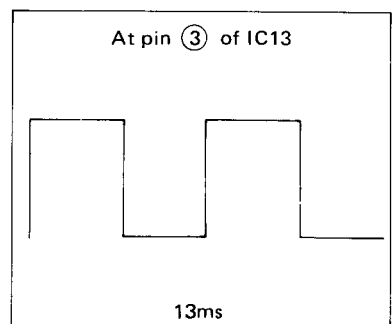
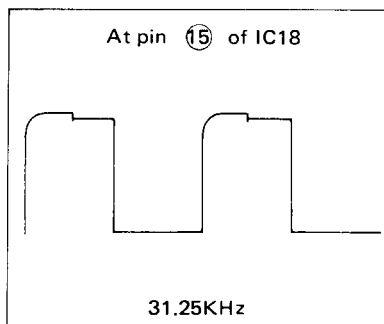
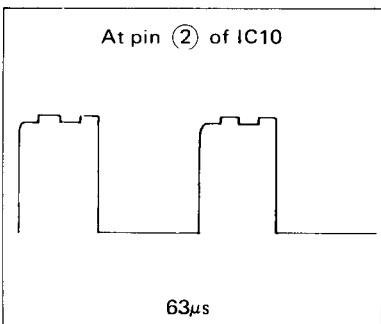
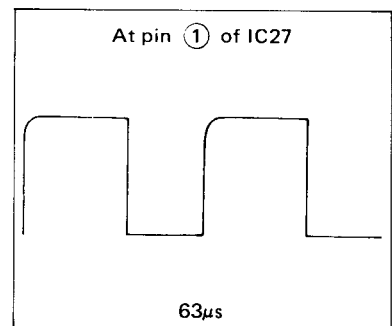
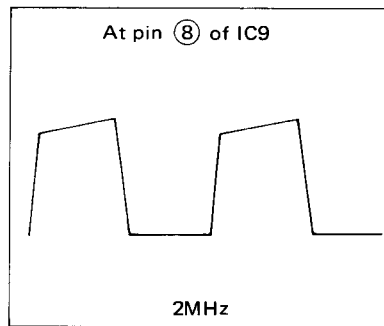
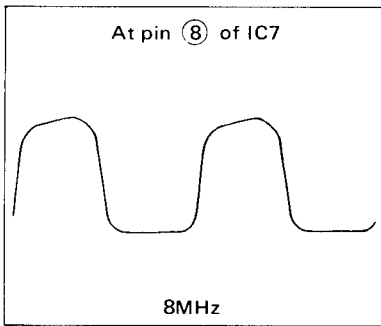
RAM (III)

\$9000 ~ \$9FFF (RAM (II) 16KRAM  
RAM (III) 4KRAM)

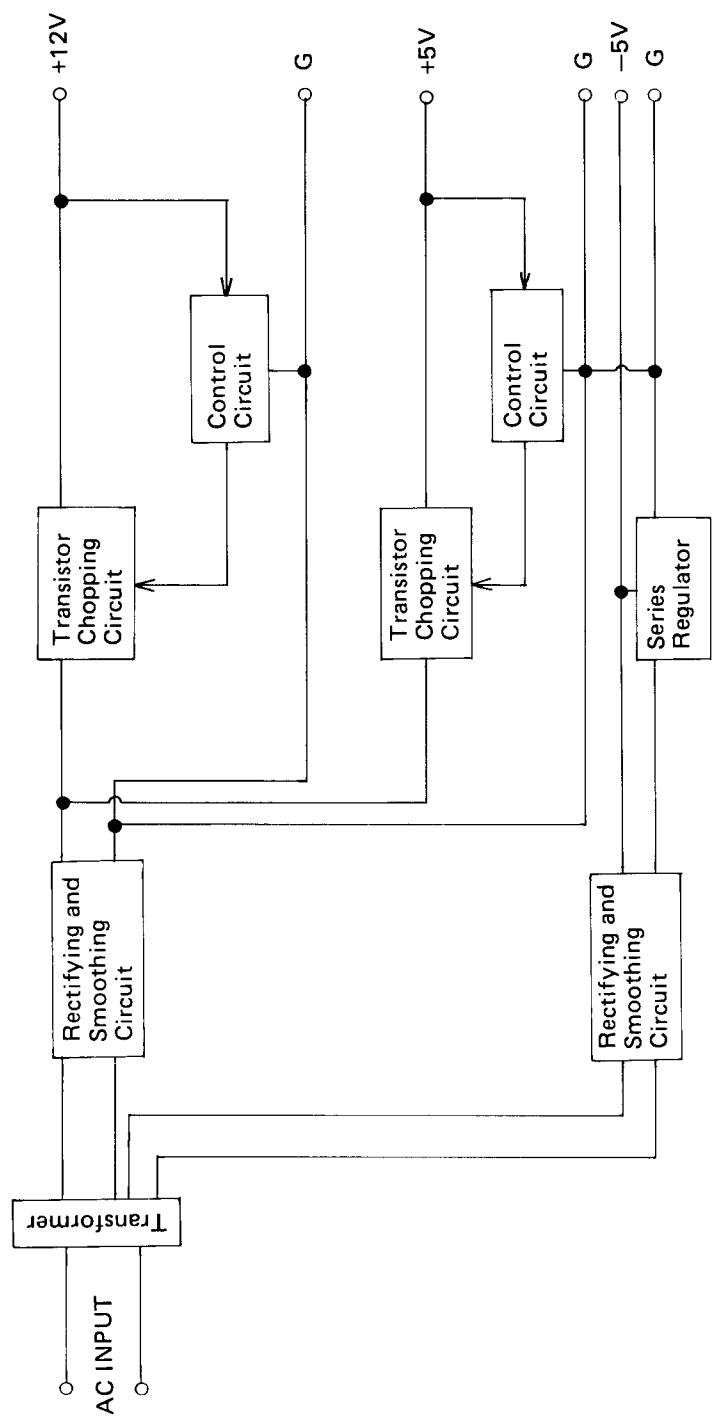
\$9000 ~ \$CFFF (RAM (II) 16KRAM  
RAM (III) 16KRAM)

\$6000 ~ \$6FFF (RAM (II) 4KRAM  
RAM (III) 4KRAM)

■ Waveform of Each Pin of CPU Board



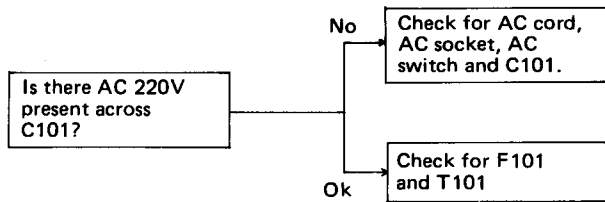
# POWER SUPPLY SECTION



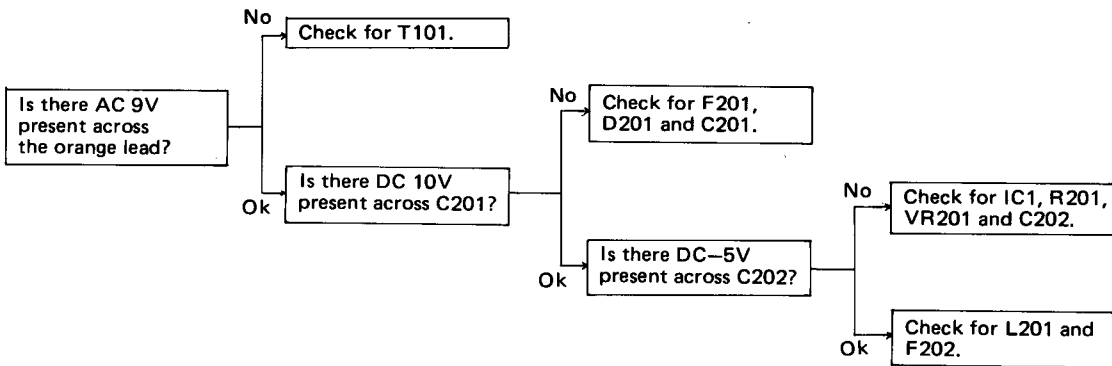
Block Diagram of Power Supply Section

■ Trouble Shooting Chart (DBOXD0004PAZZ)

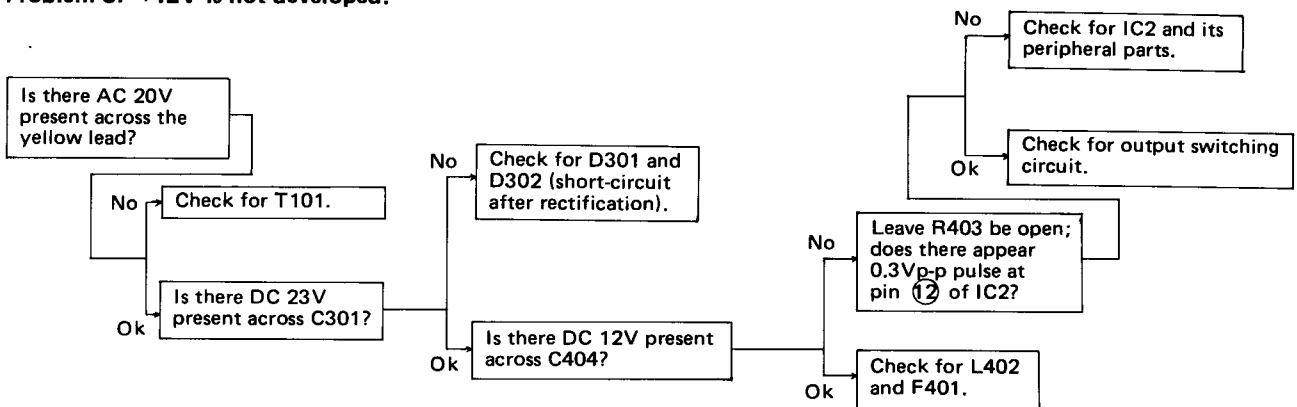
**Problem 1: No voltage appears at any output terminal.**



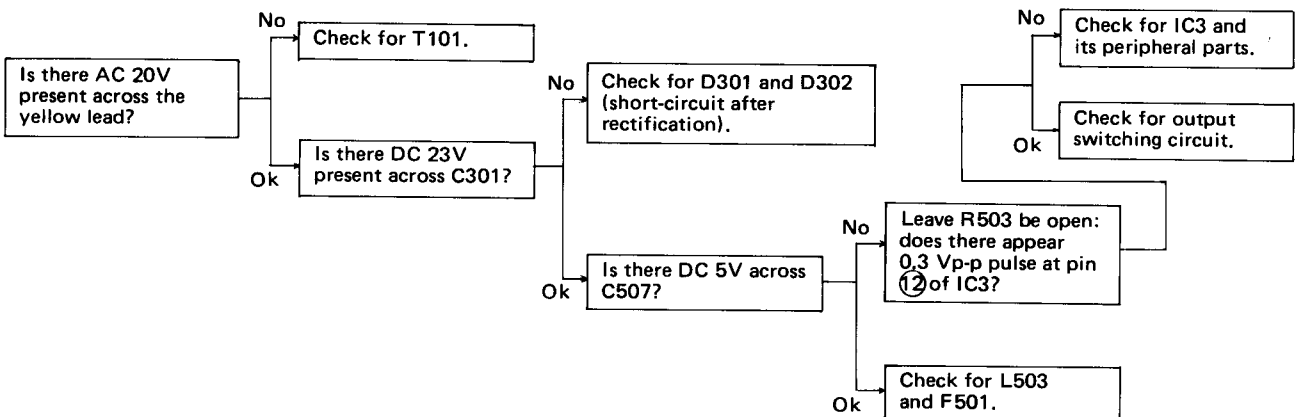
**Problem 2: -5V is not developed.**



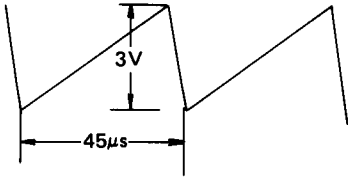
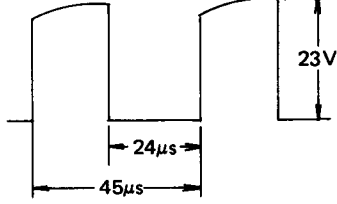
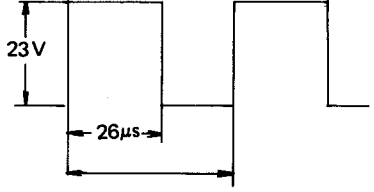
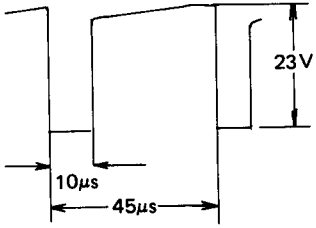
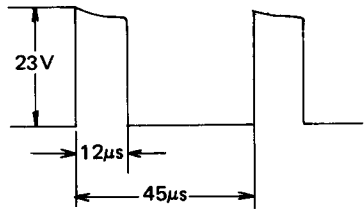
**Problem 3: +12V is not developed.**



**Problem 4: +5V is not developed.**



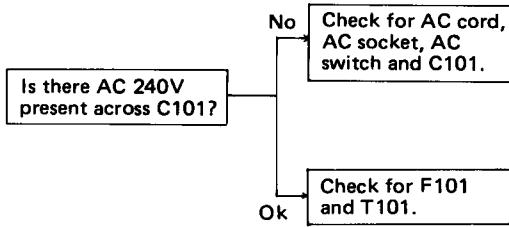
■ Waveforms of Each Parts

Waveform of pin ⑦ of IC2 and pin ② of IC3.	Waveform of pin ⑫ of IC2	Q401 collector waveform
		
Waveform of pin ⑫ of IC3	Q501 collector waveform	
		

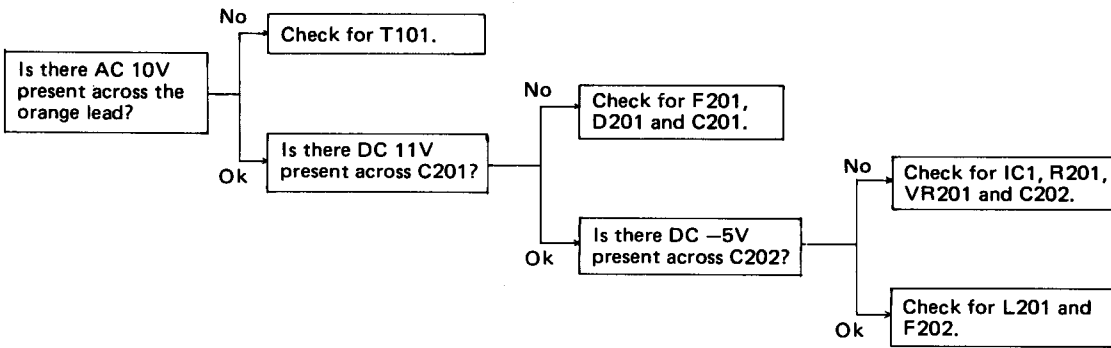


■ **Trouble Shooting Chart (DBOXD0005PAZZ ----- for UK)**

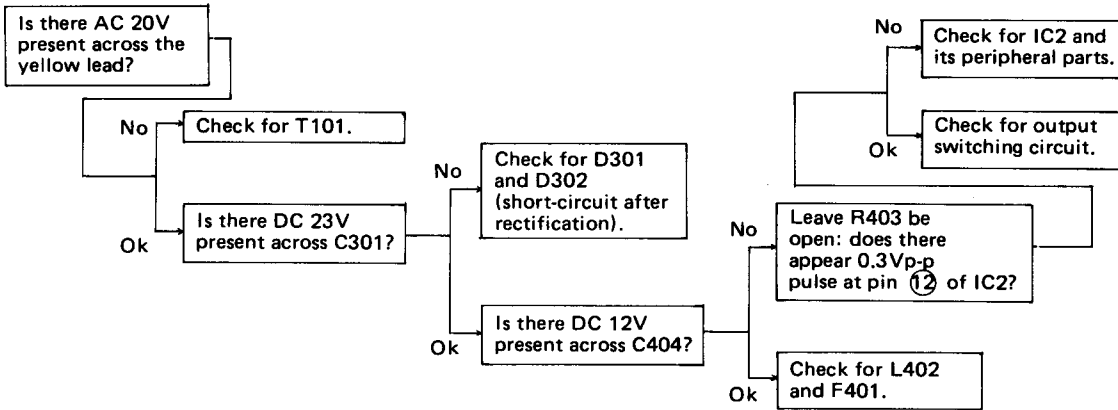
**Problem 1: No voltage appears at any output terminal.**



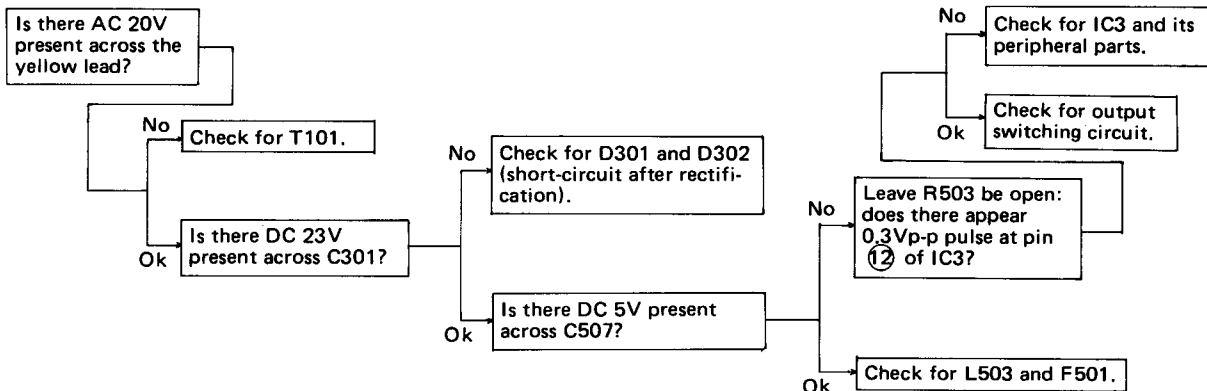
**Problem 2: -5V is not developed.**



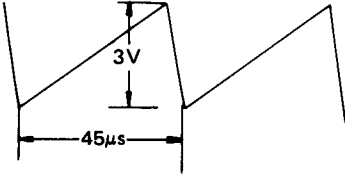
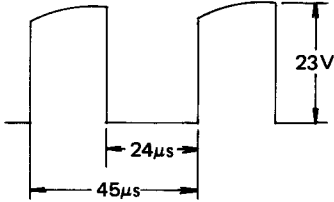
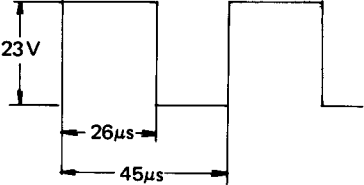
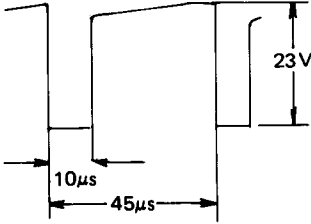
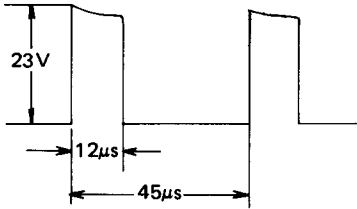
**Problem 3: +12V is not developed.**



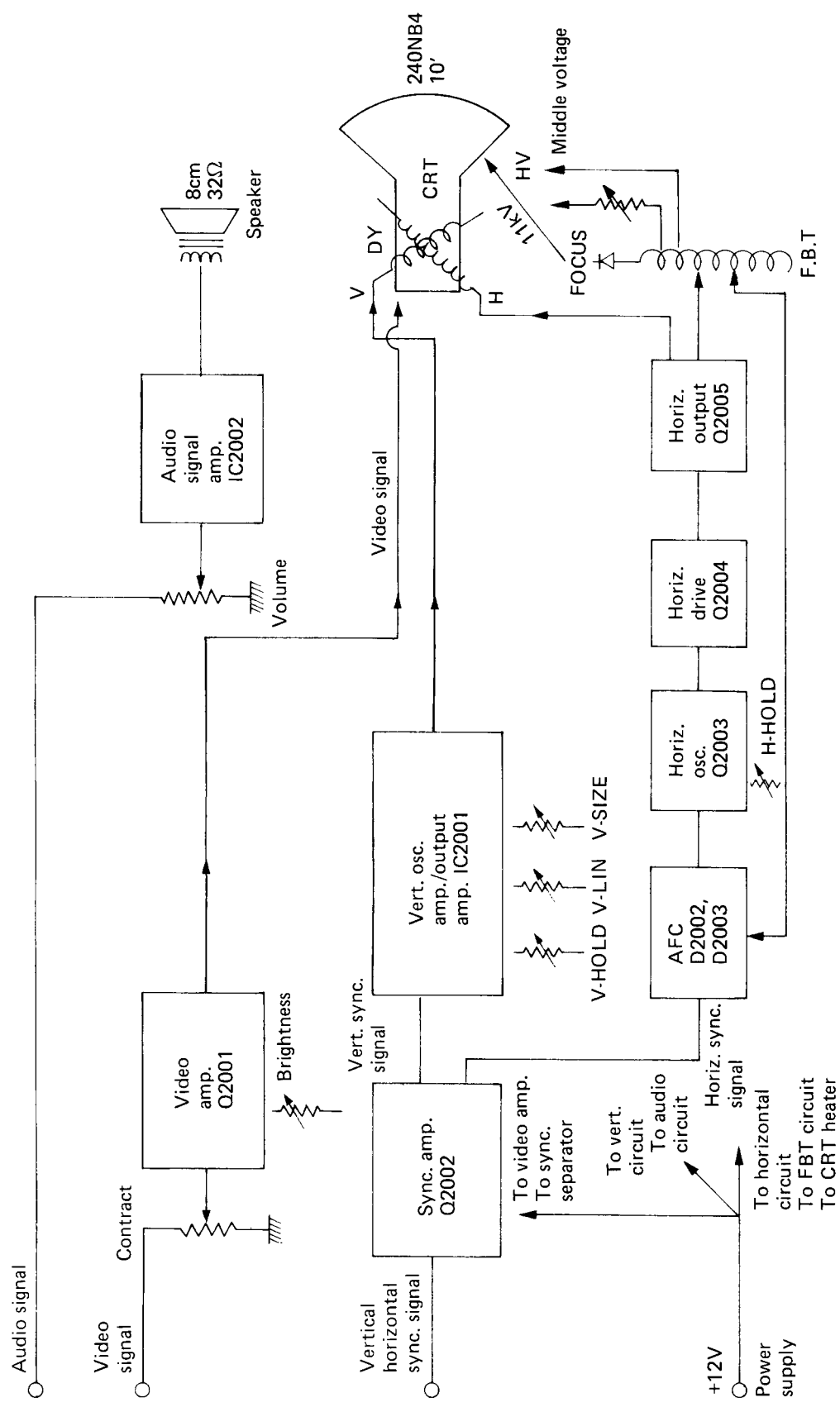
**Problem 4: +5V is not developed.**



■ Waveforms of Each Parts

Waveform of pin ⑦ of IC2 and pin ② of IC3.	Waveform of pin ⑫ of IC2	Q401 collector waveform
		
Waveform of pin ⑫ of IC3	Q501 collector waveform	
		

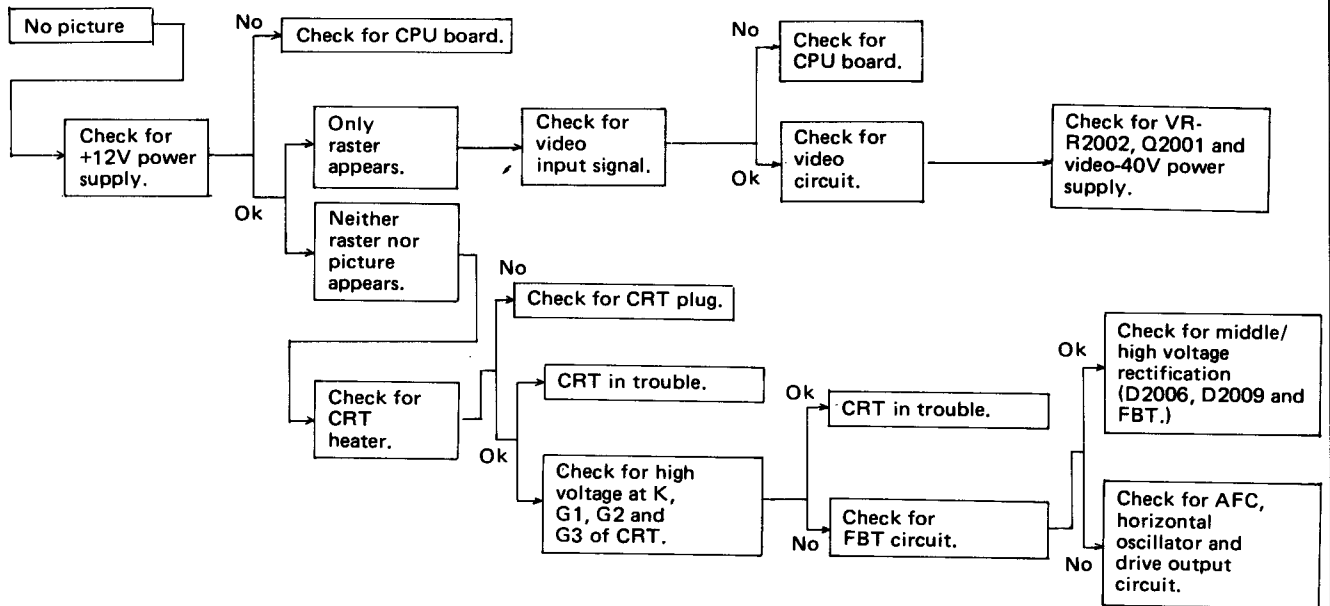
# DISPLAY SECTION



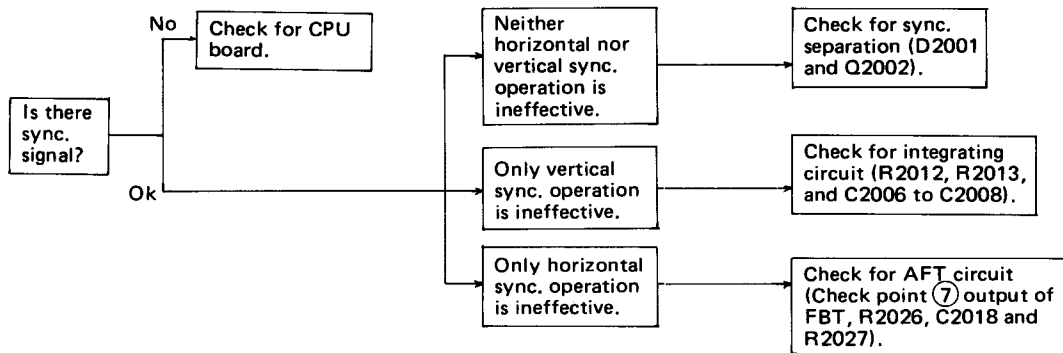
Block Diagram of Display Section

### ■ Trouble Shooting Chart

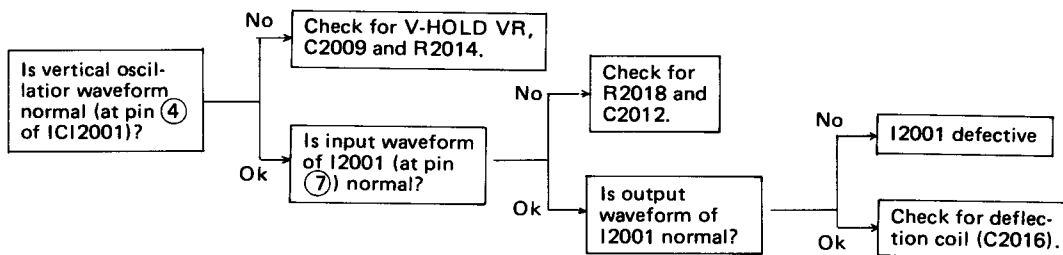
#### Problem 1: No picture appears.



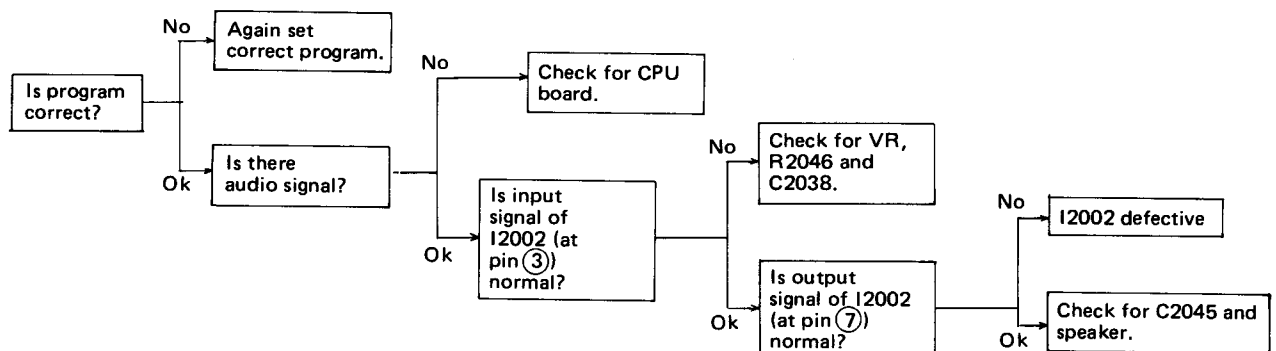
#### Problem 2: Sync operation remains ineffective.



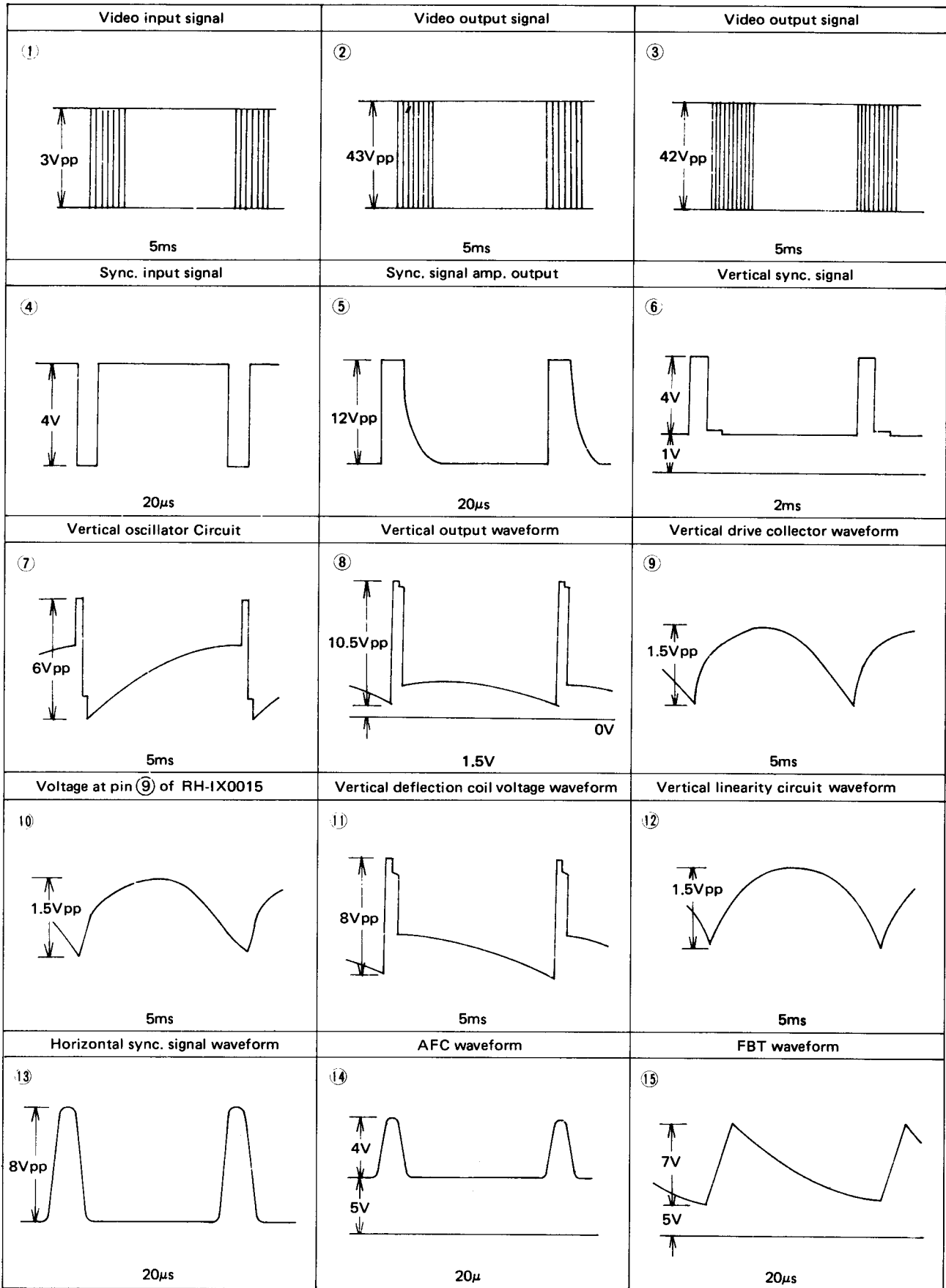
#### Problem 3: Raster is too narrow.

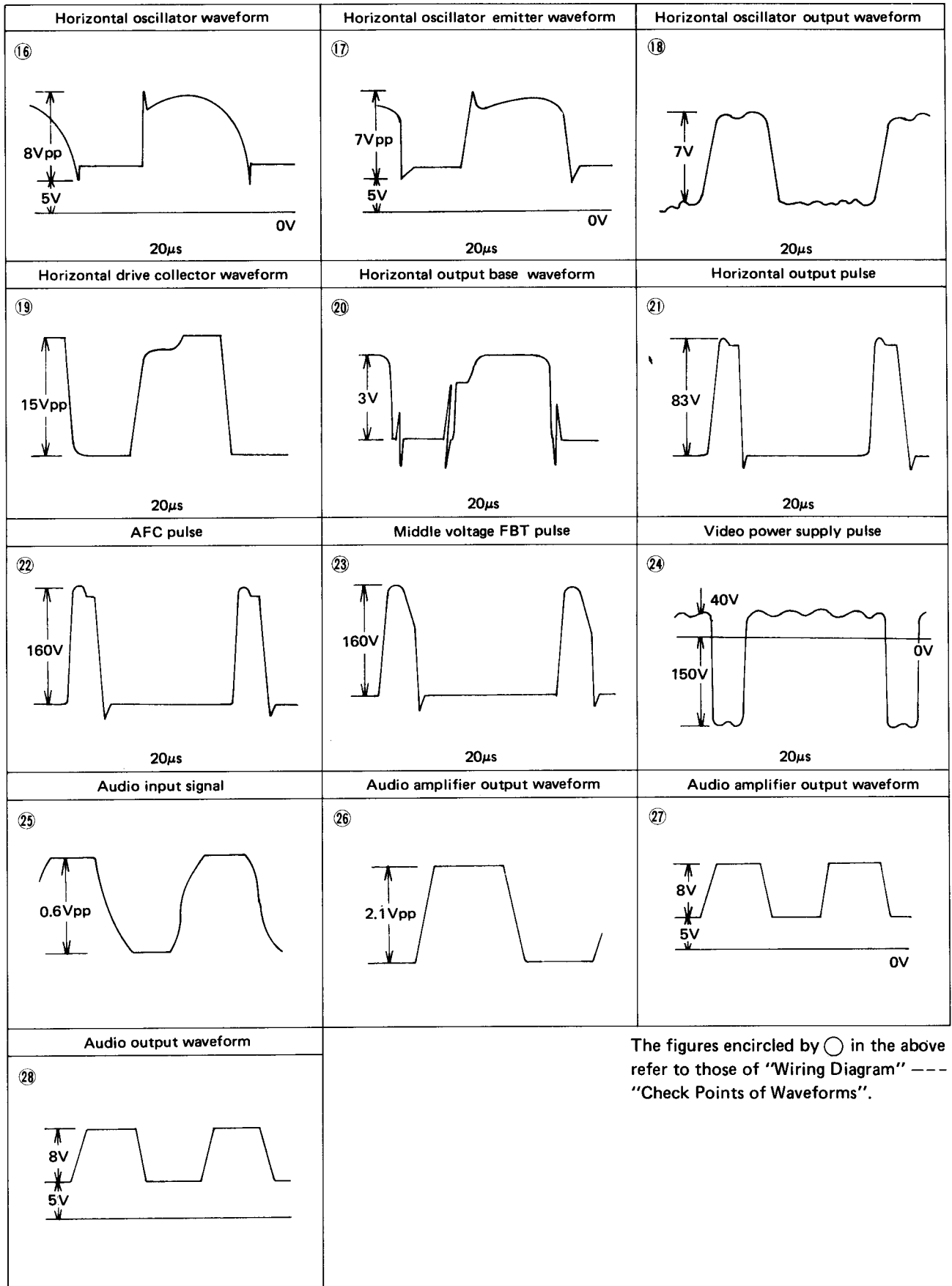


#### Problem 4: No sound comes out.

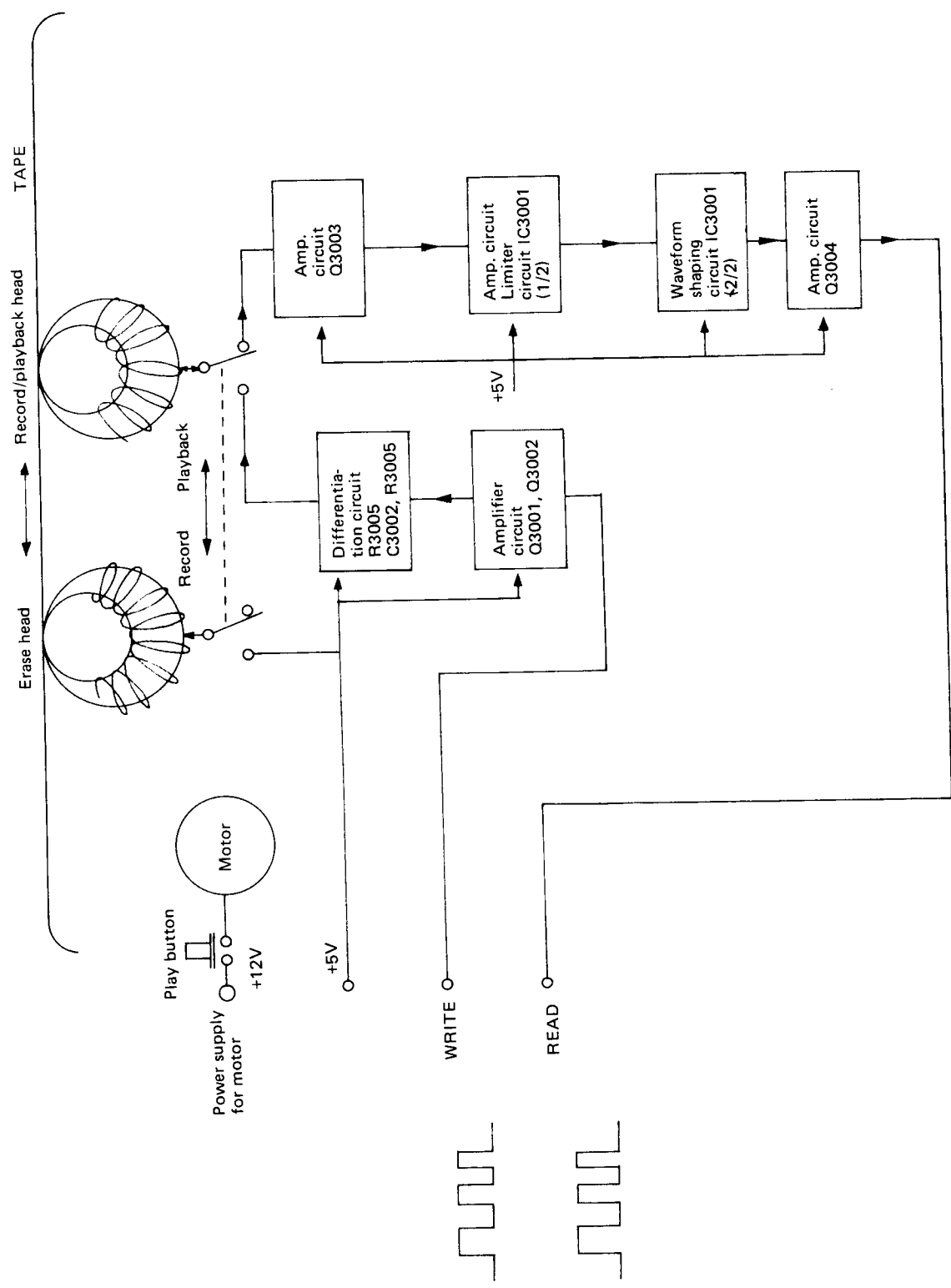


■ Waveforms of Display Section





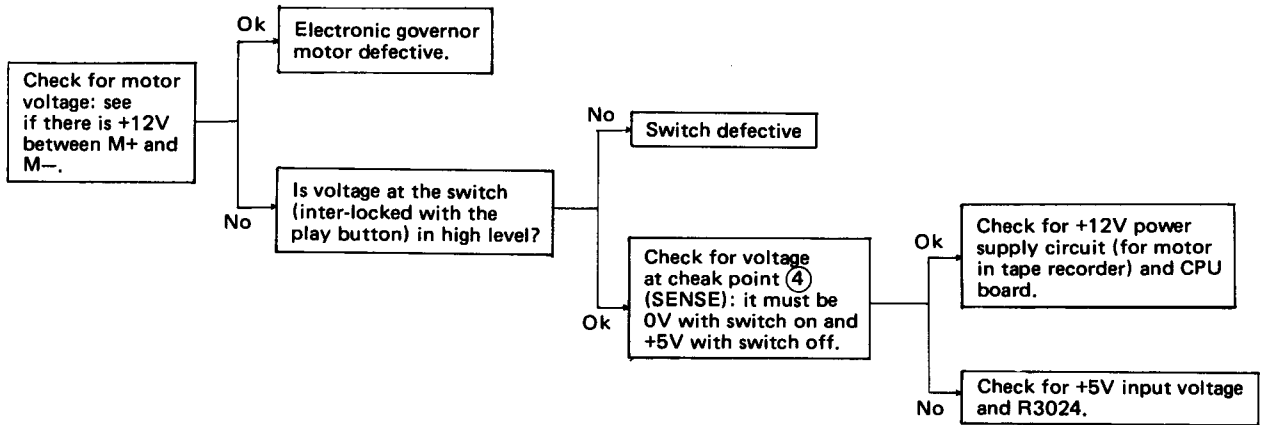
# CASSETTE TAPE RECORDER SECTION



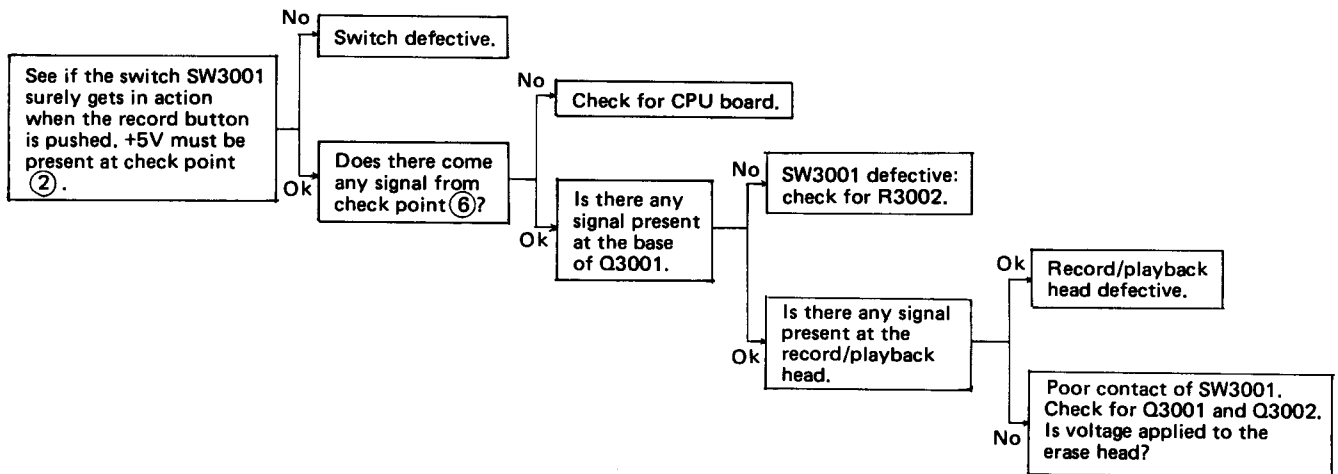
Block Diagram of Cassette Tape Recorder

### ■ Trouble Shooting Chart

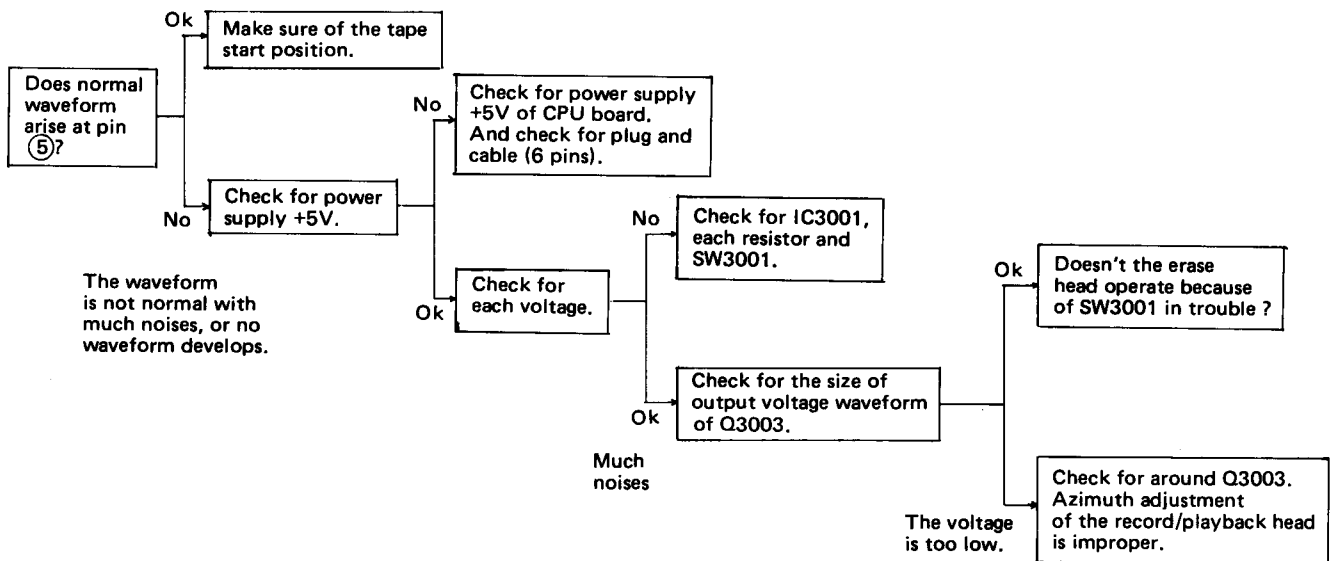
**Problem 1: Even if the play button is pushed, neither motor rotates nor tape moves.**



**Problem 2: Record (SAVE) operation of program is impossible.**



**Problem 3: Playback (LOAD) of program is impossible, or error is caused.**

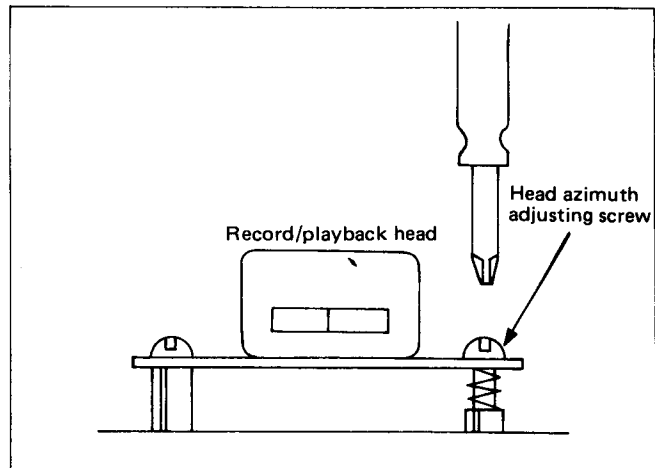




## ■ Azimuth Adjustment and Head Cleaning

### \* Azimuth adjustment of record/playback head

1. Connect a synchroscope to the collector of Q3003.
2. Load a test tape (TEAC, 3kHz-signal recorded) and play it back.
3. Rotate the azimuth adjusting screw so that the waveform on a synchroscope will be the maximum.



### Head cleaning

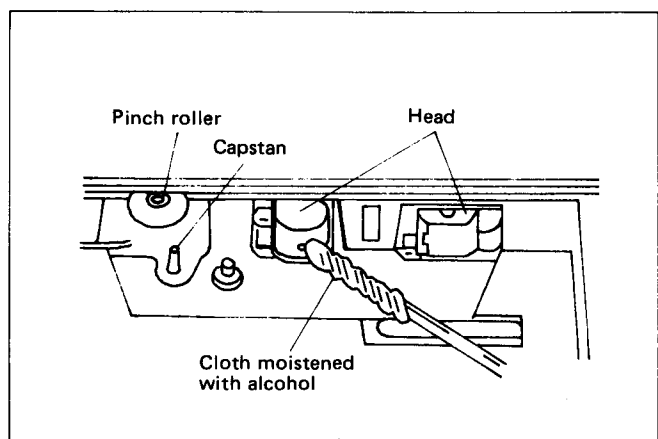
Clean the heads, capstan and pinch roller often, to remove dust and tape residue. Foreign material on them impairs the sound quality of both recording and playback.

Open the cassette holder, remove the tape, push the play button and clean them with a soft cloth moistened in alcohol.

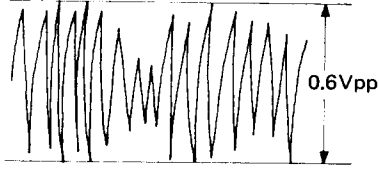
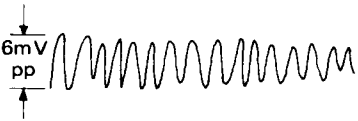
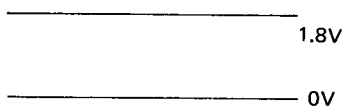
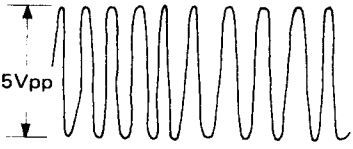


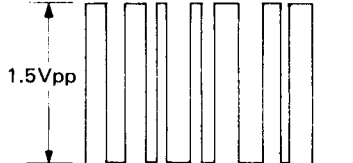

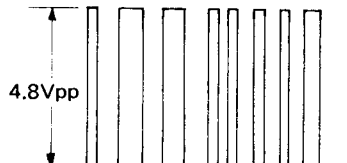

### Erase protection

To protect a cassette tape from being accidentally erased it was designed with two removable tabs. When the tabs are removed, it is impossible to push the record button.

When no cassette is inside the machine, no pushing of the record button is allowed, either. Nevertheless, pushing the button strongly may cause a trouble.



### Waveforms of Cassette Tape Recorder

<p>1st stage amp. output waveform</p> <p>①</p>  <p>0.6Vpp</p>	<p>Operational amp. input waveform</p> <p>②</p>  <p>6mVpp</p>	<p>Operational amp. input waveform</p> <p>③</p>  <p>1.8V</p> <p>0V</p>
<p>Operational amp. input waveform</p> <p>④</p>  <p>1.5Vpp</p>	<p>Operational amp. output waveform</p> <p>⑤</p>  <p>4Vpp</p>	<p>Output waveform</p> <p>⑥</p>  <p>5Vpp</p>
<p>Record input waveform</p> <p>⑦</p>  <p>1.5Vpp</p>	<p>Record amp. waveform</p> <p>⑧</p>  <p>0.9Vpp</p>	<p>Record amp. waveform</p> <p>⑨</p>  <p>4.8Vpp</p>
<p>Head input waveform</p> <p>⑩</p>  <p>6Vpp</p>		

The figures encircled by ○ correspond to those of "Wiring Diagram" – "Check Points of Waveforms".

## KEYBOARD SECTION

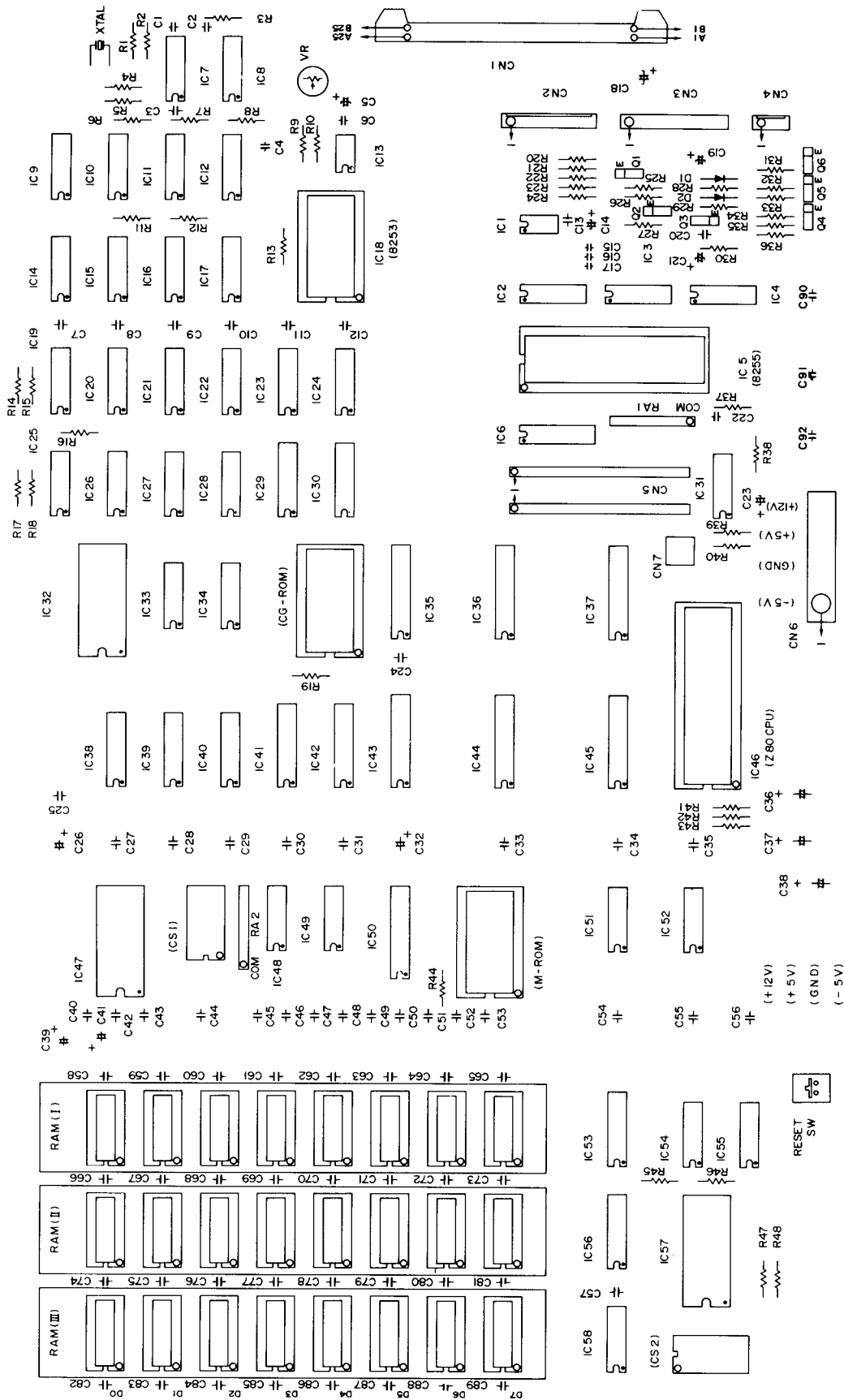
**Problem 1:** A character isn't displayed even if a key is pushed.

- (1) Poor soldering
- (2) Mechanical key defective
- (3) Printed line broken

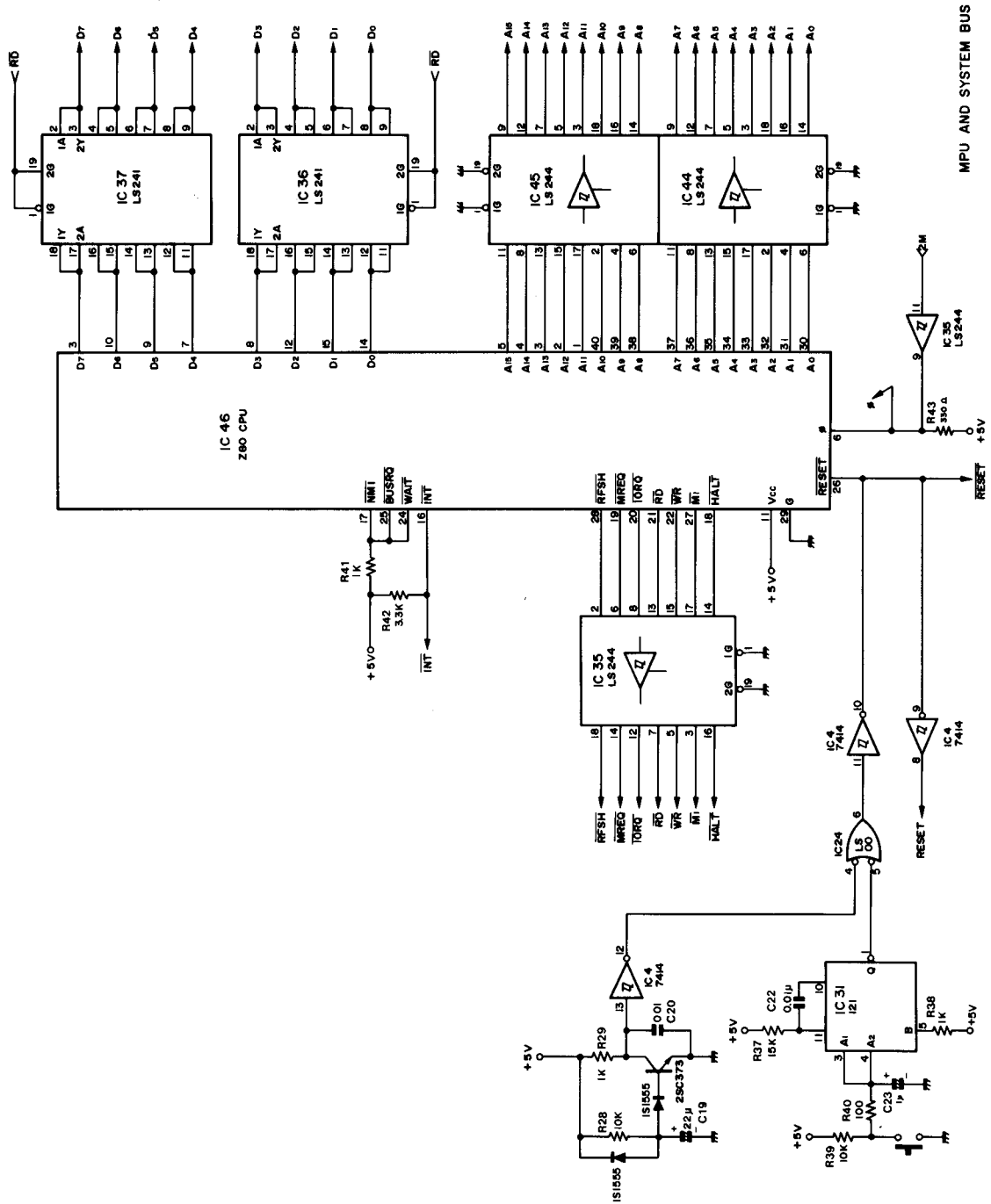
If there is nothing abnormal in the above checks, proceed with the checkings of "CPU Board Section".

# CIRCUIT DIAGRAM OF MZ-80K

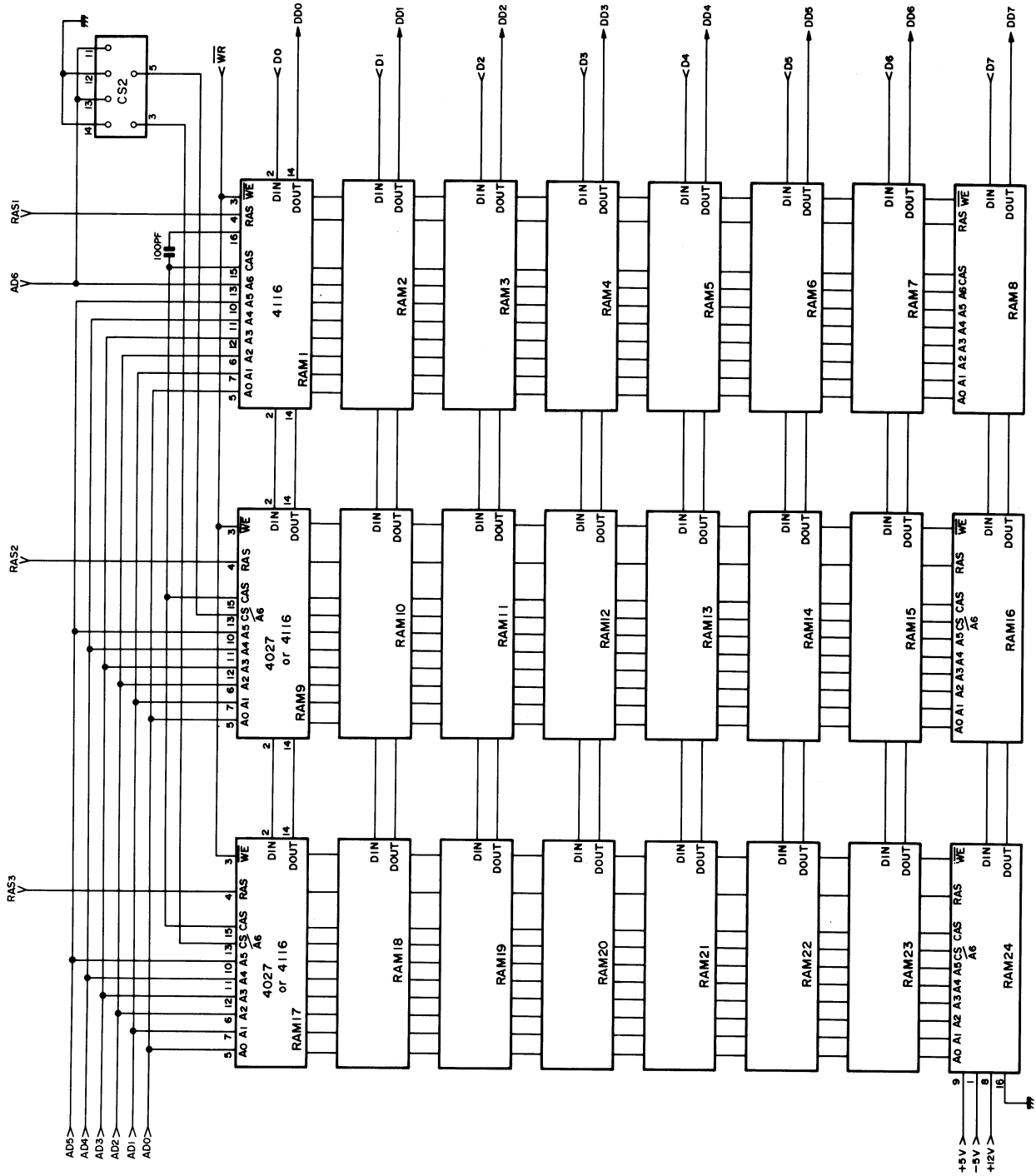
## ■ Symbols of CPU Section



■ Circuit Diagram (1) of CPU Board Section

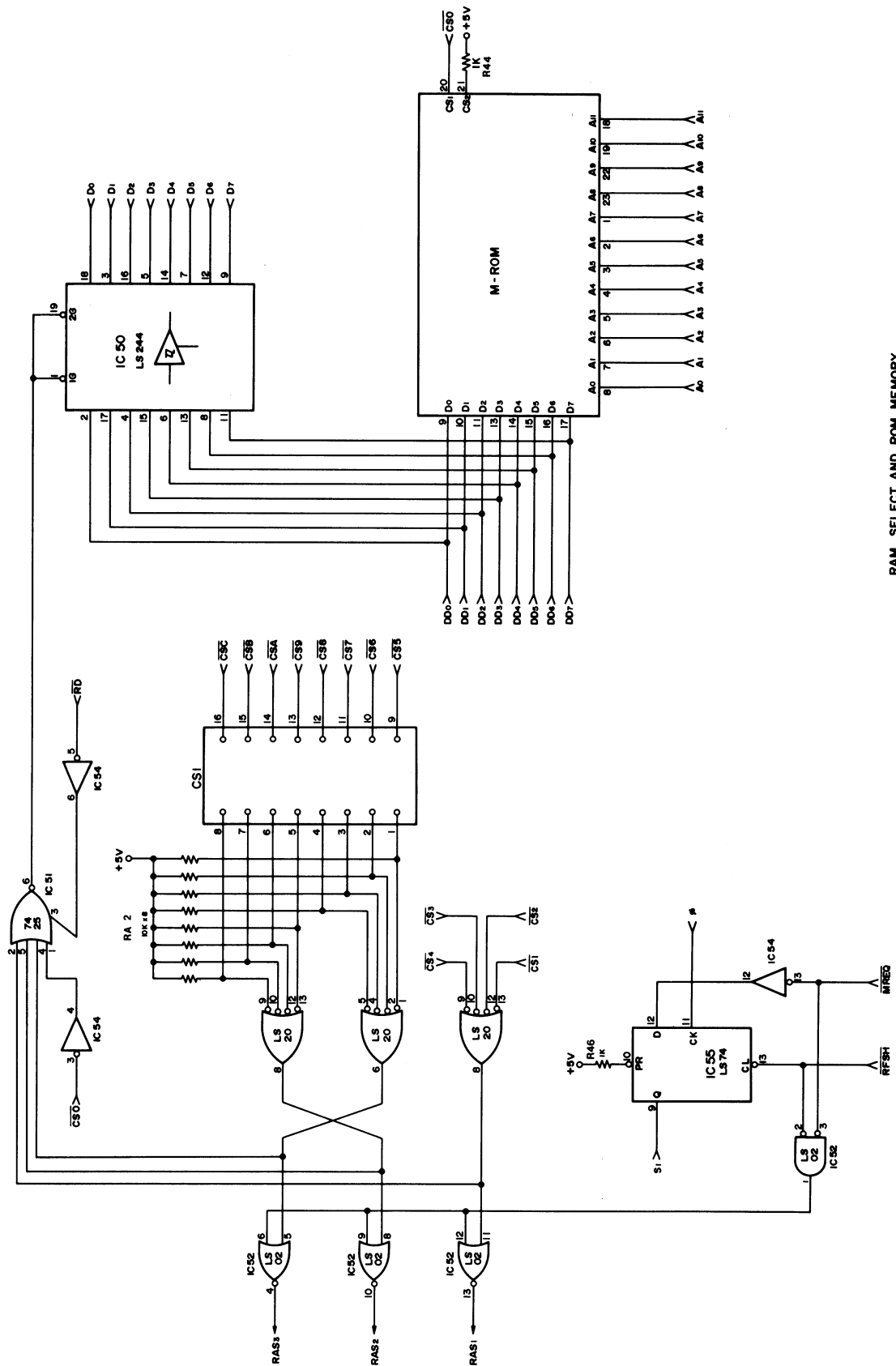


■ Circuit Diagram (2) of CPU Board Section



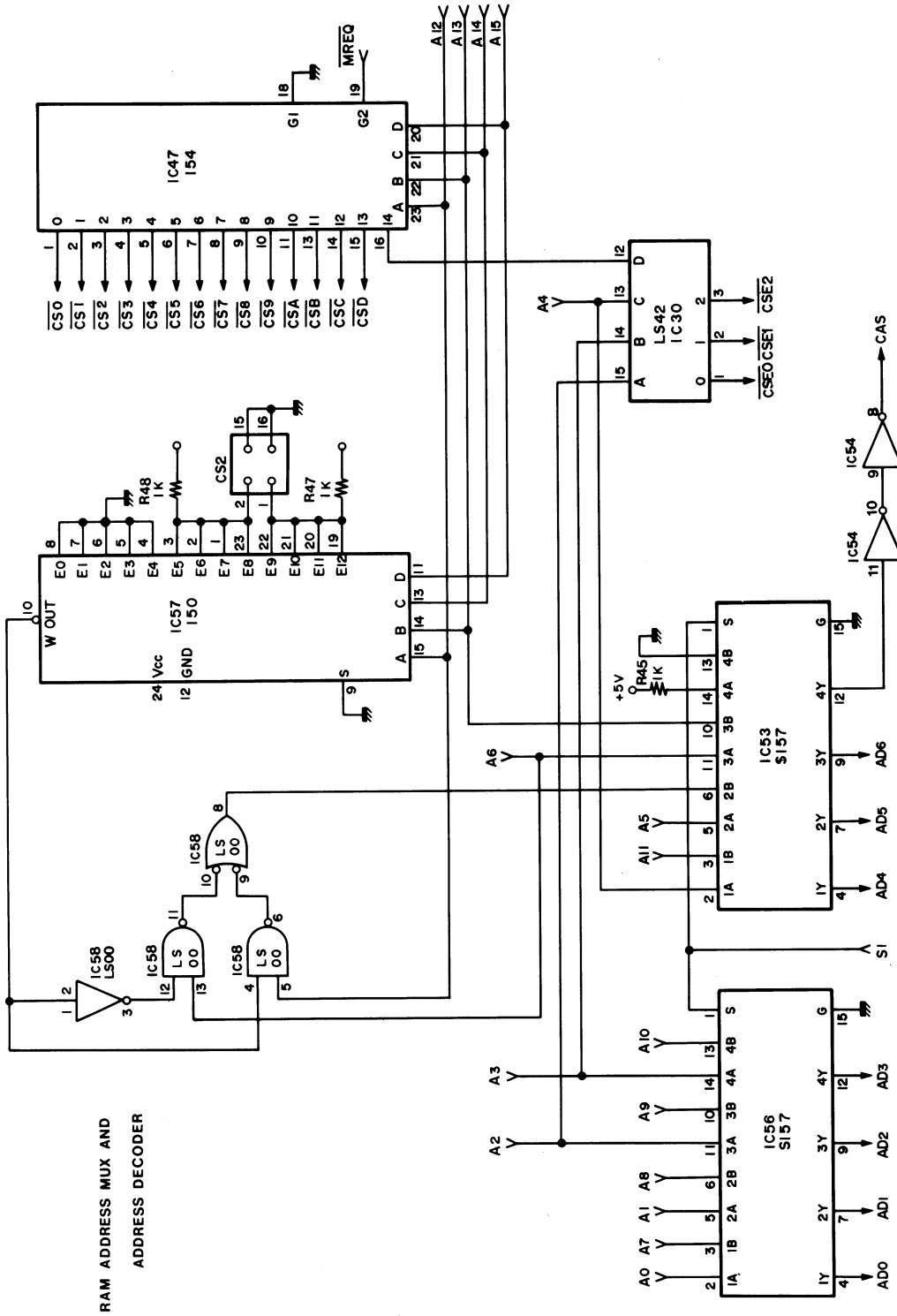
RAM MEMORY

■ Circuit Diagram (3) of CPU Board Section

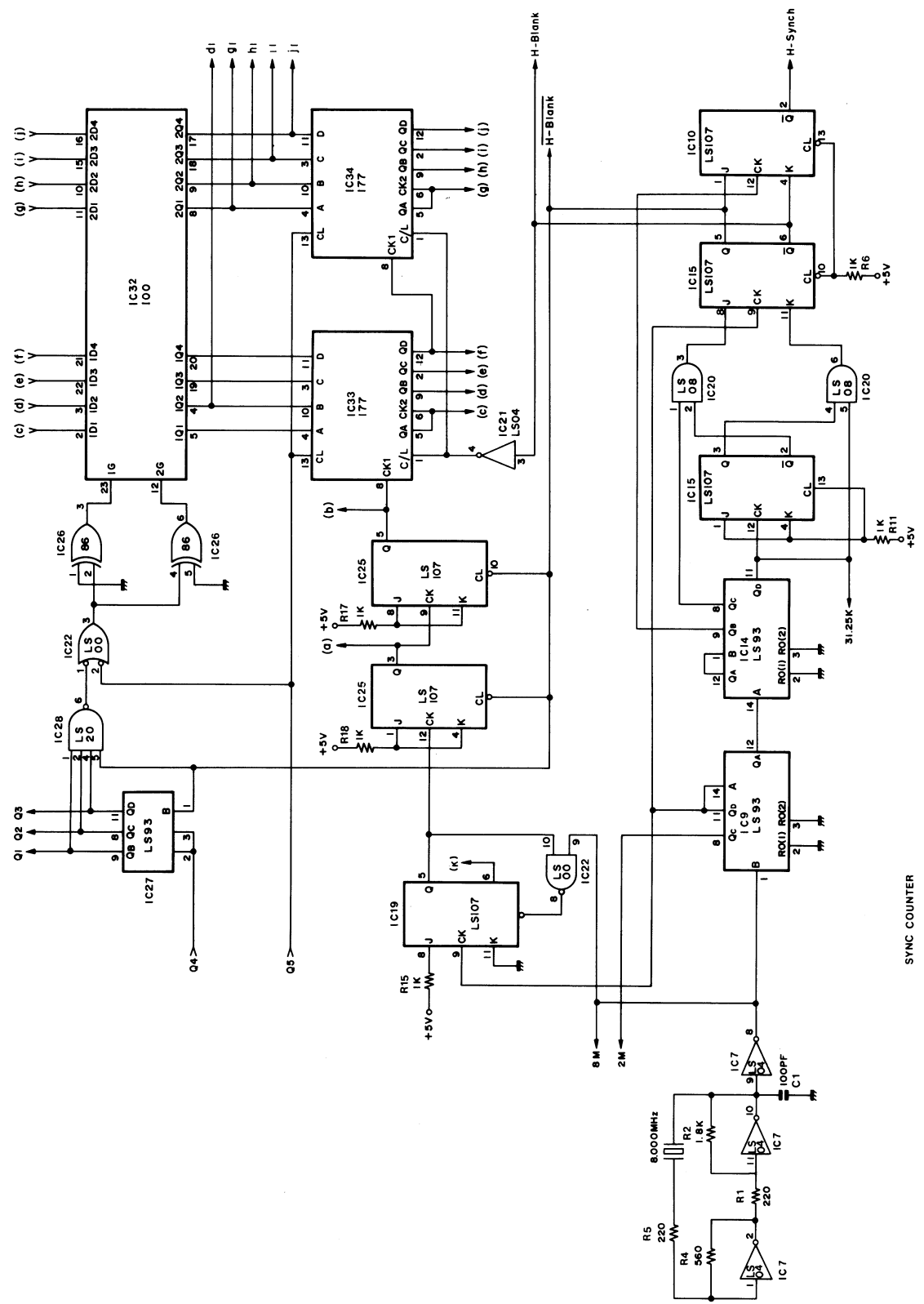


RAM SELECT AND ROM MEMORY

■ Circuit Diagram (4) of CPU Board Section

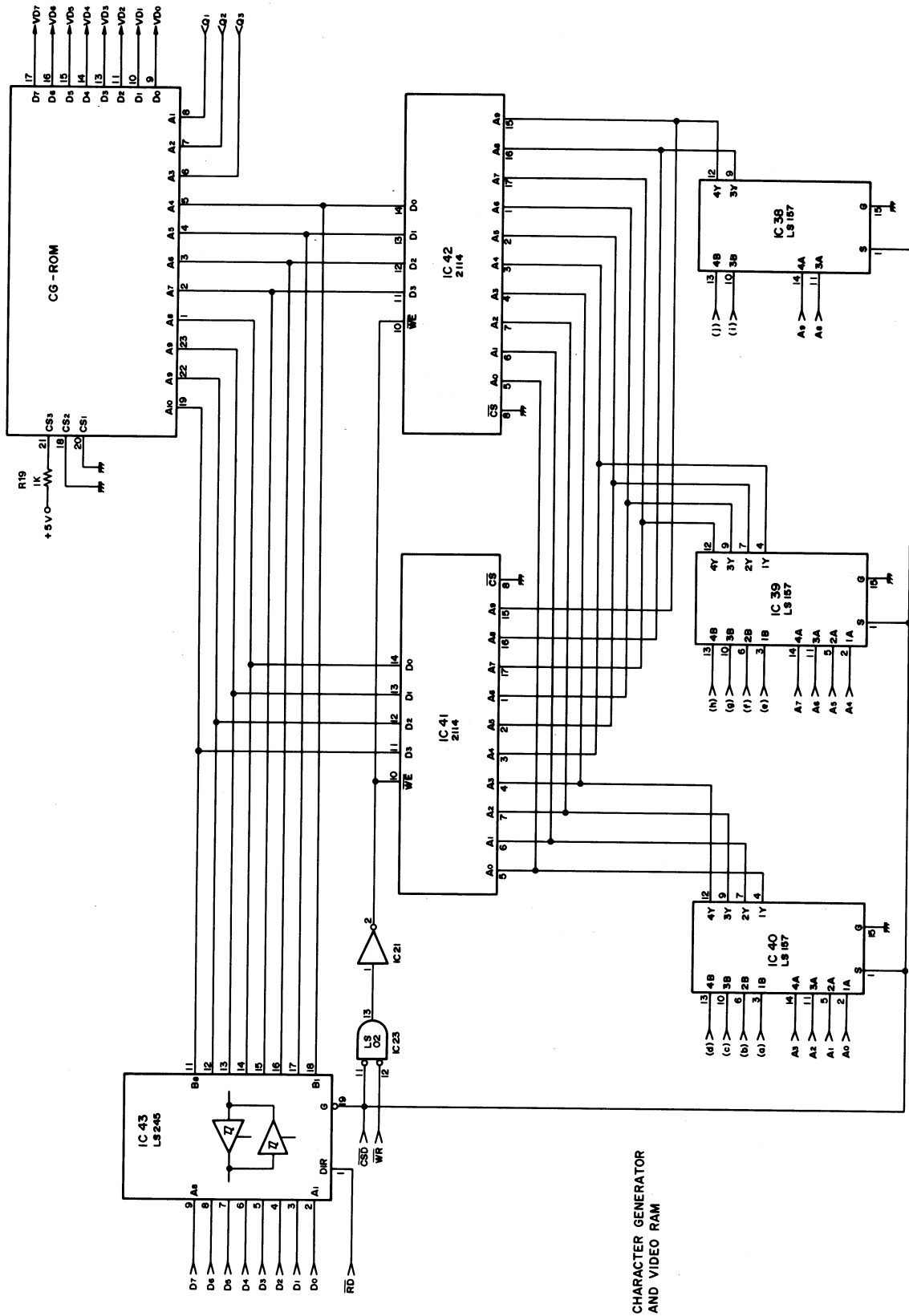


### ■ Circuit Diagram (5) of CPU Board Section



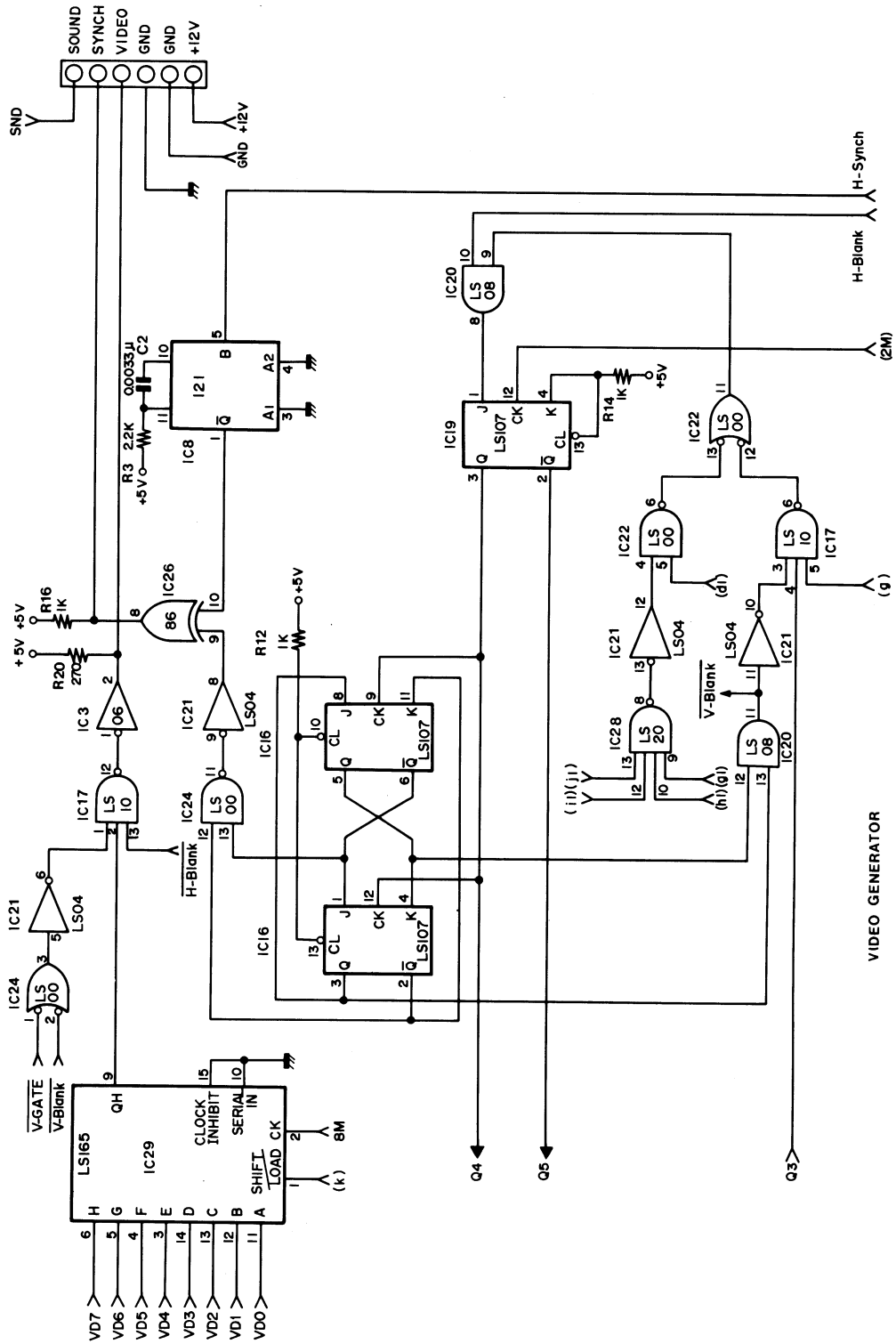


■ Circuit Diagram (6) of CPU Board Section



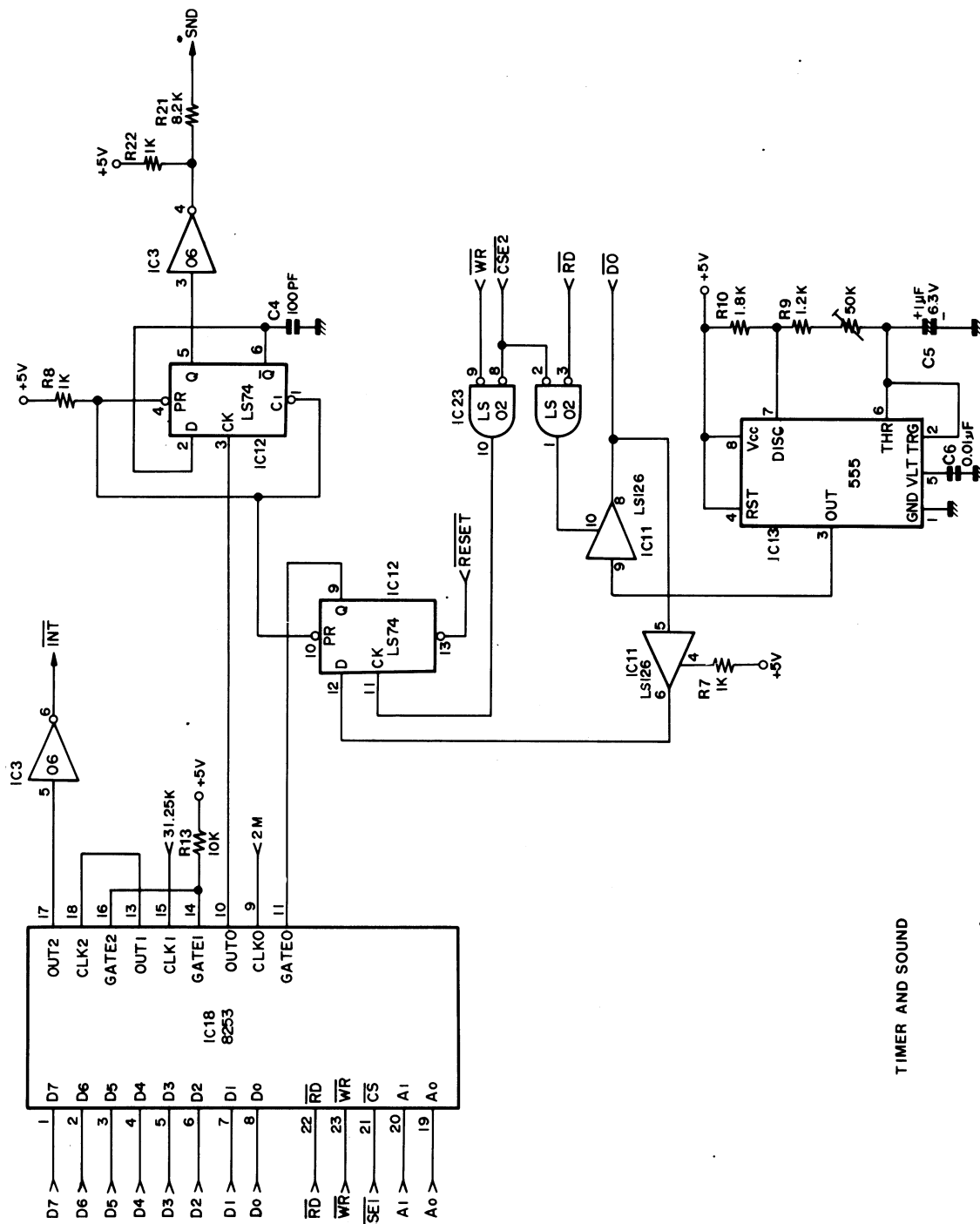
CHARACTER GENERATOR AND VIDEO RAM

■ Circuit Diagram (7) of CPU Board Section





■ Circuit Diagram (9) of CPU Board Section

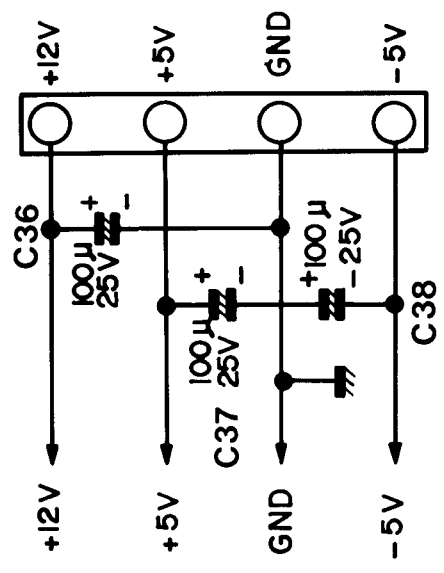


TIMER AND SOUND

■ Circuit Diagram (10) of CPU Board Section

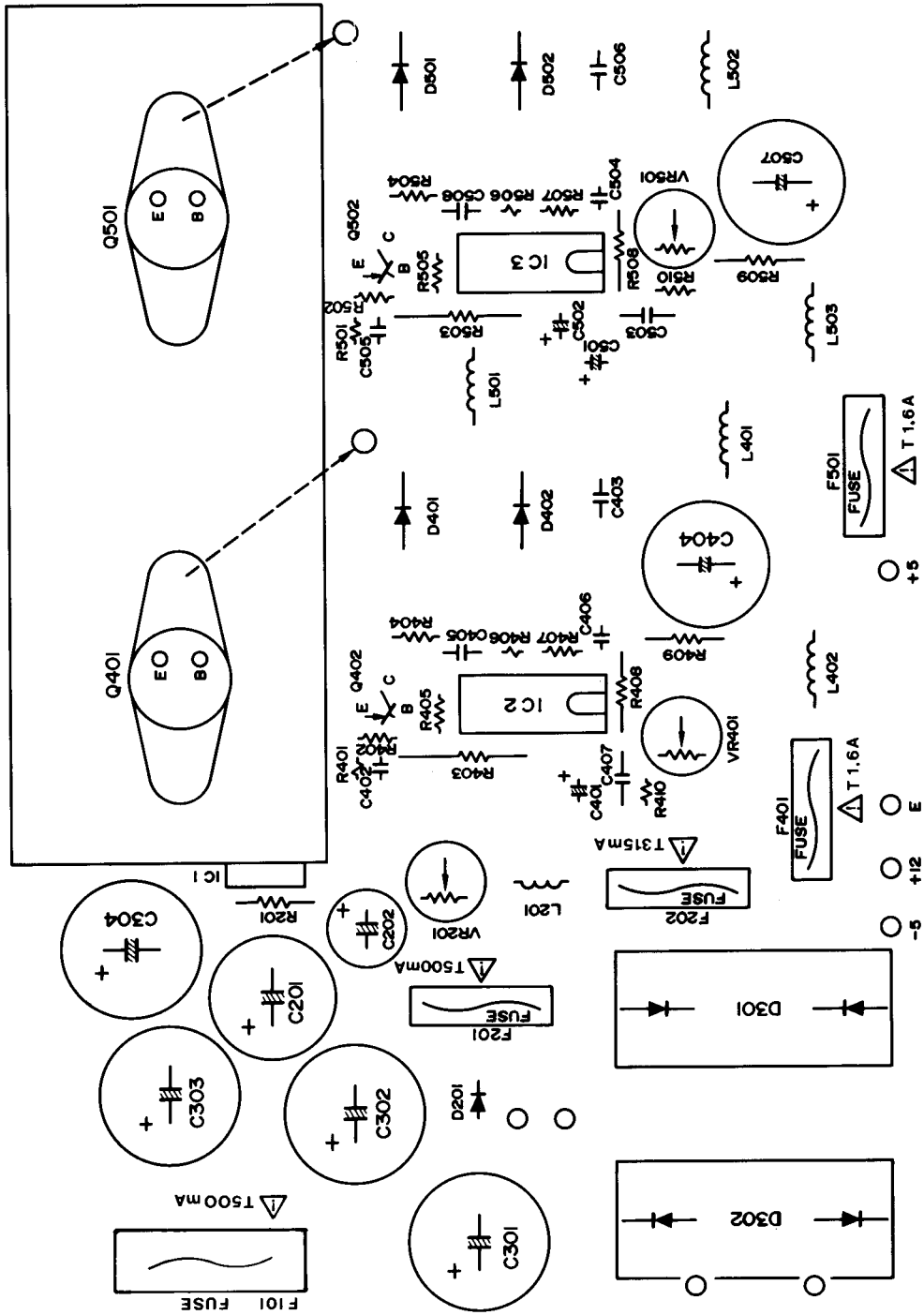
A		B	
A15	1	G	
A14	2	INT	
A13	3	G	
A12	4	MREQ	
A11	5	G	
A10	6	IORQ	
A9	7	G	
A8	8	RD	
A7	9	G	
A6	10	WR	
A5	11	G	
A4	12	MI	
A3	13	G	
A2	14	HALT	
A1	15	G	
A0	16	RESET	
G	17	G	
D7	18	G	
D6	19	G	
D5	20	G	
D4	21	G	
D3	22	G	
D2	23	G	
D1	24	G	
D0	25	G	

▷ (MARK)

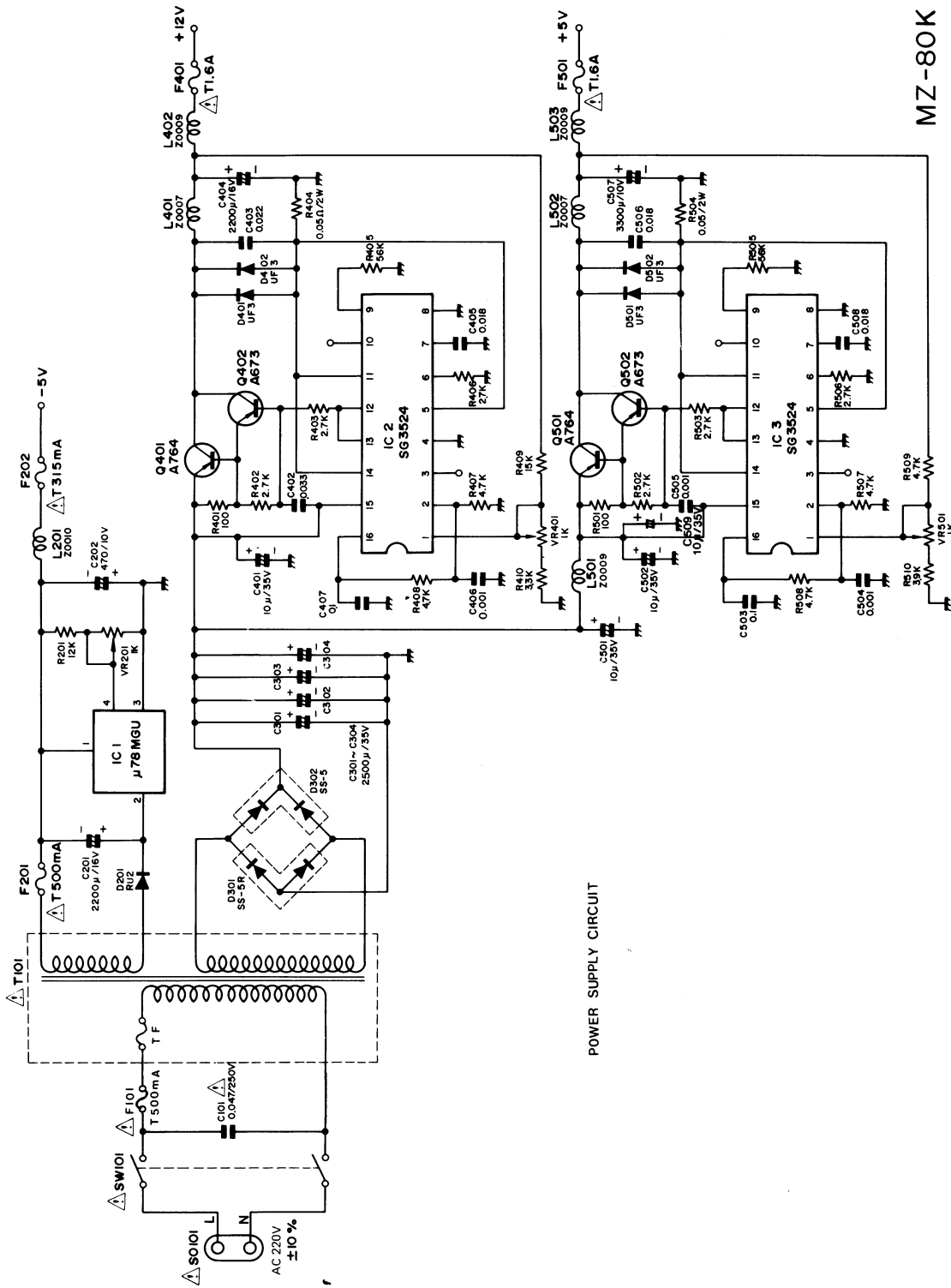


BUS CONNECTOR DETAIL

■ Symbols of Power Supply Section



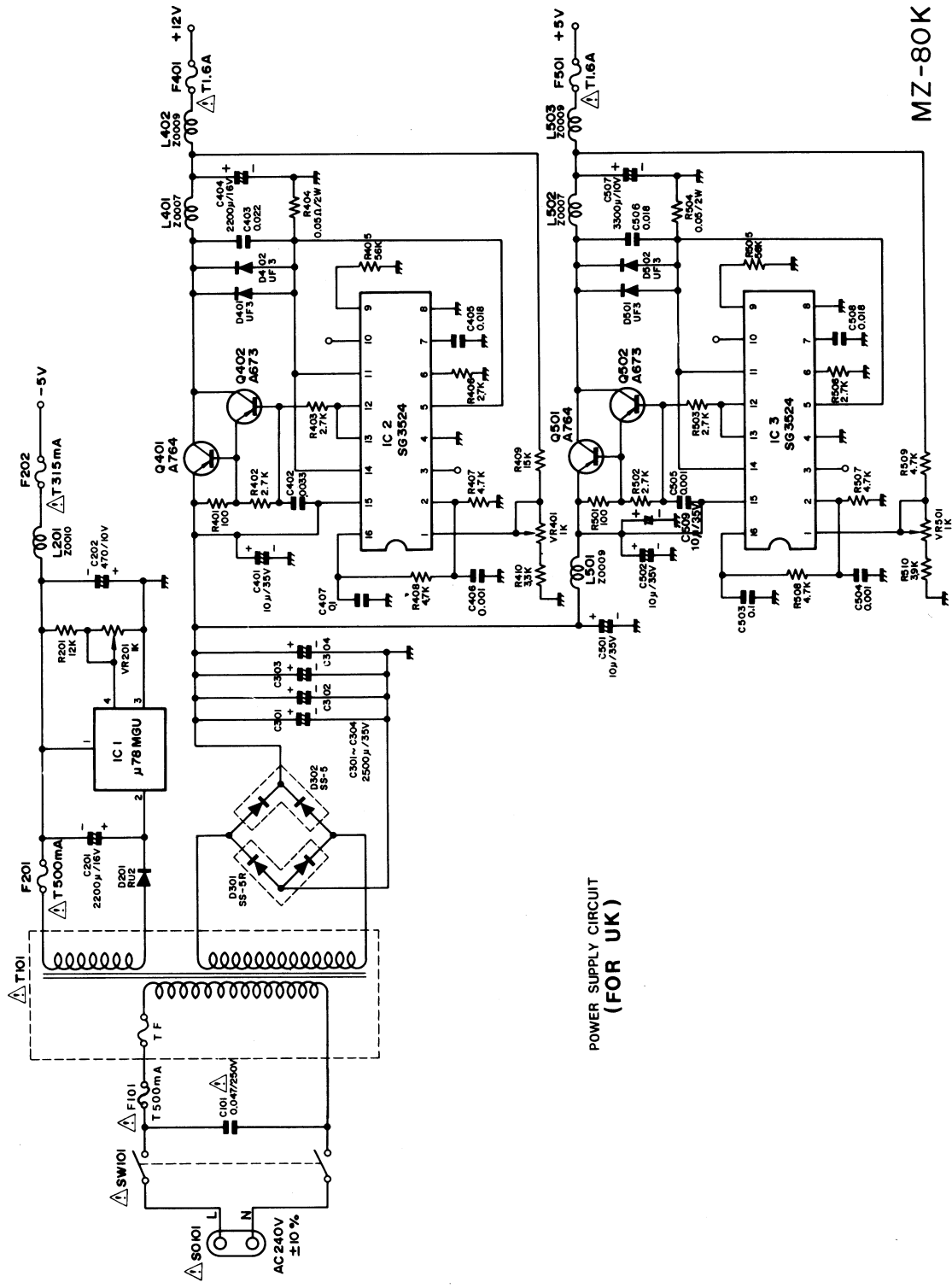
■ Wiring Diagram of Power Supply Section



MZ-80K

POWER SUPPLY CIRCUIT

### Wiring Diagram of Power Supply Section (for UK)

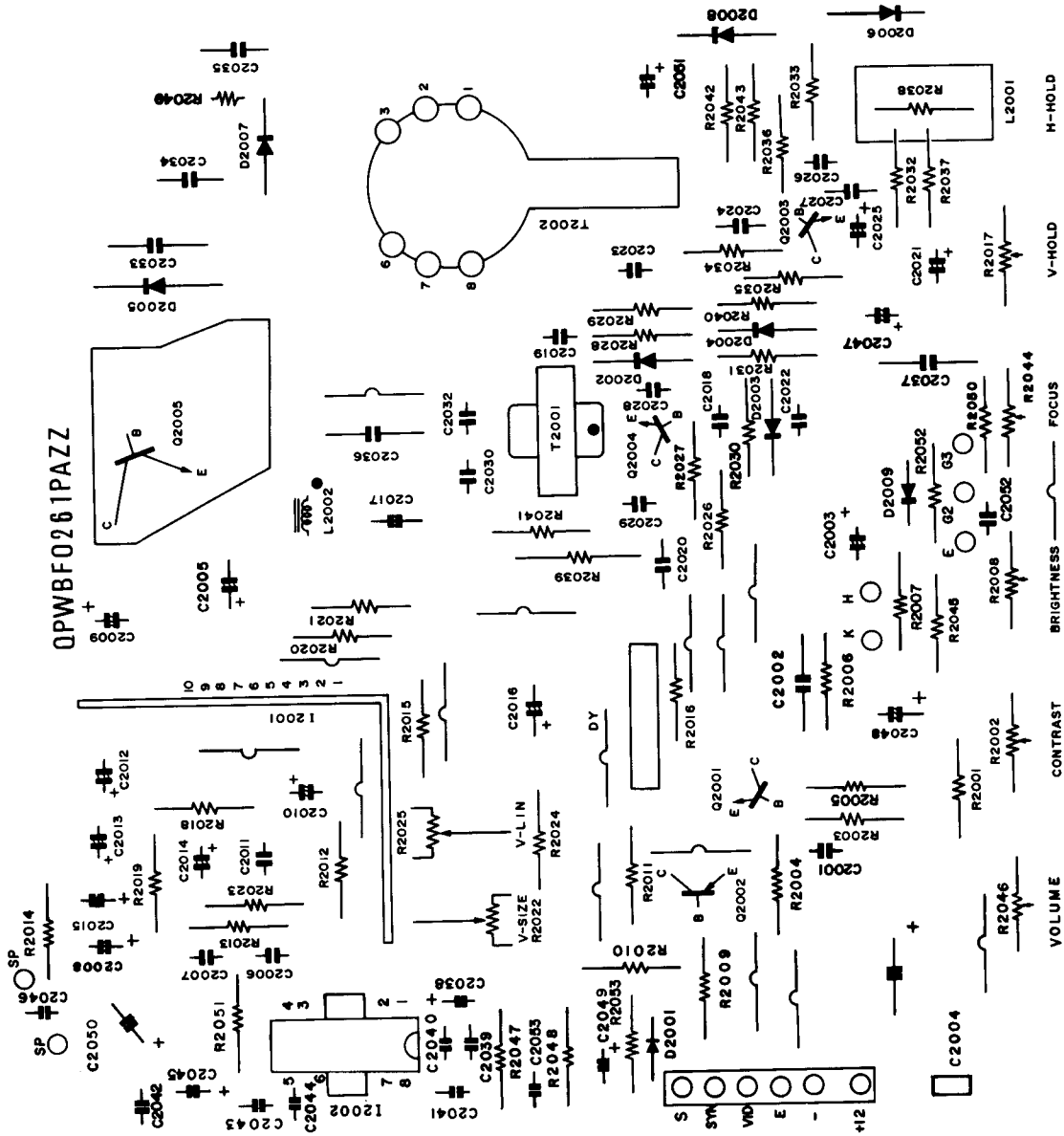


MZ-80K

POWER SUPPLY CIRCUIT (FOR UK)

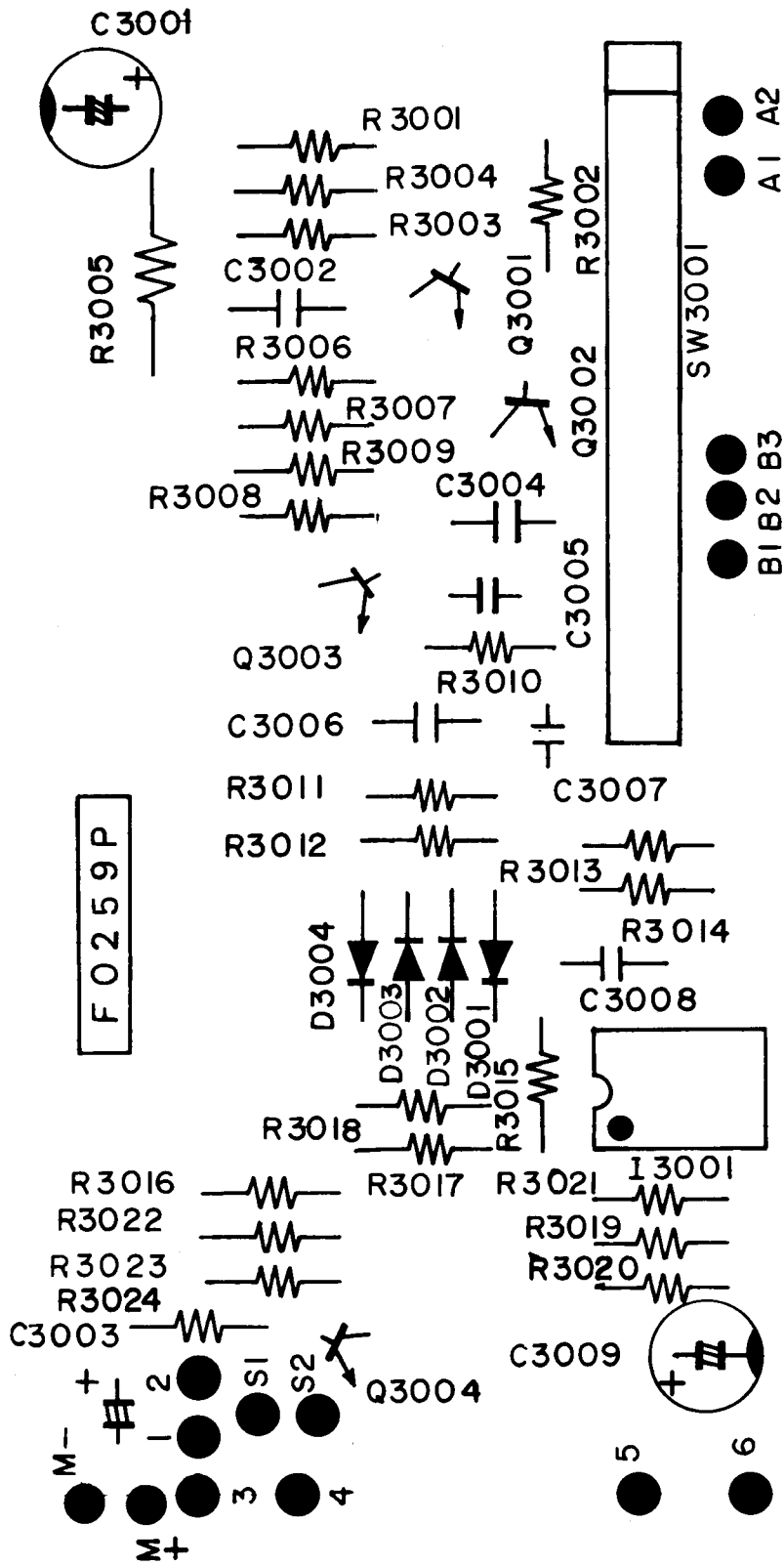


■ Symbols of Display Section

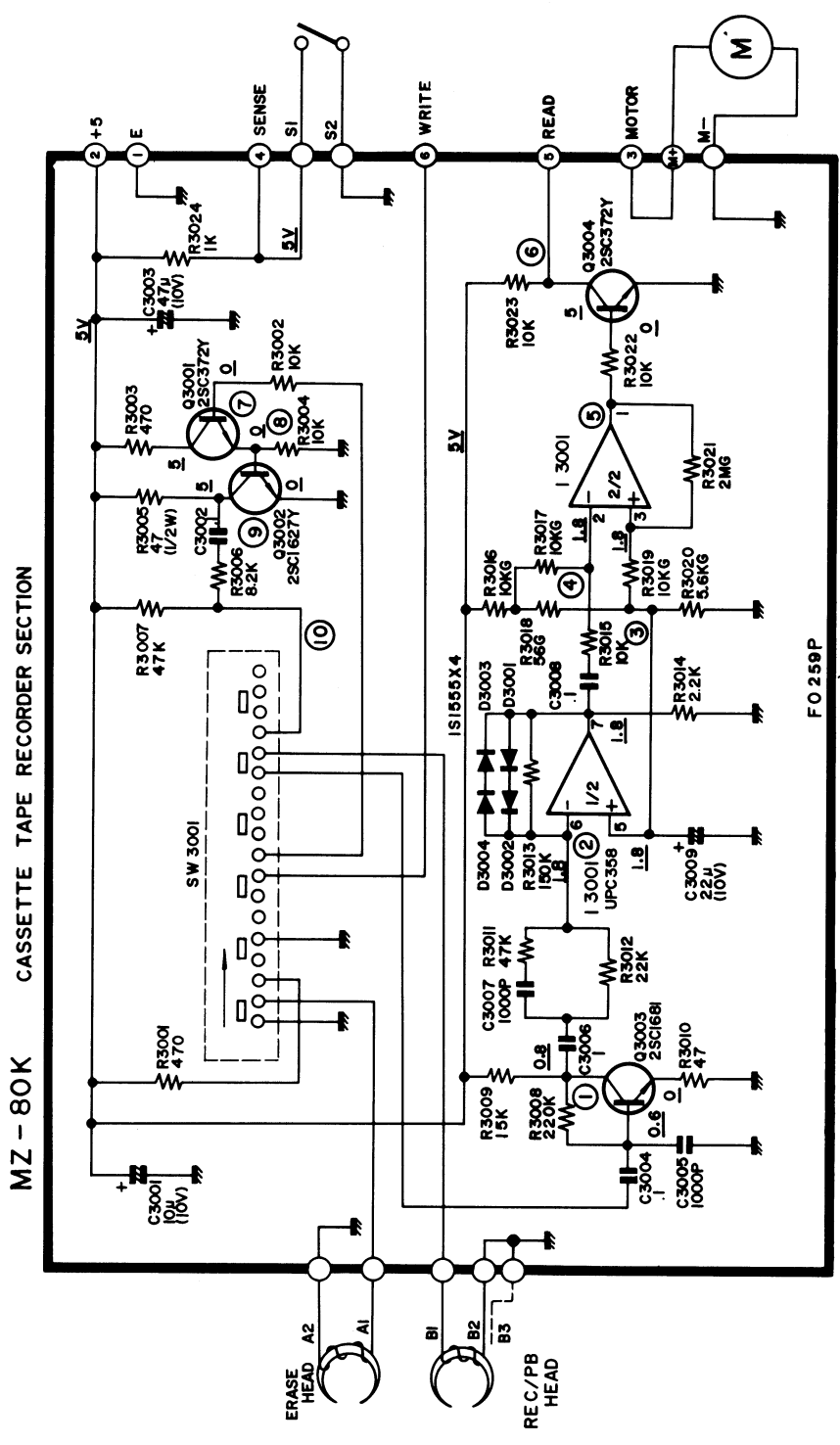




■ Symbols of Cassette Section



■ Wiring Diagram of Cassette Section



# REPLACEMENT PARTS LIST

## "HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NAME
2. REF. NO.
3. PART NO.
4. DESCRIPTION

### MODEL MZ-80K

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
<b>*** CPU BOARD UNIT SECTION ***</b>							
	DCPU-0006PAZZ	Assembled CPU Board Unit	**	IC47	RH-IX0045PAZZ	SN74154N	AN
<b>INTEGRATED CIRCUIT</b>							
IC1	RH-IX0134PAZZ	NE555P	AG	IC51	RH-IX0177PAZZ	SN7425N	AF
IC13				IC53	RH-IX0148PAZZ	SN74S157Nor HD74S157	AQ
IC2	RH-IX0079PAZZ	SN74LS74AN or HD74LS74	AG	IC56		RH-IX0147PAZZ	SN74150N
IC12				IC57	RH-IX0147PAZZ		SN74150N
IC55	RH-IX0038PAZZ	SN7406N	AG	CG-ROM	DPR0M0001PAZZ	HN462716 or MB8156C	BS
IC3				RH-IX0131PAZZ	SN7414N	M-ROM	RH-IX0171PAZZ
IC4	RH-IX0136PAZZ	μPD8255C	BA	RAM	RH-IX0145PAZZ	16KRAM, ITT4116 or MB8116	BE
IC5	RH-IX0126PAZZ	SN74LS145N	AL	RAM	RH-IX0121PAZZ	4KRAM, ITT4027 or MB8227	AV
IC6	RH-IX0074PAZZ	SN74LS04N or HD74LS04P	AE	<b>TRANSISTORS AND DIODES</b>			
IC7				Q1	VS2SA505Y//1A	2SA505-Y	AF
IC21	RH-IX0040PAZZ	SN74121N	AG	Q2	VS2SC373G//1E	2SC373	AC
IC54				Q3			
IC8	RH-IX0125PAZZ	SN74LS93	AK	Q4	VHD1S1555//1A	1S1555	AA
IC31				Q5			
IC9	RH-IX0127PAZZ	SN74LS107AN or HD741S107	AG	Q6			
IC14				D1			
IC27	RH-IX0142PAZZ	SN74S126AN	AH	D2			
IC10				R1			
IC15	RH-IX0076PAZZ	SN74LS10N or HD74LS10P	AE	R5	VRD-ST2EF221J	220 ohm	AA
IC16	RH-IX0146PAZZ	μPD8253C	BC	R30			
IC19	RH-IX0075PAZZ	SN74LS08N or HD74LS08P	AE	R32	VRD-ST2EE182J	1.8K ohm	AA
IC25	RH-IX0070PAZZ	SN74LS00N or HD74LS00	AE	R2	VRD-ST2EF222J	2.2K ohm	AA
IC11	RH-IX0071PAZZ	SN74LS02N or HD74LS02	AE	R10	VRD-ST2EF561J	560 ohm	AA
IC17	RH-IX0132PAZZ	SN7486N	AF	R3			
IC18	RH-IX0128PAZZ	SN74LS20N or HD74LS20	AE	R4			
IC20	RH-IX0129PAZZ	SN74LS165N	AQ	R6			
IC22	RH-IX0104PAZZ	SN74LS42N or HD74LS42	AH	R7	VRD-ST2EF102J	1K ohm	AA
IC24	RH-IX0130PAZZ	SN74177N	AQ	R8			
IC58	RH-IX0133PAZZ	SN74177N	AL	R11			
IC23	RH-IX0123PAZZ	SN74LS244N	AS	R12			
IC52				?			
IC26	RH-IX0176PAZZ	SN74LS241N	AS	R14			
IC28	RH-IX0083PAZZ	SN74LS157N or HD74LS157	AH	R19			
IC48				R26	VRD-ST2EF122J	1.2K ohm	AA
IC49	RH-IX0122PAZZ	MB8114NC or HM472114P-3	AV	R9			
IC29				R36			
IC30	RH-IX0124PAZZ	SN74LS245N	AR	R13			
IC32	RH-IX0090PAZZ	Z80CPU	BF	R27	VRD-ST2EF103J	10K ohm	AA
IC33				R28			
IC34				R29			
IC35				R38			
IC44				R41			
IC45				R44			
IC50				?			
IC36				R48			
IC37				R9			
IC38				R26			
IC39				R36			
IC40				R13			
IC41				R27			
IC42				R28			
IC43				R31			
IC46				R33			
				R35			
				R39			

# PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
R20	VRD-ST2EF271J	270 ohm	AA	C36	VCEAAU1EW107Y	100MFD, 25V, Aluminum	AB
R21	VRD-ST2EF822J	8.2K ohm	AA	C37			
R23	VRD-ST2EF152J	1.5K ohm	AA	C38			
R24	VRD-ST2EF473J	47K ohm	AA	C39	VCSACU1AE336K	33MFD, 10V, Tantalum	AD
R25	VRD-ST2EF123J	12K ohm	AA	C41	VCSACU1VE106M	10MFD, 35V, Tantalum	AE
R34 } R40 }	VRD-ST2EF101J	100 ohm	AA	C59	VCTYPU1ED104Z	0.1MFD, 25V, Ceramic	AB
R37			VRD-ST2EF153J	15K ohm			
R42	VRD-ST2EF332J	3.3K ohm	AA	C63			
R43	VRD-ST2EF331J	330 ohm	AA	C65			
VR	RVR-M0019PAZZ	Variable Resistor 68K ohm	AC	C66			
RA1 } RA2 }	RR-KZ0031PAZZ	Resistor Array 10K ohm x 8	AD	C68			
				C72			
				C75			
				C77			
				C79			
				C81			
				C82			
				C84			
				C86			
				C88			
<b>CAPACITORS</b>				<b>MISCELLANEOUS</b>			
C1 } C4 } C17 }	VCCCPR1H3101J	100PF, Ceramic	AA	XTAL	RCRSA0009PAZZ	Crystal, 8.00MHz	AN
C2	VCQYKU1HM332K	0.0033MFD, Film	AA		QSOCZ0012PAZZ	40-Pin socket	AH
C3					QSOCZ0010PAZZ	24-Pin socket	AF
C7 } C12 } C24 } C25 } C27 } C31 }					QSOCZ0009PAZZ	16-Pin socket	AE
C33				CS1 }	QLUGP0001PAZZ	16-Pin Descreat platform	AC
C34				CS2 }			
C35				CN1	QPLGZ0021PAZZ	50-Pin terminal (for Bus lines)	AW
C40				CN2	QPLGZ0018PAZZ	6-Pin terminal (for TV)	AD
C42 } C58 }	VCTYPU1BD104Z	0.1MFD, 12V, Ceramic	AB	CN3	QPLGZ0006PAZZ	6-Pin terminal (for cassette)	AD
C60						CN4	QPLGZ0020PAZZ
C62				CN5	QPLGZ0016PAZZ	18-Pin terminal (for Keyboard)	AF
C64				CN6	QPLGN0403CEZZ	4-Pin terminal (for Power supply)	AB
C67					QPWBN0024PAZZ	Printed Wiring Board	BS
C69							
C71							
C73							
C74							
C76							
C78							
C80							
C83							
C85							
C87							
C89							
C90							
C91							
C92							
C5 } C23 }	VCEAAU1CW105Y	1MFD, 16V, Aluminum	AB	I2001	RH-IX0015TAZZ	μPC1031H, Vertical deflection Circuit	AM
C6 } C13 }	VCKZPU1HF103P	0.01MFD, Ceramic	AA	I2002	RH-IX0016TAZZ	LA4030P, Power Amp.	AK
C15							
C16							
C20							
C14	VCEAAU1CW106Y	10MFD, 16V, Aluminum	AB				
C18	VCEAAU1CW227Y	220MFD, 16V, Aluminum	AC				
C19 } C21 }	VCEAAU1CW226Y	22MFD, 16V, Aluminum	AB				
C22	VCQYKU1HM103K	0.01MFD, Film	AB				
C26 } C32 }	VCEAAU1CW107Y	100MFD, 16V, Aluminum	AB				
				Q2001	VS2SC1514-/1E	2SC1514	AF
				Q2002 } Q2003 }	VS2SA673-C/1E	2SA673	AC
				Q2004	VS2SC1213-C1A	2SC1213	AC
				Q2005	VS2SC681A-R1A	2SC681A-R	AM
				*** MONITOR TV UNIT SECTION ***			
					DPWB-0176PAZZ	Assembled Monitor TV PWB	BS
				<b>INTEGRATED CIRCUIT</b>			
				<b>TRANSISTORS</b>			

## PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE			
<b>DIODES</b>				R2046	RVR-B7032TAZZ	5K ohm, Variable Resistor for Volume	AD			
D2001	VHD02Z7R5A//A	7.5V Zener, 02Z75A	AC	R2047	VRD-ST2EF222J	2.2K ohm, 1/4W	AA			
D2002	VHD1N34A///-1	1N-34A	AB	R2048	VRD-ST2EF471J	470 ohm, 1/4W	AA			
D2003				R2049	VRD-ST2EF473J	47K ohm, 1/4W	AA			
D2004	RH-DX0039TAZZ	SI-RECT208	AC	R2051	VRD-ST2EF120J	12 ohm, 1/4W	AA			
D2005				<b>CAPACITORS</b>						
D2008				RH-DX0043TAZZ	SIR60	AC	C2001	VCQYKU1HM152K	0.0015MFD, Mylar	AA
D2006							C2002	VCOVPC2DA104K	0.1MFD, 200V, Film	AC
D2009	C2036									
D2007	RH-DX0062CEZZ	RH1	AD	C2037	C2003	VCEAAU2CW106Y	10MFD, 160V, Aluminum	AE		
<b>RESISTORS</b>				C2004	VCEAAU1CW478Y	4700MFD, 16V, Aluminum	AH			
R2001	VRD-ST2EF470J	47 ohm, 1/4W	AA	C2005	VCEAAU1CW108Y	1000MFD, 16V, Aluminum	AD			
R2003										
R2004										
R2002	RVR-B0015PAZZ	500 ohm, Variable Resistor for Contrast	AD	C2016	VCQYKU1HM332K	0.0033MFD, Mylar	AA			
R2005	VRC-MT2HG102J	1K ohm, 1/2W	AA	C2006						
R2006	VRD-ST2EF225J	2.2M ohm, 1/4W	AA	C2007	VCEAAU1EW475A	4.7MFD, 25V, Aluminum	AB			
R2007	VRD-ST2EF154J	150K ohm, 1/4W	AA	C2012	VCSACU1VE105K	1MFD, 35V, Tantalum	AC			
R2050										
R2008	RVR-B7021TAZZ	250K ohm, Variable Resistor for Brightness	AD	C2009	VCEAAU1CW226Y	22MFD, 16V, Aluminum	AC			
R2009	VRD-ST2EF472J	4.7K ohm, 1/4W	AA	C2010	VCOYKU1HM333K	0.033MFD, Mylar	AB			
R2010	VRD-ST2EF473J	47K ohm, 1/4W	AA	C2011						
R2011	VRD-ST2EF102J	1K ohm, 1/4W	AA	C2013	RC-EZ0029TAZZ	22MFD, 16V, Aluminum	AC			
R2024				C2014	VCEABA1CW226M	22MFD, 16V, Aluminum	AC			
R2027				C2015	VCEAAU1AW107Y	100FMD, 10V, Aluminum	AB			
R2037				C2017	RC-EZ0024TAZZ	6.8MFD, 25V, Aluminum	AG			
R2012	VRD-ST2EF153J	15K ohm, 1/4W	AA	C2018	VCQYKU1HM153K	0.015MFD, Mylar	AB			
R2013	VHD-ST2EF123J	12K ohm, 1/4W	AA	C2019						
R2014	VRD-ST2EF272J	2.7K ohm, 1/4W	AA	C2020	VCQYKU1HM683K	0.068MFD, Mylar	AB			
R2015	VRC-MT2HG3R3J	3.3 ohm, 1/2W	AA	C2021	VCEAAU1CW107Y	100MFD, 16V, Aluminum	AB			
R2016	VRD-ST2EF273J	27K ohm, 1/4W	AA	C2022	VCQYKU1HM103K	0.01MFD, Mylar	AB			
R2017	RVR-B7029TAZZ	50K ohm, Variable Resistor for V-Hold	AD	C2029						
R2018	VRD-ST2EF122J	1.2K ohm, 1/4W	AA	C2023	VCQYKU1HM223K	0.022MFD, Mylar	AB			
R2019	VRD-ST2EF103J	10K ohm, 1/4W	AA	C2024	VCQYKU1HM473K	0.047MFD, Mylar	AB			
R2053										
R2020	VRC-MT2HG1R5J	1.5 ohm, 1/2W	AA	C2025	VCEAAU1EW335A	3.3MFD, 25V, Aluminum	AB			
R2021	RVR-M7052TAZZ	20K ohm, Variable Resistor for V-Size	AC	C2026	VCQYKU1HM123J	0.012MFD, Mylar	AB			
R2022										
R2023	VRD-ST2EF331J	330 ohm, 1/4W	AA	C2027	VCQYKU1HM473J	0.047MFD, Mylar	AB			
R2026	RVR-B7004TAZZ	300 ohm, Variable Resistor for V-Line	AC	C2028	VCCSPU1H6101K	100PF, 50V, Ceramic	AA			
R2025										
R2028	VRD-ST2EF821J	820 ohm, 1/4W	AA	C2032	VCKZPR1HF103P	0.01MFD, Ceramic	AA			
R2029										
R2030	VRD-ST2EF682J	6.8K ohm, 1/4W	AA	C2039						
R2031	VRD-ST2EF822J	8.2K ohm, 1/4W	AA	C2040	VCEAAU1CW227Y	220MFD, 16V, Aluminum	AB			
R2032										
R2036	VRD-ST2EF392J	3.9K ohm, 1/4W	AA	C2041						
R2033	VRD-ST2EF330J	33 ohm, 1/4W	AA	C2042	VCEAAU2AW227Y	220MFD, 100V, Aluminum	AF			
R2034										
R2035	VRD-ST2EF332J	3.3K ohm, 1/4W	AA	C2043						
R2038	VRD-ST2EF680J	68 ohm, 1/4W	AA	C2044	VCEAAU1CW106Y	10MFD, 16V, Aluminum	AB			
R2039	VRS-PU3DB222J	2.2K ohm, 2W	AB	C2052	VCKYPU2HE103P	0.01MFD, 500V, Ceramic	AB			
R2040	VRD-ST2EF221J	220 ohm, 1/4W	AA	C2053	VCQYKU1HM104K	0.1MFD, Mylar	AB			
R2041	VRC-MT2HG560J	56 ohm, 1/2W	AA	<b>TRANSFORMER AND COILS</b>						
R2042	VRC-MT2HG330J	33 ohm, 1/2W	AA	T2001	RTRNT0017TAZZ	H-Drive Transformer	AF			
R2043	RVR-B7022TAZZ	1M ohm, Variable Resistor for Focus	AD	T2002	CTRNF2072TA01	High Voltage Transformer	AY			
R2044										
R2045	VRD-ST2EF564J	560K ohm, 1/4W	AA	1	RCILH4070TAZZ	Refraction Coil	AX			

# PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE			
L2001	RCILB0021TAZZ	H-Hold Variable Coil	AG	R404	VRW-KT3DDR05K	0.05 ohm, 2W, Cement	AC			
L2002	RCILZ0057TAZZ	H-Lin Coil	AG	R504						
<b>MISCELLANEOUS</b>				R405				VRD-ST2EF563J	56K ohm, 1/4W	AA
△ QPWB0261PAZZ Printed Wiring Board AM				R407						
PRDAF0147TAZZ Radiator AB				R408						
PRDAF0107TAZZ Radiator AB				R507	VRD-ST2EF472J	4.7K ohm, 1/4W	AA			
2	QSOCV0701SEZZ	CRT Socket	AC	R508						
QPLGN0404CEZZ 4-Pin Plug AB				R509	VRD-ST2EF153J	15K ohm, 1/4W	AA			
QSOCN0077PAZZ Lead Wire with 6-Pin Socket AH				R410						
QCNW-0009PAZZ Lead Wire with 2-Pin Socket (to Speaker) AD				R510	VRD-ST2EF332J	3.3K ohm, 1/4W	AA			
3 GCABC8004PASC TV Cabinet BC				VR201						
4 GWAKP0001PASC Front Frame AS				VR401	RVR-M0010PAZZ	1K ohm, Variable Resistor	AC			
5 GCOVZ0005PAZZ Front Panel AN				VR501						
6 LANGB0002PAZZ Support Angle A AE				<b>CAPACITORS</b>						
7 LANGB0003PAZZ Support Angle B AF				C101	△ RC-CZ0174PAZZ	0.047MFD, 250V, Mylar	AK			
8 DDAI-0004PAZZ PWB Mounting Plate AR				C201	VCEAAU1CM228Y	2200MFD, 16V, Aluminum	AF			
9 PSHEF0007PAZZ Guard Net for Speaker AB				C404						
10 LANGQ0005PAZZ Display PWB Fixing Angle AD				C202	VCEAAU1AM477M	470MFD, 10V, Aluminum	AD			
11 LANGS0003PAZZ Speaker mounting Plate AB				C301						
12 LANGS0013CEZZ Speaker Holder AB				C302	VCEAAU1VM258Y	2500MFD, 35V, Aluminum	AG			
13 △ VB240NB4//K1E CRT BM				C303						
14 VSP0080P-16YA Speaker AQ				C304	VCSACU1VE106M	10MFD, 35V, Tantalum	AE			
15 PFTA-0001PASC Back Panel AH				C501						
16 HINDP0005PASA Indicator Panel of Control Knob AE				C502	VCQYKU1HM332K	0.0033MFD, 50V, Film	AA			
MSPRT0011PAZZ Spring AB				C402						
*** POWER SUPPLY UNIT SECTION ***				C403	VCQYKU1HM223K	0.022MFD, 50V, Film	AB			
DBOXD0004PAZZ Assembled Power Supply Unit **				C405	VCQYKU1HM183K	0.018MFD, 50V, Film	AB			
DOBXD0005PAZZ Assembled Power Supply Unit (for UK) **				C406						
<b>INTEGRATED CIRCUIT</b>				AR	C504	VCQYKU1HM102K	0.001MFD, 50V, Film	AA		
IC1	RH-IX0178PAZZ	Regulator, $\mu$ A78MGU	AT	C505	VCKYPU1NB104Z	0.1MFD, 12V, Ceramic	AB			
IC2	RH-IX0151PAZZ	Switching Regulator, SG3524	AK	C407						
IC3				<b>TRANSISTORS</b>				C503	VCEAAU1AM338Y	3300MFD, 10V, Aluminum
Q401	VS2SA764///-1	2SA764	AN	C507						
Q501				<b>COILS AND TRANSFORMER</b>						
Q402	VS2SA673-C/1E	2SA673	AC	L201	RTRNZ0010PAZZ	Filter Coil	AH			
Q502				<b>MISCELLANEOUS</b>						
<b>DIODES</b>				L401	RTRNZ0007PAZZ	Choke Coil	AP			
D201	VHDRU2/////1	RU2	AT	L501				RTRNZ0009PAZZ	Filter Coil	AL
D301	VHDSS5R/////1	SS-5R	AT	L503						
D302	VHDSS5/////1	SS-5	AK	T101	△ RTRNP0018PAZZ	Power Supply Transformer 220V	BF			
D401	VHDUF3/////1	UF3	AA	T101	△ RTRNP0019PAZZ	Power Supply Transformer 240V (for UK)	BF			
D402				<b>MISCELLANEOUS</b>						
D501				△ QPWB0260PAZZ Printed Wiring Board AM						
D502				F101 △ QFS-C0002PAZZ Fuse, T500mA AD						
<b>RESISTORS</b>				F201	△ QFS-C0001PAZZ	Fuse, T315mA	AD			
R201	VRD-ST2EF123J	12K ohm, 1/4W	AA	F202	△ QFS-C0003PAZZ	Fuse, T1.6A	AD			
R401	VRD-ST2EF101J	100 ohm, 1/4W	AA	F401	QFSHC0001PAZZ	Fuse Holder	AD			
R501				QFSHA0001PAZZ Fuse Holder AA						
R402	VRD-ST2EF272J	2.7K ohm, 1/4W	AA	F501	△ OSOCA0001PAZZ	A.C. Socket	AD			
R403				△ OSW-C0003PAZZ A.C. Switch AQ						
R406				△ OSOCA0002PAZZ A.C. Socket (for UK) AG						
R502										
R503										
R506										



# PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
19	GCABA8018PASA	Cabinet	AK
20	GCABB8018PASA	Cabinet	AT
	GCABB8019PASA	Cabinet (for UK)	
	PRDAR0010PAZZ	Radiator	AQ
21	DSOCN0016PAZZ	Lead Wire with 4-pin Socket	AF
22	LBSHC0003PAZZ	Rubber Bush	AB
23	<b>△ PSPAY0001PAZZ</b>	<b>Insulating Sheet</b>	<b>AF</b>
*** CASSETTE TAPE RECORDER SECTION ***			
	KTRC-0004PAZZ	Assembled Cassette Tape Recorder Unit	BT
<b>INTEGRATED CIRCUIT</b>			
I3001	RH-IX0150PAZZ	OP Amp. $\mu$ PC358C	AK
<b>TRANSISTORS</b>			
Q3001 Q3004	VS2SC372-Y/1E	2SC372Y	AC
Q3002	VS2SC1627-Y-A	2SC1627Y	AD
Q3003	VS2SC1681//-1	2SC1681	AD
<b>DIODES</b>			
D3001 D3002 D3003 D3004	VHD1S1555//1A	1S1555	AA
<b>RESISTORS</b>			
R3001 R3003	VRD-ST2EF471J	470 ohm, 1/4W	AA
R3002 R3004			
R3015 R3022 R3023	VRD-ST2EF103J	10K ohm, 1/4W	AA
R3005	VRC-MT2HG470J	47 ohm, 1/2W	AA
R3006	VRD-ST2EF822J	8.2K ohm, 1/4W	AA
R3007 R3011	VRD-ST2EF473J	47K ohm, 1/4W	AA
R3008	VRD-ST2EF224J	220K ohm, 1/4W	AA
R3009	VRD-ST2EF153J	15K ohm, 1/4W	AA
R3010	VRD-ST2EF470J	47 ohm, 1/4W	AA
R3012	VRD-ST2EF223J	22K ohm, 1/4W	AA
R3013	VRD-ST2EF154J	150K ohm, 1/4W	AA
R3014	VRD-ST2EF222J	2.2K ohm, 1/4W	AA
R3016 R3017	VRD-ST2EF103G	10K ohm, 1/4W	AA
R3019			
R3018	VRD-ST2EF560G	56 ohm, 1/4W	AA
R3020	VRD-ST2EF562G	5.6K ohm, 1/4W	AA
R3021	VRD-ST2EF205G	2M ohm, 1/4W	AA
R3024	VRD-ST2EF102J	1K ohm, 1/4W	AA

REF. NO.	PART NO.	DESCRIPTION	CODE
<b>CAPACITORS</b>			
C3001	VCEAAU1AW476Y	47MFD, 10V, Aluminum	AB
C3002			
C3004	VCQYKU1HM104K	0.1MFD, Mylar	AB
C3006			
C3008			
C3003	VCEAAU1AW106Y	10MFD, 10V, Aluminum	AB
C3005	VCQYKU1HM102K	1000PF, Mylar	AA
C3007			
C3009	VCEAAU1AW226Y	22 MFD, 10V, Aluminum	AB
<b>MISCELLANEOUS</b>			
	QPWBF0259PAZZ	Printed Wiring Board	AF
SW3001	QSW-S0011VAZZ	Slide Switch (2 contacts)	AG
24	KMECA0001PAZZ	Cassette Tape Recorder Machanical Unit (Refer to other table for detailed parts)	BG
25	GCABE8004PASA	Cabinet	AP
26	JKNBR0002PASA	Button	AC
27	GFTAC0001PASA	Flap	AN
28	HINDM0006PASA	Indicator Plate of Function Buttons	AG
29	HDECB0010PASA	Plate	AC
30	MSPRP0089AGFW	Crossarm Brace	AB
31	MSPRB0029PAFJ	Spring	AA
32	QSOCN0078PAZZ	Lead Wire with 6-Pin Socket	AH
*** KEY BOARD UNIT SECTION ***			
	DKEY-0005PAZZ	Assembled Key Board Unit	BX
<b>MISCELLANEOUS</b>			
33	QPWBF0167PAZZ	Printed Wiring Board	AN
34	LANGQ0003PAZZ	Mechanical Key-Mounting Plate	AN
35	QSW-K0001PAZZ	Mechanical Key Switch	AD
36	QSW-K0009PAZZ	Key Top (small)	AB
37	QSW-K0010PAZZ	Key Cover (small)	AB
38	QSW-K0011PAZZ	Key Top (double size)	AC
39	QSW-K0012PAZZ	Key Cover (double size)	AC
40	QSOCN0079PAZZ	Lead Wire with 18-pin Socket	AM
41	HINDP0009PASA	Key Seal	AK
***** OTHER SECTION *****			
<b>DIODES</b>			
42	RH-PX0031PAZZ	LED, GL-53RG	AF

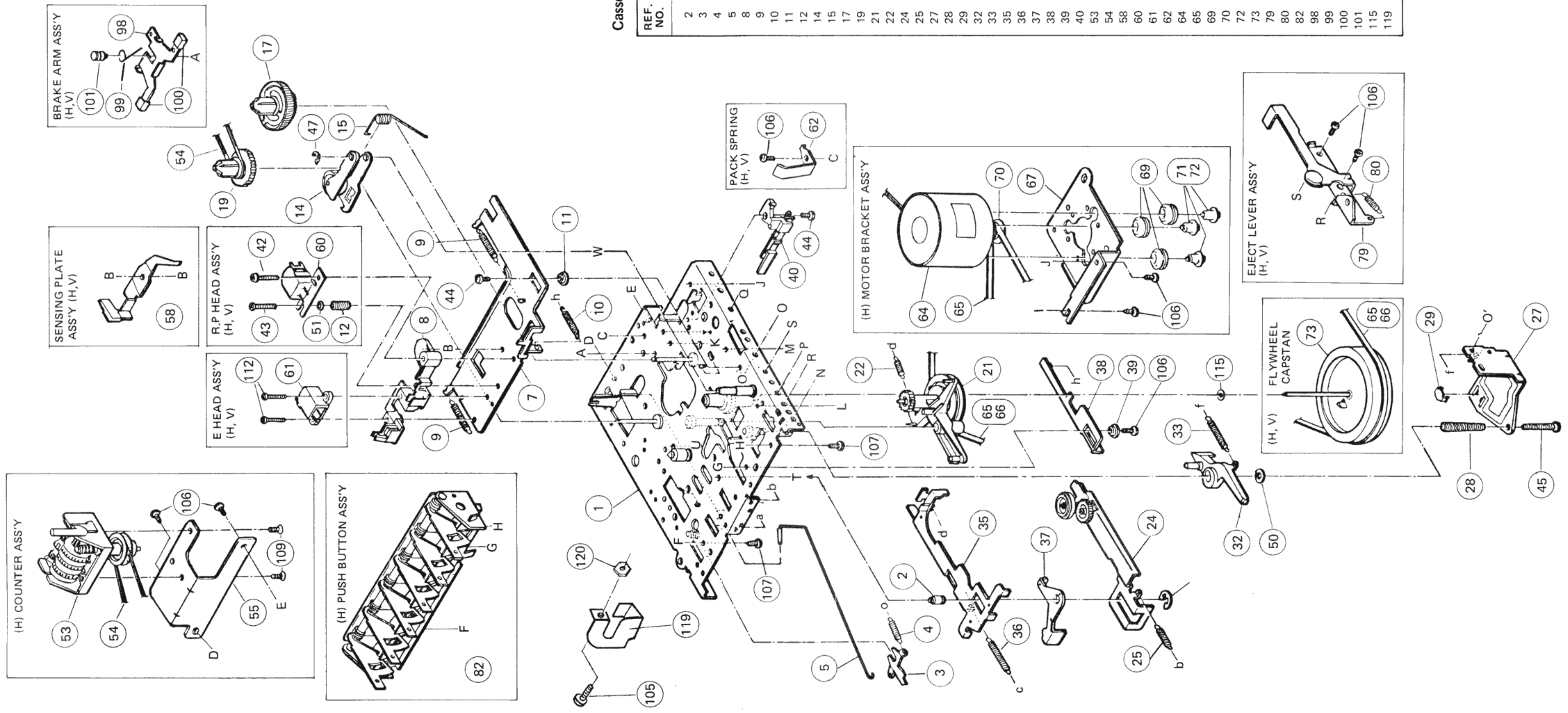
# PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
<b>MISCELLANEOUS</b>				53	LHLDW9003CEZZ	Cord Fixer, HW-146	AA
43	QPWF0172PAZZ	Printed Wiring Board for LED	AB		TINSG0002PAZZ	Instruction Manual (Germany)	BG
44	QSOCN0080PAZZ	Lead Wire with 3-Pin Socket	AE		TINSE0001PAZZ	Instruction Manual (English)	BG
45	DCABA8042PASA	Cabinet	BL		TINSF0001PAZZ	Instruction Manual (French)	BG
46	GCABB8017PASA	Cabinet	BD	54	HINDP0010PASA	Key Seal (letters with unlaut)	AD
47	DANG-0006PAZZ	Arm Fixing Angle with Screw	AE	55	HINDM0007PASA	Decoration Panel	AK
48	LHLDF0011PAZZ	CPU Board Holder	AB		PCOVP0015PAZZ	Cover	AG
49	GLEGR0001PAZZ	LEG	AB				
50	MHNG-0001PAFC	Hinge	AQ				
51	MARMM0019PAFC	Support Arm	AQ				
	QACCK0050AFZZ	A.C. Cord	AQ				
	QACCB0001PAZZ	A.C. Cord (for UK)	AQ				
52	LBNDC0001PAZZ	Cord Keeper	AC				

(Note)  
 Be sure to use genuine parts for securing the safety and reliability of the set.  
 Parts marked with "△" and parts shaded (in black) are especially important for maintaining the safety and protecting ability of the set.  
 Be sure to replace them parts of specified part number.

Cassette tape recorder mechanical parts

REF. NO.	PART NO.	DESCRIPTION	CODE
2	94R00280KCTRM	Main Boss	AB
3	94R00380KCTRM	Record Safety Lever	AC
4	94R00480KCTRM	Spring	AB
5	94R00580KCTRM	Record Safety Spoorke Ass'y	AD
8	94R00880KCTRM	Head Block	AD
9	94R00980KCTRM	Spring	AB
10	94R01080KCTRM	Spring	AB
11	94R01180KCTRM	Coller	AA
12	94R01280KCTRM	R.P. Head Spring	AB
14	94R01480KCTRM	Pinch Roller Ass'y	AH
15	94R01580KCTRM	Spring	AB
17	94R01780KCTRM	Take-up Reel Ass'y	AK
19	94R01980KCTRM	Supply Reel Ass'y	AF
21	94R02180KCTRM	RF Clutch Ass'y	AN
22	94R02280KCTRM	Spring	AB
24	94R02480KCTRM	F.F. Idler Arm Ass'y	AL
25	94R02580KCTRM	Spring	AB
27	94R02780KCTRM	Flywheel Holder	AF
28	94R02880KCTRM	Thrust Spring	AB
29	94R02980KCTRM	Flywheel Bearing	AA
32	94R03280KCTRM	Auto-Stop Lever	AD
33	94R03380KCTRM	Spring	AB
35	94R03580KCTRM	Main Plate	AF
36	94R03680KCTRM	Spring	AB
37	94R03780KCTRM	Rewind Arm	AC
38	94R03880KCTRM	Play Slide Lever	AC
39	94R03980KCTRM	Coller	AA
40	94R04080KCTRM	Leaf Switch	AG
53	94R05380KCTRM	Counter	AM
54	94R05480KCTRM	Counter Belt	AF
58	94R05880KCTRM	Sensing Plate Ass'y	AF
60	94R06080KCTRM	R/P Head	AM
61	94R06180KCTRM	Erase Head	AG
62	94R06280KCTRM	Pack Spring	AD
64	94R06480KCTRM	Motor	AV
65	94R06580KCTRM	Main Belt	AH
69	94R06980KCTRM	Motor Rubber	AA
70	94R07080KCTRM	Motor Pulley	AD
72	94R07280KCTRM	Coller Screw(s)	AB
73	94R07380KCTRM	Flywheel Capstan	AP
79	94R07980KCTRM	Eject Lever Ass'y	AK
80	94R08080KCTRM	Spring	AB
82	94R08280KCTRM	Push Button Ass'y	AW
98	94R09880KCTRM	Brake Arm	AD
99	94R09980KCTRM	Spring	AB
100	94R10080KCTRM	Brake Shoe	AB
101	94R10180KCTRM	Brake Arm Shaft	AB
115	94R11580KCTRM	Nylon Washer 2.2 x 7 x 0.5	AA
119	94R11980KCTRM	REC Push Plate	AC



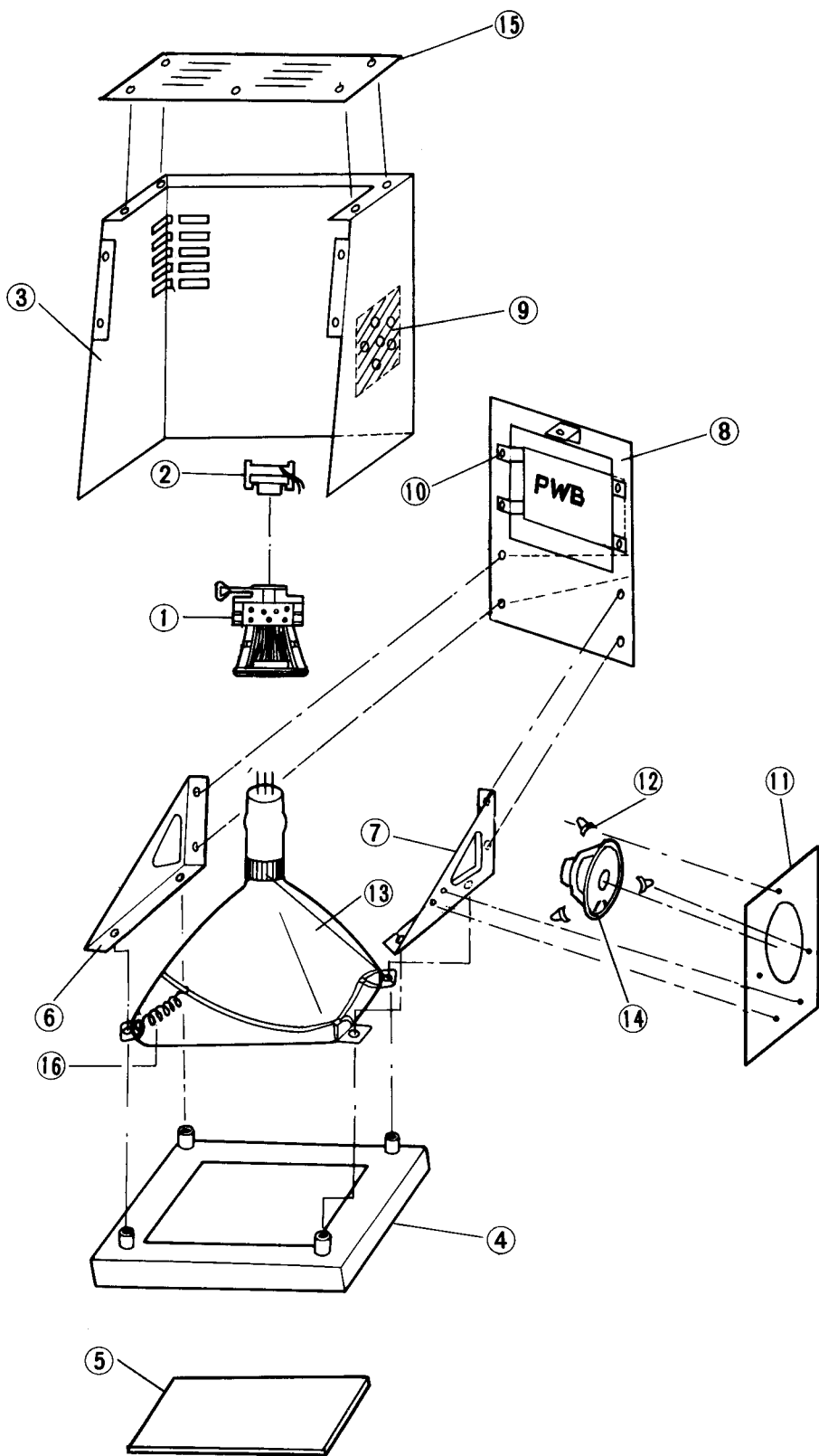


Fig. Display Section

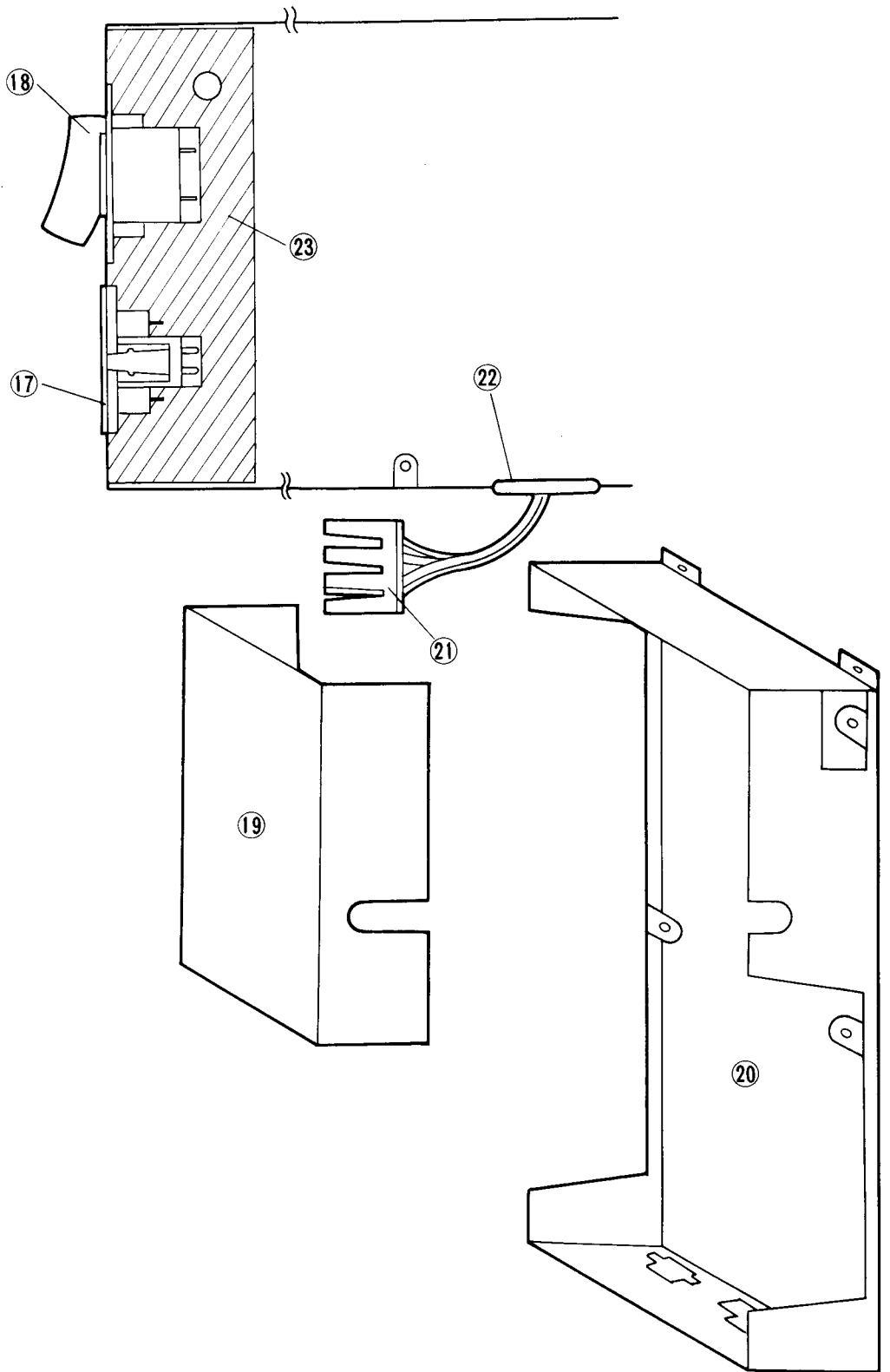


Fig. Power Supply Section

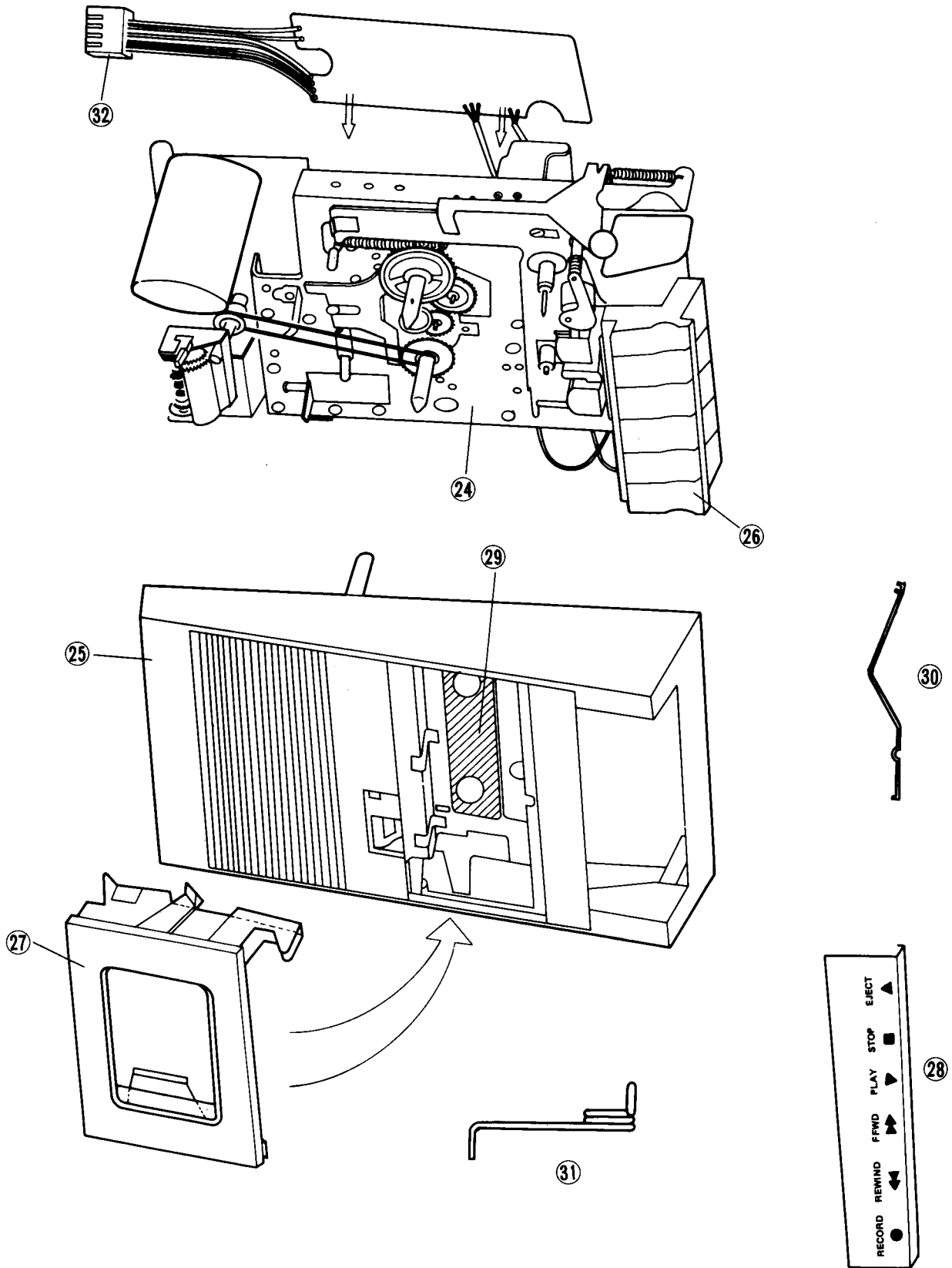


Fig. Cassette Tape Recorder Section

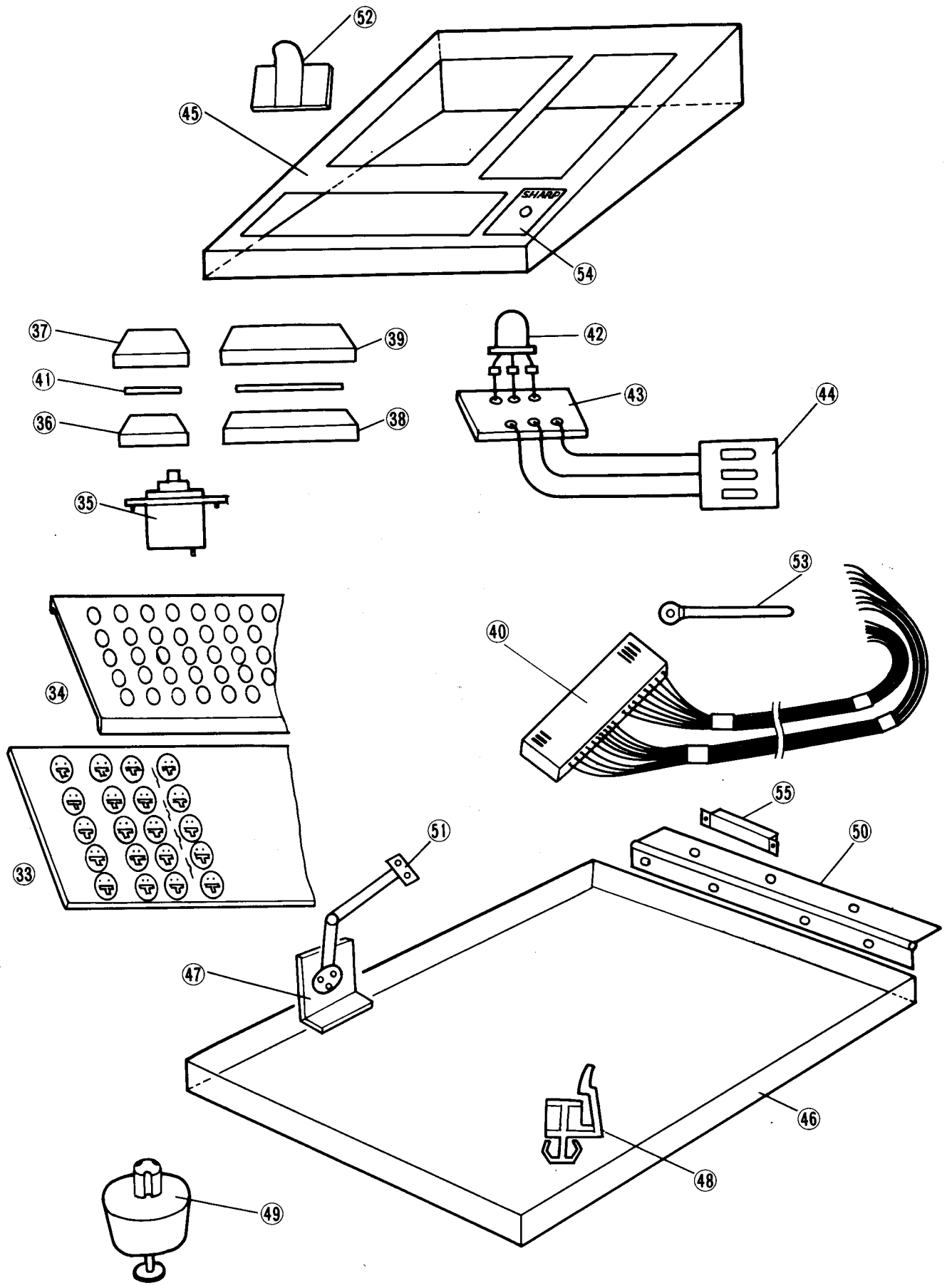


Fig. Key Board Section and Others