



Instruction Manual

for

MULTI CHECKER

ELECTRICAL SPECIFICATIONS

Input Voltages : 90V, 100V, 110V, 120V, 210V, 220V, 230V, 240V AC
at 50/60HZ

Output Voltages: +5V DC(10A), +12V DC(1A), -5V DC(1A), -12V DC(1A)
+15V DC(1A), regulated

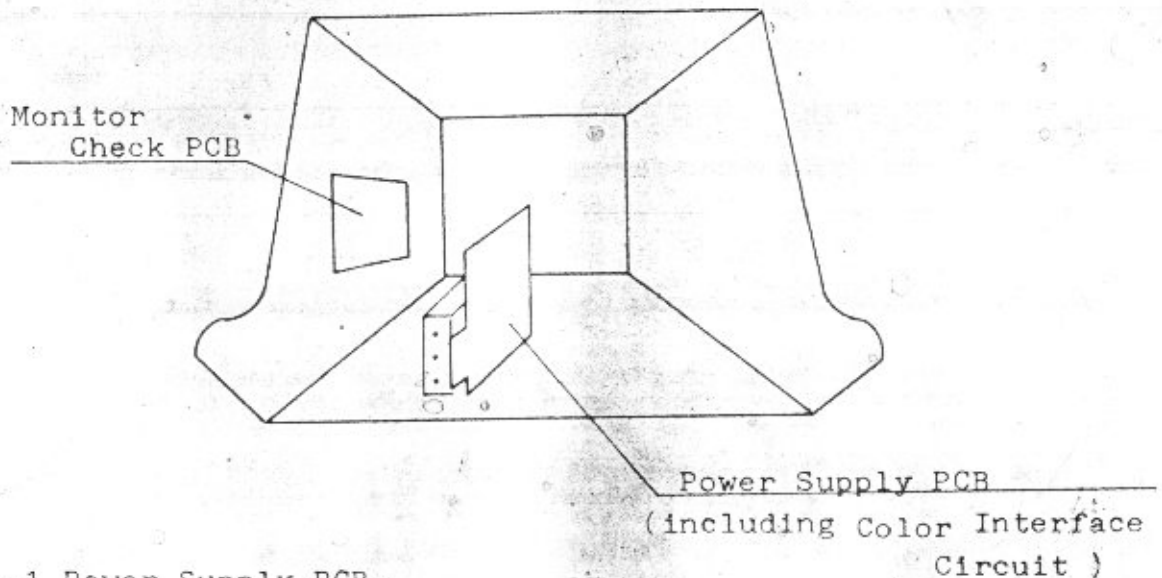
+10V DC(3A), +18V DC(1A), +24V DC(2A), +9V AC(3A)
unregulated

MHO70007

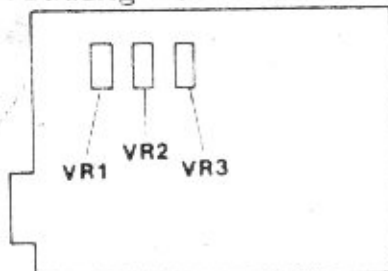
Caution for Installation:

Before plugging in the line cord, set the Line Voltage Selector according to the line voltage of the location.

1. Description of the switches and the pots on the PCB's installed in the cabinet of the Multi Checker.

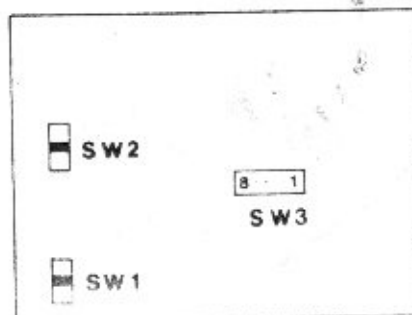


1-1 Power Supply PCB
(including Color Interface Circuit)



- o VR2 ... Pot for adjusting sync. signals
- o VR1&VR3 ... Pots for adjusting video signals

1-2 Monitor Check PCB



- o SW1 .. Power switch for the Monitor Check PCB (This switch should be set to the "OFF" position when the Monitor Check PCB is not used).
- o SW2 .. Switch for inverting the images on the screen
- o SW3 .. 8-position DIP switch for changing the test pattern and the colors.

2. Switch Settings on 8 - Position DIP switch (SW3)

- #1 }Switches for Changing colors
- #2 }
- #3 }
- #4"ON"-for adjusting the colors
 "OFF"-for adjusting the border line on the screen
- #5 - #8.Switches for Changing test patterns

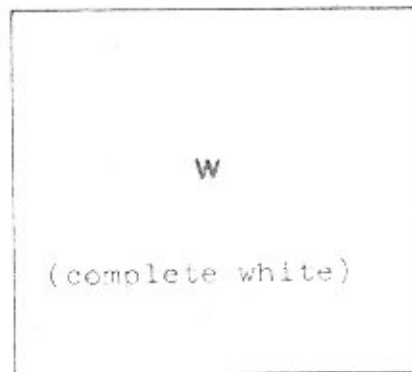
2-1 Switches Settings for Color Adjustments

- a)
- #1 — ON
 - #2 — ON
 - #3 — ON

W	CY	YE	G	MA	BL	R	W
CY	YE	G	MA	BL	R	W	CY
YE	G	MA	BL	R	W	CY	YE
G	MA	BL	R	W	CY	YE	G
MA	BL	R	W	CY	YE	G	MA
BL	R	W	CY	YE	G	MA	BL
R	W	CY	YE	G	MA	BL	R

- W — White
- CY — Cyan
- YE — Yellow
- G — Green
- MA — Magenta
- BL — Blue
- R — Red
- BK ---- Black

- b)
- #1 — ON
 - #2 — ON
 - #3 — OFF



- c)
- #1 — ON
 - #2 — OFF
 - #3 — ON

R	W
BL	CY
MA	YE
G	
YE	MA
CY	BL
W	R

(d)

#1 — ON
#2 — OFF
#3 — OFF

W
C Y
Y E
G
M A
B L
R

(e)

#1 — OFF
#2 — ON
#3 — ON

Y	C	W	B	R	B	M	G
E	Y		K		L	A	

(f)

#1 — OFF
#2 — ON
#3 — OFF

G	Y	C	W	B	R	B	M
	E	Y		K		L	A

(g)

#1 — OFF
#2 — OFF
#3 — ON

M	G	Y	C	B	W	R	B
A		E	Y	K			L

(h)

#1 — OFF
#2 — OFF
#3 — OFF

B	M	G	Y	C	W	B	R
L	A		E	Y		K	

2-2 Switch Settings for Changing Test Patterns

Test Patterns \ Switch NO.	#5	#6	#7	#8
a) Cross Hatch Pattern	OFF	OFF	OFF	
b) Horizontal Strips (small)	ON	OFF	OFF	
c) Vertical Strips (small)	OFF	ON	OFF	
d) Checkered Board (small)	ON	ON	OFF	
e) "TAITO" and border line	OFF	OFF	ON	OFF
f) Cross	OFF	OFF	ON	ON
g) Horizontal strips (large)	ON	OFF	ON	
h) Vertical Strips (large)	OFF	ON	ON	
i) Checkered Board (large)	ON	ON	ON	

3. Description of Front Panel Section

3-1 Potentiometers (indicated "VR-R1", "VR-R2", "VR-L1" and "VR-L2")

Four potentiometers with different values can be used as required: 5K, 20K, 30K and 100K.

3-2 Optional Switches

Twenty-one pushbutton switches(SW1-SW21) and two rotary switches (A and B) can be used if necessary. All of the switches are connected to the connectors mounted on the side panel.

3-3 Lamps

The lamps L-1 to L-9 operate at 12V DC, L-10 to L-15 at 5V DC, and L-22 and L-23 at 24V DC.

The lamp brackets L-16 to L-21 are provided for optional uses.

3-4 Toggle Switch (indicated "POWER", "VOLTAGE" and "VIDEO POWER")

"POWER" ... Switch for main power supply

"VOLTAGE" ... Switch for LOW-HIGH line voltage selection

" VIDEO POWER" ...Switch for monitor power supply

3-5 Steering Wheels (indicated "PULSE-R" and "PULSE-L")

Shift Levers (indicated "SHIFT-R" and "SHIFT-L")

and control levers (indicated "JOYSTICK-R" and "JOYSTICK-L")

4. Description of Side Panel Section

4-1 Connectors

Thirty connectors are provided for the connections between the Multi Checker and the PCB's to be tested.

4-2 Optional Voltage Terminals

+5, +12 and -5 volts can be obtained from these terminals.

4-3 Line Voltage Selector

According to the line voltage of the location, 100, 120, 220, and 240V AC are selectable by means of this selector. Also the Multi Checker can be set for the line voltages of 90, 110, 210 or 230V AC by using the "VOLTAGE" switch on the front panel.

4-4 "VIDEO SOURCE" Change-over Switch

Set the switch to the "COLOR" or the "MONOCROME" position according to the PCB's to be tested.

4-5 "SPEAKER SOURCE" Change-over Switch

Set the switch to the "TV-AMP" Position if the PCB's to be tested are not equipped with SOUND MAIN AMP and set to the "SOUND AMP" position if the PCB's to be tested have SOUND MAIN AMP.

4-6 "SOUND" pot

This pot controls sound Volume when the "SPEAKER SOURCE" change-over switch is set to the "TV-AMP" position.

4-7 "HORZ ADJ" Switch

"ON" ... Horizontal adjustment can be made by the "HORZ ADJ" pot.

"OFF" ... This adjustment can not be made.

4-8 "HORZ ADJ" pot

When the "HORZ ADJ" switch is set to the "ON" position, the horizontal adjustment can be made by this pot.

4-9 "VIDEO MONITOR" Switch

ON ... The signals from the Monitor Check PCB will
be sent to the monitor.

OFF ... The signals will be cut off.

4-10 Service Outlet

Rating: 125V. 6A

* "SUPER SPEED RACE (CL-5)"

1. "EC-CHECK HARNESS" is to be used as the external cable harness.
2. Settings for the switches on the side panel are as follows.

VIDEO SOURCE SW - COLOR

SPEAKER SOURCE SW - SOUND AMP

VIDEO MONITOR SW - OFF

HORZ ADJ SW - ON

HORZ ADJ VR - to be adjusted so that the images will be in the center of the screen.

3. Assignments for the control switches on the front panel are as follows:

Steering Wheel - Use the left side one.

Shifter - Use the right side one.

Accelerator - Use the VR - VR2 .

Game-over Lamp - Use the L-1 (12 VOLT) lamp.

* "FIELD GOAL"

1. "TF-CHECK HARNESS" is to be used as the external cable harness.
2. Settings for the switches on the side panel are as follows:

VIDEO SOURCE SW - COLOR

SPEAKER SOURCE SW - SOUND AMP

VIDEO MONITOR SW - OFF

HORZ ADJ SW - ON

HORZ ADJ VR - to be adjusted so that the images will be in the center of the screen.

3. Assignments for the control switches on the front panel are as follows:

Paddle Moving Pot - Use the pot located on the lower right side.

* "SPACE INVADERS PART II "

(This can be used for both CV and TV versions.)

T.T Version :

1. "PV-CHECK HARNESS" is to be used as the external cable harness.
2. Settings for the switches on the side panel are as follows.

VIDEO SOURCE SW - COLOR

SPEAKER SOURCE SW - SOUND AMP

VIDEO MONITOR SW - OFF

HORZ ADJ SW - ON

HORZ ADJ VR - to be adjusted so that the images will
be in the center of the screen.

3. Assignments for the control switches on the front panel are as follows:

JOYSTICK (RIGHT) - JOYSTICK for 1-player

JOYSTICK (LEFT) - JOYSTICK for 2-player

FIRE (R) - FIRE SW for 1-player

FIRE (L) - FIRE SW for 2-player

START - NAME RESET SW

Upright Version :

1. Same as that of T.T Version except that only the switches on the 1-Player side are used.

* "SPACE CHASER"

T.T Version :

1. "RT-CHECK HARNESS" is to be used as the external cable harness.

2. Settings for the switches on the side panel are as follows:

VIDEO SOURCE SW - COLOR

SPEAKER SOURCE SW - SOUND AMP

VIDEO MONITOR SW - OFF

HORZ ADJ SW - ON

HORZ ADJ VR - to be adjusted so that the images will
be in the center of the screen.

3. Assignments for the control switches on the front panel are
follows:

JOYSTICK (RIGHT) - JOYSTICK for 1-player

JOYSTICK (LEFT) - JOYSTICK for 2-player

FIRE (R) - ENERGY SW for 1-player

FIRE (L) - ENERGY SW for 2-player

START - NAME RESET SW

L-- 1 (12 -Volt Lamp) - for checking the coin
Lockout Coil.

Upright Version :

1. The external cable harness to be used and the settings for
the switches on the side panel are the same as those of
T.T Version.

2. As to the control switches on the control panel, only the
switches on the 1-Player side are used.

* "STRIGHT FLASH"

1. "FT-CHECK HARNESS" is to be used as the external cable harness.
2. Settings for the switches on the side panel are as follows.

VIDEO SOURCE SW - COLOR

SPEAKER SOURCE SW - SOUND AMP

VIDEO MONITOR SW - OFF

HORZ ADJ SW - ON

HORZ ADJ VR - to be adjusted so that the images will be in the center of the screen.

3. Assignments for the control switches on the front panel are as follows:

Paddle Moving Pot - Use the pot located on the lower right side.

Serve Button (1-P)- SW1

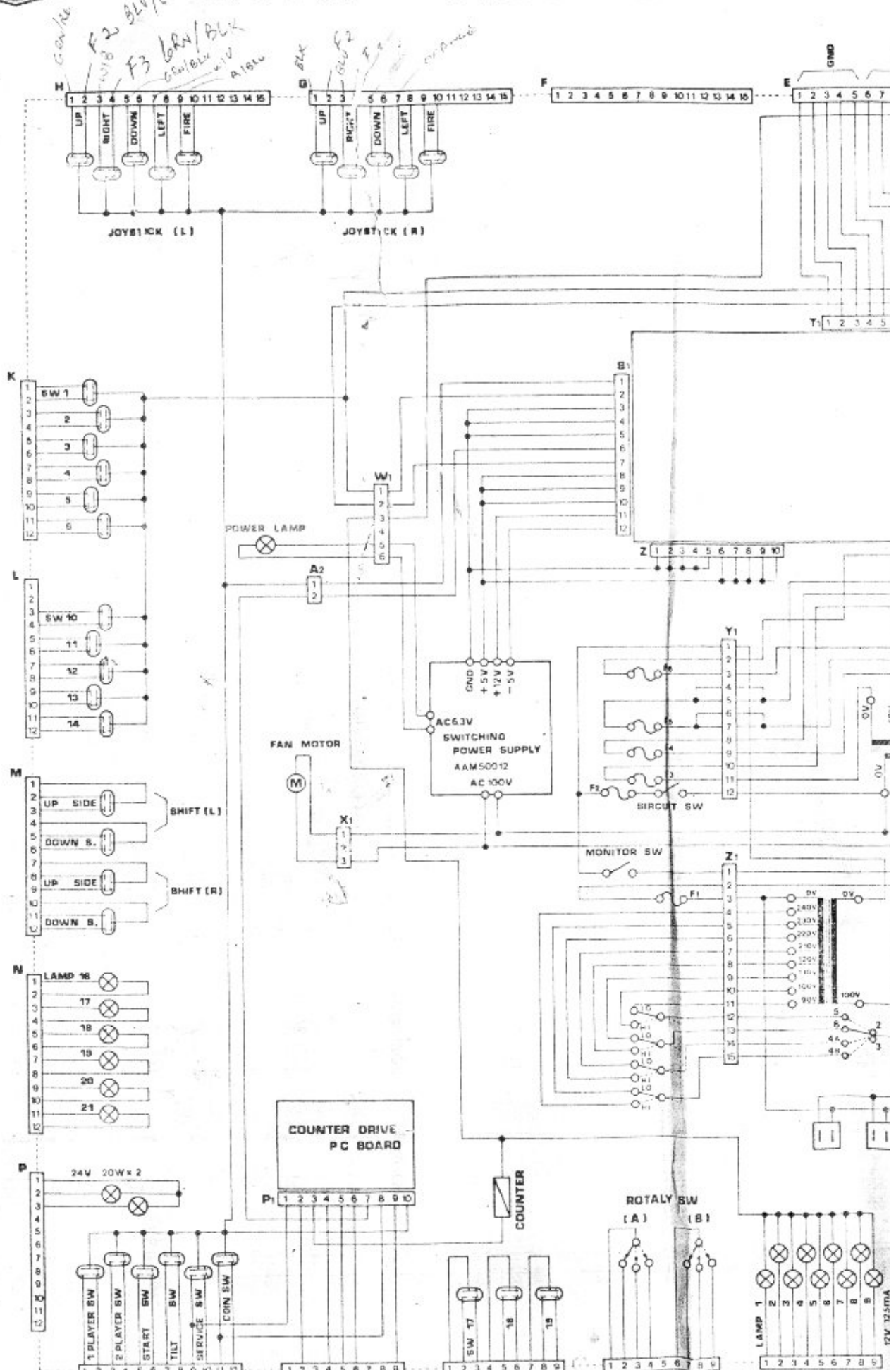
Serve Button (2-P)- SW2

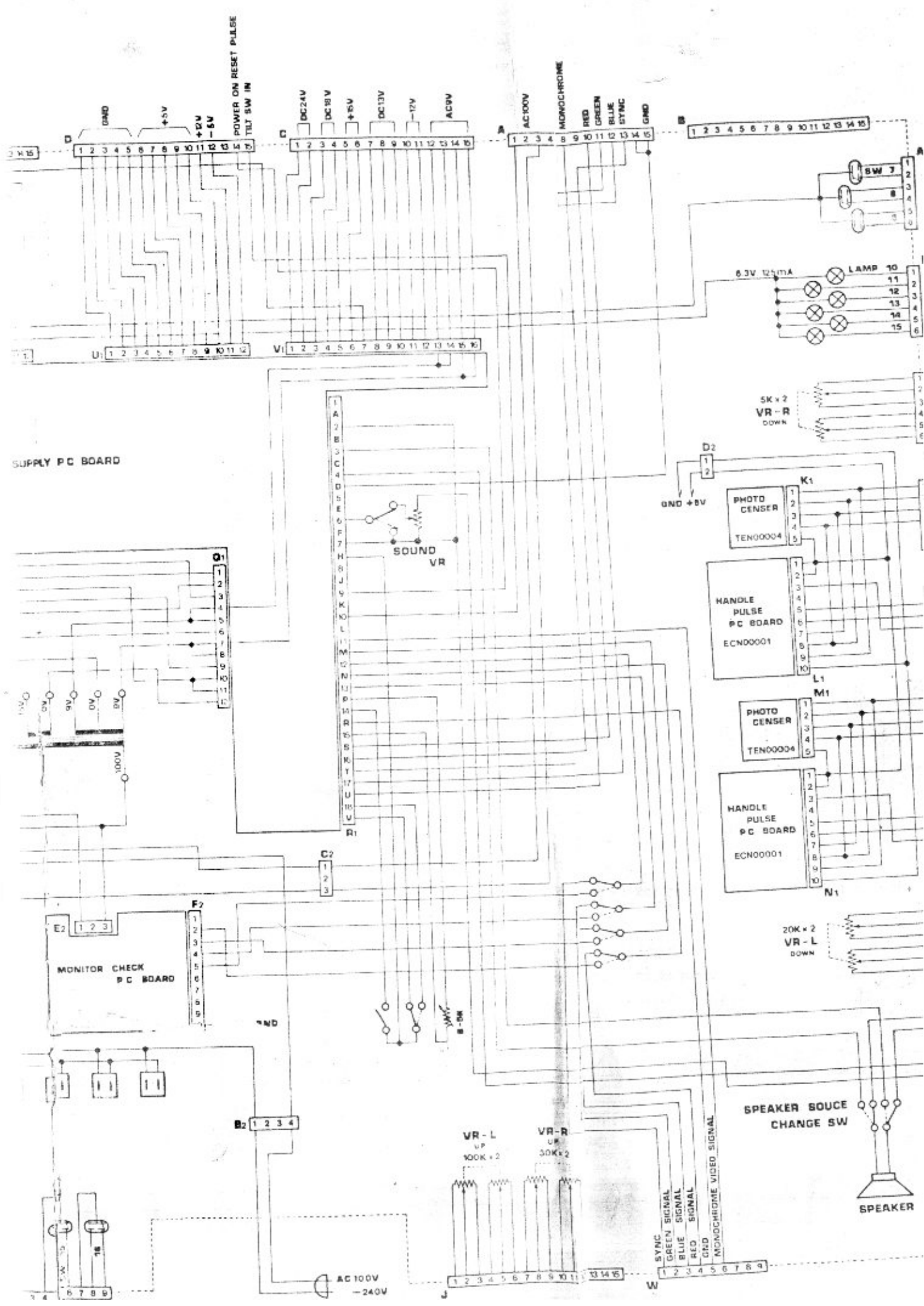
COIN LOCKOUT COIL - L-1 (12- Volt Lamp)

NAME RESET SW - START SW is corresponded.



MULTI CHECKER





SUPPLY PC BOARD

MONITOR CHECK PC BOARD

HANDLE PULSE PC BOARD ECN00001

PHOTO CENSER TEN00004

HANDLE PULSE PC BOARD ECN00001

SPEAKER SOURCE CHANGE SW

SPEAKER

SOUND VR

VR-L UP 100K x 2

VR-R 30K x 2

MONITOR CHECK PC BOARD

PHOTO CENSER TEN00004

PHOTO CENSER TEN00004

HANDLE PULSE PC BOARD ECN00001

SPEAKER SOURCE CHANGE SW

SPEAKER

SOUND VR

VR-L UP 100K x 2

VR-R 30K x 2

MONITOR CHECK PC BOARD

PHOTO CENSER TEN00004

PHOTO CENSER TEN00004

HANDLE PULSE PC BOARD ECN00001

SPEAKER SOURCE CHANGE SW

SPEAKER

SOUND VR

VR-L UP 100K x 2

VR-R 30K x 2

MONITOR CHECK PC BOARD

PHOTO CENSER TEN00004

PHOTO CENSER TEN00004

HANDLE PULSE PC BOARD ECN00001

SPEAKER SOURCE CHANGE SW

SPEAKER