Clown around installation and maintenance

1. Installation

1.1   Unpacking

Carefully remove all packaging material, and site the machine on a flat and level floor. The machine is designed for indoor use only.

1.2   Assembling

1. Remove all packaging
2. Lift the top sign off the top off the machine.
3. Unscrew glass travelling blocks
4. Lift the glass off the top of the machine.
5. Remove the 2 bolts from the inside of the back posts.
6. Remove the 2 bolts on the shelf between the back posts

7. Lift the angled box into the upright position.
8. Remove the back door (keys in bag on the gun console)
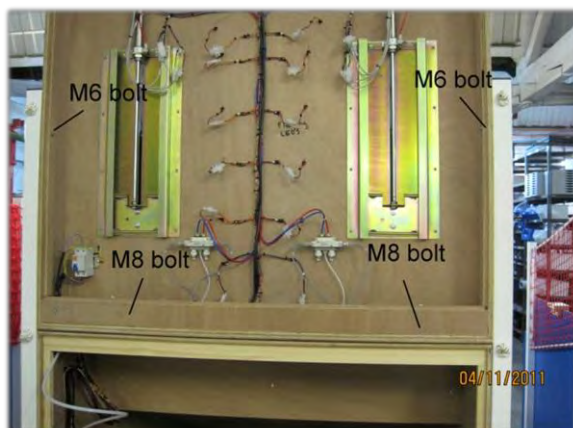
9. Screw bolts into posts through the box
10. Screw bolts through the base of the top box.
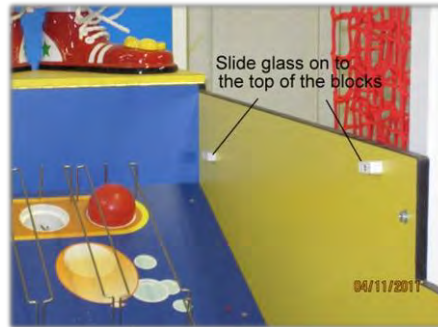
11. Fit splash guard glass.

12. Fasten the side nettings in position.
13. Fix top sign on to the top box (screws already in the holes) and fit screw caps

14. Bolt consoles into position, connecting all electrical and water between the consoles and the main cabinet

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15. Fill playfield with water up to fill line.
16. Plug machine and compressor in to a wall socket
17. Turn compressor on using the switch on the compressor
18. Allow pressure to build up in compressor before playing the game for the first time
19. IT IS IMPORTANT TO DRAIN COMPRESSOR DAILY, AND TO CHECK OIL LEVEL WEEKLY

1.3   Set up

The machine is delivered with the following settings:-

Coin mechanism £1 per game

Time limit on a game with no winner 90 seconds

Tickets per ball in hole 5

Tickets to the winner 25

2.   Game description

Clown around is a water game is for one or two players.

The aim is to drive balls up a sloping playfield using a movable water jet.

Each ball falling into a hole at the top of the playfield causes the clown to increase in height. The player who places 4 balls in the holes first is the winner.

3. Game operation

Warning.
The C101 board has 240v (110v) mains voltage present upon it when the machine is plugged in and switched on. Stay clear of the area marked "Danger high voltage" when the machine is plugged in.

Precaution.
Static electricity.
The C101 board contains static sensitive components and should not be handled unnecessarily without discharging any static electricity that you may have on yourself.
When performing any operations such as altering dip switches, ensure that you have discharged any static electricity first.
To discharge yourself, touch something that is earthed such as a metal water pipe or electricity conduit immediately before touching the board directly.

Moisture.
The C101 is housed within a plastic enclosure to prevent any water droplets or debris from splashing onto the PCB (printed circuit board). It is important that the lid is fitted at all times when the machine is in operation as just one drop of water in the wrong place could cause serious damage.

Fuses.
There are four fuses on the C101 board. These fuses must be replaced with the same type and rating to provide continued protection.
 Disconnect mains supply from machine before changing any fuse.
Fuse 1   2Amp time delay
Fuse 2   4Amp fast blow
Fuse 3   4Amp fast blow
Fuse 4   5Amp time delay

Power up.
On power up, the C101 will display the version number of the firmware (main game programming) on the two digital displays. Example 'V1 03' is version V1.03

The C101 will then perform a test on the solenoids and lamp outputs to confirm there are no short circuits which could damage the transistors. During this test, all of the lamps and solenoids will be very briefly turned on which may be heard as a clicking sound.
If the test fails, the display will show 'ER 12' and the solenoids and lamps will not operate until the fault is repaired.

Game parameters.
There are various parameters that can be altered on the C101 board such as coin values, game time and tickets dispensed. The adjustments are made using the three player start buttons in conjunction with the player displays.

Display.The Left display shows the item number (will be flashing on entry) as defined in the following table, Table 1.The Right display shows the data or value of the item currently selected.

Control.
The player buttons perform the following functions:
Player 1 button (left player) increments the flashing item or value on the display
Player 2 button (right player) decrements the flashing item or value on the display
The two player button toggles between "item" or "data" to change

Change the data of each and every item that you wish to change and when you have finished, turn off the service switch while the machine is still powered up which will save the data back to memory. Then turn the machine off then on again to use the new values.

Example:
To change the cost per credit from 50p to £1.

1. Ensure that the machine is switched on and that there are no credits left and no games are playing. Turn on the 'Service mode' switch which is situated on the side of the control box. The display will show 'Sr vC' for 3 seconds.

2. The left display will now show '0' and will be flashing and the right display will probably be showing '6' if set to its default setting.
   This is item 0 which is 'Game duration' and is set to 60 seconds if displaying '6'

3. While the left display is flashing, press the player 1 button repeatedly until the left flashing display shows '3' which is item 3, Cost per credit.

4. Now press 'TWO player' button so that the right hand display is flashing. If set to default, it should show '5' which equates to 50 pence.

5. With the right display flashing, press 'player 1' button until the display shows '10' which equates to £1.

6. *While the machine is still ON, turn off the service switch which will save the changes made.*
   NOTE: If you turn off the machine without turning off the service switch first, any changes will be lost.

7. Now turn off the machine for 30 seconds and then turn back on and test.

Notes:
1. You can only adjust each value within certain limits which are defined below in the table 1.
2. As the display is only two digit, some values are entered divided by 10. For example; coin 6 has a value of £2.00 (200 pence) so we would enter the value 20.

Table 1:

Item number		Default	Limits of value	
0	Game duration.	6	1-99	Enter value divided by 10. Eg 6 is 60 seconds
1	Tickets per ball in	5	0-99	
2	Extra tickets for win	5	0-99	
3	Cost per credit	5	1-99	Enter value divided by 10. Eg 5 is 50pence
4	Maximum credits	5	1-10	Credits deposited before coin mech is locked out
5	Coin 1 value	10	0-99	£1 coin. Enter value divided by 10.
6	Coin 2 value	5	0-99	50p coin. Enter value divided by 10.
7	Coin 3 value	2	0-99	20p coin. Enter value divided by 10.
8	Coin 4 value	1	0-99	10p coin. Enter value divided by 10.
9	Coin 5 value	0	0-99	No coin. Enter value divided by 10.
10	Coin 6 value	20	0-99	£2 coin. Enter value divided by 10.
11	Games for 0 credit	0	0	not used, leave at 0
12	Games for 1 credit	1	0-50	
13	Games for 2 credits	2	0-50	
14	Games for 3 credits	3	0-50	
15	Games for 4 credits	4	0-50	
16	Games for 5 credits	5	0-50	
17	Games for 6 credits	6	0-50	
18	Games for 7 credits	7	0-50	
19	Games for 8 credits	8	0-50	
20	Games for 8 credits	9	0-50	
21	Games for 8 credits	10	0-50	

Dip Switches.

There is a bank of 8 dip switches on the PCB that are normally only used for servicing such as firmware updates.
These switches are scanned on power up so you should power down the machine before making any changes to these switches.

Dip switches   (Issue 2 PCB)
1   Enable USB port
2   Reformat flash
3   Force boot loader
4   Test mode (Factory use only)
5
6   Enable free mode access (press all 3 plyr sw's on power up to start free mode)
7   Enable attract mode animation
8   Enable attract mode music

Switch 1.   Enable USB port.   Default ON.

This switch allows the USB port to operate when connected to a computer for uploading files.
This switch can be set to off to prevent unauthorised access to the files within the flash memory of the board.

Switch 2.   Reformat flash.   Default OFF.
This switch will wipe the contents of the flash memory (audio, initialisation and firmware files) if switch 1 is also on when the board is connected to the PC. It should be turned off immediately after the 'drive' comes up on the PC in 'My Computer'.
This function is generally only needed if the files have been corrupted during a failed transfer.

Switch 3.   Force bootloader.   Default OFF.
This switch is normally only used after a failed firmware update. It prevents the main game program from running and forces the firmware to be updated if available on the flash memory.

Switch 4.   Test mode.   Default OFF.
This switch in conjunction with the 'Service mode' switch is only to be used by authorised personnel for testing the PCB. It allows each input and output to be tested using test jigs.

Switch 5.   Not used.   Default OFF.

Switch 6.   Enable free play.   Default OFF.
If this switch is on, it is possible to start the machine in free play mode for demonstration purposes without having to put in coins. To start free play mode, press and hold all three player buttons when the display shows the version number 'V1 03' on power up. Release the buttons when 'Free' is shown on the display. To clear free play, power down the machine and power up again.

Switch 7.   Enable attract animation.   Default ON.
This switch will flash the led's and make the clowns go up and down randomly as long as there is no credit on the machine and no games are playing.
This attract mode starts 30 seconds after a game finishes. (settable in item 25 of service mode)

Switch 8.   Enable attract music.   Default ON.
This switch turns on the attract mode music when no games are playing.

Volume controls.

There two volume controls on the side of the control box.
One is for in game audio and the other is for attract mode music.

Float switch.

There is a float switch in the water tank that detects the water level to ensure that the pump does not run if the water level is too low.

The float switch will only prevent a game from starting. It will not cancel a game in progress.
The credits left will remain unless the power is turned off.

Code "Er01" will be displayed on the led display at the end of the current games to indicate low water level.

After refilling, the coin mechanism remains disabled until the remaining credit is used up for a player.

The float switch has a 5 second hysteresis. This means the float switch must change state and be stable for at least 5 seconds before the new state is detected.

Tickets.

During a game, tickets will be dispensed whenever a ball goes into a pocket and also when a player gets all four balls in within the time allowed.
Important:
If the tickets run out, the C101 will still continue to work as normal but it will remember any tickets that have not been dispensed and will dispense these when new tickets are added.
To clear the backlog of tickets, turn off the machine and turn back on again.

Credits.

As there is only one coin mech on the machine, there is some logic written into the software to ensure that the credit goes to the correct player.
This is explained here:

Current state of machine: NO GAMES RUNNING, NO CREDIT ON MACHINE.
Assumes 50p per credit & one credit per game.

User inserts 50P
Only player 1 switch flashes.
Left display flashes "01" for 1 credit, right display shows "00".

User inserts another 50P
Player 1 switch & TWO player switch flashes.
Left LED displays show "02", right display shows "00".

User inserts another 50P
Player 1 switch & TWO player switch flashes.
Left LED displays show "03", right display shows "00".

Player 1 switch pressed
Player 1 switch now lit (not flashing).
Player 2 switch is unlit, TWO player switch is unlit, left hand game starts, left display shows time, right display shows "00"

Or if:
Two player switch pressed (middle switch)

Player 1 switch, player 2 switch & TWO player switch now lit (not flashing). Both sides start playing and counting down.

Scenario 2.
Assuming left hand game only is playing:

New player inserts 50P
Player 2 switch now flashes. The TWO player switch is off.
Right hand LED display shows "01" for 1 credit.

New player presses "player 2"
Player 2 switch now lit (not flashing). TWO player switch is off, right hand game starts, right display shows time, left display is showing time for left game.

In summary…
If no games are running, a single player game can be started from the left position only.
If the left position is already playing, then the right position can be played independently.

A two player game can only be started if NO games are currently playing.
A two player game can be started if both sides have at least one credit or one of the players has at least two credits.

Once a game has been started, any new credits entered will go to the other game position if it is not running.

If a player inserts credit, the coin mech will be locked to that player until they press their start button whether the other player has credit or not.

As soon as both games are running (independent or two player) the coin mech will be locked out and not accept coins until at least one of the positions has used all of their credits.
Credit will only go to a non-playing game position.

These are the standard files that are loaded onto the C101 board:

001attract.wav	Attract mode music
002Game.wav	Game music
011rise1.pcm	First ball in effect
012rise2.pcm	Second ball in
013rise3.pcm	Third ball in
014rise4.pcm	Last ball in
015bells.pcm	Win sound effect
016laugh	Lose sound effect

020 1KHz	Test tone (factory use only)
INIT Pan V1_03.txt	Initial parameter settings for new board
PANC101 V1_03.txt	Main firmware file. Only programs the processor if the time or date has changed from that already programmed.

Trouble shooting.

Note:

The amplifier is self-protecting and will cut out briefly if it becomes over heated due to excessive volume or incorrect loading.

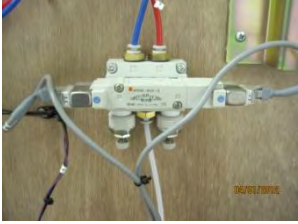Under certain situations, an error number will be shown on the displays.
The main two that could be seen are ER01 and ER12

1	Low water, please refill the water tank.
2	Waiting for USB connection (this will be automatic on iss2 hardware)
3	No valid firmware signature found
4	No firmware .hex file found
5	Hex file is corrupt
6	Flash update failed
7	Flash update good (not visible on iss1 hw)
8	Flash update about to proceed. DO NOT disconnect power
9	FWR Erase failed
10	No INIT.TXT file found
11	Not used
12	Solenoid fault (I > 5A after 1mS or I > 1.5A after 10mS) Check for shorts
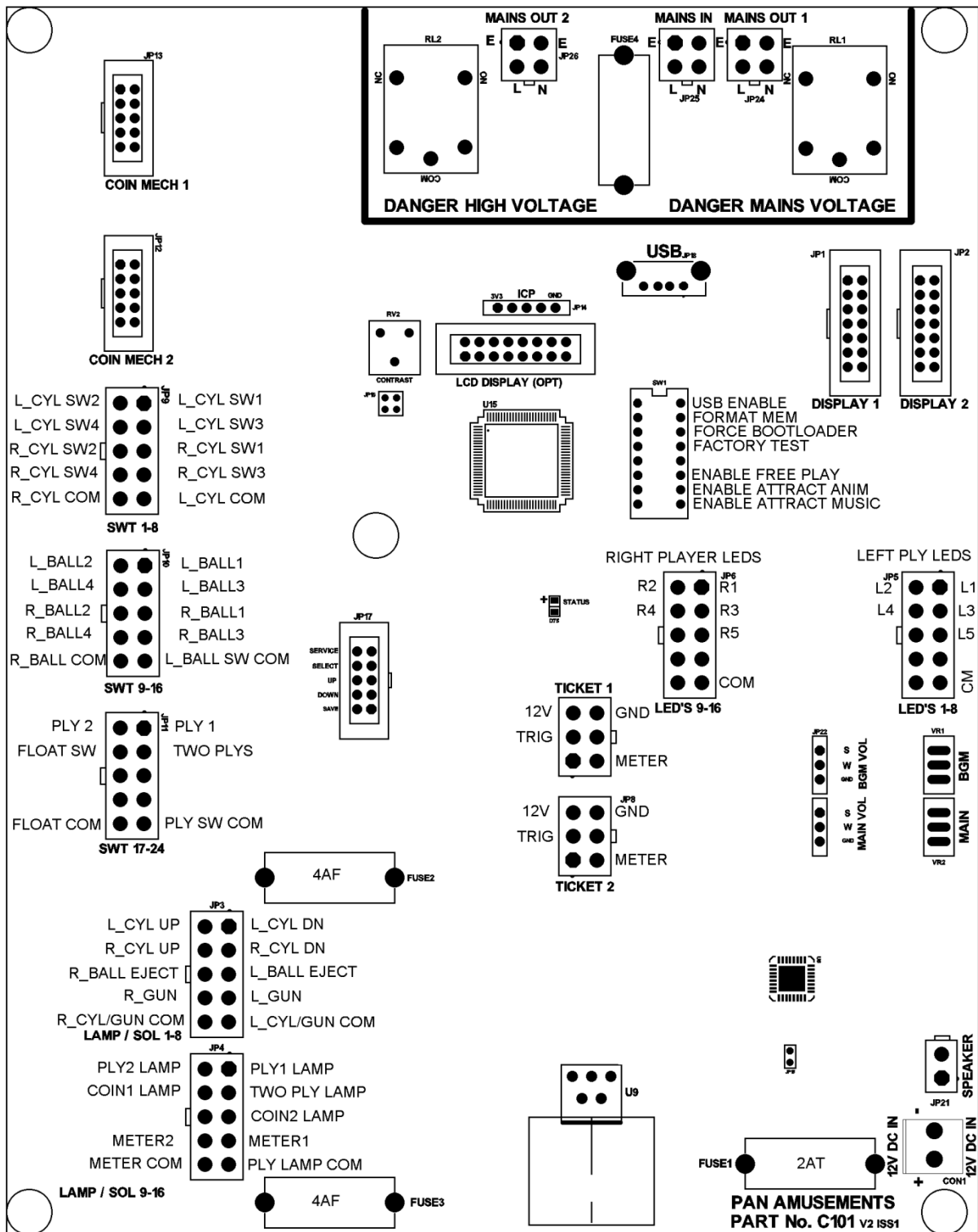
C050	Instruction plate	Fits between the 2 guns . display shows time remaining		£57.20
SS200	Water gun complete	Supplied with gaiter swivel, ready to bolt on		£406.28
C043	Plastic ball green			£0.90
C043A	Plastic ball yellow			£0.90
C043B	Plastic ball yellow			£0.90
C043C	Plastic ball red			£0.90

C101	Clown circuit board	Complete in a box		£960.00
C101REP	Clown circuit board repair only	Subject to no major damage to the circuit board		£186.00
H101	Flat key lock			£1.91
H162	Deltronic ticket dispenser			£95.00
H106	Radial cash lock			£5.25

C080	Clown cylinder operating valve	Moves the clown cylinder in both directions		£154.26
A049	Clown position sensor	Magnetic reed switch which senses the position of the cylinder rod		£21.60
SD085A	Air compressor	Supplies air to the clown cylinders		£760.00
A033	25mm bore x 300 stroke air cylinder	Moves the clown		£58.85
E152	Speaker			£31.19

M10	Water pump	Supplies water to the guns and ball ejectors		£182.49
A116A	Water solenoid valve	Switches the water supply to the guns and ball ejector		£41.41