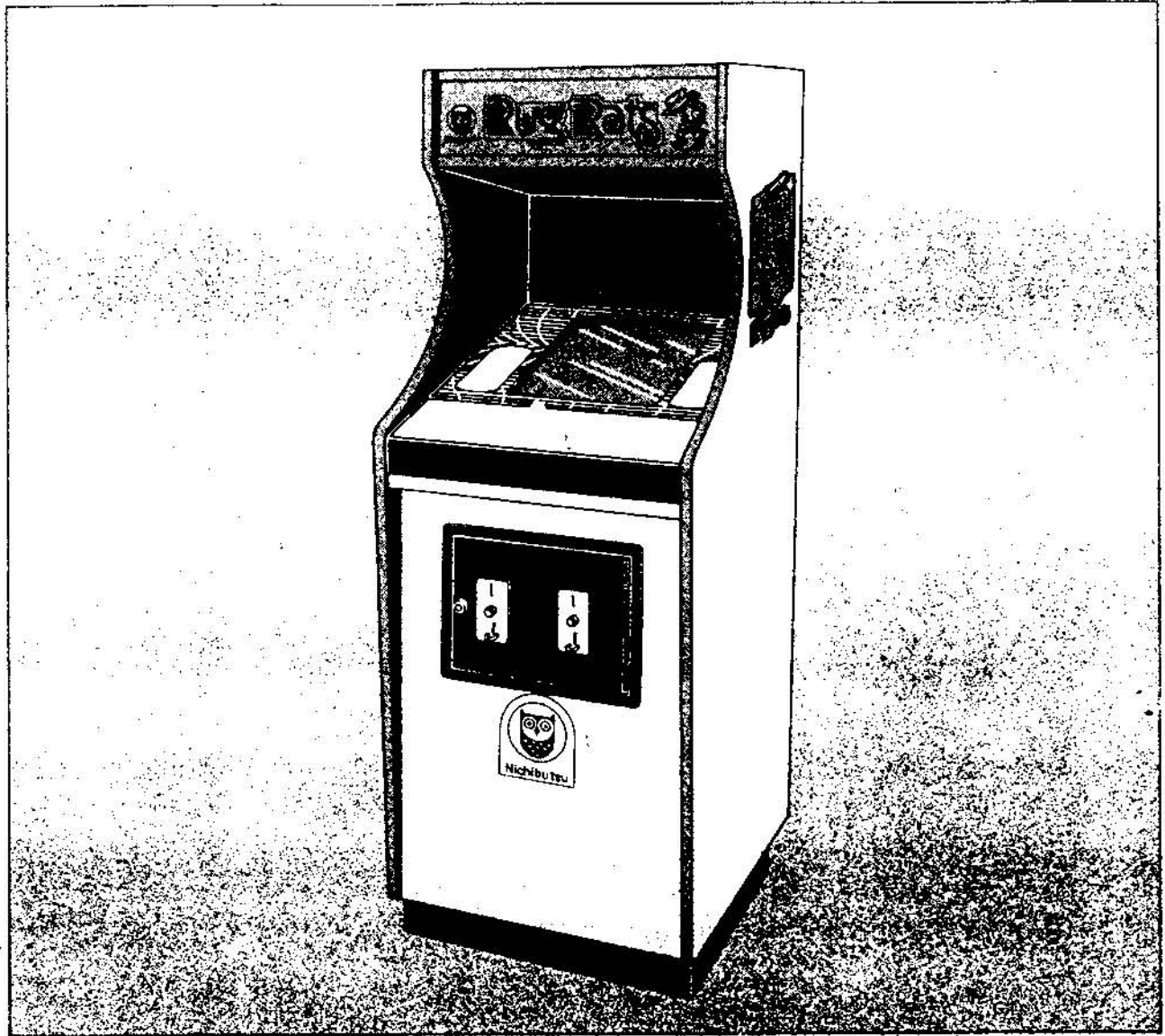


# RUG RATS<sup>TM</sup>

## INSTRUCTION



**Nichibutsu**

1. LICENSE SEAL

The "RUG RATS" is the trade mark and the copyright of Nihon Bussan Co., Ltd. (Nichibutsu)

The license seal can be displayed on the game machine as FIGURE 1. It is essential for the license seal to be visible but use caution not to be peeled away and lose the identity of the board. Nichibutsu issued only one license seal per each board sold and no duplicates will ever be made.

Put the seal on the back of the little window provided on our marquee or on the back of any clear glass or plastic overlay that you might be using.

PLACE LISENCE SEAL  
HERE.

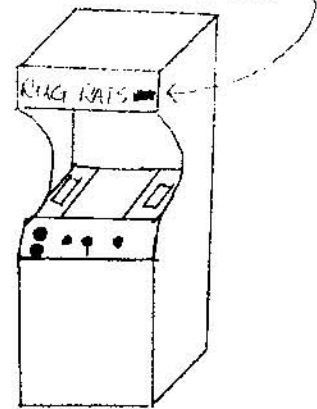


FIGURE 1

2. POWER REQUIREMENTS

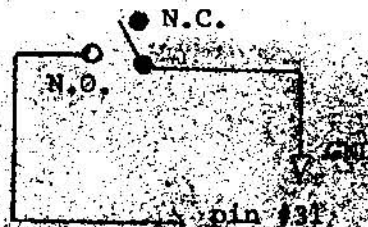
The P.C.Board requires a power supply of  
+5V 2A (+5%) for game logics,  
+12V 1A (+10%) for audio IC only.

3. CONTROL PANEL SECTION

A 4-way joystick and a shoot button are required. RUG RATS will not work properly with a 8-way joystick.

4. COIN SELECTOR WIRING

A coin selector switch may be connected to either pin 32 (coin 1) or pin 31 (coin 2)

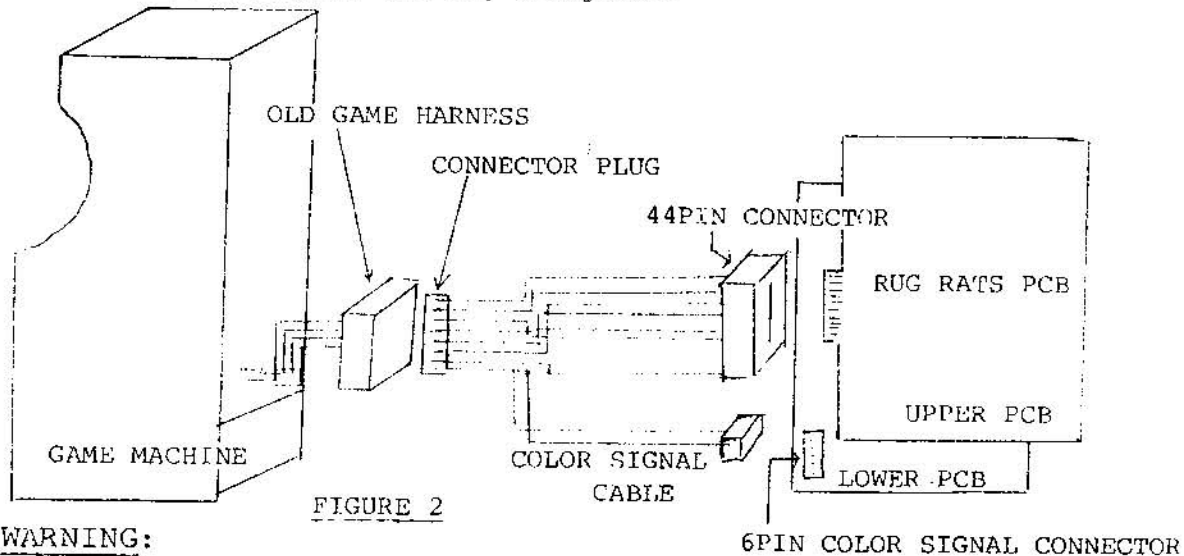


5. HARNESS

RUG RATS KIT comes with one connector plug for your convenience when converting it on other game machines.

- 1) Cut the connector-plug as needed, so that it can plug into your game machine connector.
- 2) Insert the connector-plug into your own game connector and using a pencil to mark "R", "L", "+5", etc..... according to signal at the pin on the connector.
- 3) Connect the connector-plug and 44-pin connector of RUG RATS with wires. (FIGURE 2)

Pin Marked "L" will be connected to pin #15 of RUG RATS' connector.  
" " "R" " " " to pin #16 " "  
etc.....(See wiring diagram)



WARNING:

Wiring of the harness that supplies the power (+5V, +12V) to the P.C. Board must be connected as specified, or else, damage may occur.

Before inserting a RUG RATS P.C.B. into the connector, check the voltage of these pins carefully.

Pin #1,2,3,4,41,42,43,44 = GND (0V)

Pin #5,6,7,8,37,38,39,40 = + 5V

Pin #8,9 = +12V

to connect R.G.B. and SYNC signals directly from the lower P.C. Board to the harness or to the TV Monitor directly

Pin No	Signal
1.	RED
2.	BLUE
3.	GREEN
4.	SYNC
5.	GND
6.	N.C.

TV monitor has to be equipped with TTL input level. TV monitor must be placed vertical. RUG RATS P.C. Board is designed to be used with "1-SYNC" signal monitor.

However, if your TV monitor is a "2-SYNC" signals one, please connect as dash line in FIGURE 3.

Then, pin #4 = V SYNC  
pin #6 = H SYNC

On some kinds of monitors, it is necessary:

- \* To add 2 resistors to fit the input impedance of the monitor (FIGURE 4)
- \* To turn the picture tube 180 degrees if the screen is displayed up-side-down.

7. THE KITS INCLUDE:

- |    |                    |      |
|----|--------------------|------|
| A. | Instruction        | 1pc  |
| B. | License Seal       | 1pc  |
| C. | Marquee            | 1pc  |
| D. | "How to play" card | 2pcs |
| E. | Z-Bracket          | 4pcs |
| F. | Color Signal Cable | 1pc  |
| G. | 44-pin Connector   | 1pc  |
| H. | Connector Plug     | 1pc  |

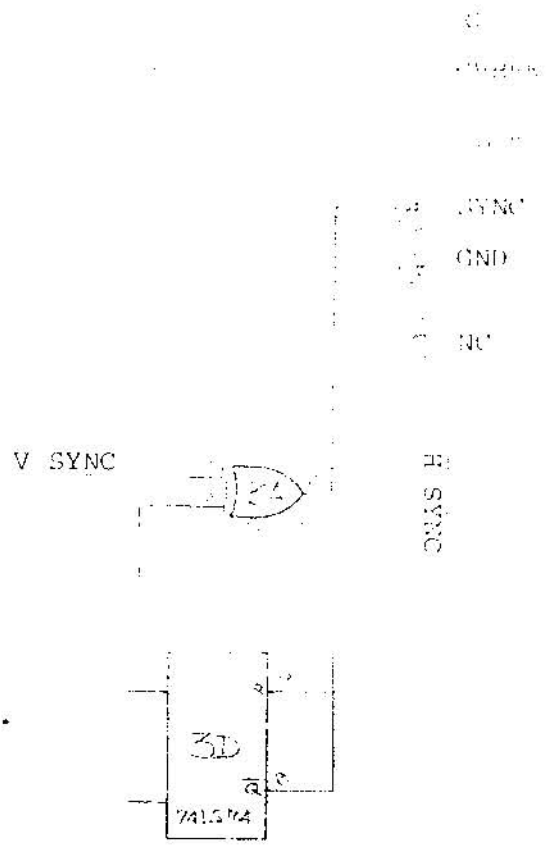


FIGURE 3.

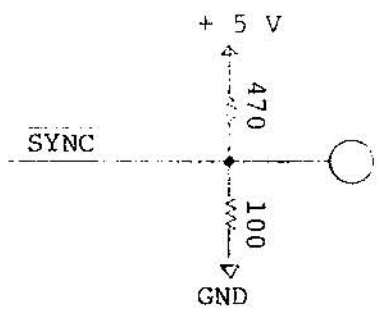


FIGURE 4.

44p CN  
upper PCB

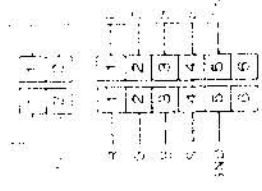
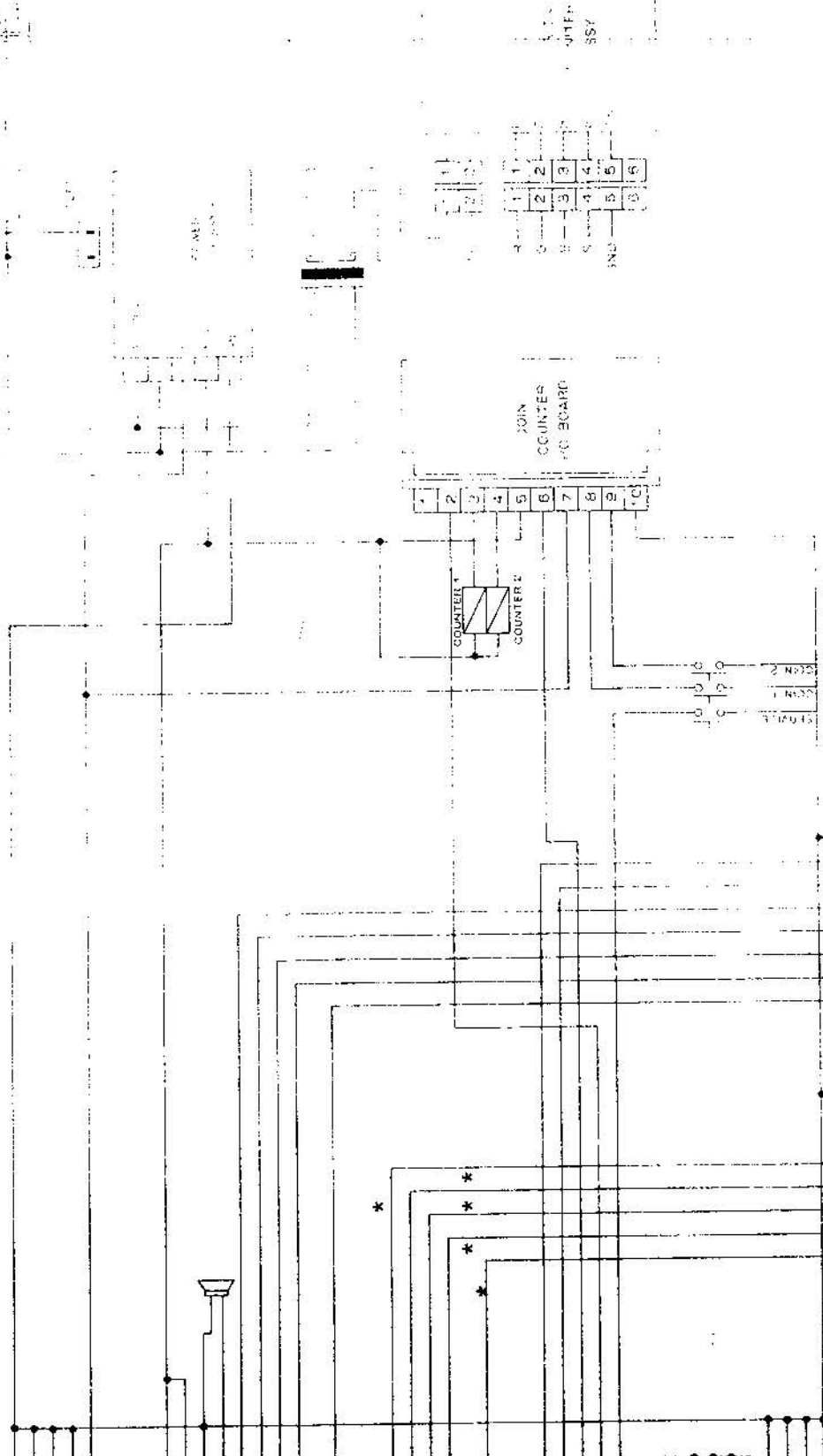
1	GND
2	GND
3	GND
4	GND
5	+5V
6	+5V
7	+5V
8	+5V
9	+12V
10	+12V
11	SP(-)
12	SP(+)
13	IP DOWN
14	IP UP
15	IP LEFT
16	IP RIGHT
17	IP FIRE
18	IP FIRE
19	IP FIRE
20	IP FIRE
21	2P DOWN
22	2P UP
23	2P LEFT
24	2P RIGHT
25	2P FIRE
26	2P FIRE
27	2P FIRE
28	2P FIRE
29	2P SELECT
30	2P SELECT
31	COIN 1
32	COIN 2
33	SER MCR
34	SER MCR
35	SER MCR
36	SER MCR
37	+5V
38	+5V
39	+5V
40	+5V
41	GND
42	GND
43	GND
44	GND

6p CN  
lower PCB

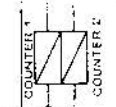
1	RED
2	GREEN
3	BLUE
4	SYNC
5	GND
6	GND

1	2P FIRE
2	2P RIGHT
3	2P LEFT
4	2P UP
5	2P DOWN
6	GND

1	IP FIRE
2	IP RIGHT
3	IP LEFT
4	IP UP
5	IP DOWN
6	IP SELECT
7	IP SELECT
8	GND



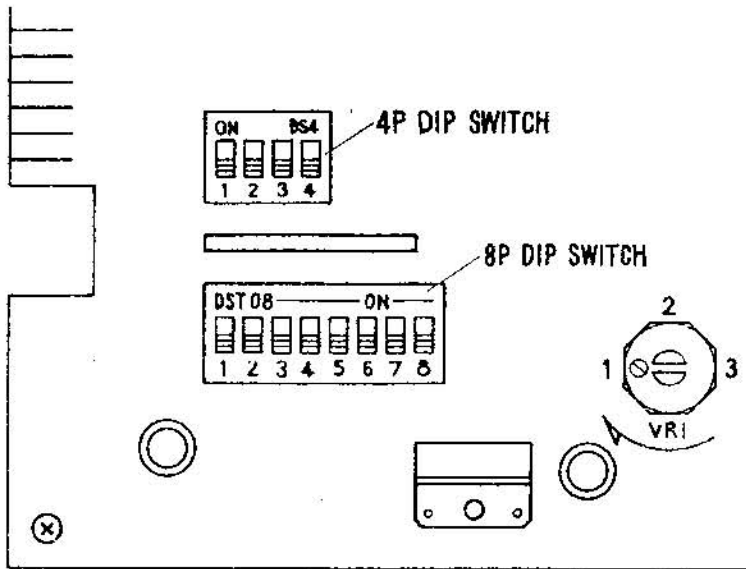
COIN  
COUNTER  
PC BOARD



NIMON GUSSAN CO., LT

2P. connections  
\*for cocktail table  
\*N.C. for upright

# ADJUSTMENTS



## 4P DIP SWITCH

OPTION	DIP SWITCH NUMBER			
	1	2	3	4
TABLE			OFF	OFF
UPRIGHT			ON	OFF
TEST		ON		OFF
NORMAL		OFF		OFF
BONUS POINTS 100000 & 200000	OFF			OFF
BONUS POINTS 150000 & 300000	ON			OFF

## 8P DIP SWITCH

OPTION	DIP SWITCH NUMBER							
	1	2	3	4	5	6	7	8
FREE PLAY					OFF	OFF	OFF	
COIN CELECTOR 1					ON	OFF	OFF	
COINAGE					OFF	ON	OFF	
					ON	ON	OFF	
					OFF	OFF	ON	
					ON	OFF	ON	
					OFF	ON	ON	
					ON	ON	ON	
COIN CELECTOR 2			OFF	OFF				ON
COINAGE			OFF	ON				OFF
			OFF	ON				ON
			ON	OFF				OFF
			ON	OFF				ON
			ON	ON				OFF
			ON	ON				ON
NUMBER of CLEANERS		2 cleaners	OFF	OFF				
		3 cleaners	OFF	ON				
		4 cleaners	ON	OFF				
		5 cleaners	ON	ON				

## V.R.I.

V.R. for the adjustment of sound volume. It will become smaller in turning it to arrow mark.



# Nichibutsu

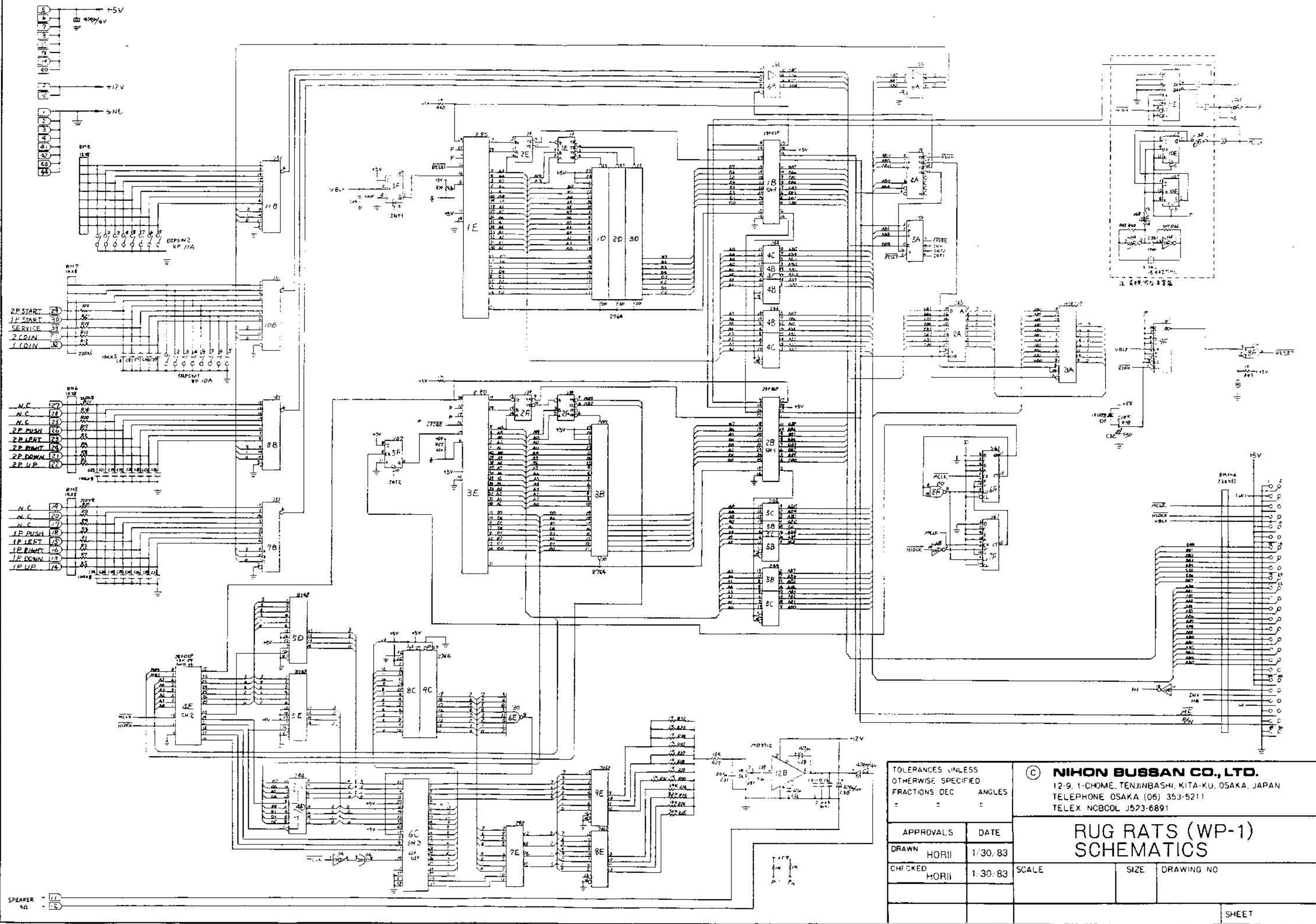
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APPROVALS	DATE	SCALE		SIZE	DRAWING NO
DRAWN HORII	1/30/83				
CHECKED HORII	1/30/83				
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