

ELECTROCOIN AUTOMATICS LTD
SERVICE MANUAL

GRAND PRIX

STAR

SITDOWN



JALECO

HOW TO FIT SEAT UNITS

1. BEFORE SECURING THE SEAT UNITS TO THE MAIN CABINET, PLEASE ENSURE THAT THE BRACKETS ON THE SEAT UNITS ARE SECURE.
2. ADJUST THE FEET ON THE SEAT UNITS SO THAT THE BRACKETS LINE UP WITH THE MAIN CABINET, AND ALSO THAT THE SEAT UNITS ARE LEVEL WITH THE FLOOR.
3. ONCE YOU HAVE ADJUSTED THE FEET ON THE SEAT UNITS, CONNECT THE SPEAKER WIRES VIA THE FOUR POSITION CONNECTORS, THEN AND ONLY THEN PUSH THE CONNECTOR THROUGH THE HOLE IN THE MAIN CABINET. THE SEAT UNITS SHOULD NOW BE TIGHT AGAINST THE MAIN CABINET.
4. LINE UP THE BRACKETS ON THE SEAT UNITS TO THE MAIN CABINET THEN SECURE VIA THE BOLTS PROVIDED, THEY ARE 4 x M8 BOLTS AND 4 x M8 PLAIN WASHERS PER EACH SEAT UNIT.
5. ONCE THE SEAT UNITS HAVE BEEN SECURED TO PREVENT ANY FURTHER MOVEMENT, USE THE WOOD SCREWS IN THE HOLES ON THE MAIN CABINET SIDE OF THE BRACKETS. 2 x BRACKET.

IMPORTANT NOTE

1. YOU MUST ENSURE THE SEAT UNITS ARE SECURE TO THE MAIN CABINET BEFORE PLAYING OF THIS GAME CAN COMMENCE. FAILURE TO DO SO COULD RESULT IN DAMAGE TO THE SEAT UNITS.
2. YOU MUST NOT ATTEMPT TO MOVE THE MACHINE BY PUSHING THE SEAT UNITS. TO DO SO COULD RESULT IN DAMAGE TO THE SEAT UNITS.
3. YOU MUST ENSURE THAT THE SEAT UNITS ARE LEVEL ON UNEVEN FLOORS, VIA THE ADJUSTABLE FEET. THIS IS SO THAT THERE IS NO MOVEMENT BETWEEN THE SEAT AND MAIN CABINET WHICH MAY CAUSE DAMAGE TO THE SEAT UNIT.

GRAND PRIX STAR SITDOWN

SPECIFICATION:

- | | | |
|----|-------------------|---|
| 1. | POWER SUPPLY | 2 x HANTAREX US 300 PSU |
| 2. | POWER CONSUMPTION | 140w EACH |
| 3. | PLAY PRICING | ADJUSTABLE ON DIP SWITCHES |
| 4. | TV MONITOR | 2 x HANTAREX 25" COLOUR MONITORS |
| 5. | DIMENSIONS | WIDTH: 1360mm
DEPTH: 785mm (WITH SEATS 1520)
HEIGHT: 1560mm |
| 6. | WEIGHT | APPROXIMATELY 650 LBS
(INCLUDING SEATS) |

* The specifications and appearance may be changed for improvement.

Table of Contents

Installation.....

Adjustments of Colour Video Monitor, Refer to Manual

Technical Features.....

Credit Information Coin Controls CCU.....

Edge Connector Information.....

Connector Information.....

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:

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.

GAME DESCRIPTION

This is a racing game where by up to four players can race against each other in a grand prix race. Via the comm. link system the players can race on three courses, these being: GERMANY (a high speed course through a forest), MONACO (a technical course through the town), or JAPAN (an original course through TOKYO).

The course is automatically picked at the beginning of the race, and as you complete each course, you will go on to the next.

In the race there are two check points for each lap, if the player fails to pass through one check point within the given time, the game is over.

The goal is to complete 4 laps, but you must be within the first four places to finish that course.

CONTROLS

- 1. ACCELERATOR: stepping on the pedal will increase the speed of the players car.
- 2. BRAKE : stepping on this pedal will decrease the speed of the players car.
- 3. STEERING : turning the wheel left or right will change the direction of the car.
- 4. SHIFT : changes the gear from low to high.

TEST MODE

Open the coin door and there you will see two test switches, the one on the left hand side is for the l/h/s/ pcb, the other for the right. Press the test switch for the desired side and the screen will display the test menu.

ROM/RAM..... checks the rom,s and ram,s on the board.
MONITOR POSITION..... a test pattern is displayed for monitor adjustment.
COLOUR BAR..... a colour bar is diplayed for colour adjustment.
I/O..... checks the switches, lamps, pots, etc.
DIP SWITCH..... shows the current dip switch settings
SOUND..... checks the sound rom/ram and the power amplifier.
COMMUNICATION..... checks the link system

1. ROM / RAM

If the ROM/RAM are functioning correctly "OK" will be displayed. If there is a fault on the ROM/RAM "NG" will be displayed.

2. MONITOR POSTION CHECK

A test pattern will be displayed allowing you to adjust the monitor postion. See monitor manual for adjustment details.

3. COLOUR BAR CHECK

The screen will display a colour bar for colour adjustment. Refer to the monitor manual for adjustment details, although there should be no need to adjust the colour as this is set in the factory.

4. I/O CHECK

This mode checks the switches, lamps, potentiometers.

When the start switch is pressed , the lamps will go on and "ON" will be displayed on the screen.

When the SHIFT is moved to high, "ON" will be displayed.

When all other switches are pushed "ON" will be displayed.

When the accelerator is pressed, the normal reading should be 80 +/- 10.

When the steering wheel is central, the normal reading should be 80 +/- 2. At 80 +/- 1, a high pitch sound occurs

When the test switch is pressed again, the screen will change to display steering wheel shock . Press the start button to move the cursor to the desired heading, then press the test switch to execute the selected test.

5. DIP SWITCH SETTINGS

This will display the switches which are on.

6. SOUND CHECK

The sound rom/rams and the power amplifier, are checked with this test. If a rom/ram is normal, then "OK" will be displayed. If there is a fault, then "NG" will be displayed.

A musical scale will sound from the front speaker, then the back speaker, and finally both.

When the start button is pressed again, a car engine will play.

7. COMMUNICATION CHECK

This display is the screen of CAR NO.1
This check will only occur when there is a comms. link between two pcb,s.

The screen will display one of the following:

NORMAL.....	OK
FAULTY.....	NG
NOT CONNECTED.....	NOT CONNECTED
POWER IS OFF.....	NOT CONNECTED
NOT BEING CHECKED.....	WAITING

When testing with CAR NO.2, it will check the connection with CAR NO.1.
Similar checks will occur if testing from CAR NO. 3 or 4.

GRAND PRIX STAR SITDOWN (EUROPE)
DIP SWITCH SETTINGS

DIP SWITCH 1

		1	2	3	4	5	6	7	8
COIN 1	1 COIN 1 CREDIT	OFF	OFF	OFF					
	1 COIN 2 CREDITS	ON	OFF	OFF					
	1 COIN 3 CREDITS	OFF	ON	OFF					
	1 COIN 4 CREDITS	ON	ON	OFF					
	1 COIN 5 CREDITS	OFF	OFF	ON					
	1 COIN 6 CREDITS	ON	OFF	ON					
	1 COIN 7 CREDITS	OFF	ON	ON					
	2 COINS 3 CREDITS	ON	ON	ON					
COIN 2	1 COIN 1 CREDIT				OFF	OFF	OFF		
	1 COIN 2 CREDITS				ON	OFF	OFF		
	1 COIN 6 CREDITS				OFF	ON	OFF		
	1 COIN 4 CREDITS				ON	ON	OFF		
	2 COINS 1 CREDIT				OFF	OFF	ON		
	3 COINS 1 CREDIT				ON	OFF	ON		
4 COINS 1 CREDIT				OFF	ON	ON			
5 COINS 1 CREDIT				ON	ON	ON			

* FREE PLAY NO YES OFF ON
NOT USED KEEP SWITCH OFF OFF

DIP SWITCH 2

NOT USED KEEP SWITCH OFF OFF
NOT USED KEEP SWITCH OFF OFF

* DIFFICULTY STANDARD OFF OFF
LEVEL DIFFICULT ON OFF
HARD OFF ON
EASY ON ON

* PLAY TIME NORMAL OFF
UNLIMITED ON

SOUND
* ATTRACT MODE YES OFF
NO ON

RACE COURSES PLAYERS OPTION OFF
* FIXED ORDER ON

NOT USED KEEP SWITCH OFF OFF

* = FACTORY SETTINGS

GRAND PRIX SRAR SITDOWN (EUROPE)
 DIP SWITCH SETTINGS (CONT.)

DIP SWITCH 3

		1	2	3	4	5	6	7	8
FIRST PLAYER	CAR NO. 1	ON	ON	ON	ON				
SECOND PLAYER	CAR NO. 2	OFF	OFF	ON	ON				
THIRD PLAYER	CAR NO. 3	OFF	ON	OFF	ON				
FOURTH PLAYER	CAR NO. 4	OFF	OFF	OFF	ON				
NOT USED	KEEP SWITCH OFF					OFF	OFF	OFF	OFF

HOW TO REMOVE CONTROL PANEL

The control panels are fixed to the cabinet via a latch on one side, and button head screws on the other side.

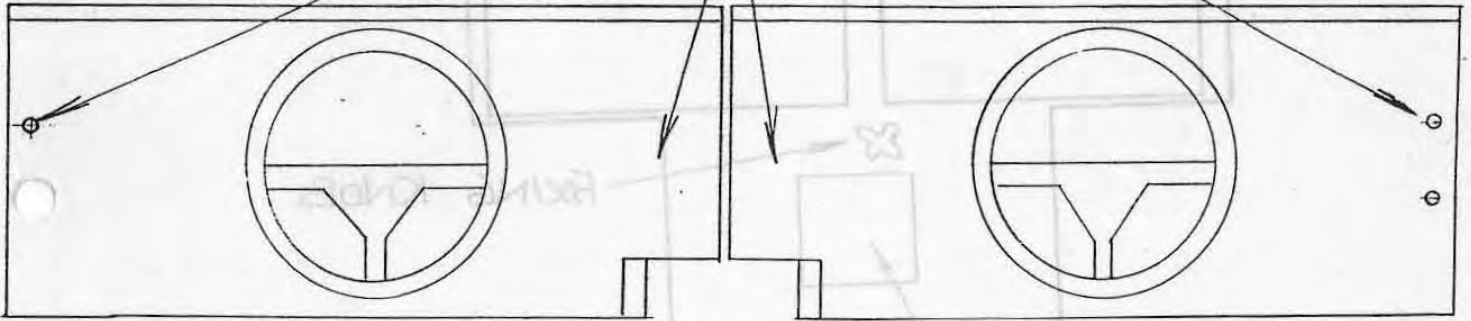
To remove the control panel, firstly open the coin door, then inside above the door there is a central panel with latches on both sides. Unlatch the side you want to remove, as the panels are independant of each other, then using the 4mm allen key supplied remove the 2x button head screws from the other side. Once you have completed the above, pull the panel slowly towards you. BEWARE WHEN LIFTING THE PANEL FROM THE CABINET AS IT IS HEAVY. Once the panel is clear of the cabinet, disconnect the leads from the panel.

PLAYER LEFT

PLAYER RIGHT

BUTTON HEAD SCREWS

LATCHES (INSIDE)



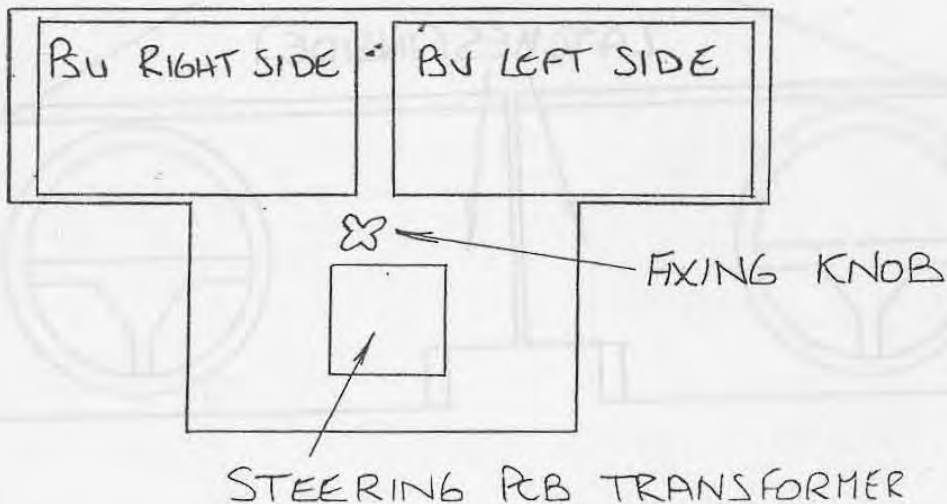
HOW TO REMOVE POWER SUPPLY UNITS

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The two HANTAREX US 300 power supplies, are fitted to a removable shelf in the lower part of the cabinet.

To remove the psu's from the cabinet, firstly you must disconnect the leads from both units, and the interface pcb, located near the front of the cabinet above the L/H/S main pcb. Once the leads have been disconnected, to remove the board there is a star knob located in the centre of the board, underneath the psu's. Remove this knob and lift the board out of the cabinet. IMPORTANT: YOU MUST RE-CONNECT THE EARTHS TO THE PSU'S.

PSU BOARD VIEWED FROM BACK OF CABINET



COIN CONTROLS CCU

TECHNICAL DATA

APPLICATIONS

CCU with sentinel

The CCU is designed to work with the sentinel 30 range of validators in a single or dual currency mode. All connections to the validators are directly from the CCU. Connections to the host machine being via the 6 way connector. If it is required that the host machine controls inhibits directly then the inhibit wiring will need to be modified to suit the application.

SWITCH SETTINGS FOR CCU

Totalising switch

As each coin is accepted, the number of credits generated by the coin are calculated by dividing the coin value by the price per credit. The result is added to the credit total. In non-totalise mode, if the coin is 20p or 10p, any money remaining after the credit calculation is added to the next 20p/10p entered before the next credit calculation is performed. If the coin is £1 or 50p then the additional credits will also be added to the credit total. In totalise mode all 20p and 10p coins are added together. Whenever this total exceeds £1 or 50p then the corresponding additional credits are added to the credit total. A time limit is placed on the totalisation to prevent the money total from being passed from one used to the next.

S11 ON - TOTALISE MODE

S11 OFF - NON TOTALISE MODE

CURRENCY SELECT SWITCH

Most coin sets have a fixed ratio of 100, 50, 20, 10 eg. 100p, 50p, 20p, 10p, but a small number of coin sets possess a different ratio eg. 100 cents, 25 cents, 10 cents, 5 cents.

On the CCU an option switch is available to allow an operator to select the coin set required. When the standard coin set is selected, the meter output pulses are in units of 10p. For the non-standard coin set, the meter output pulses are in units of 5c.

S12 ON - NON-STANDARD COIN SET (100, 25, 10, 5)

S12 OFF - STANDARD COIN SET (100, 50, 20, 10)

INHIBIT SWITCHES

Four inhibit switches are connected directly to the sentinel. There are individual switches for 11-14 and 15,6 and 17,8.

NOTE: When sentinel is used in dual currency mode, and 15,6 and 17,8 are enabled by setting SW17 and 18 on. Then both currencies must have the same coin ratios.

4.4 PRICE SETTING

The price settings switches are arranged in three groups:- 5 switches for the basic price per credit, 3 switches for the number of additional credits bought by the highest value coin eg. £1.

2 switches for the number of additional credits bought by the second highest value coin eg. 50p.

PROGRAMMING INFORMATION

PRICE PER GAME FOR 100, 50, 20, 10 COIN SET

<u>SW1</u>	<u>SW2</u>	<u>SW3</u>	<u>SW4</u>	<u>SW5</u>	<u>UNITS/GAME</u>
X	ON	ON	ON	ON	5
X	OFF	ON	ON	ON	10
X	ON	OFF	ON	ON	20
X	OFF	OFF	ON	ON	30
X	ON	ON	OFF	ON	40
X	OFF	ON	OFF	ON	50
X	ON	OFF	OFF	ON	60
X	OFF	OFF	OFF	ON	70
X	ON	ON	ON	OFF	80
X	OFF	ON	ON	OFF	90
X	ON	OFF	ON	OFF	100
X	OFF	OFF	ON	OFF	110
X	ON	ON	OFF	OFF	120
X	OFF	ON	OFF	OFF	130
X	ON	OFF	OFF	OFF	140
X	OFF	OFF	OFF	OFF	150

X = DON'T CARE

ADDITIONAL GAMES FOR HIGHEST VALUE COIN(COIN 1)

<u>SW6</u>	<u>SW7</u>	<u>SW8</u>	<u>FUNCTION</u>
ON	ON	ON	NO ADDITIONAL GAMES
OFF	ON	ON	1 ADDITIONAL GAME
ON	OFF	ON	2 ADDITIONAL GAMES
OFF	OFF	ON	3 ADDITIONAL GAMES
ON	ON	OFF	4 ADDITIONAL GAMES
OFF	ON	OFF	5 ADDITIONAL GAMES
ON	OFF	OFF	6 ADDITIONAL GAMES
OFF	OFF	OFF	7 ADDITIONAL GAMES

ADDITIONAL GAMES FOR SECOND HIGHEST COIN (COIN 2)

<u>SW9</u>	<u>SW10</u>	<u>FUNCTION</u>
ON	ON	NO ADDITIONAL GAMES
OFF	ON	1 ADDITIONAL GAME
ON	OFF	2 ADDITIONAL GAMES
OFF	OFF	3 ADDITIONAL GAMES

TOTALISING SWITCHES

S11 ON	TOTALISE MODE
S11 OFF	NON-TOTALISE MODE

CURRENCY SELECT SWITCHES

S12 ON	NON-STANDARD COIN SET (100, 25, 10, 5)
S12 OFF	STANDARD COIN SET (100, 50, 20, 10)

INHIBIT SWITCHES

S13	COIN 1	ON = ACCEPT	OFF = INHIBIT
S14	COIN 2		
S15	COIN 3		
S16	COIN 4		
S17	COIN 5/6		
S18	COIN 7/8		

QUATTRO

VIDEO CREDIT BOARD FROM BRENT LEISURE

*Multi-Coin AND Multi-Play with self-checking fault diagnosis
all combined on one fully-tested board at the RIGHT Price.*

MULTI COIN

(ONE CHANNEL VERSION)

4 coins into one input

The most universal credit unit for all video games fully proven and with total security.
For use with either Mars or Sentinal electronic coin mechs.

MULTI-COIN/MULTI PLAY

(FOUR CHANNEL VERSION)

4 coins into one input

4 inputs into one game

4 players into one coin acceptor

Up to 4 players on multi-player games through one electronic coin mech (Mars or Sentinal).
The only unit with player select after coins are inserted, allows the game to play correctly.

The "QUATTRO" unit is designed to allow electronic coin acceptors such as the Mars or Sentinal units to be easily interfaced to machines such as video games, juke boxes and kiddie rides etc.

The "QUATTRO" is particularly suited to the new generation of multi-player games such as Gauntlet. A single "QUATTRO" unit (the four channel version) in conjunction with either a Mars or Sentinal acceptor is capable of replacing up to four mechanical coin mechanisms.

PRICE OF PLAY SETTINGS

Shows the factory settings:- 1 Play 20p. 3 Plays 50p. 7 Plays 100p

Switch Bank 1 Switches 1-4 set the price charged for 1 game

SW1-1	SW1-2	SW1-3	SW1-4	PRICE
OFF	OFF	OFF	OFF	10p
ON	OFF	OFF	OFF	20p#
OFF	ON	OFF	OFF	30p
ON	ON	OFF	OFF	40p
OFF	OFF	ON	OFF	50p
ON	OFF	ON	OFF	60p
OFF	ON	ON	OFF	70p
ON	ON	ON	OFF	80p
OFF	OFF	OFF	ON	90p
ON	OFF	OFF	ON	100p
OFF	ON	OFF	ON	110p
ON	ON	OFF	ON	120p
OFF	OFF	ON	ON	130p
ON	OFF	ON	ON	140p
OFF	ON	ON	ON	150p
ON	ON	ON	ON	160p

Switch Bank 2 Switches 1-3 set the number of games for 50p.

SW2-1	SW2-2	SW2-3	GAMES
OFF	OFF	OFF	0*
ON	OFF	OFF	2
OFF	ON	OFF	3#
ON	ON	OFF	4
OFF	OFF	ON	5
ON	OFF	ON	6
OFF	ON	ON	7
ON	ON	ON	8

* Use this setting if the price of play is 50p or greater or if no bonus is required for 50p.#

Switch Bank 1 Switches 5-8 sets the number of games for 100p

SW1-5	SW1-6	SW1-7	SW1-8	GAMES
OFF	OFF	OFF	OFF	0*
ON	OFF	OFF	OFF	2
OFF	ON	OFF	OFF	3
ON	ON	OFF	OFF	4
OFF	OFF	ON	OFF	5
ON	OFF	ON	OFF	6
OFF	ON	ON	OFF	7#
ON	ON	ON	OFF	8
OFF	OFF	OFF	ON	9
ON	OFF	OFF	ON	10
OFF	ON	OFF	ON	11
ON	ON	OFF	ON	12
FF	OFF	ON	OFF	13
N	OFF	ON	ON	14
FF	ON	ON	ON	15
N	ON	ON	ON	16

Use this setting if the price of play is 100p or greater or if no bonus is required for 100p.

ERROR HANDLING

The Quattro board carries out a complex self check during the power up sequence and if any fault is detected an error code as shown below will be flashed on the coin entry lamp.

<u>No. of Flashes</u>	<u>Meaning</u>
1	Not Used
2	Illegal coin/credit setting
3	Mars 100p coin line stuck high
4	Mars 50p coin line stuck high
5	Mars 20p coin line stuck high
6	Mars 10p coin line stuck high
7	Player 1 switch jammed
8	Player 2 switch jammed
9	Player 3 switch jammed
10	Player 4 switch jammed

Connection Details

Connectors marked * are only fitted on the 4 channel units.

CN-1

13 way molex connector used to interface the Mars or Sentinel Acceptor to the Quattro.

CN-2

3 way screw connector interfaces the Quattro to the coin switch inputs of the main game logic board. This connector is always fitted and on the four channel board is used for Player No. 1.

CN-2-1	Player 1 Coin Switch N/C
CN-2-2	Player 1 Coin Switch N/O
CN-2-3	Players 1-4 Coin Switch Commons

*CN-3

6 way connector used to interface to the player select switches.

CN-3-1	Switch Enable - Do not connect to ground!	CN-3-4	Player 2 Switch return
CN-3-2	Not Used	CN-3-5	Player 3 Switch return
CN-3-3	Player 1 Switch return	CN-3-6	Player 4 Switch return

CN-4

2 way screw connector used to supply power (12v 2.2w) to the Mars Mech Coin Entry Lamp.

CN-5

2 way screw connector used to supply power to an external coin counter (12v dc).

CN-5-1	0 volts	CN-5-2	12 volts
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*CN-6 *CN-7 *CN-8

2 way screw connectors for player 2, 3 and 4 coin switches.

CN-6-1	Player 2 Coin Switch N/C
CN-6-2	Player 2 Coin Switch N/O
<i>(Players 3+4 connect in the same way to CN-7 and CN-8)</i>	

*CN-9

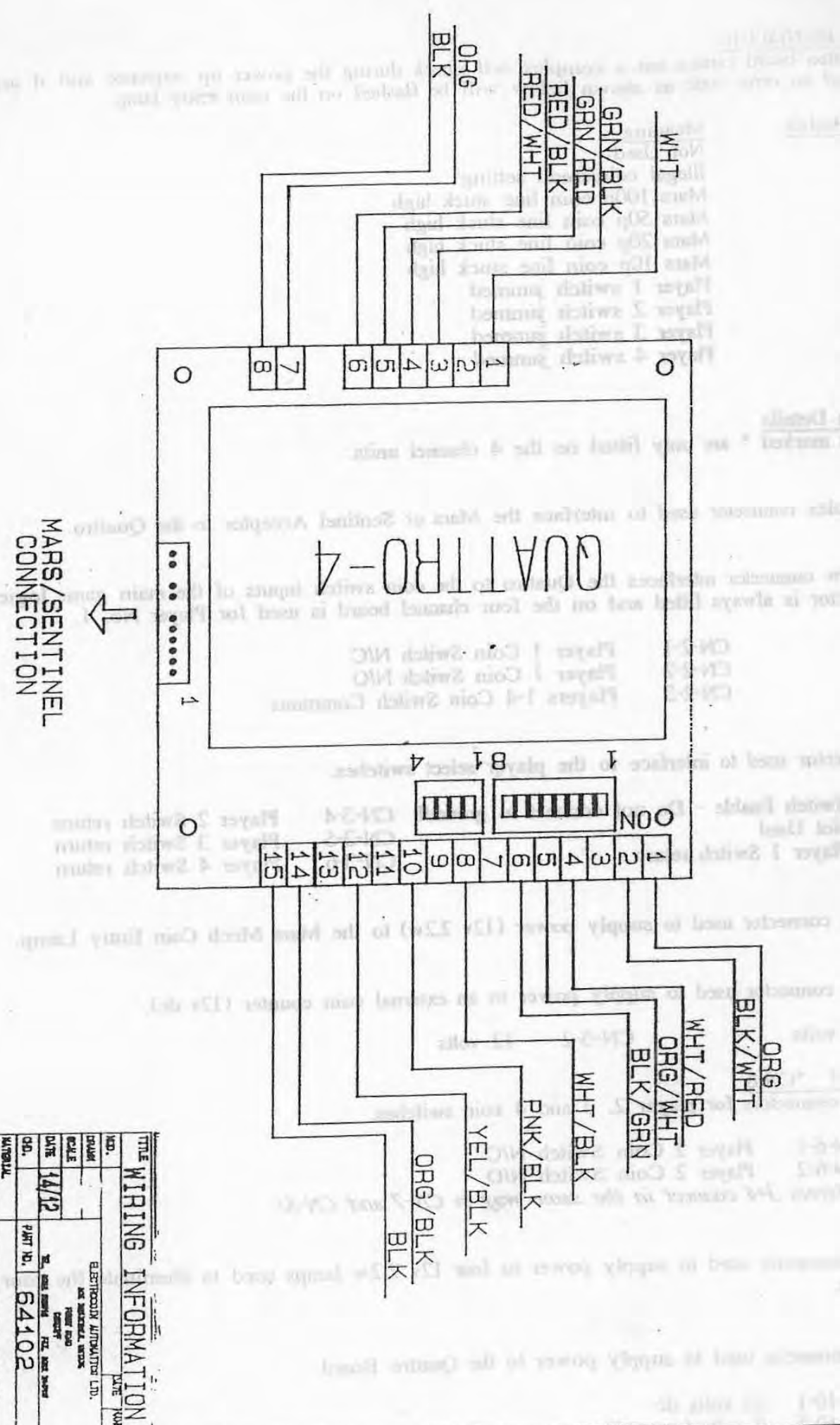
2 way screw connector used to supply power to four 12v 2.2w lamps used to illuminate the four player switches.


CN-10

2 way screw connector used to supply power to the Quattro Board.

CN-10-1	12 volts dc
CN-10-2	0 volts (ground)

WIRING INFORMATION FOR THE QUATTRO CREDIT BOARD




 MARS/SENTINEL
 CONNECTION

TITLE		DATE	
WIRING INFORMATION			
NO.		DATE	
SCALE		DATE	14/12
CD.		PART NO.	64102
WARRANTY			
FIGURE			
TITLE			

ELECTRODIN AUTOMATICA LTD.
 180, INDUSTRIAL WAREHOUSE
 HONG KONG
 TEL. 2522 8888 FAX. 2522 8888

ELECTRODIN AUTOMATICA LTD. 1980

GRAND PRIX STAR MAIN LOOM
M 5 WAY DIN PLUG

- 1 ORANGE/BLUE
- 2 BLACK/RED
- 3 RED/BLUE
- 4 ORANGE/PINK
- 5 ORANGE/GREY

POT 1 & POT 2 5K. AS VIEWED FROM BACK (SPINDLE FACING FORWARD) AND TERMINALS FACING DOWN 1 IS ON LEFT.

POT 1	PTM SW	POT 2
1 RED/GREEN	GREY/WHITE	1 GREY/BLUE
2 GREY/ORANGE	BLACK/WHITE	2 GREY/RED
3 GREY/GREEN		3 GREEN/RED

36 WAY EDGE CONNECTOR 156 PITCH

COLOUR	PIN	PIN	COLOUR
GREY/BLACK	37 A	1	ORANGE/GREEN
BROWN/BLUE	38 B	2	ORANGE/VIOLET
GREEN/RED	39 C	3	GREY/GREEN
GREY/RED	40 D	4	GREY/ORANGE
GREY/BLUE	41 E	5	RED/GREEN
RED/BLUE	42 F	6	ORANGE/BLUE
ORANGE/GREY	43 H	7	ORANGE/PINK
BLACK/ORANGE	44 J	8	BLACK/RED
BLUE/VIOLET	45 K	9	BLUE/YELLOW
PINK	46 L	10	PINK
	47 M	11	
	48 N	12	
	49 P	13	
KEYWAY-KEYWAY	50 R	14	KEYWAY-KEYWAY
YELLOW/BLACK	51 S	15	ORANGE/BLACK
BLUE/RED	52 T	16	GREY/WHITE
BLACK/GREEN	53 U	17	BLK/WHI
YELLOW	54 V	18	GREEN/BLACK
RED/ORANGE	55 W	19	GREY
	56 X	20	
	57 Y	21	BLACK/ORANGE
	58 Z	22	
	59 a	23	
	60 b	24	
	61 c	25	
WHITE/YELLOW	62 d	26	WHITE/ORANGE
ORANGE	63 e	27	
BLUE/BLACK	64 f	28	WHITE/BLUE
	65 h	29	BLACK/VIOLET
ORANGE/RED	66 j	30	
	67 k	31	
	68 l	32	ORANGE/YELLOW
	69 m	33	ORANGE
	70 n	34	
	71 p	35	
	72 r	36	BLACK

GRAND PRIX STAR BIT DOWN MAIN LOOM

PLUG L 4 WAY MINI FEMALE SOCKET MINI MALE TERMINALS.

1	ORANGE/GREEN	SP FRONT +
2	ORANGE/VIOLET	SP FRONT -
3		
4	GREEN/YELLOW	EARTH

PLUG S 4 WAY MINI FEMALE SOCKET MINI MALE TERMINALS.

1	GREY/BLACK	SP REAR +
2	BROWN/BLUE	SP REAR -
3		
4	GREEN/YELLOW	EARTH

PLUG F 6 WAY MINI M&L MALE PLUG MINI M&L MALE PINS.

1	N/W	
2	PINK	+5VDC ACCEL.
3	BLACK/ORANGE	SW. GROUND
4	N/W	
5	GREY	BRAKE SW.
6	BLUE/VIOLET	ACCEL. VR.

PLUG J 12 WAY MINI M&L FEMALE SOCKET MINI M&L MALE TERMINALS.

1	BLACK/GREEN	SW. GROUND
2	PINK	+5VDC
3	GREEN/BLACK	START SW.
4	WHITE/BLUE	START LAMP
5	ORANGE	START +V
6	YELLOW	SHIFT SW.
7	BLUE/YELLOW	HANDLE VR.
8	N/W	
9	ORANGE	+12VDC
10	BLACK	GROUND
11	N/W	
12	N/W	

PLUG Q 2 WAY MALE PLUG FEMALE TERMINALS

1	ORANGE	MOTOR +V
2	BLACK	MOTOR -V

PLUG C 5 WAY MOLEX 5051 MINI KK TERMINALS.

1	RED	VIDEO RED
2	GREEN	VIDEO GREEN
3	BLUE	VIDEO BLUE
4	BLACK	VIDEO GROUND
5	WHITE	VIDEO SYNC.

PLUG P 4 WAY MALE PLUG MALE TERMINALS

1	BROWN	MONITOR SUPPLY 0VAC
2	RED	MONITOR SUPPLY 128 VAC
3	ORANGE	MONITOR SUPPLY 220 VAC
4	YELLOW	MONITOR SUPPLY 0VAC

PLUG K 12 WAY MALE PLUG (RED) FEMALE TERMINALS.

1	BLACK	VIDEO GROUND
2	N/W	
3	BLUE	VIDEO BLUE
4	WHITE	VIDEO SYNC.
5	RED	VIDEO RED
6	GREEN	VIDEO GREEN
7	BROWN	OVAC
8	N/W	
9	YELLOW	OVAC
10	RED	128 VAC
11	N/W	
12	ORANGE	220 VAC

PLUG H 6 WAY FEMALE SOCKET MALE TERMINALS.

1	ORANGE	+12 VDC
2	PINK	+5 VDC
3	YELLOW/BLACK	COIN 2
4	WHITE/RED	CREDIT BOARD METER
5	BLACK/WHITE	SW. GROUND
6	ORANGE/BLACK	COIN 1

PLUG X 6 WAY MINI FEMALE SOCKET MINI MALE TERMINALS

1	ORANGE/BLUE	COMM. CLK +
2	BLACK/RED	COMM. GROUND
3	RED/BLUE	COMM. DATA +
4	ORANGE/PINK	COMM. CLK +
5	ORANGE/GREY	COMM. DATA -
6		

PLUG AA 2 WAY FEMALE PLUG FEMALE TERMINALS

1	ORANGE/RED	RACE LAMP
2	RED/ORANGE	RACE SW.

0.25 FASTONS AND BOOTS

1	ORANGE/RED	RACE LAMP
2	RED/ORANGE	RACE SW.
3	ORANGE	LAMP + VDC
4	BLACK/GREEN	SW. GROUND

W 0.25 FASTON & COVERS

1	BLACK/WHITE	SW. GROUND
2	BLUE/RED	TEST SW.

PLUG R 4 WAY MINI MALE PLUG MINI FEMALE TERMINALS

1	BLACK	MOTOR -V R/H/S
2	ORANGE	MOTOR +V R/H/S
3	N/W	
4	BLUE/BLACK	MOTOR SIGN. R/H/S

2

11

PLUG B 7 WAY MOLEX 3001 MAXI TERMINALS

1	ORANGE	+5 VDC
2	KEYWAY	
3	BLACK	GROUND
4	PINK	+5 VDC
5	PINK	+5 VDC
6	BLACK	GROUND
7	BLACK	GROUND

PLUG B1 5 WAY MOLEX 3001 MAXI KK TERMINALS

1	PINK	+5 VDC
2	KEYWAY	
3	PINK	+5 VDC
4	BLACK	GROUND
5	BLACK	GROUND

PLUG B2 5 WAY MOLEX 3001 MAXI KK TERMINALS

1	PINK	+5 VDC
2	KEYWAY	
3	PINK	+5 VDC
4	BLACK	GROUND
5	BLACK	GROUND

PLUG N 3 WAY FEMALE SOCKET M&L MALE TERMINALS

1	PINK	+5 VDC
2	WHITE/ORANGE	METER 1
3	WHITE/RED	CREDIT BOARD METER
	WHITE/YELLOW	METER 2

PLUG D 9 WAY MALE PLUG MALE TERMINALS

1	PINK	+5 VDC
2	PINK	+5 VDC
3	N/W	
4	BLACK	GROUND
5	BLACK	GROUND
6	N/W	
7	N/W	
8	ORANGE	+12 VDC
9	N/W	

EARTH LOOM.
 E E1 E8 E5 E6 E7 0.25 FASTONS & COVERS
 E2 E3 2BA SHAKEPROOF RING
 E4 4BA RING

PLUG R1 7 WAY MOLEX 3001 .200 PITCH

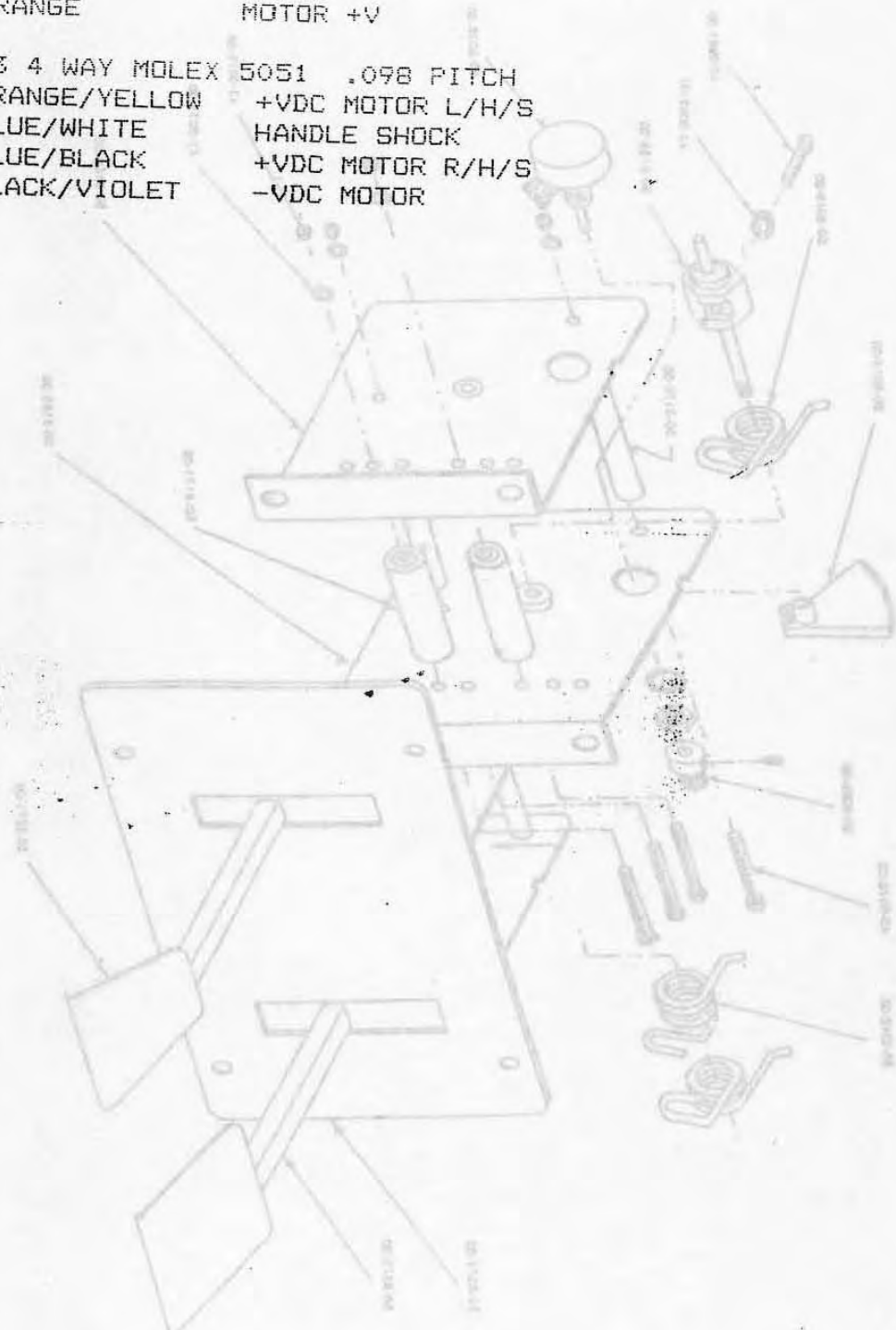
1	BLACK	GROUND
2	KEYWAY	
3	BLACK	GROUND
4	ORANGE	+12 VDC
5	ORANGE	+12 VDC
6	BLACK	GROUND
7	ORANGE	GROUND

PLUG R2 4 WAY MOLEX 3001 .200 PITCH

- 1
- 2 KEYWAY
- 3 BLACK MOTOR -V
- 4 ORANGE MOTOR +V

PLUG R3 4 WAY MOLEX 5051 .098 PITCH

- 1 ORANGE/YELLOW +VDC MOTOR L/H/S
- 2 BLUE/WHITE HANDLE SHOCK
- 3 BLUE/BLACK +VDC MOTOR R/H/S
- 4 BLACK/VIOLET -VDC MOTOR



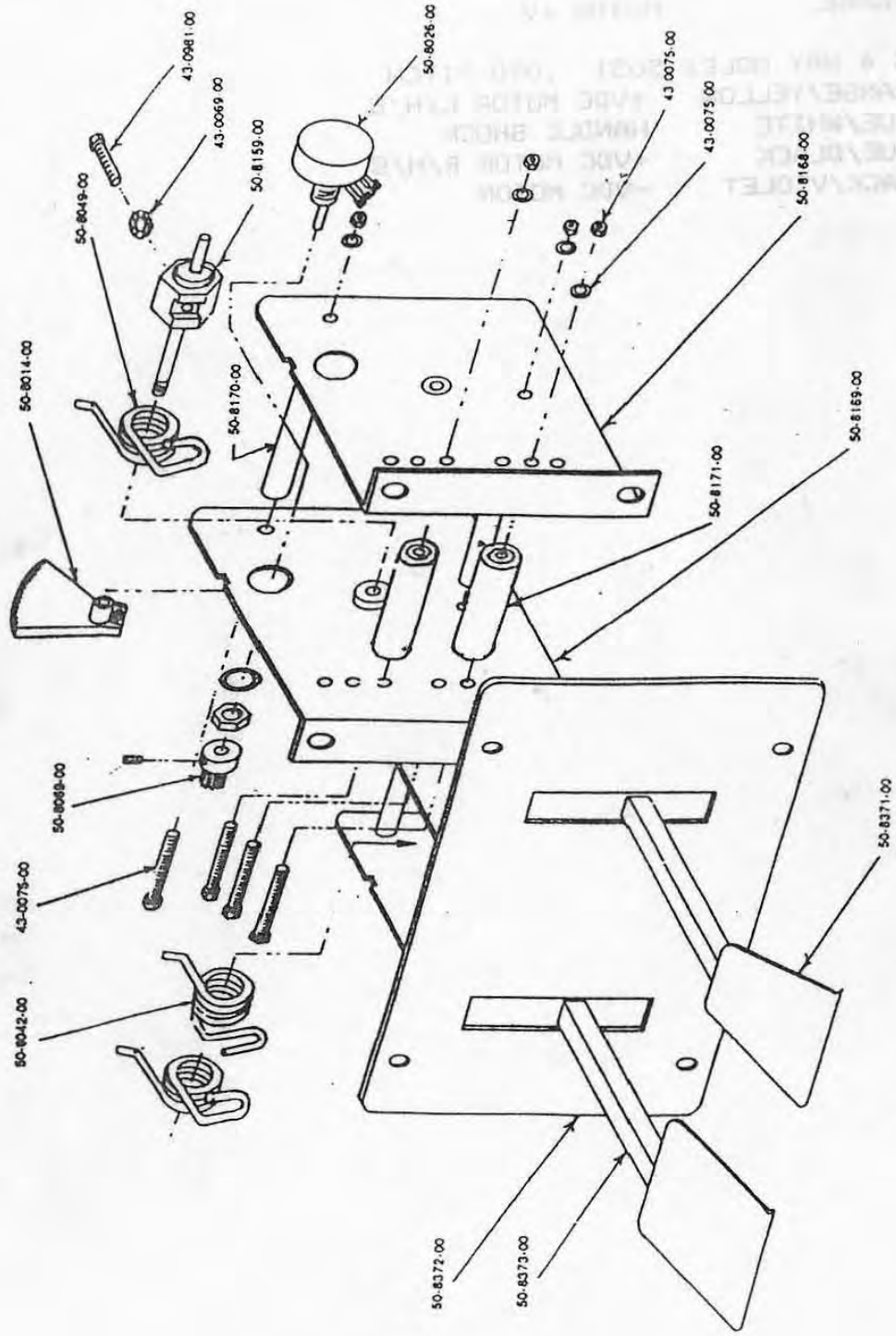
ИЗУЧЬ БЕДВТ УЗСЕМБЛГА

NOTE: Изучите сборку еще перед сборкой вая изобретения

Бедвт Узсемблрга

2

Pedal Assembly



NOTE: Numbers shown are Happ Controls Part Numbers.
HAPP PEDAL ASSEMBLY