

SERVICE MANUAL

	NIN I	STNIOGOGOL	SINTS	* INITIAL SETTING
1	◆ DRONE	300	"	LEVER UP -+ A+Z
	• CANNON	250	<i>b</i>	DOWN -+ Z+A
\$0\$	• PROBER	200	ž	FIRE BUTTON - WRITE
	• RAMMSR	150	>	
	• LASER	150	"	
d	* ROCKET	90	*	
4	• SUB MAR INE	150	<i>ħ</i>	
O	• MEYEOR	300 %	4	

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• SCHEMATIC DIAGRAM (20" COLOR MONITOR)	. , 11



1. SPECIFICATIONS

Power Source Single-phase 50/60Hz A.C. 240, 220, 117, 110 or 100V

(all within ±10%)

Wattage 120W (at 100V)

Coin Operate 1 to 6 games per 1 coin; 1 to 4 coins for 1 game

Dimensions:



2. INSTALLATION

- (1) Install the machine on a flat floor.
- (2) Avoid locations subjected to direct sunlight, high temperature, high humidity, vigorous vibrations, dust, etc. Also avoid locations where dangerous objects or fire-fighting apparatuses are stored or which block the emergency exit.
- (3) Don't give any shock or vibrations to the machine,
- (4) Don't allow any metal objects to fall into or water to get into the cabinet.
- (5) When applying voltage on the machine, do not use the same wall outlet as the one for motors, air conditioners, etc. which tend to fluctuate the voltage of the machine or to produse noise.
- (6) The line voltage that may be selected is as follows: single-phase 50/60 Hz A.C. 240, 220, 117, 110 or 100V. Connect the plug to the socket which is fitted your local voltage. This Voltage Selection Connectors are located on Power-Transformer.



3. HOW TO PLAY THIS GAME

HOW TO PLAY

- INSERT COINS.
- PRESS EITHER 1 OR 2 PLAYER BUTTON (AFTER COIN INSERTED).
- OPERATE YOUR SHIP UP OR DOWN BY CONTROL LEVER, AND DESTROY ENEMY SHIPS AND MISSILES BY FIRE BUTTON. TURN CONTROL LEVER TO THE RIGHT, YOUR SHIP GETS HIGH SPEED.
- IF PRESS THE MAY DAY BUTTON, SLOW DOWN THE GAME SPEED.

POINT

*	MINE	1000 P	STAIG
*	DRONE	300	**
*	CANNON	250	"
*	PROBER	200 ·	**
*	RAMMER	150	**
*	LASER	150	**
*	80CKET	100	"



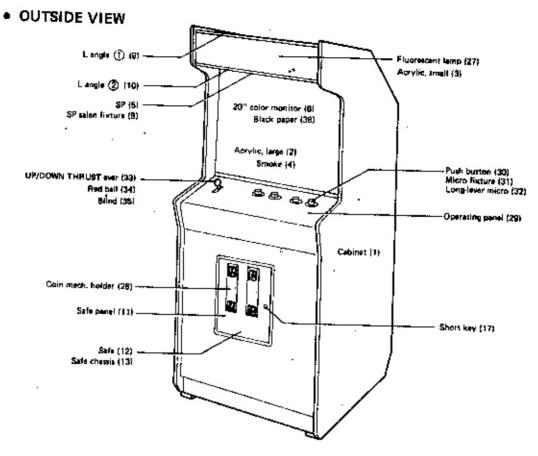
4. OPERATIONAL INSTRUCTIONS

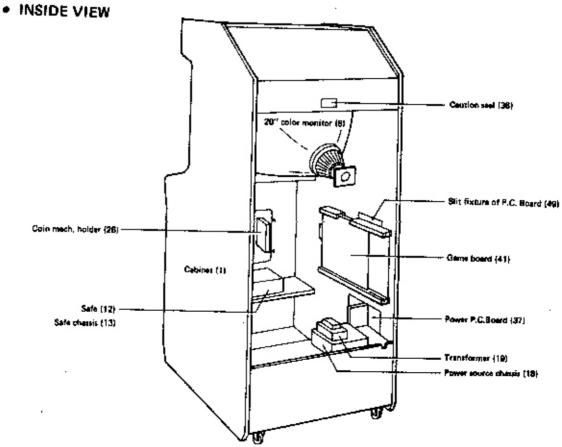
- Be sure to turn off the power switch before working on the machine.
- Avoid momentarily pushing in or pulling out the power cord plug.
- Even When it is found that the solid-state module is apparently out of order, do not check for the circuit by means of a tester, etc. since the voltage developed within the tester, etc. may destroy the IC unit.
- When carrying the machine about, be careful not to drag or drop it so as to protect the CRT of its TV set.
- Be sure to use rated fuses.
- Since there are high-tension parts on the base board and in the interior of the TV set, never touch such parts (this rule, however, does not apply to the manufacture's servicing engineers).

6. TROUBLE SHOOTING

- Before considering some phenomenon as a trouble, confirm the matters listed below and then contact your dealer.
- The video game machine is broadly divided as to electrical component into four sections, namely, the minitor section, game PCB, operating section and power source section, which are connected with one another by wiring. If any one of them develops a trouble the game machine as a whole will not work normally. When you think that there is something wrong with the machine, check for the machine just for a little while before consulting your dealer since an apparent trouble may sometimes be caused by a trifling mistake or misunderstanding which can be remedied by a modicum of repairs.
- When the machine has developed any trouble, it must first be found out which part of the four sections and the wiring is malfunctioning. When you have guessed the malfunctioning part, check for each section. If the checked part shows no abnormal signs, check for other parts related to it, too.
- Is the fuse not blown? (Be sure to use the indicated fuse. If a renewal fuse is also blown, then
 the other part is out of order.)
- Is the connector unfirmly contacted or disconnected? Since connector's poor contact is conceivable in all trouble cases thoroughly check the connector for contact condition (Be sure to turn the power off before mounting or demounting the connector.)
- Sometimes normal images cannot be produced despite turning ON the power cord plug. This
 can sometimes be corrected by setting the control circuit. So, repeat turning ON and OFF the
 power a few times.
- When checking for the meters, switches, etc. by means of a circuit tester, be sure to pull out the IC board connector.

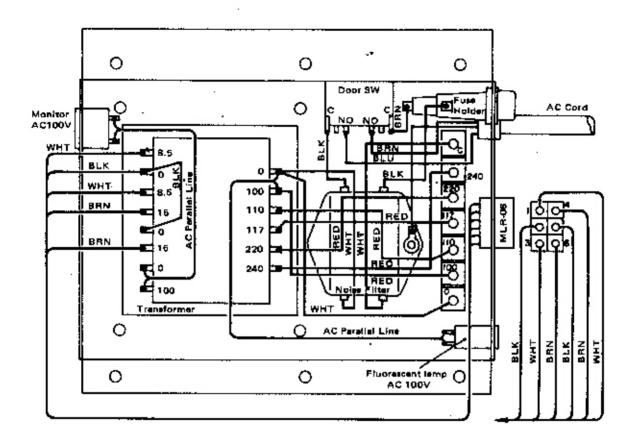
7. PARTS DIAGRAM

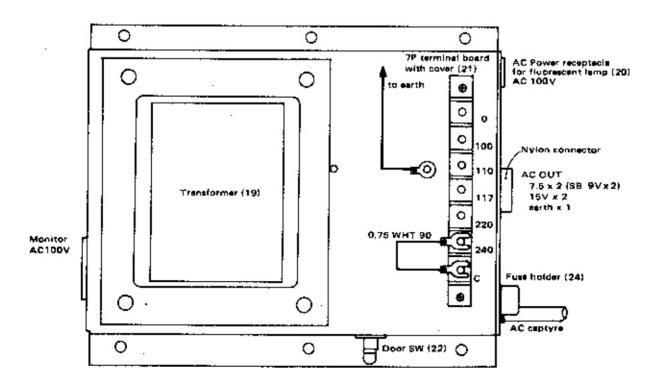




8. AC BLOCK WIRING & PARTS

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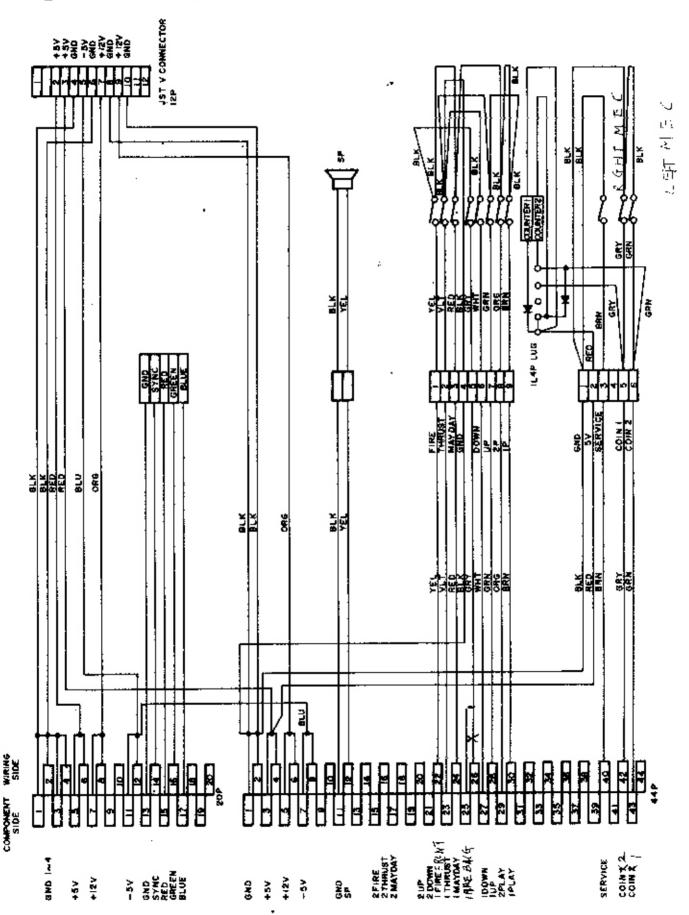




9. PARTS LIST

Symbol	Nomenclature	Description	Quantity	Remark
1	Cabinet	400 type	1	Mounting board of
2	Acrylic, large			fluorescent lamp
3	Acrylic, small			1
4	Smoke	Blue	1 :	Title board
5	SP	16 ~ 20 cm	1	
6	20" color monitor	Sanyo	1	
7			'	with AC cord 1800 Signal cord 1000
8	SP salan fixture	ł	f	
9	Langle (1)		1	
10	Langle ② '	1	1. 1	for fixing Title board
1†	Safe panel	Test 2 service 1	<u> </u>	
•=		with spot fixture	, 1	
12	Safe		,	
13	Safe chassis		1	1
14	1A class diode	•	† ;	
	3P terminal board	40, 44m/m pitch	i	
16	Wire nut		 	
17	Short key	Į	2	
18	Power source chassis	for Upright (box)	! !	for Safe panel
19	Transformer	Horizontal-type	! !	•
20	AC Power receptable	Monitor 1	1	
<u>-</u>		Fluorescent (amp 1	2	
21	7P terminal board	Through type	1	
22	Door SW	with cover		
23	Cord bush		1]
24	Fuse holder	J	1	
25	3A fuse	Screw type	1	ļ
26	Noise filter		 	
27	Fluorescent lamp	facty, faw	ļ	
28	Cain mech, holder	M75 type	1 2	•
29	Operating penel			
30	Push button	Red 2, White 5	1 7	
31	Micro fixture		·	
32	Long-lever micro]	7]	
33	Up-Down thrust lever		! : i	
34	Red ball	25φ	!	
35	Blind	8.5¢ ~ 40¢	¦	
36	Blind (Black paper)	for 20" CRT		
37	Power P.C. Board	+5V 3A + 12V 1A		Including mounted parts
38	Caution geal	5V100m + 12V 1A	1	(See attached list)
39	High-tension sent	1	1	
40	Primery voltage indicating sept		3	
41	Game board	<u> </u>	1	
42	Option SW sea!		1	
43	44P	1	1	
44	20P	4m/m pitch	1	
45	Round SW	4m/m pitch i	1	
46	Round SW		- 3	
47	Arrow seal	ON-ON .	1	
48	Service manual		4	
49	Slit fixture of P.C.Soard	}	1	
		1 4	1	

10. WIRING DIAGRAM



11. WHOLE BLOCK DIAGRAM

