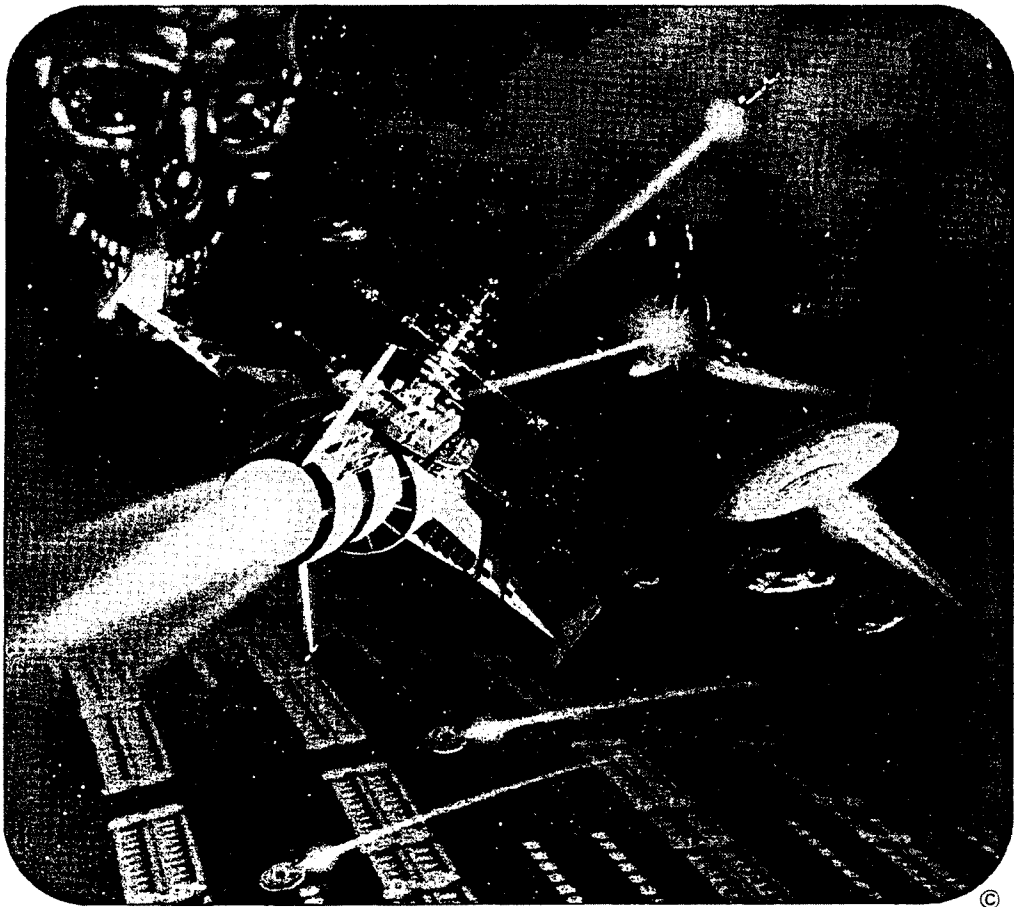


CONVERSION KIT
INSTRUCTION MANUAL

SKELAGON

TM



Nichibutsu
Nichibutsu U.S.A. Corp.



1 LICENSE SEAL

The license seal can be displayed on the game machine as FIGURE 1. The license seal must be visible. Use caution so that the seal may not be peeled away thus losing the identity of the P.C. Board. Nichibutsu issues only one license seal for 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.

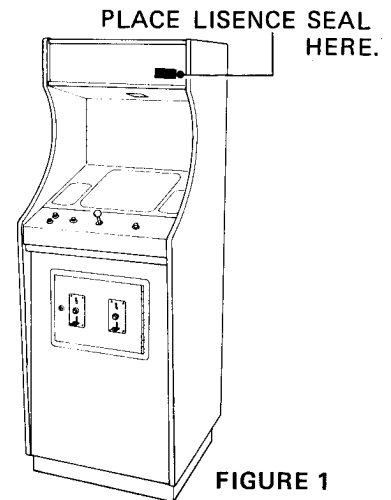


FIGURE 1

2 POWER REQUIREMENTS

The P.C. Board requires a power supply of

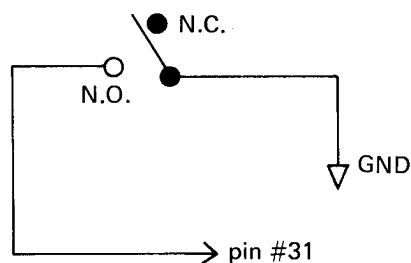
- + 5 V 3 A ($\pm 5\%$) for game logics
- 5 V 1 A ($\pm 5\%$) for game logics
- + 12 V 1 A ($\pm 10\%$) for audio IC only

3 CONTROL PANEL SECTION

A 8-way joystick and 2 shoot buttons (left & right) are required. SKELAGON will not work properly with a 4-way joystick.

4 COIN SELECTOR WIRING

A coin selector switch may be connected to either pin 19 (coin 1) pin 20 (coin 2)



5 CONNECTOR PLUG

- 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.
Use a pencil and mark "R", "L", "+5" etc. according to signal at the pin on the connector.
- 3) Connect the connector-plug and 36-pin connector of SKELAGON with wires. (FIGURE 2)
Pin Marked "L" will be connected to pin # 16 of SKELAGON connector.
Pin Marked "R" will be connected to pin # 15 of SKELAGON connector etc. (See wiring diagram)

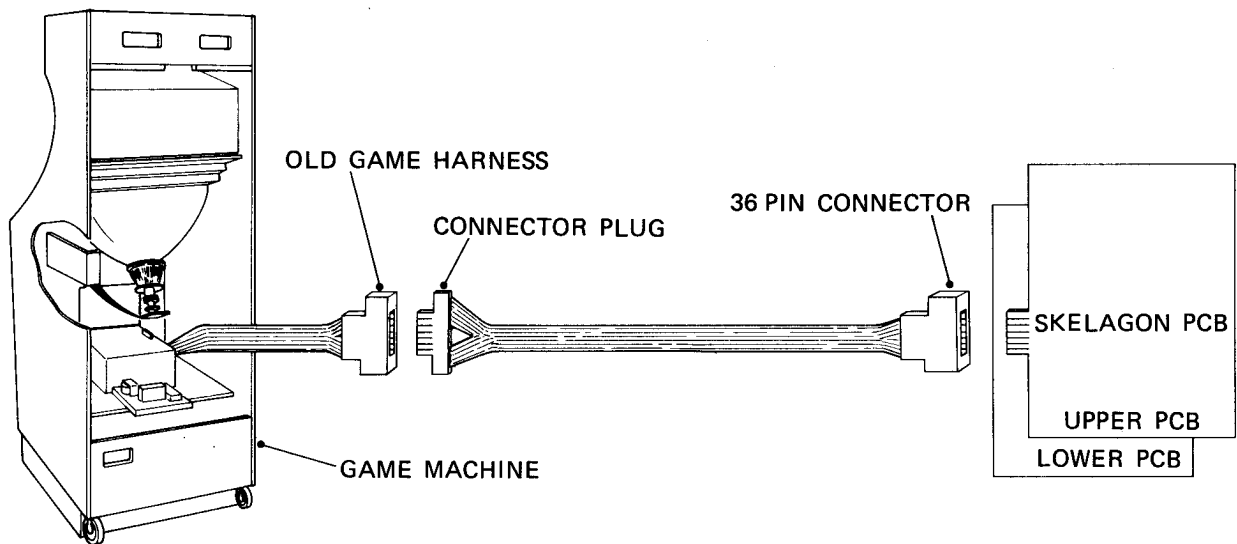


FIGURE 2

WARNING:

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

Before plug the P.C.B into the connector, apply power without P.C. Borad and check the voltage of these pins carefully.

Pin # 29, 30, 31, 32	= GND (0V)
Pin # 33, 34, 35, 36	= +5V
Pin # 2	= +12V
Pin # 1	= -5V

6 DIP SWITCH

SW 1 and SW 2 have been set as shown (FIGURE 3). Please don't attempt to change these Switch settings.

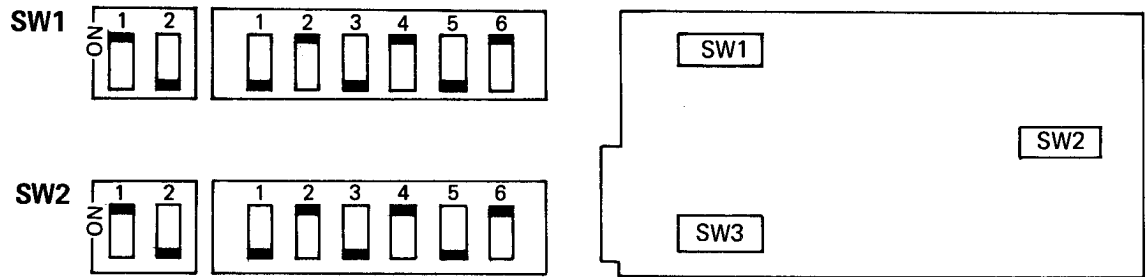
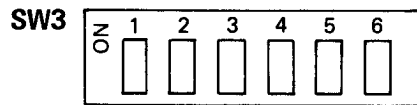


FIGURE 3

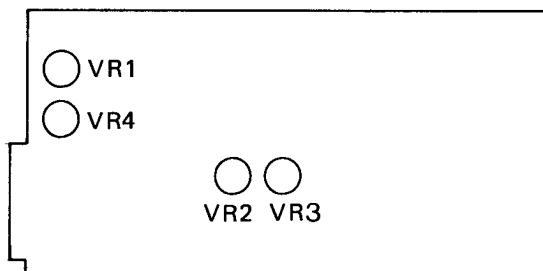
Only SW 3 is used for various optional setting by operator.



		1	2	3	4	5	6
Demonstration Sound	ON	OFF					
	OFF	ON					
Number of Ships	3	OFF		ON			
	4	ON		OFF			
	5	ON		ON			
	FREE	OFF		OFF			
Upright Type		ON					
Table Type		OFF					
1 Coin 1 play						OFF	OFF
2 Coins 1 play						ON	OFF
1 Coin 2 plays						OFF	ON
3 Coins 1 play						ON	ON

7 SOUND

There are three volumes that control the sound.



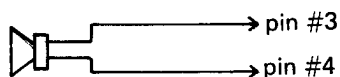
VR 1: Volume of the whole sound

VR 2: Sound of explosions

VR 4: Shooting Sound, Flying sound, music

FIGURE 4

CAUTION:



Two wires from the speaker must be connected to pin #3 and pin #4. Both of them are isolated with GND.

8 TV MONITOR

Monitor must be placed horizontal and equipped with TTL input level.

9 THE KITS INCLUDE

A. Technical Instruction	1 pc
B. License Sticker	1 pc
C. Marquee	1 pc
D. Playing Instruction Card	1 pc
E. P.C.B. Mounting Z-Bracket	4 pcs
F. 36-pin edge connector	1 pc
G. Connector-plug	1 pc
H. Print Circuit Board	1 pc

10 THE SCREEN DISPLAY UPSIDE-DOWN OR BACKWARDS

Four wires are attached to the monitor deflection yoke. Two for the horizontal control, and other two for the vertical control. When the picture is upside down, disconnect the two horizontal wires and swap the connection. When the picture is backwards, disconnect the two vertical wires and swap the connection. See figure 5a and 5b.

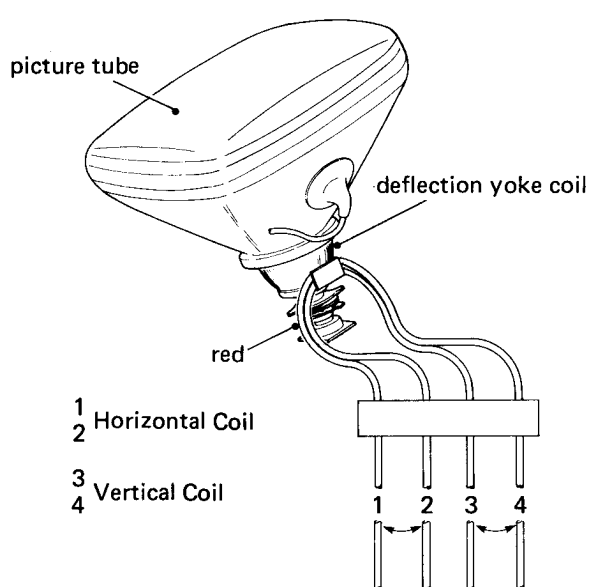


FIGURE 5a

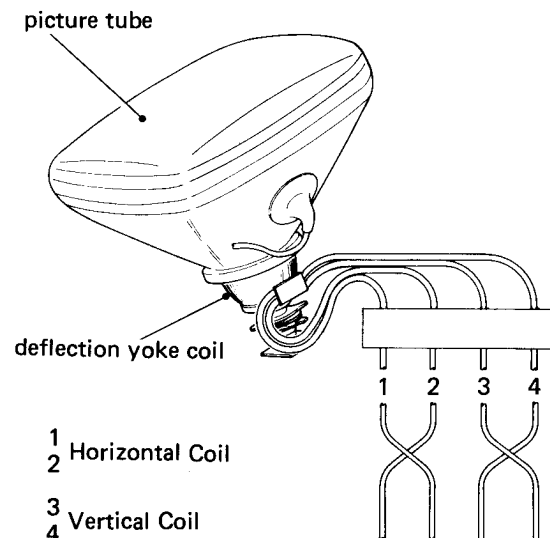
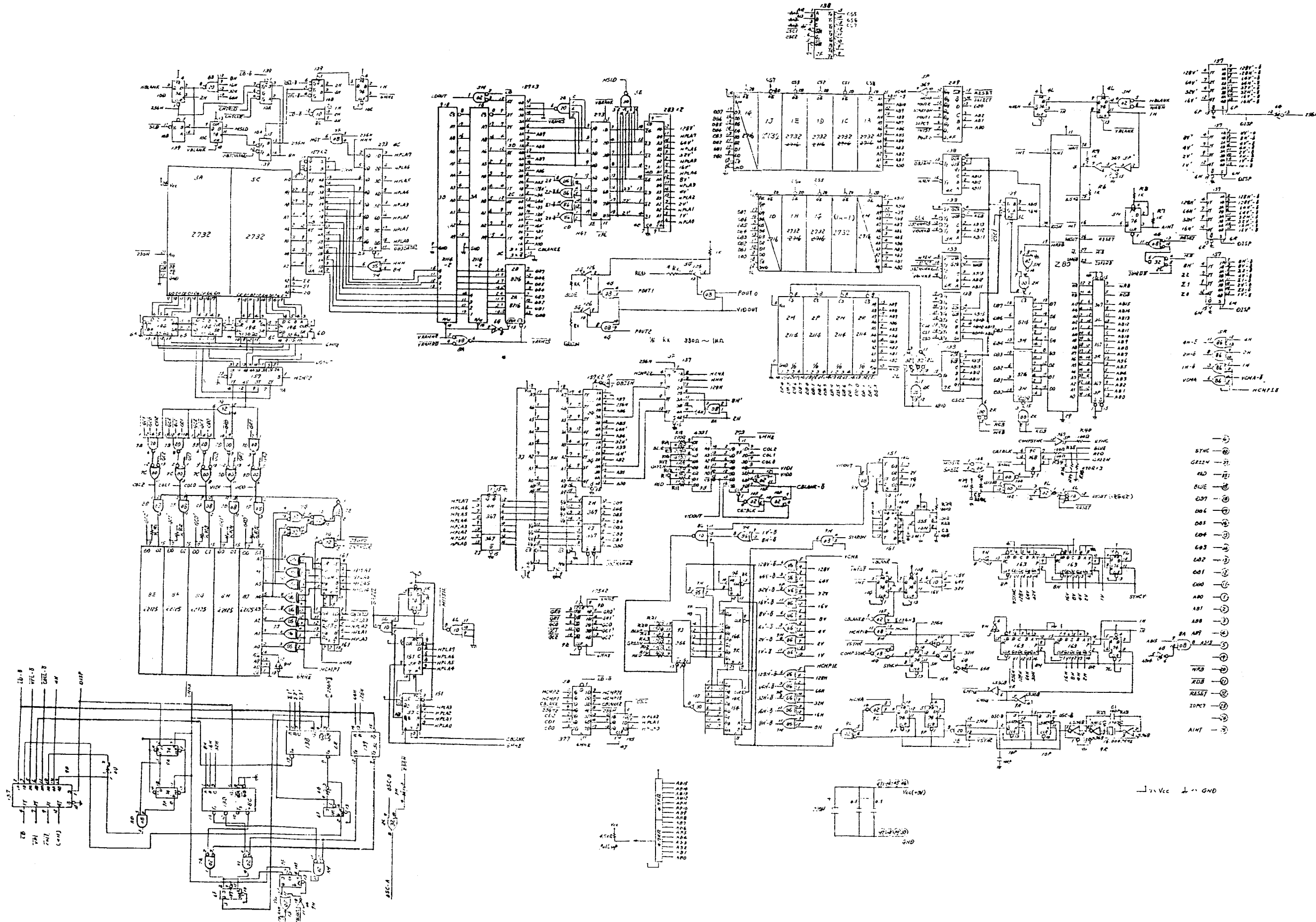


FIGURE 5b

11 THE BACKGROUND STARS APPEAR UNSTABLE

Check the voltage of +5V. Adjust from +4.85V to +5.20V if necessary until the background's stars appear clear and stable.



128V	128V-1
128V	128V-2
128V	128V-3
128V	128V-4
128V	128V-5
128V	128V-6
128V	128V-7
128V	128V-8
128V	128V-9
128V	128V-10
128V	128V-11
128V	128V-12
128V	128V-13
128V	128V-14
128V	128V-15
128V	128V-16
128V	128V-17
128V	128V-18
128V	128V-19
128V	128V-20
128V	128V-21
128V	128V-22
128V	128V-23
128V	128V-24
128V	128V-25
128V	128V-26
128V	128V-27
128V	128V-28
128V	128V-29
128V	128V-30
128V	128V-31
128V	128V-32
128V	128V-33
128V	128V-34
128V	128V-35
128V	128V-36
128V	128V-37
128V	128V-38
128V	128V-39
128V	128V-40
128V	128V-41
128V	128V-42
128V	128V-43
128V	128V-44
128V	128V-45
128V	128V-46
128V	128V-47
128V	128V-48
128V	128V-49
128V	128V-50
128V	128V-51
128V	128V-52
128V	128V-53
128V	128V-54
128V	128V-55
128V	128V-56
128V	128V-57
128V	128V-58
128V	128V-59
128V	128V-60
128V	128V-61
128V	128V-62
128V	128V-63
128V	128V-64
128V	128V-65
128V	128V-66
128V	128V-67
128V	128V-68
128V	128V-69
128V	128V-70
128V	128V-71
128V	128V-72
128V	128V-73
128V	128V-74
128V	128V-75
128V	128V-76
128V	128V-77
128V	128V-78
128V	128V-79
128V	128V-80
128V	128V-81
128V	128V-82
128V	128V-83
128V	128V-84
128V	128V-85
128V	128V-86
128V	128V-87
128V	128V-88
128V	128V-89
128V	128V-90
128V	128V-91
128V	128V-92
128V	128V-93
128V	128V-94
128V	128V-95
128V	128V-96
128V	128V-97
128V	128V-98
128V	128V-99
128V	128V-100

- STNC ①
- GREEN ②
- RED ③
- BLUE ④
- OR7 ⑤
- OR6 ⑥
- OR4 ⑦
- OR3 ⑧
- OR2 ⑨
- OR1 ⑩
- AR0 ⑪
- AR1 ⑫
- AR8 ⑬
- AR9 ⑭
- AR6 ⑮
- AR5 ⑯
- AR3 ⑰
- AR2 ⑱
- RESET ⑲
- ORC7 ⑳
- ARNT ㉑

Vcc GND

■ WIRING DIAGRAM

SOLDERING SIDE		PARTS SIDE	
- 5V	1	2	+ 12V
+ SPEAKER	3	4	- SPEAKER
2P SHOOT RIGHT	5	6	2P SHOOT LEFT
2P LEFT	7	8	2P RIGHT
1P START	9	10	2P START
1P SHOOT LEFT	11	12	2P UP
1P SHOOT RIGHT	13	14	SERVICE SW
1P RIGHT	15	16	1P LEFT
1P UP	17	18	2P DOWN
COIN 1	19	20	COIN 2
1P DOWN	21	22	COIN COUNTER
	23	24	
VIDEO GREEN	25	26	BLUE
RED	27	28	SYNC
GND	29	30	GND
	31	32	
+ 5V	33	34	+ 5V
	35	36	



Nichibutsu
Nichibutsu U.S.A. Corp.

15407 S. Broadway, Gardena, Calif. 90248

Telephone (213) 538-2162

TWX 910-346-6952 NCBTUSA