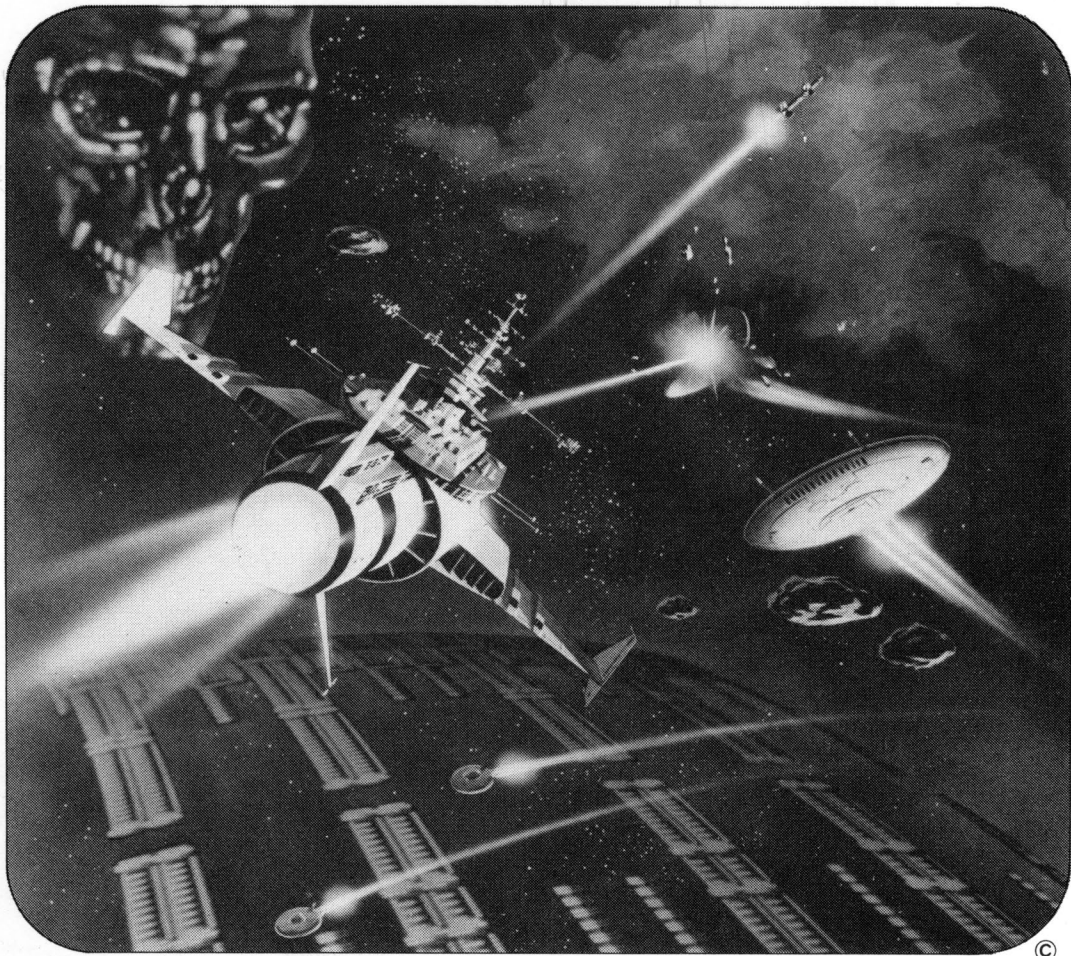


CONVERSION KIT
INSTRUCTION MANUAL

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.

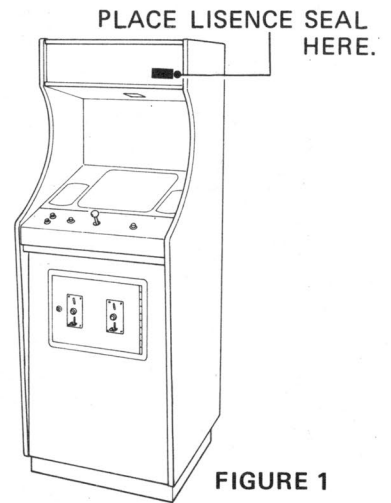


FIGURE 1

2 POWER REQUIREMENTS

The P.C. Board requires a power supply of

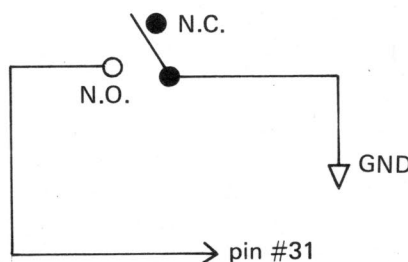
- + 5 V 3 A ($\pm 5\%$) for game logics
- 5 V 1 A ($\pm 5\%$) for game logics
- + 12 V 1 A ($\pm 10\%$) for audio IC only

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)

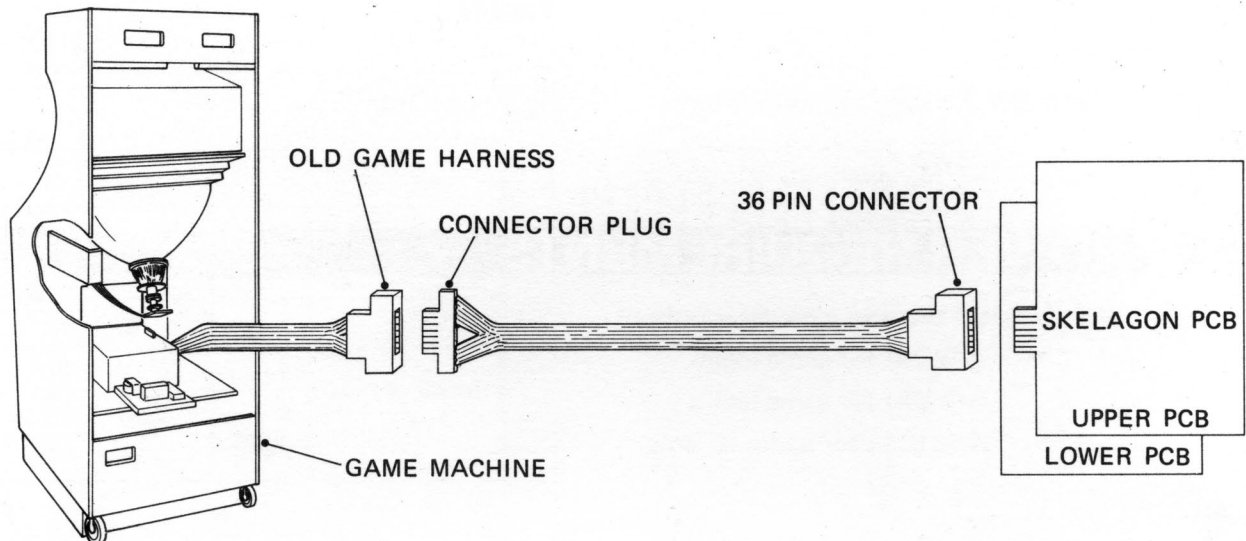


FIGURE 2

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. Board 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.

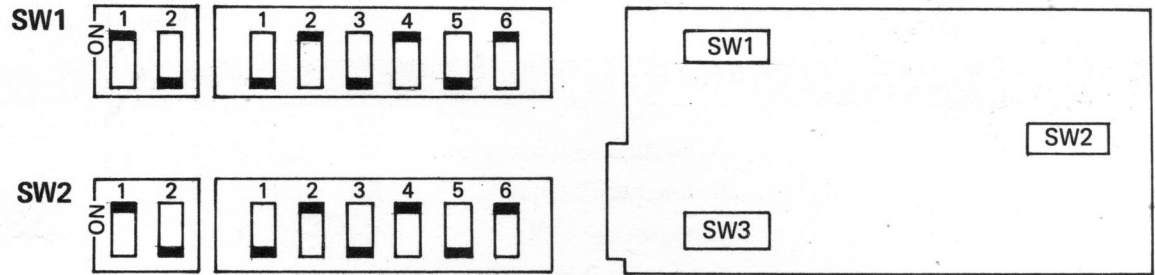
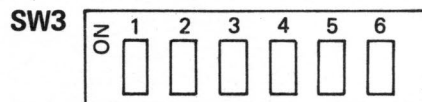


FIGURE 3

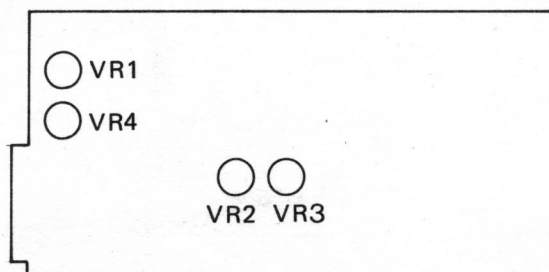
Only SW 3 is used for various optional setting by operator.



		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

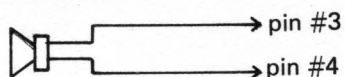
There are three volumes that control the sound.



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.

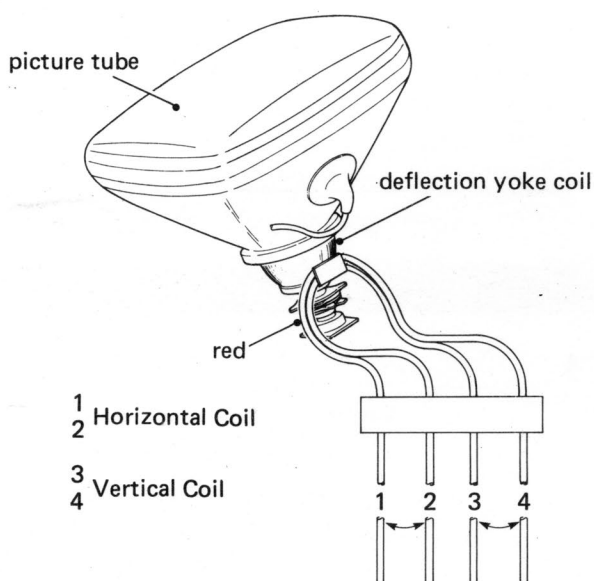


FIGURE 5a

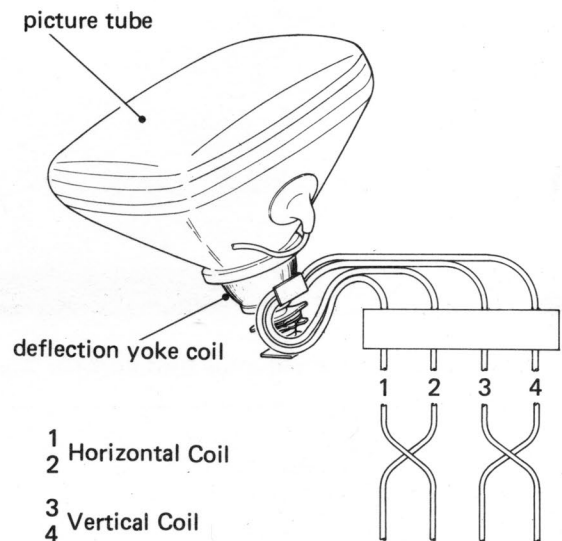
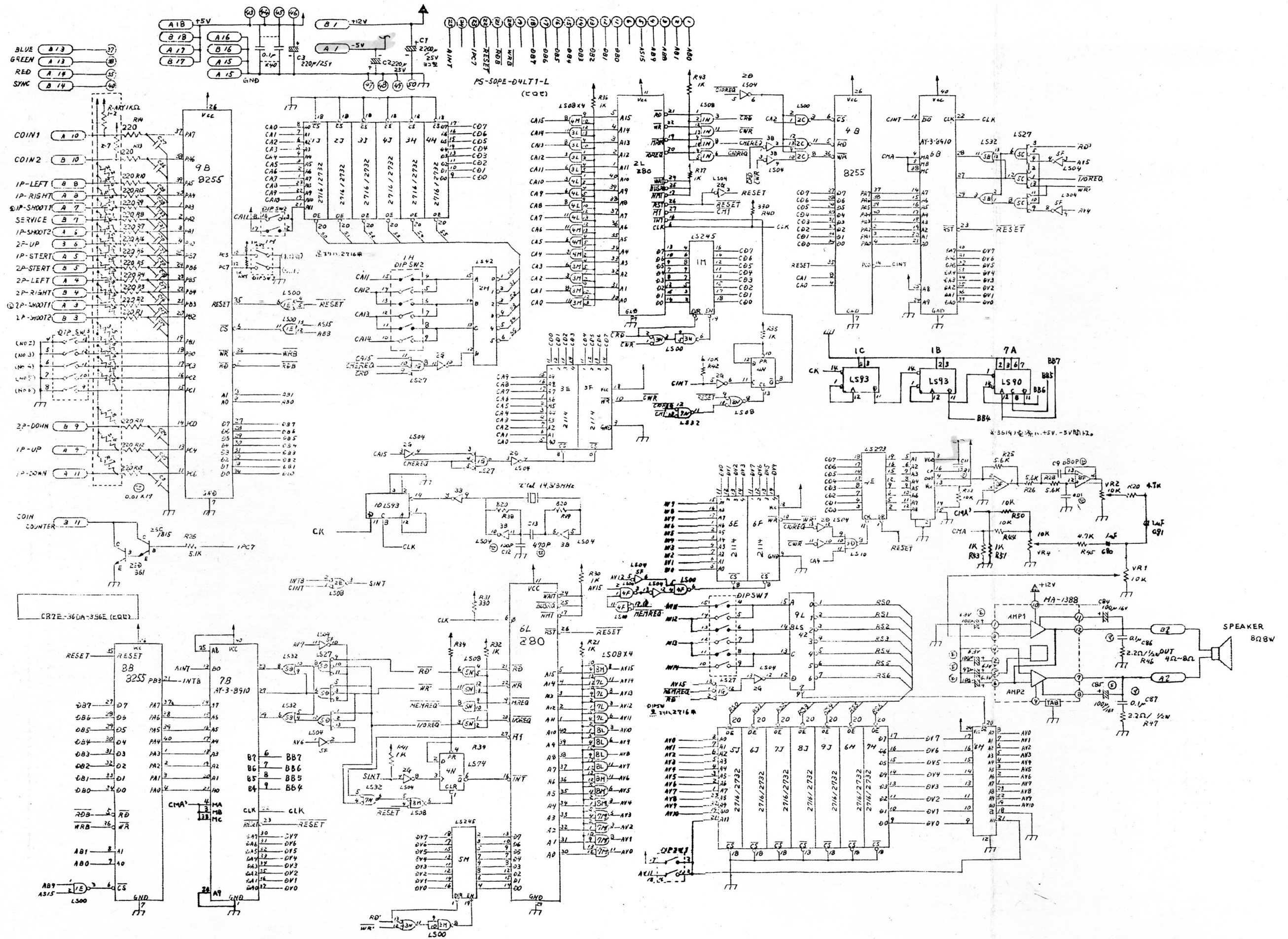
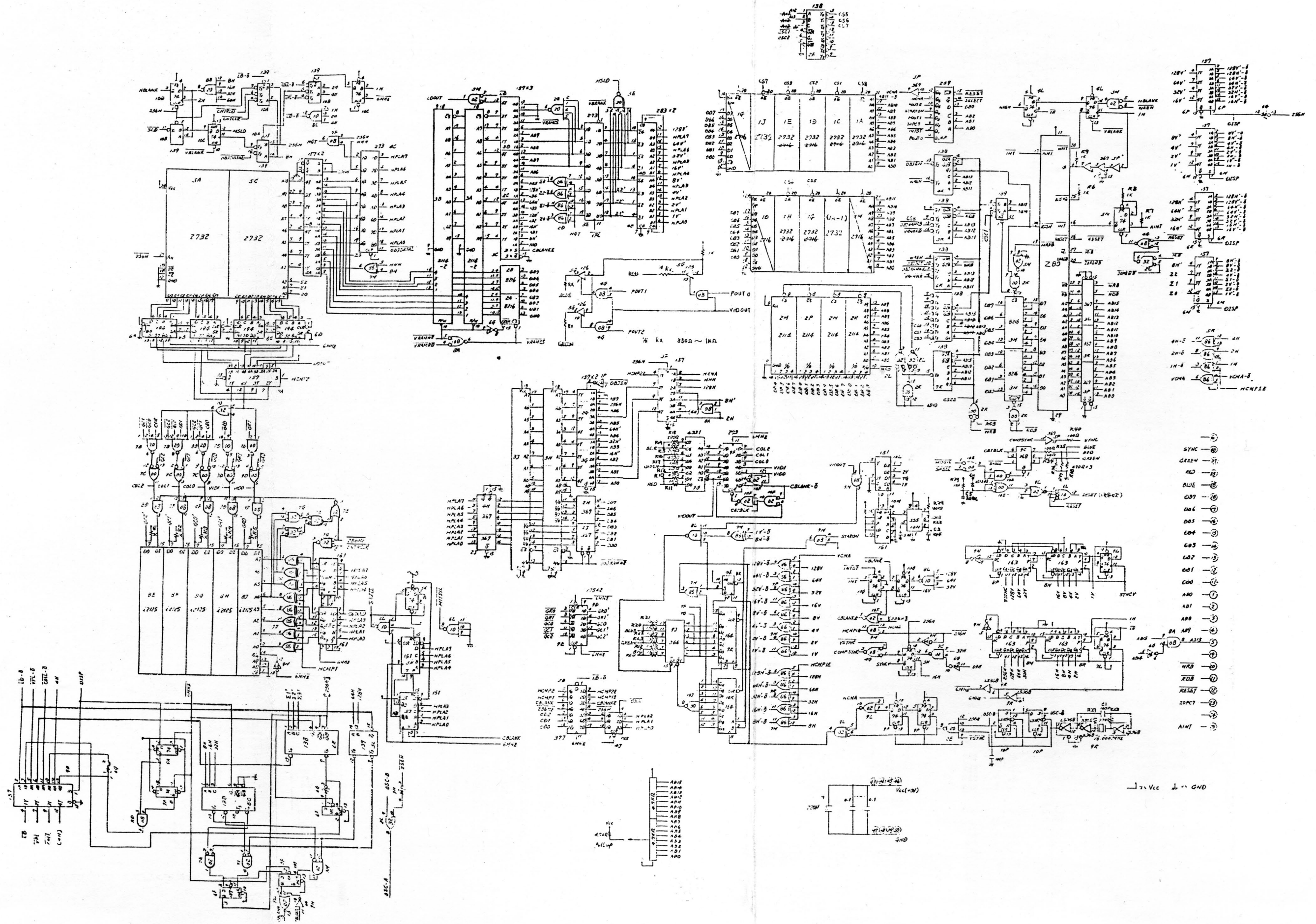


FIGURE 5b

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.





SKELAGON

(Oldst roller colour code)

WIRING DIAGRAM

Swinned colour code

State

ORG
Red-Blk

added *
button

GRY-Yell
BLK-Red

SOLDERING SIDE				PARTS SIDE			
*Vio added ✓	- 5V	BRN	1 1	2 A	ORG	+ 12V	ORG
Grey	+ SPEAKER	BRN/WH	2 3	4 B	BRN/WH	- SPEAKER	Blk
Vio	2P SHOOT RIGHT		3 5/13	6 C		2P SHOOT LEFT	(org)
brn	2P LEFT		4 7/16	8 D		2P RIGHT	org/silver
white	1P START	GRN Red	5 9	10 E	VIO	2P START	grey
org	1P SHOOT LEFT		6 11	12 F		2P UP	yell.
Vio	1P SHOOT RIGHT		7 13	14 H		SERVICE SW	
org/silver	1P RIGHT	WH ORG	8 15	16 J	WH	1P LEFT	Brown
yellow	1P UP	WH Red	9 17	18 K		2P DOWN	wh/gm
Blue	COIN 1	Blue WH	10 19	20 L		COIN 2	
green	1P DOWN	WH-GRN	11 21	22 M		COIN COUNTER	
			12 23	24 N			
green	VIDEO GREEN	GRY GRN	13 25	26 P	Grey blue	BLUE	blue
red	RED	GRY Red	14 27	28 R	Grey	SYNC	white
BLK	Black	GRN yell	15 29	30 S	GRN yell	GND	Black
			16 31	32 T			
GRY	Red	Red	17 33	34 U	Red	+ 5V	Red
			18 35	36 V			

BLK

GRY

SKELAGON. Requires

HORIZONTAL MOUNT

T.V.



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