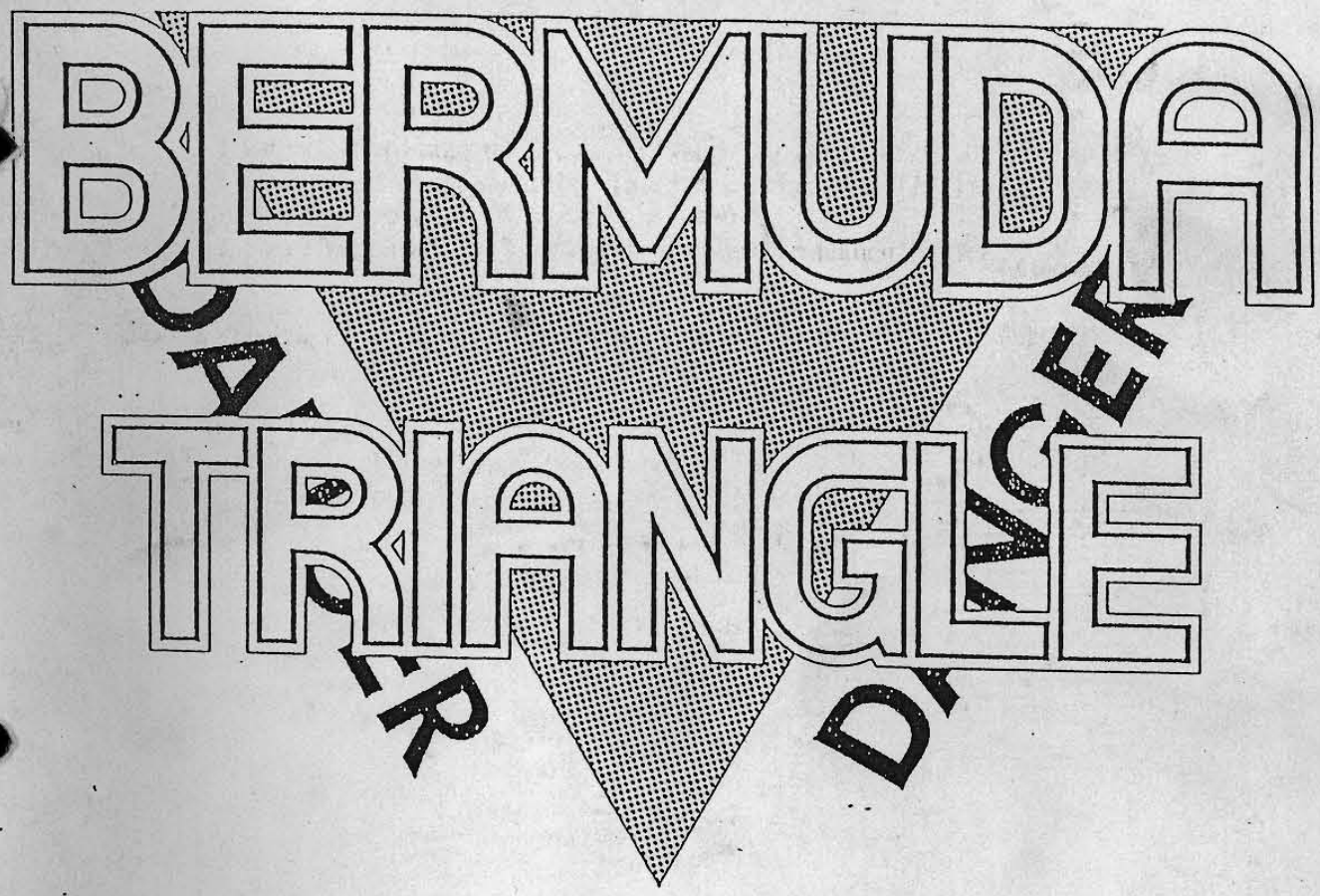
SERVICE INSTRUCTION

DANGER



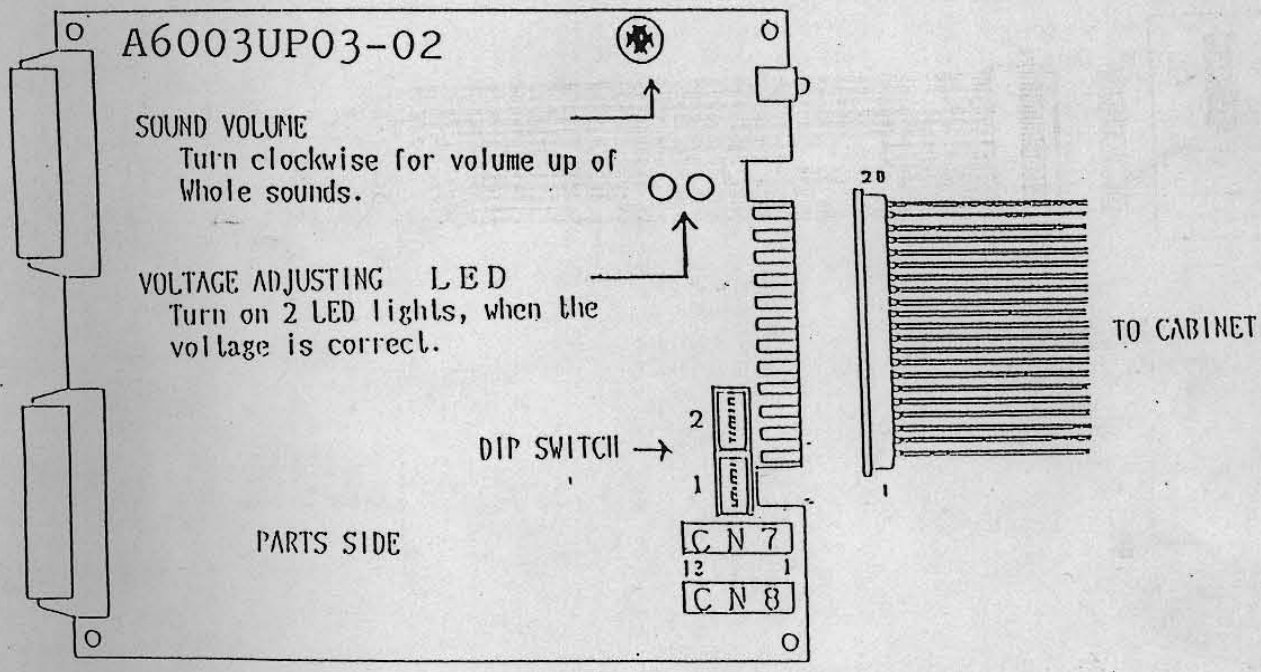
SNK
SNK GROUP

BERMUDA TRIANGLE

P. C. B. SPECIFICATIONS

1 EDGE CONNECTOR CR7E-5GDA-3. 96E(5GPIN) : HRS
2 SWITCHING DC +5V 7A
REGURATOR DC +12V 1A
DC -5V 1A

* Use with voltage on P.C.B. between the range of +5.00V ~ +5.10V
* SNK has no responsibility for any changes/modifications without SNK's approval.
* Specifications will be changed without advance notice.



① Even if Solid State Module is clearly found defective, please do not check Circuit with a Tester, etc. The ICs may be destroyed by the voltage of a Tester.

② Turn on 2 LED lights, when the voltage is correct. If only one LED light turns on, adjust by 5VADJVR of switching regurator. When no LED light turns on, check electric voltage of power source.
(To adjust voltage more correctly, it is advisable to use tester for checking.)

③ Don't forget to cut of Power Source when you change Parts or insert/pull off of Connector.

④ Please be sure to pull off Power Source by pullyng Plug.(Not by Cord)

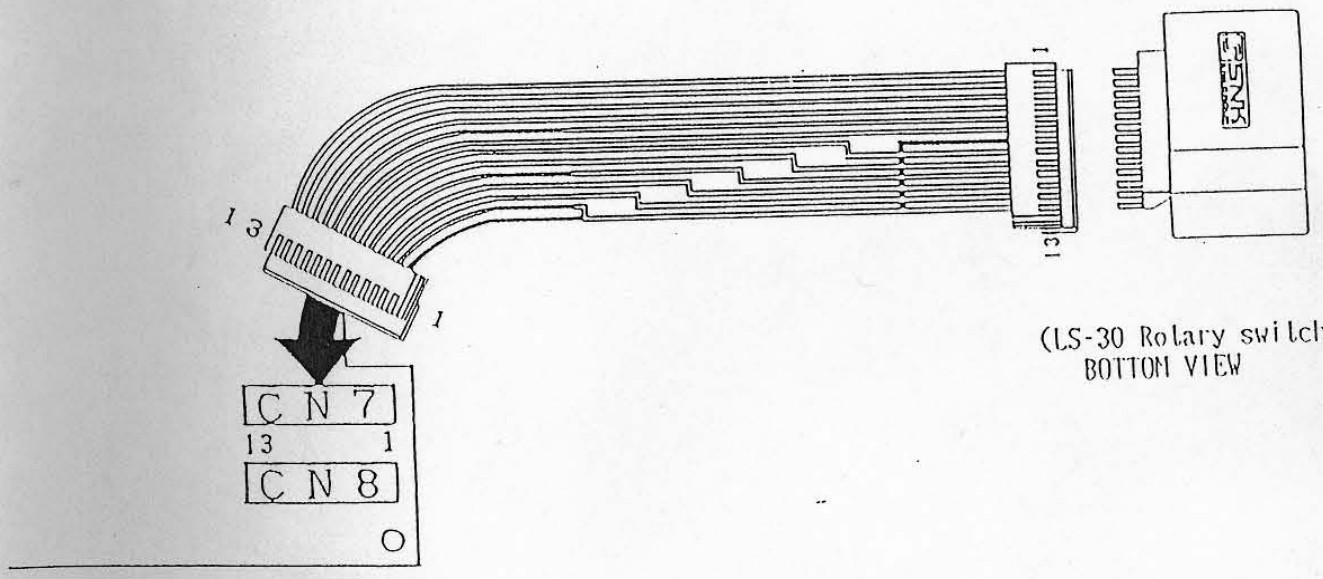
A lot of ICs and Memories are used, by which Electric power consumption for +5V (Volts) is about 5A (Amperes).
Please connect P.C.B. to Cabinet and adjust electric voltage of Power Source to be +5V at each Edge Connector(56pin) of P.C.B.

In case voltage does not indicate more than +5V even by fully adjusted by Voltage Adjustor,
it is because of insufficient Power Source or lack of capacity of Electric Current.
So, please change Power Supply of which rated voltage is higher.

For +5V, please use sufficient cable (1.25mm X 2 or 3.5 mm) which is capable for Electric Currency.

Voltage of intermediate Harness descend by contact resistance, so please avoid to connect several intermediate Harnesses in order to keep sufficient voltage.
If +6V Coin counter is connected from +5V, which causes Voltage drop, so please use +12V Coin Counter.

ROTARY SWITCH WIRING



(LS-30 Rotary switch)
BOTTOM VIEW

Connect Joystick of PLAYER 1 with CN7 of PCB
and PLAYER 2 with CN8 of PCB.

HOW TO PLAY

‡ 1P or 2P space-action shooting game
‡ 2nd player can join the game anytime after the 1st player starts and either player can join anytime and any stage during playing
‡ On this coin system, other player can join anytime while one of players is on the play. But when battle ship, ZIG of both players are crushed, the game becomes over.
‡ "Loop Lever" (LS30 Joystick) and 2-fire buttons control ZIG.
‡ Loop lever is for ZIG movement and direction of turret. Fire button A is for attacking. Fire button B is for selection of formation and power-up.
‡ ZIG is the giant time space battle ship, which turret turns in all angles.
‡ ZIG can attack through the air and ground simulianeously.
‡ Get power mark and ZIG will be power-up.
‡ Get +3 power mark, then change the evergy indication.
‡ When energy indication reaches to power-up points, 「Power UP」 letters on the screen flash on and off.
‡ While 「POWER UP」 letters flush on and off, select one of power by pushing selection button.
‡ ZIG will be crushed when number of Energy indication reaches to Zero(0).
‡ By DIP switch adjustment, 4 varieties of game styles can be selected.

① Standard play.
2-players can play simultaneously. The other player can join anytime while one of players is playing. Game continues up to the crushes of both players, ZIG.

② Continue Play.
In addition to standard play, receive additional ZIG by inserting coins, or muxinium 30ZIG(10 coins). After game is over, continue scene will be indicated in 5-seconds, so insert coin, then player can start again from starting position of crushed area.

③ 3 minutes play.
During 3 minutes after starting, the game never finish even though ZIG is crushed many times. With 3-minutes play mode, time count is indicated on lower part of monitor during play. After passing 3 minutes, time over is indicated on the monitor and the game will be finished in case of 1 player game.
In case 2 players are playing simultaneously, the game will be finished only after finishing time of both players. Then game over is indicated on the screen, and indication of continue scene will be indicated in 5-seconds. If player insert coin during such 5-seconds, player can start again from starting position of 'TIME OVER' area.

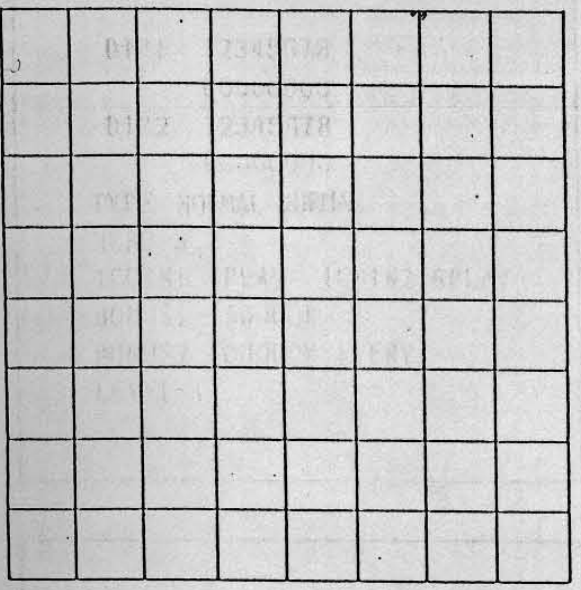
④ 5-minutes play.
This play mode is same style with 3 minutes play, but time limit is 5 minutes.

Note ; Please stick a mode explanation seal in a prominent position, when 3 minutes or 5 minutes play is selected.

HOW TO CHECK P. C. B.

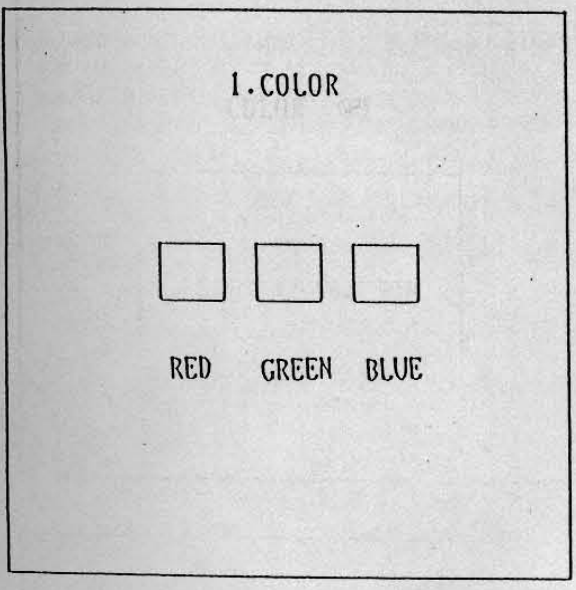
CONFIRMING AUTOMATICALLY MEMORIES WHEN POWER SWITCH TURNS ON.
KEEP PUSHING PLAY 1 BUTTON UNTIL PICTURE 1 IS DISPLAYED.
IN EACH PICTURE, PUSH PLAY 1 BUTTON TO CHANGE TO NEXT PICTURE
OR PUSH PLAY 2 BUTTON TO START THE GAME.

PICTURE 1



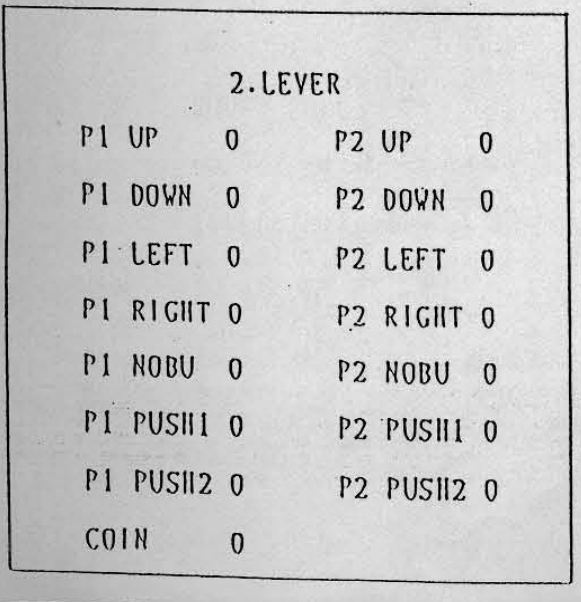
Picture 1 CROSS HATCH
Adjust moniter to get Square Measure.

PICTURE 2



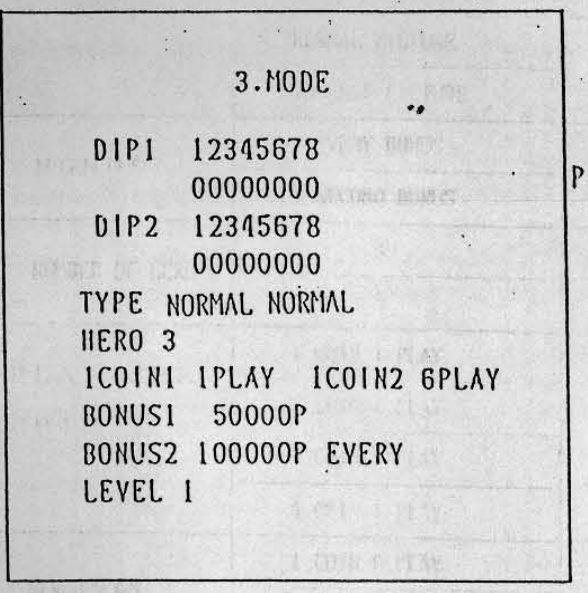
PICTURE 2 COLOR TEST
Adjust colors of Monitor.

PICTURE 3



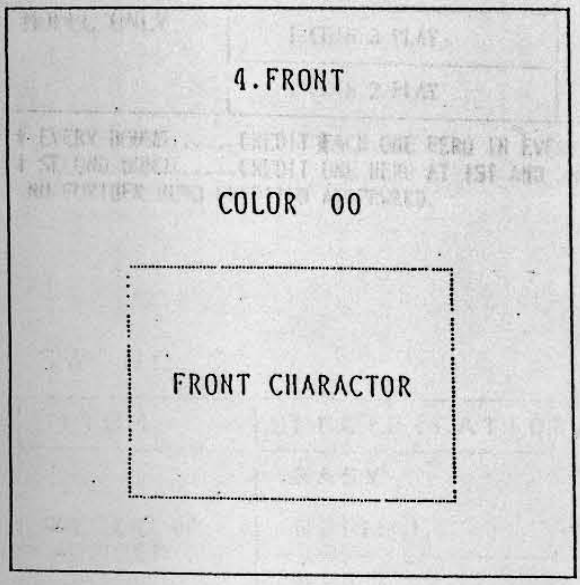
PICTURE 3 LEVER & BUTTON TEST
When lever or button turns on, 0 on the monitor change to 1.
Indicative number of lever knod is increased each 1 by turnning clockwise and decrease each 1 by turnning counter-clockwise.
confirm if coin 0 change to 1 by pushing service switch or by inserting coin.

PICTURE 4



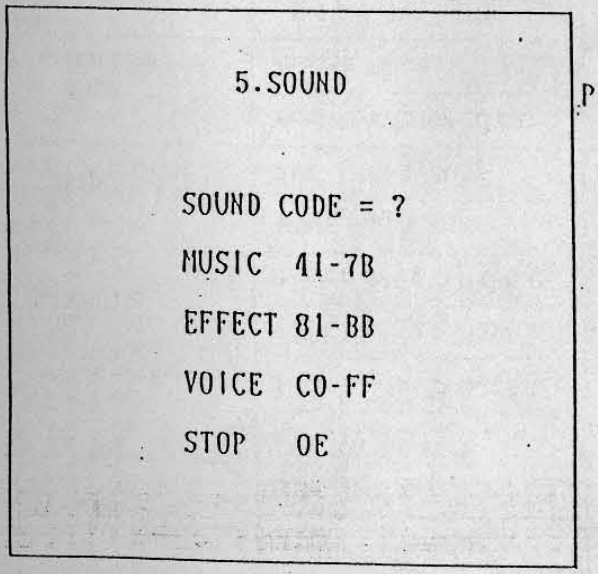
PICTURE 4. MODE CHECK
Set up the mode as you like by DIP SWITCH. (Refer to List of Dip Switch)
When switch turns on, indicative number of each BIT change to 1 from 0. And displayed actual mode at the bottom of monitor.

PICTURE 5



PICTURE 5. FRONT TEST
Confirm if Characters are displayed on the monitor.

PICTURE 6



PICTURE 6 SOUND TEST
Set up sound Code (" ? " of Picture 6) to 41-7B or 81-BB or C0-FF by lever and push firing button. Then music or effective sounds or voice comes out. If you wish to stop it, set up sound Code to 0E and push firing button.

DIP SWITCH

DIP SW No. 1

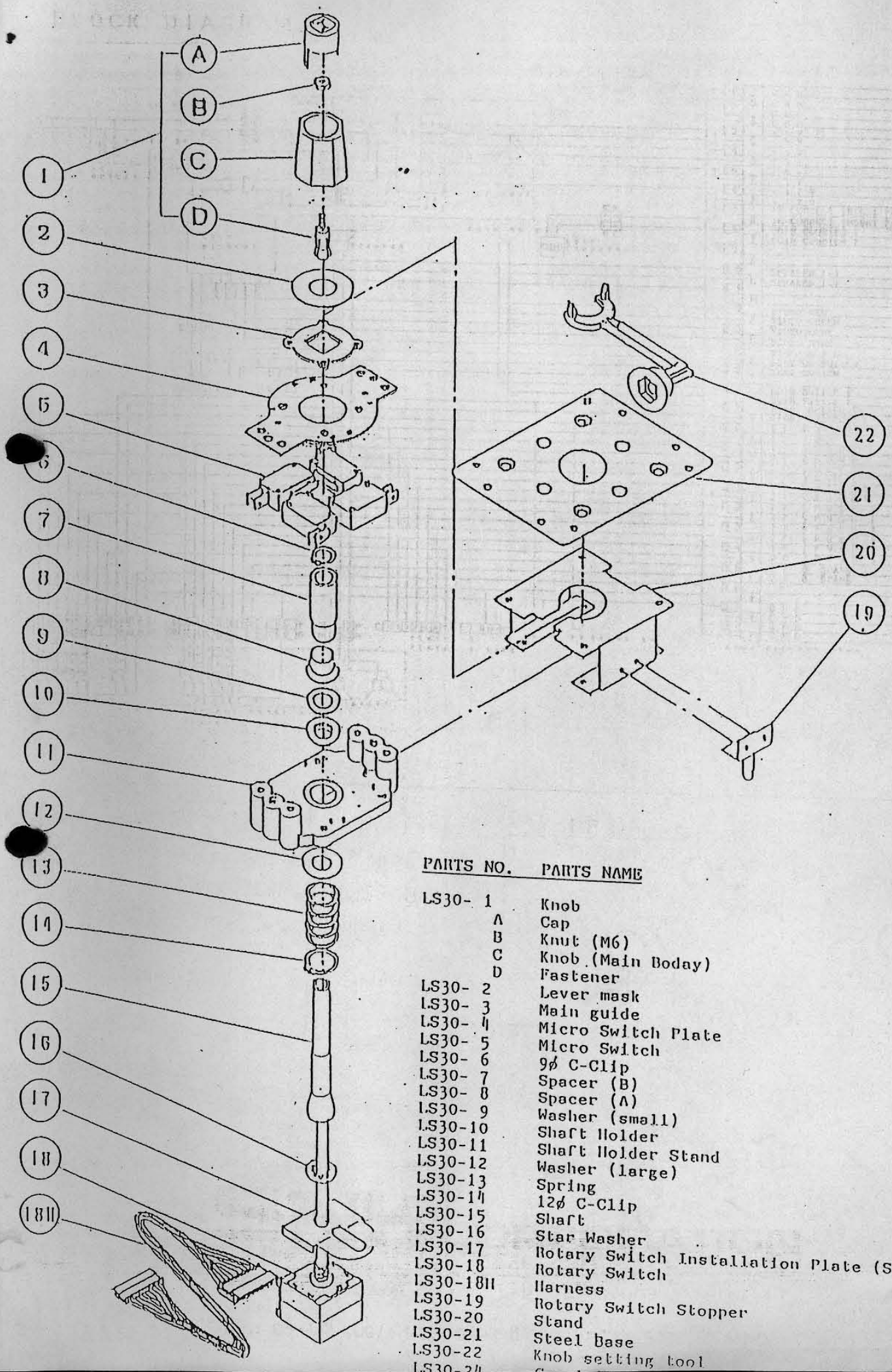
ITEM	SPECIFICATION	1	2	3	4	5	6	7	8
	NORMAL PICTURE		OFF						
	INVERSE PICTURE		ON						
BONUS	‡ EVERY BONUS			OFF					
	‡ SECOND BONUS			ON					
NUMBER OF HERO	3				OFF				
	5				ON				
PLAY FEE COIN 1	1 COIN 1 PLAY					OFF	OFF		
	2 COIN 1 PLAY					ON	OFF		
	3 COIN 1 PLAY					OFF	ON		
	4 COIN 1 PLAY					ON	ON		
EUROPEAN MODEL ONLY	1 COIN 6 PLAY							OFF	OFF
	1 COIN 4 PLAY							ON	OFF
	1 COIN 3 PLAY							OFF	ON
	1 COIN 2 PLAY							ON	ON

‡ EVERY BONUS.....CREDIT EACH ONE HERO IN EVERY 2ND BONUS.
‡ SECOND BONUS.....CREDIT ONE HERO AT 1ST AND 2ND BONUS ONLY.
NO FURTHER HERO CREDITED AFTERWARD.

DIP SW NO. 2

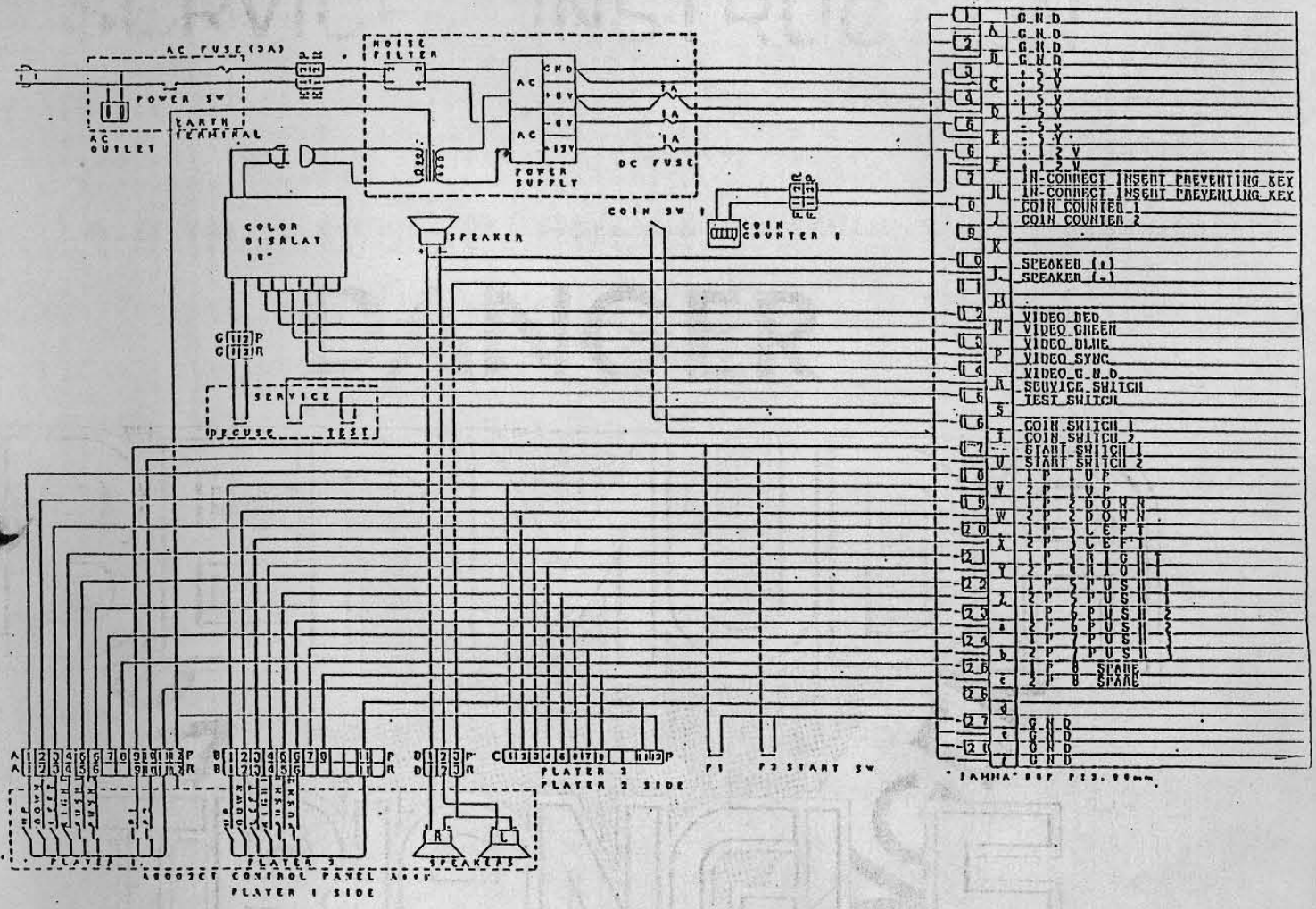
ITEM	SPECIFICATION	1	2	3	4	5	6	7	8
GAME LEVEL OF DIFFICULTY	EASY	OFF	OFF						
	NORMAL	ON	OFF						
	HARD	OFF	ON						
	DIFFICULT	ON	ON						
ATTRACTION SOUND	WITHOUT SOUND			OFF	OFF				
	WITH ATTRACTION SOUND			ON					
MONITOR SETTING	STOP VIDEO DISPLAY			ON	ON				
	NEVER FINISH			OFF	ON				
BONUS POINTS SETTING 1ST/2ND	50000/100000					OFF	OFF		
	60000/120000					ON	OFF		
	100000/200000					OFF	ON		
	NO BONUS					ON	ON		
GAME STYLE	STANDARD PLAY							OFF	OFF
	WITHOUT CONTINUE PLAY							ON	OFF
	3 MINUTES PLAY							OFF	ON
	5 MINUTES PLAY							ON	ON

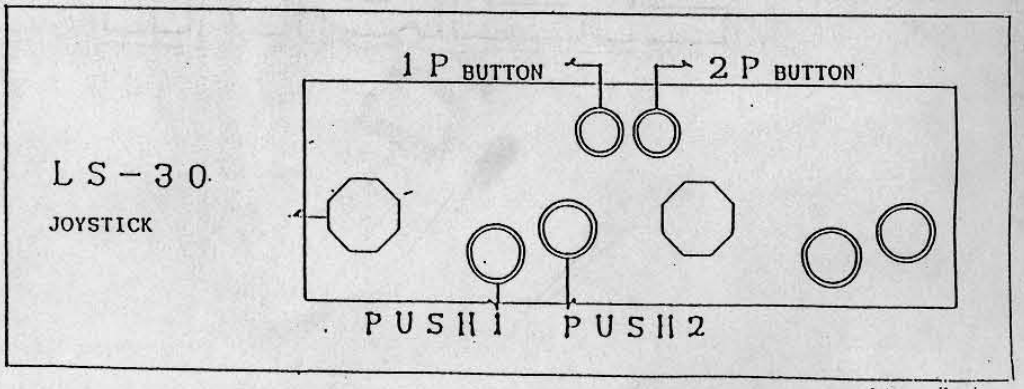
LS30 - 24 JOYSTICK ASSEMBLY



PARTS NO.	PARTS NAME
LS30- 1	Knob
A	Cap
B	Knut (M6)
C	Knob (Main Boday)
D	Fastener
LS30- 2	Lever mask
LS30- 3	Main guide
LS30- 4	Micro Switch Plate
LS30- 5	Micro Switch
LS30- 6	9ø C-Clip
LS30- 7	Spacer (B)
LS30- 8	Spacer (A)
LS30- 9	Washer (small)
LS30-10	Shaft Holder
LS30-11	Shaft Holder Stand
LS30-12	Washer (large)
LS30-13	Spring
LS30-14	12ø C-Clip
LS30-15	Shaft
LS30-16	Star Washer
LS30-17	Rotary Switch Installation Plate (SUS)
LS30-18	Rotary Switch
LS30-18II	Harness
LS30-19	Rotary Switch Stopper
LS30-20	Stand
LS30-21	Steel Base
LS30-22	Knob setting tool
LS30-24	

BLOCK DIAGRAM





SNK CORPORATION

Room #602, Maruman Bldg., 14-10, Toyotsu-cho, Suita-shi,
Osaka, Japan
TEL: 06-338-7007 FAX: 06-338-7150 TLX: 5236785 SNKCO J