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Operating and Safety Instructions

Product Safety

Every effort has been made to ensure this product has been designed with safety in mind.

Components used within this product are used within the manufacturers stated specification limits. Under no circumstances should replacement parts other than those specified or supplied by the manufacturer be used within this machine.

Electrical Safety

This machine must not be used unless it is correctly earthed and should be connected to a mains supply of 220v/240v at a frequency of 50Hz.

All machines leaving the manufacturer are subject to electrical safety tests. These tests consist of earth-bond and insulation tests. These tests should be carried out on a regular basis, or when a critical part is replaced.

Only suitably qualified or adequately instructed person should carry out work on the internal parts of this machine.

Connection.

A three-pin plug fitted with a fuse rated at 3 Amps should be fitted to the supply cable. The supply cable should not exceed a length of 2 metres.

Parts list

On receipt of your machine please check the content against the following list, and notify our **Spares Department** *immediately* of any shortages on 029 20377402.

Part	Part number
Top Glass	AT 2001
Reel Glass	AL 2001
Reel Band 1	AR 2001/1
Reel Band 2	AR 2001/2
Reel Band 3	AR 2001/3
Button Legends x 6	AB 2001
£2 jackpot decal	AD 2001/1
£3 jackpot decal	AD 2001/2
£4 Jackpot decal	AD 2001/3
£5 Jackpot decal	AD 2001/4
1 x Red RPB assembly complete	
1x RPB switch loom (fitted to vac)	
Top Vacuum Form loomed	
Reel glass vacuum form loomed	
Alphanumerical display bracket incl. 2 x 3BA nuts & bolts	
Button panel	
Game manual	
Back door sticker	
1 game eEPROM	
1 sound EPROM	

Setting-up

No connector or component must be removed or reconnected whilst the power is turned on.

Check that all connectors, assemblies, and wiring harness are correctly engaged inside the machine.

Set the DIL switch options on the MPU board to the desired position and fit the relevant decals. Run the machine through the test procedure.

Switch Settings

Switch bank 1

Switch	OFF	ON
1	Ram clear toggle	Ram Clear toggle
2	Enable coin alarm	Coin Alarm Inhibit
3	Wins banked	Direct Payout
4	Not used (leave OFF)	
5	Payout if tubes low	Lock up if tubes low
6	Small motors	Large motors
7	Not used (leave OFF)	
8	Multi-coin play	Single coin play

Switch bank 2

Switch	Function
1	Jackpot selection (see overleaf)
2	Jackpot selection (see overleaf)
3	Not used (leave OFF)
4	Not used (leave OFF)
5	Payout percentage selection (see overleaf)
6	Payout percentage selection (see overleaf)
7	Payout percentage selection (see overleaf)
8	Payout percentage selection (see overleaf)

NOTE

Switch 6 on switch bank 1 controls motor selection. When the switch is in the OFF position the Saia, Airpax motors can be used. When the switch is in the ON position the Barcrest, Minebea, Crouzet motors are selected.

Jackpot and Percentage Settings.

Switch 1	Switch 2	Outcome
OFF	OFF	£2
ON	OFF	£3
OFF	ON	£4
ON	ON	£5

The percentage can be selected via the DIL switches. If a percentage key is fitted this will override the DIL switch selection. If all the switches are off then the percentage defaults to 78%.

Switch 5	Switch 6	Switch 7	Switch 8	%
ON	OFF	OFF	OFF	70
OFF	ON	OFF	OFF	72
ON	ON	OFF	OFF	74
OFF	OFF	ON	OFF	76
ON	OFF	ON	OFF	78
OFF	ON	ON	OFF	80
ON	ON	ON	OFF	82
OFF	OFF	OFF	ON	84
ON	OFF	OFF	ON	86
OFF	ON	OFF	ON	88
ON	ON	OFF	ON	90
OFF	OFF	ON	ON	92
ON	OFF	ON	ON	94
OFF	ON	ON	ON	96
ON	ON	ON	ON	98

Demonstration mode

A demonstration mode is provided which enables the game to be played or tested without having the need to insert coins and without any actual payout of prizes.

To enter the demonstration mode, open the back door and press the test button once. To achieve £5 worth of credits press the Start button. By holding down the Cancel button and any of the Hold buttons the reels can be stepped down. The reel can also be stepped up by holding down the Cancel and HI buttons, to induce reel wins or to play the feature.

If the MPU does not recognise any activity after approximately 20 seconds the machine enters the attract mode. Credits can then be achieved by pressing the Start button again.

Test Routine.

To enter the test routine the back door must be open and the black test button on the right hand side of the cabinet pressed twice.

Navigation.

Collect	Nudge	Nudge	Nudge	Nudge Up	Start Gamble
LH1 RH6	LH2 RH5	LH3 RH4	LH4 RH3	LH5 RH2	LH6 RH1

To step to the next test press the RH2 button. To step to a previous test press the RH3 button. The relevant test will be displayed on the alphanumeric display. To activate the desired test the RH1 button is then pressed. Press the RH1 once to exit that test. The test routine is then advanced forward to the next test.

<i>Test Number</i>	<i>Test procedure</i>
1.1	Coin in
1.2	Coin out
2.1	Reels 1
3.2	Lamps
4.1	Inputs
4.2	DILS
5.1	Alphanumeric
6.1	Meters
7.1	Communications
8.2	Volume
9.1	Keys
A.1	Alarm log

Test 1.1 – Coin In.

All coins accepted by the machine will display the relevant coin value on the display.

To inhibit the coins the LH1 button is pressed. To return to coin acceptance then the LH1 button is pressed again.

The coin level sensors can be tested in this test. When the relevant sensor is made a voice will tell you which level sensor is being activated.

Test 1.2 – Coin out.

Button RH2 and RH3 are used to select the payout tube.

Button LH1 is used to payout coins. The alphanumerical display will read how many coins have been paid out. If there are no coins in the tubes, the value on the display is incremented by how many times the button is pressed.

Test 2.1– Reels 1.

On entry to this test the reels will spin to the SYNC position and light all the lamps behind the reel bands. The message SYNC POSITION will be displayed. At this point the optic tab will NOT be in the centre of the optic sensor, but the first reel symbols will be on the win line.

The relevant HOLD/NUDGE button can be pressed to step the reels down.

The symbol on the last reel pressed will be displayed.

If the CANCEL button is held for 2 seconds or more any win/feature available will be indicated.

Test 3.2 – Lamp test

On entering the test the display will read 3.2 FLASH, and all the lamps will flash.

Pressing the LH1 button will toggle the step lamp test.

The RH2 and RH3 buttons will respectively step through the lamps forwards and backwards.

Test 4.1 – Inputs

When any input changes a sound will be generated and the relevant information is displayed.

To exit this test, hold down RH1 for longer than two seconds.

The following table indicates lamps that will light upon various switches being made.

Input Definition	Lamp Definition
20p low level sensor	20p on the top glass
Pound low level sensor	£ 1.60 on the top glass
10p low level sensor	10p on the top glass
Test switch	1 nudge on top glass
Refill key	2 nudge on top glass

Test 4.2 – DIL Switches.

On entry to this test the status of the DIL switches are displayed. When a number 1 is displayed then the switch is ON. If the number is 0 then the switch is OFF.

Test 5.1 – Alphanumerical display.

On pressing the RH2 button each segment of the alphanumeric will light from left to right. Once all the segments have been tested they will then be tested simultaneously. The RH1 and RH2 buttons will toggle between the two tests.

Test 6.1 – Meters.

Pressing the LH1 button initiates the test. Each meter will pulse 5 times. **The refill key is not required for this test.**

Test 7.1 – Comms.

If machine recognises that there is a Datapak connected to the RS232 port the machine will display PASS. If there is no Datapak fitted then FAIL is displayed.

Test 8.2 – Volume.

This test will allow adjustment of the electronic volume control (**if it is present on the program card fitted**) and is identical to the volume adjustment via the refill key with the doors closed.

The display will show the volume in a percentage.

The LH1 and LH2 buttons will be used to adjust the volume down and up respectively.

The RH2 and RH3 buttons will allow the sample number to be increased or decreased respectively.

Test 9.1 – Keys

This will display the current setting of the percentage key, if there is one fitted and the current stake and payout percentage.

Test A.1- Alarm log.

On pressing the RH1 button the alarm log number will be shown on the left-hand side of the display, the alarm code on the right.

By pressing the LH4 button and the LH2 buttons you can increment or decrement the log number respectively.

By holding the RH1 button for five seconds the alarm log can be cleared.

Alarm codes

Code	Fault	Causes (in order of probability)
0.1	Ram clear	Program change, faulty battery, M.P.U
0.2	Mode change	Percentage, prize setting changed
1.1	£1 coin input	Coin jam. Coin mech., coin loom,
1.2	50p coin input	As above
1.3	20p coin input	As above
1.4	10p coin input	As above
1.6	5p coin input	As above
1.5	Token input	As above
1.9	Anti-strim alarm	Coin mech., coin loom, M.P.U
2.1	Reel 1 fault	Set-up, opto, loom, motor, M.P.U
2.2	Reel 2 fault	As above
2.3	Reel 3 fault	As above
2.4	Reel 4 fault	As above
6.0	Meter error	More than 1 meter disconnected
6.1	Meter 1 fault	Meter1 faulty
6.2	Meter 2	“
6.3	Meter 3	“
6.4	Meter 4	“
6.5	Meter 5	“
7.1	E.D.C failure	Datport unit not fitted, M.P.U, no -12v
9.1	Incorrect switch settings	Adjust switch settings, faulty MPU
9.2 – 9.8	Faulty processor	Faulty MPU, programme card

Technical Data

Machine Description

Cabinet

Cabinet name:	Roll Top
Manufacturer:	Barcrest
Technology:	MPU4
Height:	1700mm
Width:	690mm
Depth:	650mm
Weight:	120Kg (approx.)

Coin Handling

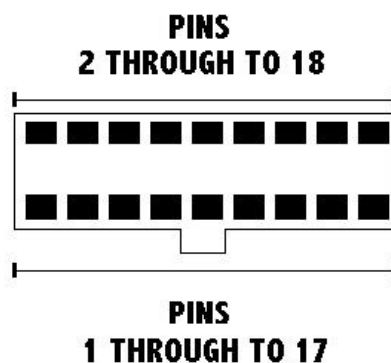
This machine uses an 18 way routing plug. The pins are identified with the notch of the routing plug facing downward and the wire links facing you.

To achieve the correct routing, link pins: -

A 10p tube is fitted in place of the front token tube and the coin validator is configured to accept the 2p coin via the token channel (5) the routing now becomes: -

4 + 6, 8 + 15, 7 + 16, 12 + 13

1 x 20p Coin Controls compact 50v AC. Fitted with cream Starpoint level sensor.
1 x £1 Coin Controls compact 50v AC. Tube is fitted with red Starpoint 3CLD AA level sensor.
1 x 10p Coin controls compact 50vAC fitted with grey Starpoint 3CLD AA level sensor



Coin Tube Capacities

The coin tube capacities are listed below with the level sensor positions.

Coin Tube	Capacity	Sensor
20p	£ 30	£ 4.40
£ 1	£ 70	£ 16
10p	£ 17.80	£ 4.50

Meters

4 x 12v DC

1 x 48v AC

Software Meters (electronic)

In all there are 50 meters, but there are useful meters that have been incorporated for the operators benefit. These are Cash in, Cash out, Games played, and Cash refilled. For the desired meter refer to the table below.

To access the software meters open the back door and press the test button once. The machine will go into demonstration mode. Next turn the refill key to the on position.

The alphanumerical display will show meter number 0. To display the next meter press the third **Hold/Nudge** button, to display the previous meter press the first **Hold** button.

To clear the meters, press and hold the **Start** button. A countdown sequence will be initiated and can be aborted by releasing the **Start** button. Once the countdown reaches zero the meters will be cleared.

Meter No.	Description	Divide by

Note that the software will be cleared down every time the RAM has been reset and the percentage or price of play has been altered.

Reels

Motor alignment

Put the machine into reel test (test 2). This will spin the reels showing the first symbols on the reel band in the win line.

Reel Band Placement

Place the notched reel band on to the notch on the reel drum and rotate. When fully rotated remove the double-sided tape on the bottom edge of the reel band and affix to the top edge of the reel band.

Reel band Layout

Reel 1	Reel 2	Reel 3
Melon Pear Cherry	Orange Plum D Orange	Orange E Plum Melon

Button Layout

Figure 1 6-way button panel

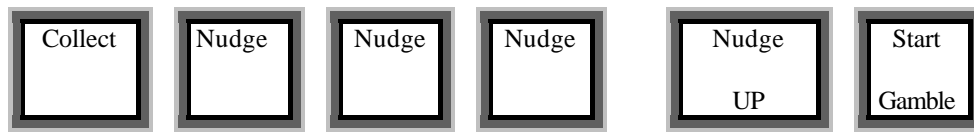
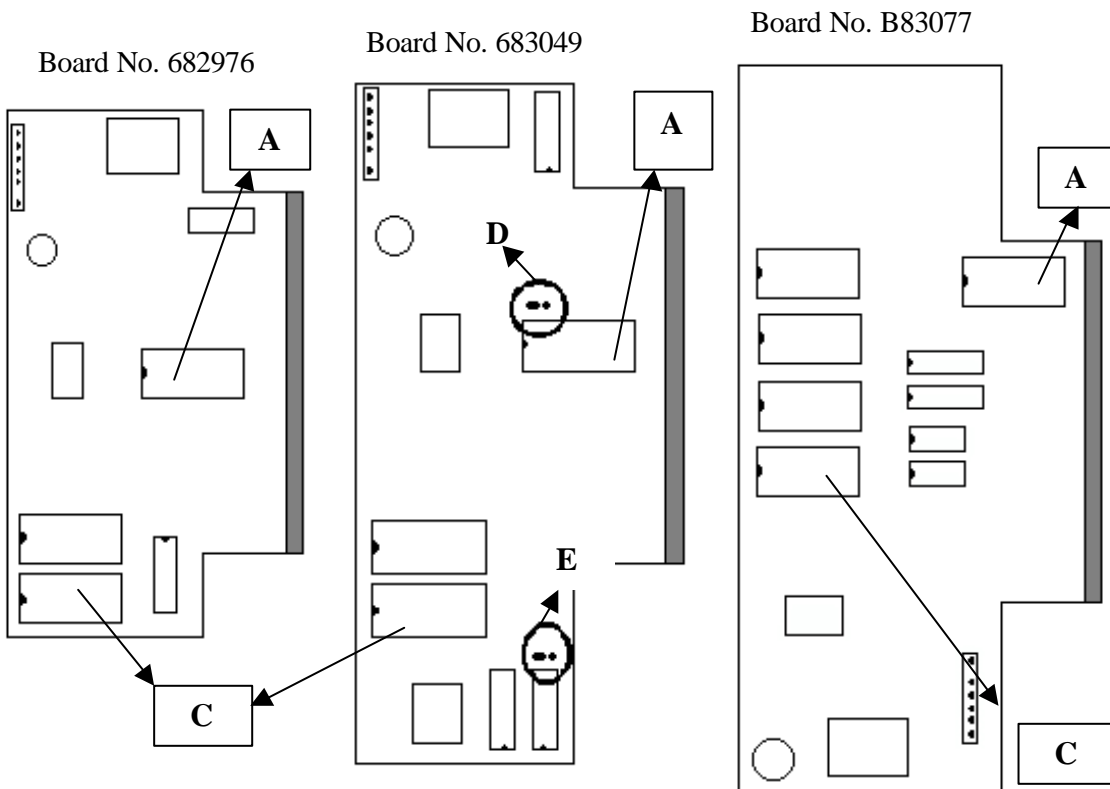


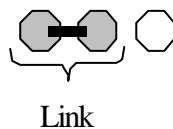
Figure 2 Program Cards



A = Game EPROM

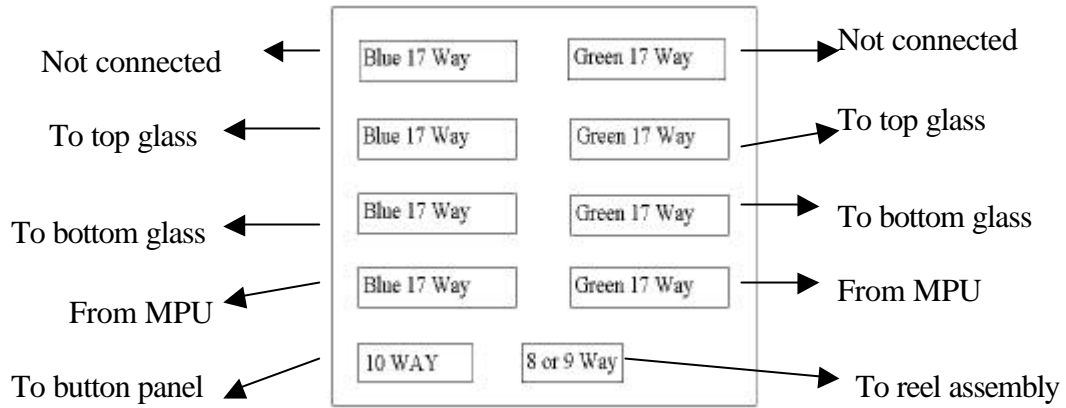
C = Sound EPROM 1

D+E = Link settings.



Connections

Figure 4 **Lamp interface board.**



Lamp Allocation

Lamp	Blue Pin	Green Pin	Position
0 1 2 3 4 5 6	9	1 2 3 4 5 6 8	Reel 1 Top Reel 2 Top Reel 3 Top
8 9 10 11 12 13 14 15	8	1 2 3 4 5 6 8 9	Reel 1 Middle Reel 2 Middle Reel 3 Middle All cash wins only highest win paid 2p play reel glass left hand side
16 17 18 19 20 21 22 23	7	1 2 3 4 5 6 8 9	Reel 1 Bottom Reel 2 Bottom Reel 3 Bottom 2p play on reel glass right side Tuppenny on reel glass
24 25 26 27 28 29 30 31	5	0 1 2 3 4 5 8 9	Cancel button 1 st Hold/Nudge Collect button Award 5 above 3 rd nudge button Climb Award 7 27 ways to win panel Tuppenny on reel glass
32 33 34 35 36 37 38 39	4	0 1 2 3 4 5 6 8	Nudge button 1 Nudge Button 2 Nudge Button 3 Award 4 panel above 2 nd nudge button Nothing panel Award 8 27 ways to win panel Classic on reel glass
40 41 43 44 45 46	3	1 2 4 5 6 8	Nudge Up button Start Award 3, 3lemons & 3grapes Nudge up 2 panel Tuppenny on reel glass
48 49 50 51 52 53 54	2	1 2 3 4 5 6 8	 Award 1 3lemons & 3grapes Nudge up panel 1 Award 10, 27 ways to win panel Tuppenny on reel glass

Lamp allocation

Lamp	Blue pin	Green pin	Position	
56	1	1	Token entry bezel	
57		2	Cash entry bezel	
59		4	Award 2, 3 lemons & 3 grapes panel	
60		5	Award 6 9 ways to win panel	
61		6	Ward 9 27 ways to win panel	
62		8	Tuppenny on reel glass	
63		9		
64		17	10	10p gamble ladder
65			11	20p gamble ladder
66	12		40p gamble ladder	
67	13			
68	14			
69	15			
70	16			
71	17			
72	16		10	5 nudges
73		11	6 nudges	
74		12	80p gamble ladder	
75		13		
76		14	Super gamble	
77		15	£1.60 gamble ladder	
78		16	7 nudges	
79		17		
80		15	10	4 nudges
81	11		8 nudges	
82	12		£2 gamble ladder secret	
83	13			
84	14		£5 jackpot secret	
85	15		£4 gamble ladder secret	
86	16		£3 gamble ladder secret	
87	17		Tuppenny name top glass	
88	14		10	3 nudges
89		11	9 nudges	
90		12		
91		13		
92		14	Nudger name top glass	
93		15		
94		16		
95		17	Tuppenny name top glass	
96		13	10	2 nudges
97	11		Press to select number of nudges panel	
98	12			
99	13			
100	14		Nudger name top glass	
101	15		Tuppenny name top glass	
102	16		10 nudges	
103	17		Tuppenny name top glass	
104	12		10	1 nudge
105		11	Select nudge button	
106		12		
107		13		
108		14	Nudger name top glass	
109		15	Tuppenny name top glass	
110		16		
111		17	Tuppenny name top glass	

Lamp allocation

Lamp	Blue pin	Green pin	Position
112	11	10	Nudge info (nudge on winline...)
113		11	Nudge info (nudge on winline...)
114		12	
115		13	Jackpot decal 4
116		14	Jackpot decal 2
117		15	Classic name to glass
118		16	Tuppenny name top glass
119		17	Tuppenny name top glass
120		10	10
121	11		Nudge info (nudge on winline...)
122	12		Nudge info (nudge on winline...)
123	13		Jackpot decal 3
124	14		Jackpot decal 1
125	15		All cash panel top glass
126	16		
127	17		Classic name top glass

MPU Connections

11 Way White – Triac Drives	
Pin	Function
1	48v AC
2	0v
3	20p Solenoid
4	£1 solenoid
5	10p solenoid
6	Not used
7	KEY
8	Not used
9	Not used
10	Not used
11	Cash refill meter

11 Way Blue – Power Out	
Pin	Function
1	48v AC
2	0v
3	Audio output
4	0v
5	0v
6	0v
7	+12v DC supply
8	Key
9	-12v DC supply
10	+34v DC supply
11	Aerial

19 Way Orange-switches	
Pin No	Function
1	20p level
2	£1 level
3	Token level A
4	Token level B
5	Not used
6	Not used
7	Not used
8	Not used
9	Not used
10	Not used
11	Not used
12	Not used
13	% key pin 4
14	Key
15	% key pin 3
16	% key pin 2
17	% Key pin 1
18	Enable pins 1-8
19	Enable pins 9-17

19 Way Black-Switches	
Pin No	Function
1	Not used
2	Nudge select switch
3	Not used
4	Not used
5	Not used
6	Test switch
7	Refill key switch
8	Door switches
9	
10	
11	Collect
12	Hold 1
13	Nudge 2
14	Nudge 3
15	Nudge up
16	Key
17	Start
18	Enable Pins 1-8
19	Enable pins 9-17

10 Way Yellow –Meters	
Pin	Function
1	Cash In
2	Cash Out
3	Token In
4	Token Out
5	Not used
6	Not used
7	Not used
8	Not used
9	Key
10	+12v DC Common

9 Way Green - Photo	
Pin	Function
1	+5v supply
2	LED Drive
3	Signal
4	Key
5	Reel D input
6	+12v supply
7	Reel C input
8	Reel B input
9	Reel A input

15 Way Red-Power In	
Pin No	Function
1	-12v Return
2	+34v Supply
3	+34v Supply
4	Key
5	48v Return
6	-12v supply
7	+12v supply
8	+12v supply
9	+12v supply
10	+12v return
11	+12v return
12	+12v return
13	+34v return
14	+34v return
15	48v supply

19 Way Red-Stepper Motors	
Pin No	Function
1	+12v supply
2	Reel D drive
3	Reel D drive
4	Reel D drive
5	Reel D drive
6	Reel C drive
7	Reel C drive
8	Reel C drive
9	Reel C drive
10	Reel B drive
11	Reel B drive
12	Key
13	Reel B drive
14	Reel B drive
15	Reel A drive
16	Reel A drive
17	Reel A drive
18	Reel A drive
19	+12v supply