

ELECTROCOIN AUTOMATICS LTD

UPRIGHT

SERVICE MANUAL

# AQUATAK

TAITO CORPORATION

PART NO 64045

AQUAJACK

SPECIFICATIONS:

- |                      |   |
|----------------------|---|
| 1. Power Supply      | 240/220 VAC (Hantarex US 250 power supply)        |
| 2. Power Consumption | 140w  |
| 3. Play Pricing      | Adjustable on Dip switches                        |
| 4. TV Monitor        | 20" Hantarex 9000E colour monitor                 |
| 5. Dimensions        | Width : 588mm<br>Depth : 746mm<br>Height : 1808mm |
| 6 Weight             | Approximately: 140 KG                             |

\* The specifications and appearance may be changed for improvement.

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## PRECAUTIONS TO BE OBSERVED WHEN INSTALLING MACHINE

THIS VIDEO GAME IS FOR INDOOR USE ONLY.  
WHEN INSTALLING AVOID PLACES MENTIONED BELOW

1. PLACES SUBJECT TO CONDENSATION DUE TO HUMIDITY.
2. IN THE PROXIMITY OF AN INDOOR SWIMMING POOL OR SHOWER.
3. PLACES SUBJECT TO DIRECT SUNLIGHT.
4. VICINITY OF HIGHLY INFLAMMABLE/VOLATILE CHEMICALS.
5. UNEVEN SURFACES.
6. VICINITY OF FIRE EXITS AND FIRE EXTINGUISHERS.
7. DUSTY ATMOSPHERE.

### INSTALLATION

IT IS IMPORTANT TO AVOID ROUGH HANDLING OF THIS MACHINE AS CERTAIN PARTS ARE FRAGILE.

UPON REMOVAL OF THE SHIPPING CARTON EXAMINE THE EXTERIOR OF THE CABINET FOR DENTS, CHIPS OR BROKEN PARTS.

ACCESS TO THE APPLIANCE SHOULD ONLY BE MADE BY QUALIFIED PERSONNEL FOR ANY PURPOSE.

INSPECT THE INTERIOR OF THE CABINET AS FOLLOWS:

A) CHECK THAT ALL THE PLUG IN CONNECTORS ARE FIRMLY SEATED i.e. THE EDGE CONNECTOR ON THE CPU BOARD. IF ANY CONNECTORS ARE FOUND UNPLUGGED IT IS IMPORTANT WHEN RE-PLUGGING NOT TO FORCE THE CONNECTORS TOGETHER. AS SOME MAY BE KEYED AND ONLY GO ON IN THE PROPER ORIENTATION.

B) CHECK THAT ALL PLUG-IN INTEGRATED CIRCUITS AND SUB BOARDS ON THE GAME PCB ARE FIRMLY SEATED IN THEIR SOCKETS.

C) CHECK ALL SUB ASSEMBLIES SUCH AS THE POWER SUPPLY FOR SECURE MOUNTING.

ENSURE THE MAINS SUPPLY IS CORRECT FOR OPERATION OF THE MACHINE, AND THAT THE SUPPLY HAS A GOOD EARTH CONNECTION.

### SAFETY/MAINTENANCE

THIS VIDEO GAME REQUIRES CERTAIN MAINTENANCE TO KEEP IT IN GOOD WORKING ORDER.

IT IS ADVISED THAT THE SITE MANAGER CHECKS THE SERVICEABILITY OF THE MACHINE DAILY.

### WARNING

HIGH VOLTAGES EXIST WITHIN THE MACHINE SO IT IS ADVISABLE THAT ONLY QUALIFIED SKILLED PERSONNEL SHOULD TOUCH ANY INTERNAL PARTS OF THE MACHINE. THE HIGH VOLTAGES PRESENT MAY CAUSE SHOCK OR EVEN FATALITY WITH MISUSE. ALWAYS TURN THE MACHINE OFF BEFORE COMMENCING ANY WORK.

HIGH VOLTAGES MAY EXIST IN ANY MONITOR UNIT, EVEN WITH THE POWER DISCONNECTED. USE EXTREME CAUTION AND DO NOT TOUCH ELECTRICAL PARTS, OR THE YOKE WITH YOUR HANDS OR WITH METAL OBJECTS HELD IN YOUR HANDS. INFORMATION ON THE MONITOR FUSES ARE CONTAINED IN THE MONITOR MANUAL SUPPLIED WITH THIS MACHINE.

### CAUTION

DO NOT USE FUSES OTHER THAN THOSE SPECIFIED, FOR THE CONTINUED PROTECTION OF YOUR GAME.

NEVER CONNECT OR DISCONNECT ANY CONNECTORS OF THE PCB, OR RESET THE DIP SWITCH SETTINGS WHILE THE POWER IS ON.

REGULARLY CLEAN THE OUTSIDE OF THE CABINET. DO NOT DRY WIPE ANY OF THE ACRYLIC PANELS, BECAUSE ANY DUST CAN SCRATCH THE SURFACE AND RESULT IN FOGGING THE PLASTIC. ACRYLIC SURFACES MAY BE CLEANED WITH ANY NON-ABRASIVE HOUSEHOLD CLEANER.

## PLAY INSTRUCTIONS

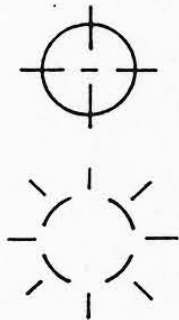
1. This game is a shooting game in which the player controls the hovercraft to destroy the enemy.
2. A round can be cleared by defeating the Boss-Mech appearing in each scene.
3. The game ends when the player has cleared 8 stages or the stocks of Aquajack players have been lost.
4. EXPLANATION FOR THE CONTROL MECH AND FUNCTIONS

### Control Mech

By moving the Control Mech, AquaJack can be moved Left/Right or Up/Down.

### Vulcan Gun

Fully Automatic Fire.



MARK (LOCK ON GUN SIGHT)

MARK (ORDINARY SIGHT)

LOCK ON GUN SIGHT

When the sight nears an enemy, lock on will happen automatically for approx. 0.5 sec 'FIRE' will then be heard.

Lock on can be released after shooting 15 bullets, or the trigger has been pressed.

### START/MISSILE BUTTON

Three Missiles can be used per round to wipe out the enemy.  
On completion of each scene one round is added.

### JUMP BUTTON

This button can be used for avoiding obstacles and enemies bullets.

### ACCELERATOR

By depressing the Foot Pedal, AquaJack accelerates.

## 5. GAME PLAY

Press Start/Missile Button to Start.

The screen changes the game mode. AquaJack departs from a garage then the play starts.

### ROUND COMPOSITION

There are 8 stages.

After finishing each stage the round map is shown so that the player can confirm his score.

ROUND 1	LAKE	ROUND 5	LAKE
ROUND 2	RUINS	ROUND 6	JUNGLE
ROUND 3	Grass Plain Village	ROUND 7	Factory area
ROUND 4	Rocky Mountain	ROUND 8	Enemy base

Each round can be cleared by defeating the Boss-Mech appearing towards the end of each round.

## 6. GAME OVER

The game ends when all 8 rounds have been cleared.

The game also ends when all stocks of the players 'AquaJack' have been lost.

## 7. CONTINUE PLAY

If the Game ends during playing, a continued play can be played.

\* Before the timer on the continue play reaches 0:0, Insert Coin(s) for credit and Press Start Button.

## 8. NAME REGISTRATION

When the Player's score is ranked in the Top Ten places, his name registration can be made. In such case, by controlling 'AquaJack' and pressing the Start Button when it reaches a desired letter. (Only three letters can be used).

## 9. Difficulty Levels:

By using the Dip Sw, the difficulty levels can be changed in 4 steps.

In detail, refer to the table for settings.

TEST MODE

COIN A : OFF  
SERVICE : OFF  
1 PLAYER SELECT : OFF

COIN B : OFF  
TILT : OFF  
2 PLAYER SELECT : OFF

1 P SW1 : OFF  
1 P SW2 : OFF  
1 P SW3 : OFF

2 P SW1 : OFF  
2 P SW2 : OFF  
2 P SW3 : OFF

1 P LH U : OFF  
D : OFF  
L : OFF  
R : OFF

2 P LH U : OFF  
D : OFF  
L : OFF  
R : OFF

DIP SW	8	7	6	5	4	3	2	1	L = ON
A	H	H	H	H	H	L	H	H	H = OFF
B	H	H	H	H	H	H	H	H	

SOUND CODE : 00H

RAM OK  
RAM OK

## AQUAJACK

### TEST 1

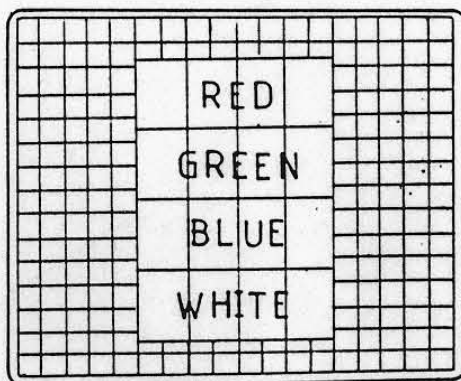
### CROSSHATCH

By turning on the Dip Switch A-3 located on the main PC boards and by turning on the main power switch. The screen changes to the test mode menu.

### CRT TEST

As the Cross Hatch and colour bars are displayed on the screen condition. Colours and brightness can be adjusted.

### CROSS HATCH



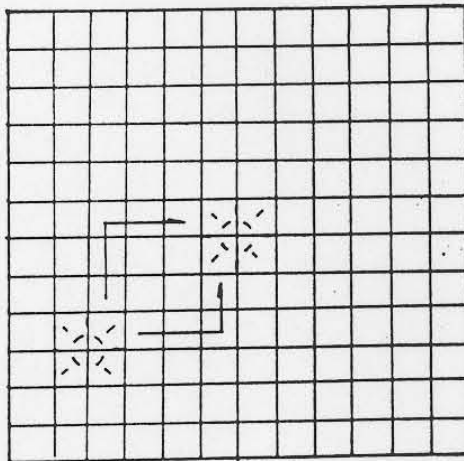
When the service switch button is pressed the screen returns to the next test.

## ADJUST TEST

This test can be used to indicate the Up/Down, Left/Right movement of the Steering Mech. Adjust position using ADJ X and ADJ Y potentiometers as necessary with the steering Mechanism in its central position.

NOTE: ADJ X and ADJ Y potentiometers are located just inside the coin door mounted on a bracket.

Press Start Button to continue Test.





DIP SWITCH SETTINGS

DIP SW A

		1	2	3	4	5	6	7	8
GAME STYLE	MOVING NON MOVING	OFF ON							
SOUND INVERSION	NORMAL INVERSION		OFF ON						
TEST MODE	NORMAL TEST MODE			OFF ON					
DEMO SOUND	WITH WITHOUT				OFF ON				
COIN A	1 COIN 1 PLAY 2 COIN 1 PLAY 3 COIN 1 PLAY 4 COIN 1 PLAY					OFF ON OFF ON	OFF ON		
COIN B	1 COIN 2 PLAY 1 COIN 3 PLAY 1 COIN 4 PLAY 1 COIN 6 PLAY							OFF ON OFF ON	OFF ON

DIP SW B

		1	2	3	4	5	6	7	8
DIFFICULTY LEVEL	B A C D	OFF ON OFF ON	OFF ON						
BONUS	50000 80000 100000 30000			OFF ON OFF ON	OFF ON				
STOCK OF PLAYER LIVES	3 2 1 5					OFF ON OFF ON	OFF ON		

DIP SWITCH SETTINGS V-2

<u>FUNCTION</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
<u>Bonus Games</u>								
None	on	on						
For every 50p	off	on						
For every £1	on	off						
For every £2	off	off						

Not used

1 Pulse per credit	on
2 Pulses per credit	off

Price per play

10p	on	on	on
20p	off	on	on
30p	on	off	on
40p	off	off	on
50p	on	on	off
60p	off	on	off
£1	on	off	off
£2	off	off	off

Please Note:- A bonus game will only be awarded if the game price of play is less than the bonus value set. Also if a mixture of coins are inserted, the time interval between coins inserted must be of less than 5 seconds for the bonus to be awarded.

EXAMPLES OF SETTINGS (FOR £1 INSERTED).

Price of Play	Bonus Games	Credits	Bonus	Total
10p	off	10	None	10
10p	For every 50p	10	2	12
10p	For every £1	10	1	11
20p	off	5	None	5
20p	For every 50p	5	2	7
20p	For every £1	5	1	6
30p	off	3	None	3
30p	For every 50p	3	2	5
30p	For every £1	3	1	4
40p	off	2	None	3
40p	For every 50p	2	2	4
40p	For every £1	2	1	3
50p	off	2	None	2
50p	For every £1	2	1	3

PINOUT INFORMATION

<u>PIN</u>	<u>COLOUR</u>		<u>FUNCTION</u>
1.	YEL\BLK	10p	MICROSWITCH OR N.P.N OPEN COLLECTOR INPUT.
2.	NIC	10p	MICROSWITCH OR N.P.N. OPEN COLLECTOR INPUT.
3.	WHT\BLU	10p	PNP INPUT (MS 111\SENTINEL)
4.	NIC	20p	INPUT (MICROSWITCH)
5.	WHT\GRN	20p	INPUT (MS 111\SENTINEL)
6.	NIC	50p	INPUT (MICROSWITCH)
7.	WHT\BLK	50p	INPUT (MS 111\SENTINEL)
8.	NIC	£1	INPUT (MICROSWITCH)
9.	WHT\YEL	£1	INPUT (MS 111\SENTINEL)
10.	BLU\BLK	0	VOLTS (10p INHIBIT)
11.	BLU\YEL	0	VOLTS (20p INHIBIT)
12.	BLU\ORG	0	VOLTS (50p INHIBIT)
13.	BLU\WHT	0	VOLTS (£1 INHIBIT)
14.	BLACK	0	VOLTS
15.	BLACK	0	VOLTS
16.	NIC	0	VOLTS
17.	NIC	0	VOLTS
18.	ORANGE	+ 12v	DC
19.	ORANGE	+ 12v	DC
20.	ORANGE	+ 12v	DC
21.	BLU\VIO	-	POSITIVE COMMON FOR MS111\SENTINEL
22.	WHT\RED		METER OUTPUT (NPN OPEN COLLECTOR)
23.	ORG\BLK		CREDIT OUTPUT (NPN OPEN COLLECTOR)
24.	NIC	0	VOLTS

## NOTES:-

- 1) Use 0 volts for negative common if plugging into MS 125 seperator unit.
- 2) Ensure that there is no coin meter connected across any input, eg. via a microswitch or an adaptor card.

NOTE: On most unigame adaptors pin 10 is linked to pin 24, and pin 11 is linked to pin 25, these links should be removed completely. Then short pin 11 to pin 12 on the adaptor card. This then uses the output from the credit board meter drive.

- 3) The meter will always total cash in 10p units regardless of any credit setting.
- 4) More than one coin mech may be fed into the PCB.

e.g. A) S10 (up to four)  
 B) S10 X MS 111  
 C) S10 X MS 125  
 D) S10 X Sentinel

- 5) Most credit boards are supplied with a standard credit loom.  
 (Part No 16315) fitted with a male 6 way amp mate 'N' lock connector.

Pinouts are shown below.

<u>PIN</u>	<u>COLOUR</u>		<u>FUNCTION</u>
1.	ORANGE	+12v	DC SUPPLY
2.	PINK	+5v	DC (LAMP SUPPLY)
3.	NIC		
4.	WHT\RED		TO COIN METER
5.	BLACK	0v	DC
6.	ORG\BLK		COIN INPUT TO GAME PCB.

28 WAY EDGE CONNECTOR

BLK	GND	A	1	GND	BLK
BLK	GND	B	2	GND	BLK
PNK	+5V	C	3	+5V	PNK
PNK	+5V	D	4	+5V	PNK
VIO	-5v	E	5	-5V	VIO
ORG	+12V	F	6	+12V	ORG
KEYWAY		H	7	KEYWAY	
GRY/BLK	L SOUND (-)	J	8	L SOUND (+)	GRY/WHT
GRY/BLK	R SOUND (-)	K	9	R SOUND (+)	GRY/WHT
YEL/RED	VOL.2	L	10	VOL.1	YEL/BRN
YEL/GRN	VOL.3	M	11		
		N	12	SERVICE SW	RED/ORG
		P	13		
		R	14		
		S	15	MISSILE START	GRY/GRN
BLU/PNK	VULCAN GUN	T	16	JUMP	BLU/YEL
YEL/BLK	COIN B	U	17	COIN A	ORG/BLK
		V	18	METER A	WHT/ORG
		W	19		
YEL/BLU	ACCELERATOR	X	20		
		Y	21	VIDEO RED	RED
GRN	VIDEO GRN	Z	22	VIDEO BLU	BLU
WHT	V-SYNC	AA	23	VIDEO GND	BLKBLU
		AB	24		
		AC	25		
		AD	26		
BLK	GND	AE	27	GND	BLK
BLK	GND	AF	28	GND	BLK

AQUAJACK  
CONNECTORS

<u>CONNECTOR B</u>	<u>P.S.U.</u>	<u>9 WAY AMP M+L PLUG MALE PINS</u>
1	+5v	PNK
2	+5v	PNK
3		
4	GND	BLK
5	GND	BLK
6	GND	BLK
7		
8	+12v	ORG
9	-5v	VIO

<u>CONNECTOR C</u>	<u>MONITOR SUPPLY</u>	<u>4 WAY AMP M+L PLUG MALE PINS</u>
1	0v	BRN
2	135v	RED
3	0Jv	ORG
4	220v	YEL

<u>CONNECTOR D</u>	<u>MONITOR</u>	<u>12 WAY AMP M+L PLUG FEMALE PINS (RED)</u>
1	VIDEO GND	BLK/BLU
2		
3	VIDEO BLU	BLU
4	V-SYNC	WHT
5	VIDEO RED	RED
6	VIDEO GRN	GRN
7	0v	BRN
8		
9	220v	YEL
10	135v	RED
11		
12	0v	ORG

<u>CONNECTOR F</u>	<u>COIN MECH</u>	<u>6 WAY AMP M+L SOCKET MALE PINS</u>
1	+12v	ORG
2	+5v	PNK
3	COIN B	YEL/BLK
4	CREDIT BD	WHT/RED
5	GND	BLK
6	COIN A	ORG/BLK

<u>CONNECTOR G</u>	<u>STEERING MECH</u>	<u>12 WAY AMP M+L SOCKET MALE PINS</u>
1	VULCAN GUN	BLU/PNK
2		
3	JUMP	BLU/YEL
4		
5	UP/DOWN	BLU/RED
6	LEFT/RIGHT	ORG/GRN
7	START (MISSILE)	GRY/GRN
8		
9	+5v	PNK
10	GND	BLK
11	GND	BLK
12	EARTH	GRN/YEL

<u>CONNECTOR H</u>	<u>SERVICE BRKT</u>	<u>ROTARY SW ( PART NO 13 FALK 1026)</u> <u>MINI PUSH BUTTON (PART NO 43EC45AO2)</u>
1	SERVICE GND	BLK
2	SERVICE SW	RED/ORG
3	VOL. 1	YEL/BRN
4	VOL. 2	YEL/RED
5	VOL. 3	YEL/GRN
6	VOL. GND	BLK

<u>CONNECTOR I</u>	<u>METER</u>	<u>3 WAY AMP M+L SOCKET MALE PINS</u>
1	+5v	METER
2	CREDIT BD	WHT/RED
3	METER A	WHT/ORG

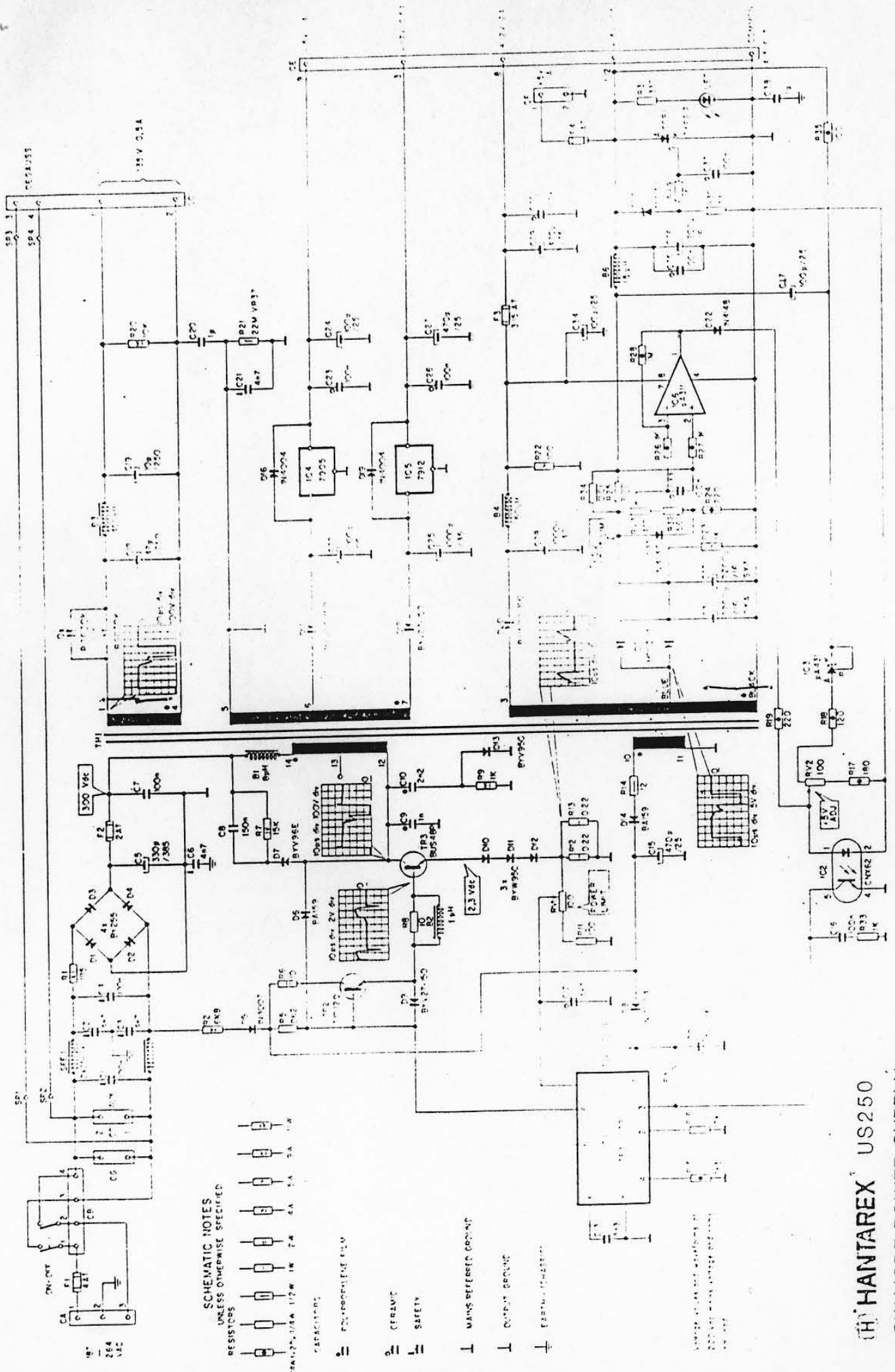
<u>CONNECTOR J</u>	<u>SPEAKERS</u>	<u>STRIP ONLY</u>
1	SPEAKER (+)	GRY/WHT
2	SPEAKER (-)	GRY/BLK
3	SPEAKER (+)	GRY/WHT
4	SPEAKER (-)	GRY/BLK

<u>CONNECTOR K</u>	<u>FOOT PEDAL</u>	<u>4 WAY AMP M+L MINI SOCKET MALE PINS</u>
1	GND	BLK
2	ACCELERATOR	YEL/BLU
3		
4	EARTH	GRN/YEL

<u>CONNECTOR L</u>	<u>(X-Y)</u>	<u>6 WAY JST 0.1 PITCH (PART NO 13JSH6P-SHF-AA)</u>
1	GND	BLK
2	+5v	PNK
3	UP/DOWN	GRN/RED
4	LEFT/RIGHT	BRN/GRN
5	UP/DOWN	BLU/RED
6	LEFT/RIGHT	ORG/GRN

<u>CONNECTOR M</u>	<u>ADJUST UP/DOWN</u>	<u>1K POT (PART NO 36AF23LIN1K)</u>
1	GND	BLK
2	UP/DOWN	GRN/RED
3	+5v	PNK

<u>CONNECTOR N</u>	<u>ADJUST LEFT/RIGHT</u>	<u>1K POT (PART NO 36FA23LIN1K)</u>
1	GND	BLK
2	LEFT/RIGHT	BRN/GRN
3	+5v	PNK



**SCHEMATIC NOTES**  
UNLESS OTHERWISE SPECIFIED

- RESISTORS
- 1R4=1/4W 1/2W 1W 2W 4W 5W 5A 5A 5A 10W
- CAPACITORS
- POLYESTER FILM
- CERAMIC
- SAFETY
- ↑ WANG REFERRED CIRCUIT
- ↑ OUTPUT GROUND
- ↑ FORWARD CHARGE

**HANTAREX US250**  
**SW MODE POWER SUPPLY**  
SCHEMATIC DIAGRAM



# ***ELECTROCOIN AUTOMATICS LTD***

## AFTER SALES & SERVICE DEPARTMENT - CARDIFF.

We would like to take this opportunity to introduce you to the NEW service department at Electrocoin Automatics - CARDIFF.

Normal working hours - 0800 - 16.30 Mondays - Fridays

Telephone number 0222 373059 - (This telephone number is now exclusive to Electrocoin After Sales).

After Hours\Weekends\Emergencies - we can now be contacted on the following telephone number - 0836 536195.

For the following enquiries please contact:

- Spares Enquiries - Phil Hayes-Pugh or Gary Scoble
- Technical Information - Ian Colley
- Workshop Manager - Mike Callan
- Spares & Repairs Accounts - Julie Tipper

N.B.

Electrocoin Automatics at Cardiff are responsible for U.K. manufactured machines and all FAMOUS GAMES products.

To ensure a fast and efficient service prompt return of faulty parts is essential.

Hoping you will avail yourselves of the facilities offered by the After Sales department and assuring you of our continued best attention at all times.

PHIL HAYES-PUGH  
After Sales Manager.