

# SHARP SERVICE MANUAL

PDSM680002-MZ



## Interface Unit **MZ-80 IO**

### **FEATURES**

- I/O extension device to connect bus-line signals being output from MZ-80K to peripheral units such as dot printer, floppy disk, colour display, etc.
- Up to 5 kinds of I/O card for peripheral units connectable. Parallel usage feasible.
- Consists of mother board and +5V switching regulator power source.
- Applicable also for control of other terminal devices by using universal I/O cards separately available.

# SPECIFICATIONS

## ■ General

Interface system	Parallel interface
Signal	TTL level
Usable interface card	Up to 5 sheets Printer interface card, Floppy Disk interface card, Colour display interface card, Universal interface card, etc.
Used IC's	SN74LS241N, SN74LS244N, SN74LS14N SN75451BP, SN75453BP
Reset	Power-on reset Reset pulse of more than 100 ms
Power consumption	45W
Rated voltage	AC 220V $\pm$ 10%, 50Hz AC 240V $\pm$ 10%, 50Hz (for UK)
Operating temperature	0 to 35°C
Storage temperature	-15 to 60°C
Dimensions	205mm(W) x 320mm(D) x 130mm(H)
Weight	5kg

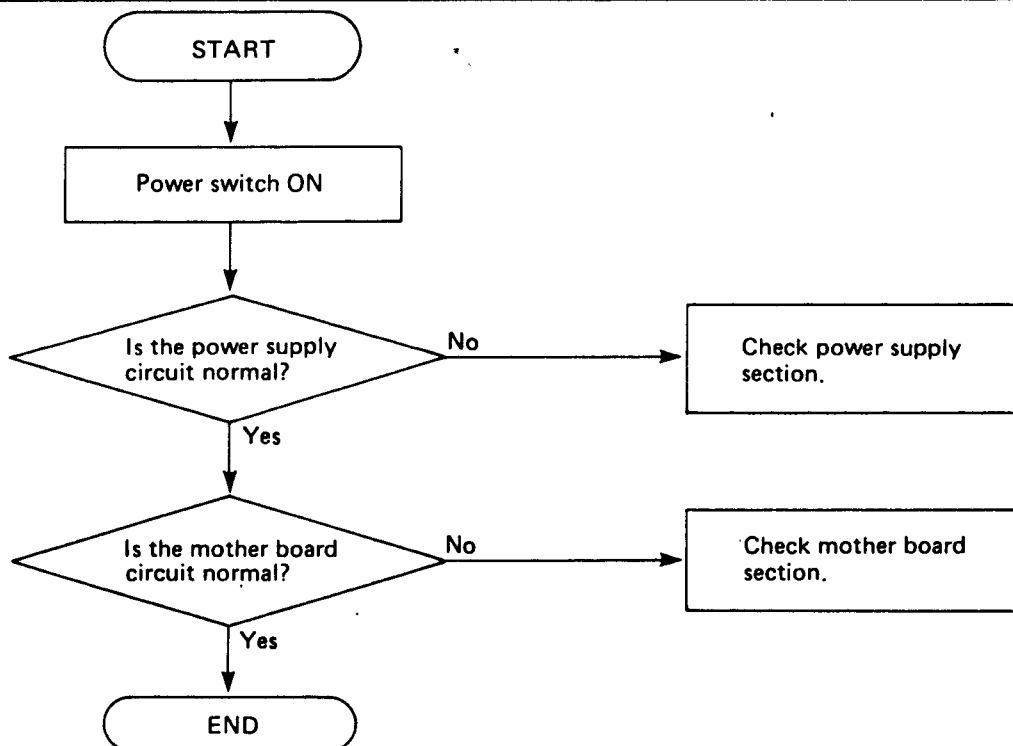
## ■ Mother Board Section

Buffer	Data Bus	SN74LS241N	2 pcs.
	Address Bus	SN74LS244N	2 pcs.
	Control Bus	SN74LS244N	1 pc.

## ■ Power Supply Section

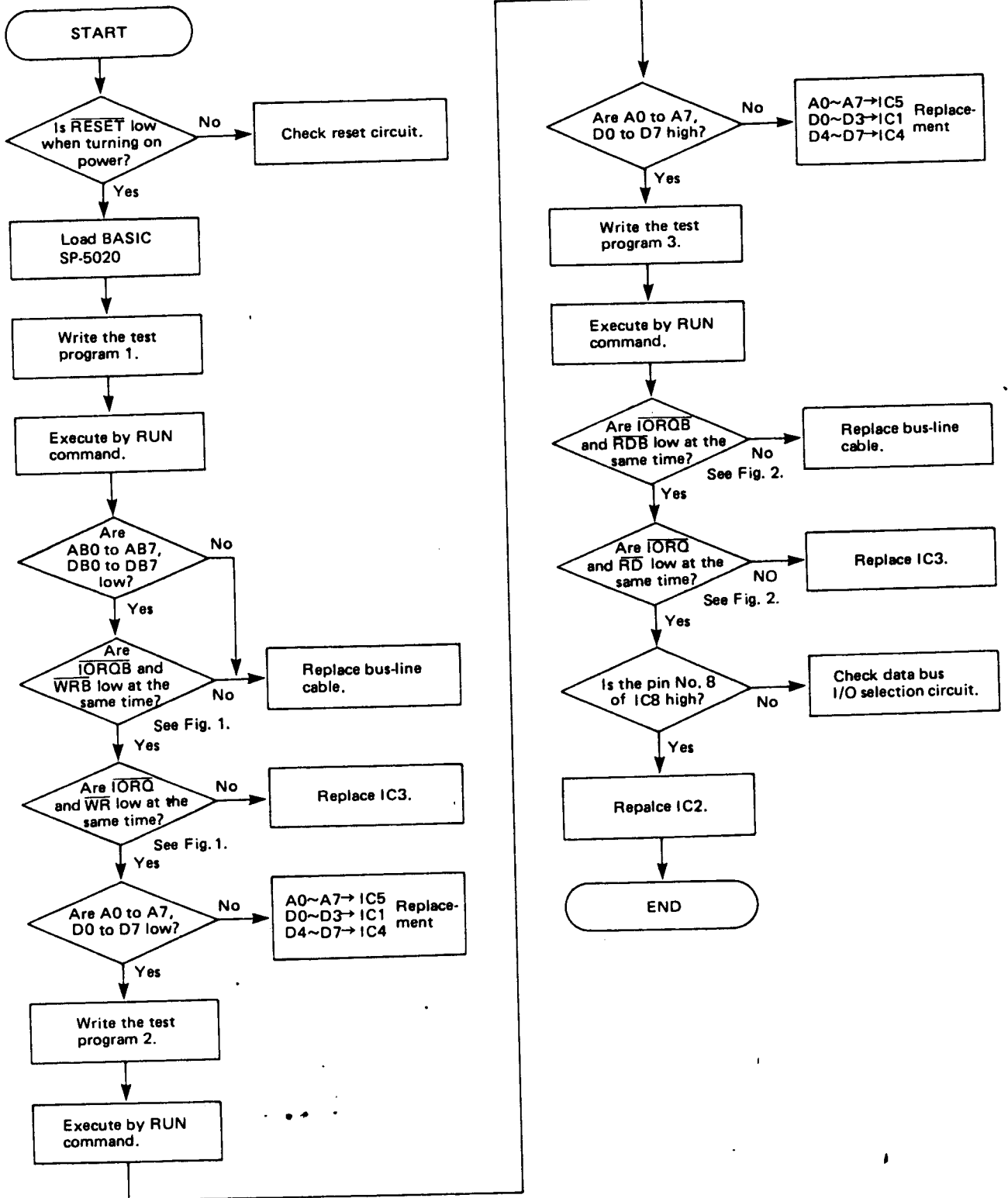
Input	AC 220V $\pm$ 10%, 50Hz AC 240V $\pm$ 10%, 50Hz (for UK)
Output	DC 5V, 5A max.

# TROUBLE SHOOTING GUIDE



# MOTHER BOARD SECTION

## ■ Repairing Procedure



**Test program 1**

```
10 A=0 : PO=0
20 OUT #PO,A
30 GOTO 20
```

**Test program 2**

```
10 A=255 : PO=239
20 OUT #PO,A
30 GOTO 20
```

**Test Program 3**

```
10 A=0 : PO=0
20 INP #PO,A
30 GOTO 20
```

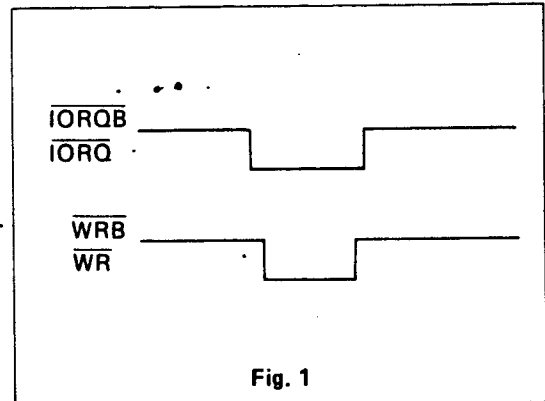


Fig. 1

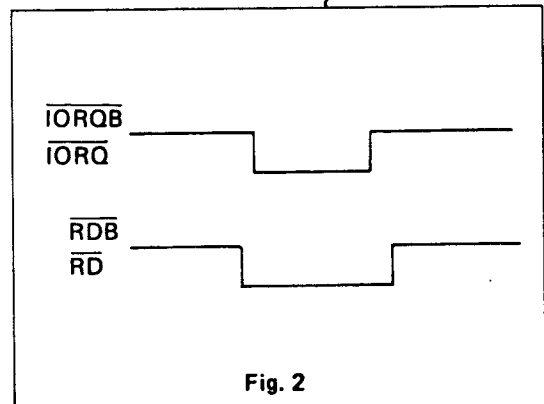


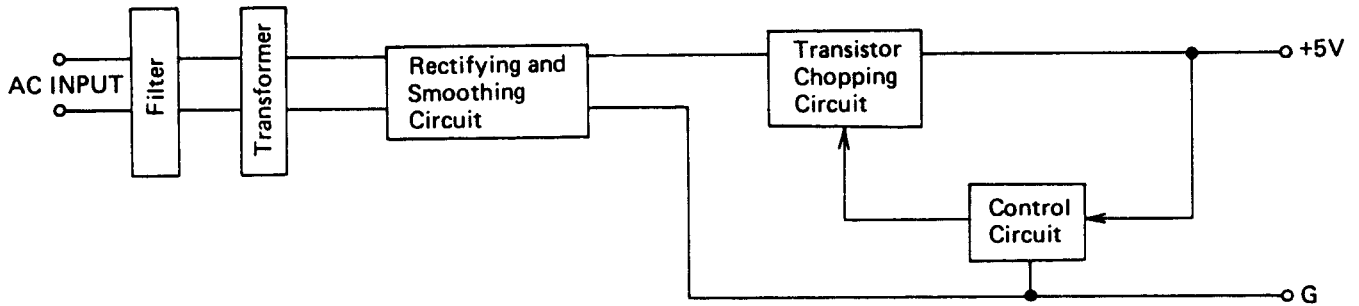
Fig. 2

■ **Checking methods of IC circuit**

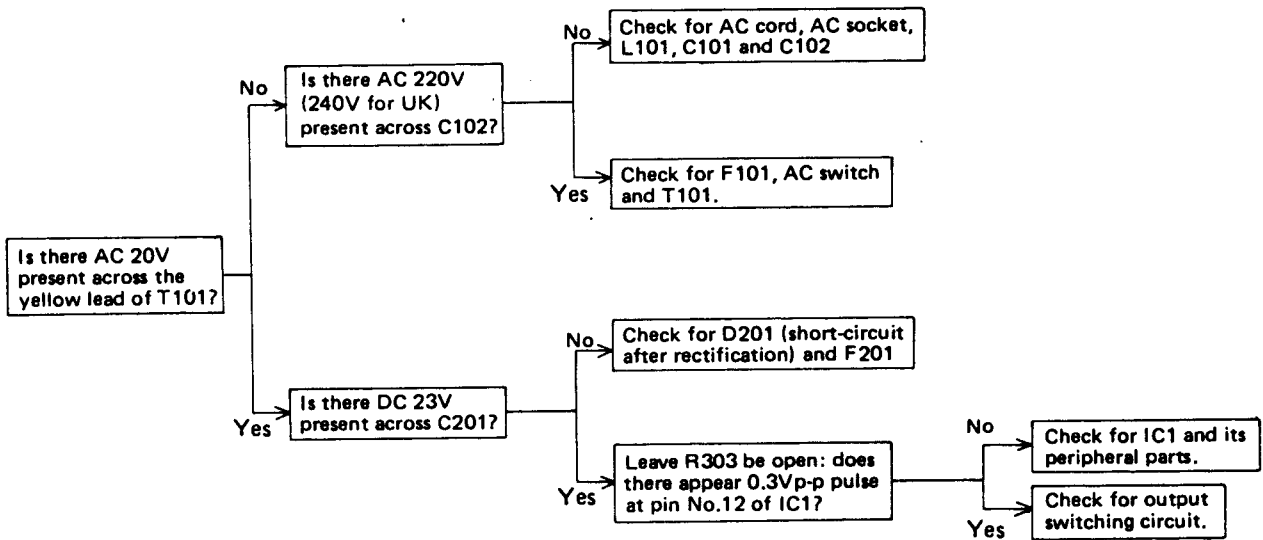
1. By touching IC insulating parts by fingers:
  - If they seem too hot by heat generation; IC is defective, or components are touching each other.
  - If a circuitry state is changed to another; Soldering is poor, or printed-wiring is erroneous.
2. By using a synchroscope:
  - If the relation between 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 2.4, Low level; below 0.5V.

# POWER SUPPLY SECTION

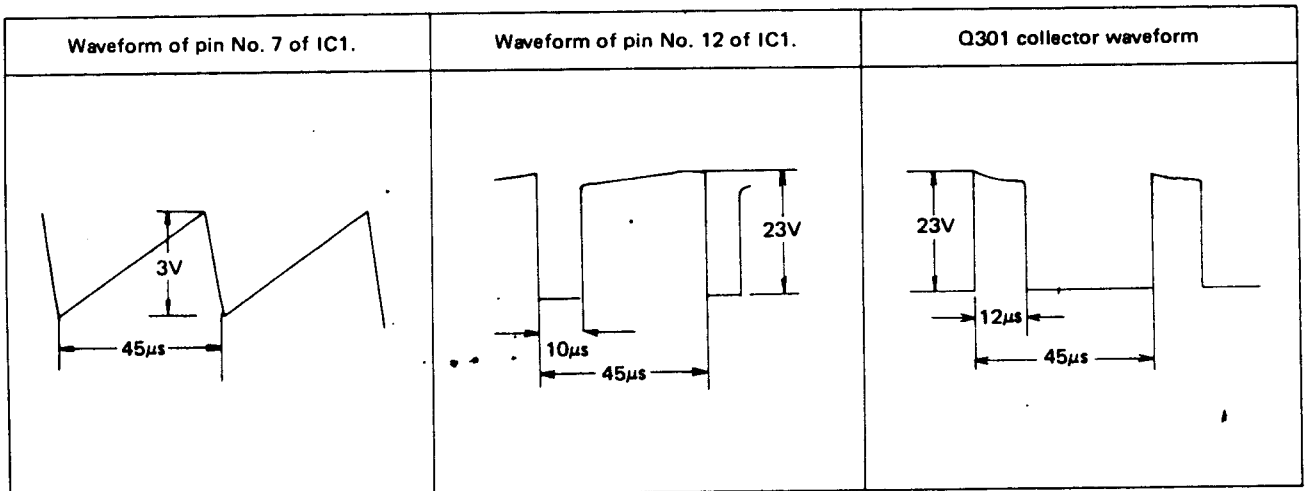
## Block Diagram of Power Supply Section



## Trouble Shooting Chart



## Waveforms of Each Parts



The figures shown above are based on the condition that a 1A load is attached to the 5-voltage terminal.

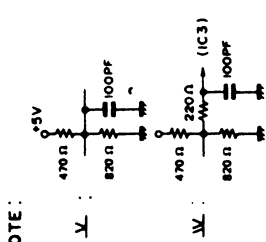
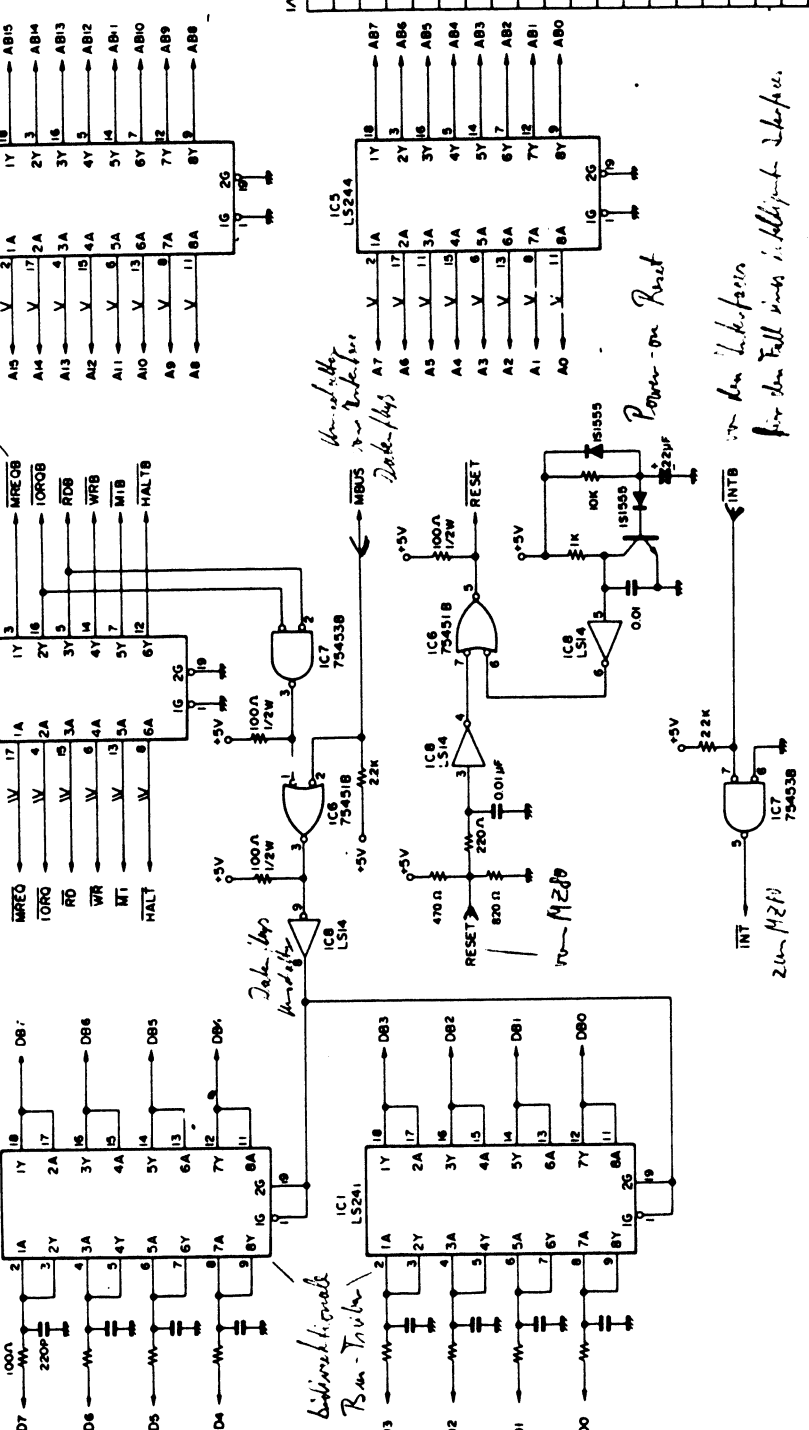
# CIRCUIT DIAGRAM AND PRINTED WIRING BOARD

## Mother Board Circuits

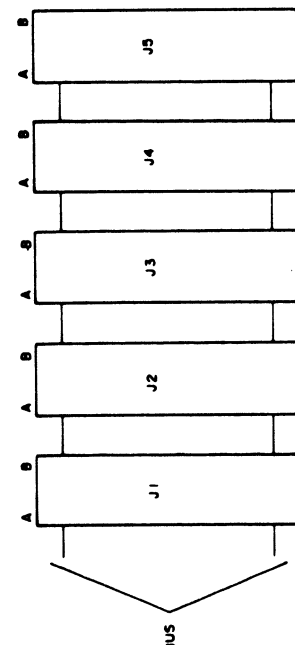
Bus-Treiber 10, 15, 5 - Tri-state  
 Bus-Treiber 10, 15, 5 - Tri-state  
 Bus-Treiber 10, 15, 5 - Tri-state

8-Bahn  
 8-Bahn  
 8-Bahn

bidirektional  
 Bus-Treiber



NOTE:



PERIPHERIAL I/O CONNECTOR

Mother Board Circuits

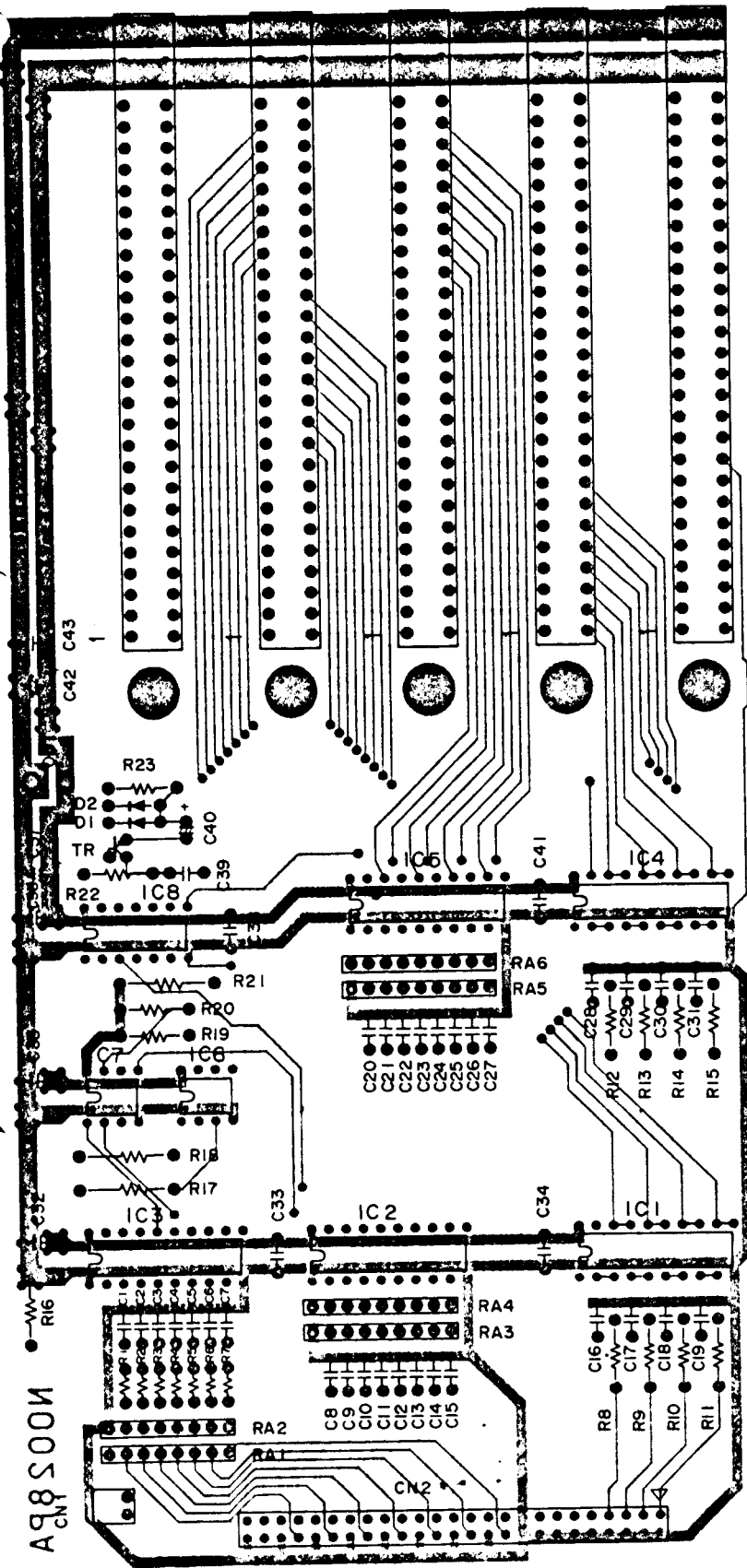
I/O CONNECTOR DETAIL		A	
B	A	B	A
DB7	1	AB7	18
DB6	2	AB6	19
DB5	3	AB5	20
DB4	4	AB4	21
DB3	5	AB3	22
DB2	6	AB2	23
DB1	7	AB1	24
DB0	8	AB0	25
GND	9	+5V	26
AB15	10	+5V	27
AB14	11	+5V	28
AB13	12	GND	29
AB12	13	GND	30
AB11	14	GND	
AB10	15	GND	
AB9	16	RESET	
AB8	17	MBUS	
AB7	18	INTB	
AB6	19	GND	
AB5	20	HALTB	
AB4	21	MTB	
AB3	22	WRB	
AB2	23	ROB	
AB1	24	TORB	
AB0	25	MRECOB	
	26		
	27		
	28		
	29		
	30		

A PART'S SIDE

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

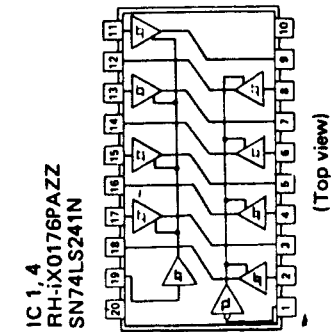
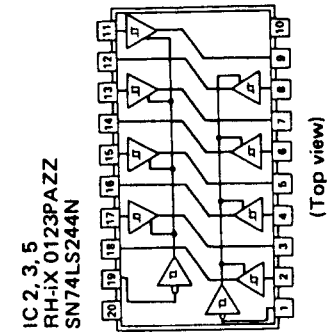
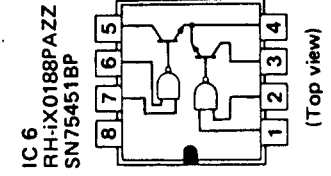
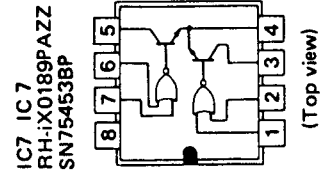
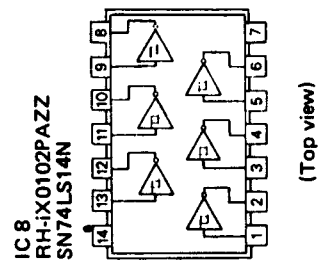
The circuit diagram subjects to change without prior notice.

■ Printed Wiring Board (Mother Board Section)

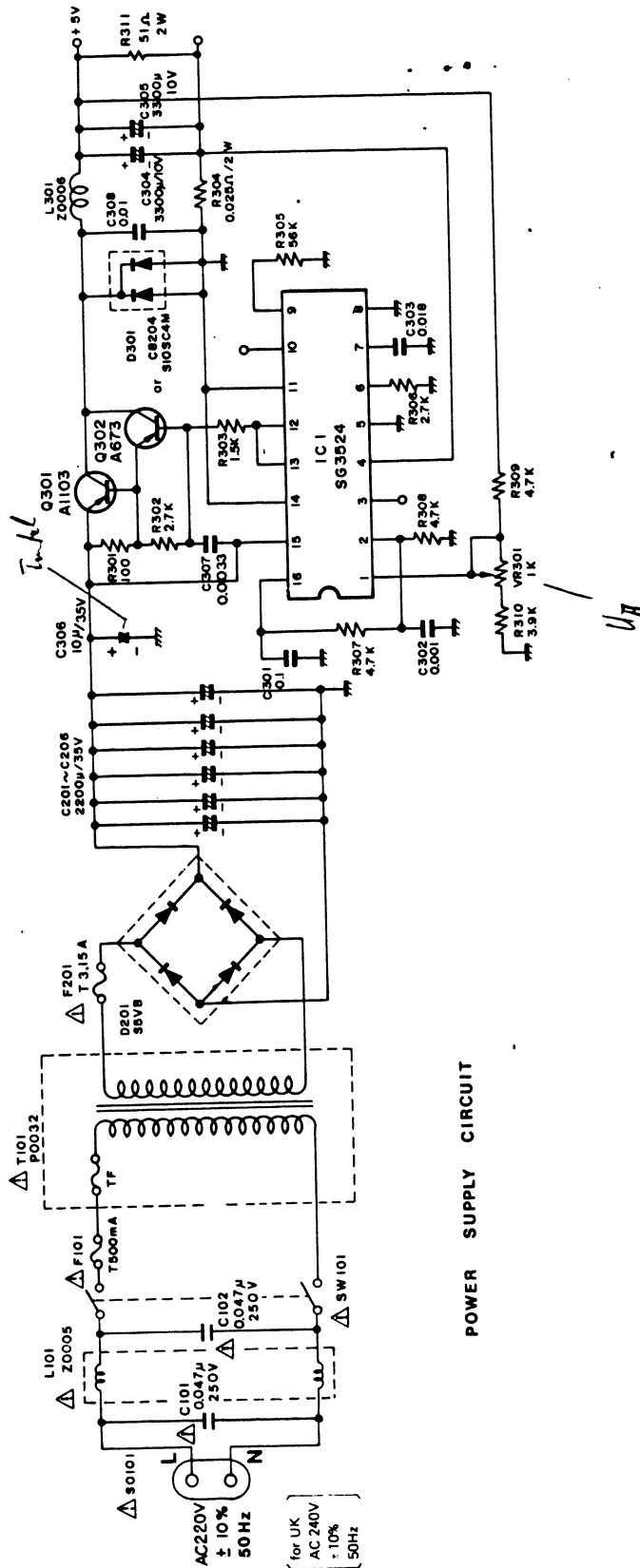


Perspective View

- Parts-fitted face
- Opposite side



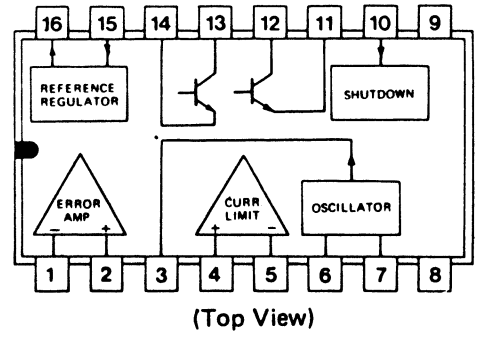
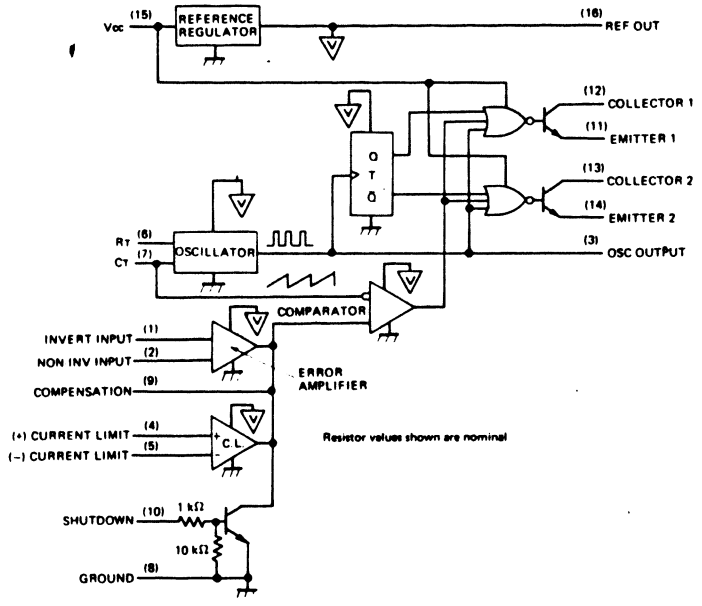
■ Power Supply Circuit







• IC 1. RH-iX0151PÄZZ SG3524



# 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

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

### MODEL MZ-8010

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
<b>*** MOTHER BOARD UNIT SECTION ***</b>				<b>CAPACITORS</b>			
	DPWB-0171PAZZ	Assembled Moter Board Unit (Not replacement item)	-	C1 } C6 } C8 } C15 } C20 }	VCCCPR1H3101J	100PF 50V Ceramic	AA
<b>INTEGRATED CIRCUIT</b>							
IC1 } IC4 }	RH-iX0176PAZZ	SN74LS241N	AS	C27 }			
IC2 } IC3 } IC5 }	RH-iX0123PASS	SN74LS244N	AS	C7 } C39 }	VCKZPU1HF103P	0.01MFD 50V Ceramic	AA
IC6 } IC7 } IC8 }	PH-iX0188PAZZ RH-iX0189PAZZ RH-iX0102PAZZ	SN75451BP SN75453BP SN74LS14N	AK AK AM	C16 } C19 } C28 }	VCCSPR1H6221J	220PF 50V Ceramic	AA
<b>TRANSISTORS AND DIODES</b>							
TR	VS2SC373G//1E	2SC373G	AC	C31 } C32 }			
D1 } D2 }	VHD1S1555//1A	1S1555	AB	C36 } C38 } C41 } C43 }	VCTYPU1BD104Z	0.1MFD 12V Ceramic	AB
<b>RESISTORS</b>							
RA1 } RA2 }	RR-KZ0052PAZZ RR-KZ0054PAZZ	Resistor Array 470 ohm x 7 Resistor Array 820 ohm x 7	AD AD	C37 } C42 }	VCSACU1AE336K VCSACU1AE226K	33MFD 10V Tantalum 22MFD 10V Tantalum	AF AE
RA3 } RA5 }	RR-KZ0055PAZZ	Resistor Array 820 ohm x 8	AD	C40 }			
RA4 } RA6 }	RR-KZ0053PAZZ	Resistor Array 470 ohm x 8	AD	<b>MISCELLANEOUS</b>			
R1 } R7 }	VRD-ST2EF221J	220 ohm 1/4W	AA	J1 } J5 }	QSÖCZ0015PAZZ	60-Pin Socket	AW
R8 } R15 }	VRD-ST2EF101J	100 ohm 1/4W	AA	CN1 } CN2 }	QPLGZ0028PAZZ DSÖCZ0003PAZZ	2-Pin Terminal for LED 50-Pin Socket with Flat cable	AC BQ
R16 } R17 }	VRD-ST2EF271J	270 ohm 1/4W	AA	1 }	DSÖCN0074PAZZ	3-Pin Socket with lead wire	AE
R18 } R21 }	VRD-ST2HF101J	100 ohm 1/2W	AA				
R19 } R20 }	VRD-ST2EF222J	2.2K ohm 1/4W	AA				
R22 } R23 }	VRD-ST2EF102J VRD-ST2EF103J	1K ohm 1/4W 10K ohm 1/4W	AA AA				
					<b>*** POWER SUPPLY UNIT SECTION ***</b>		
	DBÖXD0010PAZZ	Assembled Power supply Unit (Not replacement item)	-				

# PARTS LIST

REF. VO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE	
<b>INTEGRATED CIRCUIT</b>				<b>*** OTHER SECTION ***</b>				
IC1	RH-IX0151PAZZ	Regulator SG3524	AT					
<b>TRANSISTORS AND DIODES</b>				<b>DIODES</b>				
Q301	VS2SA1103//-1	2SA1103	AK	6	RH-PX0033PAZZ	LED	AD	
Q302	VS2SA673-C/IE	2SA673	AD	<b>MISCELLANEOUS</b>				
D201	VHDS5VB10//-1	S5VB10	AL	7	GCABC8030PASA	Cabinet	BA	
D301	VHDESAC8204-1	ESAC82-004 or VHDS10SC4M/-1	AP	8	GWAKP0003PASA	Front Frame	AV	
<b>RESISTOR</b>				9	PFTA-0003PASA	Cover	AQ	
R301	VRD-SU2EF101J	100 ohm 1/4W	AA	10	LCHSM0091PASA	Chassis	BD	
R302	VRD-SU2EF272J	2.7K ohm 1/4W	AA	11	DANG-0013PAZZ	Moter Board Fixing Angle	BD	
R306				12	PGUMS1006PAZZ	Rubber Bush	AE	
R303	VRD-SU2EF152J	1.5K ohm 1/4W	AA	13	GLEGR0001PAZZ	Foot	AB	
R304	RR-FZ0001PAZZ	0.025 ohm 2W	AE	<del>13 OACCK0050AFZZ A.C. Cord</del>				
R305	VRD-SU2EF563J	56K ohm 1/4W	AA	<del>14 OACCB0001PAZZ A.C. Cord (for UK)</del>				
R307	VRD-ST2EF472J	4.7K ohm 1/4W	AA	14	JBTN-0035PASA	Button	AE	
R309				15	LANGF0013PAZZ	Support Angle	AD	
R308	VRD-SU2EF472J	4.7K ohm 1/4W	AA	16	LANGQ0024PAZZ	Power Supply P.W.B. Fixing Angle	AS	
R310	VRD-SU2EF392J	3.9K ohm 1/4W	AA	17	PCUSG0005PAZZ	Cushion (A) 5 x 100 x t1.0	AA	
R311	VRS-PT3DB510J	51 ohm 2W	AB	18	PCUSG0006PAZZ	Cushion (B) 5 x 190 x t1.0	AB	
VR301	RVR-M0010PAZZ	Variable Resistor 1K ohm	AC	<del>18 TSPCE0008PAZZ Specification Panel</del>				
				<del>19 TSPCE0009PAZZ Specification Panel (for UK)</del>				
				TCAUE0002PAZZ Caution Card for Lever				AB
				19 PZETV0018PAZZ Insulator				AB
				20 PSPAK0003VAZZ LED Specer				AA
				21 DSÖCN0013PAZZ 2-Pin Socket with Lead Wire				AE
				22 QTANN0002PAZZ Ground Terminal				AH
				23 LANGQ0013PAZZ A.C. Switch Fixing Angle				AB
				24 LHLDLF0010PAZZ P.W.B. Holder				AF
				TINSE0008PAZZ Instruction Manual				AR
				<del>24 TLABH0002PAZZ Label for A.C. Cord (for UK)</del>				AC
				MLEVP0004PAZZ Lever for I/O card				AD
<b>CAPACITORS</b>								
<del>C101</del>	<del>RC-CZ0180 PAZZ</del>	<del>Line Capacitor PME271M547</del>	<del>AH</del>					
C201	VCEAAU1VM228M	2.200MFD 35V Aluminum	AG					
C206				C301	VCKYPU1NB104Z	0.1MFD 12V Ceramic	AB	
C302	VCQYKU1HM102K	0.001MFD 50V Mylar	AB					
C303	VCQYKU 1HM 183K	0.018MFD 50V Mylar	AB					
C304	VCEAAU1AM338M	3.300MFD 10V Aluminum	AF					
C305				C306	VCSACU1VE106M	10MFD 35V Tantalum	AE	
C307	VCQYKU1HM332K	0.0033MFD 50V Mylar	AB					
C308	VCQYKU1HM103K	0.01MFD 50V Mylar	AB					
<b>COILS AND TRANSFORMER</b>								
<del>L101</del>	<del>RTRNZ0005 PAZZ</del>	<del>Filter Coil</del>	<del>AL</del>					
L301	RTRNZ0006PAZZ	Choke Coil	AR					
<del>T101</del>	<del>RTRNP0032PAZZ</del>	<del>Main Transformer</del>	<del>AS</del>					
<b>MISCELLANEOUS</b>								
<del>F101</del>	<del>QFS-C0002PAZZ</del>	<del>Fuse Link T 500mA</del>	<del>AD</del>					
<del>F201</del>	<del>QFS-C0004PAZZ</del>	<del>Fuse Link T 3.15A</del>	<del>AD</del>					
	QFSHA0001PAZZ	Fuse Holder	AA					
<del>S0101</del>	<del>OSÖCA0001PAZZ</del>	<del>Appliance Inlet</del>	<del>AD</del>					
	QPNGN0303CEZZ	3-Pin Terminal for power supply	AB					
	2 PRDAR0020PAZZ	Radiation Plate	AQ					
	PRDAR0022PAZZ	Radiation Plate (for Diode S5VB10)	AD					
<del>S1010</del>	<del>OSIV-F0015PAZZ</del>	<del>Mains Switch</del>	<del>AL</del>					
	3 LANGK0271PAZZ	Inlet, Filter P.W.B. Fixing Angle	AG					
	4 LHLDLF0016PAZZ	P.W.B. Holder	AA					
	5 LHLDW9003CEZZ	Cord Fixer HW-146	AA					